SMART Balkans
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LOCAL PLAN

FOR THE MUNICIPALITY OF NORTH MITROVICA TO REDUCE THE RISK OF FLOODS AND TO ADEQUATELY RESPOND IN GIVEN SITUATIONS

Norway

CPCD
Centar za promociju civilnog društva

Institute for Democracy and Mediation
Instituti për Demokraci dhe Ndërmjetësim
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Introduction

The Municipality of North Mitrovica is increasingly encountering natural disasters and accidents, as well as various calamities. Risk, in its true sense, recalls the damage that can occur in any place and at any time, whose intensity can be limited or of tragic proportions.

Hence, the prevention of the risk of natural disasters, technological and other accidents, as well as the tendency to reduce the risk of their occurrence and readiness to take appropriate measures in emergencies, have gradually become an integral part of the strategies and development plans for municipalities in all areas, as procedures that should be better synchronized with a high degree of interaction with specific municipal, national, regional, and international levels.

The Municipality of North Mitrovica is responsible for organizing protection and rescue from natural disasters and other accidents within the territory of its responsibility, as part of the unified civil protection system in Kosovo, which includes planning, organizing, training, coordinating, implementing, monitoring, and financing all measures and activities for protection and rescue.

This Local Plan for reducing the risk of floods and adequate response in given situations aims to mobilize all relevant stakeholders in the Municipality of North Mitrovica, non-governmental organizations, citizens from multi-ethnic neighborhoods for reducing the risk of natural disasters, specifically floods, and representatives for climate change and other interested parties. This will be achieved through a series of specially designed activities involving all key stakeholders in the region.

At the central level, Kosovo has adopted the Strategy for reducing the risk of natural disasters, a document that has expired and after which there is no local plan addressing this issue. The planned activities will help point the way towards smarter policy solutions that directly address these problems based on a local perspective while contributing to social cohesion.

This proposed activity encourages discussion with key stakeholders and initiates actions to strengthen the capacities of local and central institutions and society to prepare for disasters through an intersectional approach that promotes gender equality and meets the needs of women and marginalized populations. The creation of a local plan for reducing the risk of natural disasters is emphasized.

Legal Framework

Although the Disaster Risk Reduction Strategy (DRR) and its action plan were designed for the period from 2016 to 2020, the frequent natural disasters that have occurred more than ever demand a strategic and harmonized approach involving all stakeholders to reduce the risk of floods.

The foundation of the DRR Strategy lies in Law No. 04/L-027 on Disaster Risk Reduction, AI 02/2012, as well as the document on risk assessment of natural disasters and other accidents, based on Regulation No. 28/2012. The DRR Strategy (2016-2020) aligns with other national and international documents, such as Kosovo's strategic documents: the Integrated Emergency Management System (IEMS), Security Strategy, Climate Change Strategy 2014-2020, sustainable development goals as defined by the United Nations, and within the Sendai Framework for Disaster Risk Reduction for the period 2015-2030: developing national and community resilience to natural disasters and other accidents, etc. In addition to the development of the National Strategy, the European Union's Internal Security Strategy and the European Strategy to support disaster risk reduction in developing countries are taken into account. The DRR Strategy will serve as a guide for Kosovo's membership in the "European Forum for Disaster Risk Reduction."

The local plan for the Municipality of North Mitrovica to reduce the risk of floods and respond adequately in given situations is based on the Law on Protection from Natural Disasters and Other Accidents and the general provisions of this law, which determine the sequence and system for protecting and rescuing people, property, animals, cultural heritage, and nature from natural disasters and other accidents.

The risk assessment for the Municipality of North Mitrovica is a document of local character, designed based on:

1. "Law on Protection from Natural Disasters and Other Accidents" no. 02/L-68;
2. "Law on Fire Protection" no. 02/L-41;
3. "Law on the Transportation of Dangerous Goods" no. 2004/06.
4. "Law on Road Traffic Safety" no. 02 / L-70
5. "Pressure Equipment Act " no. 02/L-103
6. "Law on prevention and fight against infectious diseases" no. 02/L-109
7. "Law on Civil Use of Explosives" no. 03/L-005
8. "Law on Environmental Impact Assessment " no. 03/L-024
9. "Law on Environmental Protection " , no. 03/L-025
10. "Law on protection against non-ionizing radiation and nuclear safety" no. 03/L-104
11. "Law on State Commodity Reserves" no. 03/L-130
12. Administrative instruction on the categorization of objects
13. Statute of the Municipality of North Mitrovica

General profile

The municipality of North Mitrovica is located at 42°53' north latitude and 20°52' east longitude, is situated at an elevation ranging from 508 to 510 meters. Located in the northernmost part of Kosovo, it rests at the foothills of the Zvečan volcanic cone, at the confluence of the Sitnica and Ibar rivers. It is surrounded by the steep slopes of Kopaonik, Rogozna and Mokra Gora from the east, north and west. Towards the south, the mountain ranges open up to the plain of Kosovo Polje. The city is traversed by the Ibar River (dividing the city into northern and southern parts), Sitnica, and Ljušta. The Ibar Gorge begins north of the city. The entire Mitrovica region holds strategic importance, especially in transit traffic. Positioned centrally between Belgrade to the north, Skopje and Thessaloniki to the south, Niš and Sofia to the east, as well as Podgorica and Bar to the west, the city has railway connections to Skopje and Belgrade. The nearest airport, Priština Airport, lies 40 km south of Mitrovica. The Municipality of North Mitrovica itself is situated at an altitude of 496 meters, covering an area of 5.6 km², with 3.36 km² constituting the urban area and 2.3 km² the rural zone.

1. Physical geography

1.1.0 Position

The Municipality of North Mitrovica is located at 42°53' north latitude and 20°52' east longitude, with an elevation of 508–510 meters. It shares boundaries with the municipalities of South Mitrovica and Zvečan, covering an area of approximately 5.58 km², composed of three cadastral zones. It is the smallest and almost entirely urban municipality in Kosovo. An estimation from 2011 suggests a population of around 29,460. The administrative center is the city of North Mitrovica, positioned at an elevation of 515.00 meters. It is situated near the city of South Mitrovica, the regional administrative center, approximately 3.00 km from Zvečan and about 45 km from Pristina, the capital city, through direct access to the national road N-22.3 (Elez Han-Priština-Mitrovica-Jarinje).[1].

1.1.1 Topography

[1]Municipal spatial database, and demography - URL: https://en.wikipedia.org/wiki/Demographics_of_Kosovo

The municipality of North Mitrovica resides on expansive alluvial plains at the confluence of the Ibar and Sitnica rivers and surrounding slopes. It is located at the northernmost part of Kosovo, at the base of the Zvečan volcanic cone, at the point where the Sitnica river flows into the Ibar. It is enclosed by steep slopes from the east, north, and west, formed by the Kopaonik, Rogozna, and Mokra Gora mountains. To the south, mountain ranges open towards the plain of Kosovo Polje. The Ibar Gorge begins north of the city.

1.1.2 Geology and hydrogeology

The northern part of Kosovo belongs to the basin of the Ibar River. The source of the Ibar River is in southeastern Montenegro. The Ibar River, from Ribariće to Gazivode, has been turned into a reservoir whose waters are used for irrigation through the Ibar-Lepenac system, as well as for water supply and electricity generation. The Ibar River Basin, which covers an area of 3593 km², comprises one-third of the total area of the region. The Ibar Basin includes its direct basin and the Sitnica River Basin.

The immediate Ibar basin comprises streams from the northern slopes of Mokra Gora mountain and Suva Planina, as well as the southern, eastern, and northeastern slopes of Rogozna mountain and the area of southern and southwestern Kopaonik on the right bank of the Ibar, situated north of the area between North and South Mitrovica - Stari Trg (peak Oštro Koplje, 1789 m) to the mining fields of Šatorica, Jelakce, and Belo Brdo. The total area of the direct Ibar basin in Kosovo amounts to 754 km². The basin area features a distinctly mountainous character, with a deeply incised Ibar valley and its tributaries. The highest elevation difference in the basin is 1339 m in the Kopaonik and Suva Planina areas, reaching 1283 m. Along a 50 km stretch in Kosovo, the Ibar river has a drop of 209 m (659 m - 450 m).

