



**THE REPUBLIC OF SRPSKA**

**MINISTRY OF AGRICULTURE, FORESTRY  
AND WATER MANAGEMENT**

**REPUBLIC HYDROMETEOROLOGICAL  
INSTITUTE**



# **Air quality monitoring in the Republic of Srpska**

**Department for Environmental Protection**

**26-27 april 2023**

# STATIONS NETWORK-MONITORED POLLUTANTS

RHMZ RS has four own measuring stations:

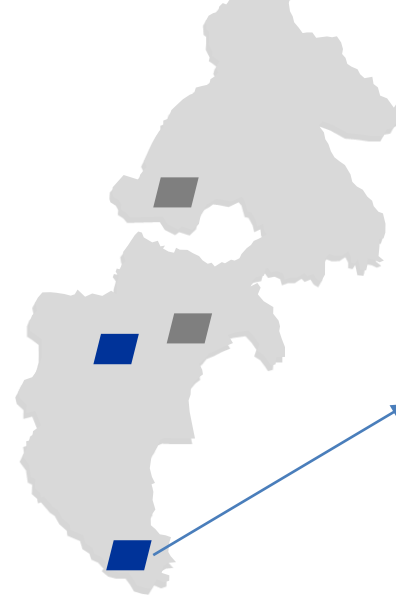
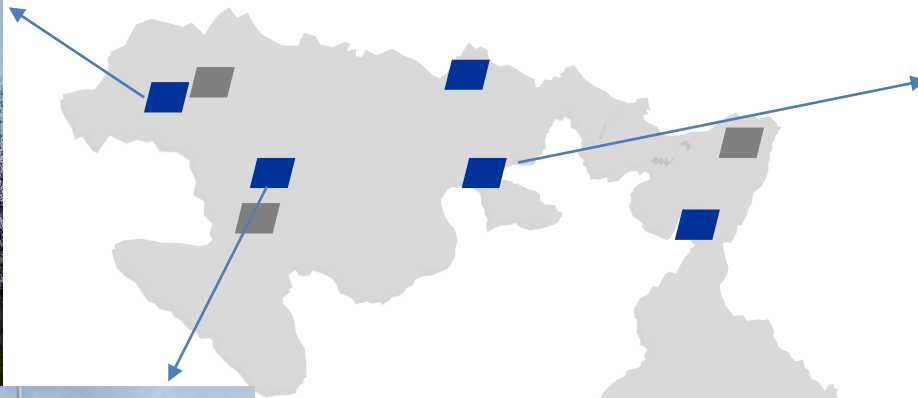
- Banja Luka, measuring pollutants  $\text{SO}_2$ ,  $\text{NO}_x$  ( $\text{NO}_2$ ,  $\text{NO}$ ), PM ( $\text{PM}_{2,5}$ ,  $\text{PM}_{10}$ ), CO and  $\text{O}_3$
- Prijedor, measuring pollutants  $\text{SO}_2$ ,  $\text{NO}_x$  ( $\text{NO}_2$ ,  $\text{NO}$ ), PM ( $\text{PM}_{2,5}$ ,  $\text{PM}_{10}$ ), CO and  $\text{O}_3$
- Doboj, measuring pollutants  $\text{SO}_2$ ,  $\text{NO}_x$  ( $\text{NO}_2$ ,  $\text{NO}$ ),  $\text{PM}_{10}$ , CO and  $\text{O}_3$
- Trebinje, measuring pollutants  $\text{SO}_2$ ,  $\text{NO}_x$  ( $\text{NO}_2$ ,  $\text{NO}$ ), PM ( $\text{PM}_{2,5}$ ,  $\text{PM}_{10}$ ), CO and  $\text{O}_3$

RHMZ RS receiving data from the measuring stations:

- Brod, measuring pollutants  $\text{SO}_2$ ,  $\text{NO}_x$  ( $\text{NO}_2$ ,  $\text{NO}$ ), PM ( $\text{PM}_{2,5}$ ,  $\text{PM}_{10}$ ), CO,  $\text{O}_3$ ,  $\text{H}_2\text{S}$  and  $\text{C}_6\text{H}_6$
- Gacko, measuring pollutants  $\text{SO}_2$ ,  $\text{NO}_x$  ( $\text{NO}_2$ ,  $\text{NO}$ ),  $\text{PM}_{10}$
- Ugljevik, measuring pollutants  $\text{SO}_2$ ,  $\text{NO}_x$  ( $\text{NO}_2$ ,  $\text{NO}$ ),  $\text{PM}_{10}$

# STATIONS NETWORK-MONITORED POLLUTANTS

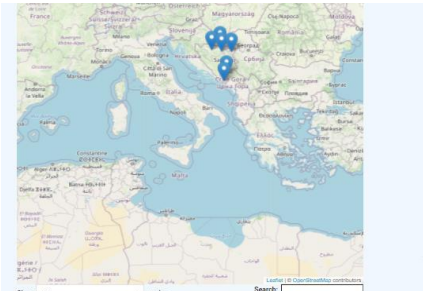
## Network of air quality stations in Republic of Srpska



■ Active stations  
■ Passive stations



# EQUIPMENT FOR MEASURING AIR QUALITY



Map showing air quality monitoring stations in Bulgaria. The map highlights several stations across the country, with a focus on the Sofia region.

