

DriDanube project

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WHY?

Current status

Monitoring

- untimely delivery
- cross-border inconsistencies
- lack of integration of risk and impact data
- increase in the number and duration of droughts in the Danube region in last decades (in 2003, 2007, 2015, 2016, 2017)

Impacts and risk assessment

- no systematic collection of drought impacts
- lack and incomparable drought risk assessment methodologies
- despite the impacts on the economy and welfare of people, mainly in agriculture, drought is still not considered an issue of high priority

Management

- reactive, dealing mainly with losses and damages
- cooperation between key actors is missing
- formal legislation does not exist

Motivation for the project

Drought is becoming one of the major challenges in water management in the Danube region.



Brought Risk in Danube Region iDanube

Project financed by European fund for regional development (85%)

Lead partner: Slovenian Environment Agency

Project budget: 1.974.750,00€

Duration of project: 30 months (January 2017 – June 2019)



Lead Partner:

- Slovenian Environment Agency (ARSO), Slovenia

Partners:

- EODC Earth Observation Data Centre for Water Resources Monitoring GmbH (EODC), Austria
- Global Change Research Institute CAS, (CzechGlobe), Czech Republic
- Global Water Partnership Central and Eastern Europe (GWP CEE), Slovakia
- Hungarian Meteorological Service (OMSZ), Hungary
- Vienna University of Technology (TU Wien), Austria
- Szent Istvan University (SZIU), Hungary
- National Meteorological Administration (NMA), Romania
- Centre of Excellence for Space Sciences and Technologies (SPACE-SI), Slovenia
- Meteorological and Hydrological Service (DHMZ), Croatia
- Slovak Hydrometeorological Institute (SHMU), Slovakia
- Faculty of Agriculture, University of Novi Sad (FAUNS), Serbia
- Republic Hydrometeorological Service of Serbia (RHMS), Serbia
- Institute of Hydrometeorology and Seismology (IHMS), Montenegro
- Republic Hydrometeorological Service of Republic of Srpska (RHMS RS), Bosnia and Herzegovina

Associated Strategic Partners:

- International Commission for the Protection of the Danube River (ICPDR), Austria
- Administration of the RS for Civil Protection and Disaster Relief (URSZR), Slovenia
- The State Land Office (SLD), Czech Republic
- Agricultural Station/Forecasting and Warning Service of Serbia in plant protection (PIS), Serbia
- Environment Agency Austria (EAA), Austria
- Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMFLW), Austria
- Ministry of Environment and Energy, Water management directorate (MZOIE), Croatia
- Ministry of Agriculture (FM), Hungary

7 EU countries

3 Non-EU countries

15 partners

8 Strategic partners

Slovenia 2

Austria 2

Czech Republic 1

Slovakia 2

Hungary 2

Romania 1

Croatia 1

Serbia 2

Montenegro 1

Bosnia and Herzegovina 1

Main Outputs

Improved drought emergency response and better cooperation among operational services and decision making authorities in the Danube region.

Drought User Service

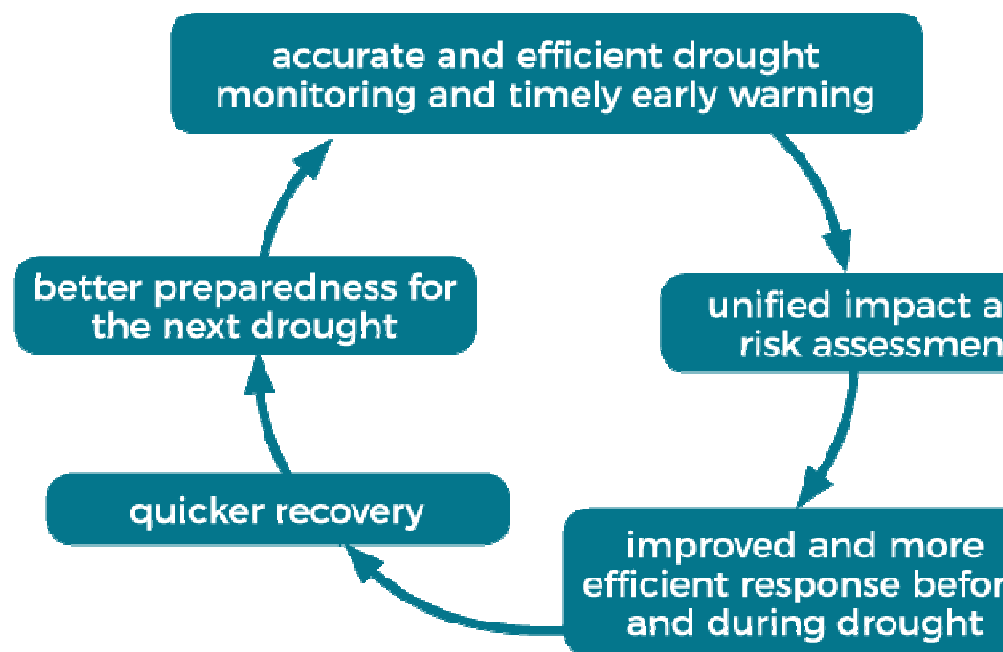
An innovative tool integrating all available data, including large volume of remote sensing products and serving the authorities to monitor, forecast and respond during drought development faster and with higher precision.