The source part of the basin is developed in karstified carbonate rocks, creating karst hydrography, resulting in the preservation of only alive and alogenic streams on the surface. West of North Mitrovica, the Ibar basin is developed in Cretaceous flysch, and on the northern slopes of Suva Planina in Paleozoic shales. North of North Mitrovica, serpentinites and peridotites (bar ultrabasic massif) prevail in the basin, along with intrusions of eruptive rocks (dacites and andesites), as well as a smaller zone of diabase-hornblende formation near the village of Slatina. Pliocene and Quaternary terraces play a secondary role, located 5 km upstream from North Mitrovica near the villages of Žabare and Vinarce. The alluvial deposit next to the Ibar river has limited spread both in plan and profile. In the village of Vinarce, the thickness of alluvium is only 5 meters, beneath which lies Cretaceous flysch. This thickness of alluvial deposits is confirmed during the construction of the water intake for the municipality of Zubin Potok. A drainage system in alluvial deposits was created on the right bank of the Ibar, 10 meters from the riverbed in the field of the village of Pridvorica, where, at a depth of 4.5 meters, a watertight layer of clay material was found. Downstream from the Veštačka Akumulacija Gazivode, the morphological characteristics of the

basin differ significantly. Processes of rock weathering and intensified erosion characterize this part of the basin, where river terraces are notably present in three levels. The youngest terraces are located directly along the Ibar River, elevated by 5–6 meters. Higher terraces are positioned 20–25 meters above the riverbed and can be followed all the way to the confluence with the Sitnica River. The oldest terraces sit at an elevation of 45–50 meters. Significant tributaries of the Ibar River include: Brnjačka River, Čečevska River, Sitnica, Banjska River, Bistrica, Vučanska River, Sočanska River (in the upper course Mošnička River, where no living organisms exist), Leposavska River (receiving waters draining from the mines Žuta Prla, Koporić, and Jelakce), Jošanička River, Drenska River (receiving waters draining from Belo Brdo mine), and Bistrica.

The geology of this area has been described by Bogdanović (1978) and Bogdanović et al. (1978) (Figure 1); the area under study belongs to the Vardar zone of the Middle Paleozoic era. This geotectonic unit comprises strongly metamorphosed sedimentary and igneous rocks from the Upper Paleozoic and Triassic periods, Cretaceous flysch, Miocene volcanic rocks with pyroclastics, as well as younger Pliocene and Quaternary sediments. The Upper Paleozoic consists of green shales, marbles, quartzites, and metamorphic igneous rocks in the lower part, while the upper layer is composed of limestones (Stari Trg/Stan Terg) with lead-zinc mineralization (Trepča/Trepča mine). The predominantly Mesozoic rocks are comprised of Lower Triassic metaconglomerates and meta-sandstones. The Middle Triassic comprises metamorphosed volcanic-sedimentary formations (shale, schist, meta-sandstone, meta-diorite, and schist) and serpentinites (in the northern part of the studied area).[2].

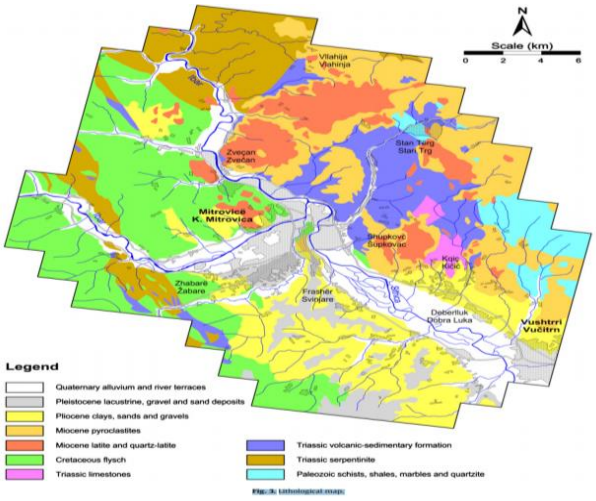

Figure 1Geological map of the terrain

The Upper Triassic rocks consist of limestone. The Cretaceous flysch formations contain mudstones, shales, and sandstones with olistoliths. The Tertiary formation comprises Lower

[2] R. Shain et al. / Journal of Geochemical Exploration 134 (2013) 1–16

Miocene conglomerates, sandstones, clays, and Miocene latites, quartz-latites, and their pyroclasts (in the northeastern part of the studied area). The Quaternary is represented by Pleistocene fluvio-lacustrine sediments, gravel and sand deposits, river terraces, and alluvium (in the central and southeastern part of the studied area). The region covered by various lithological units in the study area is as follows: upper Paleozoic greenstones, shale, marble, and quartzite 10.7 km² (3.5%), Triassic serpentinite 29.5 km² (10%), Triassic volcanic-sedimentary formation 25.1 km² (8.3%), Triassic limestone 2.6 km² (0.9%), Cretaceous flysch 57.2 km² (19%), Miocene latite quartz-latite 22.5 km² (7.5%), Miocene pyroclasts 44.6 km² (15%), Miocene and Pliocene clays, sand, and gravel 44.1 km² (15%), Pleistocene lacustrine, gravel, and sand deposits 44.1 km² (15%), Quaternary terraces 13.8 km² (4.6%), and Quaternary alluvium 51.4 km² (17%).

1.1.3 Water resources

The Ibar River represents the most valuable hydro-potential flowing along the southern perimeter of the municipality. The river originates from the Hajla mountain in Rožaje, eastern Montenegro, flows through northern Kosovo, including the Municipality of North Mitrovica, and merges into the West Morava near Kraljevo, Serbia, with its final basin in the Black Sea. The river has a drainage basin of 7,925 km², an average flow at the mouth of 60 m³/s, is not navigable, and has a total course length of around 272.00 km, with about 4.40 km flowing through the Municipality of North Mitrovica. In terms of its specific water wealth (per 1 km² of territory or per inhabitant), North Mitrovica holds a high position in Kosovo. The Ibar River, flowing through the territory, maintains an average multi-year flow of 21,300 m³/s according to data from the Republic Hydrometeorological Institute - RHZ.

Picture 2The site of the "Three Soliter" water source

The state of these waters is also investigated and controlled by institutions: the Institute of Public Health and the Institute of Ecology RMHK Trepča. All chemical analyses of these waters are

conducted on a monthly basis, providing a more comprehensive dataset. Hence, the condition of surface waters can be more thoroughly analyzed compared to groundwater. Chemical testing of groundwater is performed only as necessary, usually when there's a suspected chemical contamination. Both institutions, the Institute of Public Health and the Institute of Ecology RMHK Trepča, sample water at the same sites monthly (at Dudin krš, the bridge in Rudar, and the bridge in Grabovac).

For the purposes of hydrological analysis at the measuring point "Tri solitera," the flow of the Ibar River was measured. The flow measurement was carried out using a digital meter, OTT Z400, which automatically records the number of rotations of the propeller by counting impulses. The OTT Z400 meter instantly provides the flow rate following the measurement. The measurement period of the flow of the Ibar River at the Tri solitera site was from 10:00 am to 1:30 pm. To obtain accurate results of the water flow measurement, it was necessary to measure the width of the riverbed, which amounted to 23.9 meters. Additionally, a crucial parameter is the depth of the river, which varies at 19 measuring points due to the terrain configuration.[3](Table 1).

Point number	Depth cm	Point number	Depth
1	12	**10**	34 cm
2	20	**11**	28 cm
3	33	**12**	27 cm
4	25	**13**	26 cm
5	35	**15**	25 cm
6	44	**16**	20 cm
7	41	**17**	18 cm
8	40	**18**	16 cm
9	38	**19**	15 cm

Table 1: The depth of the Ibar river bed in measuring points

After determining the width and depth, the riverbed was divided into 20 sections each with a width of 119.5cm (See Figure 3). In order to obtain accurate flow measurements, it was necessary to take two flow measurements (at the surface and at the bottom) in sections deeper than 20cm and then

[3] Ibar River flow measurement report, INFORM project UNDP, 2020

calculate the average of the measurements. The measured water flow of the Ibar River at the Tri solitera site was 10.112 m^3/s, approximately 10 cubic meters per second.

