Republika e Kosovës
Republika Kosova-Republic of Kosovo
Qeveria - Vlada - Government

MINISTRIA E MJEDISIT DHE PLANIFIKIMIT HAPËSINOR
MINISTARSTVO SREDINE I PROSTORNOG PLANIRANJA
MINISTRY OF ENVIRONMENT AND SPATIAL PLANNING

AMMK

ANNUAL REPORT

ON THE STATE OF THE ENVIRONMENT IN KOSOVO

2017



Republika e Kosovës
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AGJENCIA PËR MBROJTJEN E MJEDISIT TE KOSOVËS

KOSOVSKA AGENCIJA ZA ZAŠTITU SREDINE

KOSOVO ENVIRONMENTAL PROTECTION AGENCY

Annual Report on the State of the Environment in Kosovo, 2017

Prishtina, 2018

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Introduction

Drafting of the Report on the State of the Environment in Kosovo is based on the Law on Environmental Protection[1]. Pursuant to Article 25 of this Law, the Government of Kosovo, upon the proposal of the Ministry of Environment and Spatial Planning, submits to the Assembly the Report on the State of the Environment.

The report should contain information on:

- the state of the environment and changes in the environment compared to the previous report,
- environmental impacts on the health of the population,
- the situation of endangered environments,
- implementation of the Environmental Strategy and Action Plan,
- measures taken to protect the environment,
- development of environmental institutions, and
- financing of the environmental protection system.

In accordance with the duties and responsibilities of governmental institutions, the Kosovo Environmental Protection Agency is the institution that drafts this document.
This Annual Report presents the state of the environment for 2017, but also previous data make up a considerable place for comparison purposes.
For drafting the report, KEPA has collected environmental data from monitoring institutions, companies, operators, various companies, publications, reports, and other sources. The collected data are processed on qualitative environmental information that is now presented in this report.

Some of the sectors are less covered in this report due to the lack of data, the lack of monitoring, incomplete legal basis and other institutional and management weaknesses.

The quality of this report, to some extent, is a reflection of the quality of monitoring implemented at the national level and the level of organization of the environmental information system. Given that these two environmental systems are yet to be established and strengthened, it can be concluded that there is a lack of complete and reliable data.

The main purpose of this report is to inform about the state of the environment in Kosovo but its data are a good basis for building adequate environmental policies and for orienting strategic development, planning and investment in sectors that have an impact on the environment, such as economy, industry, energy, transport, agriculture, etc.

[1] Law No. 03/L-025

1. The state of the environment

1.1. Air

1.1.1. Air quality

Air quality in this report reflects the situation for the territory of Kosovo based on measurements from continuous air quality monitoring stations. The source of data mainly comprises monthly reports, which present data recorded from stations under the management of IHMK.

Two of the stations located in Prishtina are representative of the quality of the air on the urban background (Rilindja) and the suburban background (IHMK), while the other 6 stations located in Mitrovica, Drenas, Peja, Prizren, Hani i Elezit and Gjilan are representative for the quality of air on the urban background and the station located in Brezovica is for the rural background. Meanwhile, 3 industrial background stations are located in the KEK area (Dardhishte, Palaj and Obiliq). (Table 1)

Table 1. Air quality monitoring stations

No.	Name of the monitoring station	Code of the station	Location	Responsible authority	Measured parameters	Type of the area
1	IHMK	KS0101	IHMK, Prishtina	IHMK	PM10,PM2.5,SO_2, NO_x,O_3,CO	Urban/traffic
2	Rilindja	KS0102	Backyard of Rilindja, Prishtina	IHMK	PM10,PM2.5,03	Urban
3	Peja	KS0305	Primary School “Lidhja e Prizrenit”	IHMK	PM10,PM2.5,SO_2, NO_x,O_3,CO	Urban
4	Prizren	KS0406	Municipal building	IHMK	PM10,PM2.5,SO_2,	Urban
5	Brezovica	KS0507	Skiing area	IHMK	PM10,PM2.5,	Suburban
6	Hani i Elezit	KS0508	Primary School “Ilaz Hallaqi”	IHMK	PM10,PM2.5,SO_2,NO_x,O_3,CO	Urban/industrial
7	Gjilan	KS0609	Municipal building	IHMK	PM10,PM2.5,SO_2,NO_x,O_3,CO	Urban/traffic
8	Drenas	KS0103	Municipal building	IHMK	PM10,PM2.5 ,SO_2,NO_x,CO	Urban
9	Obiliq	KS0110	FMC	IHMK	PM10,PM2.5,SO_2,NO_x,O_3,CO	Urban
10	Dardhishte	KS0111	Primary School	IHMK	PM10,PM2.5,SO_2,NO_x,O_3,CO	Industrial

11	Palaj	KS0112	Kosova Mont	IHMK	PM10,PM2.5,SO_2,NO_x,O_3,CO	Industrial
12	Mitrovica	KS0204	Meteorology station	IHMK	CO,O_3,PM10,PM2.5	Urban

The report includes the average monthly values from the results of the air quality monitoring system at the national grid stations.

The air quality standards based on which the assessment was made are based on the Administrative Instruction No. 02/2011, (Table 2).

Table 2. Air quality standards according to the Administrative Instruction No.02/2011.

Parameters	Limit values	Unit of measure	Limit values µg/m³	Rate of allowed exceedance in a year
NO2	Limit value for 1 hour for the protection of human health	µg/m³	200	18
	Annual limit value for the protection of human health	µg/m³	40	Not foreseen
	Annual limit value for the protection of vegetation	µg/m³	30	Not foreseen
SO2	Limit value for 1 hour for the protection of human health	µg/m³	350	24
	Limit value for 24 hours for the protection of human health	µg/m³	125	3
CO	Limit value for 8-hour daily average for the protection of human health	mg/m³	10	Not foreseen
PM10	Limit value for 24 hours for the protection of human health	µg/m³	50	35
	Annual limit value for the protection of human health	µg/m³	40	Not foreseen
PM2.5	Annual limit value for the protection of human health	µg/m³	25	Not foreseen
O3	Long-term objective for the protection of human health	µg/m³	120	Not foreseen
	Information threshold	µg/m³	180	Not foreseen
	Alarm threshold	µg/m³	240	Not foreseen

Air Quality Assessment during 2017 based on data from IHMK

The assessment includes the average monthly values and the same are compared with the Maximum Allowed Values (MAV) according to AI No. 02/2011 on Air Quality Assessment.

This report reflects the situation of air quality for 2017, namely the results monitored by IHMK air quality monitoring stations.
The report includes the average monthly values as a general assessment of the air situation in Kosovo, based on the results collected by the automatic measurements of air pollution parameters. The data have been processed and this report provides an assessment of air quality situation by monitoring zones.

The assessment of the air quality situation presents the comparison of the values of the results obtained with the standard values allowed under the local laws and regulations in force and according to the Directive 2008/50 EC on air quality (Table 2). The assessment includes the average monthly values and the same are compared with the Maximum Allowed Values (MAV) according to AI No. 02/2011 on Air Quality Assessment.

SO_2 (Sulfur Dioxide) – Data on SO_2 concentration measurement (from all monitoring stations) indicate no exceedance of the MAV (Maximum Allowed Values) throughout January-December 2017. Figure 1 shows the average annual values and the maximum allowed values of SO_2 (sulfur dioxide). The average annual values at all stations were under MAV throughout the year.

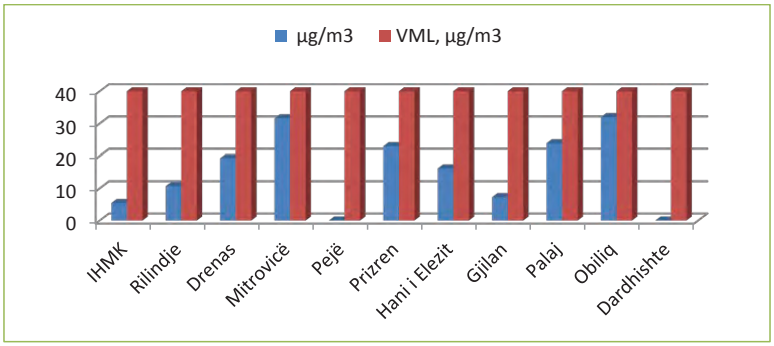


Fig.1. Average monthly values and the maximum allowed values of SO_2

CO (Carbon monoxide) - Data on CO concentration measurement from the stations that monitored this parameter indicate no exceedance of the MAV (Maximum Allowed Values) during the period January - December 2017. Figure 2 shows the average annual values and the Maximum Allowed Values of CO (carbon monoxide). As seen from the chart, no exceedances of the average annual values of CO have been recorded by any of the monitoring stations according to MAV.

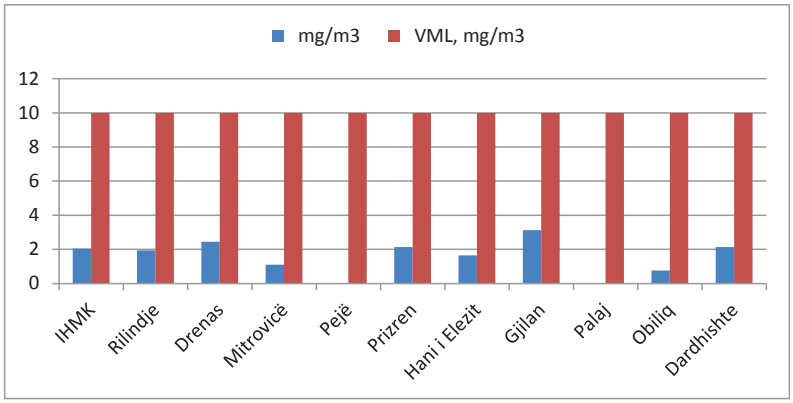


Fig.2. Average monthly values and maximum allowed values of CO

NO_2 (Nitrogen Dioxide) - Data on NO_2 concentration measurement from the monitoring stations in IHMK, Rilindje, Obiliq, Dardhishte, Gjilan and Hani i Elezit indicate a slight increase of MAV during the period January-December 2017. Figure 3 shows the average annual values and the maximum allowed values of NO_2 (Nitrogen Dioxide), indicating no exceedance of NO_2 average annual values recorded in any of the monitoring stations for 2017.

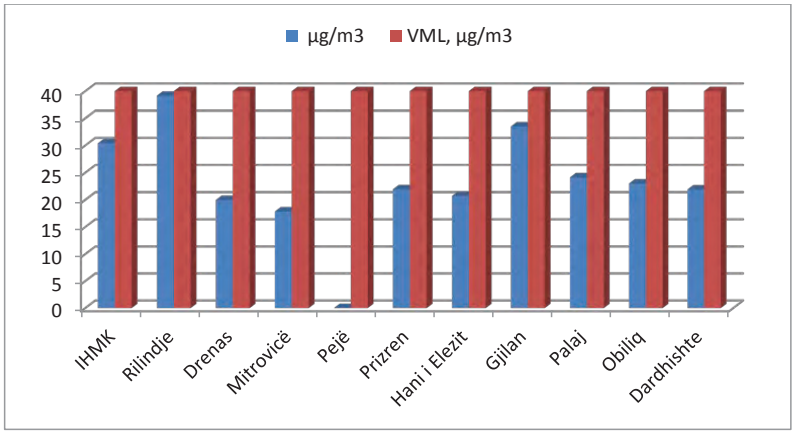


Fig.3. Average monthly values and maximum allowed values of NO_2

O_3 (Ozone) - Data on O_3 concentration measurement from any of the monitoring stations indicate that there were no exceedances of MAV (Maximum Allowed Values) during January-December 2017. Figure 4 shows the average annual values and the maximum allowed values of O_3 (Ozone). As it can be seen from the figure, no exceedance of the NO_2 average annual values has been recorded by monitoring stations for 2017. An approximation to MAV has been recorded in two monitoring stations in Prishtina and in Gjilan.

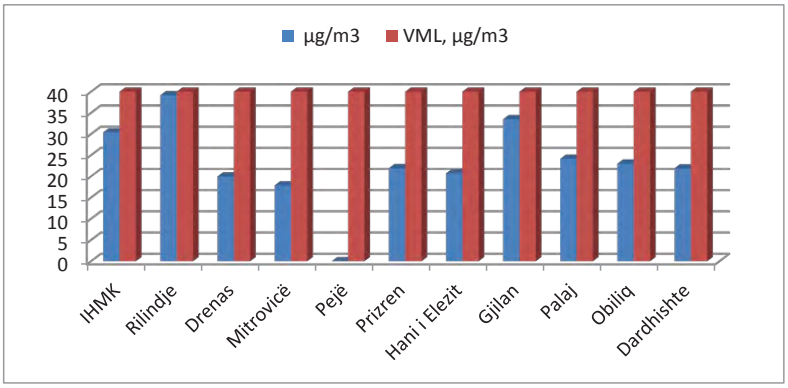


Fig.4. Average annual values and maximum allowed values of O_3

PM10 (Dust particles) - During 2017, data on PM10 concentration measurement show that MAV has exceeded the monthly and annual average. On the basis of exceeding the average monthly values, they are registered as follows:

- Obiliq and Dardhishte - 8 months
- Prishtina- IHMK and Rilindje - 4 months,
- Drenas and Mitrovica - 6 months and
- Gjilan- 1 month.

MAV for PM10 is 40 µg/m^3 (Annual Maximum Allowed Value) and 50 µg/m^3 (Maximum Allowed Value for 24 Hours of Continuous Monitoring).

Figure 5 shows the average annual values and the maximum allowed values for PM10. The chart shows that the average annual values of PM10 in Drenas, Gjilan, Obiliq and Dardhishte have exceeded the MAV.

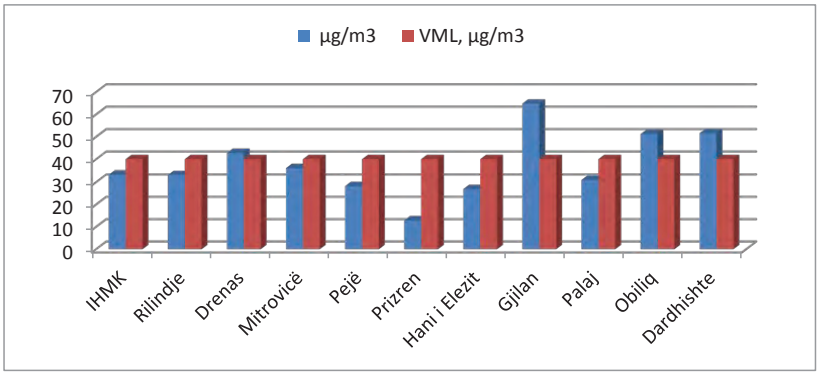


Fig.5. Average annual values and maximum allowed values of PM10

PM2.5 (Dust particles)- During the period January to December 2017, there were significant exceedances of MAV for PM2.5 in Prishtina - IHMK and Rilindja (January, February, November and December), Drenas and Mitrovica (January, February and November), Palaj (November). In monitoring stations in Obiliq and Dardhishte, exceedances were recorded in almost all months of the year.

MAV for PM2.5 is 25 µg/m^3 as Maximum Allowed Value for the annual average. This MAV it is also taken as MAV for the 24-hour average.

Figure 6 shows the average annual values and the maximum allowed values of PM2.5. The chart shows that the average annual values of PM2.5 recorded in Prishtina-IHMK, Prishtina-Rilindja, Drenas, Mitrovica, Obiliq and Dardhishte have exceeded the MAV.

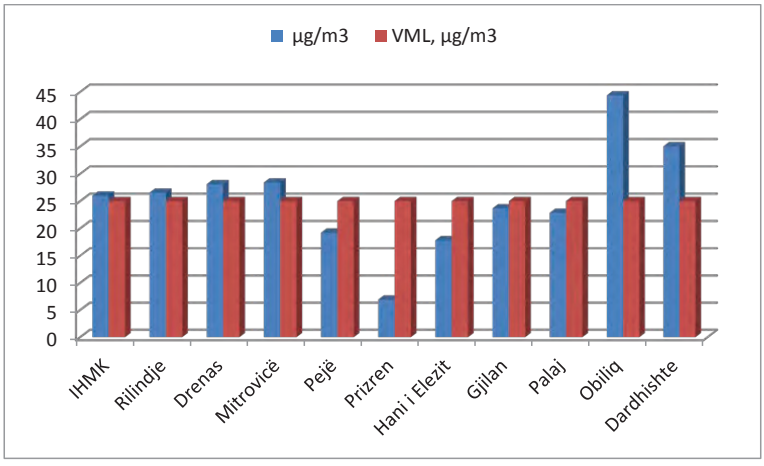


Fig.6. Average annual values and the maximum allowed values of PM10

Air Quality Assessment of PM10 and PM2.5 (dust particles) by measuring stations for 2017

Analysing IHMK data from air quality monitoring stations, during 207, only the concentration trend of PM10 and PM2.5 is presented in 11 monitoring stations.
For the two monitoring stations in IHMK and the backyard of Rilindja, during 2017 there were exceedances of VML (Maximum Allowed Values) for both PM10 and PM2.5. These exceedances were noted in January, March, February, October, November and December (Fig. 7, 8). MAV[2] for PM10: 40 µg/m[3]; MAV[3] for PM2.5: 25 µg/m[3].

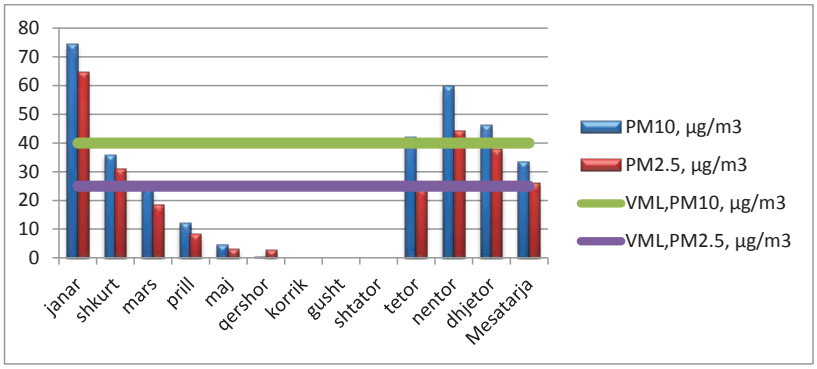


Fig.7. Average values of PM10&PM2.5 in Prishtina/IHMK

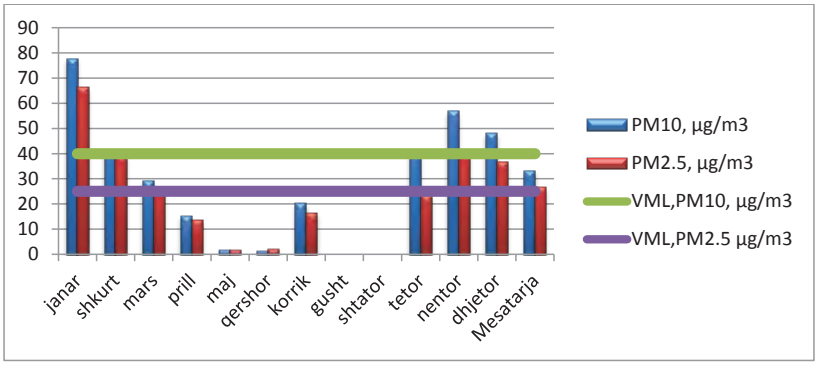


Fig.8. Average values of PM10&PM2.5 in Prishtina/Rilindja

In three monitoring stations located in the area affected by KEK activities (Obiliq, Palaj and in Dardhishte), there were exceedances of MAV (Maximum Allowed Values) for PM10 and

[2] MAV- Maximum Allowed Values for PM10, annual average according to AI 02/2011 for air quality norms
[3] MAV- Maximum Allowed Values for PM2.5, annual average according to AI 02/2011 for air quality norms

PM2.5 even in July, August and September, as a result of the emissions from the Thermal Power Plants Kosova A and Kosova B and other activities, such as extraction, hauling and storage of lignite. This fact is argued by data from dust, SO2 and NOx emissions, which are part of this report.

