

DriDanube

“Drought Risk in the Danube Region”



Department of Geodesy and Geoinformation (GEO)
Vienna University of Technology (TU Wien)

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General information

Project: **DriDanube - “Drought Risk in the Danube Region”** (DTP1-182-2.4 – DriDanube)

Programme: **Danube Transnational Programme (DTP)**

Priority Area 2 (PA2): Environment and culture responsible Danube region

Specific Objective (SO2.4): Improve preparedness for environmental risk management

Duration: January 2017 – June 2019 (**30 months**)

Project budget: **1.974.750,00 EUR**

Partnership:

- LP: Slovenian Environment Agency (ARSO)

- ERDF & IPA partners (15)

- Associated Strategic Partners (ASP) (8)

Website: www.interreg-danube.eu/dridanube



Austria

Vienna University of Technology, **TU Wien**
 EODC Earth Observation Data Centre for
 Water Resources Monitoring GmbH, **EODC**
(ASP) - Environment Agency Austria, **EAA**
(ASP) - Austrian Federal Ministry of
 Agriculture, Forestry, Environment and Water
 Management, **BMLFUW**
(ASP) - International Commission for the
 Protection of the Danube River, **ICPDR**

Slovenia

Slovenian Environment Agency, **ARSO**
 Centre of Excellence for Space Sciences
 and Technologies, **SPACE-SI**
(ASP) - Administration of the RS for Civil
 Protection and Disaster Relief, **URSZR**

Croatia

Meteorological and Hydrological Service,
DHMZ
(ASP) - Ministry of Environment and Energy,
 Water management directorate, **MZOIE**

Czech Republic

Global Change Research Centre AS CR, v.v.i.,
CzechGlobe
(ASP) - The State Land Office, **SLO**



Slovakia

Global Water Partnership Central and Eastern
 Europe, **GWP CEE**
 Slovak Hydrometeorological Institute, **SHMU**

Hungary

Hungarian Meteorological Service, **OMSZ**
 Szent Istvan University, **SZIU**,
(ASP) - Ministry of Agriculture, **FM**

Romania

National Meteorological Administration, **NMA**

Serbia

(IPA) Faculty of Agriculture, University of Novi
 Sad, **FAUNS**
(IPA) Republic Hydrometeorological Service of
 Serbia, **RHMSS**
(ASP) - Agricultural Station/Forecasting and
 Warning Service of Serbia in plant protection,
PIS

Bosnia and Herzegovina

(IPA) Republic Hydrometeorological
 Service of Republic of Srpska, **RHMZ RS**

Montenegro

(IPA) Institute of Hydrometeorology
 and Seismology, **IHMS**

DriDanube:

WHY ?

Aim:

- to increase the capacity of the Danube region to adapt to climatic variability by **enhancing resilience to drought** with recently developed tools and data sets;

WHAT ?

Outcomes:

- **Operational service:** Drought User Service (DUS)
- **Methodology** for **drought impact** assessment and forecast
- **Methodology** for **drought risk** assessment
- **Strategy** to improve drought response

TO WHOM ?

Target groups:

Improve drought emergency response and enhance the cooperation between operational services and decision making authorities in the Danube region:

- Governmental institutions
- Hydro-meteorological national services
- Emergency response authorities
- Non-governmental organisations
- Water and farmer communities/chambers
- Industries

Outcomes: ongoing work

- 1. Operational service: Drought User Service (DUS)**
 - **Prototype available:** <http://193.170.203.91/>
 - **Already functional:**
 - EO-based information on vegetation, soil moisture
 - Model output: surface water balance
- 2. Methodology for drought impact assessment and forecast**
 - **Input data:** historical crop yields, historical drought impacts (from newspapers and official journals; not only on agriculture), drought impacts reported every week by farmers, EO data (e.g. NDVI, SWI)
 - **Output:** Yield forecast available on DUS (weekly updated during the growing season)
- 3. Methodology for drought risk assessment**
 - **Input data:** historical data for 2001-2017 period: meteorological data (temperature and precipitation) and crop yields
 - **Output:** Risk maps will be available on DUS (static maps)
- 4. Strategy to improve drought response**
 - **Input:** Review of existing management procedures and responsible institutions in each country
 - **Output:** Policy paper

