



Drought monitoring products in Croatia

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**Croatian Meteorological and Hydrological Service
Department of Climatology**

Drought monitoring products

 **Croatian Meteorological and Hydrological Service** 

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Climate monitoring

Cumulative daily precipitation [Read more...](#)

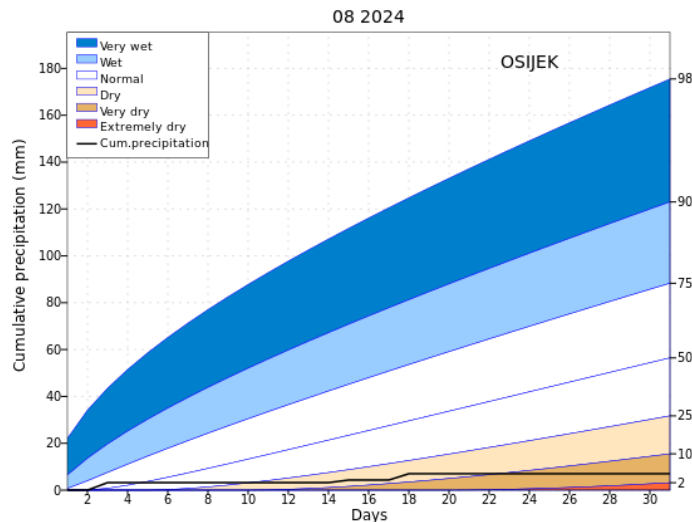


Figure 1: Cumulative precipitation amount (mm) in August 2024, and theoretical percentiles (2., 10., 25., 50., 75., 90. and 98.) curves from the period 1981-2020

Daily mean temperature

Precipitation and insolation

Climate assessments

Drought monitoring

» Cumulative precipitation and anomaly

» SPI

» SPEI

» Estimated drought impact (DriDanube)

Climate standard normals

Figure 1. represents a cumulative precipitation amount in mm (bold curve) from the beginning to the end of analysed month, for the given station. The theoretical percentiles (2nd, 10th., 25th., 50th, 75th, 90th and 98th) are presented with smooth lines. They constitute a frame that enables the estimation of the actual cumulative precipitation amount deviation from the normal i.e. median (50th percentile). The Square Root Normal Distribution is employed to obtain the theoretical percentiles using the average monthly precipitation amount from the 1981-2020 time period. The cumulative rainfall amount from the beginning of the month to a given date of the month, less than 25th percentile (the first quartile) indicates the dry conditions for the given period. Similarly, the cumulative precipitation amount greater than 75th percentile (the third quartile) indicates wet conditions. The excess of 2nd or 98th percentile can be expected once in 50 years, indicating extreme events.

Dashed line represents 7-day total precipitation forecast (ECMWF HRES model). By the end of the month only observed data are shown.

Drought monitoring products

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Precipitation anomalies for different time scales [Read more...](#)

