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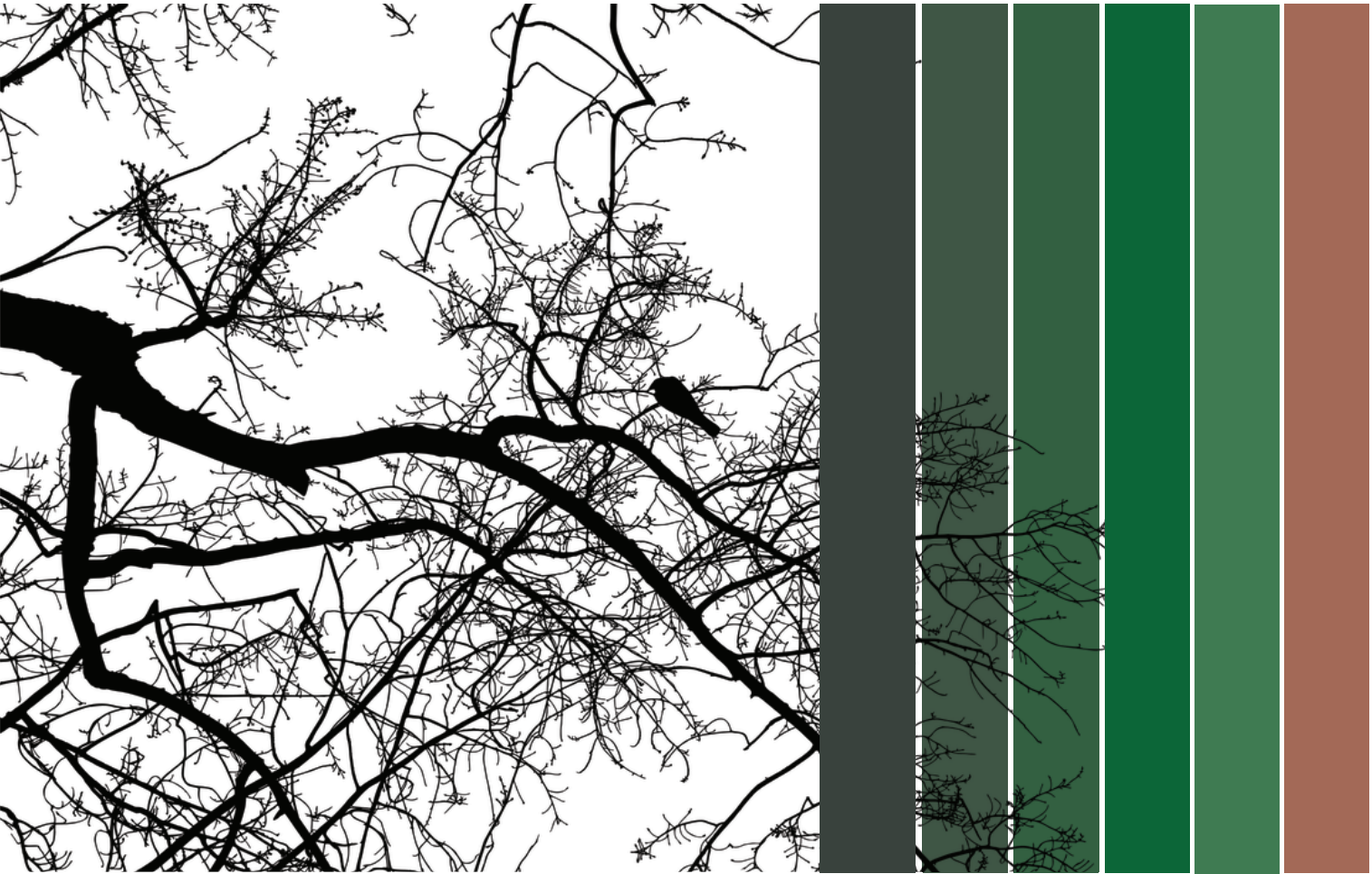
Analysis of environmental protection mechanisms with a presentation of the functioning in a specific case



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Contents

Acronyms

IPH- Institute of Public Health

RMHK- Mining-metallurgical-chemical combine

LEAP- Local Environmental Action Plan

PM2,5- Particles that can only be seen under a microscope

PM10- Particle size 10 micrometers

MAFRD- Ministry of Agriculture, Forestry and Rural Development

MRL-Maximum residue limit

MDK- Maximum allowable concentration

KSZŽS - Kosovo Environmental Strategy

ŠU- Forest Administration

a.s.l– above the sea level Metara

ISO – International Organization for Standardization

Introduction

The concept of environment can be most broadly defined as a complex of physical, chemical and biotic factors (such as climate, soil and living beings) that act on an organism or ecological community and determine its shape and survival. According to the general classification of resources, they are divided into human, physical and natural. Environmental degradation occurs as a consequence of the direct or indirect impact of contaminants and human activities that affect the quality of the environment and the health of citizens. The rapid development of industrialization around the world has seriously endangered the ability of humanity to maintain ecological balance. Industrialization as a precondition for the economic growth of each country included the release of waste by industry resulting in pollution and environmental degradation. To understand the concept of environmental protection we need to understand and explain the concepts. Preservation of the environment in a broader sense aims at its safety and health, as well as reducing the overuse of natural resources. In a word, it is the care of all the components that make up the environment. The notion of environmental protection includes any measure taken to maintain or preserve the state of the environment. Environmental protection can be achieved by reducing pollutants or anything that leads to its degradation. The quality of the environment is the most important factor in the survival of the human species and its management is a complex multidisciplinary task whose strategic basis consists of the principles of sustainable urban development and which can be successfully achieved if there is a well-organized environmental information system. Information systems used for planning and environmental protection have a more or less pronounced management character. A modern approach to environmental management and development planning is not possible without quality, detailed and updated information on pollution sources, and the state of the environment in all areas, available technical and technological solutions, as well as economic analysis and legal regulations. Environmental protection is an integral part of management at all organizational levels, and as a continuous process must be coordinated with social and economic processes (such as health, safety at work, food quality, finance, etc.) and with the regulatory standards.

Standards and principles

A standard is a document that defines rules, guidelines or characteristics for activities or their results (of products or services) in order to achieve an optimal level of regulation. International standards and procedures are established by the international standardization organization ISO i IEC, and together they form the world›s standardization system.

The United Nations Conferences held in Stockholm in 1972 and in Rio de Janeiro in 1992 are very important for the development of standards. The two most significant results of this conference are Agenda 21[1] and ISO 14000. Agenda 21 contains a set of directives for the implementation of sustainable development, which was adopted by 172 countries. Prior to this conference, the UN addressed the International Organization for Standardization, ISO, with a request to develop a single standard for environmental

1 https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf

protection that would be acceptable at the global level. In 1993, the ISO Technical Committee developed a standard for the environmental management system, ISO 14000.

The ISO 14000 series of standards is a set of standards that ensures that business is in line with the requirements of the natural environment (environmental) and consists of two groups:

Standards relating to organizational management and system assessment- (ISO 14001 - Environmental management system - Requirements with guidance on implementation; ISO 14002 - Guidance for small and medium-sized enterprises wishing to certify their environmental management system; ISO 14004 - Management system environmental protection - Principles, systems, support, ISO 14020. ISO 14021 - Labeling and declarations, ISO 14030 - Guidelines for performance targeting and monitoring of environmental management systems).

Standards related to product evaluation (ISO 14022, 14023, 14024 - Product labeling; ISO 14040 + LCA - Product life cycle analysis; ISO14050 - Terms and definitions. RIO UN 1992ISO 1400).

The principles that meet the management of environmental protection according to ISO 14001: 2005 are: environmental policy, planning, implementation, measurement, verification and improvement, continuous improvement.

About the open initiative

«Democracy, Openness and Perspectives of the Serb Community in Kosovo - Open» is an initiative launched in 2020 that aims to develop an open and dynamic space for discussion within the Serb community in Kosovo, dialogue between Serb and other communities, including relevant institutions at the local and central level.

Members of the Open Platform are prominent civil society and media organizations from the Serb community in Kosovo that analyze and assess the impact of civil and political organizations on democracy and openness of the Serb community in Kosovo and analyze and assess the democratic character and openness of institutions, public policies, and processes of importance for the Serb community in Kosovo.

These analyzes will help to see the current situation and perspectives of the Serb community in Kosovo. At the same time, it will serve as a basis for reasoned advocacy activities towards citizens, local and central government institutions, and the international community with the aim of intensifying the engagement of all social actors in strengthening democratic practices and culture of dialogue.

About the study

This report was prepared within the «OPEN» initiative and perceives s at the current state of the environment in northern Kosovo municipalities: Zvecan, Zubin Potok, Leposavic and North Mitrovica, according to the model of environmental protection systems that these municipalities have, as well as based on the opinions of Kosovo Serb citizens on environmental issues.

Methodology

Sample methodology and structure

A face-to-face field survey was conducted in the period October-November 2021. A total of 500 Serb citizens were questioned throughout Kosovo. The questionnaire consisted of 46 questions and covered a total of 6 areas. The sample was intentional, quota, and the criterion for determining the quota was the size of the municipality of housing. The confidence interval is +/- 5. Distribution by place of residence is as follows:

Municipality:					
		Frequency	Percentage	Valid ercentage	Cumulative Percentage
Valid	Leposavić	110	22.0	22.0	22.0
	Kamenica	10	2.0	2.0	24.0
	Novo Brdo	30	6.0	6.0	30.0
	Zubin Potok	50	10.0	10.0	40.0
	Štrpce	30	6.0	6.0	46.0
	Zvečan	60	12.0	12.0	58.0
	Gračanica	60	12.0	12.0	70.0
	Ranilug	30	6.0	6.0	76.0
	Parteš	10	2.0	2.0	78.0
	Klokot	10	2.0	2.0	80.0
	Severna Mitrovica	100	20.0	20.0	100.0
	Total	500	100.0	100.0	

The sample was composed of a total of 60% men and 39.8% women. The average age of the respondents was 42 years. As for education background, a total of 5.4% of respondents completed primary school, 47% of respondents finished only secondary school while 45% of respondents completed higher education. In total, 58% of the respondents were employed while 42% are not working or retired. It is important to point out that there are no official statistics on the demographic structure of the target population, ie the Serb population in Kosovo, meaning the representativeness of the sample can be referenced only as conditional.

Methodology and design of qualitative research - Focus groups

Time:

Survey conducted from October 2021 to January 2022.

Research Instrument:

A discussion guide consisting of 4 thematic areas and 12 questions

Number of focus groups:

4 focus groups, one in each of the municipalities

Total number of participants:

32 participants, 8 participants in each focus group, 17 men and 15 women by gender

Criteria for selection of participants:

Involvement in the socio-political life of the community, with a focus on environmental issues.

Methodology and design of qualitative research - Interviews

Time:

The survey was conducted in the period from May to December 2020.

Research instrument:

The interview guide consists of 4 thematic areas and 16 questions.

Total number of interviewees:

Six (6) interviewees.

Criteria for selection of interlocutors:

Professional engagement and field of education.