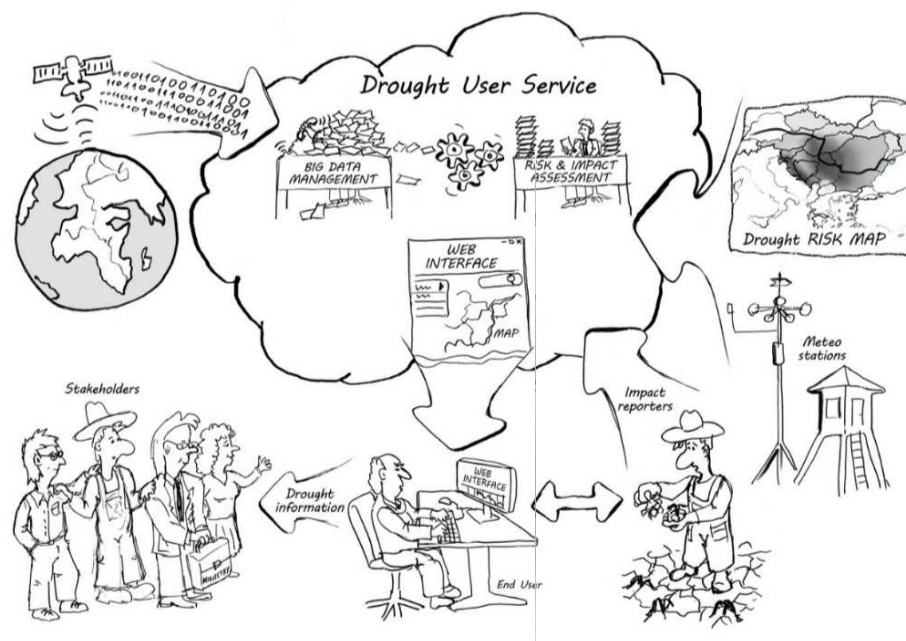
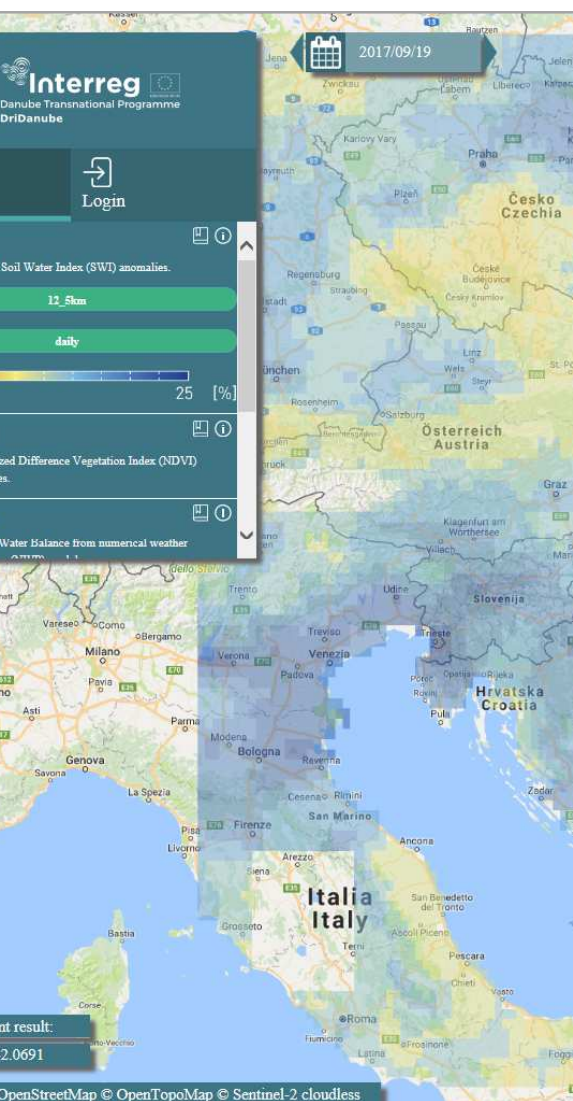
Methodologies for drought impact and risk assessment

