

**WATER AND MAN IN SYMBIOSIS ON THE PLATEAU OF THE BJELASNICA MOUNTAIN*****Ahmet Hadrovic**

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Abstract

Since its inception, man, with a continuous struggle for survival, has thought about himself and the world around him in the way of asking many questions that have become eternal questions of man's essence in general: Who is man? Where is he from? Since when? What is his place in the Universe? Is it a given or self-generating being? Where is he going? How long will it last? ... Man gives answers to these questions constantly, over and over again, through religion, philosophy, science, art and his daily practical work. The man announced 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 fruit gatherer. By stepping out of the cave into the open space (Neolithic, Bronze and Iron Ages), man shows that he is bolder, more resourceful and stronger than other living beings with whom he shares nature. He became a farmer and breeder of domestic animals, socially organized (first through clan and tribal communities and later through arrangements we know as a slave-owning society). Rich civilizations are emerging in the valleys of large rivers, and on islands and shores of warmer seas across the planet Earth. The abundance of water along more or less vast and fertile river valleys and suitable sea shores, all combined with other climatic benefits (especially the number of sunny days and temperatures), resulted in intensive agriculture that brought abundant yields whose surpluses in open trade changed for others goods or „cashed in“ (turned into universal goods, into gold). Cities were created as a physical objectification of complex interpersonal relations, and in them a large number of various constructions, as a physical framework of a more or less wide range of human needs. Aware that water is the basic precondition of his existence (and well-being as a high level of existence), man thanks the water donor in various ways. The obvious truth that the existence of abundance of water is a basic prerequisite for all abundance, but the creators of the first civilizations have already covered the myths and deities-guardians of water. At the same time, exceptional individuals (scholars, philosophers) begin to think about the world around them in search of its meaning, and therefore the place of man in that world. In some of the first known philosophical reflections (dating from the 7th century BC), water is considered to be the basic element, the beginning, of the Universe. We state this because the latest knowledge about water largely correlates with this teaching. The great religions (which their followers believe to be the direct word of God, God's revelations), Judaism, Christianity and Islam, give water the meaning of life and universal energy which (as life) in a special way (hitherto incomprehensible) permeates the entire Universe. This paper is a small contribution to the understanding of the symbiotic relationship between water and man, on the example of the Plateau of the Bjelasnica Mountain.

Keywords: Water, Bjelasnica, Bosnia and Herzegovina, Man.

INTRODUCTION**1. ENVIRONMENT**

It is not possible to present water and man in symbiosis on the Plateau of the Bjelasnica Mountain without first considering the environment, both natural and social. Only when they find themselves in a relationship, natural and social environment, and water as a medium that connects the entire universe, it is possible to understand the emerging forms of symbiosis of water and man on the Plateau of the Bjelasnica Mountain.

1.1. Natural environment

The Bjelasnica Plateau is a vast geographical area in the central part of Bosnia and Herzegovina, with the top of the Bjelasnica Mountain (2067 m) as the central point (Geographical coordinates: 43°42'13.65"N, 18°15'27.51"E), (Figure 1). The plateau is about 25 km southwest of Sarajevo. This plateau, together with Mount Igman, stretches for about 30 km in the northeast-southwest direction, perpendicular to the Dinaric Massif, and about 10-20 km wide. The northernmost part of Bjelašnica (also its highest ridge) stretches from east to west for about 12 km. The ridge falls to the north, vertically, for a full 500 m. At the foot of the huge grindstones (sipar), Kotlovi and Muslin grindstones, the mountain Igman is connected to this ridge. The main ridge (east-west direction) breaks at the top of Vlahinja to the southwest and then completely breaks at Mrtvanje. The second ridge with the highest group Hranisava continues at a certain distance from Mrtvanje. This second ridge stretches from north to south and gradually descends to the Bjelasnica plateau. On the northern side, it descends vertically for 500 m into the forested Pazaric and Korcan Bjelasnica. From the highest ridge (which is visible from Sarajevo) to the southwest, the real mountain Bjelasnica spreads, deep and far to the south, southwest and southeast. Towards the south and southwest it spreads all the way to the hilly areas around the Neretva river. To the south, it borders the mountain Visocica, from which it is sharply separated by the canyon of the Rakitnica river. To the east, via Hoyta, it connects with the Treskavica mountain. From the west, the slopes of Dzepi and Preslica mountains touch it. From the south and southwest, the Bjelasnica mountain gradually rises to the north, but not everywhere uniformly. From Vran-Blatacke sides (Vran-Blatacke strane), where the altitude is about 1200 m, the entire southwestern side of the mountain spreads as a vast field (Delica polje) all the way to Radobolja, the northernmost flat area of the region. The altitude of this area is between 1200-1400 m. The boundaries of this plateau are the course of the river Zujevina and the mountain Igman in the north, the

ridge Hojta and the mountain Treskavica in the southeast, the 25 km long canyon of the river Rakitnica (which divides the Bjelasnica Plateau and the Visocica mountain) in the south) in the southwest and the saddle of Ivan-planina (which connects the Plateau of the Bjelasnica with the Bitovnja mountain) in the west. Bjelasnica is named after the white snow cover (“cap”/”kapa”) that stays there most of the year, from November to May (sometimes in the summer months)^[1,2].



Figure 1. Geographical position of Bosnia and Herzegovina (left) and The Plateau of the Bjelasnica Mountain

Source: <https://gisgeography.com/bosnia-and-herzegovina-map/>, Accessed: 12.23.2021. Google Earth, Accessed: 12.23.2021.

The Bjelasnica Plateau is rich in various relief forms (Figures 2, 3). From the geological aspect, Bjelasnica is a part of the Dinaric Alps, composed of secondary and tertiary sedimentary rocks, mainly limestone and dolomite. Most of Bjelasnica was built of Middle and Upper Triassic limestones and dolomites. There are differences in the geological structure of its individual parts. The rocks in the eastern part of the mountain, east of Umoljan (the valley of the Rakitnica river around the Sabici and Rakitnica villages) are formed into clasts, ie waterproof marls, sandstones. From the geological point of view, the western part of the mountain is dominated by exo-karst relief forms such as oysters, ravines, sinkholes and bays on limestone-dolomite base (area along the lower course of Raktinica), so typical karst and therefore this part is very poor in surface watercourses. As the largest part of Bjelasnica, especially its stunning part, is built of Middle Triassic and Upper Triassic limestones and dolomites, these limestone-dolomite masses have cracked numerous cracks created by karst processes, due to which precipitation is quickly lost underground. During the diluvial glaciation on Bjelasnica, glaciers were most strongly developed on its northern side. Even today, there are traces of the action of these glaciers.



Figure 2. The Bjelasnica plateau - view from the top of the Bjelasnica: Dugo polje, Lukavac, Brda, Milisici, Rakitnica, Bobovica and further Visocica

Source: Author (8/17/2017)

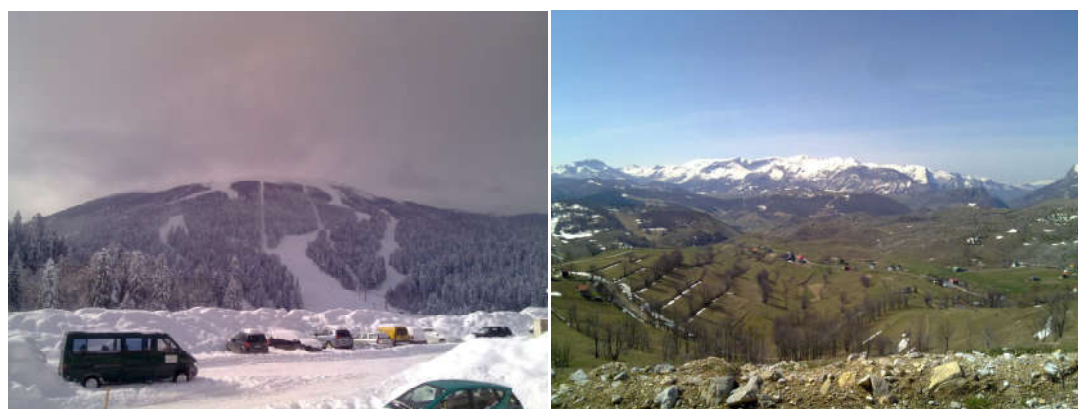


Figure 3. Motifs from the Plateau of the Bjelasnica mountain

Source: Author (2/11/2012, 4/20/2013)