Interlocutors: Face-to-face interviews were held with: Advisor to the Mayor of Zvečan, Prof. Dr. Jelena Đokić, Deputy Mayor of North Mitrovica, Adriana Hodžić, doctor of medicine, Zoran Bukumiric, Republic Inspector for Environmental Protection Veroljub Petronić, head of the Ibar Forest Farm, graduated forestry engineer Milo Vukojević, graduated biologist Nenad Milosevic.

Air condition

Air control is legally regulated by the Law on Protection of Air from Pollution 2010/03-L-160 as the primary law in this field, but also by additional acts and laws such as the Law on Environmental Protection 2010/03, the Law on Protection from Natural and Other disaster no. 04 / L-027, Law on Protection against Non-Ionizing, Ionizing Radiation and Nuclear Safety 2010/03-l-104, Law on Biocidal Products 03 / l-119, Law on Hydrometeorological Activity 02 / L-79, Law on Chemicals04 / l-197, Law on Integrated Prevention and Control of Environmental Pollution03-L-043 and other laws and bylaws.

The main sources of air pollution in municipalities in northern Kosovo are the products of fuel combustion in households, heating plants, individual boiler rooms, traffic, construction activities, inadequate storage of raw materials, landfills, the degree of public hygiene and more. It should be added here and inadequate landfilling of industrial waste, which is not only typical for the municipality of Zubin Potok, but in the remaining three municipalities it is one of the most important causes of air pollution.

A GAIA air quality monitoring station has been set up in the municipality of North Mitrovica. It is specially optimized, very precise and easy to use station, designed by Earth Sensing laboratories. Available to the public on the site: https://aqicn.org/map/mitrovice/.

This page shows the measured amounts of PM2.5, particles of this category are so small that they can only be seen under a microscope, PM10 particles - 10 micrometers in size and are also called fine particles, which in certain conditions can be seen with the eye, O3 (Ozone) , NO2 (Nitrogen Dioxide), SO2 (Sulfur Dioxide), CO (Carbon Monoxide), as well as air temperature and humidity, and wind speed.

The air pollution index is determined by scales where each scale is marked with the appropriate color and indicates health implications as a consequence of the presence of the substance in the air. A scale of 0-50 is marked in green and indicates that air quality is considered satisfactory and air pollution poses little or no risk. The scale of 51-100 is marked in yellow, which indicates that the air quality is acceptable, although some of the polluters can cause moderate health concerns for a very small number of people who are unusually sensitive to air pollution. The scale from 101-150 is in orange, which indicates that members of vulnerable groups can have health consequences, while the general public is unlikely to be affected.

The scale of 151-200 is in red and indicates that everyone can begin to experience health consequences, and members of vulnerable groups can have more serious health consequences. The 201-300 scale is in purple and represents health warnings about emergencies, which means that the entire population is more likely to be affected. The last scale is over 300 and it is marked in dark red, which is a health warning that anyone can have more serious health problems. consequences.

Water condition

Water and water resources management in Kosovo is regulated primarily by the Law on Waters of Kosovo 04 / L-147 and the Law on Waters 2004/24, but also by other laws and bylaws. In general, the municipalities that are the subject of this research belong to the Ibar basin, ie the river Ibar flows through all of them. Regular drinking water supply was solved by building a regional water supply project, implemented in cooperation with the municipalities of Zvecan, Zubin Potok and North Mitrovica, while Leposavic has its own water supply system.

Control of chemical and bacteriological safety of drinking water, both from the water supply system and spring water, in the northern municipalities of Kosovo is performed by the Institute of Public Health.

Lake Gazivode, as the most important water potential in Kosovo, was built in 1977 as part of the Ibar-Lepenac hydro system, which supplies northern and central Kosovo with water for irrigation and drinking. Representing one of the largest earth dams in Europe, the lake is also the only serious water resource in Kosovo with very beautiful locations. Its panoramic ambience between Rogozna Mountain on one side and Mokra Gora Mountain on the other, makes it one of the most impressive natural attractions in Kosovo. The lake stretches for 24 km and offers excellent opportunities for swimming, walking and mountain biking. There are several small beaches along the coast. Water from this lake leads through a long canal of 20 km to the water factory in Sipolje in the southern part of Mitrovica. In that factory, the water is processed and it used to be further distributed to consumers in the northern and southern parts of Mitrovica, Zvečan, Srbica / Skenderaj and Vushtrri. Also, the water from Lake Gazivoda is drained through special canals and pumps to Gracanica Lake, near Pristina, where it goes to the consumption system in this city. The lake has no chemical or industrial pollutants, and the biggest problem is the dirt and waste that unscrupulous tourists leave behind. The water control on the lake is also performed by the Public Health Institute in Mitrovica.

The water problem has been occurring in the Ibar basin since its entry into Mitrovica, where it joins the Sitnica river, which is also contaminated. Passing by landfills, which are either temporary cultivated or uncultivated, it receives toxic material that spills out of those landfills. In addition to contamination with heavy metals and chemical compounds, the characteristic is that none of the municipalities in the north has a wastewater treatment plant. so the communal water from the sewage system flows directly into the Ibar, which represents additional contamination of the river itself.

In addition, the risk of contamination with organic substances is posed by the thermal power plants Kosovo A and Kosovo B in Obilić. Coal combustion always causes the danger that the concentration of phenol in the recipients is above the MRL, which damages the ecosystem. Algae often appear in the lower reaches of the Ibar, which are a direct consequence of the excessive concentration of phosphorus and nitrogen.

The analysis of a water sample generally contains about thirty parameters. According to the usual terminology, this is a «big analysis» and it includes:

- physico-chemical and chemical parameters: temperature, limpidity, odor, pH value, dissolved oxygen, VRK, HPK, suspension materials, total phosphates, dry residue, alkalinity, electrical conductivity, etc.

OO chemical testing includes: presence of organic matter, ammonia, nitrite, nitrate, chloride, determination of Ca, Mg, water hardness, phenol, sulfate, etc.

OO Determination of metals such as: Pb, Cu, Zn, Fe, Mn, Cd, Cr, Sb, Ni, etc.

The table below shows a part of the obtained test results, interesting for the analysis of the problem.

O Table 1. Physical and chemical characteristics of the water of the Ibar River[1]

R. br..	Examined parameters	Measuring point				
		1.	2.	3.	4.	5.
1.	PH value	7,81	7,67	7,94	7,92	8,11
2.	Sulfates	55,56	62,15	63,38	72,64	63,38
3.	Chlorides	63,00	65,50	53,50	55,20	50,80
4.	Nitrites	0,167	0,196	0,196	0,187	0,133
5.	Nitrates	16,20	15,90	14,20	12,60	12,60
6.	Phosphates	1,12	0,72	0,037	0,038	0,090
7.	Cyanides	0,074	0,063	0,054	0,015	0,007
8.	Uk. Hardness in 0D	11,89	11,54	11,09	11,87	12,32
9.	Suspend. matter	11,08	13,18	10,54	9,02	8,62
10.	Dry residue	247,30	223,00	209,70	207,70	214,90
11.	Uk. sedimentary mat	258,38	236,18	220,24	216,72	223,52
12.	Pb	0,26	0,34	0,42	0,32	0,48
13.	Zn	0,09	0,08	0,09	0,04	0,06
14.	Cu	0,01	0,02	0,01	0,01	0,18
15.	Fe	0,06	0,31	0,13	0,13	0,06
16.	As	0,0038	0,00185	0,0198	0,0180	0,0226
17.	Ni	0,0038	0,0042	0,0045	0,0014	0,0068
18.	Cd	0,000659	0,000745	0,00050	0,00054	0,00055
19.	Hg	0,000063	0,00285	0,000235	0,00103	0,00226

1 The impact of Trepca on the pollution of the Ibar and the proposed protection measures, prof. dr. Milan Barac

Condition of the land

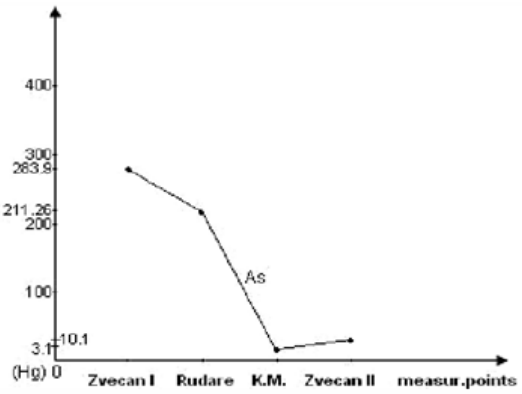
The importance of soil quality comes primarily from the fact that land is the source of the food we consume. Contaminated soil usually leads to contaminated food, which results in endangering the health of the population. Most of the fertile and arable land in northern Kosovo›s municipalities is located right along the Ibar River, especially in the area of Zvecan and Leposavic. The very structure and composition of land in these municipalities has not been subject to scrutiny by public services in the Kosovo system.

Measurement of concentrations of heavy metals in the soil is performed by the PHI in accordance with the rules on permitted quantities of hazardous and harmful substances in the soil and irrigation water and methods of their testing (SlRS, No. 23/94).

Consequences of the work of RMHK Trepca still affect soil degradation because there is a large amount of pollutants released in the process of production of lead, zinc and the chemical industry, deposited in tailings or scattered around. Numerous studies have shown that the land within a radius of 10 km from the lead smelter in Zvečan is seriously polluted, mainly with heavy metals such as lead, arsenic, mercury, zinc, copper, nickel and chromium. Concentrations of other heavy metals in the soil in most cases exceed the MRL, which resulted in their higher concentration in plants used for human consumption[2].

2 Implementation of the Environmental Protection System in the Territory of Kosovska Mitrovica and Zvečan Municipalities, Gordana Milentijević, Jelena Djokić.

O Arsenic (As), mercury (Hg)



The given diagram shows that the concentration of arsenic exceeds the maximum permissible amount of hazardous and harmful substances of up to 2 mg / kg of soil, while mercury is not isolated. Concentrations of other heavy metals in the soil in most cases exceeded the MPC, which had the effect of their concentration in plants used for human consumption[3].

Additional threats to the land are frequent floods of the Ibar River, which, carrying heavy metals flowing from industrial landfills as well as the amount of phenol as a result of coal combustion, floods agricultural lands, leaving hazardous metals and phenol in the soil itself.

KSZŽŠ points out that the main environmental problems affecting the land surface are mainly related to temporary and permanent loss of land caused by illegal construction, the impact of industry, erosion, mined areas, municipal sanitary landfills and industrial waste.

3 Ibid

Industrial landfills - Trepca as the most important factor of pollution

The works in Trepca were carried out during the Roman times, but reliable data on that do not exist. The peak of the development of mining and metallurgical activity in Serbia was in the 13th - 15th century, during the medieval Serbian state. In addition to Trepca, other lead, silver and gold mines have been opened in the wide area of this region: Novo Brdo, Janjevo, Zaplanina, Rogozna, Belasica. The first written documents about Trepca date from 1303, and are in the archives of Dubrovnik. With the invasion of the Turks on the Balkan Peninsula, mining in Trepca declined, and with the conquest of Trepca and Novi Brdo in 1455, it gradually died out, only to cease completely at the end of the 17th century.