Unification and cross-border coherence of drought Risk and Impact assessments. Establishment of network of reporters as additional source of information for drought impacts in agriculture.

DriDanube Strategy

A clear guidance for overcoming the gaps in the drought decision-making processes and improvement of drought emergency response in the Danube region.





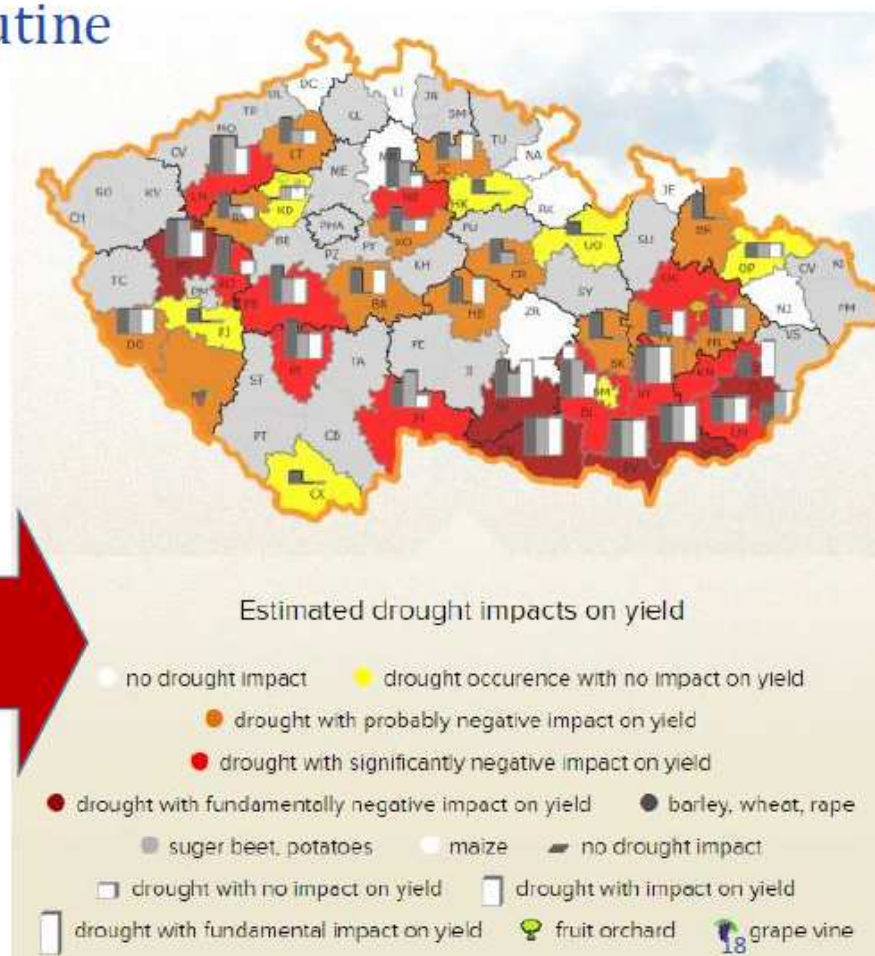
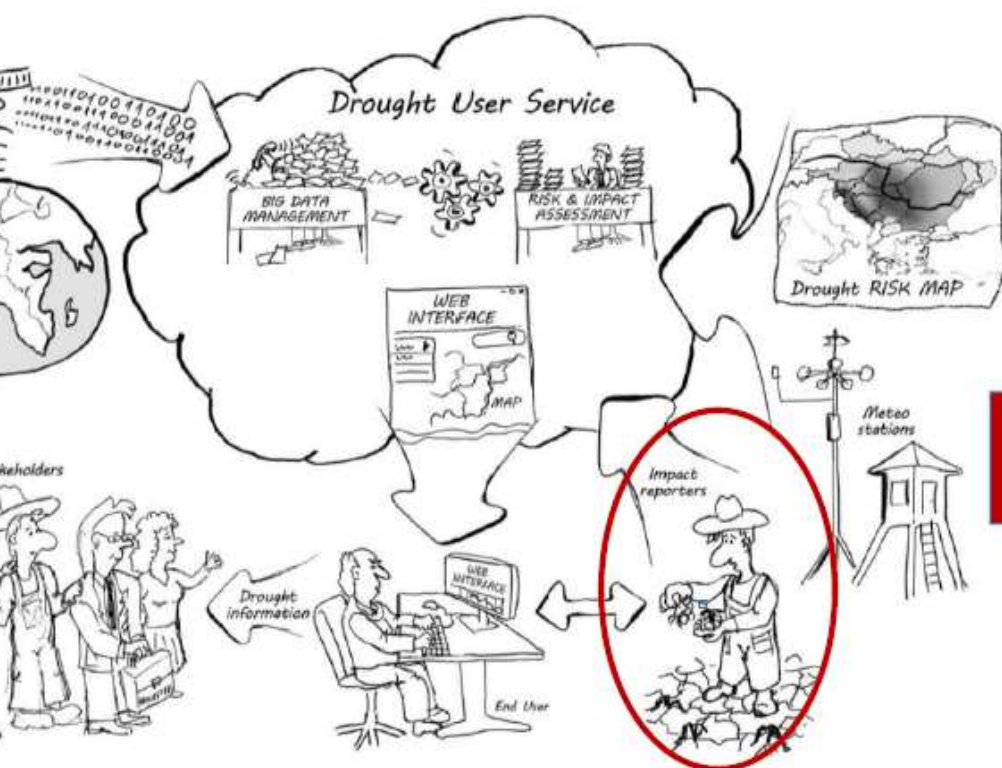
Drought User service – common view on drought development in real time