The climate of the Bjelasnica is transitional (borderline), between Mediterranean and continental influences, with dominant characteristics of mountain and alpine climate. In a large Bjelasnica area, lower than 1500 m above sea level, there is a mountain climate (type Dfb, according to Köppen's classification of climate, humid boreal climate with warm summers). This type of climate is characterized by large annual amplitudes: the average temperature of the warmest month ≤ 22 °C, 3 to 4 and even 5 months temperatures are lower than 0 °C; coniferous forests and steppes develop in drier areas, and deciduous forests in wetter ones. In areas with an altitude of more than 1500 meters, mountain climate is present (type Dfc according to Köppen's classification of climate, humid boreal climate with fresh summers). This type of climate is characterized by long, very cold winters and short cool summers - only 1 to 4 months the average temperature is ≥ 10 °C. Features of mountain climates are constant inversions of temperatures, as well as relatively high humidity throughout the year. With the increase in altitude, in the highest mountainous areas of Bjelasnica, the mountain climate turns into a real alpine climate. Areas with an alpine climate are characterized by very long and cold winters, and short and cold summers, where the average temperature is below 0 °C for six months of the year. Due to its geographical position and altitude, Bjelasnica represents the boundary of the influence of two major climatic units - the Mediterranean and the continental. Thus, Adriatic and continental air masses clash on Bjelasnica, resulting in frequent and rapid changes in weather conditions, frequent and strong winds and heavy rains, relatively early appearance of the first snow and frost (mid-September), and long retention of heavy snow cover in higher areas until the second half of May). The transfer of moist and warm air masses is transformed in the conditions of mountainous relief into special climatic situations. Considering the position of mountain massifs in the area, in the northwest-southeast direction (direction of the Dinaric mountains), the influence of currents from the west and southwest (primarily influences coming from the Neretva river valley) is manifested on the southwestern slopes as warmer and wetter from the northeast colder and drier, which creates different hydroclimatic conditions on the northeastern and northwestern slopes. Usually this diversity is expressed on mountain ridges, where different sides have different microclimatic conditions. There is a lot of precipitation in every season. The average annual amount of precipitation in the mountainous area exceeds 1200 mm, and it is mostly snowfall that lasts a long time. Rainfall is very often accompanied by strong thunderstorms, and is especially abundant during autumn. Permanent snow cover (which in some years could be up to three meters high) lasts long in the spring and usually lasts between November and May. The average annual temperature is only 0.7 °C, due to extremely low winter temperatures. The highest temperatures reach 24 °C, and the lowest are recorded down to -41 °C. Winters are extremely harsh and long, so spring is felt only in mid-May, and short summers can be accompanied by waves of cold air. The mountain is generally known for strong and frequent winds, and at the top of Bjelasnica sometimes in the winter months they reach hurricane strength and speed of over 100 km/h.

Resources. Resources are natural values that man uses more or less directly to meet a wide range of his needs. Given their abundance, we distinguish between renewable and non-renewable resources. Renewable resources are: Solar radiation, water, forests and living things in general. Non-renewable resources are oil, gas, coal and minerals. In our considerations, we will treat water, forest (as a resource created more or less without human influence), soil (as a "derived" natural resource, without or with human activity) in the forms of forest pastures, cultivated meadows and fields and orchards (as man-made and especially purposeful trees, ie plant biomass). From non-renewable resources we will process stone (rock) as a building material, first of all. The watershed of the Adriatic and Black Sea basins passes through Bjelasnica. Due to the karst terrain, precipitation is quickly lost underground, so the mountain is generally without significant surface flows, with the exception of rivers that flow along the edge of its mountainous area. In the eastern part of the mountain, due to the specific geological structure (atypical karst), there are several water sources and several surface watercourses that survive most of the year, except in the case of extreme summer droughts. Due to the extremely karst relief, the western part of the mountain is poor in surface watercourses, and the already few springs are poorly abundant. Groundwater (caused by precipitation and melting snow) in the karst area is a valuable segment of natural heritage. Thus, towards the northeast, from the so-called hydrological unit Bjelasnica, groundwater is drained into the hot rivers of Bosnia, Ljuta and Bijela. The catchment area of the source of Bosnia is 150 km², and Ljuta 108 km². This hydrological area ("Sarajevo field") is a small area, but given the amount of water it supplies to Sarajevo, it is very important. It is replenished to a significant extent with water from the Igman and Bjelasnica hydrological units. In the narrower locality where the ski slopes on Bjelasnica are located, in the locality Babin do, there are no springs or any river flows. However, as precipitation exceeds the amount of evaporation, there are constant water currents in this area and its surroundings. Due to differences in geological composition, especially due to the significant share of limestone-dolomite blocks (characterized by a high degree of crack intersection), the surface hydrographic network is underdeveloped in the higher mountainous parts. Permanent watercourses have been developed only on rock masses that have an insulating character, in the basin of Ljuta, Zeljeznica, Dobropoljka, Zujevina and Tresanica. In the canyon of Rakitnica, Neretva and Ljuta, at the source of Bosnia and in the area of Zeljeznica, in the limestone-dolomite masses there is a strong underground drainage of Bjelasnica, Treskavica and Visocica. Other terrains have an underground karst-type hydrography where water drains into the Adriatic and Black Sea basins, but with completely undefined surface watersheds and underground development of reservoir masses.

The Rakitnica river (Figure 4) springs at the western end of Treskavica near the village Rakitnica, at an altitude of between 1300 and 1500 m and flows into the Neretva on the mountain border Bjelasnica-Visocica-Prenj, as its right tributary, not far from Boracko Lake, on at an altitude of 324 m. There is not a single source for which it could be said with certainty that it is the main source of the river, but it is a series of springs in the said area. The Rakitnica river, with its famous canyon, separates the mountains Bjelasnica and Visocica and drains other streams into the Neretva. Tributaries of Rakitnica, in order from its source to the mouth of the Neretva, are as follows: Tusilacka river (left tributary, estuary at 1108 m above sea level, flows from Visocica), Sklope (right tributary, stream from Bjelasnica), Studeni potok (right tributary, stream from Bjelasnica), Peruce (right tributary, stream from the slopes of Oblje), Medjedja (left tributary, stream flowing from Visocica), Grusca (left tributary, river flowing from Visocica). This typical mountain river cuts deep between Bjelasnica on the right and Visocica on the left, forming a canyon, a morphological phenomenon and an idyllic wonder of wild nature, with a series of rapids, waterfalls and peaceful pools.

Rakitnica Canyon is the longest and deepest in Bosnia and Herzegovina. It is over 20 km long and the depth is between 800 and 1000 m. The beginning of the Rakitnica canyon is at an altitude of 1120 m. The most attractive part of the river is between the bridge on the road Lukomir-Bobovica to Lucica (Bajrina koliba). It is a river course of 4-5 km with a drop of about 300 m and numerous waterfalls and cascades. At the time of heavy precipitation and melting snow in some parts, the level of Rakitnica rises by 20 m. During the spring rains, waterfalls that fall from high rocks on the slopes of Bjelasnica and Visocica are especially attractive. The entire length of the Rakitnica canyon is home to endemic species of flora and fauna. There are 32 species of endemic plants, flowers and trees that live in this small region of the Dinaric Alps. Bears, wolves, wild boars, foxes and wild goats find refuge in this hard-to-reach canyon. With its course of 32 km, it does not flow through populated areas, and the water is drinkable from the source to the mouth. It contains brown and soft trout (endemic) and grayling, in large quantities. The most favorable part of the course for fishing is from the road bridge near the Tusila village to the pedestrian bridge on the path to the Bobovica village.