Only after the First World War, the English company "Selection Trust" became interested in these old - medieval mines - The English-Serbian Company "Trepca - Mines LTD" was founded in 1926. Exploitation began and already in 1929 the reserves amounted to 1,700,000 tons of rich lead-zinc ore. As early as 1930, flotation, power plants, cable cars and other facilities were built in Zvečan. From 1930 to 1939, the concentrates were exported, and then a smelter with a capacity of 28,000 t / year was built. of 6 Newman (trough) furnaces and refining with 4 three-ton listed[4].

During and after the Second World War, new mines were opened (Ajvalija, Novo Brdo, Kopaonik), new mines and flotation plants in four republics of the former Yugoslavia, now independent states (Serbia, Montenegro, Bosnia and Herzegovina).

Herzegovina). At that time, Trepca had 22 mines and 12 flotations. In 2000, parts of Trepca in Kosovo fell under UN administration.

Lead metallurgy, where lead concentrate was processed, was developed in Zvečan. Zinc concentrate was processed in K. Mitrovica, where both the chemical industry and the battery factory operated. Other Trepca industrial processing plants were located at the following locations: Industrial batteries in Pec, alkaline and diesel batteries in Gnjilane, accumulation systems in Novi Pazar, Bujanovac and Sombor.

The development of Trepca also led to environmental degradation. The consequences of that are still being felt today. It is important to note that in this area, from Pristina through Kosovska Mitrovica to Raska (i.e. from the mines Ajvalija and Kisnice to Suva Ruda), at a distance of 120 km, there are 16 huge military-technical fleets. They contain heavy metals and non-metals, polluting chemical compounds and toxic substances. They cover an area near Gračanka, Sitnica and Ibar over 300 ha with a mass of over 100,000,000 tons. Both passive and active landfills endanger the air, water and land, especially the surfaces and groundwater, and the pollution of the Ibar River causes that Danube waters is endangered. According to these pollutions during the work until 2000, and after, the region of K. Mitrovica became recognizable not only in Serbia but also in southern Europe.

The Trepca tailing piles in the middle course of the Ibar are flotation (seven of them), as well as two from the slag of shaft furnaces, i.e. ashes from coal combustion. Lead-zinc-pyrite ore is enriched in flotation concentration plants. The mineral composition of the ore is: galena (PbS), sphalerite (ZnS), pyrite (FeS2), magnesite (Fe3O4), argenite (Ag2S), chalcopyrite (CuFeS2), arsenopyrite (FeAsS) and others. Their representation is different, depending on the location of the mine. The process of selective concentration is performed so that on the one hand, concentrates of

4 The impact of Trepca on the pollution of the IBRA River and the proposal of protection measures, prof. dr. Milan Barać.

lead and zinc , and on the other hand, tailings and waste materials are formed. During the process of flotation concentration of minerals lead and zinc are used in different types of reagents and in different quantities: Na-2CO3, ZnSO4, Na2SO3, KEKS, KAKS, NaCN, CuSO4, Ca (OH) 2 and others.

The tailings are mostly made of andesitic rocks, i.e. siderite and anherite, then alkaline carbonates, quartz, clay mass. The presence of heavy metals and non-metals (Pb, Zn, Cd, Fe, As, Cu, MnO, SiO2, MgO, Cr2O3, CaO, etc.) and various chemical compounds during flotation, with different pH values in landfill, which represent ecological area load.

Lead concentrates are processed in the lead smelter in Zvečan by oxidation-reduction process. The obtained raw lead with 95% Pb goes to refining, while the slag of shaft furnaces goes to the landfill. Its chemical composition is given later, but here we should mention that due to the composition of ZnO (10-12%) granulated slag from shaft furnaces is very interesting for the valorization of zinc.

The combustion of lignite in the Trepca power plant in Zvečan produces ash, and the processing of coal in gas generators produces gas and slag. Ash and slag are deposited in a special tailing piles.

Each of the tailing piles has special physical and chemical characteristics and properties. We present them in the direction of the Ibar River, from south to north:

The flotation tailings pile "Žarkov potok" is located on the right bank of the river Ibar, in the bay of the stream, 150 m away from the main road Kraljevo - Skopje. The exploitation of this flotation tailings began in 1974 and so far 11,970,000 tons of tailings from the "First Tunnel" flotation have been deposited. The tailing pile occupies an area of 22 ha and is active;

OO The flotation tailings pile "Gornje polje" is located on the right bank of the river Ibar, between Zvečan and Kosovska Mitrovica. It is on the river itself and is a passive landfill. The exploitation of this tailings began in 1930 and ended in 1963. The flotation material is from the old flotation in Zvečan (later moved to the First Tunnel). It covers an area of 50 ha and a total of 15,000,000 tons of tailings have been deposited;

OO The slag landfill of shaft furnaces is a metallurgical landfill and is still active. It is located on the right bank of the river Ibar, near the industrial circle in Zvečan. It covers an area of 8 ha and 2,500,000 tons of shaft furnace slag has been deposited;

OO The landfill of ash and slag from coal combustion is located in Zvečan on the right bank of the river Ibar, next to the road Kraljevo - Skopje. It covers an area of 8 ha, and the mass of disposed ash is 300,000 tons. The landfill is passive, not recultivated;

OO The flotation tailings pile "Žitkovac" is located on the left bank of the river Ibar, next to the railway Kraljevo - Skopje. It is passive, and recultivation is poorly performed, and since there are erosions, surfaces and groundwater continue to pollute the Ibar River. The tailings were exploited from 1964 to 1973, when 7,050,000 tons of tailings from flotation in Zvečan were deposited. The landfill covers an area of 26 ha;

OO The flotation tailings pile "Gornji Krnjin" is located in Leposavic on the right bank of the Ibar River, next to the railway and the main road Kraljevo - Skopje. It was exploited from 1972 to 1979. 2,600,000 tons of tailings were deposited there. It covers an area of 7 ha, it is passive and partially recultivated;

OO The flotation tailings pile "Bostanište" is located next to the landfill "Gornji Krnjin", also in Leposavić. It has been active in exploitation since 1979. It covers an area of 30 ha and so far 3,500,000 tons of tailings from flotation in Leposavić have been deposited;

OO The flotation tailings pile "Veliko i Malo polje" is located on the right bank of the Ibar in Rudnica. It is passive and not recultivated.

It covers an area of 18 ha, and 3,600,000 tons of tailings from the "Suva ruda" flotation in Rudnica were deposited there.

The flotation tailings pile "Kukanjica potok" is also in Rudnica, a little further from the Ibar (1.5 km), above the road Kraljevo - Skopje. It is active, covers an area of 19 ha, and so far 1,080,000 tons of tailings from flotation in Rudnica have been deposited there.

The danger to the environment that these landfills represent can best be seen from the table showing the chemical composition of each of them:

Metals and non-metals	LANDFILL NAME									
	Gornje Polje I	Gornje Polje II	Šljaka šahtvih peći	Pepeo	Žitko-vac	Gornji Krnjin	Bosta-nište	Veliko Polje	Malo Polje	Kukanjica potok
Pb	0,615	2,790	3,26	0,211	0,321	0,366	0,245	0,275	0,284	0,298
Cu	0,039	0,123	0,224	0,038	0,032	0,012	0,017	0,061	0,127	0,014
Zn	0,096	0,470	8,46	0,072	0,125	0,132	0,178	0,585	0,410	0,978
Cd	-	-	-	-	-	-	-	0,0024	0,0022	0,0050
Ni	-	-	-	-	-	0,028	0,012	-	-	-
Mn	0,280	0,140	0,750	0,091	0,70	0,320	0,750	0,310	0,290	0,990
Ca	8,060	3,030	12,03	9,230	6,880	3,260	5,200	6,730	7,140	3,420
Mg	0,056	0,059	1,030	1,010	0,130	0,300	2,100	0,250	0,540	2,090
SiO_2	24,42	12,68	21,00	31,01	22,40	41,29	32,17	43,46	44,30	53,04
Fe	17,42	26,08	25,71	8,25	18,55	18,13	18,53	14,55	16,01	9,35
S	8,480	18,69	1,010	0,610	7,580	4,240	10,10	1,310	2,020	7,070
Al_2O_3	1,620	1,050	3,260	9,620	3,790	3,140	6,510	10,10	7,410	10,80
As	0,210	0,320	0,061	0,028	0,420	0,360	1,260	0,036	0,058	0,110
Sb	0,022	0,290	0,091	0,011	0,019	0,010	0,077	0,014	0,022	0,015
Bi	0,012	0,024	0,028	0,0024	0,091	0,079	0,061	0,033	0,042	0,021

Very poorly recultivated or not recultivated at all, these landfills are usually located on the banks of the Ibar River, which allows toxic elements to flow into the river. This phenomenon occurs especially in rainy periods and periods of melting snow. The water from the river Ibar is not sampled regularly, nor is its chemical composition analyzed, but it is more the subject of individual scientific research papers. In its study, EMEG obtained the results presented in Table 1. (Water condition).

Waste management

Municipal waste and its inadequate management is one of the biggest environmental problems in municipalities in northern Kosovo. The regional landfill in the municipality of Zvečan was built in 2002 in a place called Balaban for the needs of northern municipalities, but due to the length of the road and unprofitable transport, the municipality of Zubin Potok did not use this landfill but continued to use the landfill in Gazivode (Lučka Reka)which is characterized by frequent fires at the landfill itself. As the landfill in Balaban has fulfilled its capacities, North Mitrovica, as the largest producer of municipal waste, but also Zvečan, is starting to dispose municipal waste at the site of the industrial landfill in Žitkovac, and the other part of municipal waste is disposed in illegal landfills in these municipalities, which greatly affects the general hygiene of the space and does not exclude the occurrence of various infections. Such a solution is absolutely unacceptable, seen from the point of view of experts in ecology. The construction of the Savina stena landfill in the municipality of Zvečan will provide space, but the question of many illegal landfills that are visible in these municipalities remains in terms of their rehabilitation.

There is no system for separating medical waste and its special treatment, which, given the amount of such waste coming from the Clinical Hospital Center in Mitrovica, as well as other medical institutions in the northern municipalities of Kosovo, presents a special type of risk. Despite many conversations about garbage recycling, recycling itself has never taken root in municipalities in northern Kosovo.

Public utility companies in these municipalities are responsible for municipal waste and according to the interviewees and focus groups we find that they are very active, which means that they regularly collect garbage and empty containers. In urban areas, especially in North Mitrovica, it is evident the low awareness of citizens who largely dump waste behind buildings and structures and create huge landfills that are a potential source of infection. There are many illegal landfills in rural areas and there is no organized municipal waste storage system.

A special problem in the municipality of Zubin Potok is the waste left by tourists, which is not a small problem considering the number of visitors to the lake on both sides of the administrative line.

Forests - Case Study

The importance of forests in the areas covered by this report can best be seen by recognizing the fact that forests, through the process of photosynthesis, their green leaves and tree needles, convert atmospheric CO2 into solid carbon that is stored in biomass. The status and change of these stocks of carbon, dead wood, garbage and land determines the status of the forest as a storage or source of CO2.

Forests are covering 47% of Kosovo›s territory, 62% in public and 38% in private ownership[5].