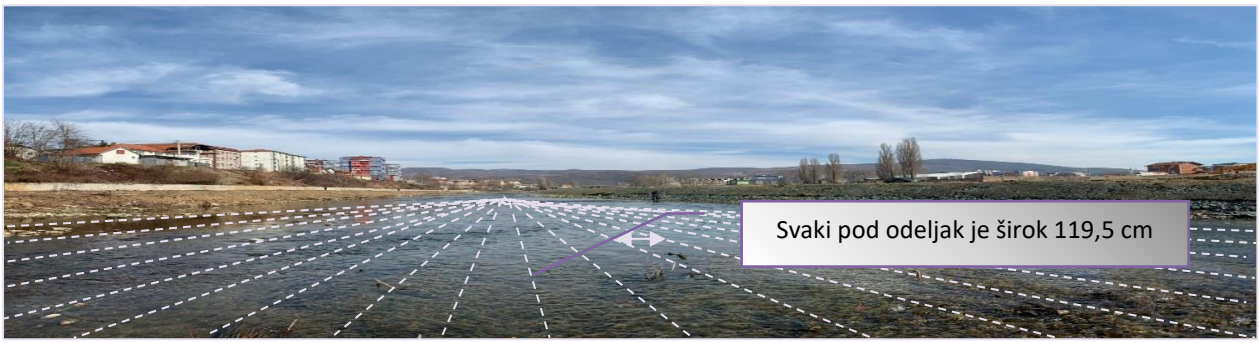

Figure 3View of the Ibar riverbed divided into sections

Serial number	Certain components	VALUES FOUND BY MONTHS												GVI mg/dm ^{3}
		I	II	III	IV	V	YOU	VII	VIII	IX	X	XI	XII	
1	pH	7.32	7.32	7.31	7.32	7.35	7.33	7.37	7.43	7.38	7.40	7.32	7.33	**6 to 9**
2	Inc. tal.mat. mg/dm ^{3}	382.26	177.14	167.80	304.42	234.28	202.14	201.60	197.28	202.76	249.78	262.38	300.38	**1580**
3	Growth. mat. mg/dm ^{3}	364.00	166.00	157.00	291.00	218.0	181.00	182	178.00	186.00	223.00	250.00	278.00	**15000**
4	Ner. mat. mg/dm ^{3}	18.26	11.14	10.80	13.42	16.28	21.14	19.60	19.28	16.76	26.78	12.38	22.38	**80**
5	SO $_4$ mg/dm ^{3}	58.57	78.35	64.48	69.72	52.72	52.31	49.06	53.71	62.56	79.02	71.82	63.01	**2000**
6	Pb mg/dm ^{3}	0.33	0.17	0.23	0.14	0.19	0.10	0.03	0.10	0.05	0.08	0.08	0.50	**0.1**
7	Zn mg/dm ^{3}	0.57	0.14	0.36	0.51	0.28	0.06	0.07	0.06	0.08	0.06	0.06	0.04	**1.000**

8	Cu mg/dm ^{3}	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.1**
9	Cd mg/dm ^{3}	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.01**
10	Fe mg/dm ^{3}	0.39	0.25	0.25	0.25	0.91	1.26	0.50	0.40	0.18	0.48	0.55	0.63	**1.0**
11	**Ca mg/dm ^{3}**	**68.87**	**42.92**	**61.30**	**40.20**	**51.04**	**49.39**	**44.07**	**51.48**	**46.67**	**49.19**	**46.77**	**51.30**	

Table 2. Report on the water quality of the Ibar in the period I-XII 2019 Dudin Krš (mg/dm ^{3})[4]

Serial number	Test parameter	Unit of measure	The result
1.	Turbidity	NTU	36.4
2.	Hydrogen ion concentration (ph)	pH	8.00
3.	Oxidability ($KmnO_4$)	mg/L	46.8
4.	Chlorides (Cl)	mg/L	17.7
5.	Nitrites (NO_2)	mg/L	0.21
6.	Nitrates (NO_3)	mg/L	14.2
7.	Sulfates	mg/L	10.5
8.	Phenols	mg/L	<0.001
9.	Hardness (Total)	dH^0	8.96
10.	Alkalinity	m mol/L	4.0
11.	HPK	mgO_2/L	11.8
12.	Oxygen now	mgO_2/l	3.1
13.	Biological consumption of oxygen-5	mgO_2/l	7.7

[4] Report of the Ecology Institute of the Trepča Development Center

Table 3: Results of physico-chemical analysis of water at the measuring point "Tri solitera"

The Institute of Public Health in North Mitrovica has provided physical and chemical analysis data of the Ibar River from previous years for the purpose of this work, and the obtained values are presented in Table 4.

Serial number	Test parameter	Unit of measure	The result
1.	Turbidity	NTU	1.35
2.	Hydrogen ion concentration (ph)	pH	7.4
3.	Oxidability ($KmnO_4$)	mg/L	10.9
4.	Chlorides (Cl)	mg/L	15.9
5.	Nitrites (NO_2)	mg/L	0.008
6.	Nitrates (NO_3)	mg/L	15.9
7.	Sulfates	mg/L	9.9
8.	Phenols	mg/L	0.0005
9.	Hardness (Total)	dH^0	8.4
10.	Alkalinity	0.1 NHCa/l	P=1 M=32
11.	HPK	mgO_2/L	9.3
12.	Oxygen now	mgO_2/l	16.0
13.	Biological consumption of oxygen-5	mgO_2/l	2.7

Table 4: Results of the Institute for Public Health North Mitrovica

The obtained results of the physical and chemical analysis of the Ibar River have been compared with previously acquired values from the Institute of Public Health in North Mitrovica. An overview of the past parameter analysis reveals variations in the values, enabling the monitoring of changes that have occurred.

The analysis indicated significantly increased values of water turbidity compared to previous assessments, possibly due to the substantial amount of rainfall several days before the evaluation. Based on the concentration of CaCO3 in the sample (water hardness), the categorization of the Ibar River was determined, with the CaCO3 content in the sample at 89.6mg/l. According to Directive 2008/105/EC, a calcium carbonate value ranging from 50 to <100 designates the water as a category III, and other parameters are compared with the values for the same category.

The nitrate content (NO3) has decreased compared to previous samples analyzed, yet the measured value of 14.2 mg/l exceeds the standard for the third class of 5.6 mg/l. Comparing nitrite values reveals an increase in $NO2^{5}{}_{2}$ concentration compared to previous measurements, indicating the presence of a high number of bacteria in the water and poor disinfection, not involving the influence of sodium hypochlorite. The concentrations of chloride and sulphate have increased compared to the previous measurement, yet both values are below 350 mg/l, which is the recommended value for the third class of surface waters.

The biological oxygen demand measured at the "Tri Solitera" measuring point highlights the presence of aerobic bacteria. The obtained value of 7.7 mg O2/l defines conditions in which the fish population is threatened. According to EU recommendations, the value of Biological Oxygen Demand should be less than or equal to 3 mg/l O2 (Directive 78/659/EEC). The chemical oxygen demand has increased compared to the previous measurement (9.3 mg O2/l) and stands at 11.8 mg O2/l. Dissolved oxygen is one of the most important parameters for determining water quality. In the sample from the "Tri Solitera" measuring point, the immediate oxygen saturation is 3.1 mg O2/l, significantly lower compared to the previous measurement, which recorded an immediate oxygen saturation of 16.0 mg O2/l. Comparison of the results indicates a high level of river pollution. According to European standards, where the critical value of dissolved oxygen is 6mg/l, the fish population is at risk (Directive 78/659/EEC).

The organic pollution of the water is indicated by the oxidizability at the "Tri Solitera" measuring point, measuring 46.8 mg/l, which is significantly higher compared to the previous measurement of 10.9 mg/l. Both samples were analyzed using the permanganate method, with a recommended value of 15 mg/l. Despite proving the presence of organic impurities through the analysis of these parameters, the formation of toxic organochlorine compounds is negligible due to the low chlorine concentration.