Figure 4. The Rakitnica village on the Rakitnica river (above) and the canyon of the Rakitnica river (below)

Source: Vladimir Obradovic (7/29/2017), (top)

Source: Author (4/2/2017, 8/13/2016), (below)

Konjicka Ljuta (Mala Ljuta) springs on the slopes of Bjelasnica, northeast of the town of Konjic, a right tributary of the Neretva river. On its short route of 4-5 kilometers, it flows in a north-south direction through a valley formed by the river over time and through the settlement of Ljuta. *The Zujevina river* is the largest river in the Hadzici municipality. It is formed by merging the streams Kradenik (which springs below the northwestern slopes of Bjelasnica) and Resnik, in Pazaric. This is a timid river that is constantly overflowing. The right tributaries of Zujevina are Ljubovcica, Krupa and Zunovnica, and the left ones are Pazaricki potok, Vihrica and Rakovica. It flows into the Bosna river, in the municipality of Ilidza, at the location Sastavci, where the rivers Zeljeznica, Dobrinja and Miljacka also flow into Bosnia. Therefore, the area is almost always exposed to floods during rainy periods. *Studen potok* is an extremely attractive stream that meanders on a gentle plateau above the village of Umoljana. Due to the karst terrain, its flow is not constant. It is supplied with water from the slopes of the stone hill Obalj and the hill Gradina above the Umoljani village. During sudden and abundant precipitation and melting snow, the stream swells, only to dry up after long droughts, retaining water only in the deeper depressions of its flow (Figure 5).



Figure 5. Studeni potok

Source: Author (2/21/2015, 11/10/2013, 10/30/2011)

There are several mountain lakes on Bjelasnica: Lokvanjsko Lake (located in the bay below the top of Mala Vlahinja, at 1760 m above sea level; it is of glacial origin, about 100 m long, 60 m wide, average depth up to 2 m); Sitnicko Lake, Blatacko Lake (in Blace), Kalajli Lake (between Hranisava and Opancka) and *Balica Lake* (north of Umoljan), (Figure 6). The difference between lakes and ponds is that lakes are larger areas of water and do not dry out during the dry season and remain the only watering places for livestock.



Figure 6. Balica Lake in Umoljani

Source: Author (6/30/2013)

The most famous ponds (lokve) are: Stina lokva (on Stin dol), Crvena lokva (on Dugo polje), Karanfil lokva, Medvedja lokva (on the north side of Bjelasnica, Figure 7), Cmiljevac, Razdolje or Galesina lokva (in the central part of the mountain), Pidja lokva, Opacak lokva (in the Opacak neighborhood), ponds on Meterizi and pond in Razaslje.



Figure 7. Bear pond (Medvedja lokva)

Source: Author (9/8/2011)

Forest in the life of people living on the Plateau Bjelasnica name great importance: supply of firewood which is, along with water (as a driving force), the main energy source, supply of wood which is, along with stone, the main building material, as wildlife habitat, future hunting has always been a special form of recreation (especially for richer members of human communities), a treasure trove of forest fruits (mushrooms, blueberries, wild fruits ...). Over 3000 species and subspecies of plants live in the Bjelasnica area, which is about 66% of the total number of found species in Bosnia and Herzegovina, which makes it a very important treasure trove of plant diversity. The natural vegetation areas are mainly forest and mountain communities of alpine tundra and sub-alpine grasslands. Communities, especially forest ones, show clear vertical zoning in terms of climatic factors that go with altitude, and in some places this has been modified by aspects and soil type. Only the southwestern side of the mountain, the Vran-Blatacka side and the slopes of Lovnica are forested. Lovnica is almost exclusively beech forest, but high and well developed. In the north, 500 m below the northern ridge (below Vlahinja and Hranisava) there are coniferous areas of Pazaricka and Korcanska Bjelasnica. The upper limit of the forest on Bjelasnica reaches about 1900 m above sea level. Above them is a grassy area with occasional conifers (juniper, pine curves). The highest ridges are bare, completely devoid of high vegetation. In the area of the Bjelasnica Mountain, it is difficult to single out a certain locality due to the constant migration of the animal world. Bear, chamois, wolf, eagle, fox, rabbit, wild ducks, soft-mouthed trout, lizards, 127 species of butterflies and 29 species of locusts and many other mammals, birds, reptiles and invertebrates have found their habitat on the mountain Bjelasnica. Of importance, the preservation of which requires the designation of special areas of conservation, are two species of bats (*Rhinolophus blasii*, *Myotis myotis*), wolf (*Canis lupus*), brown bear (*Ursus arctos*) and wild boar (*Rupicapra rupicapra*).

Beekeeping in the autochthonous form of human life on the Bjelasnica Plateau was not considered a primary agricultural activity, but as a "by-product". Thus, honey was a rare delicacy, and wax a by-product (regardless of its importance in preparing candles, "strengthening" the thread for making shoes and clothes, for example). *Soil* is a surface, more or less thin layer that covers a stable geological structure (a small part) of the Earth's surface. The thickness of this layer, its mineral composition and performance for the growth (cultivation) of various plants, are the result of a wide range of natural resources as well as human activities. On the Bjelasnica Plateau, the importance of soil as a renewable resource can be traced through its appearance in gardens, fields, meadows and pastures. Every village on the Bjelasnica Plateau, right next to the houses, had more or less spacious gardens where vegetables were grown (potatoes, onions, carrots, beets, cabbage, and sometimes even peppers and tomatoes), (Figures 8, 9, 10). Closer to the village were fields where potatoes were grown (in larger quantities) and various cereals (barley, rye and oats, and corn - less often)^[9]. More or less spacious meadows were areas where hay was collected for winter feeding of cattle (Figure 11). Pastures are the most extensive areas and stretch from the village to the highest mountain peaks. The existence of watering places for cattle on pastures was an extremely important condition for their efficiency as a resource (Figure 12).



Figure 8. Gardens in the Lukomir village
Source: Author (5/22/2016)



Figure 9. Gardens and fields in the Cuhovici village
Source: Author (8/13/2016)



Figure 10. Fields and meadows in the Umoljani village
Source: Author (6/30/2013)



Figure 11. Meadow (edge of Dugo polje, near the Lukomir village)
Source: Author (7/1/2012)

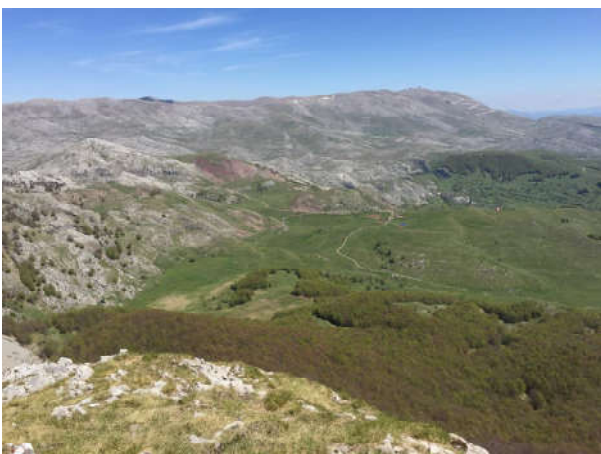




Figure 12. Pastures on Bjelasnica

Source: Author (7/31/2017, 8/9/2018, 6/17/2012, 10/17/2015)

Non-renewable natural resources are the result of the geological-petrological structure of a certain area. Of the non-renewable resources, the most important stone for the life of the people on the Bjelasnica Plateau. It is used here mainly as a building material for the construction of all types of buildings: foundations, semi-buried floors, ground floors, once all the walls of the building, from the foundation to the roof. Stone was the most important material for building public fountains. For the construction of residential and utilitarian buildings, along with stone, wood was mostly used. Wood was used in the form of logs (in the “natural” version of complete walls, ceiling and roof structures, and as a roof covering, shingles). In the second case, wood was used for the construction of the walls (bondruk), while the filling of the walls was made of crushed stone and mortar. Clay (prepared in a suitable ratio with water) was used as a “mortar”. Since the 1960s, mortar has been made from sand (“kum”) excavated at certain sites. New facilities are made of modern materials, as in any (urban) environment in Bosnia and Herzegovina.