Some integrated products:

- **SWI anomalies** – product of the SSM used to express the amount of water contained in soil (daily)
- **NDVI anomalies** – Vegetation greenness/vigor
- **SWB** – Surface Water Balance from numerical weather prediction (NWP) model
- **SWBSLO** – Surface Water Balance from numerical weather prediction (NWP) model for the territory of Slovenia
- **VegCon1** – Relative vegetation condition for croplands and grasslands
- **VegCon2** – Relative vegetation condition for all types of vegetation types

Metodology for drought impacts assessment – interactions with reporters on weekly routine

In Danube region including
 Slovenia, already in place in CZ, SK



Estimation of the risk

- Generally in risk calculation the impact and the probability of the event (drought) is taking into account
- The simplest way is:
$$\text{Risk} = \text{hazard impact} * \text{probability of occurrence}$$
- There are more general calculation methods
- Focus will be on agricultural impacts
- Requested data are: yield data and meteorological data from PPs
- Final outputs will be risk maps for the whole region

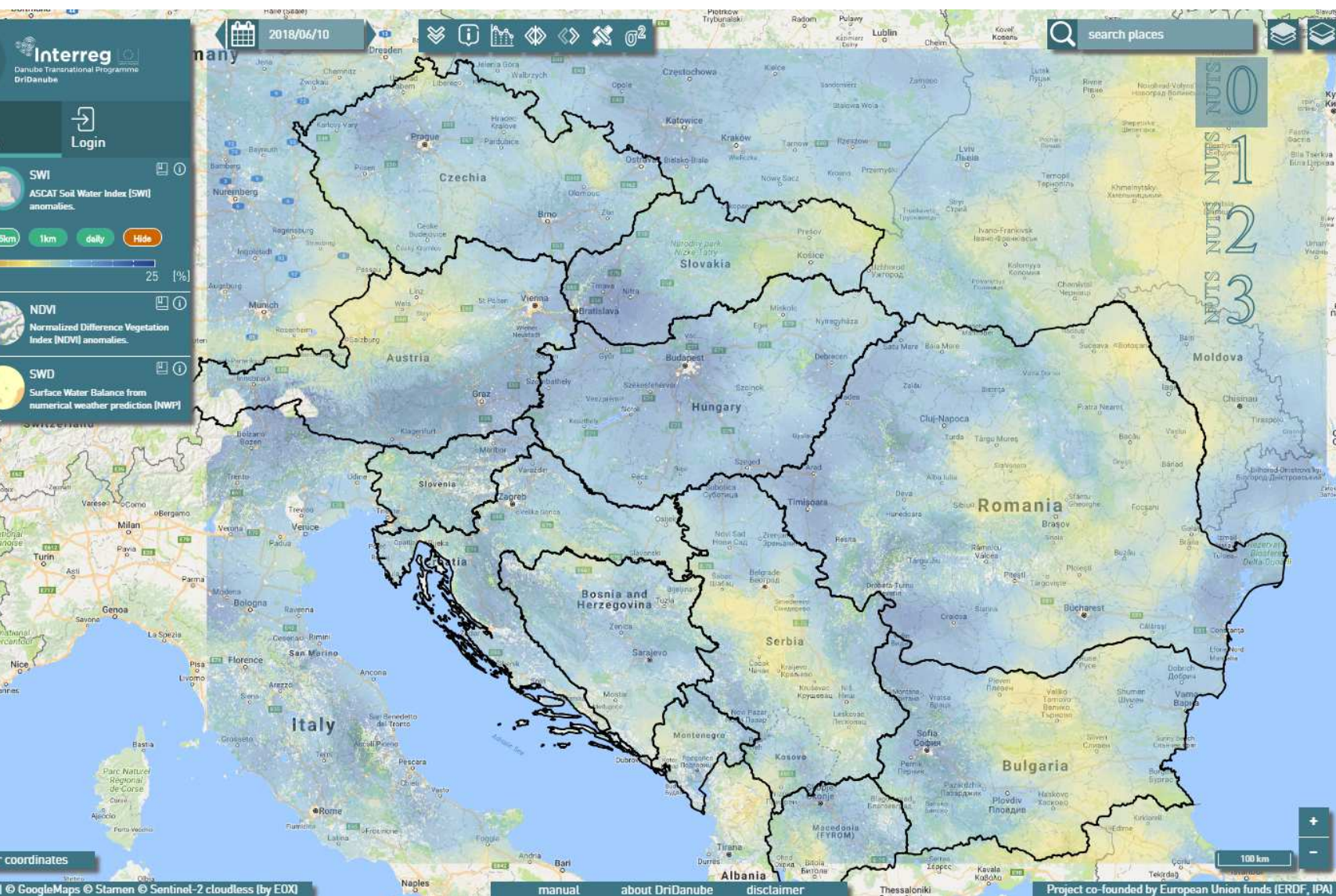
Optimal drought management model

DriDanube Strategy:

- aims at going beyond present national mechanisms that regulate drought preparedness and response
- common strategic document to combat current partial and insufficient drought management
- to cover entire region