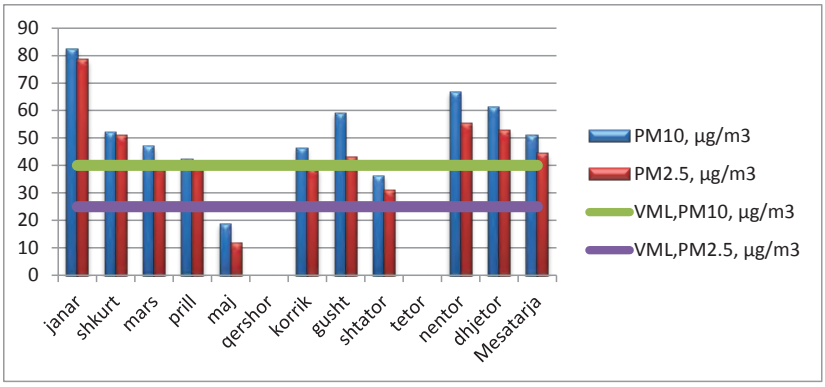


Fig.9. Average values of PM10&PM2.5 in Obiliq

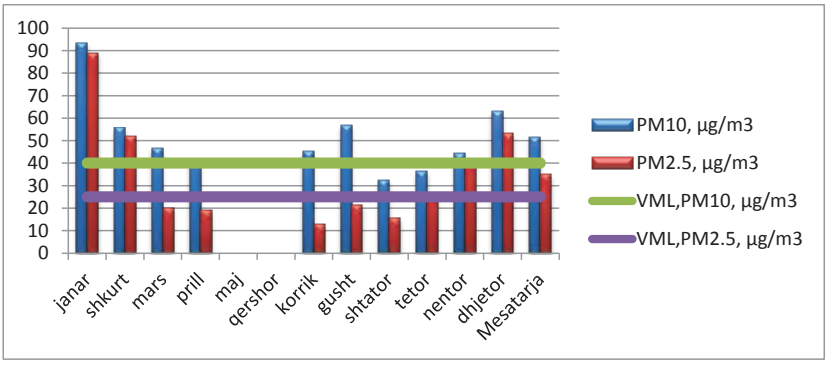


Fig10. Average values of PM10&PM2.5 in Dardhishte

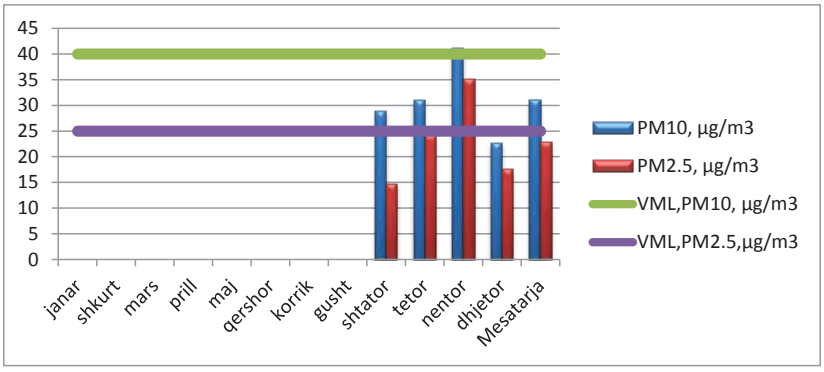


Fig.11. Average values of PM10&PM2.5 in Palaj

The chart presented by the monitoring station in Drenas, in addition to the autumn-winter-spring season, shows exceedances of dust concentrations in PM10 and PM2.5 (June, July and August). It is estimated that values exceeding the MAV (Maximum Allowed Values) are the result of Ferronikel, road transport and household activities, which during the heating season use fuels that release emissions, causing air pollution (Fig.12).

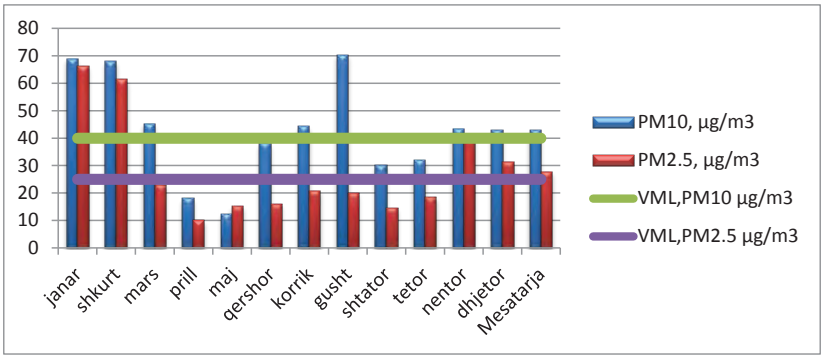


Fig.12. Average values of PM10&PM2.5 in Drenas

Data from the air quality monitoring station in Hani i Elezit show exceedance of MAV (Maximum Allowed Values) of PM10 for December and of PM2.5 in October, November and December. The Sharrcem cement plant is considered to be the main contributor to air pollution (fig. 13).

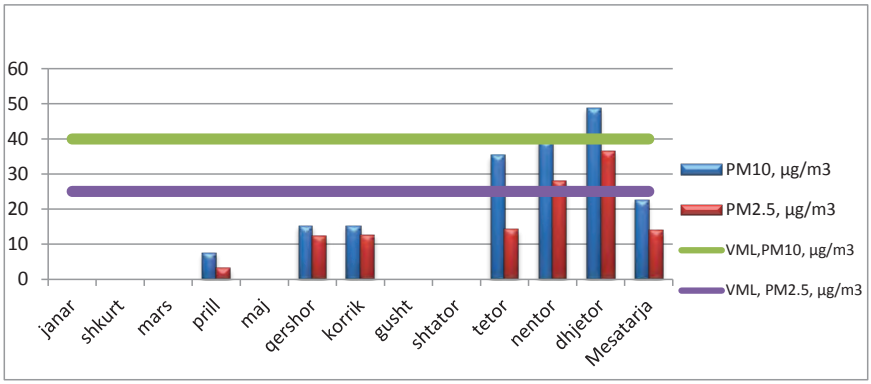


Fig.13. Average values of PM10&PM2.5 in Han të Elezit

Chart 14, which presents the air quality in Mitrovica, shows exceedance of MAV (Maximum Allowed Values) mainly for PM2.5 (January, February, March, July and November) and exceedance of the Maximum Allowed Values of PM10 in two months (January and August).

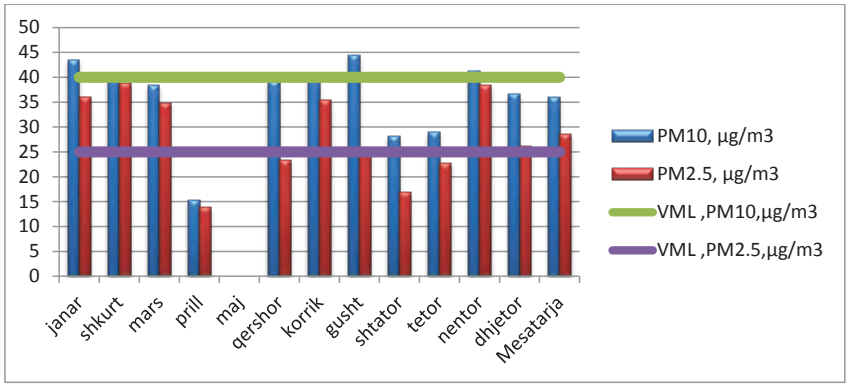


Fig.14. Average values of PM10&PM2.5 in Mitrovica

Chart 15, which presents the air quality in Gjilan, shows exceedance of MAV (Maximum Allowed Values) mainly for PM2.5 in December and November, and exceedance of Maximum Allowed Values of PM10 in December.

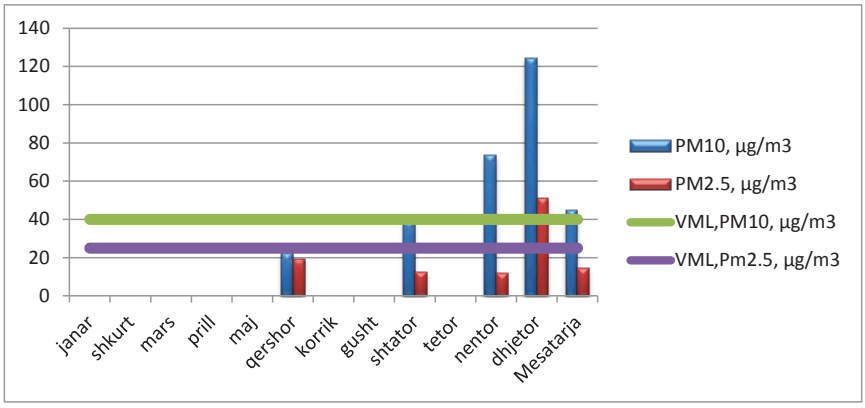


Fig.15. Average values of PM10&PM2.5 in Gjilan

Chart 16, which presents the air quality in Peja, shows the exceedance of MAV (Maximum Allowed Values) mainly for PM2.5 only in November and no exceedance of PM10 average values in any of the months of the year.

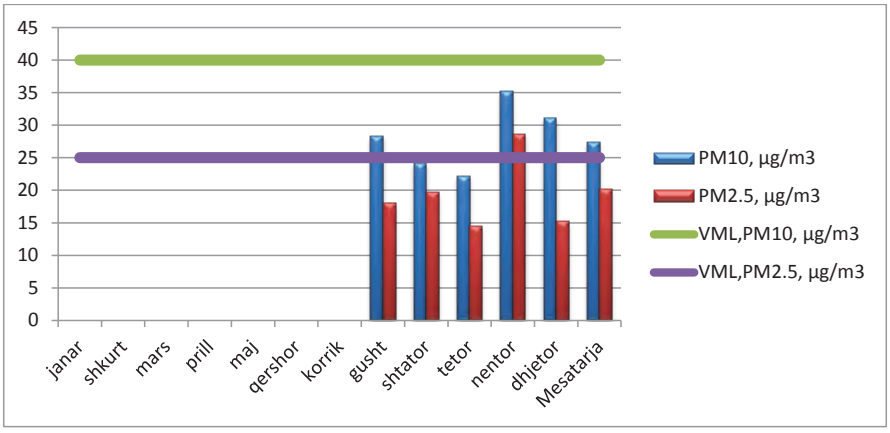


Fig.16. Average values of PM10&PM2.5 in Peja

At the monitoring station in Prizren, no exceedance of MAV (Maximum Allowed Values) for PM10 and PM2.5 was recorded (fig.17).

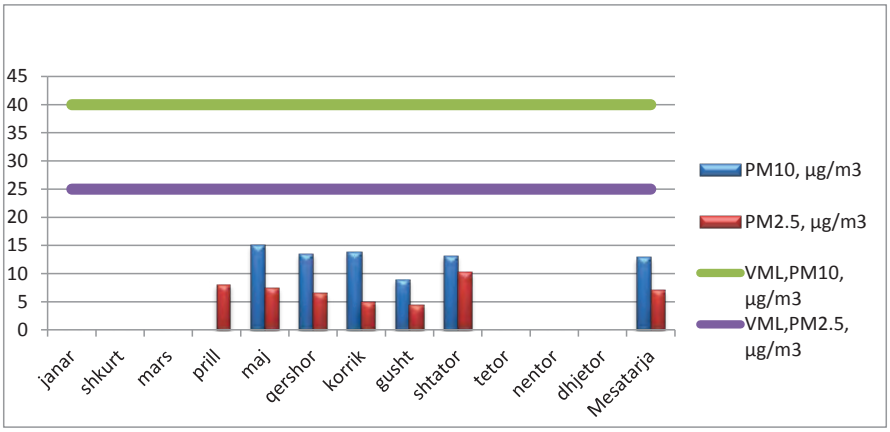


Fig.17. Average values of PM10&PM2.5 in Prizren

Trend of air quality 2012-2017

As we can see in fig. 18, various values of SO_2 have been recorded during 2012-2017. During 2015, 2016 and 2017 we can notice higher values. Limit values for 24 hours for health protection should be up to 125 µg/m³. The highest pollution over the years for this parameter is in Obiliq, Drenas, Prizren and Hani i Elezit.

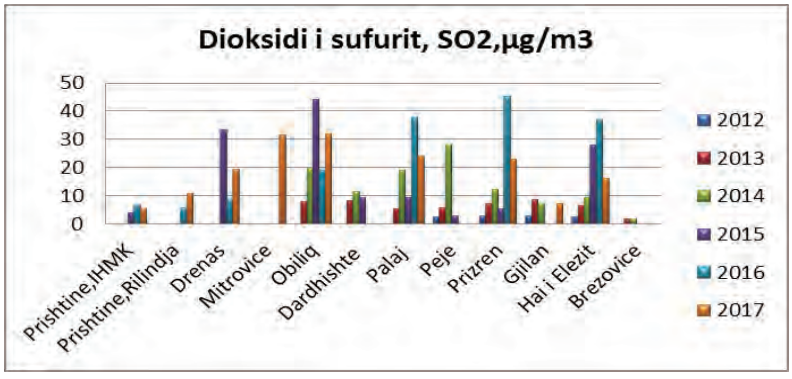


Fig.18. Trend of Sulfur Dioxide (SO_2) values

Fig.19. shows the trend of NO_2, from which it is noticed that this trend has fluctuated from year to year. It is noted that this pollutant has higher values during 2015, 2016 and 2017, especially in stations located in Prishtina, Obiliq, Gjilan and Han i Elezit. The annual limit value for the protection of human health is 40 µg/m³. According to the annual average, no exceedance of NO_2 was recorded in either station.

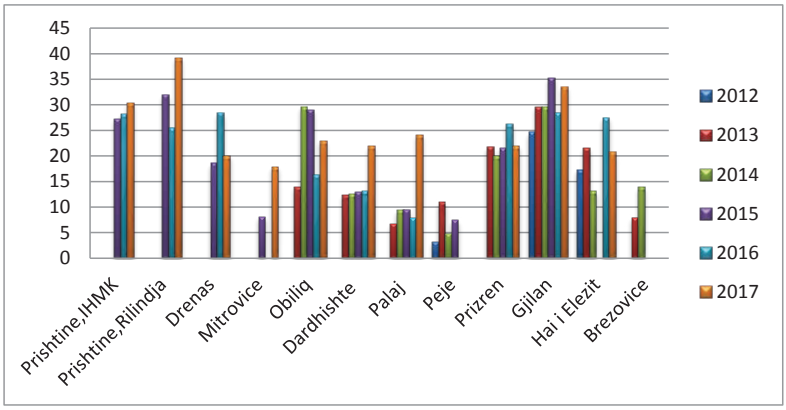


Fig.19. Trend of Nitrogen Dioxide (NO_2) values

Fig. 20 shows that the trend of ozone growth is higher at Prizren and Hani i Elezit for 2013, 2015 and 2016. Inform the public if the information threshold of 180 μg/m³ is exceeded.

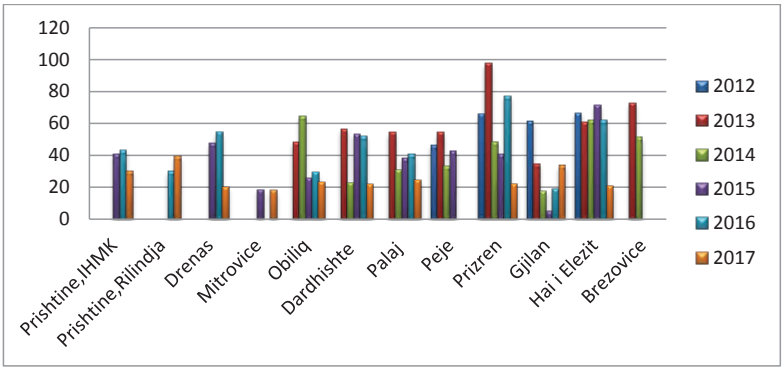


Fig.20. Trend of ozone (O_3) values

Fig. 21 shows that trend of carbon monoxide is of higher value in Prishtina (IHMK), Obiliq, Peja and Prizren stations. The highest values were recorded in 2015 and 2016. Limit value for daily averages is 10 mg/m³.

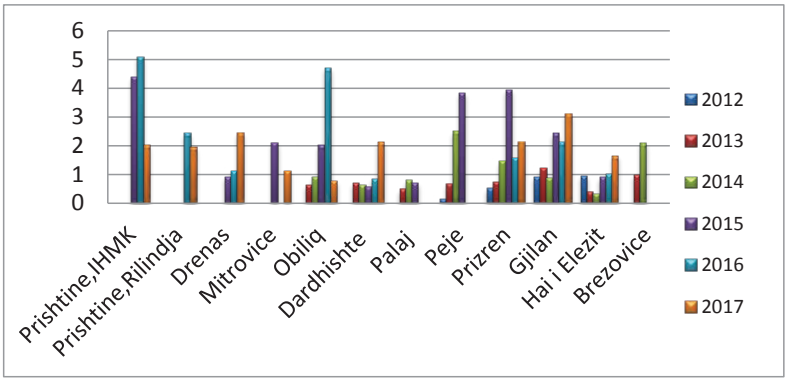


Fig.21. Trend of Carbon Monoxide (CO) values

Fig. 22 shows trend of PM10, where is noted that it is different for average annual values in monitoring stations. It is noted that between the period from 2013 to 2017, the stations located in Prishtina (Rilindja), Drenas, Obiliq, Gjilan and Han i Elezit have recorded the highest average values of PM10. The annual limit values for health protection are 40 μg/m^3.

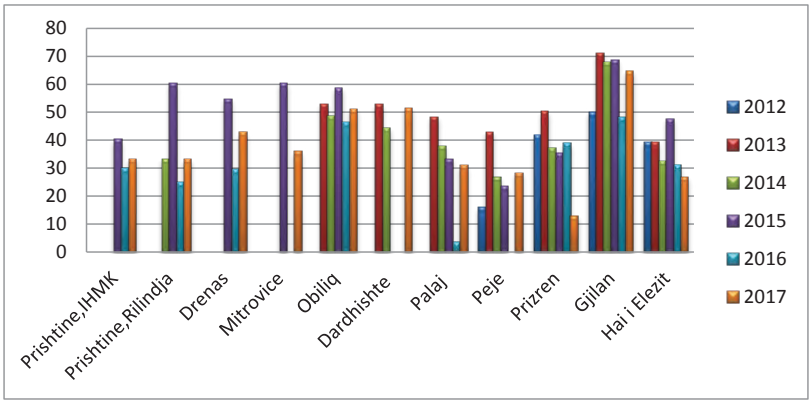


Fig.22. Trend of Dust Particles (PM10) values

Fig. 23 shows that the PM2.5 trend for annual average values is different across monitoring stations. From 2013-2017, all stations have recorded values exceedances, but more accentuated are in Mitrovica, Obiliq, Gjilan and Drenas. The annual limit values for health protection are 25 μg/m3.

