



Review of Bosnia and Herzegovina

Hydrometeorological Institute

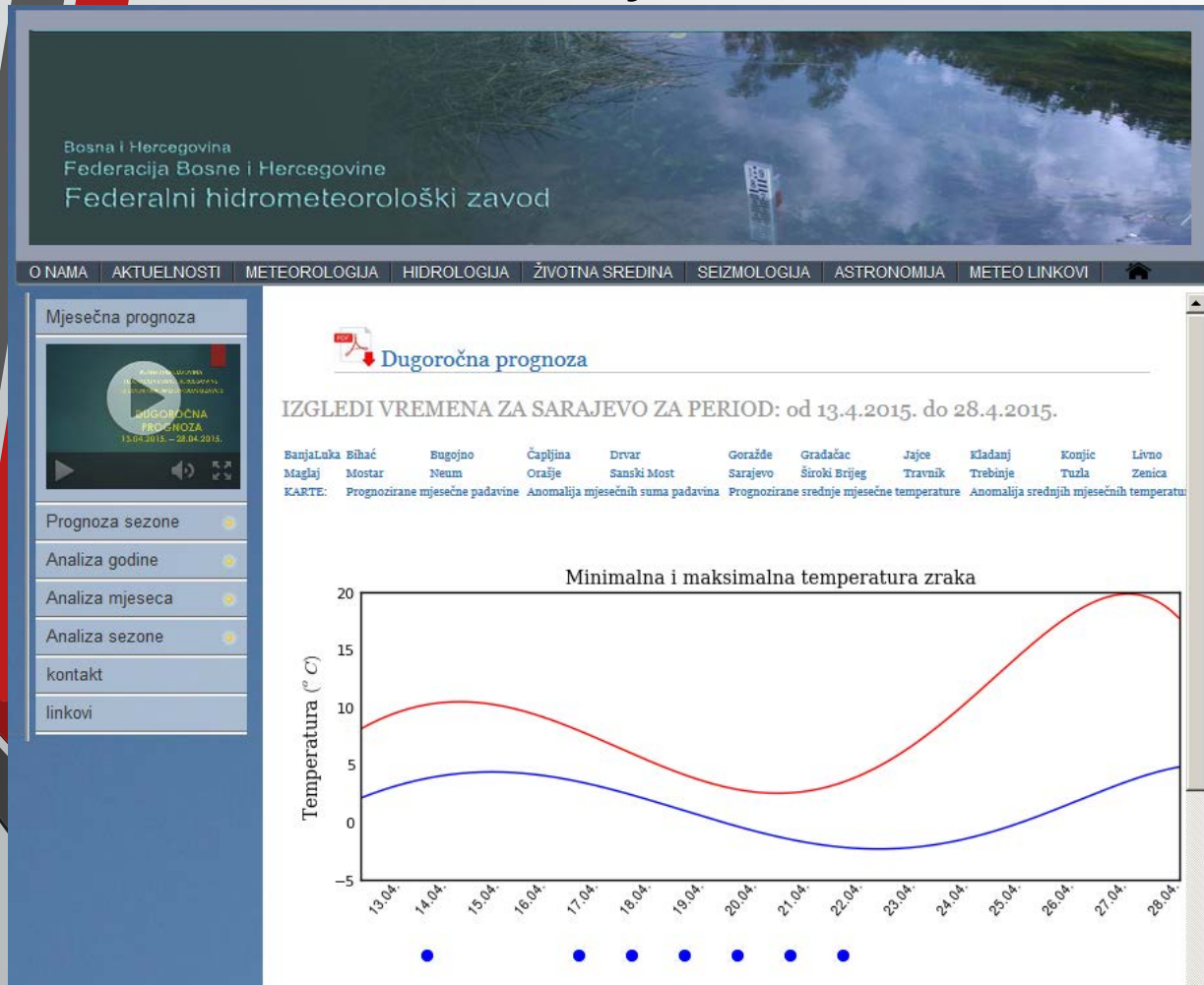
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About organizations and duties

Mission, Objective, and main activities of organizations



The provision of timely and reliable data, information and warnings of weather, climate and climate change, water resources, the quality of the environment (air, water and soil), seismic and astronomical processes and phenomena in the Federation Bosnia and Herzegovina, in order to protect life and property, ensuring sustainable development and enforcement of international obligations and strengthen international cooperation.