Forest management in Kosovo is under the authority of the Ministry of Agriculture, Forestry and Rural Development (MAFRD). Legislation in this area is based primarily on the Law on Forests in Kosovo 2003/3, but also on other laws that directly or indirectly regulate forest management, such as the Law on Special Protected Areas no. 03 / L-039, Law on Protection from Natural and Other Disasters no. 04 / L-027, Law on Hunting no. 02 / L-053, Law on Environmental Impact Assessment no. 03 / L-024, Law on Environmental Protection no. 03 / L-025, Law on Fire Protection no. 02 / L-4, Law on Nature Protection 03 / L-233, and other laws regulating related matters. In addition to legal acts, strategic documents in the field of forestry have been adopted, namely the Policy and Strategy for the Development of the Forestry Sector 2010-2020, and the Action Plan for the Implementation of Policies and Strategies 2010-2020, the Strategy and Action Plan for Biodiversity 2011-2020.

Until the beginning of the Brussels dialogue, all control over forests in the northern municipalities of Kosovo was performed by the company "Srbija shume". This was a problem in the north of Kosovo, where excessive deforestation was not legally punished. The situation is further complicated by the duality of the system and the existence of parallel institutional structures that are not functional. If the illegal woodcutting on the territory of the municipalities in the north of Kosovo is determined by the inspectors of the PE «Srbija shume», the police do not go out in the field and do not submit reports because they do not recognize the authority of that institution within the Kosovo system[6].

With the beginning of the Brussels negotiations, there is a slight change in the situation. As there is a department of the Kosovo Forestry Agency in the southern part of Mitrovica, which has jurisdiction over municipalities in northern Kosovo, through the Brussels agreements it has been agreed that inspectors from northern municipalities should be hired to operate in the Kosovo system. Although this has happened, the officials in charge of marking during the cutting and issuing of shipping documents for the transport of wood, very rarely go to the scene. In conversations with locals, through organized focus groups and interviews conducted as part of this research, we concluded that although there are employees of the Forestry Agency, almost all activities related to legalization of woodcutting and shipping documents are performed by only a few employees. Marking of wood for cutting absolutely not apply but entire areas are cut, regardless of the size and quality of the wood.

According to the data of "Serbia sume", 53,000 hectares of forests in the territory of the northern part of Kosovo are in public ownership. There are 38,000 on the territory

5 Kosovo National Forst Inventoty 2012. https://nfg.no/wp-content/uploads/2019/01/Kosovo-National-Forest-Inventory-2012.pdf

6 Šume na Kosovu, bogatstvo koje nestaje, http://www.lokalnirazvoj.org/upload/Publication/Documents/2016_12/Sume_na_Kosovu_bogatstvo_koje_nestaje.pdf

of the municipality of Leposavic, and the rest belongs to the municipality of Zubin Potok. There are 26 thousand hectares privately owned.

According to the same data of "Serbia sume", in the past 20 years, over 623 thousand cubic meters of forests have disappeared from an area of almost nine thousand hectares by illegal logging in the territory of the administrative line. Only in 2019 , by the end of October, over 12,000 cubic meters of wood were cut in that area, and immeasurable environmental damage was done

O Presentation of the destroyed hill in the municipality of Leposavici

O Site of illegal felling of halortrees Zubin Potok

The most drastically affected areas are the Kopaonik area in the municipality of Leposavic, the area of Rogozna and the area of Mokra Gora in the municipality of Zubin Potok. In the area of Kopaonik and Rogozna in the past 20 years, there has been a significant increase in deforestation and degradation of forest ecosystems in these two mountains, but also land degradation and impact on the Ibar river basin, which flows between these two mountains. A completely unplanned and uncontrolled deforestation initiated and will initiate an exceled problem for further development of the area, changes in the micro-climate and biological characteristics.

Having in mind the complete legal vacuum created due to the existing legal regulations in the area of Kosovo (where part of the observed area is located), as well as the inability of the Serbian authorities to react adequately in that area in the period after 1999, an increasing cutting of forests occurred. It culminated several years ago, especially in the area of the Municipality of Leposavic. Entire forest complexes, decades-old and centuries-old forests have been cut down, often according to the so-called naked cuts system.

It is a devastating fact that most of that wood was sold as a basic raw material (firewood) in the area of Kosovo, leaving the bare slopes of the hills, exposed to the effects of erosive influences, the consequences of which are yet to be shown. Some forest sites are completely devastated. Areas in both state and private ownership are endangered. It is completely expected that the mentioned situation will lead to further change of ecological characteristics in the area of Kopaonik and Rogozna. This can result in further negative impact on the flora and fauna of these mountains and on the characteristics of the natural asset. This state of forests resulted in the destruction of wildlife habitats and the intersection of their roads, which caused a decline in the number of wild animals and endangered their habitats, which was also noticed by members of hunting associations.

Despite this situation on the ground, this problem has not been adequately addressed, so its solution has not yet begun. This project aims to point out the mentioned problems and start social trends in the direction of solving them. Therefore, the project plans to gather the NGO sector, experts, and representatives of interested associations, local governments, media and citizens in order to define directions for action in solving environmental problems.

Graduate biologist Nenad Milosavljevic, an activist in the field of ecology, states that when looking at the general characteristics of forest ecosystems, all types of forests in the first degree of systematization enter into certain large units - complexes (belts), which are differentiated under the influence of three basic factors for life of forest vegetation: temperature, humidity and altitude.

The following complexes are characteristic in our area: a) complex (belt) of xeromesophilic sessile oak and hornbeam forests and b) complex (belt) of mesophilic beech and beech-coniferous forest types.

Given the presence of the main species of trees in this area, the following types of forest communities dominate:

OO Sessile oak and Oak forests - These forests form the transition between pure sessile forests and clime-zonal vegetation of the most common malt and oak communities. They occupy the lower belt of sessile forests and a very wide range of different soil types.

OO Sessile and black ash forests - A fairly widespread plant community occupies terrains on the altitude from 1000m.

OO Sessile and white hornbeam forests - It is a very dry variant of forest communities, inhabits on warm, south-facing, shallow and skeletal habitats.

OO Sessile and linden forests - This forest community occurs in smaller areas, mainly occupies the southern and eastern exposures and reaches altitude of about 1000 m.

OO Sessile and hornbeam forests - Very represented community in this area. It mainly inhabits richer habitats with a greater amount of moisture exposed to the north.

OO Malt and oak forests - A plant community that extends to the altitude from 500 to 900 m above sea level occurs along rivers and streams.

OO Beech forests in the oak region - Occur in the lower altitude in the belt of oak forests, on deep lands and northern exposures.

OO Mountain beech forests - Very represented forest community and important from the economic point of view. In the lower regions, it occurs in the northern and northwestern expositions, in the higher parts in ravines, along streams and rivers.

OO Subalpine beech forests - According to ecologically-arbitrary characteristics, these are better quality stands in this terrain, which occur on deep and acidic soils on the altitude above 1000 m.

OO 1Subalpine beech forests - Occupy the highest terrain in our area from 1500-1700 altitude i.e. at the very limit of the distribution of beech on poorly productive lands. These forests are of poor quality (deformed, low, grenade trees).

It should be noted that above the belt of subalpine beech there are large areas of pastures, overgrown with pasture grasses, and in smaller parts with blueberries and rare spruce offspring.

When observing forest functions - considering the previously mentioned data on forest cover, percentage of forest origin (high, coppice and mixed by origin), then values and amount of wood volume per area, current increment and other values - it can be concluded that it is extremely small wood pulp production, given the environmental conditions listed. Therefore, apart from the production function of forests, all other forest functions and all other functions

are reduced to a minimum. In the last twenty or more years, there has been a significant degradation of forests, as complex formations of biogeocenoses, as well as forest land and microclimate in this area.

The functions of the forest are manifold. They are a source of wood and food, but they are also a factor in the preservation of water, land and air, and at the same time they play a significant role in cultural, sports, recreational, tourist and other human activities.

According to the long-term manager of the forest farm «Ibar», graduated forestry engineer Milo Vukojevic - it is necessary to restore the devastated forests, to cover areas where complete devastation was carried out (remove all timber), and parts where other parts of the forest are preserved, conduct regular care measures, which avoids bare cutting on a large area and provides a group mixture of planted and wild species.

In order to save labor force and achieve better reception of seedlings, it is recommended to prepare the soil by machine, by undermining with a ripper on all terrains that enable machine work, except on skeletal soil where there is a possibility of erosion. It is recommended to prepare the soil for spring planting in the fall and vice versa, so that the soil under the influence of extreme temperatures and atmospheres is better fragmented and creates reserves of moisture. On this prepared soil, planting should be done wherever possible by machine, where this is not possible, by hand. For more efficient reception and later care, use trained seedlings; the larger the soil is more prone to weeding. If coniferous species are used, use seedlings between 30-50 centimeters, and if they are deciduous, height above 60 centimeters.

Afforestation bare lands and clearings

In order to increase the total forest cover in accordance with the financial possibilities, it is necessary to start afforestation of bare lands and clearings in all those places where there are appropriate environmental conditions. Previously given recommendations regarding the restoration of devastated forests largely relate to the afforestation of bare land. Here, too, it is very important to include larger continuous areas of better quality, especially those on closer slopes, where the use of mechanization in land cultivation and planting is possible. On surfaces with a grass carpet, it is obligatory to rip the terrain before planting, where you should not be afraid of erosion, regardless of the direction of the furrows, because they take over surface water and lower it into the soil, where it infiltrates and gradually drains into deeper layers. Regarding the choice of species for planting, the principles that apply to the groups of ecological units, where the bare ones are located, should be adhered to. Avoid creating monocultures on larger areas. Therefore, complementary species should be grouped together in the main species, using microcellular variability. It is good to plant deciduous trees (maple, beech, bear hazel, wild cherry) and others in small impurities inside the conifers. Adhere to the rules of slightly denser planting than during the reconstruction of devastated forests (two-needle pines approx. 3000 pcs / ha). As a rule, when the habitat conditions are more favorable, the soil is deeper, sharper and fresher, the seedlings should be larger and less frequently placed, and the more unfavorable the conditions, the seedlings should be younger and more densely planted.

In unfavorable edaphase conditions, skeletal and dry soils, seedlings with sod are recommended.

Cut shoots and remove weeds by hand

Considering that no cultivation measures have been implemented in artificially raised crops in our area lately, and they are in desolated state, it is necessary to pay special attention to these areas in the near future. Weed intensity is directly related to the ecological

and production characteristics of the land. If the production characteristics of the soil are stronger, the risk of harmful effects, both herbaceous and woody species, is greater, and if maintenance is neglected, it will inevitably hinder the development of culture.

If weed control is taken care of in a timely manner, it is very successfully carried out mechanically. Mowers, or short cropper, are used to suppress competitive vegetation around seedlings with a diameter of 0.7-1 m, and due to economy on the rest of the surface, weeds and shoots are not touched, because they do not represent competition. This breeding measure should be carried out according to all the rules that apply to different crops and different habitat conditions.

Replenishment of artificially raised crops and initiation of their natural renewal

On the areas where the reconstruction and afforestation of bare lands has been done, as a rule, filling is done. With this measure, it is necessary to include those areas where the reception failed, replacement of broken, dried, overgrown plants and areas is performed, where the wilting of seedlings is expressed in groups.

Well-developed and richly rooted, i.e. plants from containers close to the surviving seedlings are used for filling.

Hoeing and dusting

Implement this measure after the eventual establishment of new cultures, for the purpose of normal growth and development, adhering to the necessary instructions.

