

CLIMATE MONITORING PRODUCTS FOR FARMERS

IN THE CZECH REPUBLIC

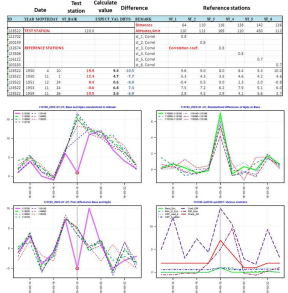
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We provide climate information to public, state authorities, politicians and experts (free of charge). This is based on pre-processed meteorological and climatological datasets and is disseminated through specialized web portals.

Climatological data

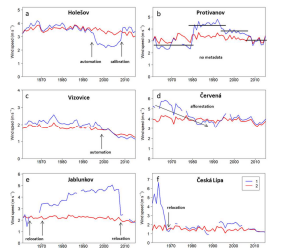
Data Quality control

A new procedure and software (MetQC) was developed based on combination of several statistical tests within CCS C3S.311a.Lot.4.



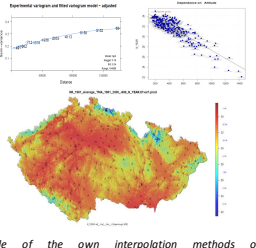
Time series Homogenization + filling gaps

We have more than 20 years of experiences with various types of data (all meteorological elements). Detection of inhomogeneities in monthly step is based on ensemble of methods (ProClimDB, www.climahom.eu). Daily step correction is based on own DAP method. Finally, missing values in the period 1961-2019 are being filled.



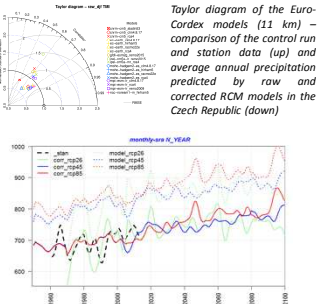
Spatial Interpolation

The pre-processed station records of various meteorological elements are spatially interpolated into a 500x500 m resolution grid and these layers are then applied in various products (it includes hourly, daily to the long-term averaged data). Our method is based on regression kriging.



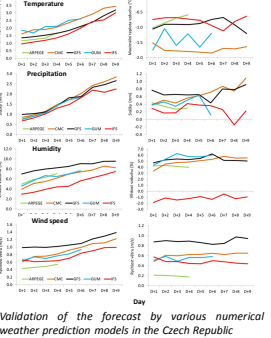
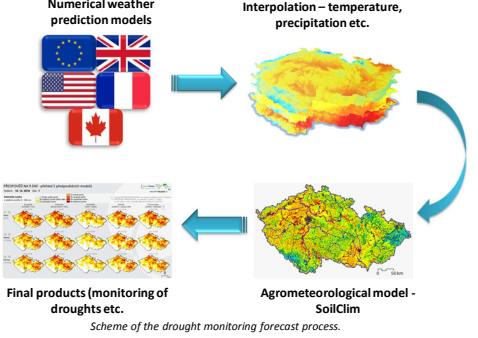
Climate models

Models (GCM, RCM) were selected, that capture climate in Central Europe well. These were further bias corrected (DAP method - quantile mapping) and recalculated to the location of meteorological stations.



Forecast data

There is great uncertainty in the weather forecast, so you cannot rely on just one model. Our forecast is based on a set of multiple models. This better captures the uncertainty.



Climate change portal www.klimatickazmena.cz

Home web page www.klimatickazmena.cz

Example of the free downloadable layouts

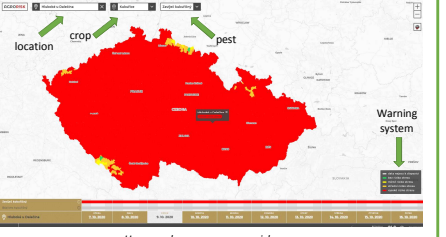
Scheme of web portal philosophy

The portal focuses on presentation of climate models outputs (GCM and RCM) for the Czech Republic. The results are divided into climate, agriculture, water regime, landscape and forestry groups.