Measuring stations

In Federation of
Bosnia and Herzegovina:

- 15 synoptic
- 3 automatic stations
- 19 climatological
- 12 agrometeorological
- 50 hydrological stations

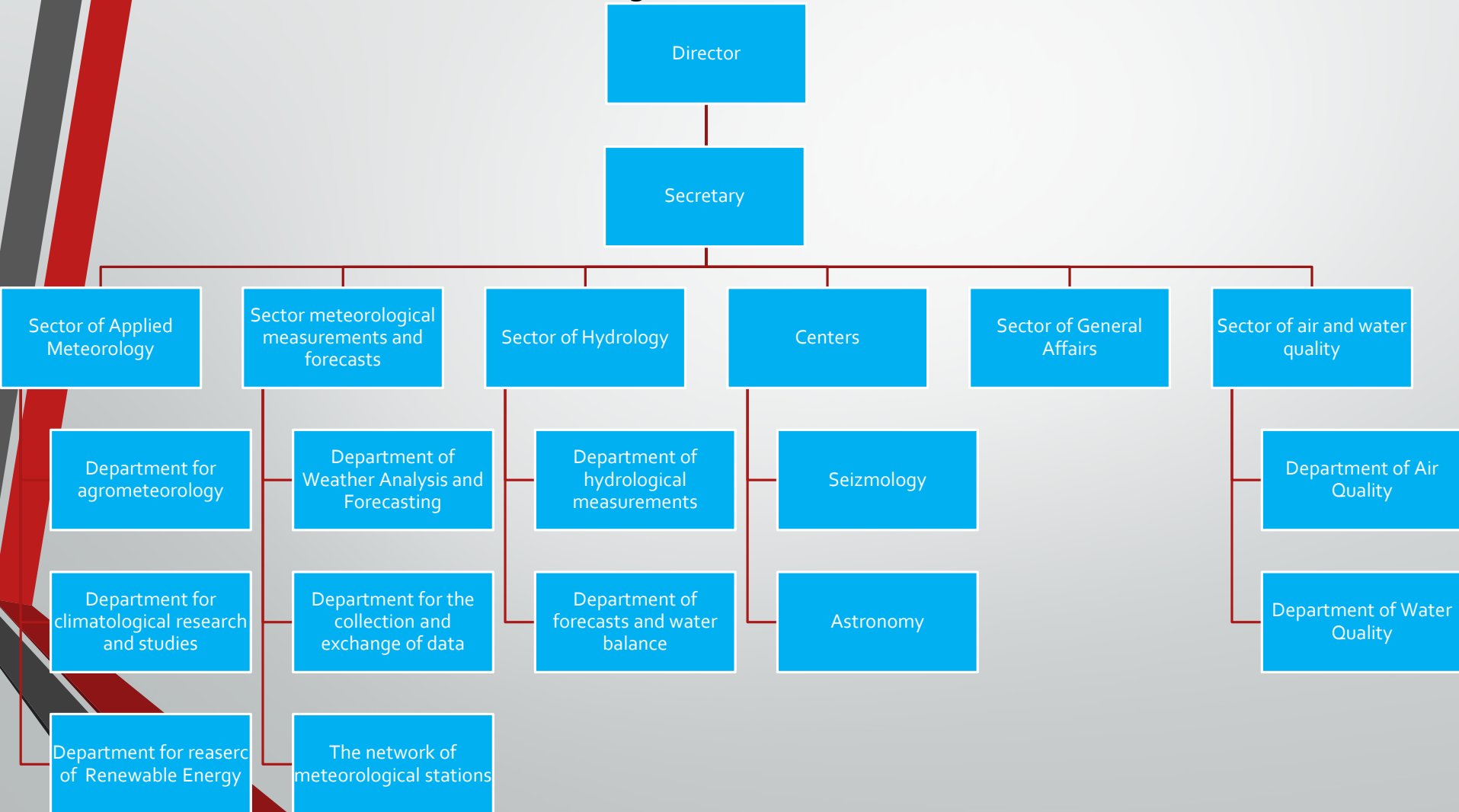
In Bosnia and Herzegovina
in territory of Republika Srpska:

- 17 synoptic
- 8 climatological stations



About organizations and duties

Organization charts



Agrometeorology

is the study of weather and use of weather and climate information to enhance or expand agricultural crops and to increase crop production.



Some of the data and analyses from our department that could be find online and used are: The soil temperature, measured at 5 different depths: 2, 5, 10, 20, 30, 50 and 100 cm on the bare soil, ie. soil without vegetation. Evapotranspiration, SPI index, Agro forecast, Phenology,...

Soil temperatures in various depths



Temperature tla

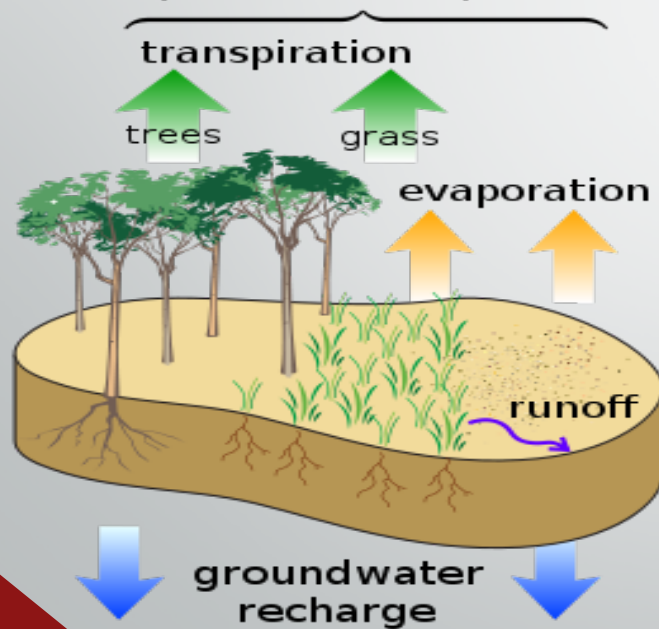
Vrijednosti temperature tla za: 26.4.2017.

	Termin	7	14	21
Lívno	Termin	7	14	21
	5 cm	9.0°C	11.4°C	12.4°C
	20 cm	9.0°C	9.0°C	9.6°C
Mostar	Termin	7	14	21
	5 cm	13.0°C	19.1°C	15.9°C
	20 cm	-9999°C	-9999°C	-9999°C
Sanski Most	Termin	7	14	21
	5 cm	11.8°C	17.2°C	15.1°C
	20 cm	12.4°C	13.8°C	14.4°C
Sarajevo	Termin	7	14	21
	5 cm	8.8°C	17.0°C	12.6°C
	20 cm	9.6°C	10.6°C	11.8°C

Referentna evapotranspiracija (mm)