Water as a resource. Water is an integral part of every living organism and a basic prerequisite for life. Recent scientific discoveries lead to the conclusion that water is the matter (and energy) that unites the Universe into a single whole. Water covers two-thirds of the Earth's surface, but most of that water is not drinkable; 97% of the water is in the oceans and seas, salty, and the rest is frozen in huge icebergs; less than 1% of water is accounted for by what we use for drinking, hygiene and agriculture. Although water is considered a renewable resource, there are limited amounts of water on Earth. In other words, we cannot create new water. All water on Earth moves through nature in a closed cycle, which consists of five phases: evaporation, transpiration, condensation, precipitation and shrinkage. Water knows no boundaries of administrative division in the world (countries, regions, continents). For this reason, water is viewed as a global good of planet Earth. At the Earth level, some international conventions have been adopted on water management as a general good of mankind. The human species is not the only one that needs water. By reducing clean water supplies, many river and lake ecosystems are threatened. Excessive use of water can lead to dehydration of natural water sources. These resources, both the flora and fauna that depend on them, actually play an important role in the ecosystem. On the other hand, the drying of riverbeds affects the growth of algae that develop very quickly and soon cover the surface of the water. This blocks the flow of sunlight, reduces the amount of oxygen in the water, and thus reduces biodiversity in these areas. Acid rain caused by air pollution has made some areas of Europe and North America impossible for plants and animals to live. Nowadays, the rational use of water as a resource is one of the main tasks in all countries. On the other hand, the basic precondition for the protection of human health is quality drinking water.

1.2. Social environment

The social environment represents everything that man has created and that sets him apart from the world of other living beings. It includes both physical structures (various material, more or less ordered products of their activity) and the intangible world that we know through intellect (science, philosophy, religion, law, morality) through an ordered system of abstract symbols (letter, signs). Society is the most general term that connects all the products of human action, where we call its material part the social base, and the intangible social superstructure. Fifteen villages are located on the Bjelasnica Plateau, where about 2500 inhabitants lived just before the war (1992-1995). Part of the plateau administratively belongs to Bosnia (municipalities Trnovo and Hadzici), and part to Herzegovina (municipality Konjic). The population is mainly engaged in animal husbandry, to some extent in agriculture and forestry, and more recently in tourism. According to previous research, part of today's Bjelasnica villages can be traced back to the 14th century, when they were still used for summer grazing by Herzegovinian nomads. However, life on the mountain existed before, as evidenced by numerous necropolises of stecak tombstones, as well as archaeological finds from earlier historical periods (Neolithic, Illyrian, Roman and Slavic). There has long been a belief that the Bjelasnica area villages was the area of *Bogomilism*, where this teaching and view of the world lasted the longest. In this sense, the Milisici village is mostly mentioned as the last place where its inhabitants converted to Islam in the 18th century.

History. The Bjelasnica mountain area was inhabited in prehistory [3, 4, 5, 6, 7]. The Gradina site, a fortress above the Umoljani village, dates from that time. There are also sites of Crkvina located not far from the Rakitnica river on a hill above the medieval necropolis of stecak tombstones. The population of the Slavicized Illyrian novels was mainly engaged in cattle breeding and kiridji business (“kiridzije”). They came into contact with Dalmatian cities that traded with the Slavic hinterland. Goods were transported

by caravans - horses, mules and donkeys. Among the villages of Bjelasnica are, among others, Donji and Gornji Kramari, whose name (probably) comes from the Vlach elders of the caravan called *kramari*. The Bjelasnica peaks of Velika and Mala Vlahinja testify in support of this claim. All this shows that the area was inhabited by Vlachs and that there was a trade route to Sarajevo. The assumption that this area was inhabited by nomads-Vlachs in the pre-Ottoman period may be close to historical facts with regard to customs, dress and other elements of culture, which are most similar, sometimes identical, with those in "Old Herzegovina". Also, many surnames of this area, such as Bandici, Aljovici, Fajici, moved to this area from Herzegovina.

Several necropolises on the Bjelasnica Plateau, dating from the 14th and 15th centuries, testify to the existence of the teachings and precepts of the "Bosnian Church", ie people who considered themselves "true Christians" - Bogomils. The Ottoman census of the province of Herzegovina (from 1477, fourteen years after the fall of Bosnia under the Ottoman Empire) mentions the Bjelasnica village of Tusila, which belongs to the Timor Zagorje from the item Gregory the Duke¹. In the census from 1488, the village of Umoljani is mentioned as the carpenter of Sinan lebelebi son of Abdulselam. In this list appear Muslim names in the first generation, such as: Hamza son of Radin, Hamza son of Vukcin, Ahmed son of Tvrtko. The beggars had 20 houses and a total income of 1572 akca¹⁸. This leads to the conclusion that Islam reached the inhabitants of these villages very early, twenty years after the Ottoman conquests. In this census, certain estates are listed on ancestors who were non-Muslims, but now the owners are all Muslims, 69 of them with an income of 13500 akca².

The strategic importance of Bjelasnica was known in the SFRY when, for the needs of the Yugoslav People's Army (Jugoslavenska narodna armija, JNA), a large radar station was built on one of the peaks of the Vlahinja ridge, and a communication center and tower were built next to the meteorological station on top of the mountain. Bjelasnica also played a strategic role during the war in Bosnia and Herzegovina, during the siege of Sarajevo (1992-1995). In that period, the area of Bjelasnica and Igman, between Konjic and Sarajevo Airport (which was controlled by UN forces) was controlled by forces of the Army of Bosnia and Herzegovina.

Cultural and historical heritage. The Bjelasnica Plateau has been inhabited since the Illyrian period, as evidenced by the ruins of ancient fortifications - Gradina (Figure 13). Remains from Roman times have been recorded in the areas of Visocica and Bjelasnica, given the fact that a Roman road passed through it, connecting the areas where the present-day towns of Nevesinje and Sarajevo are located.



Figure 13. View from Gradina to the Umoljane village
Source: Author (12/20/2014)

¹ One house inhabited by Radovan, son of Miroslav, was recorded on that timar. Wheat, oats, and some vegetables are mentioned as income, with a very modest income of 214 akca, while the village of Drezica, for example, has an income of 1992 akca.

Celebija, E. (1996), *Putopis. Odlomci o jugoslavenskim zemljama*, Sarajevo-Publishing, Sarajevo, p. 478.

² The travel writer Evlija Celebija passed through this area in the middle of the 17th century when he mentions the village of Rakitnica and some other localities (Bijele vode) that are not inhabited today. Celebija writes that „it is strange, overgrown with greenery and inhabited mountain region“.

Celebija, E. (1996), *Putopis. Odlomci o jugoslavenskim zemljama*, Sarajevo-Publishing, Sarajevo, p. 478.

Among the most numerous monuments from the Middle Ages are stecak tombstones (from the 14th or 15th century) near the village of Tusila, between Bjelasnica and Visocica. Necropolises of stecak tombstones are located in the villages of Lukomir, Cuhovici, Blace. On the edges of the mountains are feudal fortifications.

The necropolis of the stecak tombstones in the Sabici village (Figure 14) consists of an agglomeration of a total of 53 stecak tombstones built during the Middle Ages (mainly during the 14th and 15th centuries).



Figure 14. Necropolis of stecacs in the Sabici village

Source: Author (2/1/2020)

The necropolis of stecak tombstones in the Umoljani village (at the Dolovi site) is part of a wider whole, the National Monument, comprising 53 stecak tombstones, 11 old nisan tombstones and the remains of an old church located in 6 locations near the village of Umoljani³ (Figure 15).



Figure 15. Necropolis of the stacak at the Dolovi site near the Umoljani village

Source: Author (2/1/2020)

Near the Umoljani village, above the site with stecak tombstones, there is a necropolis with four grave sites (mezari) with preserved “nisan” tombstones (tombstones of Muslim cemeteries); nisan tombstones have two basic shapes: a rectangular shape with a pyramidal finish and a stela shape (Figure 16). They were created in the second half of the 15th and the first half of the 16th century. They are decorated with ribbon and hemisphere motifs.