Geographically, the territory of the Leposavić Forest Administration extends between 18 ° 17 ‹and 18 ° 40› east longitude and 43 ° 00 ‹and 43 ° 14› north latitude. The relief features are very diverse. The lowest point above the sea level is located in the confluence of the Vračarska river and the Ibar, and the highest is on Pančićev vrh at 2017 meters. In addition to this elevation, we should also mention «Musinac» at 1725 m above sea level; Pilatovica 1703 above sea level etc. The narrow belt of the flat land is located next to the left bank of the river Ibar. Observed as a whole, the terrain is extremely hilly, intersected by streams and ravines. As for the slope, it is usually moderately steep, and there is also a slightly sloping terrain.

Hydrographic conditions - The river Ibar as the main river potential in this area belongs to the Black Sea basin. The rivers flowing into the Ibar from the Kopaonik side, and having significant amounts of water throughout the year, are: Bistrička, Dresnka, Tvrđanska, Leposavska, Dobravska, Ceranjska and others. These rivers receive water from numerous springs and forest streams. The largest amounts of water are, understandable, during the spring months when the snow melts. The wealth of water is conditioned by the geological composition of the terrain as well as by the favorable precipitation regime, which will be discussed in the following text. Geological conditions - So far, no detailed geological research has been performed on the forest management works in the area of the Leposavić Forest Administration, so some literature data from the wider area have been used.

According to the data of J. Cvijić, the central part of the Kopaonik massif is composed of granite. At the edges of this nucleus comes a belt of contact metamorphic shales, defined as various types of cornites. Above this envelope of the central granite core, serpentine is deposited on almost all sides, and there are especially significant masses of serpentine towards the gorge of the river Ibar. In addition to serpentine, there are other rocks, such as metamorphic shales, crystalline shales, rhyolites, etc. According to the geological map in the scale of R 1: 500000, the geological base in this terrain is composed of adensite, rhyolite, dacite (and their tuffs), then peridotite, gabbro, etc. According to the

study of the Institute of Water Management Belgrade, the geological composition is a flysch of the Upper Cretaceous. In the layer of the parent rock, there are marls, sandstones and clay shales. On the geological map of Serbia, the geological base is composed of dacitoandensite tuffs, dacitoadensites, diabases, serpentines and Upper Cretaceous flysch.

Pedological conditions - Pedological conditions are directly related to the geological basis of the terrain. They are very important for the proper growth and development of forest vegetation. Given the diversity of the parent rock, which we have previously concluded, there are different types of soil, both in depth, quality, structure and productivity.

Apart from the parent rock, the productivity of the soil depends on the depth and the presence of various nutrients in it. Based on all this, it can be concluded that in the future more attention must be paid to the study of different types of land in this field and within that adjust the growth and development of indigenous tree species, as well as the necessary introduction of indigenous species.

Climatic conditions - The climatic conditions of one region depend on many factors that act in that area. In the first place, we should mention the air temperature, precipitation, winds, altitude, etc. When studying the climatic conditions of one region, all these elements should be analyzed and synthesized in order to get an accurate picture of the climate characteristics of a particular area.

Air temperature

The average monthly air temperatures for this area have the following values:

Muaj ne viti.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
tem. ajr. C°	1.5 (-)	1.3 (+)	4.9 (+)	10.1 (+)	14.5 (+)	18.5 (+)	20.7 (+)	20.7 (+)	16.0 (+)	10.8 (+)	6.3 (+)	2.4 (+)

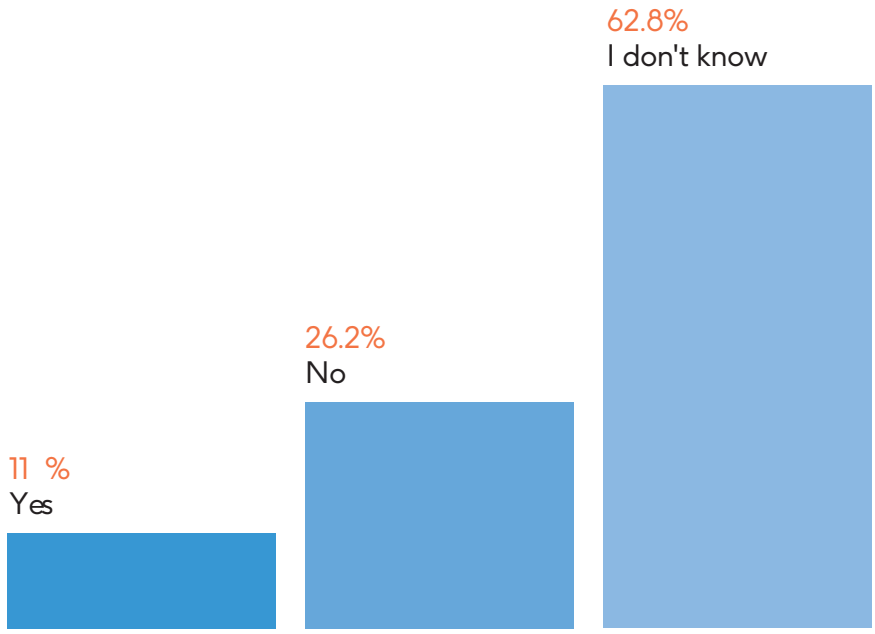
Based on these data, an average annual temperature of 10.7 C ° is reached. These data show that the average annual air temperature is very favorable for all types of trees that grow in this area. Air temperature in the vegetation period is of special importance for forest vegetation. Based on summary data, it can be concluded that in these climatic conditions, vegetation generally begins in April and lasts until the end of September, and in that period the air temperature is very favorable. It should be especially emphasized here that the temperature range is quite large and ranges from 2.8 C ° to + 38.6 C °, which can have a negative impact on the growth and development of vegetation.

In this regard, it is necessary to pay special attention to care and restoration measures, and one should also be careful when introducing new (non-native) tree species. When it comes to the strategy for forestry development, none of the four municipalities in northern Kosovo has adopted strategic documents on forestry development.

Attitudes of citizens

The questions of quantitative research are conceived in a way that on the one hand shows how much citizens know about the activities of competent authorities on environmental protection, and on the other hand shows the desire of citizens to participate in preserving a healthy environment and their experiences in places they live.

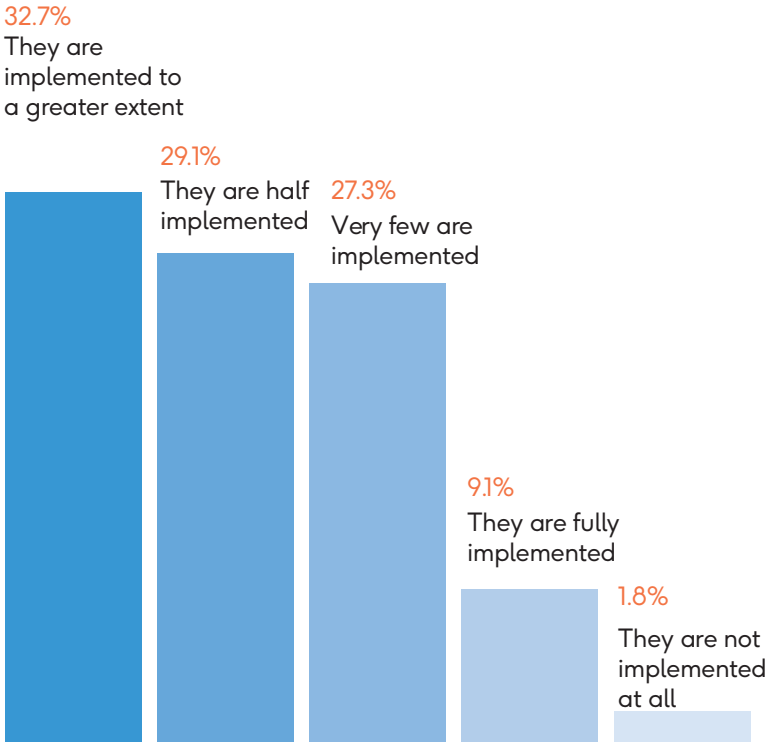
O Graf 1. Does your municipality have an approved Environmental Strategy or Local Environmental Action Plan?



Question: Does your municipality have an approved Environmental Strategy or Local Environmental Action Plan (LEAP) shows us how much citizens know about the existence of strategic documents for environmental protection. As can be seen from the attached, the majority of respondents, i.e. 62.8% do not know, while eleven percent thinks they have, and 26.2% think they do not. It is worth emphasizing here that a large part of the citizens do not know that there are competent services within the municipal administration, i.e. the department that deals with environmental protection, and there is no knowledge about the necessary acts that decision makers must adopt. The fact that in the north of Kosovo none of the 4 municipalities has approved an active LEAP or other strategic document regulating environmental protection, i.e. that the municipalities of Zvecan and Leposavic had approved an expired LEAP, and North Mitrovica and Zubin Potok never drafted that document, says that environmental protection was not among the priorities of decision

makers in these municipalities. The situation is similar with the Serb-majority southern municipalities. It is worth mentioning that the lack of strategic documents in the field of environmental protection is an obstacle and, in most cases, disqualifies the municipality›s ability to apply for projects dealing with environmental protection, bearing in mind that strategic documents are the basis on which the applicant refers[7].

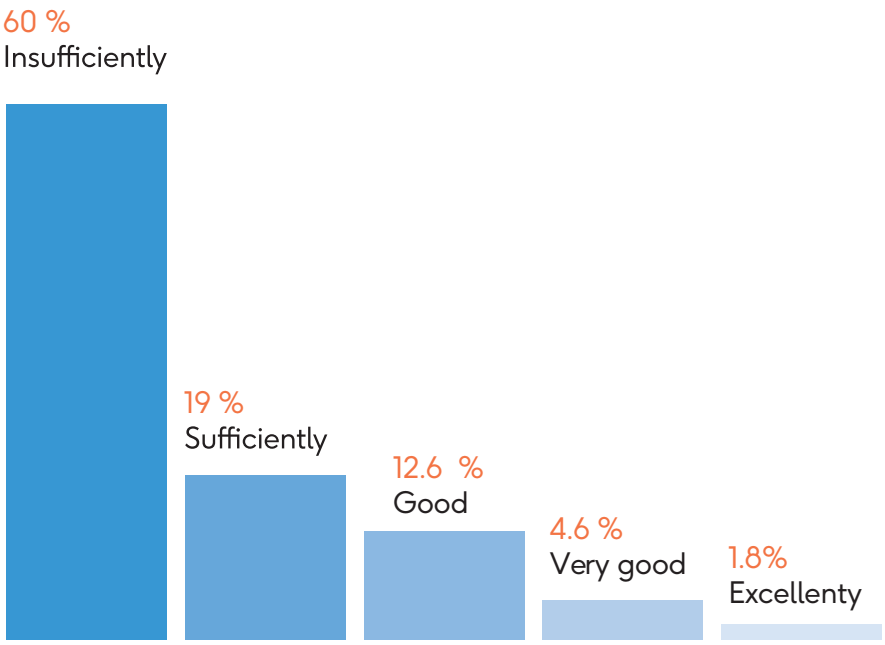
O Graf 2. If your municipality has adopted a strategic document / LEAP, evaluate the implementation of the action plan so far, to what extent are the activities carried out in practice?