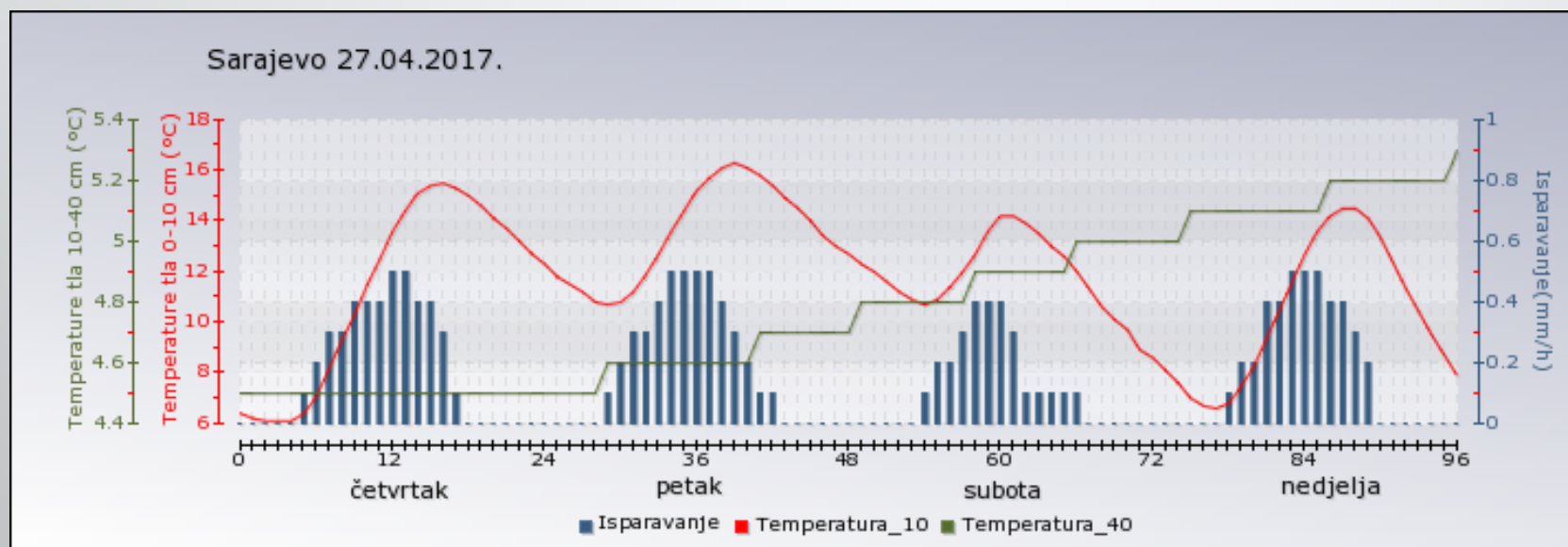
stanica	24.4.2017.	25.4.2017.	26.4.2017.	27.4.2017.	28.4.2017.	29.4.2017.
Bugojno	3	3	3	2.1	3	3.3
Zenica	3.3	3.6	3.7	2.4	3.5	3.6
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0

evapotranspiration =
transpiration + evaporation



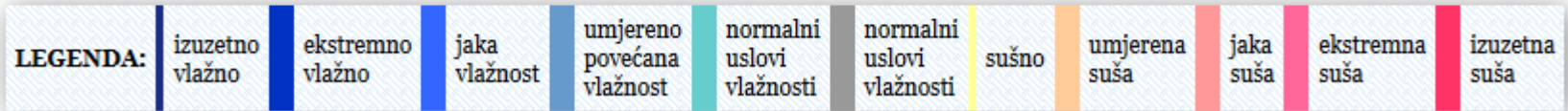
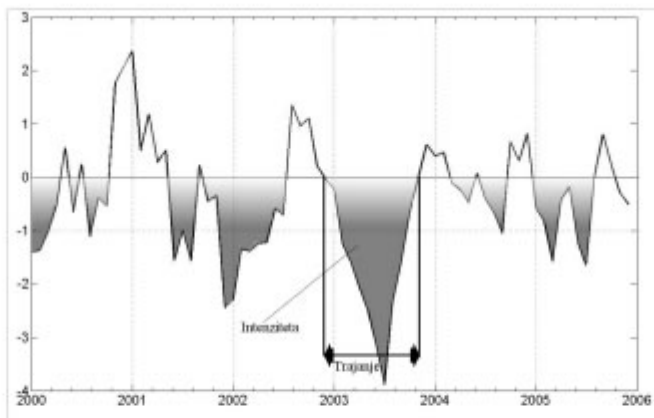
Evapotranspiration (ET) is the sum of evaporation and plant transpiration from the Earth's land and ocean surface to the atmosphere. Evaporation accounts for the movement of water to the air from sources such as the soil, canopy interception, and waterbodies.