Drought User Service (DUS) (1)

An operational service based on exploitation of Earth Observation (EO) data:

Available online: <http://193.170.203.91/>

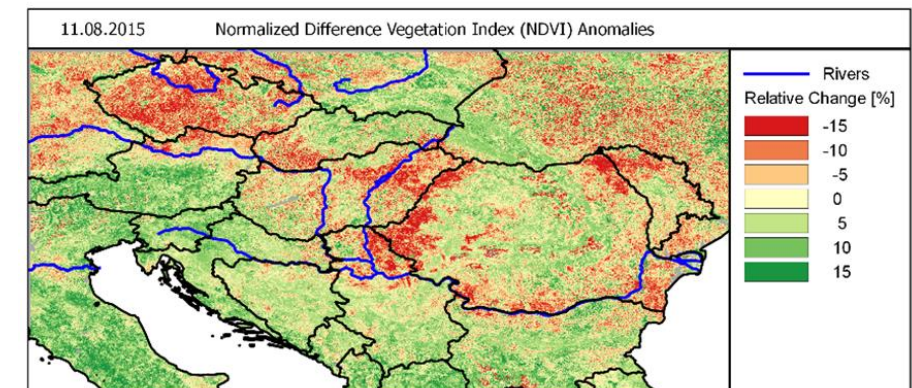
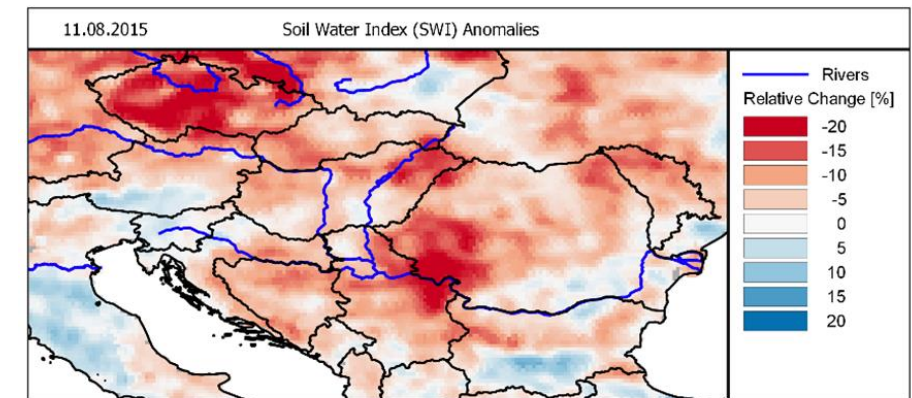
- Easy-to-use interface:
 - Access in browser (operating system-independent)
 - Responsive interface (selecting different products, dates, geographic region (e.g. NUTS3))
- Functionality:
 - Display a suite of drought-related Earth Observation indices (vegetation condition, soil moisture, yield forecast, etc.)
 - Visual comparison between different products
 - Visualisation of time-series
 - Info-sheet for each data set
- Specifications:
 - Spatial extent: regional (Danube catchment), but also country-based
 - Temporal resolution (depends on input data): daily (SWI), weekly, 10-day(NDVI), etc.
 - Spatial resolution (depends on input data): 1km, 7.5 km, 12.5 km, etc.