The microbiological analysis of the Ibar River at the "Tri Solitera" measuring point highlighted severe water pollution. Water sampling was carried out at the point of discharge of municipal wastewater into the Ibar River without prior treatment. The defined microbiological parameters of the analysis included the total number of coliform bacteria, coliform bacteria of fecal origin, fecal

[5]Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156 /EEC, 84/491/EEC, 86/280/EEC

streptococci (intestinal enterococci), the number of live bacteria in 1 ml of the sample at 37°C after 48 hours, the number of Pseudomonas aeruginosa in 100 ml, and Proteus species in 100 ml of the sample.

In the tested sample, the total number of coliform bacteria in 100 ml of the sample was 240,000, as well as the number of coliform bacteria of fecal origin, which was also 240,000 in 100 ml, indicating primary fecal contamination of the river. Additionally, the number of fecal streptococci in 100 ml of the sample was 240,000. The EU Water Directive provides recommended quality standards for surface water concerning microbiological parameters: total coliforms at 10,000 in 100 ml; fecal coliforms at 10,000 in 100 ml, and fecal streptococci at 5,000 in 100 ml.

The results of the microbiological analysis of the Ibar River vary from place to place. As there is no wastewater treatment system in the northern region of Kosovo, and the river is used as a collector, the obtained results are expected. Variations exist depending on the source, rainfall, river self-purification, and seasonal changes, yet the water quality index consistently indicates high pollution. This is supported by earlier Ibar analysis results, where the total number of coliform bacteria in 100 ml of the sample was 24,000, and the number of coliform bacteria of fecal origin in 100 ml was also 24,000.

1.1.4 Climate

The climate in the Municipality of North Mitrovica is moderately continental with significant precipitation. Even in the driest month, there is a considerable amount of rainfall. Approximately 805 mm of rainfall is recorded annually. The driest month is August with 54 mm of rainfall. The highest rainfall occurs in May, averaging 84 mm. The average temperature throughout the year is 10.5°C. July is the warmest month with an average temperature of 20.3°C, while January is the coldest month with average temperatures of -1°C. The difference in rainfall between the month with the least and the most rainfall is 30 mm. There is a temperature variation of 20.8°C throughout the year.

The morphological, or rather, hypsometric characteristics of the research area have determined its climatic features. The climate pattern ranges from moderately continental to mountainous. Mountain massifs like Mokra Gora, Rogozna, Suva Planina, and the southern and southwestern slopes of Kopaonik have their specificities in terms of climatic characteristics.

1.1.5 Air temperature

Based on the processed data, it can be concluded that there is relatively small fluctuation in rainfall throughout the year, meaning that rainfall is evenly distributed across the months. This is highly favorable from a hydrogeological perspective because a stable rainfall regime enables a consistent

groundwater regime. The average rainfall for the observed terrain ranges from 600 to 855 mm of rainfall, except in mountainous areas where an average of about 1100 mm of precipitation falls. In places like Kopaonik, Mokra Gora, and Suva Planina, during strong winters, the number of days with snow cover reaches up to 180, significantly impacting the groundwater regime. Looking at individual months, the heaviest rainfall occurs in May, June, and July, averaging over 100 mm.

The influence of mountainous masses is particularly evident when analyzing the temperature regime. Air temperatures in the highest areas during winter can drop to -30°C. Consequently, the average temperature in the research area ranges from 3.7°C (Kopaonik) to 11.4°C (Peć). The coldest month is January, with average temperatures ranging from -4°C (Kopaonik) to 1°C (Peć). The warmest is August, with average temperatures ranging from 13°C (Kopaonik) to 22.1°C (Peć).

After 1999, there were no measurements conducted in the region of North Mitrovica by the Serbian Hydrometeorological Service or the Kosovan Hydrometeorological Service. In this case, using the New Loc Clim software package, a mathematical calculation was carried out by interpolating climatic values taken from the nearest meteorological stations, as shown in Table 5. New Loc Clim is an FAO software program that provides estimates of average climate conditions at locations where official observations are not available. In addition to providing climate characteristics at specific points, this software enables the creation of climate maps based on user-provided station data or, in cases where such stations are not available, for generating maps of average climate conditions (8 variables) derived from the updated FAOCLIM database, which covers nearly 30,000 stations worldwide.[6]

	Longitude [°]	Latitudes [°]	Altitude [m]	Distance [km]	Direction	Direction	Station name	The name of the country
1	20.7	43.7	217	91.1	351	S	KRALJEVO	SERBIA
2	21.9	43.33	202	96.9	59	SI	NIS	SERBIA
3	21.65	41.96	239	121.6	148	JI	SKOPJE PETROVAC	NORTH MACEDONIA
4	22.28	42.51	1176	122.7	110	I	SKOPJE	NORTH MACEDONIA
5	19.28	42.43	52	139.7	249	Z	PODGORICA	MONTENEGRO
6	19.25	42.36	33	145.1	247	JZ	PODGORICA-GOLUBOVCI	MONTENEGRO
7	20.7	41.53	1321	151.9	185	J	LAZAROPOLJE	NORTH MACEDONIA
8	22.18	41.75	327	166.3	139	JI	ŠTIP	NORTH MACEDONIA

[6] ttp://www.fao.org/land-water/land/land-governance/land-resources-planning toolbox/category/details/en/c/1032167 /

9	23.38	42.65	595	206.6	97	I	SOFIA OBSERVER	BULGARIA
10	21.36	41.05	589	208.6	169	J	BITOLJA	NORTH MACEDONIA

Table 5: Meteorological stations surrounding the research area

	Jan	Feb	Mar	Apr	Maj	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Per year
Medium temperature													
1	0.4	3.0	6.5	11.1	15.6	19.3	21.2	21.1	17.6	12.3	7.6	2.7	11.5
2	0.4	3.0	6.0	9.6	14.8	18.5	20.2	19.8	16.0	10.8	6.0	1.6	10.5
3	0.5	3.0	6.1	10.8	15.3	19.1	21.2	21.5	17.3	12.0	7.1	2.7	11.4
4	-0.4	2.0	5.5	10.1	14.8	18.7	20.3	20.6	16.7	11.3	6.5	1.7	10.7
5	0.6	3.7	6.5	10.6	15.8	19.1	21.0	20.6	17.0	11.8	7.0	11.8	12.1
6	-0.5	1,2	5.0	11.3	15.8	19.2	21.5	21.2	17.8	12.1	7.0	3.0	11.2
7	-0.7	2,2	5,6	10.1	15.0	18.3	20.2	20.0	16.6	11.5	7.1	1.6	10.6
8	0.4	3.0	7.5	11.6	16.2	19.3	21.2	21.6	18.2	12.8	6.3	2.5	11.7
9	-1.8	0.1	-3.3	5.9	10.0	15.0	19.3	15.8	17.5	9.0	4.5	0.8	7.7
10	1.5	4.3	7.0	11.0	16.2	19.8	21.6	21.2	17.6	12.1	7,8	2.7	11.9
	0.04	2.55	5.24	10,21	14.95	18.63	20.77	20,34	17,23	11.57	6.69	3.11	10.93
Maximum temperature													
1	3,4	6.0	9.8	17.1	21.7	25.3	28.2	28.5	25.1	18.0	11.1	6.5	16.7
2	4.0	7.1	12.8	17.7	22.7	26.0	28.3	28.7	25.3	19.2	10.8	6.0	17.4
3	4.3	8.3	13.8	18.5	23.7	27.5	30.0	30.0	26.0	19.2	10.1	5.0	18.0
4	4.6	8.3	11.8	19.2	23.2	28.0	30.7	31.1	26.0	18.5	11.6	7.4	18.4
5	9.1	10.6	14.3	19.2	24.2	29.0	32.5	32.5	27.5	21.0	15.0	11.8	20.5
6	9.5	11.3	15.1	19.1	24.2	28.2	31.7	31.7	27.2	21.7	15.3	11.1	20.5
7	2,2	3.0	6.0	10.6	15.5	18.8	22.2	22.2	18.7	13.3	8.0	4.0	12.0
8	4.5	8.1	12.6	18.1	23.2	27.2	30.1	30.0	26.2	19.5	11.8	6.0	18.1
9	2,2	5.0	9.8	15.3	20.1	23.5	25.8	25.7	22.6	16.6	9.6	4.0	15.0
10	3.2	6.5	11.3	16.5	21.7	25.8	28.6	28.5	24.7	18.2	11.5	5.3	16.8
	4.7	7.42	11.73	17,13	22.02	25.93	28.81	28.89	24.93	18.52	11.48	6.71	17.34
Minimum Temperature													
1	-4.2	-3.6	0.2	5.5	10.0	13.1	14.8	14.0	10.6	6.4	2.9	-0.7	5,7