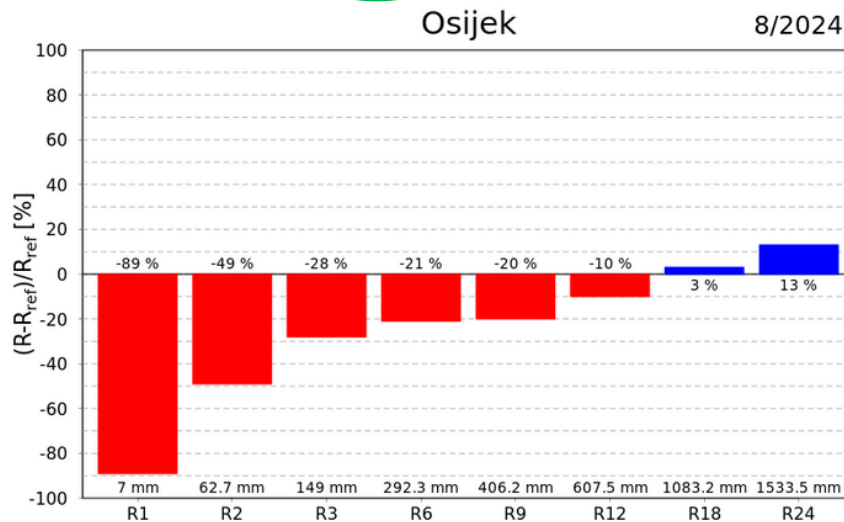
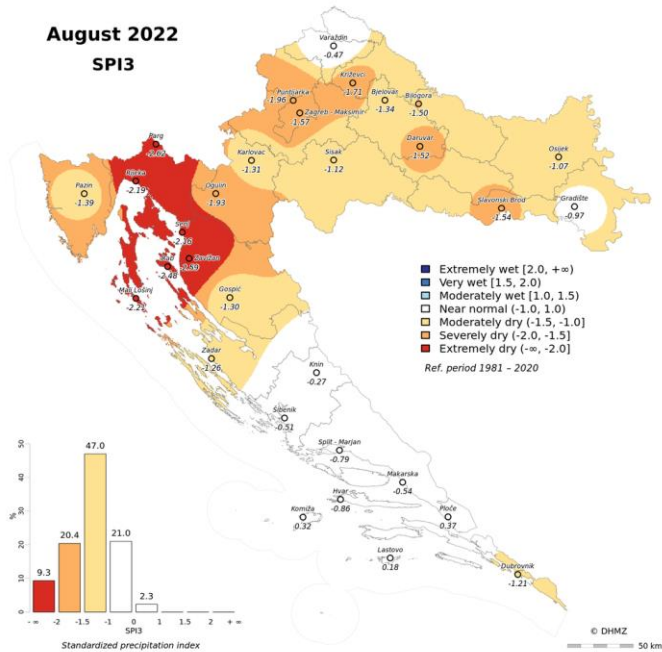


Figure 2: Difference between measured rainfall (R) and the corresponding 1981 - 2020 mean (Rref) for different time scales (1, 2, 3, 6, 9, 12, 18 and 24 months)

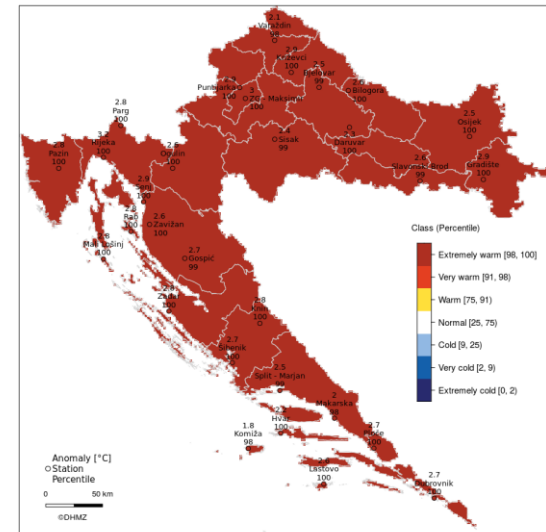
Figure 2 shows the precipitation (R) departure (given in percentages) from the corresponding 1981 - 2020 mean value (Rref), for the selected station and month, for different time scales (1, 2, 3, 6, 9, 12, 18 and 24 months). The N-month time-scale precipitation amount refers to a cumulative amount of precipitation starting from N-1 month to the selected month. The values are indicated above the time-scale positions on the graph. The blue bars indicate positive deviation (more precipitation), and the red refers to negative deviation (less precipitation). For example, if the R3 value for the September 2020 is 100 mm, and the red bar reaches -20%, it means that the cumulative amount of precipitation from July to September 2020 is 100 mm, and that is 20% less than the corresponding 30-year average (125 mm).