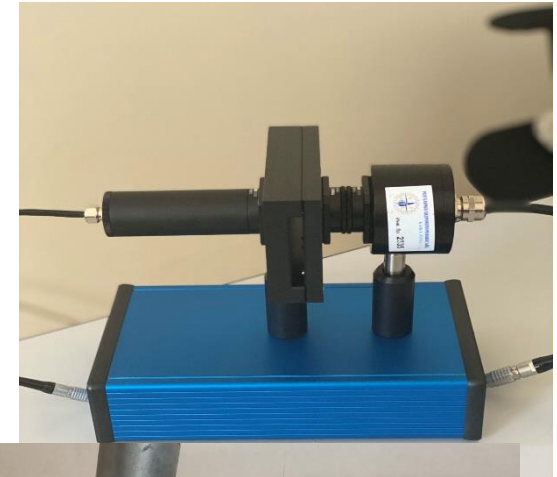
Станица №	O3	CO	SO2	NO	NO2	NOx	PM10	PM25	Опис
Бяна Лука	57.7074	0.5949408	14.025648	11.164875	43.814063	60.876284	65.995	43.222	Еко-автоматска станица за измерване на качествата на въздуха в Бяна Лука
Брод	56.80	0.55	20.07	5.04	13.36	11.01	60.79	53.86	Еко-автоматска станица за измерване на качествата на въздуха в Брод
Гачко	N/A	N/A	35.54	-0.22	4.69	3.71	47.68	N/A	Еко-автоматска станица за измерване на качествата на въздуха в Гачко
Добър	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Еко-автоматска станица за измерване на качествата на въздуха в Добър
Трибича	86.9094	0.24006932	21.972664	0.8029500	7.2765652	8.5034819	34.858	23.256	Еко-автоматска станица за измерване на качествата на въздуха в Трибича

Current data on air quality



Particle sampler

MABI



Atomic absorption spectrophotometer

# EXPECTED NETWORK EXTENSION

- ✓ Within the Republic network of measuring points which, according to the Decree on the establishment of the Republic network of measuring points stations and measuring points ("Službeni glasnik Republike Srpske", number 124/12) consists of twelve (12) measuring places within one (1) zone and six (6) agglomerations:

***Banja Luka, Doboj, Bijeljina, Trebinje, Prijedor, Istočno Sarajevo***

- ✓ RHMZRS currently monitors pollutant values in a real time at seven measuring points:

***Banja Luka, Trebinje, Prijedor, Doboj, Brod, Gacko and Ugljevik***

- ✓ As you can see, it will be necessary to provide measuring points in Bijeljina and Istočno Sarajevo and we will have one measuring point in each agglomeration

# IT DIFFICULTIES, DATA FLOW FROM INSTRUMENTS TO THE RAVEN DATA BASE

- ✓ The data logger from location Dobož does not have enough inputs and it is not possible to connect all analyzers and meteorological devices
- ✓ We cannot get permission to transfer data from the Rafinerija Brod location. This measuring station is not property of RHMZRS
- ✓ We do not have a proper website and our IT engineer works with external IT company to create new website
- ✓ Data from the analyzers are stored on two servers in one place. Also, some of the data are on the cloud an external IT company. Our goal is to have all data in our two different locations.



# MAINTENANCE, REGULAR CALIBRATIONS, ALARMS WHEN DEFLECTION AND QUALITY CHECK OF DATA MONITORING

- ✓ We do not have enough funds for the recommended maintenance of the equipment, we are also behind schedule with recommended maintenance of the analyzers
- ✓ The Law on public is a problem for us when purchasing consumables – Teflon filters for analyzers, tapes for PM analyzers, a data loggers, etc.
- ✓ It will be correct if we will have four calibrations (analyzers) per year at an accredited entity. We do not have the funds for this activity but we have hand calibration unit and have started with own calibration procedures.
- ✓ We react when we receive alarms on the analyzers, according to the possibilities we have at that moment- replacing the tape, restarting the device, etc. For situations when alarm occurs due to a lack of regular service or when intervention is beyond of our capabilities, we call authorized service technicians

# DISSEMINATION EFFORT ABOUT THE AQ DATA TO THE PUBLIC (REAL TIME AND MONTHLY/YEARLY REPORTS)

- ✓ AQI includes 24- hour mean values of PM particle concentrations. During winter, temperature inversions and a large difference in PM pollutants concentrations usually occur. It is difficult to explain to the public the low AQI value if a clear and warmer day is followed by a cloudy and colder day. It will be necessary to find some solution for this approach.
- ✓ If we don't have (reliable) data in the analyzers or we have some interruptions with in data transmission, you can find the reasons in the above
- ✓ Public will not have reliable or any information about pollution



# INFORMATION OF REQUEST

- ✓ The most requested informations from journalists during the winter is about the stations of our network, the data presented and health recommendations in accordance with the data
- ✓ Certain parts of the public have the opinion that we do not present the right data and hide the truth about real pollution. Very often, in the winter months, citizens with personal installed measuring instruments measure the concentration of PM pollutants. The data obtained in this way have high values. We are very interested for instruments, informations and experiences that we can get from citizens

# IMPORTANT FOR THE COMMON PUBLIC TO BE UNDERSTOOD WHEN READING DISSEMINATION WEBSITE

- ✓ It is very important to inform the public that the presented data is not validated and verified. Also, it is important to note that AQI does not represent concentration of pollutants.
- ✓ An AQI without a detailed explanation of the connection to health recommendations is useless. Health recommendations must be very accessible on the website and displayed near or with the AQI