Forecast soil temperature at depths of 0-10, 10-40 cm and evaporation of soil.

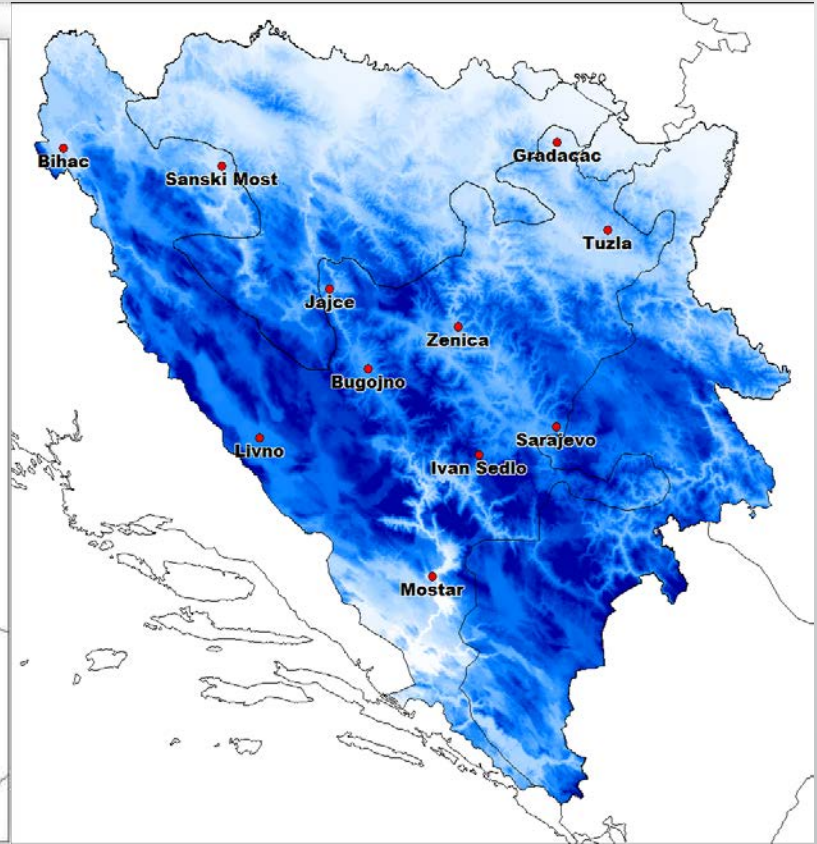
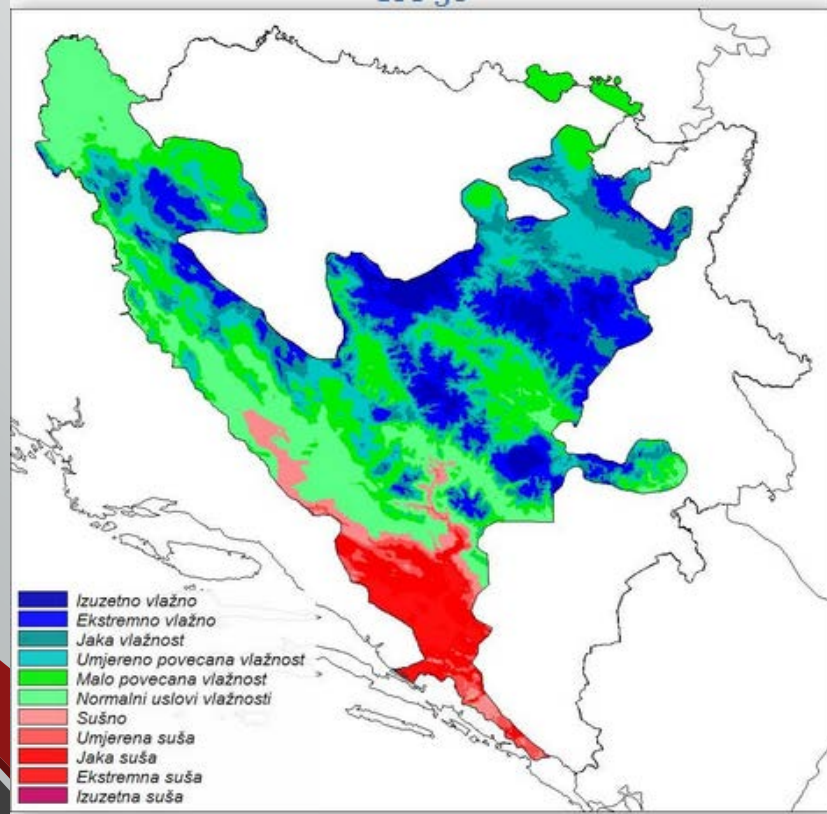