Drought User Service (DUS) (2)

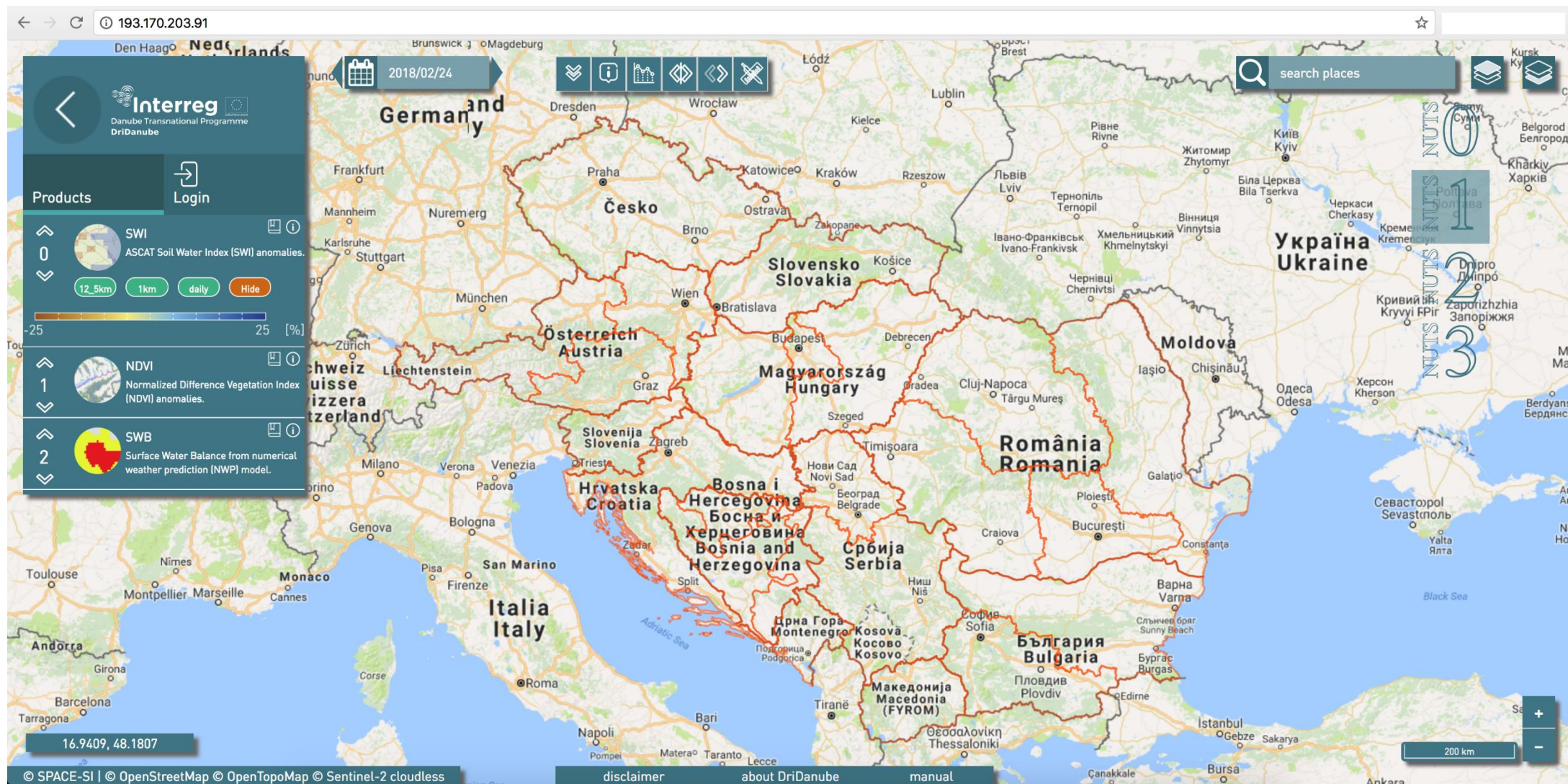
An operational service based on exploitation of Earth Observation (EO) data:

Available online: <http://193.170.203.91/>

- Drought EO-based characterisation (example):
 - Major drought event reported in the Danube region in August 2015
 - SWI anomaly image (difference from long-term mean value) with a spatial sampling of 0.1 degrees (top)
 - NDVI anomalies with a spatial sampling of 1/112 degrees (~1km) (bottom)



Drought User Service (prototype)



Questions, updates, feedback:



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