Drought monitoring products

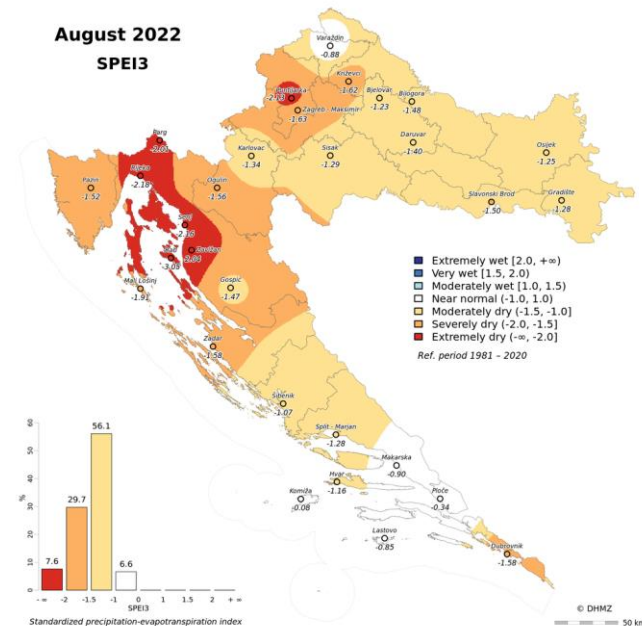
August 2022
SPI3



Summer 2022
Mean air temperature
Percentiles with respect to 1981-2010 normal



August 2022
SPEI3



Time scales:

1, 2, 3, 6, 9, 12, 18, 24

Reference period:

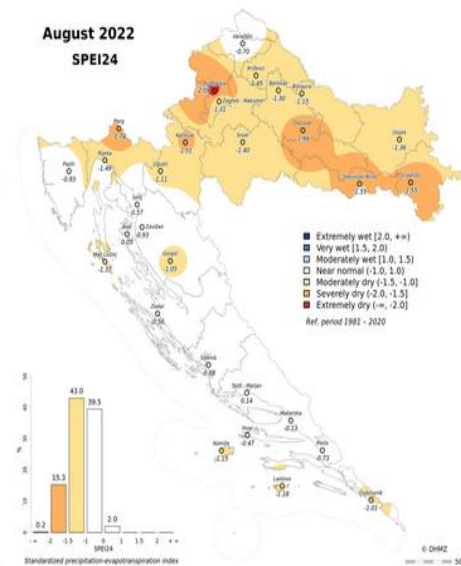