³ The necropolis of stećak tombstones in the Umoljani village is on the list of 30 medieval necropolises of stecak tombstones that were declared a UNESCO World Heritage Site in 2016. The necropolis is also a national monument of Bosnia and Herzegovina.



Figure 16. The Four Cemeteries (Martyrs/sehidi of the Army of Mehmed II Fatih)

Source: Author (2/1/2020)

The necropolis of stecak tombstones in the Lukomir village (Figure 17) is located on the southeastern edge of the village, along the road to Bobovica and Umoljani. The necropolis consists of an agglomeration of 18 stecak tombstones (17 chests and 1 gabled tombstone). The necropolis is divided by the fence of the active Muslim cemetery, within which there are 7 stecak tombstones, while 11 of them are outside the fence of the mentioned cemetery. Six specimens were decorated, and symbolic features (lines made in the form of indentations, stylized cross, swords and shield) were recorded as relief motifs.



Figure 17. Cemetery in the Lukomir village

Source: Author (4/2/2017)

The necropolis of stecak tombstones in the Dubocani village (11.61 km away from Konjic) is located at the Ravnice site, and consists of an agglomeration of 49 stecak tombstones: 4 slabs, 44 chests and 1 gabled tombstone (164 x 64 x 80 cm).

The necropolis of stecak tombstones in the Blace village is located at the Kod Cekica site, and consists of an agglomeration of eight stecak tombstones, one of which is decorated (crescent and circle motifs).

Most of the existing permanent settlements date back to the 19th century. Given the preservation of rural areas, they represent an exceptional value of cultural and historical heritage [9, 10, 11, 12, 13, 14]. During the 1992-1995 war, most of the villages on the Bjelasnica Plateau were set on fire, so we learn about the appearance of pre-war buildings from the literature and rarely preserved family photographs of the locals (Figure 18).



Figure 18. The Lukomir village of (1932), left. Chardaklije houses in the Rakitnica village (in the middle). The Umoljani village (right)
 Source: Kadic, M. (1967), *Starinska seoska kuca u Bosni i Hercegovini*, „Veselin Maslesa“, biblioteka „Kulturno Nasljedje“, Sarajevo

The mosque in the Umoljani village (Figure 19) is a national monument of Bosnia and Herzegovina. There are no written traces of the construction of this mosque (vakufname or any other written document). It is believed that the first construction of the mosque (from 200 years ago) on this site was made of wood, and that the current construction was built in the early 20th century. The mosque in Umoljani is, among other things, known for preserving the *famous Sarajevo Haggadah* during World War II. This is the only building on the part of the Bjelasnica Plateau that belongs to the Trnovo municipality that remained unburned during the 1991-1995 war.



Figure 19. Mosque in the Umoljani village
 Source: Author (2/1/2020)

In 1984, Bjelasnica was one of the hosts of *the 14th Winter Olympic Games*. Alpine ski disciplines for men (slalom, giant slalom and downhill)⁴ are organized there. In preparation for these Winter Olympics, a road was built across the Igman Plateau, connecting Sarajevo via Hadzici with Malo Polje, Veliko Polje and Babin Do. The Babin Do area has several buildings from that time, including the “Marshal Hotel” (then the “Famos Hotel”) and most of the ski facilities in the area. The FIS World Cup events were held on January 18, 1983 and March 21-22, 1987. In 1983, only the descent was organized (the winner was Gerhard Pfaffenbichler). In 1987, competitions were held in the men's slalom (the winner was Grega Benedik) and the giant slalom (the men's winner was Marc Girardelli, and the women's equal draw was Marie Walliser and Vreni Schneider).

Socio-economic relations. Socio-economic relations, on the one hand, show the degree of development of productive forces and the degree of social upgrading, on the other hand, they reflect the relationship between productive forces and productive relations. In this way, socio-economic relations become an essential mirror of the whole society. Despite major social changes, people's lives on the Bjelasnica Plateau remained within the traditional framework until the war (1992-1995), when major changes took place here as well. Changes have happened before, but not often. Namely, some families on the Bjelasnica Plateau were traditionally “ulema” (in addition to everyday life, they kept the tradition of studying the Qur'an and practicing the practice of the local hodja-imam), so they sent their children (already in the early 70's) to school in Gaza Husrev-bey's madrasa, then to the Faculty of Islamic Sciences in Sarajevo. Other individuals sent their children to high schools in Sarajevo, which then graduated from various faculties. During the war (1992-1995), the inhabitants of many villages on the Bjelasnica Plateau were expelled and their villages burned. A new generation of people was born in exile (in Sarajevo, Konjic and around the world) and started a new life there, not at all similar to the traditional one of their ancestors. In the new environments, their parents found a new job and founded their own new households. At the end of the war, many people returned to the Bjelasnica Plateau, built their houses, less often on the

⁴ Bill Johnson (USA) was the winner in the downhill; twins Phil and Steve Mahre (USA) won gold and silver medals in slalom; Max Julen (Switzerland) won the gold medal in the giant slalom, while the silver medal in this discipline was won by (then) Yugoslav Jure Franko.

foundations of earlier houses that were devastated, mostly houses in new locations in the village and according to patterns of building houses anywhere in Bosnia and Herzegovina. For some people, building new houses was to maintain a mental connection with their area and their ancestors (since they still remained living in the city), while for others it was a restoration of an earlier life, with modern agricultural equipment and means of transport (tractors, multicultivators), lawn mowers, vans, trucks...). Some individuals, in the new circumstances, only spent the summer on the Bjelasnica Plateau (sheep and cattle breeding, tillage - mostly potato growing, beekeeping), while they spent the winter in the city.

Forms of consciousness (philosophy, religion, morality). The inhabitants of the Bjelasnica Plateau are Bosniaks by their ethnicity (in part of Trnovo municipality and most of Konjic municipality), while (until the 1992-1995 war) there were Serbs (Blace, Ljuta, Dzepi) and Croats on the part of the Plateau belonging to Konjic municipality. Islam, both as a religion and as an overall view of the world, has determined their psychological profile, value system and practical action in all segments of life. In this sense, this area is recognizable not only in Bosnia and Herzegovina but also beyond. The people of this region (and beyond) deeply believe that respect for God is a basic prerequisite for order on Earth (and throughout the Space).

Morality is a system of values that determines the relationship of man to nature, the relationship of man-individual to society, the relationship of man to man and the relationship of man-individual to himself. Since this value system is not prescribed, it is not sanctioned in the same way. Nevertheless, he regulated these relations, often in a very strict way, which often had more force than the law. Morality is conditioned by time and space, which gives it the character of relativity. Hence, moral values within one and the same social group or community are changeable over time and under the influence of the value system of other communities that come to the observed community spontaneously, sometimes more or less intrusively. Collectivity and solidarity were the foundations on which it functioned and on which social communities developed on the Bjelasnica Plateau. Awareness and responsible attitude towards nature, ie towards the resources that generate people's lives on the Plateau of the Bjelasnica, is evidenced by the construction of a system for purification of the Rakitnica river (Figure 20).



Figure 20. Collector for wastewater treatment along the Rakitnica river (directly in front of its canyon)

Source: Author (2/1/2020)

Art is a special world that is “created” by man. This world is sometimes a free (artist's) interpretation of the real world of nature and society, sometimes a completely fictional world (as a result of the artist's imagination), sometimes a world of abstract signs with which the observer communicates exclusively on the basis of affective... In Bosnia and Herzegovina, art can follow through historical epochs. Unlike science, it is possible to achieve high achievements in art in societies that are not organized, in poor and in conflict societies. Moreover, such societies can provoke great themes in certain branches of art (individual-human destinies, individual-society relationship, war, love, good, evil...) and their elaboration in the way of art can be very strong and striking⁵.