As we can see from the attached overview, citizens assess the implementation of activities envisaged by LEAP or other strategic document in practice, in a way that a very small percentage (1.8%) think that activities are not implemented at all, 27.3% believe that very few activities are carried out, 29% of respondents believe that the activities are carried out in half, 32% believe that the activities are carried out to a greater extent, while 9.1% believe that the activities are carried out in full. It should be noted that only 55 participants answered this question, i.e. 11% of the complete sample who were sure that the municipalities have strategic documents..

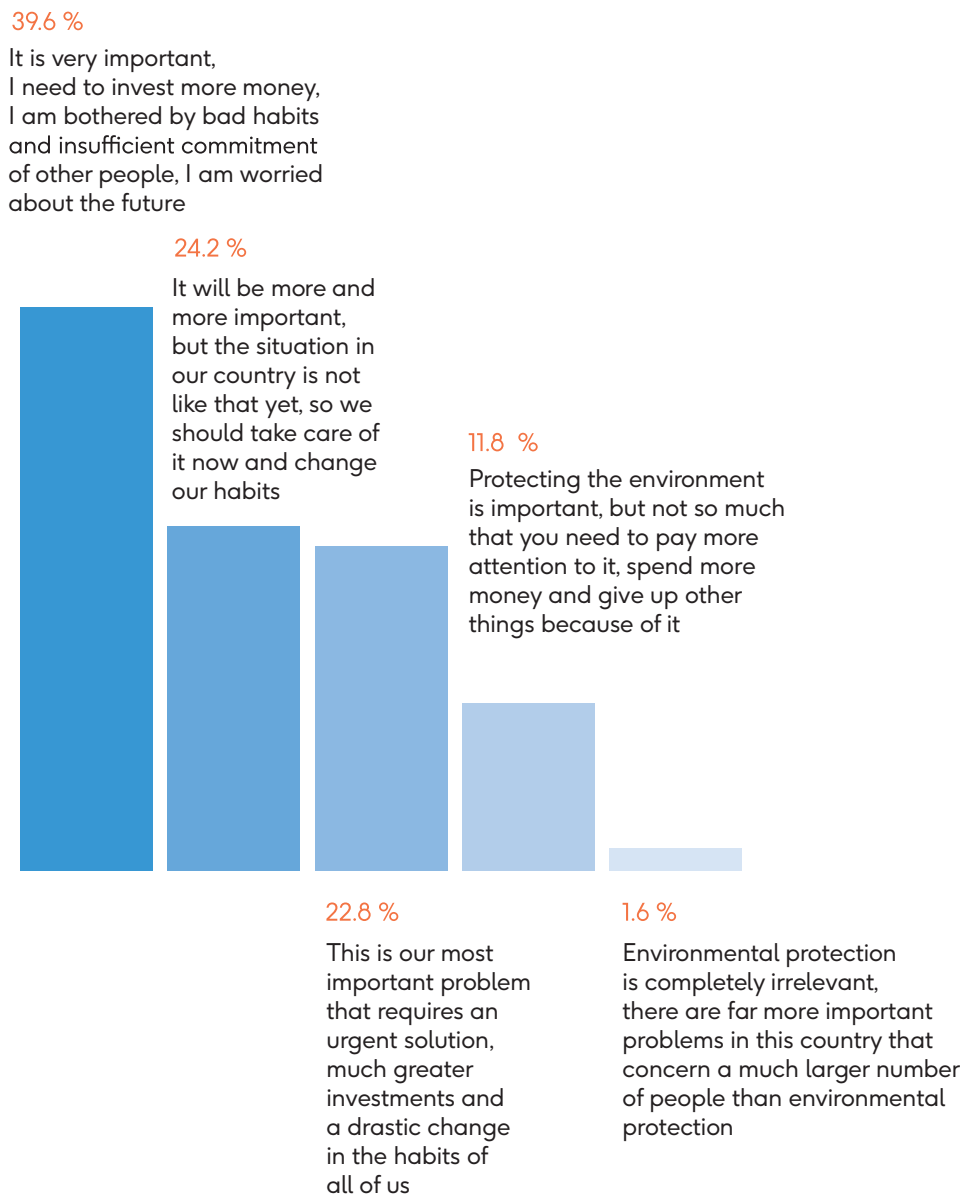
7 https://www.un.org/en/development/desa/population/migration/generalassembly/docs/global-compact/A_CONF.151_26_Vol.I_Declaration.pdf

O Graf 3. Assess your municipality›s commitment to the environment



When it comes to assessing the commitment of the municipality in the field of environmental protection, the largest number of surveyed citizens, 62%, believes that the municipalities are not sufficiently committed. This opinion is supported by the findings from the focus groups where the most frequently repeated phrase «there is a garbage dump at every step» was identified, which indicates a large number of illegal dumps in almost every municipality in Kosovo. This is very pronounced in the north of Kosovo, especially in the municipalities of Zvecan and North Mitrovica, but also the huge amounts of garbage that individuals land in natural resources, such as the shores of Lake Gazivoda, which indicates a lack of waste management strategy, or its non-implementation in recent to all municipalities. 19% of respondents think that municipalities are sufficiently committed to preserving the environment, 12.6% of respondents think they are committed to good extent, 4.6% of respondents think very good and only 1.8 percent think excellent. This presentation clearly shows the need for greater involvement of municipalities in the field of environmental protection, but also greater involvement of citizens in planning and decision-making processes when it comes to important environmental issues. This opinion is completely in line with the information obtained from in-depth interviews and focus groups, that most municipalities do not have complete or no approved any strategic documents that regulate the environment, which is the responsibility of legislators at the local level or municipal assembly.

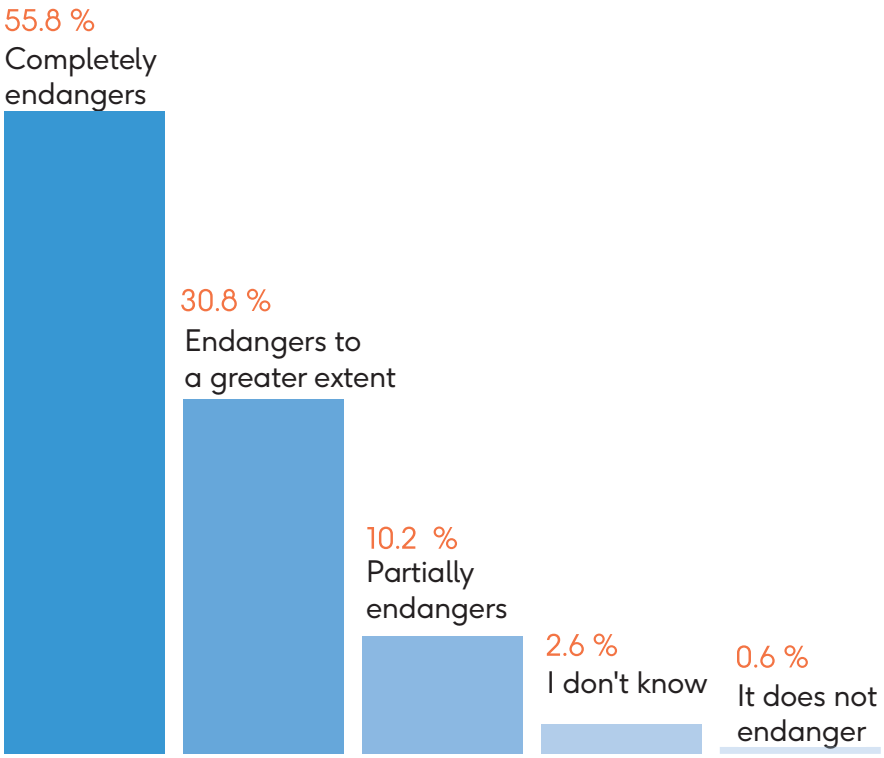
O Graf 4. How important is environmental protection to you personally, and do you consider environmental protection to be your personal priority?



How important environmental protection is and how much citizens consider it their priority is best shown in the following overview, where only 1.6% think it is not important because there are bigger problems, 11.8% think it is important, but that it should not be devoted more attention or money at the expense of other things, 24.2% think that it will be more and more important and that habits must be harmonized now, 39.6% think that it is very important, that more funds need to be invested and that they are bothered by insufficient efforts, while 24.2% think that this is our most important problem that requires an urgent solution through greater investments and changing habits of the whole society. From what has been shown, we can see that the awareness of citizens about the importance of the environment is at a fairly satisfactory level. On the other hand, the fact that the World Bank ranks Kosovo among poor countries and that both

average and median earnings in Kosovo are not enough for a normal life, but some additional finances are required, positions the issue of physical survival on the priority scale, which is a normal reaction caused by the urge to survive. In the long run, the results show that citizens are aware that environmental protection is the most important factor in preserving the conditions for survival, and that we must intervene fairly quickly in terms of its preservation.

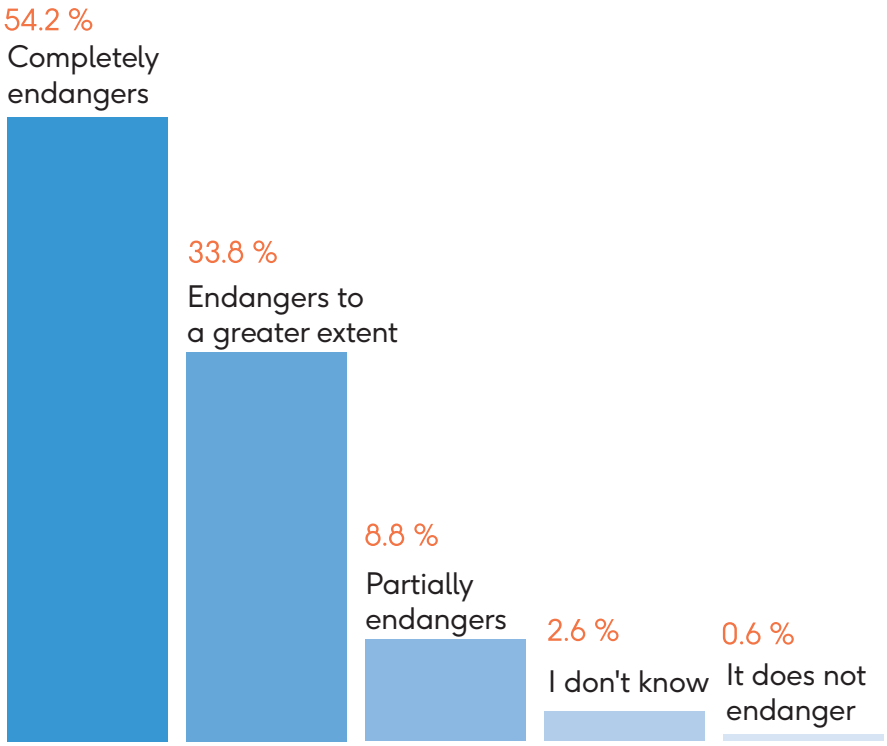
O Graf 5. In your opinion, to what extent does unscrupulous behavior of citizens endanger the environment?