2	-3.0	-1.3	2,4	6.0	10.1	13.3	14.6	14.6	11.5	7.0	2,2	-0.9	6.4
3	-3.5	-1.3	1.8	5.4	9.8	13.1	14.8	14.6	11.3	6.3	1,2	-2.5	5.9
4	-3.0	-2.5	0.6	5.3	10.1	13.3	15.1	14.3	11.1	5.9	2.9	-1.2	6.0
5	2,2	2.5	5.4	9.3	13.6	17.7	20.7	20.6	17.0	11.6	7.5	4,4	11.0
6	1,3	3.0	5.8	9.1	13.5	17.2	20.2	20.2	16.5	11.6	6,8	2.9	10.7
7	-6.0	-5.0	-2.8	1,1	5.0	7,8	9.3	9.3	7.0	3.5	0.0	-4.0	2.1
8	-2.8	-0.9	2.5	6.5	11.0	14.3	16.1	15.8	12.3	7.6	3.0	-1.2	7.0
9	-5.0	-3.0	0.3	4.6	9.3	12.3	13.8	14.3	10.6	5,6	1,2	-2.8	5.1
10	-4.5	-2.3	1,2	5.0	8.6	11.6	13.1	12.8	9.8	5.5	1.7	-2.6	5.0
	-2.85	-1.44	1.74	5.78	10.1	13.37	15.25	15.05	11.77	7.1	2.94	-0.86	6.49

Table 6: Temperature data from surrounding meteorological stations as listed in Table .5

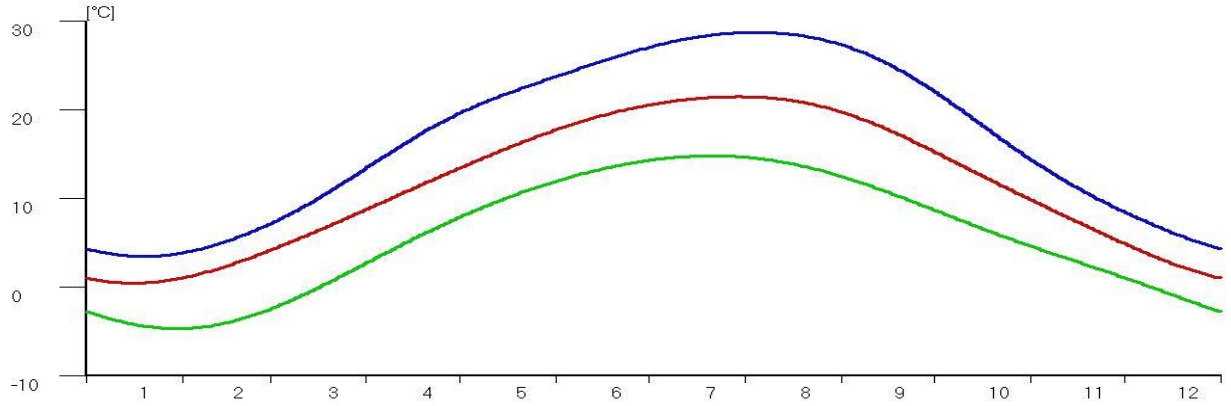

Figure 4: Graphic representation of the temperature regime in the north of Kosovo, minimum (green), maximum (blue) and medium (red)

1.1.6 Precipitation and humidity

Based on the processed data, it can be concluded that there are relatively small fluctuations in rainfall throughout the year, indicating an even distribution of precipitation across the months. This is highly favorable from a hydrogeological perspective, as a stable rainfall regime enables a consistent groundwater regime. The average rainfall for the observed terrain ranges from 600 to 855 mm of water column, except in mountainous areas where an average of about 1100 mm of precipitation falls. In locations such as Kopaonik, Mokra Gora, and Suva Planina, during severe winters, the number of days with a snow cover reaches up to 180, significantly affecting the groundwater regime. Looking at individual months, the most precipitation occurs in May, June, and July, averaging over 100 mm.

Day	Precipitation	Precipitation	Precipitation	Precipitation, evapotranspiration	Precipitation, evapotranspiration	Precipitation, evapotranspiration
	Best [mm]	**Low [mm]**	**High [mm]**	**Best [mm]**	**Low [mm]**	**High [mm]**
Average	8.35	5.54	13.48	1.92	1.63	2.21
Min	10.00	0.00	2.25	0.35	0.01	0.66
Max	42,40	31.95	66.56	3.99	3.59	4.48

Table 7: Statistical data for daily precipitation and evapotranspiration in the North Kosovo region

The results from Table 7 are presented graphically in Figure 5.

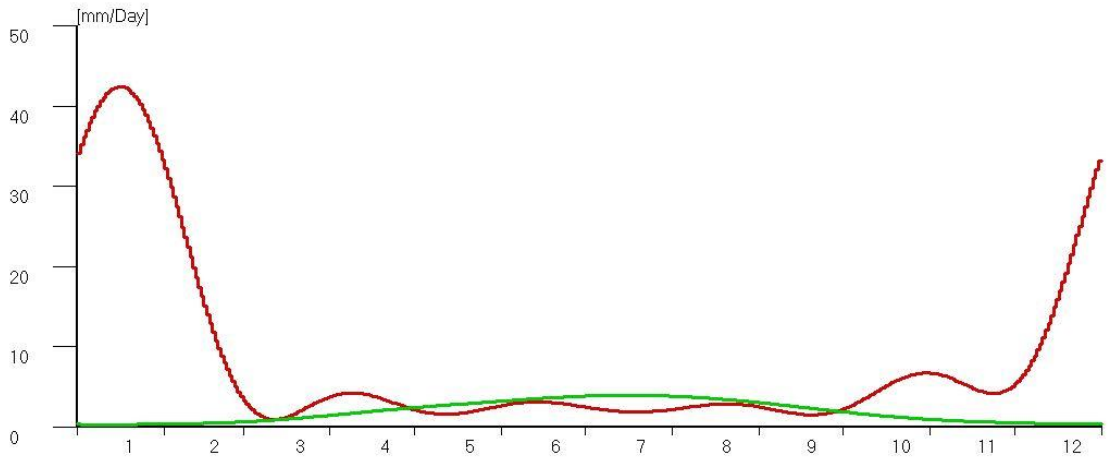

Figure 5: Average daily precipitation (red) and evapotranspiration (green) in the north of Kosovo

1.1.7 Solar radiation - Solar fractions and hours of sunshine in Northern Kosovo

Day	Solar Faction	Solar Faction	Solar Faction	Day Length	Day Length	Day Length	Sun Hours	Sun Hours	Sun Hours

	The best [%]	Low [%]	High [%]	best [h]	low [h]	high [h]	best [h]	low [h]	low [h]
Average	30,333	22,273	38,923	2:09			3:57	3:01 am	4:55
Min	9.35	0	21.74	8:56			0:50	0:00	1:57
Max	54.5	50.05	60.9	5:15			7:45	7:07	8:30

Table 8: Sunny shares and sunny hours in North Mitrovica

The number and length of sunny hours in 2015 in the north of Kosovo are shown in Figure 6.