⁵ For Bosnia and Herzegovina, this is especially characteristic in the field of film. Some achievements have reached the top of the world:

- *Golden Lion*, Best Picture Award „Remember Dolly Bell“? at the Venice Film Festival (1981), directed by Emir Kusturica,
- *Golden Palm*, award for best film for „Father on a Business Trip“ at the Cannes Film Festival (1985), directed by Emir Kusturica,
- *Golden Palm*, Best Director Award for the film „Hanging House“ at the Cannes Film Festival (1989), directed by Emir Kusturica,
- *Golden Oscar* (American Film Academy Award for Best Foreign Language Film) for „No Man's Land“ (2001), directed by Danis Tanovic,
- *Golden Bear*, award for the feature film „Grbavica“ (2006), director Jasmila Zbanic.
- Silver Bear, expert jury award for the feature film „Episode in the Life of an Iron Picker“ (February 16, 2013), directed by Danis Tanovic.
- The movie „Quo Vadis, Aida?“ winner of three awards of the European Film Academy (for 2021): awards for the best European film, for the best director - Jasmila Zbanic and the best actress - Jasna Djuricic

Similarly, great international achievements were achieved by painters Mersad Berber (1940-2012) and Safet Zec (1943), car designer Omer Halilhodzic (1963).

2. WATER AND MAN

Remains of material culture testify to the continuity of life in this area, from the Neolithic, through the Illyrian era, the Roman Empire, the Slavic era to the present day. The first Ottoman census of the province of Herzegovina (from 1477, fourteen years after the fall of Bosnia to the Ottoman Empire) mentions the names of people, owners of timars, apparently of Bogumil or Christian origin (Gregory the Duke, for example), while the second Ottoman census from 1488. they mention both pre-Ottoman and new, Islamic names (Hamza son of Radin, Hamza son of Vukcin, Ahmed son of Tvrtko, Sinan son of Abdulselam). Until the war (1992-1995) on the Plateau of Bjelasnica, people mostly lived in the traditional way. Until the war (1992-1995) on the part of the Bjelasnica Plateau belonging to the Trnovo municipality, mostly Bosniaks lived (Figures 21, 22, 23), while on the part of the plateau belonging to the Konjic municipality, along with Bosniaks, Serbs also lived. Blace, Zagorice, Vrdolje) and Croats in smaller numbers.



Figure 21. Men travel on horseback from one village to the Jumu'ah (left) and to socialize on the teferic (right)

Source: <https://www.youtube.com/watch?v=DbTZaFRNxgc>, Accessed: 1/28/2020.



Figure 22. Every day and ceremonial costume (The Lukomir village)

Source: <https://www.pinterest.com/pin/412853490834589391/>, Accessed: 1/28/2020.



Figure 23. Women on Bjelasnica buy hay (left). Grain threshing in the Lukavac village, 1980s (right)

Source: <https://www.youtube.com/watch?v=DbTZaFRNxgc>, Accessed: 1/17/2020.

<https://www.dinarskogorje.com/bjelascaronica---vodi269-po-planini.html>, Accessed: 1/17/2020.

The amount of water on Earth is constant. In doing so, water circulates in nature, with a change in its physical state. This process takes place without the will of man, as one of the essential preconditions of life on Earth. However, since living on Earth, man has influenced certain natural processes, including the state of water in nature (on Earth), and this impact is, as a rule, “negative”. Namely, man is able to influence some natural processes by directing their flow “to his advantage”. The greater this temporary “benefit”, the more obvious the unpredictable reaction of nature (through phenomena that man calls “natural disasters and catastrophes”) will be more intense, more devastating 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 price, and that, as such, it can be cashed in. Similar to air, the water “knows” neither the geographical nor the administrative boundaries of the Earth. Since it is the basic premise of the life of every living organism, water control and water management should be harmonized, linked and synchronized, from the private home to the planet Earth as a whole⁶.

2.1. Physiological aspect of water

Water is the most important nutrient for life, man and every living thing. The human body can live without other nutrients for weeks, while without water for only a few days. Water is the most important component of living organisms, the cells of its tissues and the intercellular space that is filled with a special fluid. Just over half of your body weight is water. Thus, in an adult male, water makes up about 60-70%. Water is found in the body in two forms: free water and bound water. Free water enters the composition of certain body fluids (blood, intercellular fluid, lymph, organ secretions). Numerous substances are dissolved in it: minerals, proteins, carbohydrates. Bound water is part of some compounds (proteins). Total body water: 70% of body weight^[15]. Water in the body is necessary for the normal functioning of every human organ. It represents an environment in which only different and numerous chemical reactions can take place, which enable life:

- It serves to break down the food in the digestive organs. In this way, it enables cutting processes of digestion, starting from the mouth to the large intestine,
- Enables the absorption of nutrients from the intestinal contents into the blood and lymph,
- Water also transports absorbed nutrients through the blood from the digestive organs, to all organs of their tissues and cells,
- It serves as a carrier of various chemical substances, which are formed in metabolic processes and which are unnecessary for the body, from cells to excretory organs,
- Water plays a significant role in regulating the constant body temperature, because the evaporation of water from the surface of the body emits large amounts of heat,
- It has a significant role in the mechanical movements of the joints, various organs (heart, lungs, digestive organs),
- About 8 liters of water are excreted in 24 hours in the digestive organs in the form of various juices (saliva, gastric juice, bile, intestinal, pancreatic juice). This water enables the delivery of various digestive enzymes and then the breakdown and absorption of food. The same water is used for digestion and absorption of prepared nutrients, and together with them it returns to the blood and lymph. This water distributes nutrients to various tissues and organs. Water is constantly moving through the body, and enters all the cells and leaves them,
- It has been determined that about 50 liters of water pass through the cell membranes every day, entering and leaving the station.

2.2. Psychological aspect of water

Whether because of the “memory” that it originated from water^[16, 17], whether due to the fact that the bulk of his body mass is water, or due to the fact that without water he can not survive longer than three days, only man enjoys the feeling that water is at hand. In doing so, unlike any other substance or phenomenon, man feels and experiences water with all the senses: sight, hearing, touch, the senses of heat and cold, smell and taste. Based on such a complex (“total”) experience of water, man has, in fact, identified with water. Man built his first dwellings near water (he built dwellings on the water/sojenice). The first great civilizations were the “gifts of rivers” and pleasant seas: Egypt-Nile, Mesopotamia-Tigris and Euphrates, Chinese civilization-Yangtze, Crete and Mycenae-Aegean, early North American culture-Mississippi... When he creates his life space (from a private house to a complex public city), man does it by the water (natural springs, rivers, lakes, sea), sometimes in a way that makes a huge effort to create artificial watercourses, artificial water reservoirs or architectural facilities (spas, hammams, saunas) in which it is in the most direct contact with water. In all these cases, one can always find the empirical (scientific) basis of human need for water, but also those human-water relations (psychological, aesthetic) that can be expressed only by the feelings and general state of the human spirit. There is no doubt that the richness of water in the human environment, the richness of technical-technological-aesthetic forms of “use” of water has become a measure of how far one man and his community have “grown”. It happens that one nation (as a result of natural disasters or wars) inherits the civilizational goods of another nation, and among those civilizational goods are contents with water (spas, hammams, fountains, waterworks...). According to how he treats these civilizational achievements of his predecessors, the level of civilization of the “new masters” of a certain geographical area can be read.

2.3. Health-hygienic-aesthetic aspect of water

Almost every time he starts an important job, a person makes contact with water, in a way that he deems appropriate to the importance of the work he will do (in a way that has become traditional for certain human communities or cultures over time).

⁶ Within the famous Miletic (philosophical) school represented by three philosophers (Thales, Anaximenes and Anaximander), there are interesting reflections on the question of the root cause, the primordial principle (ἀρχή), the world. One of them, Thales (c. 640-550 BC), taught that water began in nature.

Every time he felt that he had “come out” of optimal health, the man (already in his closest environment, in the family) reached for water as a means to “restore balance”^[18]. Around the world, there are places in open natural space with water (usually thermal) to which attributive properties are attributed. Such places are visited by thousands of people, both those in need of health recovery and the curious. Official medicine has long introduced water treatments (hydrotherapy) as the official method in the treatment of patients' recovery. New methods of water treatment are also being discovered. The presence of water in the human environment suggests purity, and purity suggests health. It's just a healthy and clean living environment and beautiful. Namely, everything that is clear, pure, true (as opposed to obscure, camouflaged, dirty) is beautiful.