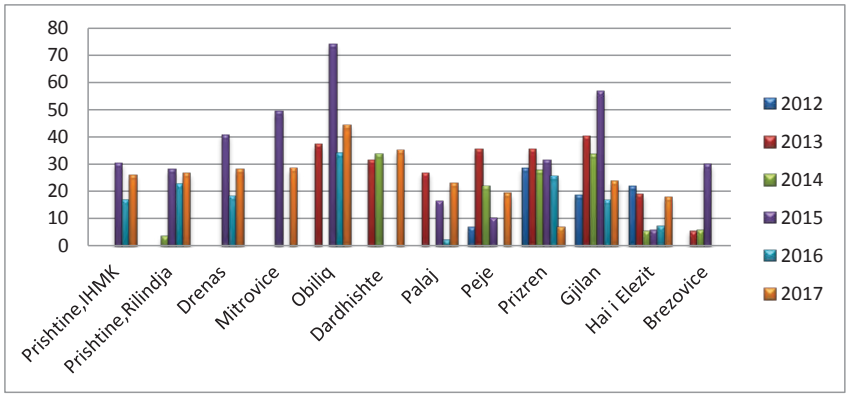


Fig.23. Trend of Dust Particles (PM2.5) values

1.1.2. Air emissions

1.1.2.1. Assessment of air emissions from TPP Kosova A and TPP Kosova B

KEC is Kosovo's public company, which owns and operates with electricity generating assets and lignite mining assets. It is considered as one of the biggest polluters in Kosovo.

Trend of emissions in Thermal Power Plants Kosova A and Kosova B during January - December 2017

The limit values under Directive 2001/80 / EC, as well as AI No. 2007 on the rules and standards of the discharges on air by the stationary sources of pollution, are as follows:

- ✓ ***SO_2***.....*400 mg/Nm^3*
- ✓ ***NOx***.....*500 mg/Nm^3*
- ✓ ***Dust***.....*50 mg/Nm^3*

This chapter presents graphical data on dust, SO_2 and NOx emissions in Thermal Power Plants Kosova A and Kosova B, in the period of January to December 2017.
The parameters of SO_2, NOx and CO_2 are calculated (except the dust emission which is measured) in TPP A, whereas in TPP B are placed analysers for continuous measurement of dust, SO_2, NOx, and CO2 emissions. According to KEK reports, during 2017 has been noticed stagnation in the operation of these equipment.

Dust emissions in mg/Nm^3- Fig. 24 shows dust emissions in TPP A and TPP B. These data show that no exceedance of allowed levels of dust has been recorded in TPP A during January – December, whereas in TPP B dust values were above allowed levels.

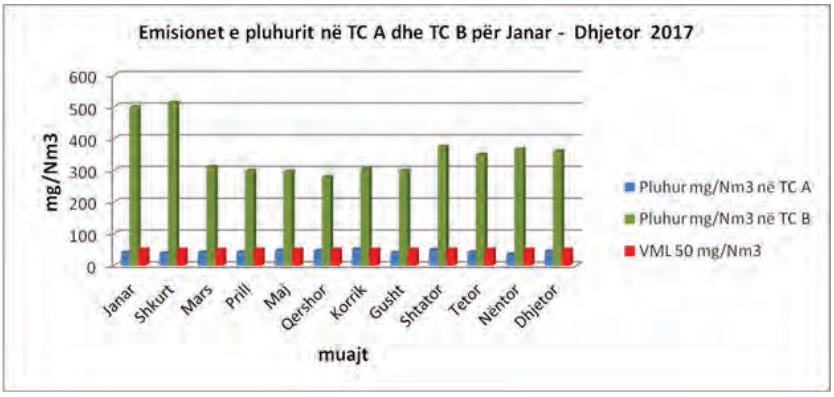


Fig.24. Dust emissions in mg/Nm3 during January - December 2017

Emissions of SO_2 in mg/Nm^3 - Fig. 25 shows emissions of SO_2 in TPP A and TPP B. As noted from the presented data, no significant exceedances in TPP A have been recorded, while exceedances of the SO_2 values in TPP B have been recorded during January, February, May, June, September, October, November and December.

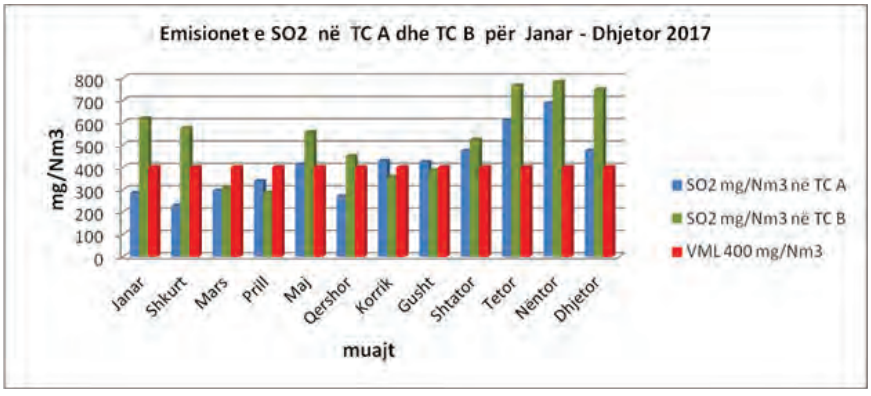


Fig.25. SO2 emissions in mg/Nm3 during January - December 2017

Emissions of NOx in mg/Nm^3- Fig. 26 shows emissions of NOx in TPP A and TPP B. The data indicates that in both thermal power plants there is exceedance of NOx values during January - December 2017.

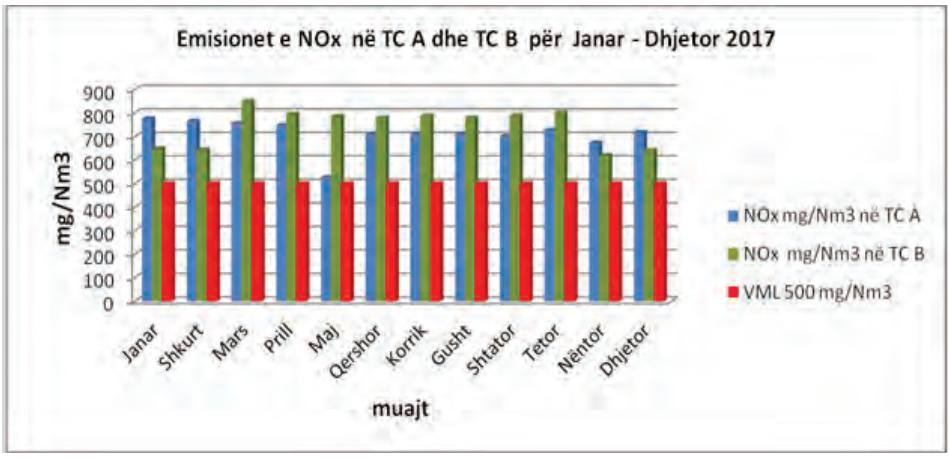


Fig.26. NOx emissions in mg/Nm3 during January - December 2017

1.1.2.2. Evaluation of air emissions by NewCoFeronikeli

During the production process, Feronikel releases polluting emissions both in the air and in the water. Air emissions are especially released from the rotating kilns, electric furnaces, conveyors and heating plants.
Find below a graphical representation of dust, SO_2 and NOx emissions measured in Feronikel, namely in:

- ✓ Chimney of rotary kilns;
- ✓ Conveyor chimney;
- ✓ Electric furnace no.1 behind the scrubber.

Chimney of rotary kilns

Measured dust emissions in mg/Nm³ – Fig. 27 shows dust emissions in chimney of Feronikel rotary kilns, which shows that there are no exceedances of allowed values during January - December 2017.

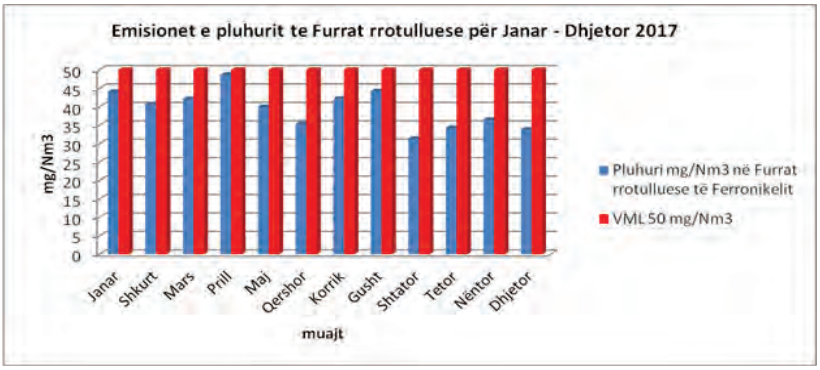


Fig.27. Measured dust emissions in mg/Nm3 during January - December 2017 in chimney of rotary kilns

Measured SO_2 emissions in mg/Nm³- Fig. 28 shows emissions of SO_2 in the chimney of Feronikel rotary kilns. The data indicates that during January - December 2017 no exceedances of the allowed values were recorded.

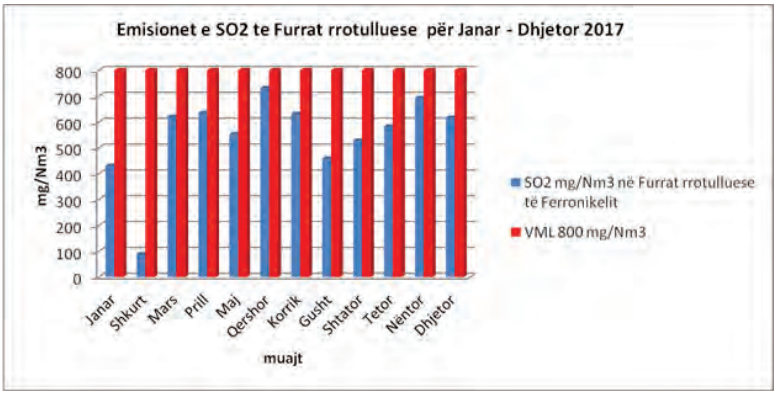


Fig.28. Measured SO_2 emissions in mg/Nm3 during January - December 2017 in the chimney of rotary kilns

Measured NOx emissions in mg/Nm³- From the data shown in Figure 29, which present emissions of NOx in the chimney of Feronikel rotary kilns, it is noted that during January - December 2017 have been recorded lower values compared to allowed ones.

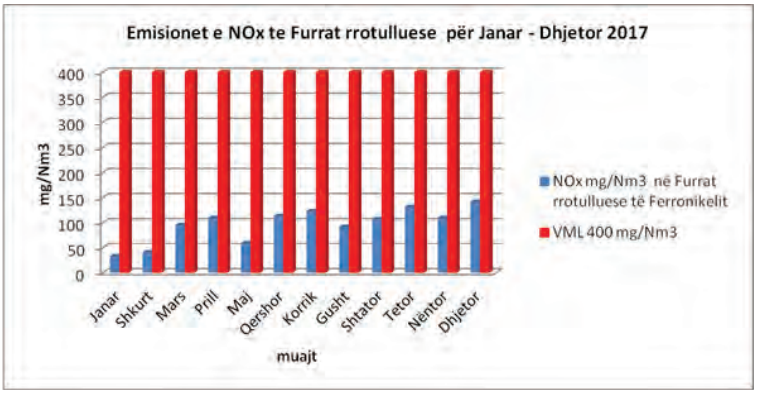


Fig. 29. Measured NOx emissions in mg/Nm3 during January - December 2017 in the chimney of rotary kilns

Conveyor chimney

Measured dust emissions in mg/Nm3 - Fig. 30 shows dust emissions in the Feronikel conveyor chimney. According to the chart, there have been no exceedances of the allowed values during January - December 2017.

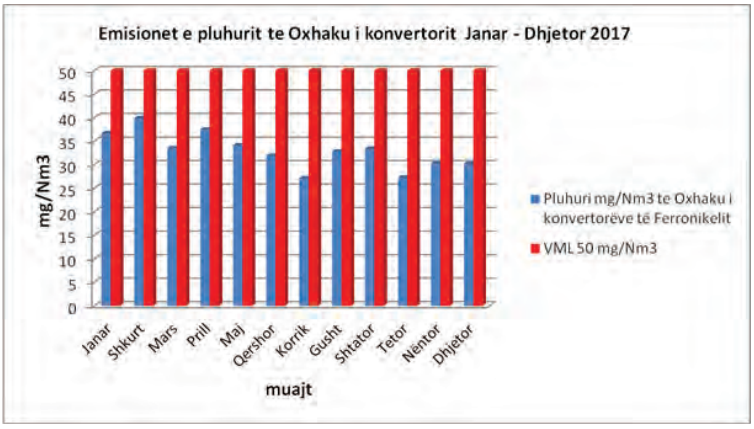


Fig.30. Measured dust emissions in mg/Nm3 during January - December 2017 in the conveyor chimney

Measured SO_2 emissions of in mg/Nm3- Fig. 31 shows SO_2 emissions at Feronikel, respectively in the conveyor chimney, indicating there have been no exceedances of allowed values during January - December 2017.

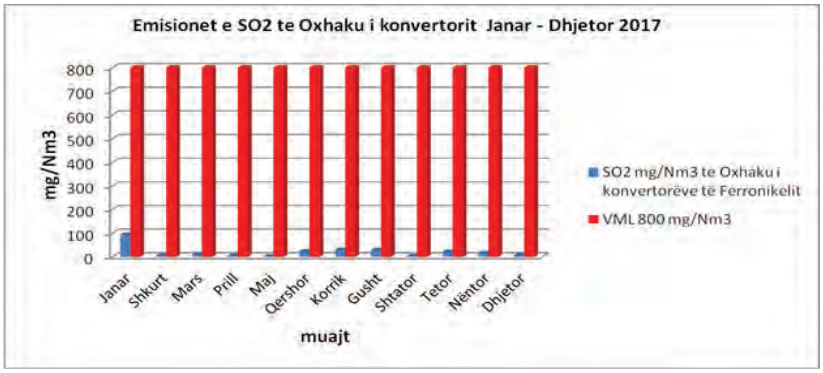


Fig.31. Measured SO_2 emissions in mg/Nm3 during January - December 2017 in the conveyor chimney

Measured NOx emissions in mg/Nm3 – Fig. 32 shows NOx emissions in the conveyor chimney, indicating that during January - December of the year have been recorded lower values compared to the allowed values.

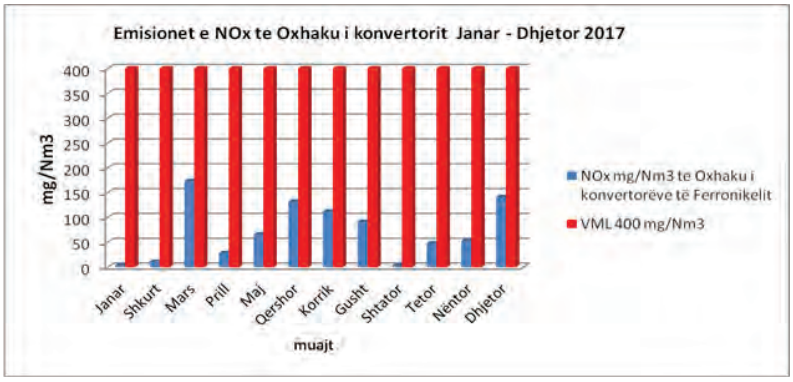


Figure 32. Measured NOx emissions in mg/Nm3 during January - December 2017 in the conveyor chimney

Electric furnace no.1 behind the scrubber

Measured dust emissions in mg/Nm^3- At this point, only dust emissions are monitored. Fig. 33 shows dust emissions at Feronikel, respectively in the electric furnace no. 1 behind the scrubber, indicating that no exceedances of the allowed values have been recorded during January - December 2017.

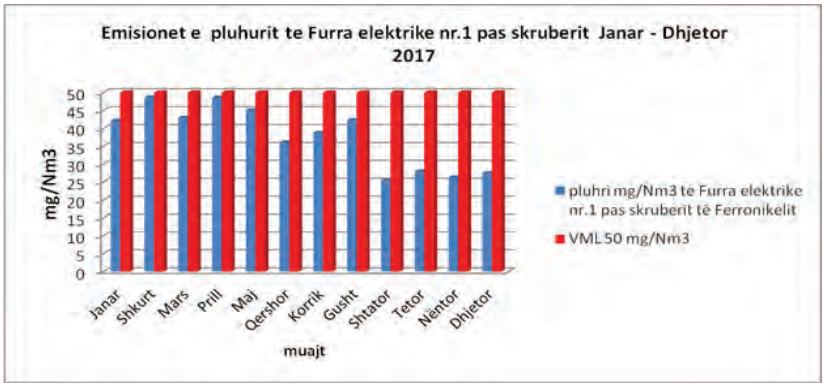


Figure 33. Measured dust emissions in mg/Nm3 during January - December 2017 in the electric furnace no. 1 behind the scrubber

1.1.2.3. Evaluation of air emissions by SharrCem

The technological process in all stages of cement production is accompanied, to a large or small extent, by factors that affect the environment. The main environmental impacts of cement industry are emissions into the air. Emissions (dust, NOx, SO_2) into the air are result of combustion processes in the rotary kilns. These emissions partially originate from the physicochemical dispersion of the raw material and partially from the combustion process of the fuel.

Find below the graphical representation of dust, SO_2 and NOx emissions. There are no measurements for February, because during this month there was no production due to renovations with this operator.

Dust emissions in mg/Nm3 - Fig. 34 shows dust emissions in SharrCem during January - December 2017. The data indicate that the values are very low and no exceedances of the allowed values have been recorded.

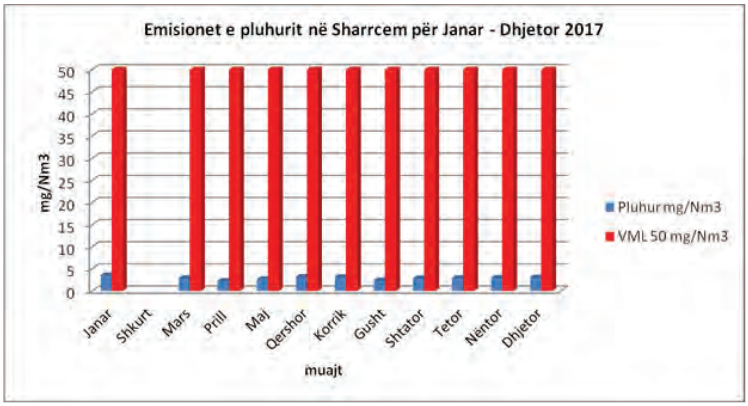


Figure 34. Average monthly value of dust emissions in mg/Nm3 during January - December 2017

SO_2 emissions in mg/Nm3 – Fig. 35 shows SO_2 emissions in SharrCem, which indicates that the values are very low during January - December 2017.

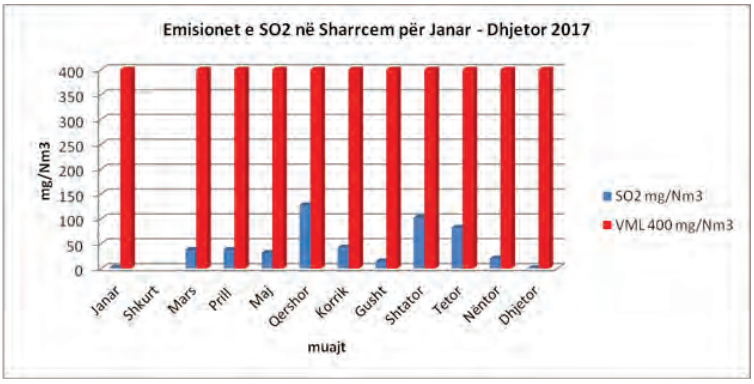


Figure 3 5. Average monthly value of SO_2 emissions in mg/Nm3 during January - December 2017

NOx emissions in mg/Nm3 – Fig. 36 shows NOx emissions in SharrCem, indicating that there have been no exceedances during January - December 2017.