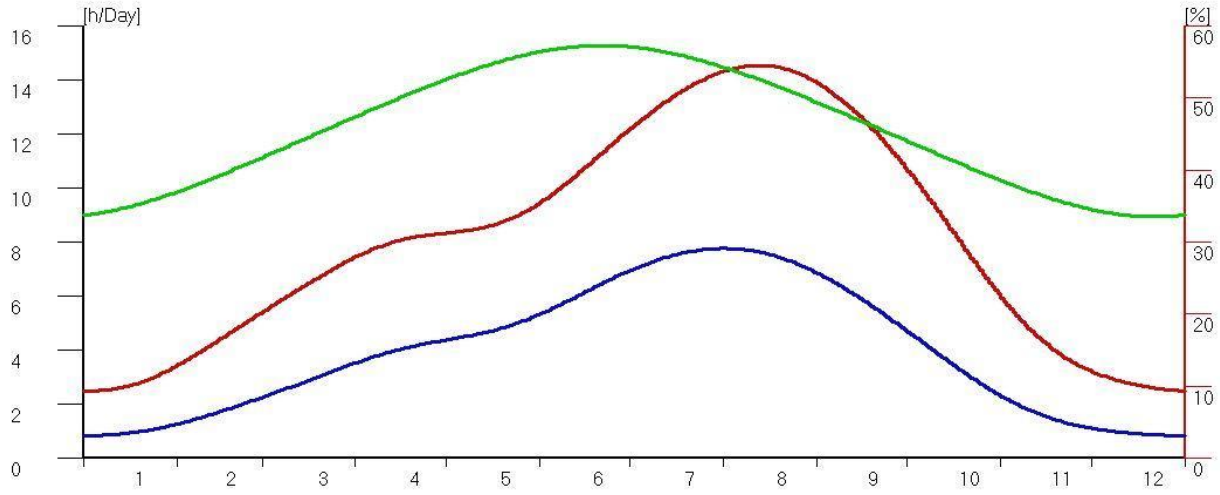

Figure 5: Annual solar cycle in the north of Kosovo

1.1.8 Wind

Winds blow from all directions in Kosovo, but with varying frequencies. The Mitrovica region experiences 50-60 windy days annually. The most common winds blow from the north to the southern parts. Despite the region being protected by mountain ranges from the north, the Ibar Valley draws significant air masses from the north rather than the south, where there is an open pathway for airflow. While the maximum wind speed is recorded from the south, most winds fall into the secondary class of winds.

Day	Steam	Steam	Steam	Wind	Wind	Wind
	Best [hPa]	**Low [hPa]**	**High [hPa]**	**Best [km/h]**	**Low [km]**	**High [km/h]**
Average	10,617	9,068	12,165	3.42	1.01	6,14
Minimal	4.98	4.01	5.84	2.25	0	4.53
Maximum	16.9	14.82	19.09	5.55	3.52	7.92

Table 9: Distribution of wind speed and water vapor in North Mitrovica in 2017.

1.1.9 Natural hazards

Natural hazards in North Mitrovica relate to the risks of floods, fires, and earthquakes. The Ibar River, which partially flows through North Mitrovica, poses a flood risk to certain parts of this municipality. The initial stretch of the Ibar River in North Mitrovica downstream from the confluence point with the Sitnica River, spanning about 5.0 km, finds the Ibar River situated between two paths: the Mitrovica-Leposavić highway and the railway. These two paths serve as boundaries for the river, preventing water overflow. However, flooding can occur in the space between these paths. As a result, people in the vicinity have not constructed buildings, except in areas considered safe from flooding. Thus, only agricultural land is flooded in this region. Flooding occurs because the Sitnica River brings significant sediment loads that increase the water level, and waste from Trepča also contributes to the rise in water levels. The areas surrounding the Ibar River downstream from the confluence point with the Sitnica River, spanning 5.0 km, are the affected zones

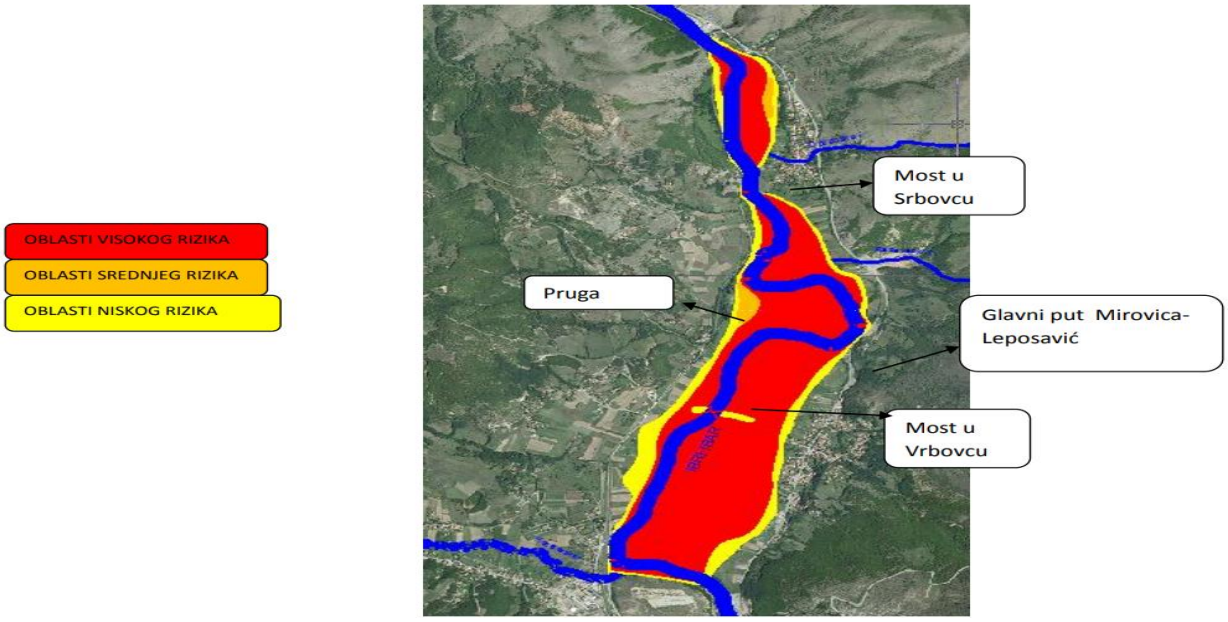

Figure 6. Map of endangered areas of the Ibar river bank

A large portion of the sewage shafts are filled with soil, making it impossible to perform adequate interventions when the sewer system gets blocked. Due to the age of the sewage pipes and the penetration of tree roots, blockages are formed in the pipes, which obstruct the sewage system. There are few septic tanks, and they operate on an individual basis without proper regulation, serving as the most common source of soil contamination and groundwater pollution. As a result of the aforementioned issue with the sewage network, during heavy rainfall, a substantial amount of water accumulates in Kolašinska Street, hindering the normal flow of traffic. Additionally, significant amounts of waste remains even after the rainfall has stopped.

Picture 7Flooded Kolašinska street Apill 2019

1. Drainage and sewerage

The Waterworks Administration 'Ibar', as well as the technical service, are located in Lole Ribara Street, in the former Military Overhaul facility, while the water supply plant is situated in the municipality of South Mitrovica, in Shipol. Since June 2019, the water supply is also provided through a newly built pipeline in Zubin Potok. The primary function of the 'Ibar' waterworks is to supply the population with hygienically safe drinking water, wastewater disposal, maintenance, repair, and the reconstruction of water supply and sewerage systems.

The first public water supply in the then Kosovska Mitrovica was built in 1938 with shaft wells and infiltrated fields in the Suvi Do pumping station, with an initial water capacity of 50 liters per second. In 1984, the drinking water capacity was increased to 150 liters per second. With the construction of the water plant in Shipol, the capacity was increased to 450 liters per second, and until 1999, the water supply functioned smoothly. However, over the last 20 years, the municipality of Northern Mitrovica has faced water shortages and constant restrictions. The Shipol water plant was renovated in 2016 and produces high-quality water, but the aging secondary water supply system within our municipality significantly diminishes the water quality. Additionally, due to the limited capacity of the secondary network unable to support the pressure from the newly built Zubin Potok water pipeline, the water supply situation in Northern Mitrovica remains unchanged. Unplanned connections to the water supply network by citizens also contribute to these challenges.

The primary resource to ensure drinking water is the Ibar-Lepenac canal intake from Lake Gazivode. Northern Mitrovica uses several water pumping stations and reservoirs:

Suvi Do Pumping Station

Hospital Reservoir

Zvečan Reservoir

Kukavica Reservoir

Northern Mitrovica ranks high in Kosovo in terms of its specific water resources (per 1 km2 of territory or per capita). The Ibar River flows through the territory, with an average multi-year flow of 21,300 m3/s according to the Republic Hydro-Meteorological Service.