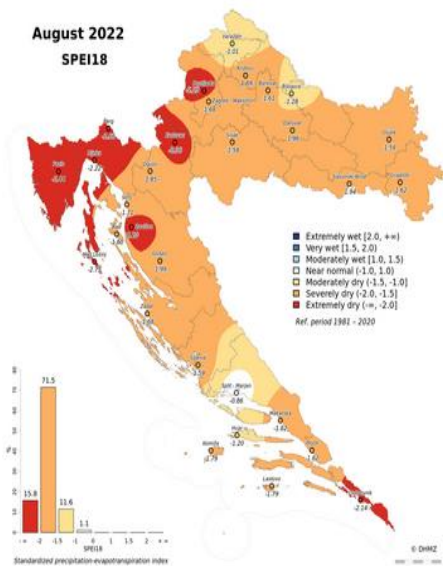
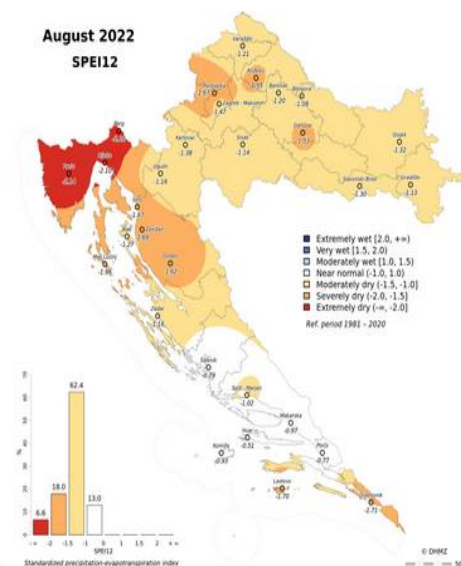
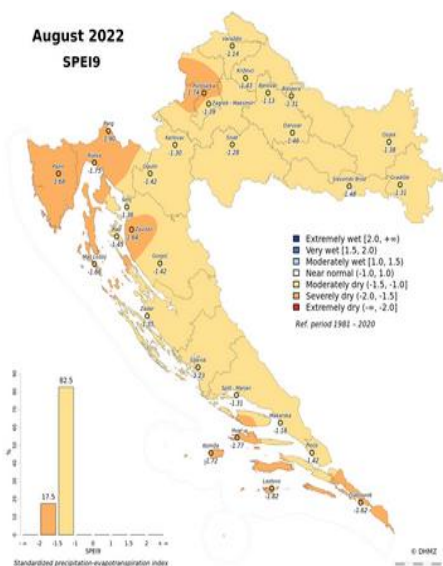
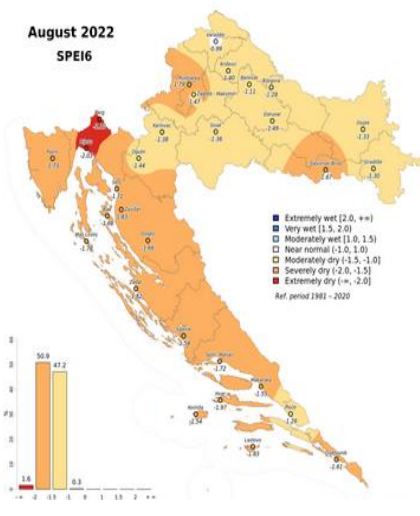
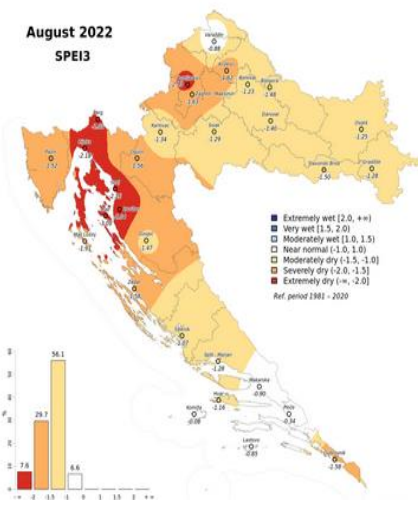
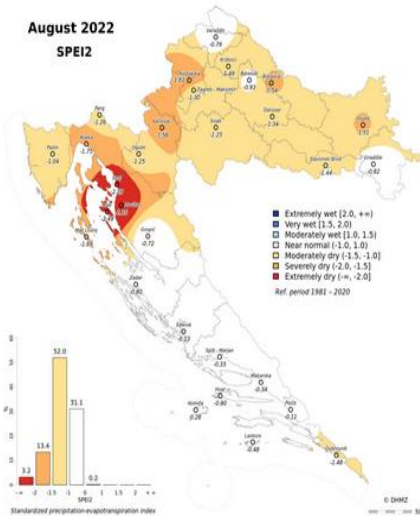
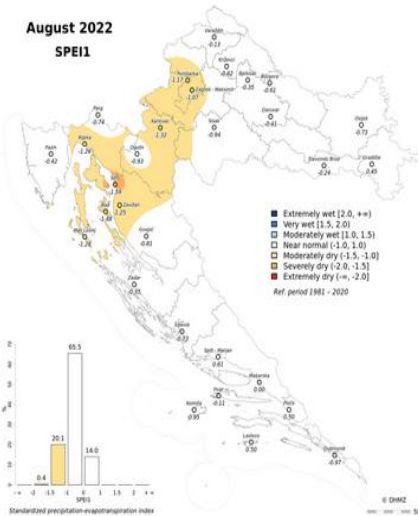
1981-2020