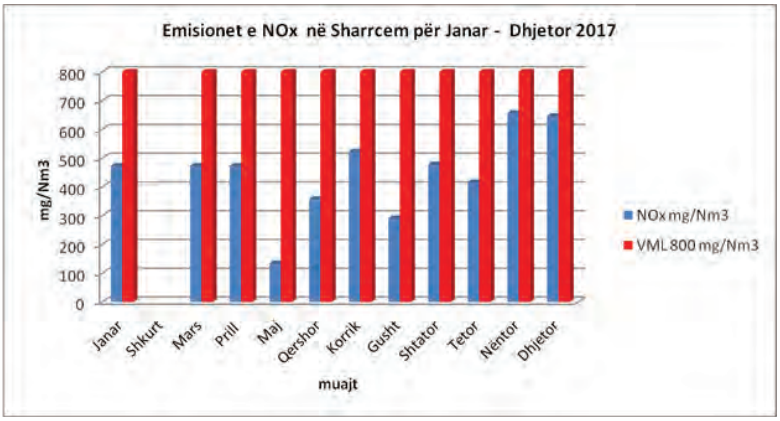


Figure 36. Average monthly value of NOx emissions in mg/Nm3 during January - December 2017

1.2. Water

Industrial development, urbanization and intensive agriculture are just some of the factors that affect water pollution. Despite continued engagement, the uncontrolled use of water resources and damage to river beds still remains one of the forms of degradation of our water resources.

Pressures in the waters come mainly as a result of increased volume of wastewater without proper physical, chemical or biological treatment. All of this has an impact on the increase of values in physical, chemical and microbiological parameters in water bodies. Other precipitation pressures are the runoff of agricultural lands and other pollution surfaces, which leads to the growth of suspended matter, inorganic materials (fertilizers-N, P, K, NH_4^+ etc.) and organic ones (PCB, Herbicides etc.). Among the biggest pressures on water bodies are industrial discharges of various activities.

Monitoring of surface water quality

River waters in the territory of the Republic of Kosovo are monitored by the Hydrometeorology Institute of Kosovo. The quality of these rivers is determined on the basis of physical, chemical and heavy metal analyses. The monitoring network has a total of 54 sampling sites (monitoring stations). The physical parameters currently being monitored are 10 physical parameters (measured 11 times a year), 39 chemical parameters (measured 11 times a year) and 8 heavy metals (2 times a year).

River monitoring stations, monitored parameters and frequency of measurements have been presented in Annex 1 and 2 of the report.

In this report, the state of the water is reflected through these indicators (parameters): Dissolved oxygen (mg/l O_2); Biochemical Oxygen Demand - BOD (mg/l O_2), Chemical Oxygen Demand - COD (mg/l O_2); Total Organic Carbon-C (mg/l); Total phosphorus – P (mg/l), Total Suspended Matter-TSM (mg/L). The values presented in the charts are as average values for 2017.

Parameters such as dissolved oxygen (O2), Biochemical Oxygen Demand for 5 days (BOD), Chemical Oxygen Demand (COD), show the level of organic and bacteriological pollution of water, and belong to the set of parameters expected to have pressures from the above mentioned phenomena. The presence of phosphorus (P_{tot}) causes eutrophication in the waters.

The Drini i Bardhe Basin – In this basin the selection is made for two rivers, namely Drini i Bardhë and Ereniku river, where as annual average value is presented the Chemical Oxygen Demand/mg/l O_2 (COD) and that in both rivers of the monitoring stations along the flow excluding referent stations (sources).

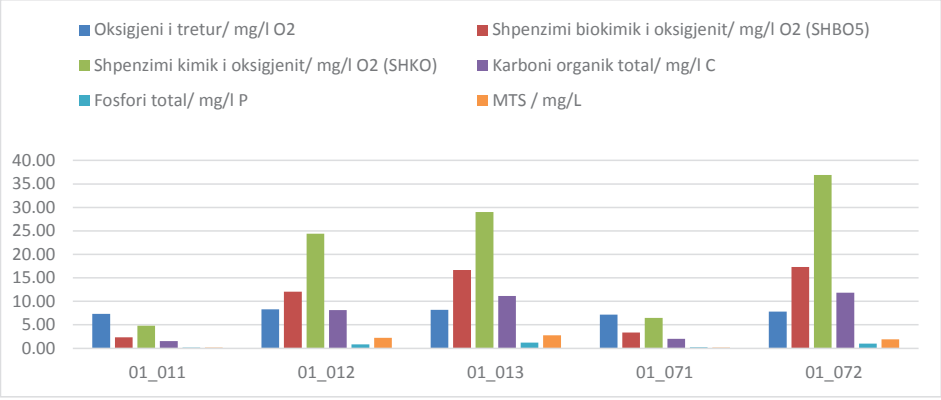


Figure 37: Indicators selected by river water quality monitoring- IHMK 2017 (Drini i Bardhë River Basin)

Iber River Basin – In this basin the selection has been made for these rivers: Ibri, Sitnica, Prishtevka, Graqanka and Drenica (figure 38), where it can be seen that the river Prishtevka/Bresje, with almost all the presented parameters shows higher values, because the river stretches itself is along the most populous area and includes also industrial areas.

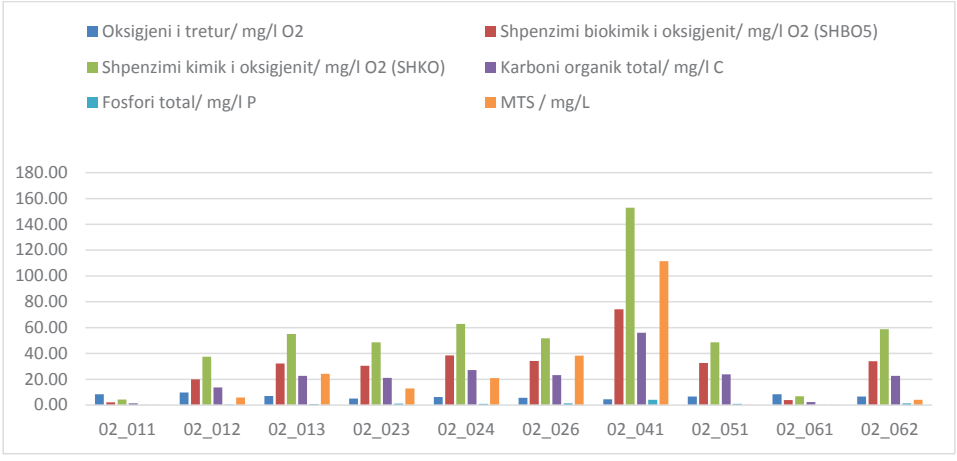


Figure 38: Indicators selected by river water quality monitoring- IHMK 2017(Iber River Basin)

Morava e Binçes and Lepenc Basin – In the Morava e Binçes Basin, the Morava e Binçes River has been selected with four monitoring stations in total (figure 39), where almost in all its monitoring stations there is increase of these six parameters. While in the Lepenci Basin, two rivers have been selected: Lepenci and Nerodimja.

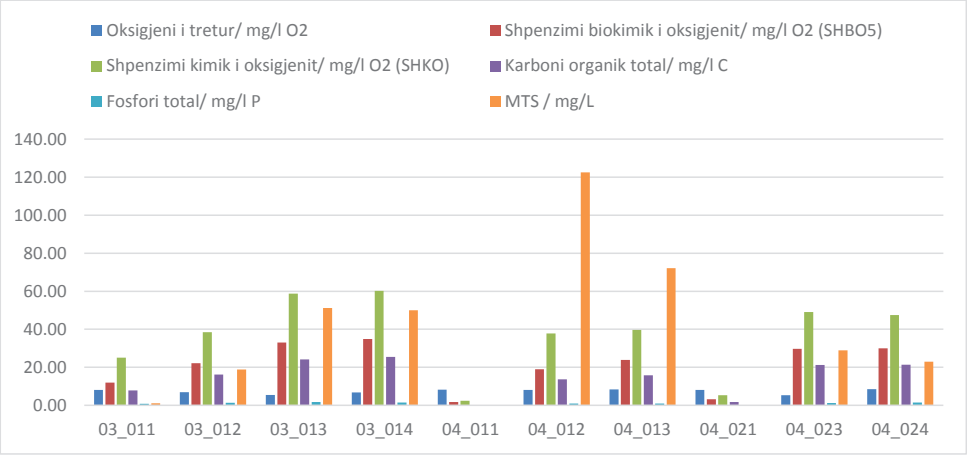


Figure 39: Indicators selected by river water quality monitoring- IHMK 2017 (Morava e Binçes and Lepenc Basin)

Based on these three charts (territorial stretches of all basins), where the presence of total quantity of phosphorus/ mg/l P, based on the analyses conducted during this period, in the river waters will not have expressed impact on the surface waters, because its values shown in the chart range between 0.02 mg/l P (Drenica/ Pjetershtica) and 4.05 mg/l P (Prishtevka/Bresje). Based on that, we can conclude that surface waters in Kosovo are not endangered by eutrophication.

Also, the indicator Biochemical Oxygen Demand (BOD), during the monitoring period for 2017, shows that the estimated values range between 1.73 mg O_2/l (Lepenci/ Prevalla Subain) and 74.22 mg O_2/l, which indicates the highest annual average water pollution of the rivers Prishtevka/Bresje. Even though in natural conditions clean waters do not have at all BOD quantity, this pollution is justified by the fact that surface waters are always and all around increasingly exposed to discharges of polluted waters through which are created optimal conditions for increase of BOD values.

In order to find out whether the water state has changed from the previous year in 2017, table 3 shows the water quality trend for the selected parameters as in the abovementioned charts.

Table 3: Trend of river water quality 2016-2017

Monitoring stations	Dissolved oxygen/ mg/l O_2	Biochemical Oxygen Demand/ mg/l O_2 (BOD)	Chemical Oxygen Demand/ mg/l O_2 (COD)	Total Organic Carbon/ mg/l C	Total Phosphorus/ mg/l P	Total Suspended Matter/ mg/L (TSM)
RV01_011	↓	↑	↑	↑	↓	↔
RV01_012	↑	↓	↓	↓	↓	↓
RV01_013	↑	↑	↑	↑	↑	↓
RV01_071	↓	↑	↑	↑	↓	↔
RV01_072	↑	↑	↑	↑	↓	↓
RV02_011	↓	↓	↓	↓	↓	↓
RV02_012	↑	↓	↓	↓	↓	↓
RV02_013	↑	↑	↑	↑	↑	↑
RV02_023	↓	↑	↑	↑	↓	↓
RV02_024	↓	↑	↑	↑	↓	↓
RV02_026	↑	↑	↑	↑	↓	↑
RV02_041	↑	↓	↓	↓	↓	↓
RV02_051	↑	↑	↓	↑	↓	↓
RV02_061	↑	↑	↑	↑	↓	↓
RV02_062	↓	↑	↑	↑	↓	↓
RV03_011	↓	↑	↑	↑	↑	↑
RV03_012	↑	↑	↑	↑	↑	↑
RV03_013	↑	↑	↑	↑	↑	↑
RV03_014	↑	↑	↑	↑	↓	↓
RV04_011	↑	↑	↑	↓	↓	↔
RV04_012	↓	↑	↑	↑	↑	↑
RV04_013	↓	↑	↑	↑	↓	↑
RV04_021	↑	↑	↑	↑	↓	↔
RV04_023	↑	↓	↓	↓	↓	↓
RV04_024	↑	↑	↓	↑	↓	↓

Biological monitoring of surface waters

The development of ecological assessment and classification systems is one of the most important and technically challenging parts in the implementation of the Water Framework Directive (WFD). The good ecological status of surface waters is defined in Annex V of the WFD, in terms of quality of the biological community and hydrological and chemical characteristics. Since absolute biological quality standards cannot be established in all countries aiming the WFD implementation and due to ecological variability, controls are specified to allow only a slight departure from the biological community, which will have an anthropogenic impact.

In the framework of the project "Enabling Transboundary Cooperation and Integrated Water Resources Management in the Extended Drin River Basin" supported by GEF (Global Environmental Fascilities) and implemented by GWP (Global Water Partnership), biological monitoring has taken place at the River Drini i Bardhë Basin in five monitoring stations:

- Monitoring Station 1 - Drini i Bardhë River in Radavc,
- Monitoring Station 2 - Klina River in Klina,
- Monitoring Station 3 – Toplluha River in Pirana,
- Monitoring Station 4 – River Lumbardhi i Prizrenit in Vlashnje and
- Monitoring Station 5 - Drini i Bardhë River in Vërmica.

In the framework of this monitoring, the Zoo Bentos - Invertebrata (Water Invertebrates) have been researched and Fito Bentos - Diatoms and Macrophytes have been monitored.
Monitoring Station 1 and Monitoring Station 5 are located along the Drini i Bardhë River, while, three other Monitoring Stations are located along the stream of Drini i Bardhë River.

Macroinvertebrates – Benthic (bottom of the river) macro (large enough to be seen with the naked eye) invertebrates are water organisms that are generally small (shall be kept with a mesh of 200 to 500 μm), but sufficiently big to be easily collected. Macroinvertebrates live on the bottom substrate of streams and lakes, for at least one part of their cycle and also in all types of water habitat. This group includes insects, but also worms, lobsters and snails of freshwaters.

Monitoring Phyto Benthos/Diatoms – Diatoms are the photosynthetic, eukaryotic organisms living in almost all water bodies. They are found in springs, rivers, basins, lakes, canals, freshwater, brackish waters and sea waters. Diatoms are traditionally classified according to the shape of their valves, divided into two major structural groups: centric diatoms (with valve) are radially symmetric and pennate diatoms (with valves) are bilaterally symmetric.

Monitoring Phyto Benthos / Macrophytes – Macrophyte is an aquatic plant that grows in or near water and is either emergent, submergent, or floating, and includes helophytes (a plant that grows in marsh, partly submerged in water). In lakes and rivers, macrophytes provide substrate for aquatic invertebrates, produce oxygen, and act as food for some fish and wildlife. The aquatic vegetation structure in rivers may change as a result of the enrichment of nutrients and the presence of pollutants. Moreover, the presence of aquatic macrophytes is reported as an improvement in water quality.

Biological monitoring results of macroinvertebrates are presented in Table 4.

Table 4: Biological Monitoring Results for Macroinvertebrates

	Radavc	Klina	Toplluha	Vlashnje	Vërmica
Value of the EPT index *[4]	22	20	12	16	8
Bio-classification	Very good	Very good	Very good	Very good	Good
Value of the FBI index*	1.97	3.78	5.19	3.97	6.01
Bio-classification	Excellent	Very good	Poor	Very good	Quite poor
Value of the BMWP index*	204	200	134	154	96
Bio-classification	Very good	Very good	Very good	Very good	Good
Value of the ASPT index*	8.16	7.69	5.82	6.41	5.33
Bio-classification	Clean water	Clean water	Suspicious quality	Clean water	Suspicious quality
Biotik SWRC index *	2.03	4.78	5.50	3.77	5.41
Water classification	Excellent	Very good	Poor	Good	Poor

The ecological status of the Drini i Bardhe water body at the monitoring points has been determined based on the variable values of the macroinvertebrate index, as shown in Table 5.

[4] ****Clarification of abbreviations used in the table:*** ***ETP****-Ephemeroptera, Plecoptera, Trichoptera;* ***FBI-*** *Family Biotic Index,* ***BMWP-*** *Biological Monitoring Working Party Score;* ***ASPT-*** *Average Score per Taxon;* ***SWRC-*** *Stroud Water Research Centre .*

Table 5: Ecological status of the Drini i Bardhe basin[5]

River	Measuring location	Ecological status	
Drini i Bardhe	Radavc	High	
Klina	Klina	Moderated	
Toplluha	Pirana	Poor	
Lumbardhi i Prizrenit	Vlashnje	Moderated	
Drini i Bardhë	Vërmica	Poor	

The water quality assessment based on macroinvertebrate, diatoms and macrophytes carried out during this project provided an initial overview of the quality of the freshwater ecosystems of the Drini i Bardhe basin. However, in order to have sustainable and scientific results of water quality in the Drini i Bardhe basin and beyond in Kosovo, and with the purpose to create a more detailed picture of biological monitoring of water quality, it is suggested as follows:

- Repeat monitoring of water quality assessment based on macroinvertebrate, macrophyte, and diatoms in other seasons over the year.
- Repeat monitoring of water quality assessment based on microvertebrate, diatoms and macrophytes in multiple monitoring stations for the stream and selected rivers, in order to have a more accurate picture of water quality in the Drini i Bardhe basin.
- Expansion of water quality monitoring in other streams and of Drini i Bardhe river basin, which are not included in this monitoring phase.
- Expansion of water quality monitoring based on biological indicators in other streams and rivers in Kosovo.
- According to WFD requirements, establish a repeat system at selected monitoring stations of the Drini i Bardhe river basin based on legal requirements, at least four times a year.
- Establish a database where all biological monitoring results, including those presented in this report, are collected together with all the results of chemical monitoring and other field observations.
- Since in Europe there are many biotic indices in use and which are designed for other geographic areas, there is an urgent need to standardize the use of biotic indices that would be suitably tailored for Kosovo.
- There is an urgent need to have a good agreement between the Balkan countries, in order to standardize the use of the same biotic indices to assess the quality of freshwater ecosystems in this zone.

[5] *Biological Monitoring Report under the project "Enabling Transboundary Cooperation and Integrated Water Resources Management in the Extended Drin River Basin" GWP 2017*

- The use of reference sites that possess 'good ecological status' can also be misleading in the region as there should be a standardized way of defining these environments in freshwater ecosystems.
- The use of recommendations driven by the EU WFD has been differently understood in different Balkan countries and there is an urgent need to standardize between countries the proper methodology for assessing water quality using microvertebrate, diatoms and macrophytes.

Monitoring the amount of water

In addition to water quality, IHMK also monitors the amount of waters. The amount of water is monitored through the hydrometric network, which consists of a number of measuring stations in the rivers where the measurements for the amount of water are taken. The hydrometric network consists of 25 hydrometric stations. These stations measure the Level (h) and Feed (Q). The following table presents the data for the water level H (m), for the respective hydrometric stations, carried out in 2017.

Table 6: Average annual values of H (cm) by metering stations [6]

Station	Avg. (m)	Max (m)	Min (m)
Berkova	0.993	1.567	0.814
Brod	0.718	1.608	0.538
Caraleva	0.237	0.965	0.153
Deçan	0.310	0.779	0.224
Domorov	0.690	1.705	0.441
Drelaj	0.584	1.610	0.265
Drenas	1.154	2.275	0.880
Gjakova	0.804	3.045	0.359
Gjonaj	1.846	4.266	1.327
Grykë	0.715	1.811	0.464
Hani Elezit	1.030	2.611	0.729
Kacanik	0.420	1.569	0.229
Kepuz	0.995	2.495	0.505
Klina	0.632	1.964	0.435
Konçul	2.365	4.950	1.792
Leposaviç	1.619	3.206	1.166
Lluzhan	0.856	2.855	0.482
Millosheva	1.402	3.665	0.856
Mirusha	0.720	1.292	0.561
Mlika	0.602	1.239	0.302

[6] *Hydrometeorology Institute of Kosovo*

Nedakovc	1.468	2.689	1.245
Pirana	1.075	3.455	0.809
Prizren	0.534	0.960	0.405
Viti	0.574	1.531	0.349
Vragoli	0.678	2.312	0.416

The following table presents data for Feeds (Q) for four hydrometric monitoring stations realized in 2017.

Table 7: Average annual values of Feeds Q (l / s) by metering stations [7]

Metering station	Annual average l / s	Annual minimum l/s	Annual maximum l/s
Gjonaj	45.3	6.12	97.4
Rugova Gorge	3.468	0.595	8.631
Deçan Gorge	0.516	0.252	1.230
Prizren Gorge	2.603	0.577	7.014

[7] *Hydrometeorology Institute of Kosovo*

1.3. Land (soil)

Industry, agriculture, waste, transport, and used waters are among the main sources of land pollution in Kosovo. In many locations around the heavy industries, such as Obiliq, Mitrovica, Drenas and Hani i Elezit, land is considered to be polluted.

Heavy industries discharge pollutants into the environment and the presence of hazardous waste, either of heavy metals or chemicals, causes land pollution.

The trend of land pollution and degradation is still rising, despite many measures undertaken by local and central institutions. Almost from the year 2000 until today, agricultural lands continue to be degraded. This phenomenon is particularly manifested along the main local and regional roads of Kosovo.