Water and man in the open areas. The relationship between water and man is most immediate in open nature. Here, man adapts to water, uses all its (found) benefits, but also fears its enormous power. Here man had to study water well in order to live in a symbiotic relationship with it. There are many modalities in which man encounters water in the open: sometimes man encounters water like the rain he rejoices in or fears, sometimes man encounters water like snow (to whom he rejoices 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). On the Plateau of the Bjelasnica mountain, man encounters water in nature in the form of a smaller or larger stream, a smaller or larger river, a smaller or larger lake. Sometimes the encounter with water is perceived as an encounter with life itself, sometimes as a physical obstacle in a person's life paths, sometimes as a special challenge to test a person's psychophysical abilities... Man's encounters with water are sometimes intentional (enjoys the beauty of her appearance). For the second time, man makes an extraordinary intellectual and psychophysical effort to “overcome the water barrier”, while creating such achievements of spirit and skills that provide him with such a special place in nature. Some open areas take on different purposes during the year: sometimes there are meadows where cattle are grazed, sometimes there are water reservoirs, sometimes there is a place for people to gather for recreation, trade, entertainment (Figure 24) ...



Figure 24. Narodni teferic in the Umoljani village

Source: Author (9/2/2011)

Bridges are creations of human knowledge and skills, artificial ensuring the continuity of man-made paths over natural obstacles (most often watercourses). Sometimes the natural obstacle is overcome only by a wooden log, sometimes by a more or less complex construction of wooden forms, beams and beams, sometimes by light hanging constructions reminiscent of a spider's web (Figure 25).



Figure 25. Bridge in the canyon of the Rakitnica river

Source: Prof. Hajrija Selimovic (9/14/2021)

Water, man and village. The village is a more or less complex physical structure designed and arranged by man in a way to ensure a comfortable 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. In doing so, the existence of water is a basic (and often eliminatory) condition for choosing a wider location of the village. In the conditions of the Plateau of the Bjelasnica mountain, the origin and development of a village can be connected with the establishment of one family-nucleus, from which new families emerge. In the subsequent growth and development of the village, it may happen that a family from another village comes to the village in question, on various living grounds, of which the inheritance of property is one of the possible ones. The water source used by the village (open source, arranged spring with fountain, arranged spring with fountain and watering place for cattle) is one of the most important physical-spatial and mental-psychological points of the village, as physical structures and as social communities. It is a meeting place for people throughout the day, with morning and evening meetings being the most important since “daily briefings” of all aspects of intimate-human (individual) life of people and their community are held. The arrangement, generosity and maintenance of the public fountain are the image of every village. Sometimes the inhabitants of a village pay special attention to the comfort of occasional travelers who will pass through their village, and arrange a public fountain and in a way that it is at the service of every passer-by (Figures 26-30).



Figure 26. Hair-fountain in the Lukomir village

Source: Author (11/20/2011, 7/1/2012)



Figure 27. Mills in the Umoljani village

Source: Author (November 2010)



Figure 28. Central public fountain in the Umoljani village
Source: Author (6/30/2013)



a)



b)



c)



d)

Figure 29. Central (and memorial) fountain in the Lukavac village. Figure 29. b) is a memorial plaque with information that Josip Broz Tito, the leader of the Yugoslav partisans in World War II, lived in the village of Lukavac (1942).

Source: Author (10/23/2021)

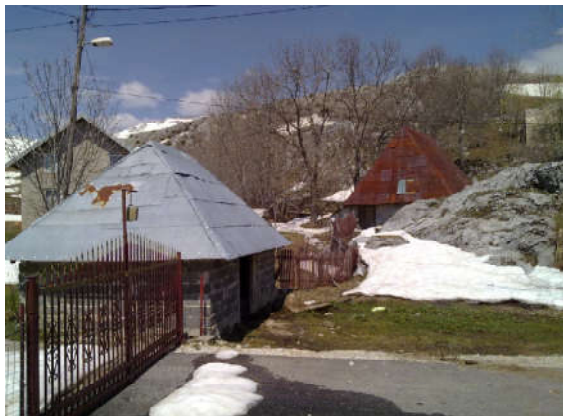


Figure 30. Public fountain-well Kazman in the Milisici village

Source: Author (4/20/2013)

Water, man and his house. In the context of his house, man is the most readable. Here (through the location of his house within the built and natural environment, the disposition of its horizontal and vertical plan, materialization, and especially through water treatment) man reveals himself: he expresses his attitude towards nature, his neighbor, shows intra-family relations... Water is ubiquitous in man's life, from his birth to his death, given to everyone and in every place (Figure 31). Being clean (which means frequent bathing practices) is one of the most important characteristics of people who follow Islam. The houses of the poorest members of Islam on the plateau of the Bjelasnica mountain also had a place for bathing (spa). A special portable dish, a freezer, was used to wash hands before and after meals. The inner courtyards (courtyards/avlije) were those places within the private house complex that, with their decoration, spoke a lot about the man and his family. Enclosed from the road and neighboring house complexes (more or less by a massive wall of wood, brick or stone), the courtyard was a kind of specially protected and arranged home garden. According to its utilitarianism, the courtyard was a surface for communication between the disparate contents of the house complex (main residential building, summer kitchen, garden, orchard, woodshed, horse stable...). For this reason, the treatment of the walking surface is made of permanent cladding (stone pebbles or stone slabs). There were a lot of unpaved places (čičekluci) where flowers and ornamental shrubs were planted. A fountain and a well had a special place (Figure 32).



Figure 31. House of Ismet Velic on the bank of the Ladjevac river in the Rakitnica village on Bjelasnica (Architect: Ahmet Hadrovic)
Source: Author (10/23/2021)



Figure 32. Hair-fountain in the courtyard of the house in the Umoljani village
Source: Author (2011)

3. FOUNTAIN

A fountain is a construction or design that regulates water consumption 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 lives of people in Bosnia and Herzegovina with the arrival of the Ottoman Empire (1463).

3.1. A fountain as a utilitarian object

At its core, the fountain is a purely utilitarian facility where man can satisfy one of his basic needs, the need to consume water. We have seen the extent to which water is a presupposition of life; hence the construction, a “place to consume water” (fountains, wells), seems extremely natural, even to the extent that it seems to us that a fountain is “naturally there”, like a tree, a stream or a stone, for example. It is paradoxical that the “natural existence of a fountain” in the open, in cities and villages around the planet Earth, is a rarity. The fountains on the plateau of the Bjelasnica mountain, according to the location where they were built and the simplicity of their design, are remarkably useful (Figures 33-46). In some cases, their purpose to serve both humans and animals is striking.

3.2. A fountain as an expression of man's need for beauty

No matter what a person does, if he does it with full awareness of the purposefulness of the job, he does it with pleasure and with the need to work in a beautiful way. As much as the fountain was a purposeful object (and as such an expression of one of the most basic human needs, the need for water), its construction is approached by man as a sublime act. A fountain is a 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 an expression of the efforts of its builder how to present himself to people, what image of himself he wants to leave in the memory of people, both contemporaries and those generations to come. The appearance of the fountain reflects the character of its builders. Sometimes the construction of the fountain is burdened with more than obvious messages of its builders (ie founders, donors), sometimes to such an extent that through the design and materialization of the fountain we can discern the place where it was built, profiles of people who built it and motives of people who built it.

3.3. Fountain as a transmitter of messages

Sometimes the erection of a fountain (choice of its location, design and materialization) is in the 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: kindness and nobility, wealth, wisdom, piety, modesty⁷... In Bosnia and Herzegovina, there are inscriptions on fountains whose lapidary language and the meaning of the message are close to the language and philosophy of inscriptions (epitaphs) on stecak tombstones in Bosnia and Herzegovina⁸. Sometimes the fountains are designed and materialized with an obvious effort to show the wealth of the builders (founders), and sometimes modest to the extent that one can discern only someone's noble intention to do good, such as giving a sip of invigorating water, (Figures 36, 43). Some fountains transmit folk tradition (story), from generation to generation. The stories, for the most part, have a religious basis, and they tell about scenes from life that sound like folk legends to us today.