Data obtained from the numerical model WRF-NMM

SPI



SPI-30



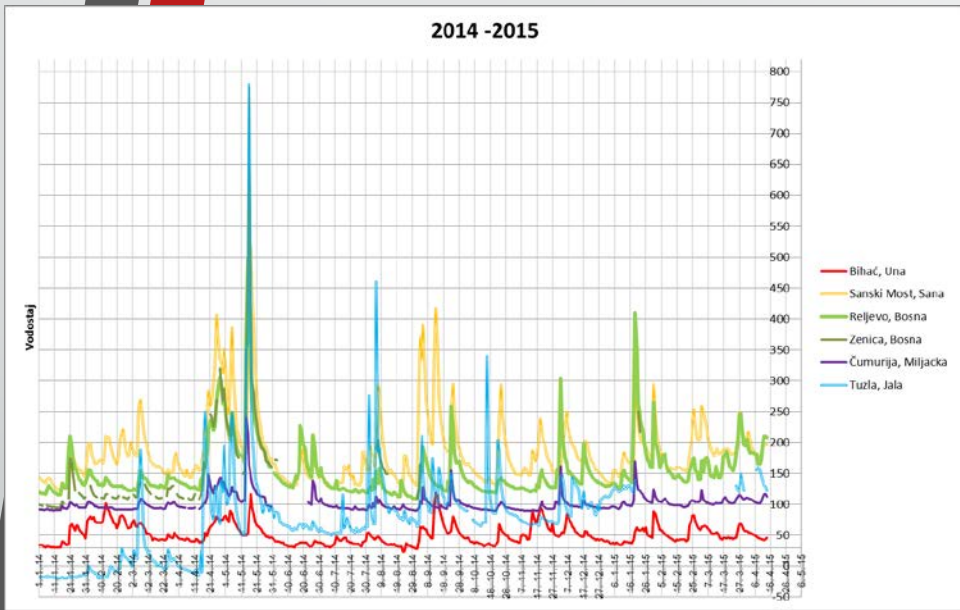


Climate changes and hazards

Bosnia and Herzegovina is a small country and its influence on climate change is almost neglected, but the strains we suffer are enormous.

Almost every year we got caught up in some weather disaster. Let's see the latest and the most severe ones!

Catastrophic flood in may 2014





Severe drought in last decade

- During the last decades, the country experienced several droughts in the years 2000, 2003, 2007, 2011 and 2012. This produced some severe consequences:
- In August 2000, Bosnia and Herzegovina suffered the worst drought in 120 years, where about 60% of the agricultural production was affected, resulting in extreme food insecurity
- During the summer of 2003, some regions were hit by drought, which caused around €200 million in damages of agricultural output and affected close to 200,000 people.
- In the summer of 2007, extremely high temperatures and the resulting drought destroyed more than 40% of the agricultural production and caused forest fires, which affected about 250 hectares of land.
- In 2012, the country experienced a prolonged drought period, causing a loss of \$1 billion in agricultural production, a 70% reduction of grains and vegetable yields.