Land use

Land use and utilization is characterized by a growth trend both in terms of use for agro-economic and infrastructural purposes. In many cases, the agricultural land is utilized without any criteria or standards. As a result of these actions, especially in infrastructure construction or exploitation of inert materials, the land undergoes into unrecoverable degradation.

According to the data of Agricultural Holdings Survey for 2017, the total utilized surface area of agricultural land was 416 072,30 hectares, most of which consisted of meadows and pastures (including common land) 218 314,30 ha or 52.5%, while the arable land - 186 954.16 ha or 44.9%.

Compared to 2016, during 2017 there is an increase in the utilized area of agricultural land, and also an increase in the arable lands, while there is a decrease in pasture and meadows. Other arable land included perennial crops by 2.3% and orchards by 0.3%.

In Kosovo, the medicinal and aromatic plants sector is consolidated to a certain level both in cultivation and in gathering. There are approximately 160 ha cultivated, as well as 179,580 ha certified areas for the collection of medicinal plants and wild fruits.

There are 5 certified companies and 45 collection centres that collect these plants throughout Kosovo. Export is carried out as semi-processed product and 95% of production is exported abroad.[8]

[8] *Source: Department for Agricultural Policy and Markets / MAFRD*

Responsibilities for land management and consolidation

Law No. 04/L-040, 2012 on Land Regulation defines responsible institutions for land regulation such as: Ministry of Agriculture, Forestry and Rural Development, Kosovo Cadastral Agency, Municipalities and Municipal Cadastral Offices.

Ministry of Agriculture, in compliance with the Municipal Development Plans, proposes the cadastral zones or parts of cadastral zones to be regulated with the land regulation project. Kosovo Cadastral Agency possesses the overall land registry data such as:

- Cadastral zones
- Land area by crops
- Number of cadastral parcels
- Number of participants

Land protection and sustainable development of agriculture depend greatly on the preparation and the appropriate implementation of land policy. These policies are the key to control land degradation and improve the utilization of agricultural land, based on its production capacities.

Management and administration of land in Kosovo is regulated by several laws and Administrative Instructions implemented by Ministry of Agriculture, Forestry and Rural Development, Ministry of Environment and Spatial Planning and other relevant institutions.

Responsibilities for land monitoring

There is still no complete and functional system for land monitoring in Kosovo, although there are institutions responsible for land monitoring, such as the Kosovo Agriculture Institute and the Hydrometeorology Institute of Kosovo.

Both institutions operate within the relevant ministries, namely the Ministry of Agriculture, Forestry and Rural Development and the Ministry of Environment and Spatial Planning, respectively.

Kosovo Agriculture Institute is responsible for land monitoring as follows:

- Technical and scientific support for technical departments of MAFRD,
- Controlling the quality of agricultural inputs, food, and preservation of living environment,

- Research on varieties of agricultural crops (wheat, barley, maize and potatoes) in agro-ecological conditions of Kosovo.
- Investigative work toward the creation of wheat cultivars, maize hybrids, etc.,
- Preparatory work on the creation of a gene bank for different crops,
- Evaluation of the production qualities and land melioration in Kosovo,
- Research, identification and inventory of harmful biological agents (pests, pathogens, weeds, etc.)[9]

Hydrometeorology Institute of Kosovo is responsible as follows:

- Monitors land pollution throughout the territory of Kosovo, according to the monitoring program;
- Reviews the national network for monitoring the soil quality and gives proposals for eventual changes to it as needed;
- Monitors the soil quality and conducts laboratory tests even in special cases;
- Assesses and analyses the results of soil quality monitoring and compiles reports on soil quality monitoring;
- Prepares the operational procedures for soil laboratory analysis according to European norms for laboratory measurements;

Protected areas and biodiversity

The number of protected nature areas in Kosovo in 2017 is 184 and includes an area of 126,119.29 ha or 11.56 % of Kosovo's total surface area. Within these areas there are: 19 Strict Nature Reserves [10] ("Arnen Reserve", "Maja e Ropsit", "Rusenica", "Kamilja", etc.), 2 National Parks (NP "Sharri", NP "Bjeshkët e Nemuna"), 156 Nature Monuments ("Drini i Bardhë with Radavc cave", "Cave of Gadime", "Mirusha Waterfalls", "Rugova Gorge", "Drini i Bardhë Canyon at the Ura e Fshejtë", "Trungu i Rrapit në Marash" etc.), 1 Nautre Park ("Pashtrik Mountain and Vërmica Lake"), 5 protected Landscapes ("Shkugëza","Pishat e Deçanit", etc.) and 1 Special Protected Zone of Birds ("Ligatina e Hencit-Radeva").

The largest surface area of protected areas consists of National Parks such as: "Bjeshkët e Nemuna" and "Sharri" Nature Park "Pashtrik Mountain and Lake

[9] http://www.mbpzhr-ks.net/sq/instituti-bujqesor-i-kosoves
[10] During this period, 8 new strict reserves have been announced, while the limit and the total surface area have been redefined for some of the existing reserves.

Vermica", Protected Landscapes "Germia" and Natural Monument of Special Importance "Ujëvarat e Mirushës".
During 2017, after the preparation of professional justification by the Kosovo Institute for Nature Protection, 11 Monuments of Nature of the territory of the Municipality of Ferizaj were added to the total list of protected areas.

Table 8. Protected nature areas by categories 2017

IUCN Category	Name	No.	Surface area/ha	Share in the protected areas %
I	Strict Nature Reserves	19	10,885.82	**0.99**
II	National Parks	2	115,957	**10.6**
III	Nature Monuments	156	6,059.79	**0.57**
V	Nature Park	1	5,934	**0.5**
V	Protected Landscape	5	2.437	**0.2**
V	Special Protected Zone of Birds	1	109.5	**0.01**
	Total	184	126119.29[11]	**11.56 %**

During 2017, upon the initiative of the Kosovo Institute for Nature Protection, professional justifications for taking under legal protection of 10 new objects/nature areas, of which 9 protected monuments and 1 protected landscape in the municipality of Gjakova, have been prepared.

During this period, protected areas have been monitored and recommendations and professional opinions on the intervention in nature have been provided.
In some of the protected areas, there have been interventions such as: illegal construction, forest cutting, fires in protected areas and construction of infrastructure.

In 2017, it was foreseen the implementation of the project for marking the protected areas - strict reserves, but due to budget cuts, the project is expected to be implemented in the following years.

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[11] Explanation: this surface area of protected areas does not include the protected areas located within National Parks "Sharri" and "Bjeshkët e Nemuna".

Flora and vegetation - Because of the geographical position and climate conditions, as well as the historical development of flora and vegetation, Kosovo is a very rich region of species, among which a large number of them are endemic, steno-endemic and relict plants. The vegetation has characteristic ecosystems representing habitats for many animal species.

Flora of our country consists of algae, lichens, fungus, ferns, gymnospermae, and angiosperms, which are the basis of life and form the green layer of the earth that directly impacts the life of animal and human organisms. According to the data of different authors, approximately 2.800 to 3.000 species of vascular flora are present in Kosovo.[12]

With regards to the present state of flora and vegetation, although thorough analyses of the state of certain floricultural elements and some phytocenosis have not been conducted yet, hitherto researches show that flora and vegetation of our country is at risk of destruction. This has been impacted by the complex of factors, among which the anthropogenic factor is the main factor of degradation and destruction of the primary and autochthonous flora of this territory. Although sufficient analyses regarding the state of certain floricultural elements and some phytocenosis have not been carried out yet, hitherto researches indicate a poor state of flora and vegetation in our country. This has been impacted by the complex of factors, among which the most important is the anthropogenic factor, which has led to the degradation and destruction of the autochthonous flora.

The state of fauna - In terms of fauna, Kosovo is characterized by a wide variety of species, although researches in this regard have not been completed. The overall state of fauna is good as a result of the expansion of the protected areas, mainly in two National Parks composed of 10% of the total nature protected area. The biggest pressure to fauna in Kosovo is caused by illegal hunting that occurs from time to time even within the nature protected areas.

Deer and wild goats are species most vulnerable to illegal hunting. The situation is better for brown bears, wolfs, etc. Due to being disturbed by humans and lack of a management body, especially during the nesting season, many bird species that once lived in the Ligatina e Hencit nowadays are rarely seen.

It is estimated that in Kosovo live about 250 species of vertebrates, out of which 200 species are birds, about 20 species of reptiles, over 10 species of amphibians, and over 30 species of fish, 176 species of butterflies and an unidentified number of macro invertebrate fauna of water. The exact number of fauna species shall be determined

[12] The Red Book of Vascular Flora of the Republic of Kosovo

during the drafting of the Red Book for fauna, which commenced in 2017 and will continue in 2018, and within other projects as well.

Monitoring Species of Mammals - Within the activities for monitoring and inventorying of biodiversity in nature protected areas, during 2017, KEPA, respectively the Institute for Protection of Nature continued monitoring fauna through camera traps in two National Parks, "Sharri" and "Bjeshkët e Nemuna".

Camera traps are placed in some parts of the Parks, which are believed to be possible areas of wildlife movement. During this period, data were provided on the presence of mammal species such as: Lynx, Brown bear (*Ursus arctos*), Roe Deer (*Capreolus capreolus*), Red Deer (*Cervus elaphus*), Wild pigs (*Sus scrofa*), Fox (*Vulpes vulpes*) Wild cats (*Felis sylvestris*), Badger (*Meles meles*), Brown Hare (*Lepus europaeus*) as well as some other common species. This year also, camera traps have verified the presence of Balkan lynx (*Lynx lynx ssp. balcanicus*) in the territory of the National Park "Bjeshkët e Nemuna". From the presence of the total number of these mammal species, it can be ascertained a relatively good state of fauna in these two nature protected areas.



Images by the records of camera traps

1.4. Waste

State in the waste sector - Waste management in the Republic of Kosovo is regulated by **Law no. 64/L-060** on Waste, and by other bylaws. Municipalities, owners and manufacturers, as well as licenced persons dealing with waste management, are obliged to annually report on waste management to the Ministry of Environment and Spatial Planning.

Environmental protection from pollution and damage caused by waste requires for the legislation adopted in the field of waste to be applied where the standards, techniques and methods for their treatment have been set, which affects in the reduction of waste volume and the negative impacts on the environment.

Municipal waste management in Kosovo is realized through public and private service providers, while waste are collected in the regional and municipal sanitary landfills.

The condition of sanitary landfills in Kosovo is not satisfactory. This condition is due to many factors, with particular emphasis on their poor management.

In general terms, it can be estimated that progress was marked toward improvement in the maintenance aspect compared to previous years. A more severe condition is at the Peja and Prishtina landfill due to waste overflow, lack of new surface for landfills, as well as problems with waters flowing outside the landfill. Coverage with earth in parts filled with waste is estimated to be better compared to previous years.



Covering waste with layers of soil in the sanitary landfill in Landovicë (Prizren)

Amount of municipal waste deposited - The amount of waste generated and deposited in the sanitary landfills in Kosovo is increasing as noted in the following table. The largest amount of waste is deposited in the sanitary landfill in Mirash (Prishtina), whereas the smallest amount in the sanitary landfill in Dragash.

Table 9. The amount of waste by sanitary landfills 2014-2017

Sanitary landfills	Total in ton 2014	Total in ton 2015	Total in ton 2016	Total in ton 2017
Prishtina (Mirash)	88,803.29	104,742.68	116,529.00	116,355.77
Prizren (Landovica)	44,490.70	79,661.07	89,897.79	90,858.81
Mitrovica (Germova)	40,284.64	39,546.52	43,863.36	64,663.05
Peja (Sferk)	38,950.00	44,424.00	48,342.00	47,926.00
Gjilan (Velekinca)	21,263.30	38,244.60	45,311.82	40,788.79
Ferizaj (Gerlica)	23,462.00	13,801.23	12,904.16	21,248.18
Podujeva (Dumnica)	7,679.20	10,315.42	10,552.70	11,083.00
Dragash (Sharr)	4,261.00	4,577.00	5,201.50	5,530.50
Total of landfills	**269,194.13**	**335,312.52**	**372,602.33**	**398,454.10**

The increase of deposits is noted based on the trend of waste disposal in the landfills for 2014-2017 *(Fig.40).*

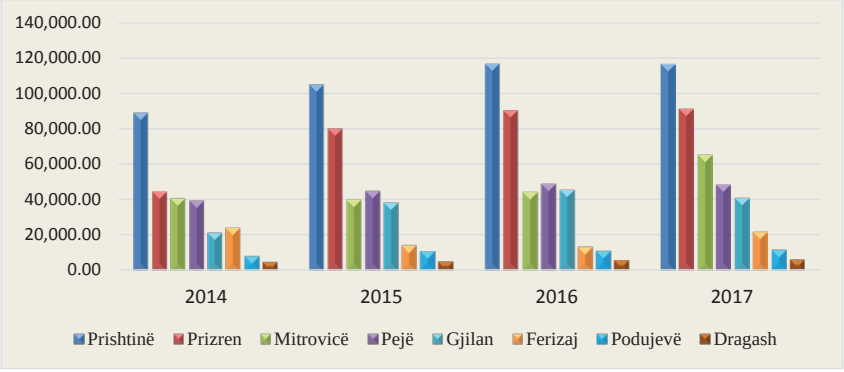


Figure 40. The amount of waste disposed 2014-2017

From the 2017 reported data, a total of 398,454.10 tons of municipal waste was collected in Kosovo. The 2017 data indicate that the average municipal waste collected in Kosovo was 229 kg/inhabitant/year, respectively 0.63 kg/inhabitant/day.

Figure 41 presents the average amount of collected municipal waste expressed in kg/inhabitant/year by the number of inhabitants for 2014-2017[13].

[13] *KAS, The estimation of the population of Kosovo 2014, 2015 and 2016.*

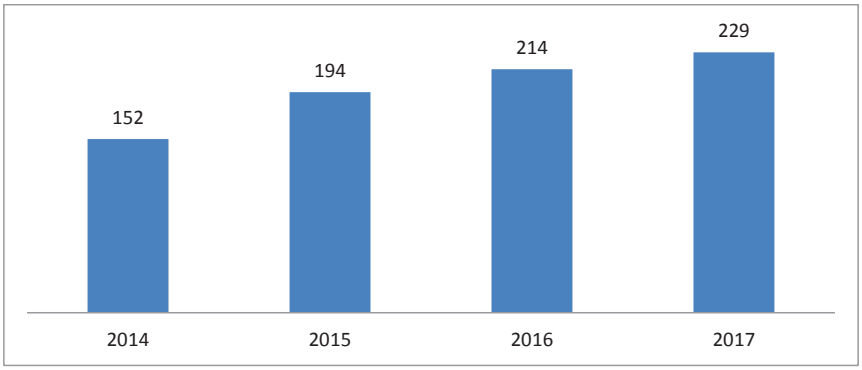


Fig.41. The amount of collected waste in kg/inhabitant/year 2014-2017

In the sanitary landfills managed by KLMC, namely Mirash (Prishtina), Dumnica (Podujeva), Velekinca (Gjilan) and Landovica (Prizren), for 2016-2017, the waste disposal resulted to be higher in 2017 marking a difference of 5,136.66 tons. In 2016, 275,195.47 tons were deposited, while in 2017 were deposited 280,332.12 tons *(Fig.42).*

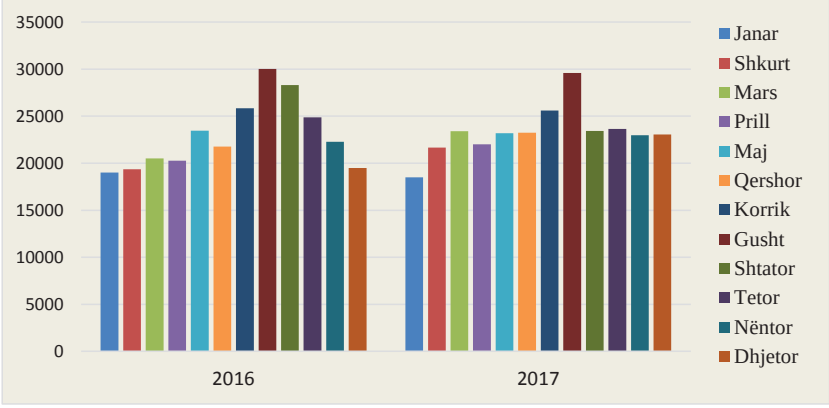


Figure 42. Trend of waste disposal in the sanitary landfill, managed by KLMC for 2016-2017

The trend of waste disposal has marked an increase in the Mitrovica's sanitary landfill. In 2017, in this sanitary landfill were disposed 64,663.05 tons, respectively 24,321.06 tons more compared to 2016. This is justified by the extension of waste collection service network and the better waste management by relevant operators.

In 2016-2017, the largest amount of waste disposal was recorded in August, with 3,632.03 tons. The increase in consumption of organic products has contributed to

this growth. Wastes from the municipalities of Mitrovica, Vushtrria and Skenderaj are disposed In the Mitrovica's sanitary landfill.

During 2017, 47,926.00 tons were disposed in Peja's sanitary landfill. The disposal trend does not indicate any significant change, thus, unlike 2016, in 2017 about 0.5 tons less of disposed waste were recorded. In this landfill the wastes from municipality of Peja, Deçan, Klina and Istog are accepted to be disposed.

By comparing the amount of waste disposed in Mitrovica and Peja sanitary landfill for 2014-2017, it is noted that the largest amount of waste was disposed in the Mitrovica's sanitary landfill, with a difference of 5,194.2 tons.*(Fig.43*).

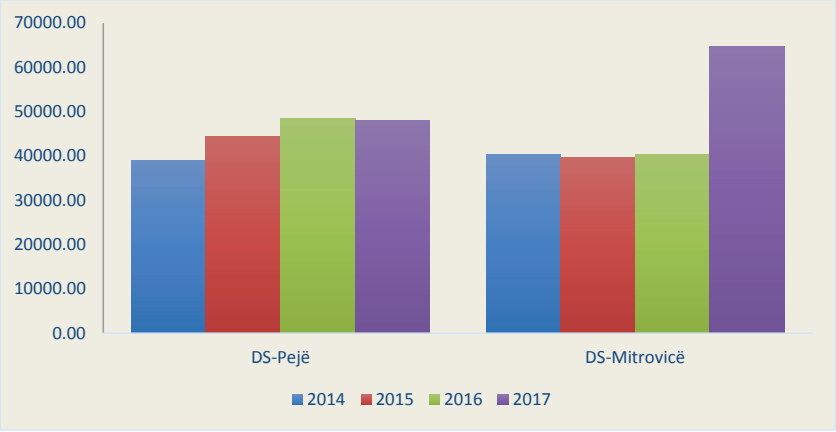


Figure 43.The amount of waste disposed in the Mitrovica and Peja sanitary landfill for 2014-2017

The landfills of Dragash and Podujeva are special because only the waste generated in these municipalities is disposed therein. In Dragash landfill, 5,201.5 tons were disposed in 2016, while 5,530.5 tons were disposed in 2017, i.e. there is an increase of 329 tons.

In Podujeva landfill, 10,315.42 tons were disposed in 2016, while 11,083.00 tons were disposed in in 2017, with a difference of 767.58 tons. In these landfills, the largest amount was disposed in August, during 2016-2017. Comparing these two landfills for 2017, Podujeva landfill marked a difference of 5,552.5 tons of more disposed waste compared to that of Dragash.