In this review, we see the attitudes of citizens to what extent the unscrupulous behavior of citizens affects the threat to the environment. A very small number, only 0.6%, believe that unscrupulous behavior of people does not affect the quality of the environment, i.e. does not endanger it. 10.2% of respondents think that it is partially endangered, while 30.8% think that it threatens it to a greater extent. A majority of 55% of respondents believe that unscrupulous behavior of citizens completely endangers the environment, while 2.6% did not know the answer to this question. The conclusion that is drawn from the answer obtained in this way is that citizens recognize their own unscrupulous treatment of the environment as one of the main causes of its endangerment. The fact that the human factor, with the exception of natural disasters, is the most important factor that endangers the environment must also be mentioned here. It appears in the planning and implementation of all events, both production and others that directly or indirectly affect the quality of the living environment. It should also be noted that starting with illegal dumping of

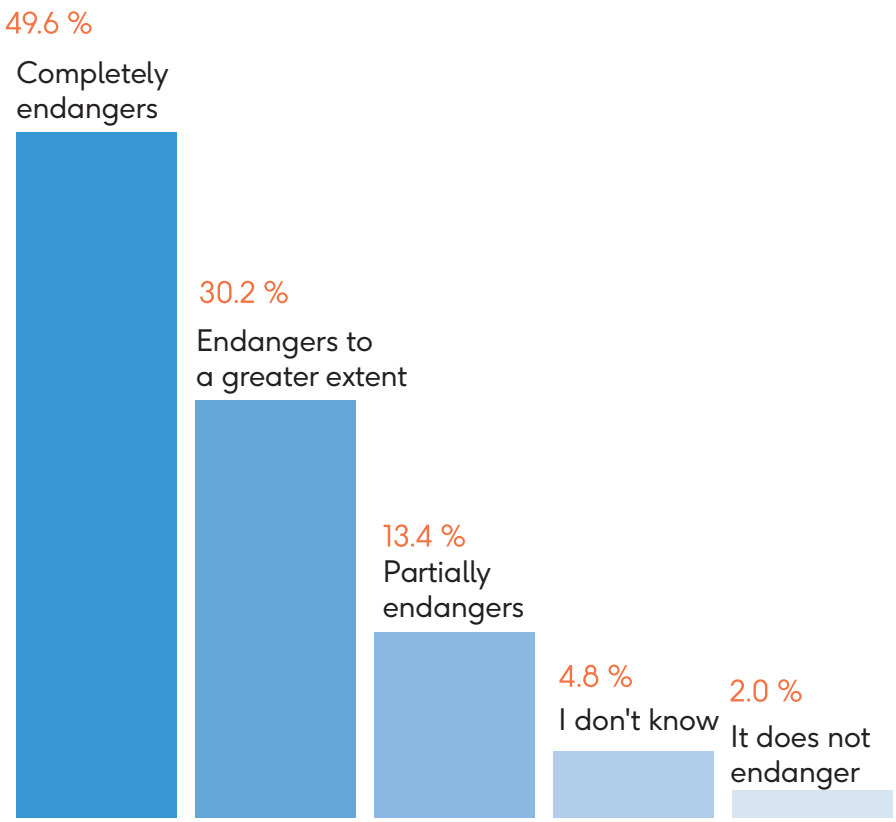
municipal waste disposed in different places by individuals, to inadequately planned and uncultivated industrial landfills, inadequate and uncontrolled engagement in various types of production, uncontrolled and genocidal deforestation, are all the result of human labor. Taking everything into account, we can characterize irresponsible behavior as one of the most critical factors that destroy a healthy living environment.

O Graf 6. Non-punishment of subjects that endanger the environment



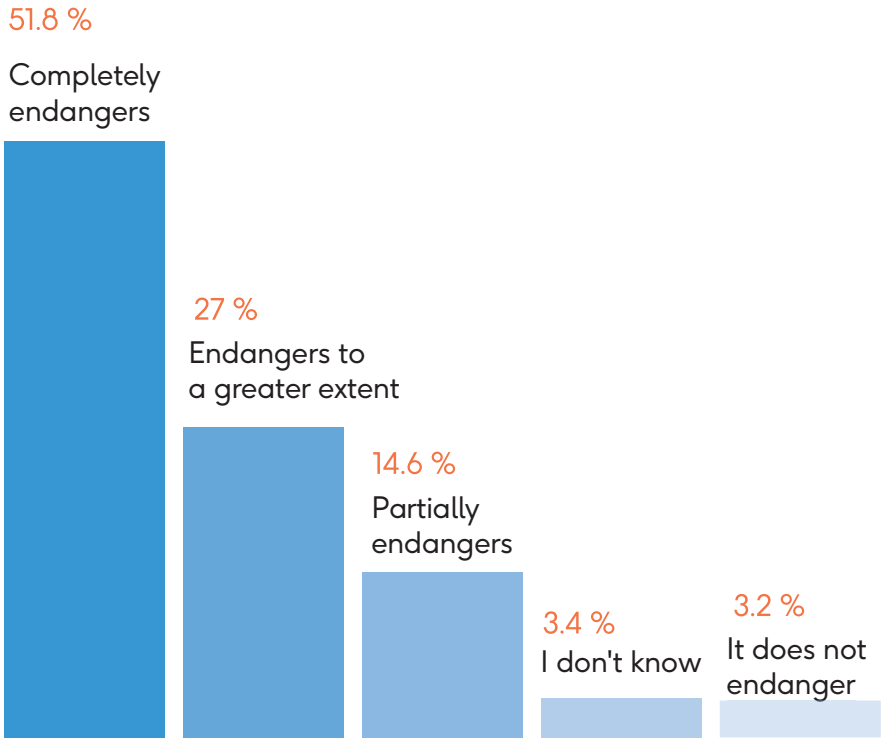
From the presented diagram we can see the attitude of citizens towards penal policy in the field of environmental protection, so the majority of respondents think, 54.2%, that the lack of penal policy, or impunity for entities that endanger the environment endangers the environment as a whole, 33 of them. 8% think that it threatens to a greater extent, 8.8% think that it partially threatens, 2.6% do not know, and finally only 0.6% think that non-payment of fines does not endanger the overall state of the environment. If we compare the impact of penal policy in other spheres, for example in the sphere of traffic, we will notice that offenses are reduced in proportion to the number and amount of fines imposed. This opinion is shared by the participants in the interviews and is the conclusion of most focus groups that were organized as part of this research.

O Graf 7. Lack of logistical and budgetary resources for maintaining a healthy environment



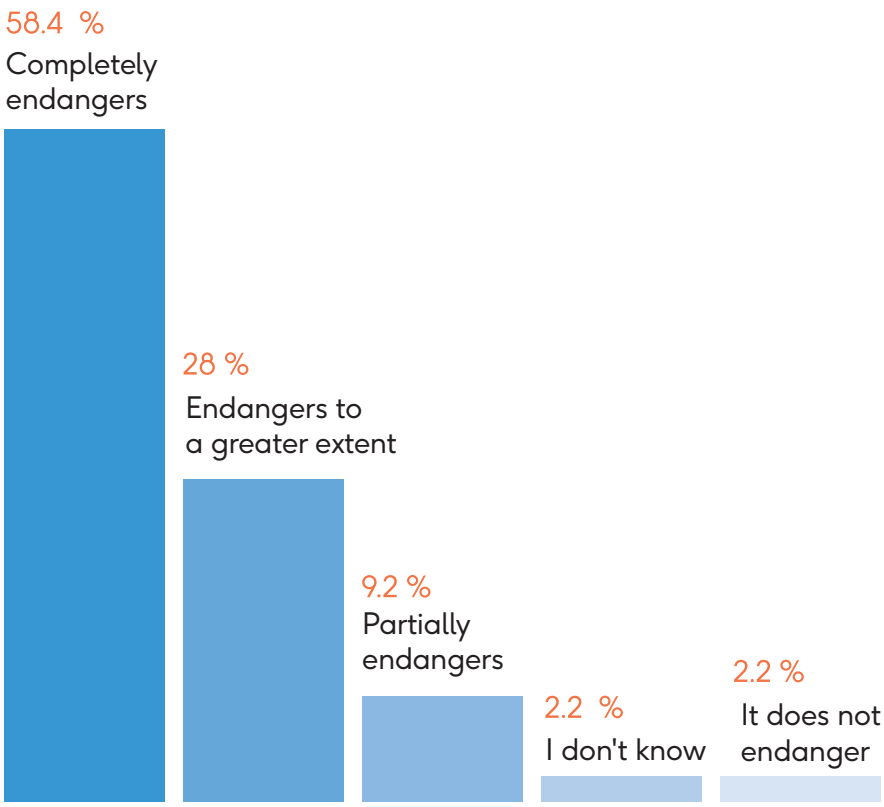
2% of respondents believe that the lack of finances, i.e. logistical and budgetary means in terms of maintaining the environment does not endanger the environment itself, 4.8% have no knowledge, 13.4% think that it partially endangers, and opinions of 30.2% of respondents is that it endangers to greater extent, and 49.6% of respondents believe that it completely endangers. Through research of available literature, but also through in-depth interviews and focus groups, we recognize that the budget allocated for environmental and environmental protection needs is symbolic, but also that projects dealing with the environment and its preservation require higher allocations. The recultivation of industrial landfills, which are one of the most serious polluters of the environment, requires huge funds that are inaccessible to municipalities. The arrangement of one municipal waste landfill also requires huge funds, as well as intervention in the field of forestry. Municipal budgets are too small, so the amounts required by some of the interventions exceed the complete municipal budgets. When it comes to the lack of logistical support, it is most visible in the sphere of industrial landfills, because almost all works on them require the participation and approval of RMHK Trepca. Moreover, even if there was cooperation with RMHK Trepca, its ownership issue would be the first insurmountable obstacle for the time being.

O Graf 8. Lack of interest of local and central institutions in fulfilling their legal obligations



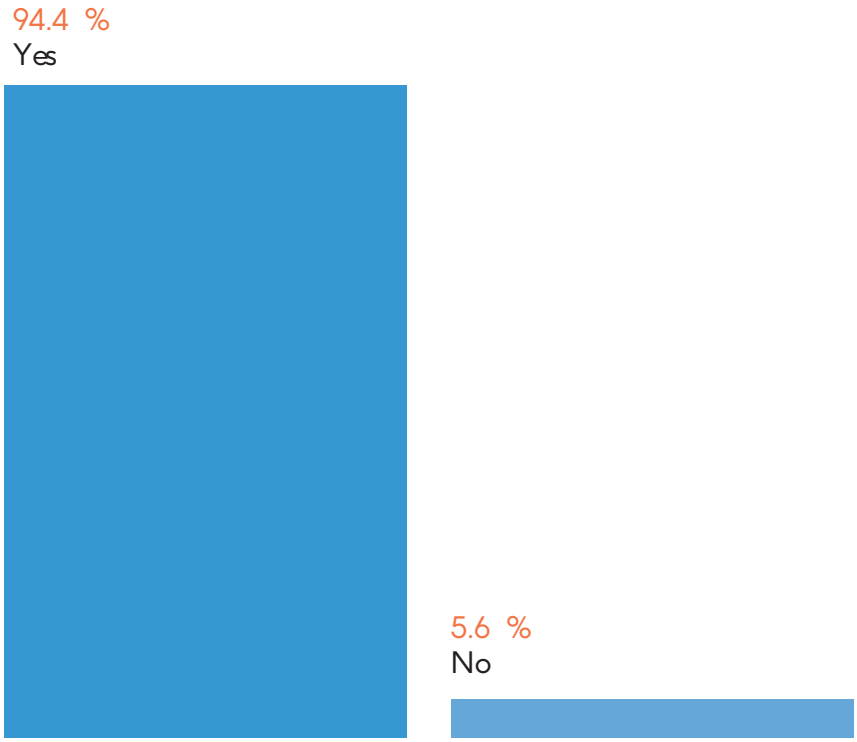
When it comes to the interest of local or central authorities in fulfilling their legal obligations, which include environmental protection, and the extent to which their lack of interest endangers the environment itself, the majority of respondents, 51,8%, believe that it is completely endangering, 27% consider it endangers to greater extent, 14.6% of respondents consider that it partially endangers, 3.4% of respondents believe that it does not endanger, and 3.2% of them do not know the answer. Here again we are talking about the human factor, i.e. inaction. Representatives of the local authorities, with whom the interviews were conducted, believe that there is interest, but that the lack of budget funds and project financing limits them in their commitment to the environment. On the other hand, the majority opinion of respondents coincides with the opinion of environmental experts who believe that there is very little room for corruption in the environment, and as it is not profitable in terms of finance, as such this area is not interesting to decision makers and their interest in this area is much lower than in other areas.