Drought management

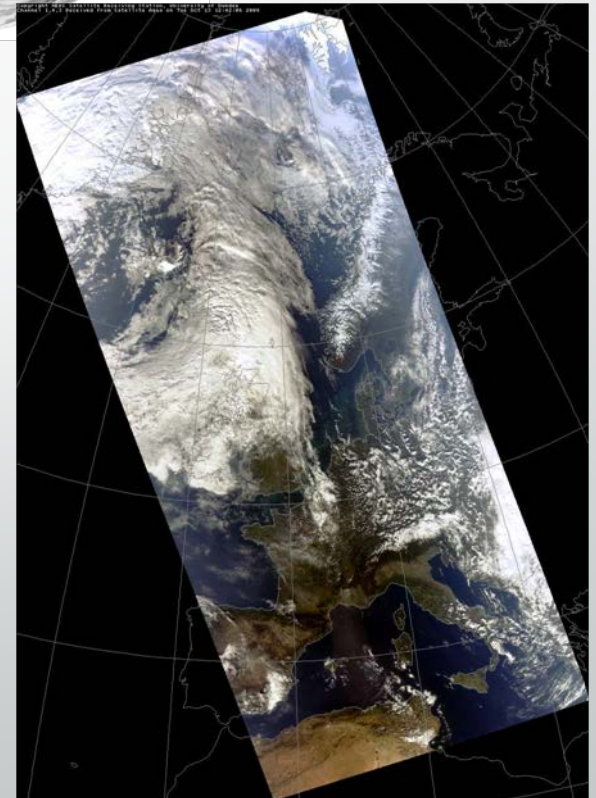
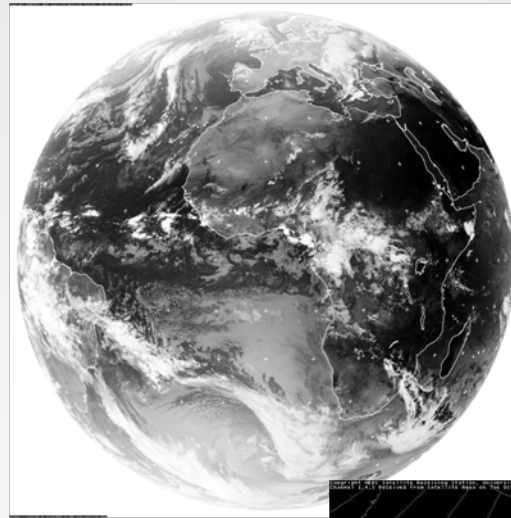
- The pressing need is to establish a drought early warning system at national and local level. Besides that, the country would highly benefit from the following:
 - 1. Upgrading and modernizing the hydrometeorological observation networks, data management and forecasting system as well as supporting sustainable organizational, human and technical resources to maintain and operate them;
 - 2. Training in drought vulnerability and risk assessment;
 - 3. Enhancing the cooperation and networking between various hydrometeorological sectors, different stakeholders and end-users of this data, services and early warnings;
 - 4. Strengthening the capabilities for drought preparedness and management, including contingency plans at local and national level; and 5. Developing sustainable irrigation systems

Satellite meteorology

Within the project, we received a two EUMETCast workstation - called DAWBEE (Data Access for Western Balkan and Eastern European Countries) stations

Software packages:

1. TechniSat DVB (Digital Video Broadcast)
2. EUMETCast Client Software (TELLICAST)
3. MSGProc – procesing tool
4. ViewMSGProc – data visualisation tool





LSA SAF PRODUCTS AND PROBLEMS

Through the EUMETCast, via DAWBEE (Data Access for Western Balkans and Eastern Europe), Meteorological Institute of Bosnia and Herzegovina receives products from the Land Surface Analysis Satellite Applications Facility SAA. The LSA SAF products that we receive are:
Albedo, DSLF, DSSF, ET, FAPAR, FDeM, FRM, FRP-PIXEL, FVC, LAI, LST, SC₂

None of these are currently used!

Hard work and training