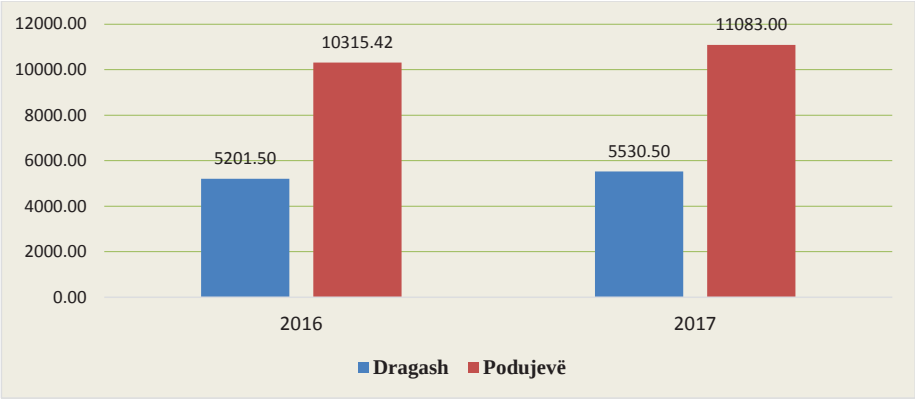


Figure 44.The amount of waste disposed for 2017- Dragash & Podujeva

Illegal landfills - During May and June 2017, in cooperation with municipal officials/inspectors and RWC officials, and with the support of GIZ, an assessment has been carried out by the Kosovo Environmental Protection Agency. Out of a total of 1,572 illegal landfills identified, 45% of them are large landfills, 36% are medium landfills, and 17% are small landfills.

Table 10 presents the tabular data regarding the number of illegal landfills identified in 2016 along the roads in 17 municipalities, their revaluation in 2017 and the number of eliminated illegal landfills. Following the revaluation, out of the total number of 1117 illegal landfills in 2016, after eliminating a number of them, the number of illegal landfills identified in 2017 is 451.

From the collected data, the municipality of Lipjan was identified with the largest number of illegal landfills (97), followed by Drenas and Ferizaj with 57 and 51, respectively, whereas the municipality of Klina was identified with the smallest number of illegal landfills (9).

Table 10. Comparison of identified illegal landfills by municipalities, 2016 and 2017

No.	Municipality	No. of illegal landfills 2016	Eliminated	No. of illegal landfills 2017
1	Istog	82	61	21
2	Klina	57	48	9
3	Peja	121	102	19
4	Gjakova	70	28	42
5	Ferizaj	61	10	51
6	Kacanik	35	17	18
7	Shtime	27	13	14
8	Drenas	137	80	57
9	Fushe-Kosova	42	32	10
10	Graçanica	32	16	16
11	Lipjan	105	8	97
12	Obiliq	53	42	11
13	Podujeva	35	21	14
14	Prishtina	94	18	76
15	Mitrovica	38	25	13
16	Skenderaj	71	53	18
17	Vushtrri	57	34	23
Total		**1117**	**666**	**451**

Medical waste – This type of waste is treated in 8 plants, located within the main hospital centres in Kosovo. Out of these 8 plants, 7 of them have been built under MESP funding, while the plant within the Vushtrria hospital was funded by the Red Crescent of the United Arab Emirates.

Based on the data collected by KEPA, it is noted that the treatment of such wastes is increasingly growing from year to year (Table 11). It has been ascertained that not all health institutions dispose waste for treatment in such plants, otherwise the amount of these waste would have been increased.

In the plant located in UCCK, the largest amount of medical waste is treated in Prishtina, followed by the plant in Prizren, while the smallest amount is treated at the plant in Vushtrri.

Except the plants in Gjakova and Vushtrri, all other plants are operating at full capacity, while in the plant in UCCK the work is performed in shifts due to the large amount of waste.

Table 11. The amount of medical wastes treated for 2015-2017

No.	Plant	Amount/kg/2015	Amount/Kg/2016	Amount/Kg/2017
1	Prishtina	205967	230370	246587
2	Prizren	91760	93981.8	110541.36
3	Peja	44418	49403	49351.00
4	Ferizaj	52082	57795	8901[14]
5	Gjilan	26591	22936	36791.30
6	Gjakova	9365	2160	2171
7	Mitrovica	51192	66000	79359
8	Vushtrri	/	/	1647.95
8	**Total**	**481375.00**	**522645.80**	**532323.11**

Waste treatment in Kosovo - Based on the updated register with the list of waste management companies licensed by MESP, there are 76 licensed companies, which have registered several activities, such as municipal waste, metal waste, medical waste, plastic waste management, etc. Municipalities with the largest number of waste management companies are: Prishtina with 16 companies, followed by Ferizaj and Gjakova with 12 and 8 companies, respectively, while Viti, Suhareka, Malisheva, etc., have only 1 licensed company each. The following table presents the types of waste treatment and the number of companies performing these activities *(Table 12).*

Table 12. Number of companies dealing with the treatment of various wastes

No.	Type of treated wastes	Licensed operators
1	Disposal	1
2	Collection and transport of municipal waste	28
3	Collection, transport and treatment of municipal waste	3
4	Collection, transport and treatment of industrial waste	1
5	Treatment of medical waste	7
6	Collection, transport and treatment of organic waste	1
7	Collection, transport and treatment of organic waste, plastics, paper, glass, wood, etc.	1
8	Collection, transport and treatment of paper and cardboard	2
9	Collection, transport and treatment of paper, cardboard and plastic waste.	1
10	Collection, transport and treatment of paper waste	4
11	Collection, transport and treatment of metal and plastic waste.	2
12	Waste types: accumulators, metals, vehicles, etc.	11
13	Collection, transport and treatment of metal and iron waste	9
14	Collection, transport and treatment of oils waste	3
15	Collection, transport and treatment of rubber waste	2
Total		**76**

[14] *The plant in Ferizaj has reported only for January, February and March*

Survey on waste treated - The outcomes of this survey with businesses dealing with waste management for 2016 indicate that the total amount of waste received for treatment was 62,461 tons. The amount of waste deriving after the treatment process was 55,830 tons. The amount of wastes treated in the country was 60,935 tons, whereas the amount of waste exported by the companies dealing with processing/treatment, was 10,871 tons[15] *(Table 13).*

Table 13. The amount of waste managed by companies dealing with treatment/processing 2016

Type of waste	The amount of waste received for treatment/ processing	The amount of produced material	Out of which	
			Treated/ processed	Exported
Amount in ton	ton	ton	ton	ton
Metal waste (iron metal waste, coloured metals, iron, copper, can, alloy, anti-corrosion metal, lead)	41,756	33,207	40,232	4,046
Plastics (plastic bottles, nylon, granules)	10,,163	12,091	11,686	498
Paper	5,322	5,312	3,860	6,128
Others (housing waste, old blankets, glass bottles)	5,220	5,220	5,220	199
Total	**62,4261.00**	**55,830.00**	**60,998.00**	**10,871.00**

Figure 45 shows the percentages of treated and processed material, where, as it can be seen, the material that has been treated and processed most is metal with 67% followed by plastic with 16%.

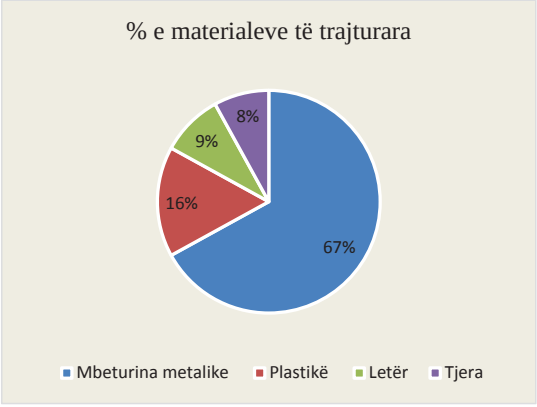


Figure 45. Waste managed by material from companies dealing with their treatment and processing, 2016

[15] *KAS, Waste Treatment Survey, 2016*

Industrial waste - The outcomes of the 2016 Industrial Waste Survey (IWS), carried out by Kosovo Agency of Statistics (KAS), which are presented in Table 14, show that the amount of industrial waste was 2,335,231 tons. These wastes are generated by the activities carried out in the following sectors:

B-Mining and quarries,
C-Manufacturing,
D- Supply of electricity, gas, steam and supply of air-conditioning.
E- Water supply, sewerage, waste management and land revitalization.
F-Construction
G-U- Service Sectors

Table 14. The total amount of industrial waste generated by industry sectors B.C.D.E.F.G-U, 2016[16].

Type of industry	Total generated wastes	Processed wastes
B.C.D.E.F.G.U	ton	ton
Total	**2,335.231**	**2,314.519**

[16] *Industrial Waste Survey 2016*

1.5. Public health

Pollution and degradation of the environment is related to the impact of human activity on the various environmental sectors and natural resources. These actions, apart from affecting the state of the environment, have an impact on human health and the living world as well. Impacts on environment and health depend on geographic location, meteorological conditions, proximity to industrial and agricultural areas, etc.
Environmental pollution, with particular emphasis on air and water pollution, is estimated to be one of the key indicators that in contact with human vital organs and exposure to them pose a serious threat to health.

Health effects depend on factors, such as: the population sensitivity rate to the exposure to pollution, exposure duration, ability to adapt to pollution and distance from the source of pollution. Environmental diseases are largely dependent on environmental, meteorological, socio-economic factors, primary and secondary health care, and the degree of information and education about the dangers of environmental pollution.

A summary of the effects and impacts on public health, impacts on natural ecosystems and other impacts on environmental infrastructure and cultural heritage is presented in Table 15.

Tab. 15. Effects on health, ecosystem and other environmental effects

Effects on health	**Effects on ecosystem**	**Other effects**
✓ Reducing the normal functioning of respiratory organs, ✓ Irritation of eyes, nose, mouth and throat, ✓ Asthma and bronchitis, ✓ Difficulty in breathing, coughing, ✓ The weakening of the organism, ✓ Headaches and dizziness, ✓ Immune system disorders and endocrine disorders, ✓ Neurotic disorders, ✓ Cardiovascular diseases, ✓ Cancerous diseases, ✓ Premature death, ✓ Negative impacts on pregnancy, etc.,	✓ It affects the reduction of biodiversity, ✓ Reduces the value of crops and agricultural cultivations, ✓ It affects the acidification of clean waters, ✓ Reduces the quality of air, ✓ It affects climate change and the ozone layer, ✓ Increases the likelihood of ecological catastrophes (drought and floods).	✓ It has an impact on serious damage to cultural heritage sites. ✓ In damaging residential properties (material damage)

This report provides an overall assessment of the impact of environmental sectors in the public sphere based on relevant data available and relevant recommendations are issued.

The legal infrastructure for the environmental sector and public health in Kosovo is harmonized to a degree with the European Union directives and standards, but supplementations, mechanisms and instruments for their implementation are still required, in order to effectively respond to the needs and requirements for improving the environment and public health.
Emissions from air pollutants from heavy industries, landfill sites, transport, agriculture, mining landfills, small combustion plants, and households in 2017 were also the main sources of pollution with adverse effects on public health.

Obiliq, Prishtina, Fushe Kosova, Drenas, Mitrovica, Hani i Elezit and settlements nearby mines are considered the most sensitive areas where public health is endangered by pollution.
The Ministry of Health is the responsible institution at the national level for maintaining and improving the health of the population of the Republic of Kosovo. In order to address this problem, the Ministry is in the process of preparing the projects on the assessment of environmental impact in health.[17]

Environmental Diseases - The National Institute of Public Health within the Ministry of Health functions as an institution responsible for monitoring and preventing environmental diseases. The NIPH also monitors the state of public health; in particular, it monitors the diseases caused by epidemics and pandemics, injuries (in work, traffic, etc.), protective measures, promotion and encouraging of good behaviours to life and the environment.

In 2017, as in previous years, the NIPH has followed, monitored and registered the number and trend of environmental diseases in the population.

During 2017, some diseases are reported with higher numbers while some are declining. As seen in Table 16, diseases such as ITPR-Pneumonia/ARI, SARI (a severe form of pneumonia) and seasonal influenza have marked a decrease in the number of patients compared to 2016. For some other diseases, such as acute diarrhoea, hallucinosis and some contagious diseases, there has been an increase in the number of patients compared to 2016.

Tab. 16. Trends of Environmental Diseases for 2014-2017

[17] *Health Sector Strategy 2017-2021, Ministry of Health 2016*

Diseases	2014		2015		2016		2017	
	Cases	Over100000 habitants	Cases	Over 100000 habitants	Cases	Over 100000 habitants	Cases	Over 100000 habitants
ITPR-Pneumonia/ ARI	15242	839.4	12133	664	13897	760.5	13608	744.7
SARI (a severe form of pneumonia)	521	28.7	66	3.6	217	11.8	117	6,4
Seasonal influenza	39758	2189.7	41798	2287.5	84697	4635.2	51504	2818,7
Acute diarrhoea	66196	3635.8	60361	3303.4	76386	4180.4	91312	4997,2
Varicella	8651	476.4	7172	392.5	8075	441.9	8152	446,1
Syndrome of bloody diarrhoea	38	2.1	22	1.2	29	1.5	35	1,9
Meningitis syndrome	188	10.3	250	13.6	152	8.3	149	8,1
EHKK	5	0.2	1	0.05	1	0.05	0	0
EHSV	14	0.7	2	0.1	4	0.2	6	0,3
West Nile Virus	4	0.2	2	0.1	0	0	2	0,1
Lyme disease	14	0.7	3	0.1	4	0.2	2	0,1
Leishmaniasis	3	0.1	0	0	2	0.1	0	0
Malaria	-	-	4	0.2	1	0.05	0	0
Exanthematic Fever Syndrome	21	1.1	23	1.2	14	0.9	1	0,05
Pertussis	16	0.8	39	2.1	24	1.3	32	1,7
Epidemic parotitis	3743	206.1	1900	103.9	184	10.06	120	6,5
TBC	834	45.9	770	42.1	-	-	-	-
Intoxicatio alimentaris	684	37.6	1202	65.7	2132	116.6	2278	124,6
Acute jaundice A	154	8.5	124	6.7	124	6.7	115	6,3
Jaundice B	52	2.8	63	3.4	59	3.2	83	4,5
Jaundice C	14	0.7	12	0.6	21	1.1	3	0,1
Toxic Jaundice	0	0	2	0.1	3	0.1		
Typhus abdominalis	6	0.3	3	0.1	11	0.6	2	01
Salmonellosis	53	2.9	81	4.4	66	3.6	109	5,9

Rota virus	117	6.4	75	4.1	156	8.5		
Tularaemia	105	5.8	378	20.6	27	1.4		
Lymphadenitis	92	5.1	192	10.5	106	5.8		
Leptospirosis	6	0.3	3	0.1	3	0.1		
Brucellosis	34	1.8	31	1.6	26	1.4	32	1,7
Anthrax	6	0.3	-	-	-	-	-	-
Tetanosis	0	0	2	0.1	1	0.05	0	0
Echinoccocosis	0	0	4	0.2	-	-	1	0,5
Toxoplasmosis	0	0	14	0.7	10	0.5		
Vulnus morsum viperi	9	0.5	13	0.7	45	2.4	31	1,7
Vulnus morsumcani	-	-	-	-	1	0.05	0	0
Campylobacter							1	0.05
Other contagious diseases	752	33.8	592	32.3	539	29.4	656	35,9
Total	137591	7578.2	127449	7374.5	187435	10257.8	169997	9303,5

Environmental diseases are caused due to poor hygiene, socio-economic conditions, drinking water supply from uncontrolled sources-wells, long term interruption of sewage water, polluted waters, and lack of sewerage, waste disposal near water sources and other pollutants.

The probability of many diseases is higher during the summer season, as temperatures in this period are higher, creating more favourable conditions for the spread of viruses and bacteria. At the same period of time, sanitary hygiene conditions in some areas of Kosovo are at a lower level due to lack of water and due to drought.

The quality of drinking water refers to the microbiological and physicochemical characteristics, in relation to a number of standards against which compatibility can be assessed. The quality of drinking water is an important indicator for the well-being and health of the population. Kosovo has an adequate legislation which is presented in the Administrative Instruction No. 16/2012, and which is in compliance with EU standards for drinking water.

RWCs are responsible to supply quality water to their customers; they also are obliged to conduct internal water quality monitoring/testing. On the other hand,

NIPHK is the Institution with legal responsibility for controlling and monitoring the drinking water, which ensures that the water distributed by the RWC is in compliance with the parametric values of the local standards for water quality. In this report, the quality has been assessed based on the data reported by WC at WSRA.

Based on the results of the monitoring carried out by the Water Centre and the National Institute of Public Health (NIPHK) in compliance with the responsibilities of this Centre for External Monitoring according to the AI No. 16/2012, the overall quality of drinking water in Kosovo offered to customers in 44 supply areas (SA) extended to the service areas of the seven RWCs is 99.54% in accordance with parametric microbiological values, while 98.30% in accordance with parametric chemical values, resulting in a total compliance level of 98.58%.

This degree of compliance is the result of 59,604 tests conducted during 2017 by the six Regional Laboratories of the Regional Public Health Centres (RAPC) and the Testing Laboratory Centre at NIPHK. As can be seen from Figure 46, the highest compliance with the values of the microbiological parameters has been recorded in RWC Radoniqi and RWC Mitrovica which is 100%, while the lowest compliance in RWC Hidromorava which is 97,1%.

The highest compliance in terms of chemical parameters has been recorded in RWC Radoniqi with 100% compliance and RWC Mitrovica with 99.8%, while the lowest compliance for the abovementioned terms has been recorded in RWC Bifurkacioni with 96.9%, RWC Prishtina with 97.7% and Hidrodrini RWC with 97.8%.

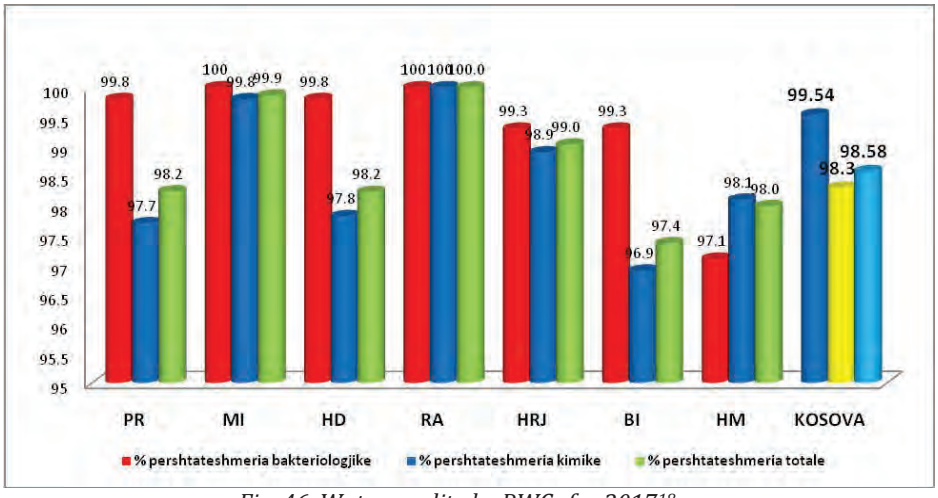


Fig. 46. Water quality by RWCs for 2017[18]

[18] *Drinking Water Quality in Kosovo, 2017, Report NIPHK*

A summarized overview of the monitoring outcomes by supply areas is provided in the following table.

Table 17: Drinking water quality in supply areas according to basic parameters for 2017[19]

Parameters	**Number of tests performed**	**Compliance with the parametric values**	**Exceeding parametric values**	
		%	No.	No of SAs
Total coliforms	6,032	99.29	43	11
E coli	6,032	99.8	12	7
Residual chlorine	5,991	89.65	620	30
Blur	6,035	99.27	44	11
Smell	2,357	100	0	0.0
Taste	2,357	100	0	0.0
pH	2,357	99.96	1	1
Nitrates	2,350	99.74	6	3
Nitrites	2,357	99.92	2	2
Ferrous	2,327	99.83	4	3
Manganese	2,399	99.71	7	4
Aluminium	1,079	99.81	2	2
Other parameters	17,932	99.4	108	16
Total:	**59,604**	**98.58**	**849**	**90**

Compared to 2016, the quality of drinking water in 2017 has marked a slight improvement of 0.3% in total. In general, the degree of compliance with regard to microbiological and chemical parameters has improved from 98.3% to 98.53%.