Wastewater from cities, urban areas, and industries directly flows into watercourses (the Ibar River, streams, and brooks) through sewage networks or without them, without prior purification. Urban areas in Northern Kosovo are covered by sewerage systems over approximately 80% of their territory, while the rate in rural and some suburban areas is much lower, around 40%. In previous water quality studies of the Ibar River, the emphasis was on heavy metal contamination due to intensive industrial activities in the Mitrovica region, particularly at Trepča Mining and Metallurgical Complex, where intense mining, metallurgical, and chemical production occurred for decades. The established concentrations of heavy metals, especially lead, have deteriorated the quality of the Ibar River water. However, industrial production has been minimal in recent years,

and concentrations of heavy metals, except for lead, do not exceed the maximum permissible levels. Unlike organic pollutants, trace metals cannot be separated from water systems using natural processes and are primarily enriched in mineral and organic matter.

The Public Utility Enterprise Ibar, responsible for water supply, cannot resolve this problem. This enterprise manages the stormwater and sewage system. The sewage system capacities, which discharge into the Ibar River, are outlined in Table 13, while the sewage discharge distribution is depicted in Figure 9.

Besides industry, other major pollutants in Northern Mitrovica include *JKP Standard* (a heating plant), *the Clinical Hospital Center Kosovska Mitrovica* (a heating plant and medical waste), and the service center of the company *Kosmet transport ad.*

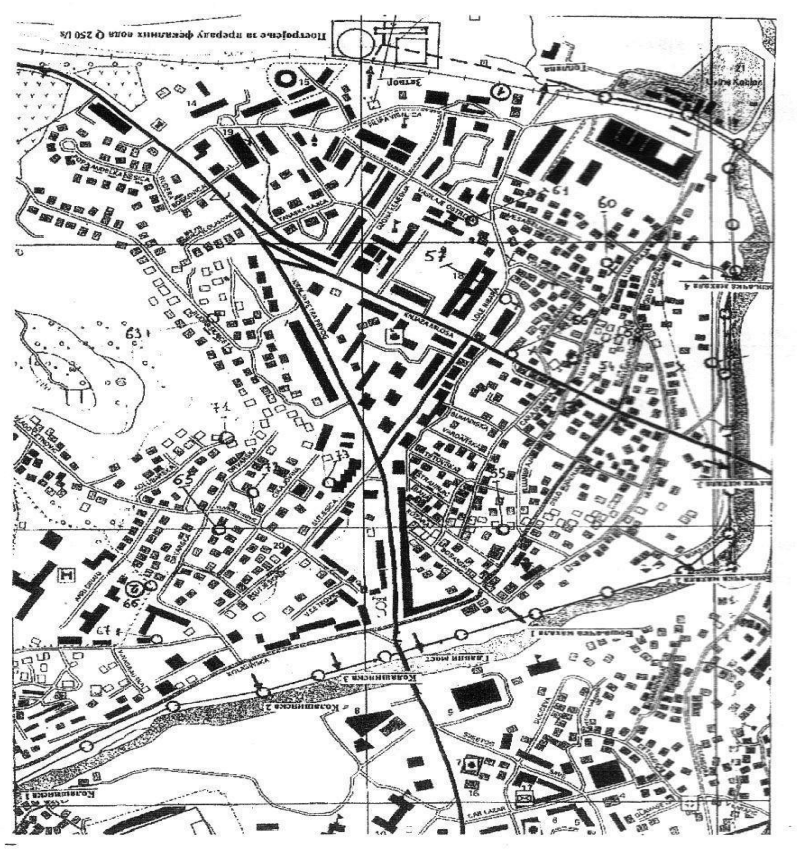

Figure 8System plan for sewer outlets into the river Ibar in the territory of the municipality of Severna Mitrovica

Serial number	Street place	capacity (l/s)

1	Water pipe	**5**
2	Kolasinska 1	**10**
3	Kolasinska 2	**25**
4	Kolasinska 3	**10**
5	The main bridge	**30**
6	Bosnjačka mahala 1	**10**
7	Bosnjačka Mahala 2	**20**
8	Bosnjačka Mahala 3	**15**
9	Bosnjačka Mahala 4	**5**
10	Heating plant	**40**
11	Prison	**15**
	IN TOTAL	175

Table 13. Capacities of the fecal sewage system

It can be said that the Ibar watercourse is used as the main collector of all types of wastewater (industrial and fecal), as shown in Figure 10.

Figure 9Sewer outlet of Bošnjačka Mahal 4.

Flood risk assessment

One of the first activities in the municipality of North Mitrovica is risk assessment. Risk assessment involves a systematic examination of a task, job, or process occurring in the course of work for the purpose of identifying significant risks present, determining whether the risk of any damage is already reduced to an acceptable level, and, if not, deciding on future control measures that need to be taken to reduce the risk to an acceptable level.

Risk assessment should be carried out by experienced and competent individuals. Competence can be expressed through a combination of knowledge, awareness, training, and conducted exercises.

Risk assessment should also be considered based on a rule, for example, every month, every year, two years, depending on the risk, or if something changes, such as in the case of organizations – new workshops, changes in processes or substances, while in the case of the community – population, new construction, etc.

To perform a proper assessment, a specific methodology is required, and Kosovo has its own methodology for risk assessment that can be found at: mpb@ks-gov.net.

Among other tasks, risk assessment will have to analyze:

- Reduction in direct runoff, reducing the risk of floods.
- Increased recharge of groundwater (if possible).
- Improvement of rainwater runoff quality by reducing the concentration of present pollutants, reducing the negative impact on the recipient.
- Mitigation of environmental and recipient consequences in the event of accidents and spillage of larger quantities of pollutants.
- General improvement of the environment, increase in aesthetic and material value.
- Formation of a natural habitat for wildlife in urban areas.
- The task of the rainwater control system to reduce changes in runoff hydrology and rainwater quality due to urbanization.

Intensity, types and impacts of natural disasters

The territory of the municipality of North Mitrovica has a high risk of floods, mostly due to flooded rivers Ibar and Sitnica and rising groundwater levels during the rainy seasons.

The zones that have been most affected in the past are the zones along the Ibar river basin.

The occurrence of flood hazards is primarily limited by weather conditions and the geomorphological and topographic characteristics of the target area. River flow and bed floods include:

- River water or river floods
- Flooding
- Flooding towards river channels
- Flooding due to dam failures and breaches.

Hydrographic characteristics in terms of flood hazards and submerged territories are determined based on a spectrum of different factors among which we distinguish:

- Unregulated infrastructure in riverbeds in urban areas of the municipality, except for one regulated part of the riverbed.
- Degradation of riverbeds - uncontrolled excavation and excessive exploitation of natural resources - sand and timber in the riverbed and by the river, causing floods, erosion of riverbanks, and deviation of the river.
- Unauthorized works and negative events on the earth's surface causing damage to water supply pipes leading to increased river levels and flooding in certain settlements.
- Unregulated construction of residential houses and other buildings in and around riverbeds.
- The impact of every factor in terms of public irresponsibility when disposing of solid waste in the riverbed, especially at critical points such as bridges, canals, pipelines, etc.
- Dysfunctional and irregular maintenance of network infrastructure for stormwater and sewage.

Objectives of the plan for the municipality of North Mitrovica to reduce the risk of floods and respond adequately in given situations

Objectives of the plan are based on instructions derived from the Strategy for SRPK which proposes the following:

C1: Development of an integrated risk and disaster management system

1.1. Integration of disaster risk reduction policies and implementation of legislation for risk management and governance.

1.2. Strengthening institutional mechanisms and capacities at the local level for strategy implementation.

1.3. Advocating for political commitment and responsibility.

1.4. Increased financial support for disaster risk reduction.

1.5. Establishment of a supervisory body for implementing the local disaster risk reduction plan.

C2: Strengthening risk management capacities

2.1. Increased capacity to generate information (statistical and various other data) for PKDK.

2.2. Strengthening the capacity to collect, evaluate, and analyze data, completing the current database for natural disasters.

2.3. Enhanced cooperation and inter-institutional coordination in early warning regarding natural disaster risk reduction.

2.4. Support for research, information exchange, and collaboration with academic and scientific institutions to reduce existing risks and prevent new ones.

2.5. Understanding the dimensions of disaster risk.

C3: Creating safe and sustainable communities

3.1. Enhance communication and information dissemination among relevant institutions to reduce the risk of natural disasters.