O Graf 9. Insufficient awareness of the importance of the environment



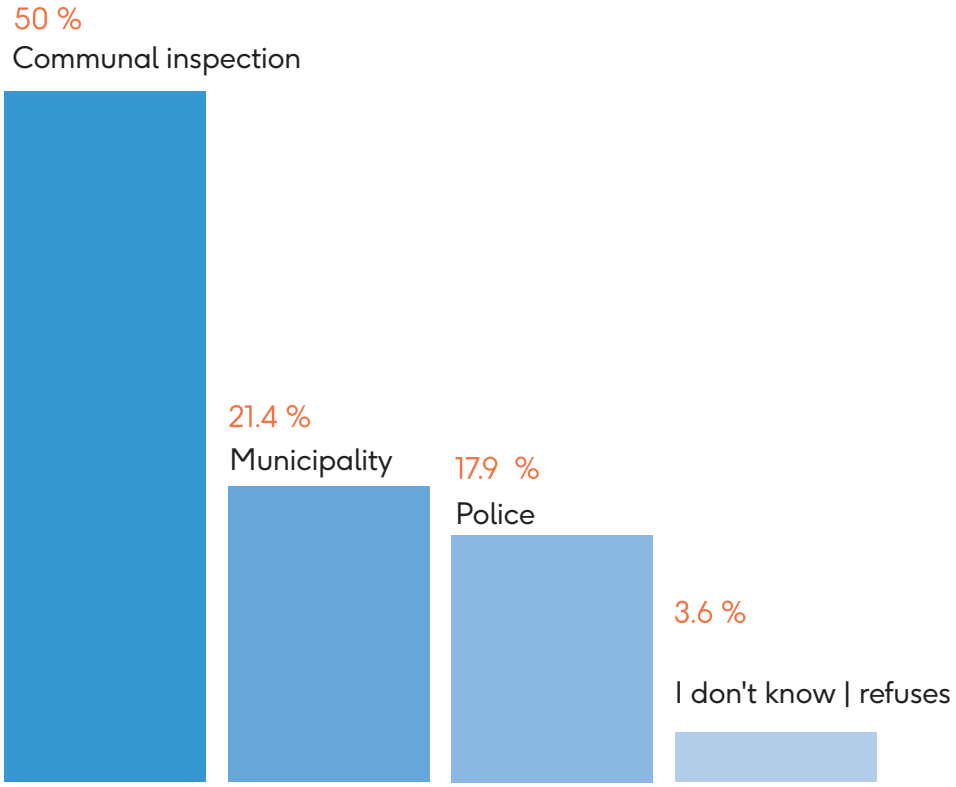
When asked whether the underdeveloped awareness of the importance of the environment endangers the environment itself, 58.4% of respondents said that it completely endangers it, 28% that it endangers it to a greater extent, 9.2% of respondents think that it partially endangers it, 2.2% respondents believe that it does not endanger, while 2.2% of respondents do not know the answer to this question. In conversations with the competent institutions, which is confirmed by the conversation with the Deputy Mayor of North Mitrovica, Ms. Adriana Hodzic, one of the biggest problems for maintaining hygiene in the city environment is the underdeveloped awareness of citizens. As it is pointed out in many residential buildings that have entrances on both sides, the back of the building is almost regularly full of garbage.

O Graf 10. Have you ever reported any kind of environmental threat to any of the competent institutions?



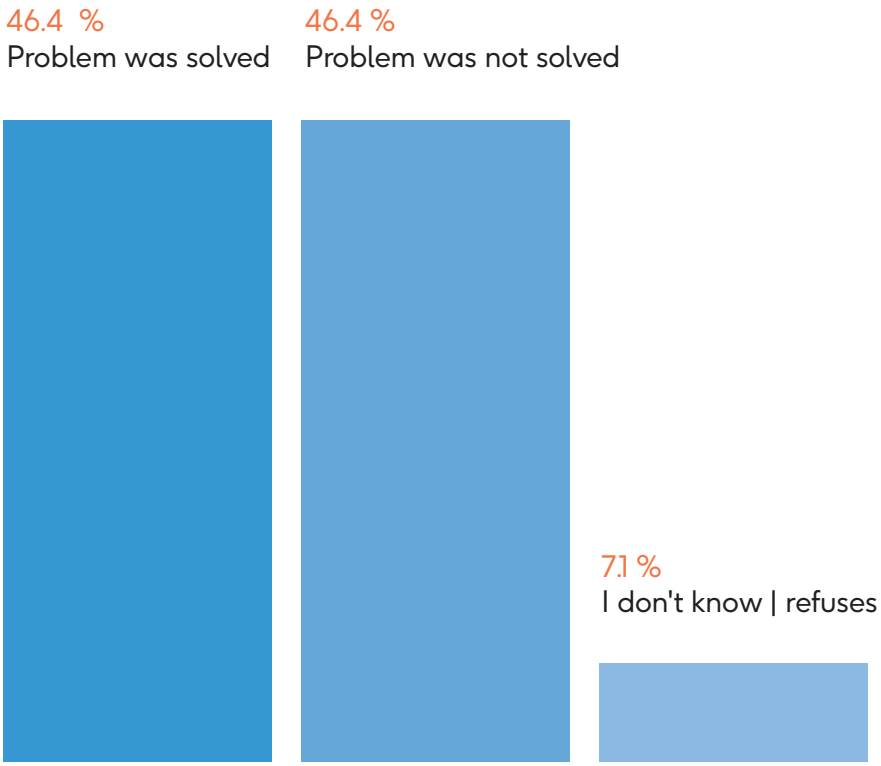
When it comes to endangering the environment and intervening on the same endangerment, there is great contradiction. We can see from the survey that as many as 95% of respondents did not report any case of endangering the environment, although they are almost a daily occurrence. Only 5.6% of respondents, or 28 of them, reported some kind of environmental threat. This phenomenon was explained through focus groups as a consequence of very low trust of residents in government officials and competent authorities, so that, except when it comes to natural disasters in terms of fire, flood or landslide, convinced that their application will not change the situation on the ground, citizens do not decide to take steps in terms of reporting environmental threats.

O Graf 11. If so, to whom did you first report the problem?



Out ff the total number of those who reported the case to the competent authorities, 50% of respondents, or 14 out of 28, reported the case to the municipal inspection, which indicates that they reported illegal landfills in most of cases, 21.4% reported to the municipality, while 17.9% reported police, and 3.6% refused to answer which organ they reported endangering the environment.

O Graf 12. What answer did you get after the application / is the problem solved?



Regarding the solution of the reported problem, 7.1%, i.e. two respondents refuse to state whether the problem has been solved or not, 46.4% or 13 of the 28 respondents who reported the case, claim that the problem has been solved, while 46, 4% or 13 of the 28 respondents who reported the case claim that the problem has not been resolved

Key findings

- The current model of environmental protection in the municipalities of Zvečan, North Mitrovica, Leposavić and Zubin Potok is almost non-functional
- Unprofessional and inadequate medical waste management is another in a series of dangers caused by human inaction.
- Savina Stena regional landfill is a solution that will solve the problem of municipal waste for a while
- Municipalities do not have strategic documents regulating the field of environmental protection or approved LEAPs, which will be an obstacle in applying for projects related to environmental protection
- The number of illegal municipal waste landfills in the municipalities in the north, inadequate waste management and unscrupulous behavior of citizens are the main causes of these landfills.
- Devastated forests in northern Kosovo due to lack of effective logging and afforestation control mechanisms
- Budget funds intended for environmental protection insufficient to meet basic needs
- Industrial waste is the biggest threat to the ecosystem and its solution requires a complex approach including Trepca and international engagement taking into account unresolved ownership issues
- Lack of legal mechanisms to prevent pollution and eliminate the consequences of existing pollution
- Although there is an awareness of citizens about the importance of the environment, care is not taken to preserve it

Key Recommendations

- To approve strategic documents and LEAP as a basis for taking measures in the field of environmental protection and increasing the possibility of applying for environmental projects
- To involve the central level and the international community in resolving and recultivating industrial landfills
- To work on the reforestation of devastated forest areas and involve experts in that work
- To adopt legal regulations-regulations on the behavior of citizens and legal entities in terms of prevention of environmental threats and apply them in practice
- To increase the budget for environmental interventions, work closely with central authorities and international donors
- To launch a campaign for raising awareness of the harmfulness of illegal landfills for municipal waste to the ecosystem
- To involve the professional public and civil society organizations in solving environmental problems
- To work on education of farmers on the cultivation and types of plants that can be cultivated on contaminated soil
- To involve citizens in the processes of making and implementing decisions related to environmental protection

Conclusion

From the review of the state of the environment in the municipalities in northern Kosovo, Zvecan, Zubin Potok, North Mitrovica and Leposavic, we conclude that the environmental protection model in these municipalities is not defined and that environmental protection systems are dysfunctional, as well as the mechanisms involved within the system. The lack of control mechanisms and penal policy is obvious and has caused almost irreparable consequences, both in the forest fund in northern Kosovo and in the ecosystems in these municipalities. The current situation in these municipalities requires urgent intervention, primarily in terms of finding functional models for each municipality individually, considering their natural specifics and social needs. Drafting and adoption of normative acts in terms of LEAP and strategic documents is necessary, as well as raising the professional capacity of staff in the field of environmental protection. A problem hard to solve is industrial landfills, which, in addition to huge financial resources, also require the engagement of political factors in terms of obtaining certain permits and resolving ownership issues that may arise in the process of resolving this problem.

As a special part, we should point out the «high awareness of the importance of the environment» which, despite research showing that it is quite high, denies the factual situation in terms of a huge number of illegal dumps, both in rural and urban areas. These landfills were created as a direct consequence of unscrupulous actions of citizens, i.e. lack of environmental awareness. It is necessary to carry out a comprehensive awareness-raising action, to acquaint the citizens with the risks that arise in cases when the state of the environment is disturbed, and to include them in the processes related to its preservation.

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