The lowest degree regarding compliance with parametric values is related to residual chlorine (89.6%). This situation is present continuously in all RWCs and is reflected in the overall statement of compliance. This indicates an operational problem that RWCs should address in proper form by regular and adequate chlorination of the water which they supply, as well as with the operational control of the chlorination methodology. Other parameters were generally at a satisfactory level - over 99%.

[19] ibid

The coverage of the water supply service in 2017 at the sector level reaches 94%, which is 3% higher than in the previous year (2016). RWC Prishtina, Gjakova and Hidrodrini have achieved high coverage of the population with services within their respective service areas. RWC Hidroregjioni Jugor with 70%, Hidromorava with 75% and Mitrovica with 76% continue to be at the lowest level of coverage with water supply services in 2017.[20]

Coverage of wastewater services at sector level during 2017, reaches the level of 74%. The highest level of coverage with wastewater services in 2017 was achieved by RWC Prishtina, and just like with the coverage of water supply services, it is worth noting that a great impact on this was also the movement of population from other cities and registration as households or customers of this company. RWC Hidrodrini service area continues to be in the low level of coverage with wastewater with 44%, which is 5% more than in the previous year (2016).[21]

[20] *Annual Performance Report for Water Service Providers in Kosovo, 2017, WSRA*
[21] ibid

2. Measures taken to protect the environment

2.1. Approximation of environmental legislation with EU Directives

The Kosovo National General Policy also includes the European integration process. Among the key challenges in this process is the environment, the fulfilment of European environmental standards and the approximation of the national environmental legislation with the European legislation.
Table 18 presents a summary of the EU's main environmental directives and the level of their transposition into national environmental legislation.

Table 18: Transposition of EU directives into national environmental legislation

Area	EU Directive	Level of transposition[22]
Horizontal legislation	Directive on EIA (85/337/EEC)	91%
	Directive on SEA (2001/42/EC)	100%
	Directive on environmental information (2003/4/EC)	66%
	Directive on public participation (2003/35/EC)	100%
	Directive INSPIRE (2007/2/EC)	20%
	Directive on Environmental Crimes (2008/99/EC)	50%
	Environmental Liability Directive (2004/35/EC)	84%
Air Quality	Environment Air Quality Directive (2008/50/EC)	92%
	Directive on arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air (2004/107/EC 4th Daughter Directive)	98%
	NEC Directive, national air emissions ceilings (2001/81/EC NEC Directive	12%
	Directive on Sulphur Content of Liquid Fuels (1999/32/EC Sulphur Cont. Liquid Fuels)	60%
	Volatile Organic Compounds (VOC) Solvents Directive (94/63/EC VOCs Petrol)	98%
	Directive on Stage II petrol vapour recovery during refuelling VOC- Volatile Organic Compound (2009/126/EU Stage II VOCs petrol)	30%
Waste management	Waste Framework Directive (2008/98/EC)	81%
	Waste Batteries Directive (2006/66/EC)	61%
	Packaging Waste Directive (94/62/EC)	100%
	Directive on PCB/PCT – polychlorinated biphenyls	87%

[22] *Monitoring transposition and implementation of the EU environmental acquis, Year 18 , Progress Report-Kosovo , ECRAN*

	(PCBs) and polychlorinated terphenyls (PCTs) (96/59/EC PCB/PCT)	
	Directive on end-of-life vehicles (2000/53/EC End-of-Life Vehicles)	100%
	Directive on Landfills (99/31/EC / Landfill)	100%
	Directive on restriction of the use of certain hazardous substances in electrical and electronic equipment (2011/65/EU RoHS)	92%
	Directive on waste electrical and electronic equipment (2012/19/EU WEEE)	86%
	Directive on mining waste management (2006/21/EC Mining Waste)	100%
	Sewage Sludge Directive (86/278/EEC Sewage Sludge)	100%
Chemicals	Asbestos Directive (87/217/EEC)	82%
Water Quality	Water Framework Directive (2000/60/EC)	57%
	Directive on Urban Wastewater Treatment (91/271/EEC) UWWT	51%
	Groundwater Directive (2006/118/EC Groundwater)	32%
	Drinking Water Directive (98/83/EC)	100%
	Nitrates Directive (91/676/EEC)	26%
	Directive on Bathing Waters (2006/7/EC Bathing Water)	0%
	Directive on water quality standards (2008/105/EC)	5%
	Directive on flood risk assessment and management (2007/60/EC Floods)	4%
	Directive on technical specification for chemical analysis and monitoring of water status (2009/90/EC Quality Assurance/Quality Control)	0%
Nature Protection	Directive on wild birds (79/409/EEC)	100%
	Directive on habitats (92/43/EC)	100%
	Directive on keeping of wild animals in zoos (1999/22/EC Zoos)	80%
Control of Industrial Pollution	Industrial Emissions Directive (2010/75/EU)	68%
	Directive Seveso III on control of major industrial accidents (2012/18/EU)	27%
	Directive on Control of VOC substances (2004/42/EC -VOCs from Paints, Varnishes and Vehicle Refinishing Products)	25%
Noise	Ambient Noise Directive (2002/49/EC)	74%

2.2. Level of Implementation of Strategies and Environmental Plans

Strategic and programmatic framework for the environment and its sectors is developed to a satisfactory level in Kosovo, but the level of implementation is still low. Table 19 presents the main strategic and programmatic documents of the environmental sector and the level of their implementation.

Table 19: Level of implementation of strategies and action plans for the environmental sector

Strategy/Plan	Period of validity	Status of document	Level of enforcement
The Kosovo Environmental Strategy and the National Environmental Action Plan	2013-2022	There is no decision of approval by the Government of Kosovo (GoK) and Kosovo Assembly	Implementation did not start due to uncertainty in the approval process
Strategy and Action Plan for Biodiversity	2011-2022	Approved by the GoK) (under review process)	Partially
Air Quality Strategy 2013-2022	2013-2022	Adopted by the Assembly of Kosovo	Partially
Action Plan for the Implementation of the Air Quality Strategy	2018-2020	Adopted by the Assembly of Kosovo	At the initial stage of implementation
Kosovo Strategy on Waste Management	2013-2022	Approved by the GoK (under review process)	Partially
Plan of the RKS on Waste Management	2013-2017	Approved by the Government of the Republic of Kosovo (under review process)	Partially
Kosovo Strategy and Action Plan on Climate Changes	2017-2026	In the process of approval in the GoK	Has not started yet
National Water Strategy	2017-2022	Approved by the GoK and Kosovo Assembly during 2018	At the initial stage
Spatial Plan of Kosovo – Spatial Development Strategy of Kosovo	2010-2020+	Adopted by the Kosovo Assembly	Partially- Kosovo zoning map is in process of implementation
Spatial Plan for National Park "Sharri"	2013-2022	Adopted by the Kosovo Assembly	Partially – two more regulatory plans are in process of drafting

Spatial Plan for Nature Monument of Special Importance "Ujëvarat e Mirushës"	2014-2023	Adopted by the Kosovo Assembly	Implementation has not started due to the lack of management body for this protected zone
Spatial Plan for Protected Area of Special Importance "Beteja e Koshares"	2014-2023	Adopted by the Kosovo Assembly	Partially
Spatial Plan of the Area with special Interest "Shtabi i përgjithshëm i UÇK-se, Kleçkë and Divjake"	2014-2023	Adopted by the Kosovo Assembly	Partially
Spatial Plan for Area of Special Interest "New Mining Field"	2010-2020	Adopted by the Kosovo Assembly	Partially
Management Plan for National Park "Sharri"	2015-2024	Approved by the Ministry of Environment and Spatial Planning	Partially

2.3. Institutional developments and setbacks

Among the major developments in the empowerment, affirmation and enhancement of the technical capacities of environmental institutions need to be distinguished:

- Establishment of River Basin District Authority;
- Appointment of the National Coordinator for Climate Change;
- Establishment of the Inter-Ministerial Task Force for the protection of air from pollution;
- Establishment of the Steering Committee for the Waste Management Sector;
- Increase of the number of licensed natural persons for drafting the Environmental Impact Assessment reports;
- The initiation of the process of the laboratory accreditation and the staff of the Hydrometeorology Institute of Kosovo;
- Capacity building of environmental institutions through trainings and programs at the national, regional and international level;
- Increasing the representation of Kosovo's environmental institutions in regional organizations, initiatives and projects.

Whereas, within the setbacks and obstacles in the empowerment of the environmental institutions during this period are distinguished:

- Lack of network for monitoring of groundwater;
- Lack of monitoring of the biological / ecological aspects of surface waters;
- The small number of officials in the air monitoring sector;
- Lack of a particular sector for Climate Change in MESP;
- Lack of a central institution for the monitoring of chemicals;
- Small number of programs of bachelor and master level in the field of environment;
- The small number of staff in the natural sector, especially the Institute for Protection of Nature;
- Failure to make functional the Environmental Advisory Board;
- Trained and experienced staff leaving responsible institutions in the environmental sector.
- Limited capacities of municipalities in the environmental sector;
- Limited budget in the environment sector.

2.4. Inspections and control of law enforcement

As part of the ex officio competencies of the Inspectorate of Environment, Water, Nature, Spatial Planning and Construction for control, MESP, during 2017, has carried out: 481 supervisory activities in the field of environment; 310 supervisory recorded activities in the field of waters; 15 supervisory activities with minutes in the field of nature; and 180 supervisory activities with minutes in the field of spatial planning and construction. Other details are presented in Table 20.

Table 20: Inspections and other legal procedures

Type of inspection activity in the field of environment	Number of activities
Decisions	3
Mandatory fines	-
Recommendations, remarks and orders	389
Initiation of Court procedures	95
Type of inspection activity in the field of waters	**Number of activities**
Decisions	2
Initiations court proceedings for minor offence	55
Recommendations, remarks, orders and information	268
Type of inspection activity in the field of nature	**Number of activities**
Initiations for minor offence court proceedings	2
Recommendations, remarks, orders and information	12
Type of inspection activity in the field of spatial planning and construction	**Number of activities**
Inspections with minutes	180
Decisions	22
Initiation of court proceedings	2
Recommendations, remarks and orders	12

In the sector of the protection of nature, within the requests for initiation of minor offense proceedings based on the Law on Nature and the Law on National Parks, and the relevant legislation, in 2017, KEPA, on behalf of the Directorate for Administration of the National Park "Bjeshkët e Nemuna" and Directorate for Administration of National Park "Sharri" has filed: 229 criminal charges; 15 requests for initiation of the minor offence proceedings; and 43 requests for initiation of civil lawsuit proposal.

The initiation of these 357 procedures is aimed at compensation of the damage in total value of € 519,484.70 caused by unlawful acts of irresponsible persons to the institution (Table 21).

Table 21: Initiations of KEPA in Courts, Prosecutions and State Advocacy Office

Type of activity on behalf of the Directorate for Administration of National Park "Bjeshkët e Nemuna"	Number of cases	Amount of damage
Criminal charges at the Basic Prosecution in Peja	122	318,450.70 €
Criminal charges at the Basic Prosecution in Gjakova	3	2,700.00€
Application for initiation of the minor offence proceeding at the Basic Court in Peja– Minor Offence Division	3	3,067.00 €

Type of activity on behalf of the Directorate for Administration of National Park "Sharri"	Number of cases	Amount of damages
Criminal charges at Basic Prosecution in Ferizaj	79	56,500.00 €
Criminal charges to the Basic Prosecution in Prizren	25	64,199.00 €
Application for initiation of the minor offence proceeding at the Court Branch in Suhareka – Minor Offence Division	4	8,666.00 €
Application for initiation of the minor offence proceeding at the Court Branch in Dragash – Minor Offence Division	5	1,904.00 €
Application for initiation of the minor offence proceeding at the Court Branch in Kaqanik – Minor Offence Division	2	858.00 €
Application for initiation of the minor offence proceeding at the Basic Court in Prizren – Minor Offence Division	1	1,270.00 €
Type of activity on behalf of the Directorate for Administration of National Park "Sharri" and "Bjeshkët e Nemuna"	Number of cases	Amount of damages
Application for initiation of civil disputes submitted to the State Advocacy Office – Ministry of Justice	43	62,355.00 €

2.5. Issuance of permits

According to the data from MESP, activities have been carried out in all relevant fields during 2017. Based on the authorizations of environmental legislation, 147 permits were issued in the field of environment, 5 permits in the field of nature, 102 licenses and permits in the field of waste, and 44 other acts in the field of water. More detailed information on activities on issuing permits in the sector of environment, waste, nature and water are presented in the following table.

Table 22: Activities for issuing permits during 2017

Activities with Environmental Consents	
Cases received for environmental consent	180
Granted	120
Rejected	20
Under the review process	20
Activities for Environmental Permits	
Cases received for environmental permits	61
Granted	49
Cases rejected	12
Conclusions	1
Activities for Integrated Environmental Permits	
Granted	5
Activities of issuing permits in the field of nature	
Permit for scientific research in nature	3
Permit for the preparation of dead specimens of bears (Ursus Arctos) based on the A.I No. 26/2012	1
Permit for allowing the undertaking of actions with strictly protected species of wild plants	1
Activities of issuing permits in the field of waste	
License for waste management	21
Permit for importing Chemicals	3
Permit for biocide products	29
Permit for import of plastic bags without additives	28
Permit for Exporting Waste	21
Activities of issuing permits in the field of waters	
Water conditions	19
Water Consent	13
Water Permits	4
Extension of Water Permits	8
Decisions to reject Water Permits	15
Amendment of Decisions	1
Conclusions	16

2.6. Investments in the environment

Investing in the environment is one of the direct forms of intervention for the protection of the environment, improvement of the condition of the environment and prevention of negative impacts on the environment. The Kosovo Government, through the budget for the Ministry of Environment and Spatial Planning, has oriented the largest share of investments in the environment. Municipalities and other institutions also orientate some of their budget to environmental projects.

Analysing the budget of the Ministry of Environment and Spatial Planning for the period 2015-2018, we note that there has been a significant increase both for the total budget and on capital investments in the environment.

While capital investments in the environment in 2015 were over EUR 34.9 million, in 2016 they increased to about EUR 36 million, in 2017 to EUR 49 million, and in 2018 to around EUR 53 million (Table 23).

Table 23: Total budget and budget for capital expenditures MESP 2015-2018[23]

	2015	2016	2017	2018
Capital expenditures	34,901,813	35,903,684	45,824,312	49,187.682
Total budget	38,043,185	39,357,027	49,121,434	52,893,885

Capital Expenditures of MESP during 2017 were mainly projects that were implemented for river beds regulation, waste management, and expansion of the sewage and water supply network, as well as other environmental projects of general interest. The following table presents some of these projects implemented by MESP.

Table 24: Environmental projects implemented from the budget of MESP during 2017

Project name	Amount of the budget 2017 €
Cleaning the Lepenc River from the Asbestos Waste	93.000
Inventory of types of plants, animals, types of natural habitats and their mapping	20.000
Construction of a municipal landfill in the Peja region	10.000
Construction of solid material dump in Prishtina	50.000
Building a Botanical Garden	20.000

[23] *Ministry of finance www.mf.rks-gov.net*

Development of the database at the central level for environment, inspectorates and waters	50.000
Construction of sewage system in Deçan	160.000
Regulating of river bed Krena - Gjakova	400.000
Water accumulation in Iber River - Mitrovica	1.350.000
Waste waters disposal and infrastructure improvement project in the Bistrica River in Prizren	1.800.000
Regulating of Lepenc River bed in Kaqanik	190.000
Regulating of the river bed Drenica in Drenas	300.000
Rehabilitation of water supply and increasing water capacities for 9 villages of Kaqanik	500.000
Water supply project in Drenas	129.187
Installation the water irrigation canal Dubova-Dobrusha-Kashica-Saradran,Istog	55.000
Construction of the sewage system in village Runik – Skenderaj	200.000
Regulating of the river bed Bistrica - Peja	200.000
Waste water treatment factory in Peja	3.800.000
Opening and cleaning the Sitnica River bed	350.000
Sewage in village Raushiq, Peja	100.000
Rehabilitation of the river bed Klina - in Klina	210.000
Regulating of the river bed in Rahovec	10.000
Regulating of the sewage system in Kamenica	10.000
Regulating of the sewage system in Mitrovica	10.000
Regulating of the sewage system in Skenderaj	10.000
Sewage network in the village of Tvrdjen, Leposavic – sedond phase	50.000
Water supply in Rogana-Muqiverc-Novosella-Hodonovc in Kamenica	295.000
Water supply Kopernice –Kolloleq-Shipashnice in Kamenica	83.000
Water supply Koretin – Kamenica	43.000
Building sewage network in villages of Kaqanik	561.177
Sewage in Prekaz-Mikushnice, Skenderaj	500.000
Water supply Shipol-Brus, Mitrovica	400.000
Water supply Vushtri-Grace	485.594
Water supply for 10 villages and connection to new sources, Deqan	50.000
Water supply in Gadime, Lipjan	20.000
Maintenance of the air monitoring stations	150.000
Marking and digitalization of protected zones of nature	10.000
Maintenance of hydrometric stations of Kosovo by basins	20.000
Advancement of the existing meteorological network and its automation	40.000
Empowerment of the management of National Parks “Sharr Mountain” and “Bjeshkët e Nemuna”	60.000

During 2017, donor support continued with several projects that have been continuation of projects from previous years and with new projects as well. The following table presents data on some of the largest donor-supported projects for the sector of waters and environment.

Table 25: Some of the donor projects in the environment and water sector 2017

Project name	Donor-supporting organization	Project value	Implementation period
Support for Implementation of the Energy Package with Focus on Energy Efficiency and Renewable Energy	BE & GFA	2,274,190.00 €	2016 – 2019
ORF Biodiversity (Open Regional Fund for Biodiversity) Joint project for Kosovo, Albania, Macedonia, Serbia, Montenegro and Bosnia and Herzegovina.	GIZ	3,000,000.00 €	2015 - 2018
The Project "Support to Environmental Programme MESP- Kosovo "	SIDA	6,810,000.00 €	2016 – 2020
Project "Integrated Management of Water Resources of the Drini river extended Basin"	UNDP/GEF	1,000,000,00 $	2016 – 2019
Project for the construction of the lagoon wastewater treatment system in Kramovik	UNDP/GEF	200,000.00 €	2016 – 2019
Regional Project for floods "IPA FLOODS"	BE&CIMA	1,998,386.00 €	2015 - 2017
Project "Competition for Clean Environment"	KFW&GIZ	3,400,000.00 €	2015 –2017
Project "Capacity Building for Air Pollution Control"	JICA	4.000.000,00 $	2017 – 2020
Collection of Environmental Data (MCC Threshold Programme)	MCC -USA	3.000.000,00 $	2017-2019
Investing in efficient energy in the sector of household (MCC Threshold Programme)	MCC -USA	20.700.000,00 $	2017-2019
Investment in the central heating system (MCC Threshold Programme)	MCC -USA	10.900.000,00 $	2017-2019

3. Findings and Recommendations

3.1. Main findings of the report

Air

- ✓ Despite the progress made in setting up a network for air quality monitoring, there is still a need to invest in the modernization, completion and maintenance of this network and in particular for the functionality of the central data processing software and their real-time report.
- ✓ The data from the monitoring point out for some parameters in excess of the maximum allowed values, especially for PM10 and PM2.5, mainly during the winter season.
- ✓ Assessments show that the main sources of pollution are the sectors of energy, transportation and household. However, a complete inventory of air emissions is required to be performed and also a more detailed study on the distribution and concentration of pollutants.
- ✓ It has been ascertained the low level of implementation of laws, bylaws and policies for the air sector, as it is the case of policies for controlling emissions from mobile sources and of the oil quality.
- ✓ Low level of implementation of legal requirements at the local level. Even though the Law on Air Quality requires the drafting of Local Air Quality Action Plans, so far no municipality in Kosovo has drafted and approved such a document.