3.2. Including disaster risk reduction knowledge in educational plans.

3.3. Raising community awareness of the importance of reducing the risk of natural disasters through media campaigns, social networks, training, exercises, and protective measures.

3.4. Organizing and establishing structures for protection, rescue, and assistance (OESFPRA).

3.5. Involving youth and civil society organizations in OESFPRA to reduce the risk of natural disasters.

3.6. Involving vulnerable communities (pregnant women, children, elderly people, people with chronic illnesses, persons with disabilities, etc.) in the development of risk management plans.

C4: Raising awareness and promoting risk within institutions and other subjects

4.1. Promotion and development of instruments and programs to develop standards, codes, operational instructions, plans, projects, etc.

4.2. Improving communication and information exchange among relevant institutions to identify and assess risks.

4.3. Deepening the strategy of integrating and coordinating institutional activities in the process of relevant risk identification and assessment and taking protective measures.

4.4. Development of quality standards such as certification and recognition for disaster risk management with the participation of the private sector, civil society, organizations and associations.

4.5. Promoting and supporting regional and international cooperation agreements.

4.6. Providing quality information, evaluations, creating statistics/databases, and monitoring trends and new risks of natural disasters.

4.7. Promoting regional protocols to facilitate capacity exchange and enable emergency response during and after disasters.

Implementation of the strategy at the local level and development of the Action Plan

The municipality of North Mitrovica, following the plan and anticipated activities from the DRR Strategy, aims to implement:

- Establishment and oversight of a professional working group for developing the municipal document for natural disaster risk assessment and ensures its approval.
- Appointment of staff to the Commission for Protection and Rescue during emergencies.
- Establishment/Appointment of a working and supervisory professional group for spatial and urban planning, including preventive measures.
- Taking responsibility for other protective duties to undertake concrete measures in emergency management areas.

After these primary activities, the working groups of the North Mitrovica municipality will proceed to develop the risk assessment and subsequently:

- Create a preventive mid-term plan and program along with budget allocations.
- Recommend the creation of an emergency fund based on the history of disasters in the municipality and the assessment of damage from those disasters over the past few years.
- Develop a readiness plan—training and exercises for staff management, coordination, and emergency response, as well as testing equipment and tools.
- Design, plan, and prepare exercises according to the identified risk scenarios twice a year for different types of disasters and emergencies.

ACTION	SUCCESS INDICATORS	RESPONSIBLE INSTITUTION	OTHER PARTICIPANTS	TIME LIMIT	PRICE AND SOURCE OF FINANCING	COMMENTS

C1: Developing an integrated system for risk and disaster management						
1.1. Strengthening of institutional mechanisms and institutional capacities responsible at the local level for the implementation of the strategy;	# annual training for 30 participants for emergency management and policies # the capacities of the participants in these trainings are strengthened by 60% during this period	North Mitrovica municipality STATUE Integrated Emergency Management Systems	NGO sector, CSOs	in 2026		
1.2. Establishing a working group, creating a flood risk assessment	Risk assessment Action plan	Working group of the municipality	All institutions Kosovo, Ministry of Defense, NGOs, civil society and the private sector	in 2025	20 expert days 6000 Municipal budget, donors UN Habitat	
1.3. Identification of institutional mechanisms that need improvement	Report and recommendations	Working group of the municipality		in 2025	5 expert days 1500 Municipal budget, donors UN Habitat	
1. 4. Determining the roles and responsibilities of the main actors	# Round tables, six months with the main actors # compiling a manual for roles and responsibilities	Working group, municipal committees	All institutions of Kosovo, MoD, NGOs, civil society and the private sector	in 2025	Organization of round tables, 1500 E per year Manual 10 Expert days 3000 Municipal budget, donors UN Habitat	
1.5. Formation of a supervisory body for the implementation of the local disaster risk reduction plan.	Decision of the municipality on the establishment of meetings of the supervisory body, minutes of the meeting	Departments for natural disaster risk management, infrastructure, environmental protection, water management	-	in 2026	-	

1.6 Lobbying for financial support from external and internal donors and interested parties	At least 1 investment attraction conference	Municipality	All institutions of Kosovo, MoD, NGOs, civil society and the private sector	in 2027	1,500 for organizing a donor conference Municipal budget, donors UN Habitat	After risk assessment and project planning, it is up to the authorities to attract funds for the implementation of potential flood risk mitigation projects.
C2: Strengthening capacity for risk management						
2.1. Capacity building, ensuring the level of coordination and cooperation with other institutions in Kosovo and participation in international projects.	Trainings and workshops for municipal officials, fire services at the inter-municipal level	North Mitrovica municipality STATUE Integrated Emergency Management Systems	CSOs	2025-2026	5000 STATUE Agency for Emergency Situations, Donors	
2.2. Adoption of new technical solutions for flood protection, erosion and flood control, for settlements and construction of new facilities	Trainings and workshops for municipal officials, urban planning and fire services	North Mitrovica municipality STATUE Integrated Emergency Management Systems	Focus groups of citizens, Construction companies and consulting companies University	in 2026	5000 STATUE Agency for emergency situations, Business Donors	
2. 3. | Real-time access to confidential data is promoted, using spatial and field information, including geographic information systems (GIS).	Creating a map of flood risk	Work group Departments for natural disaster risk management, infrastructure, environmental protection, water management	Focus group of citizens I Maintenance of businessmen	in 2024	4000 GIS expert Municipality, Donors UN Habitat	
C3: Creating safe and sustainable communities						
3.1. Establishing a Communication	a communication	Working group of	NGOs	2025, 2026,	1500	

Plan for Certain Structures	plan was drawn up	the municipality		2027	Workshops for visioning the plan municipality, Donor Ministry, UN Habitat	
3.2. Compilation and implementation of educational training in emergency techniques	Increase emergency response readiness by 50%	North Mitrovica municipality STATUE Integrated Emergency Management Systems	Fire Service, Media	in 2026	1500 Training municipality, Donor Ministry, UN Habitat	
3.4. exchange of experiences with other municipalities	Regular six-monthly round tables at the inter-municipal and central level	Ministry, KIPA Integrated Emergency Management Systems	NGOs, media	2026, 2027	3000 annually	
3.5 Organization of activities to raise public awareness of flood risks	Increasing public awareness among the general population by 50%	North Mitrovica municipality Work group	NGOs The media	2025, 2026, 2027	1000 For making billboards, ads on radio, television and social media	
3.6. consultation workshop with young people and civil society	A joint document with a plan of activities of youth and civil society to improve the situation in flood protection	North Mitrovica municipality Work group	NGOs The media	2024, 2025	1000 For 2 workshops	
3.7. Identification of representatives of different groups and Mobilization of marginalized groups in drawing up a risk management plan	List of contacts with representatives of various marginalized groups participating in the development of a risk management plan	Work group Office for Communities	NGOs Groups of citizens	in 2024	-	
C4: Raising awareness and promotion in institutions and other entities about risks						
4. 1. Identification of needs for	Report on previous meetings with	North Mitrovica Municipality	NGOs	in	-500	

improving communication and information exchange	relevant bodies at the central, regional and local level Developed instrument for timely communication	Working Group STATUE Integrated Emergency Management Systems	The media	2024	Workshop for the creation of an instrument for communication and information exchange	
4.2. Organization of courses with institutions	Workers of institutions, education, health and other institutions increased their response capacity by 50%	North Mitrovica Municipality Working Group STATUE Integrated Emergency Management Systems	University	in 2025	Development of curriculum, manuals and presentations Per diems for lecturers 7000 Municipality, donors	
4. 3. signing agreements with scientific domestic institutions as well as with international ones in order to prevent the creation of new risks in relevant fields.	Signed MoU with the University of Mitrovica, IBC-M and the consortium of universities from the Erasmus + Natural Disaster Risk Management project	North Mitrovica Municipality Working Group	University, IBC-M The media	in 2025	Conference 3000	
4.4. Identification of needs for capacity exchange between municipalities	Analysis of inter-municipal cooperation, The report	North Mitrovica Municipality Working Group	NGOs,	in 2024	-	
4.5. Compilation of a regional protocol for facilitating and exchanging capacities	Protocol on cooperation and capacity exchange signed	North Mitrovica Municipality Working Group	Municipalities of the North region	in 2025	300 Drafting of the protocol	

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