3.4. Fountain as a symbol

Considering the motivation with which someone approaches the construction of a fountain, several types of fountains can be observed on the plateau of the Bjelašnica mountain:

- Public fountain (built by an individual or several people) with a message (expressed by the inscription on the fountain) that it is at the service of all people, (Figure 33),
- Public fountain (built by the social community: village, city, state ...), (Figure 34),
- Hair - fountain (good deed), where its founder emphasizes that he raises good deed (hair). Sometimes the hair-fountain is erected “for the soul” (for a memorial) to a dear person (father, mother, parents, for an early deceased child, for a dear person in general), (Figures 35-46),
- Memorial - fountain (with the inscription the founder announces that the fountain was erected as a memorial fountain “for the soul” to a certain person), (Pictures 41, 45),
- Martyrdom - the fountain is a memorial - a fountain that is erected in honor of the martyrs/sehida (fighters - the righteous who gave their lives on the “path of truth and good”), (Figure 34).

7

- The following tradition is also transmitted in folklore in Bosnia and Herzegovina: „the angel Gabriel said that his favorite mission (given by God) would be to feed the thirsty“. (The author heard this story, hikjaja/“nice message“, from Abdulharis Sheta, B.Sc. in Mechanical Engineering, October 15, 2011, in Sarajevo).

- On the fountain in Nahorevo (near Sarajevo) is written terih:
1972. YEAR THIS HAJR
WATER IN THE NAME OF ALLAH DZ.S.
BROUGHT INTO LETTER ON
LEAVE TO PEOPLE LEFT
PANDZIC SULEJMAN
1914-1993
EL-FATIHA

8

- I DIDN'T MISS
HERE I AM WITH YOU
I JUST FELL ASLEEP BEFORE YOU.

(Inscription on the fountain with a fountain in the harem of the mosque in Bosanska Dubica, 2005).



Figure 33. Hair-fountain along the Sabici-Sinanovici road

Source: Author (6/23/2008)



Figure 34. Memorial fountain to the Bosnian Martyrs/sehidima (1992-1995) with a watering place for cattle in Gornji Umoljani

Source: Author (4/20/2013)

3.5. Fountain in context

The fountain, as an expression of the elementary human need for water, is a sublimated expression of the time and space in which it originated. By analyzing the fountain, we have the opportunity to read for a while, in a similar way as we do with architecture. Although the fountains on the plateau of the Bjelasnica mountain have been built since the arrival of the Ottoman Empire in this area, there were periods when the already built fountains were demolished, precisely because of their mental strength and symbolism. Each fountain has its own history. Some fountains were built quite by accident, while others were very seriously planned and built with a lot of human effort, will and material resources, (Figure 35). Some fountains are used very often, and others rarely. Some fountains have become famous, while others are completely anonymous.

Fountain in open nature. Fountains in open nature are one of the most beautiful scenes that one can come across when moving through open space (fields, forests...). An encounter with water seems to be an encounter with a man of the best, most beautiful and noble qualities. At the same time, the fountain in the open space of nature can only show the nobility of its builder (without the latter investing much effort or resources), (Figures 35-46); the second time we will be amazed at how much effort and resources a benefactor (and a noble man) had to invest in order to make drinking water available to a casual passer-by. Particularly striking is the effort of the builder-benefactor to design the fountain in such a way that it is at the service of both humans and animals.



Figure 35. Public fountain (slopes of the Bjelasnica, above the Lukavac village)
Source: Author (6/7/2012)



Figure 36. Public fountain in the open space (The Umoljani village)
Source: Author (11/10/2013)



Figure 37. Public fountain with a watering place for cattle along the road to the Lukavac village – top of the Bjelasnica
Source: Author (11/11/2012)



Figure 38. Hair-fountain with watering place for cattle along the Sabici-Umoljani road
Source: Author (9/20/2008)



Figure 39. Hair-fountain on Dugo polje near the Lukomir village
Source: Author (11/20/2011)



Figure 40. Hair-fountain in the Lukomir village
Source: Author (7/1/2012)



Figure 41. Hair-fountain in the Lukomir village
Source: Author (11/20/2011, 7/1/2012)



Figure 42. Livestock feeding trough and spring with mills (The Umoljani village)
Source: Author (10/30/2011)



Figure 43. Hair-fountain along the Sabici-Umoljani road
Source: Author (9/20/2008)



Figure 44. Hair-fountain along the Umoljani-Dugo Polje-Lukomir road
Source: Author (10/21/2012)



Figure 45. Hair-fountain along the Babin Do-Sabici road (below the Lukavac village)

Source: Author (6/19/2011)



Figure 46. Hair-fountain along the Igman-Sabici road

Source: Author (1/1/2008, 2/11/2012)

4. Conclusion

Water, universal matter and energy, which in an unexplored way binds the individual givens of the Earth and the Universe into a single whole, and man, as one of the givens of Nature (by all known the most developed stage of life on Earth) are parts of the Universe, essentially connected to the whole which we call Life. Knowledge of the complex dimensions of Life (to which man is directed by his position on Earth and the Universe), will result in an infinitely wide range of manifestations of the symbiosis of water and man, which will testify to the complexity of man. Just as a man, as an individual, can be learned or ignorant, good or evil, generous and selfish (...) population on Earth, as a whole. In other words, the human population as a whole can bring the conditions for their own life and survival on the planet Earth to the level of human self-destruction, but they can also preserve them and more or less improve them. Today we are aware that man can decide on his future on the planet Earth (not counting all the known and unknown threats to his life that come from the nature of the Earth and the Universe). Today, it seems to us that the issue of food for all people and the issue of energy is much easier than the issue of ensuring quality water. All serious societies (states) on Earth (including 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. Preservation of water (as a resource) from pollution.

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 finite, constant, size (and that, for example, the human population is growing). Every individual, in every place, in every situation must think and work on water conservation. It is interesting that the need for public taps is perhaps more relevant today than before, perhaps due to the larger number of people in cities and due to insufficient access to drinking water for all people. Public fountains are being built in Bosnia and Herzegovina (and in Europe) and in those areas (cities) where there was no tradition (such as the more famous cities with the tradition of Islamic civilization). There are many ways to pollute water in nature; some types of water pollution are noticeable at first glance, while others are more or less "hidden" and "unclear". The starting position for the prevention of water pollution in nature should be the individual's awareness of nature conservation, as a prerequisite for his life. Nature (and water, as its default element) were there before man and will be there after man. By violating the laws of nature, man can endanger some of the living species (plants or animals) and the existence of himself. He cannot destroy Life on planet Earth, nor water. It is "irrelevant" to the Universe whether there will be room for man in it; he has his own path to follow, and man can only know the laws of its structure. Social communities should ensure the protection of nature (and water as its essential segment) through appropriate legislation, monitoring and sanctioning, and permanent education of citizens and their activation in specific actions (from home to the wider community). Especially large amounts of water are consumed by

industry through various technological processes (cooling, heat transfer, matter and body transfer, washing ...) ^[19]. Finding ways to use the same water (recycling) is a fundamental challenge for the industry of the future⁹.

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⁹ ...“ The lesson of history is that in the tumultuous adjustment that surely lies ahead, those societies that find the most innovative responses to the crisis are most likely to come out as winners, while the others will fall behind. Civilization will be shaped as well by water's inextricable, deep interdependencies with energy. Food, and climate change. More broadly, the freshwater crisis is an early proxy of the twenty-first century's ultimate challenge of learning how to manage our crowded planet's resources in both an economically viable and an environmentally sustainable manner. By grasping the lessons of water's pivotal role on our destiny, we will be better prepared to cope with the crisis about to engulf us all“...

Solomon, S. (2011), *Water: The Epic Struggle for Wealth, Power, and Civilization*, Harper Perennial, Reprint edition, p. 5.