Water

- ✓ The quality of surface waters in Kosovo continues to be affected by the pollution resulting from urban and industrial water discharges, uncontrolled dumping of waste into the rivers, the use of pesticides and fertilizers in agriculture, and damage to river beds by exploiting river sand and gravel and illegal constructions.
- ✓ Currently, monitoring of surface water quality is carried out at 54 monitoring points in rivers, while monitoring of the amount of water is carried out at 26 monitoring stations. There is still no regular monitoring of the quality of lake waters and groundwater, just like there is no biological monitoring of surface water.
- ✓ Indicators presented in this report show a presence of organic and bacteriological pollutants in river waters, although it can be concluded that surface waters are not endangered by eutrophication.
- ✓ Preliminary monitoring of biological aspects shows only an initial overview of monitored surface water quality, from which a complete assessment on the biological quality of these waters cannot be made.

Land /Soil

- ✓ Currently Kosovo does not have a program or a regular monitoring with regard to quality of soil/land. This activity is mainly carried out through periodic projects and activities.
- ✓ KEPA has identified several locations, considered as environmental hotspots, in need of rehabilitation. However, their rehabilitation has not started yet due to the lack of budget.
- ✓ Changing land destination, loss of agricultural land and loss of green spaces from the construction remain among the main environmental challenges in the land sector.

Protected areas and biodiversity

- ✓ Despite continuous growth in the number of protected areas and their surface, the efficient management of the protected areas and prevention of illegal actions in these areas remain an issue for the institutions of Kosovo.
- ✓ There are still protected areas with special protection status, which still lack respective managing bodies.
- ✓ Lack of spatial, management and regulatory plans for some of these areas is also seen as a problem.
- ✓ Monitoring of fauna through camera traps provided information on the presence of rare and endangered fauna species in Kosovo. However, despite this, Kosovo does not have a Red book of fauna yet.
- ✓ There is a lack of special programs as well for monitoring biodiversity in general or specific species in particular.
- ✓ Implementation of certain initiatives and projects for the management of cross-border natural areas is also seen as positive and important.

Waste

- ✓ Kosovo continues to face lack of efficient waste management. Currently, roughly 60% of the generated waste is collected at national level. The majority of them are disposed in sanitary landfills, while there is still a lack of an organised system for source separation and recycling of waste.
- ✓ The management of sanitary landfills in Kosovo is not very good and among the main problems seem to be malfunctioning of wastewater pumping systems, poor compression of disposed waste and insufficient coverage.
- ✓ A number of illegal landfills (approximately 1500 of them) have been identified throughout Kosovo, which despite of the commitment of Municipalities and donors continues to be a challenge of this sector.
- ✓ Activities for source separation and recycling of waste still remain on a low scale.

Public Health

- ✓ Compared to the previous year, a significant increase in the number of diseases associated with environmental aspects has been recorded.

- ✓ However, there is still no detailed and index-based study in Kosovo that would assess the real impact of the state of environment on public health.
- ✓ Drinking water inspection conducted by the National Institute of Public Health shows that around 98.5% of the tests have been in accordance with local standards of water quality

Measures taken to improve the state of the environment

- ✓ Kosovo continues its commitment for the alignment of national legislation with EU Directives, although its implementation remains a challenge.
- ✓ Strategies and action plans have been drafted and approved for all environmental sectors, but the level of their implementation is partial.
- ✓ Although during 2017, the inspection and surveillance activities in the nature protection sector have increased, environmental crime continues to be a growing activity.
- ✓ Even though the budget for the Ministry of Environment and Spatial Planning for environmental capital projects has increased, the number of projects by donors has increased as well; the environmental issue in Kosovo is still addressed with low priority by the Government of Kosovo.

3.2. Recommendations

Air

- ✓ Responsible institutions shall implement the requirements of Kosovo Assembly Resolution No. 06-R-002 on improving air quality and mechanisms for monitoring its implementation shall be established.
- ✓ Implement objectives and projects of the Strategy and Action Plan on Air Quality, approved by the Government of Kosovo and the Assembly of Kosovo.
- ✓ Increase the efficiency of the implementation of environmental legislation through additional mechanisms and instruments.
- ✓ Complete the inventory of emissions and sources of air pollutants,
- ✓ Complete and fully functionalize the national air quality monitoring system in order to improve the collection, processing and reporting of data on air quality,
- ✓ Strengthen the technical and institutional capacities for maintenance of the air quality monitoring network, servicing and calibration of equipment as well as accreditation of laboratories.
- ✓ Improve cooperation between monitoring institutions and operators, especially in the process of information flow, processing, reporting and informing the public more efficiently on the air quality.
- ✓ Develop advantageous policies for the use of fuels with the lowest emissions in the environment.
- ✓ Preference over the use of alternative transport that causes less pollution to the environment and time-limited use of old and non-catalytic vehicles.
- ✓ Implement bylaws on allowable air emission rates from mobile sources and stationary sources.

Water

- ✓ Establish a network for monitoring of groundwater and regular monitoring of groundwater status.
- ✓ Monitor the biological parameters of surface water to determine the surface water quality index.
- ✓ Invest in the establishment of water infrastructure and with particular emphasis on the construction of wastewater treatment plants.
- ✓ Prioritize issues related to adaptation to climate change in the water sector,
- ✓ Continue with the completion of legislation in the water sector and transposition of European Union directives into the latter.
- ✓ Implement the strategic objectives and projects planned in the National Water Strategy.
- ✓ Design Water Management Plans.

- ✓ Investigate the impact of water use on energy production and their impact on protected areas.

Soil

- Develop a program for permanent monitoring of agricultural and industrial lands.
- Develop more conducive policies for sustainable land development and management.
- Strengthen the implementation of the legal and programmatic framework for the soil protection sector from pollution and the change the land destination.
- Develop programs and projects for rehabilitation of lands identified as environmental hot spots.
- Monitor the use of pesticides and fertilizers on agricultural land.

Protected areas and biodiversity

- ✓ Continue exploring, identifying and monitoring the areas of nature and stock-taking of plant and animal species and natural habitats.
- ✓ Establish management bodies for protected areas of special interest.
- ✓ Finalize the drafting of the Kosovo's Fauna Book, and to take measures for endangered species of fauna.
- ✓ Continuously monitor the condition of rare and endangered plant and animal species.
- ✓ Protect rare and endangered species habitats and prepare professional justifications for the designation of protected zones of birds and habitats according to the ecological network Natura 2000.
- ✓ Approve the Spatial Plan for the National Park "Bjeshkët e Nemuna", Management Plan for the National Park "Bjeshkët e Nemuna" and Regulatory Plans.
- ✓ Ensure that all activities carried out within the territory of protected areas are in accordance with the Law on Nature Protection (No. 03 / L-233).
- ✓ Continuously inspect the protected areas by the Inspectorate of MESP.
- ✓ Increase the staff number in the sector of nature protection and biodiversity.

Waste

- ✓ Improve the management of Kosovo sanitary landfills, and monitor environmental discharges from landfills.
- ✓ Increase the service for municipal waste collection across territory of Kosovo.
- ✓ Kosovo Municipalities shall be continuously engaged in the elimination of illegal landfills in their territory.
- ✓ Municipalities shall designate sites for the treatment and disposal of waste from construction and demolition.

- ✓ Develop national programs and systems for source-separation and recycling of waste.
- ✓ Improve the collection, processing and reporting of date on waste.

Public health

- ✓ Improve the urban environment in order to reduce the negative environmental impacts.
- ✓ Invest in increasing of green areas in urban areas, in order to improve the state of the environment and public health situation.
- ✓ Invest in improving the quality of drinking water and its regular monitoring.
- ✓ Invest in improving the quality of water supplied by the Regional Water Companies.
- ✓ Increase the % of coverage of the population by the water supply service and the wastewater discharge service (sewage).
- ✓ Conduct research on the impact of the state of the environment on public health.

General

- ✓ Re-submit the State Strategy and the Action Plan for Environmental Protection and Sustainable Development for approval by the Government of Kosovo and the Assembly of Kosovo in accordance with the provisions of the Law on Environmental Protection.
- ✓ Increase the budget of the Government of Kosovo for the environmental sector and especially for environmental capital projects.
- ✓ Establish an eco-fund (environmental fund) and use its funds for subsidies and Programs to improve the state of the environment.
- ✓ Strengthen the implementation of environmental principles, in particular the principles of "polluter pays", "user pays" and "principle of encouraging measures" for legal and natural persons who choose the best possible techniques and clean production.
- ✓ Strengthen the implementation of horizontal legislation and with particular emphasis on legal requirements from the Law on Environmental Impact Assessment and the Law on Strategic Environmental Assessment.

4. References

1. KEPA 2015, Report on the State of Water 2015
2. KEPA 2016, Report on the State of the Environment
3. KEPA 2017, State of the Air Report
4. KEPA 2018, Municipal Waste Management in Kosovo, Status report
5. WSRA 2017, Performance report of water and sewerage companies 2017
6. KAS 2018, Agricultural Household Survey 2017
7. KAS 2016, Industrial Waste Survey 2017
8. KAS 2016, Municipal Waste Survey 2017
9. KAS, Waste Treatment Survey, 2016
10. KAS, Estimation of Kosovo Population 2014, 2015 and 2016.
11. NIPHK, The Quality of Drinking Water in Kosova 2017
12. MAFRD 2011, Plan for agriculture and rural development, 2010-2013
13. MESP 2012, Strategy and Action Plan on Biodiversity 2011-2020,
14. MESP 2012, Strategy and Action Plan on Air Quality 2011-2021
15. MESP 2014, The Red Book of Vascular Flora of the Republic of Kosovo, MESP
16. MESP 2014, Strategy on Waste Management 2013-2022
17. MESP 2014, Environmental Strategy 2013-2022
18. MESP 2015, National Water Strategy 2017-2034
19. MESP 2015, Climate Change Strategy 2014-2024
20. Monitoring transposition and implementation of the EU environmental Acquis, Year 18, Progress Report 10 , Kosovo/ECRAN
21. MoH, Health Sector Strategy 2017-2021
22. Monthly and annual reports, Department of Environment, KEK
23. Annual Report 2013-2017, Department of Environment, NewCoFeronikeli

5. List of abbreviations, figures and tables

5.1. List of abbreviations

KEPA	Kosovo Environmental Protection Agency
KAS	Kosovo Agency of Statistics
EU	European Union
CLC	Land Coverage by CORINE Methodology
ECRAN	Environment and Climate Regional Accession Network
EFAS	European Flood Awareness System
GHG	Greenhouse Gases
GIZ	German Agency for International Cooperation
IHMK	Hydrometeorology Institute of Kosovo
KNPI	Kosovo Nature Protection Institute
NIPH	National Institute of Public Health
IPA	Instrument for Pre-Accession Assistance
IUCN	International Union for Conservation of Nature
KEK	Kosovo Energy Corporation
KLMC	Kosovo Landfill Management Company
RWC	Regional Waste Company
KTOE	Kilo Ton Oil Equivalent
KUR	Regional Water Company
MAFRD	Ministry of Agriculture, Forestry and Rural Development
MoF	Ministry of Finance
MEI	Ministry of European Integration
MESP	Ministry of Environment and Spatial Planning
NM	Nature Monuments
MTI	Ministry of Trade and Industry
MED	Ministry of Economic Development
WHO	World Health Organisation
EO	Economic Operators
NGO	Non-Governmental Organisation
NP	National Park
KEAP	Kosovo Environmental Action Plan
LEAP	Local environmental action plan
REC	Regional Environment Centre
NR	Nature Reserves
SIDA	Swedish International Development Agency
CCS	Climate Change Strategy
BOD	Biochemical Oxygen Demand
PP	Thermal Power Plant
TPPA	Thermal Power Plant A
TPPB	Thermal Power Plant B
AI	Administrative Instruction

UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WWRO	Water and Waste Regulatory Office

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6. Appendixes

6.1. Appendix 1

Physical, chemical and heavy metals parameters monitored by IHMK[24]

Indicators	Symbol	Unit	Frequency of measurements/year
PHYSICAL PARAMETERS			
Time	h	0:00	11
Weather	W	observation	11
Water temperature	Wt	0C	11
Air temperature	At	0C	11
Scent	Sc	smelling	11
Colour	Col	Co/Pt	11
The blur	Bl	NTU	11
Electrical conductivity	χ	µScm-1	11
Water soluble matter	M.tert.	mg/l	11
Concentration of hydrogen ion	pH	0-14	11
CHEMICAL PARAMETERS			
Dissolved oxygen	DO	mg/l O2	11
Oxygen saturation	Os	%	11
Chemical Oxygen Demand	COD	mg/l O2	11
Chemical Oxygen Demand with dichromate	COD-Dcr	mg/l O2	11
Biochemical Oxygen Demand	BOD5	mg/l O2	11
Biochemical Oxygen Demand	BOD7	mg/l O2	11
Total Organic Carbon	TOC	mg/l C	11
Total suspended matter	TSM	mg/l	11
Detergents	DET	mg/l	11
Ion Nitrates	NO3-	mg/l	11
Nitrates Nitrogen	N-NO3-	mg/l N	11
Ionization of nitrates	NO2-	mg/l	11
Nitrates	N-NO2-	mg/l N	11
Ammonium ion	NH4+	mg/l	11
Ammonium nitrate	N-NH4+	mg/l N	11
Total inorganic nitrogen	TIN	mg/l N	11

[24] *Only blue marked rows have been evaluated and presented in this report.*

Non-ionized ammonium	NH3	mg/l	11
Non-ionized ammonium nitrogen	N-NH3	mg/l N	11
Total organic+ inorganic nitrogen	AT	mg/l N	11
Total organic nitrogen	ATO	mg/l N	11
Ortophosphate	PO43-	mg/l	11
Phosphorus orthophosphate	P - PO43-	mg/l P	11
Total phosphorus (poli + orto)	Ptot.	mg/l	11
Sulphate Ion	SO42-	mg/l	11
Total hardness	Th	0dH	11
Calcium solidity	Fca	mg/l	11
Magnesium solidity	FMg	mg/l	11
Calcium ion	Ca+	mg/l	11
Magnesium ion	Mg+	mg/l	11
P-Alkalinity	Pa	ml 0.1 e HCl	11
M-Alkalinity	Ma	ml 0.1 e HCl	11
Total alkalinity	TA	mmol/l HCl	11
Bicarbonates	HCO3-	mg/l	11
Free chlorine	Cl2	mg/l	11
Chlorides	Cl-	mg/l	11
Silicate	SiO32-	mg/l	11
Silicon on silicate	Si - SiO32-	mg/l Si	11
Chlorophyll a	Chlorophyll a	µg/l	11
Phenol	C6H5OH	mg/l	11
HEAVY METALS			
Chromium	Cr3+	µg/l	2
Cadmium	Cd2+	µg/l	2
Nickel	Ni2+	µg/l	2
Zinc	Zn2+	µg/l	2
Manganese	Mn2+	µg/l	2
Copper	Cu2+	µg/l	2
Iron	Fe2+	µg/l	2
Lead	Pb2+	µg/l	2

6.2. Appendix 2

Codes of the physical-chemical monitoring stations of surface waters- rivers

Code	Location	River	Emptying
RV01_011	Radavc	Drini i Bardhë	Mediterranean Sea/Adriatic Sea
RV01_012	Klina	Drini i Bardhë	Mediterranean Sea/Adriatic Sea
RV01_013	Gjonaj	Drini i Bardhë	Mediterranean Sea/Adriatic Sea
RV01_014	Vermica	Drini i Bardhë	Mediterranean Sea/Adriatic Sea
RV01_021	Istog	Istogu	Mediterranean Sea/Adriatic Sea
RV01_022	Zllakuçan	Istogu	Mediterranean Sea/Adriatic Sea
RV01_031	Stërnac i ulët	Klina	Mediterranean Sea/Adriatic Sea
RV01_032	Klina	Klina	Mediterranean Sea/Adriatic Sea
RV01_041	Drelaj	Lumbardhi i Pejës	Mediterranean Sea/Adriatic Sea
RV01_042	Pejë dalje	Lumbardhi i Pejës	Mediterranean Sea/Adriatic Sea
RV01_043	Grabanicë	Lumbardhi i Pejës	Mediterranean Sea/Adriatic Sea
RV01_051	Banjë e Malishevës	Mirusha	Mediterranean Sea/Adriatic Sea
RV01_052	Volljakë	Mirusha	Mediterranean Sea/Adriatic Sea
RV01_061	Deçan Hyrje	Lumbardhi i Deçanit	Mediterranean Sea/Adriatic Sea
RV01_062	Kralan	Lumbardhi i Deçanit	Mediterranean Sea/Adriatic Sea
RV01_071	Jasiq	Ereniku	Mediterranean Sea/Adriatic Sea
RV01_072	Ura e Terzive	Ereniku	Mediterranean Sea/Adriatic Sea
RV01_081	Zhdrellë	Rimniku	Mediterranean Sea/Adriatic Sea
RV01_082	Xërxa	Rimniku	Mediterranean Sea/Adriatic Sea
RV01_091	Buqallë	Toplluha	Mediterranean Sea/Adriatic Sea
RV01_092	Piranë	Toplluha	Mediterranean Sea/Adriatic Sea
RV01_101	Prevallë	Lumbardhi i Prizrenit	Mediterranean Sea/Adriatic Sea
RV01_102	Vllashnje	Lumbardhi i Prizrenit	Mediterranean Sea/Adriatic Sea
RV02_011	Kushtovë	Ibri	Black Sea
RV02_012	Mitrovicë	Ibri	Black Sea
RV02_013	Kelmend	Ibri	Black Sea
RV02_021	Bablak	Sitnica	Black Sea
RV02_022	Lipjan	Sitnica	Black Sea

RV02_023	Vragoli	Sitnica	Black Sea
RV02_024	Plemetin	Sitnica	Black Sea
RV02_025	Nedakovc	Sitnica	Black Sea
RV02_026	Mitrovica	Sitnica	Black Sea
RV02_031	Marinca	Llapi	Black Sea
RV02_032	Podujeva	Llapi	Black Sea
RV02_033	Millosheva	Llapi	Black Sea
RV02_041	Bresje	Prishtevka	Black Sea
RV02_051	Vragoli	Graqanka	Black Sea
RV02_061	Pjetërshtica	Drenica	Black Sea
RV02_062	Vragoli	Drenica	Black Sea
RV02_062B	Drenicë	Çikatovë e Vjetër	Black Sea
RV02_071	Devetak	Shtime	Mediterranean Sea/Adriatic Sea
RV02_072	Vojnovc	Shtime	Black Sea
RV03_011	Korbuliq	Morava e Binçës	Black Sea
RV03_012	Kllokot	Morava e Binçës	Black Sea
RV03_013	Ranillugë	Morava e Binçës	Black Sea
RV03_014	Domoroc	Morava e Binçës	Black Sea
RV03_021	Marec	Kriva reka	Black Sea
RV03_022	Domoroc	Kriva reka	Black Sea
RV04_011	Prevallë Subain	Lepenci	Mediterranean Sea/Adriatic Sea
RV04_012	Kaçanik	Lepenci	Mediterranean Sea/Adriatic Sea
RV04_013	Hani i Elezit	Lepenci	Mediterranean Sea/Adriatic Sea
RV04_021	Jezerc	Nerodimja	Mediterranean Sea/Adriatic Sea
RV04_022	Bifurkacioni	Nerodimja	Mediterranean Sea/Adriatic Sea
RV04_023	Gërlicë	Nerodimja	Mediterranean Sea/Adriatic Sea
RV04_024	Kaçanik	Nerodimja	Mediterranean Sea/Adriatic Sea

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