30 stations, DHMZ network

Drought monitoring products - SPEI

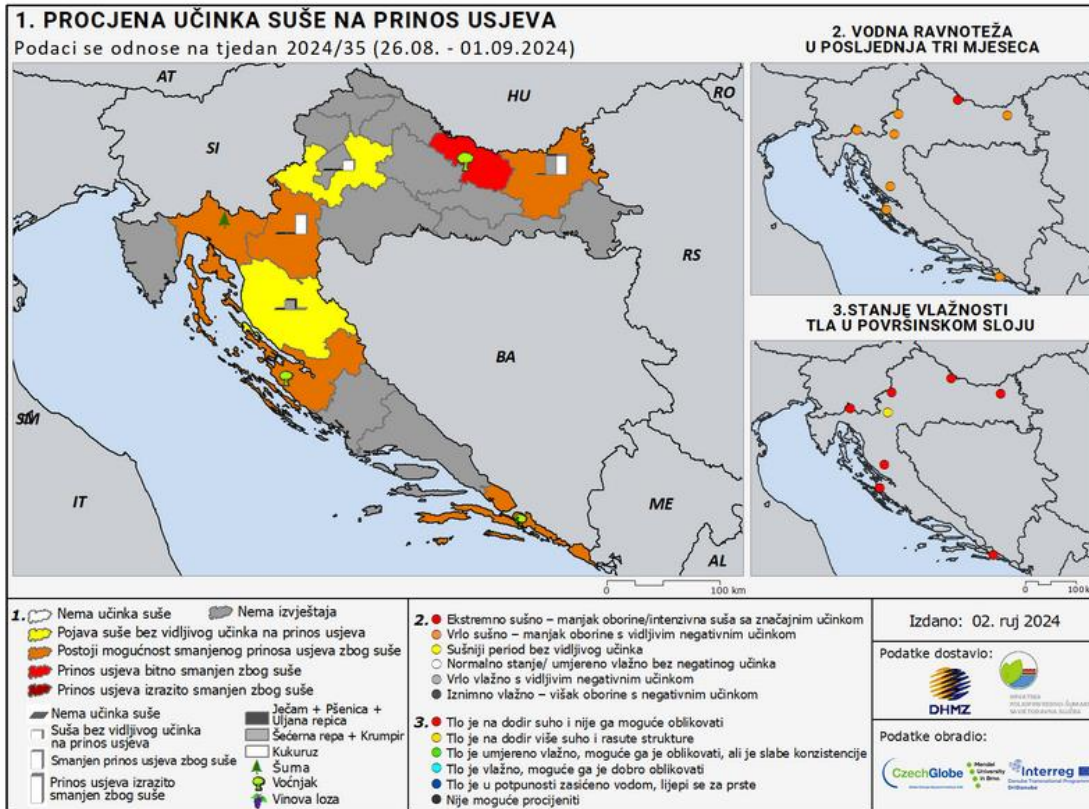
SPEI

city August 2022



Drought monitoring products – drought impacts

< Period 26.08.2024. - 01.09.2024. >



Daily mean temperature

Precipitation and insolation

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- » Cumulative precipitation and anomaly
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Climate standard normals

Figure 1. Maps of estimated drought impact on main crop yield in Croatia

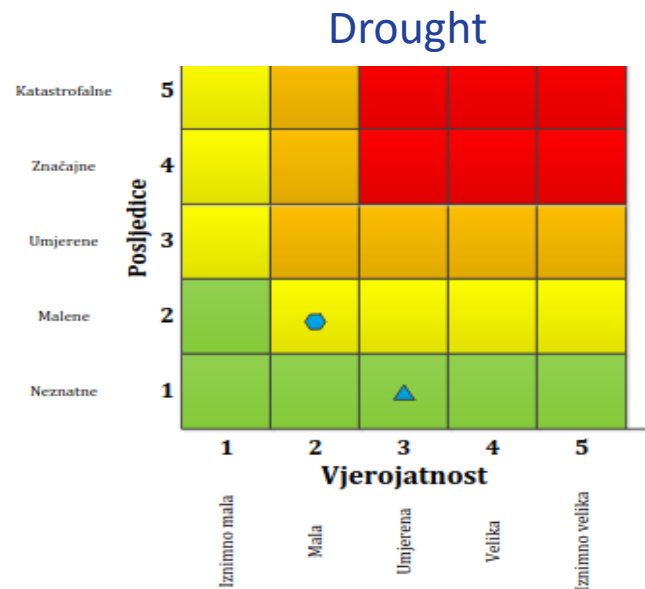
Map 1. Estimated drought impact on main crop yield

Map 2. Water balance for the last three months

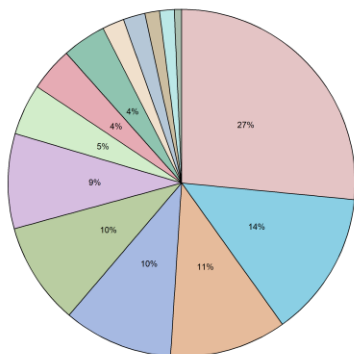
Map 3. Current soil moisture in the topsoil layer

Cooperation on national level

- Disaster Risk Assessment (DRA) in Croatia
 - coordinated by Ministry of Interior
 - drought coordinated by Ministry of Agriculture, Forestry and Fisheries (MAFF)
- Drought reporters for impact maps – mostly from MAFF



- WP1: Impact data base – national newspapers
DHMZ – leading two activities
- WP2: Testing the forecasting tools
- WP3: Developing a joint communication and engagement action plan within existing legal frameworks



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