The main output is given in a form of maps and plots (charts) or a user can download a prepared layout.

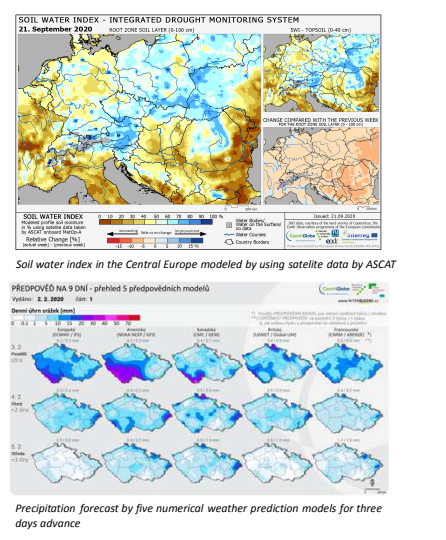
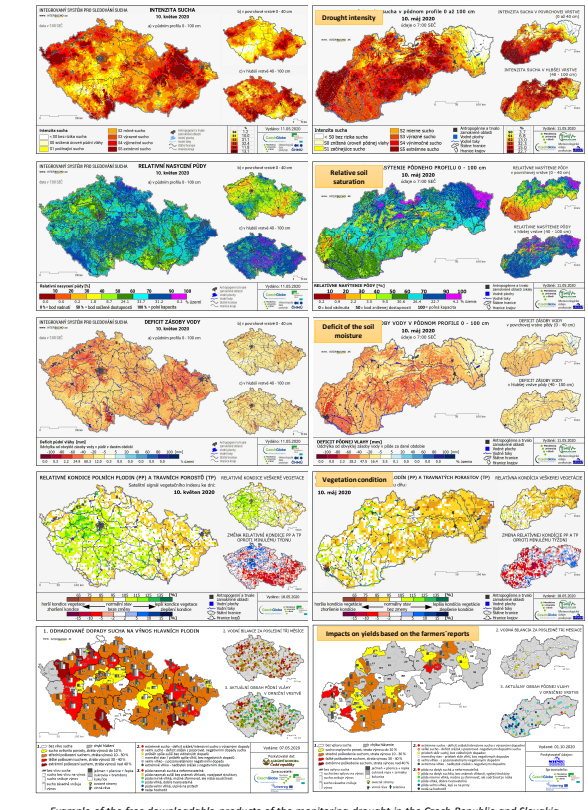
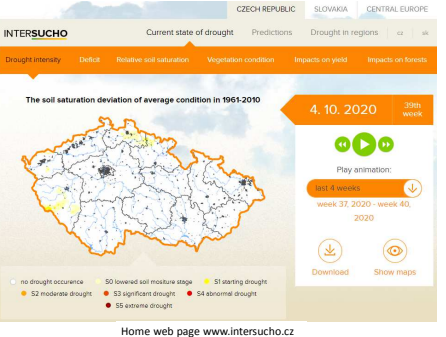
Monitoring and forecasting of selected biotic and abiotic noxious factors for agriculture, www.agrorisk.cz

The newly prepared portal is focuses on monitoring and forecasting of selected biotic and abiotic noxious factors. This also includes early warning of late spring frosts, strong winds, high temperatures, drought or occurrence of pest and diseases.



Monitoring of drought www.intersucho.cz

The flag ship is a drought monitoring system that focuses on monitoring of agricultural drought and its forecast for 10 days ahead by numerical weather prediction models. This product comes from US drought monitor (www.drought.gov). It is based on several pillars, such as measured data, satellites and feedback from farmers. In return, a localized forecast is provided for them free of charge. Monitoring is also prepared and products are available for Slovakia, Austria and Croatia.



Conclusions

- We developed own quality control software (MetQC) and tools for the homogenization, bias correction and interpolations (ProClimDB, www.climahom.eu)
- The created quality controlled and homogenized data serve in various products as bases for tuning statistical models that are core of these products and thus help to make the products as best as possible
- Examples of products based on pre-process climatological data shown here included drought monitoring, specific products for farmers and climate change
- We put science into practice

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