to provide a common drought management model for all participating countries

pilot projects, one of them is a twin project with JoinTisza

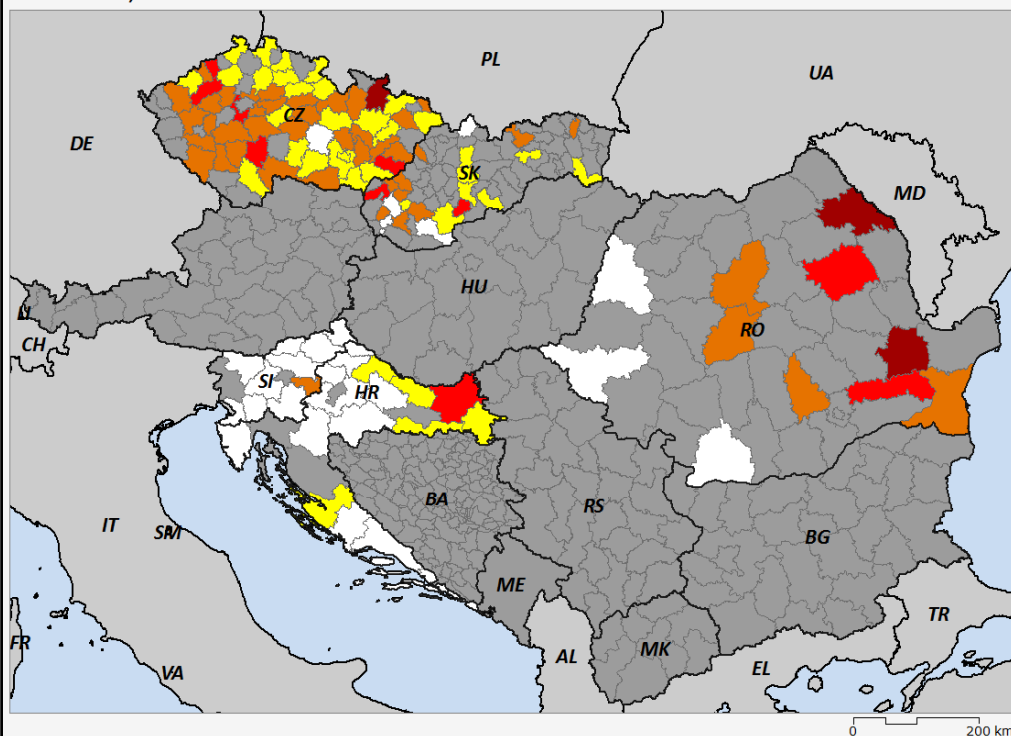


Soil Water Index on 10 June 2018 across the region as seen in Drought User Service

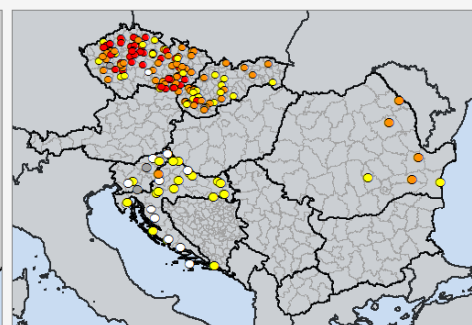
Drought 2018 Watch Campaign

1. ESTIMATED DROUGHT IMPACT ON MAIN CROP YIELD

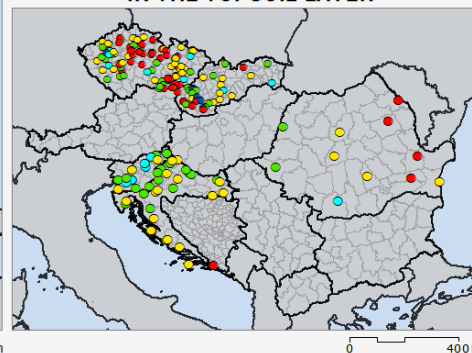
WEEK 23, 2018






















2. WATER BALANCE FOR THE LAST THREE MONTHS



3. CURRENT SOIL MOISTURE IN THE TOPSOIL LAYER



- 1.**  no drought impact  no report
-  drought occurrence w/o impact on crop yield
-  drought occurrence is likely to reduce crop yield
-  drought occurrence significantly reduces crop yield
-  drought occurrence substantially reduces crop yield
- 2.**  extreme drought - precip.deficit/intense drought with significant impact
-  severe drought - precipitation deficit with noticeable negative impact
-  rather dry period without noticeable impact
-  normal state / moderate humid period
-  without negative impact
-  very humid - with noticeable negative impact
-  extremely humid - precipitation excess with negative impact
- 3.**  dry to touch and non-moldable
-  soil rather dry to touch with loose consistence
-  soil slightly moist, moldable with low cohesion
-  soil moist, well moldable
-  very wet soil, sticks to fingers
-  out of classification scale

Agricultural Station/Forecasting and Warning Service of Serbia in plant protection

Network of Reporters in Serbia (NRS) established.

NRS has started activities in the beginning of June 2018.

Issued: Jun 08, 2018

Data provider:



Data processed by:



Wider impact of the project



DriDanube project has intention **to increase technical capacities** and elaborate more targeted water management policies taking into account water scarcity and droughts;

results will be considered and used as input for further strengthening of RBMP according to the EU WFD;

stronger link with EC and support with the preparation of drought related policy and other regional policy (EUSDR)

get more info at www.interreg-danube.eu/dridanube

Acknowledgement

Provincial Secretariat of Finance of the AP of Vojvodina
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DriDanube project

Thank you for your attention

