DriDanube project - Drought Risk in the Danube region

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DROUGHT RISK MANAGEMENT IN THE ALPS EXPERT WORKSHOP & 2nd WATER MANAGEMENT PLATFORM MEETING
Ajdovščina, Slovenia, September 14, 2017
Drought enigma & drought watch

Drought appearance on European level

Drought in 2017

First steps of drought policy

DMCSEE & DriDanube project and future cooperation
Drought events are regional phenomena, affecting transnational water management.
Growing concern - drought on European level

European droughts 2002 – 2015

- Large areas of EU have been affected by several major droughts in recent decades.
- Severity and frequency of droughts have increased, including in water rich countries.
- Damage costs in 2003: 100 million people affected, 8.7 billion eur.
- Damage costs 1986- 2009 100 billion eur.

Source: EEA, 2012; EEA, 2017
Higher drought risk in the future?

Changes in summer soil moisture between the periods 1961 to 1990 and 2021 to 2050

Projected change in 20-year return level minimum flow and deficit volumes due to climate change

- Regions bordering the Mediterranean Sea and SEE regions are expected to be especially dry

Source: EEA, 2017
Regional multi-sectoral drought impacts

In past decades the drought-related damages in the region of South-Eastern Europe (SEE) have had large impact on the economy and welfare, mainly reflected in destroyed crops and devastated farmland and other water related sectors.

- Agriculture
- Navigation
- Water supply (drinking water)
- Energy (Hydropower)
- Industry (cooling water)
- Water quality
- Ecology (Biodiversity)
- Recreation
- Others
### Overview of water-related sectors Danube countries experienced impacts from 2015 droughts

| Sector                          | AT | BA | BG | CZ | DE | HR | HU | RS | SI | SK | MD | ME | RO | UA |
|--------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Agriculture                    | XX | XX | /  | XX | X  | XX | XX | X  | XX | XX | X  | XX | X  | X  |    |
| Navigation                     | XX | 0  | /  | X  | X  | X  | 0  | 0  | 0  | 0  | 0  | X  | X  | /  | /  |
| Water supply (drinking water)  | X  | XX | /  | X  | X  | X  | 0  | X  | 0  | X  | X  | X  | /  | XX |    |
| Energy (Hydropower)            | X  | X  | /  | X  | X  | 0  | X  | 0  | 0  | X  | X  | /  | X  | /  |    |
| Industry (cooling water)       | na | X  | /  | X  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | /  | XX |
| Water quality                  | XX | X  | /  | 0  | 0  | 0  | X  | X  | 0  | X  | X  | /  | /  | /  |    |
| Ecology (Biodiversity)         | X  | X  | /  | XX | X  | X  | X  | X  | 0  | X  | XX | /  | /  | /  |    |
| Recreation                     | 0  | X  | /  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | X  | /  | /  |    |
| Others                         | /  | /  | /  | X  | 0  | y  | /  | /  | /  | y  | /  | /  | /  | /  |    |

0 – no impacts; X – low impacts; XX – high impacts; na – no information available; / – not relev

Severe drought in 2017

- affected also Alpine region
Agricultural drought in Slovenia in 2017

• Spring drought 2017 continued and intensified through summer
• Most affected regions: Prekmurje, Dolenjska, Primorska
• Precipitation deficit in some regions exceeded the record in 2003 (Dolenjska)
• First estimation of the damage: 120 millions EUR
Groundwater levels from March to August 2017 – Šentjernejsko polje

... in summer developed in hydro drought
DMCSEE activities
2006 - 2017
Project: Drought Risk in the Danube Region - DriDanube

Lead Partner: Slovenian Environment Agency
(Drought Management Centre for Southeastern Europe)

Slovenia 2
Austria 2
Czech Republic 1
Slovakia 2
Hungary 2
Romania 1
Croatia 1
Serbia 2
Montenegro 1
Bosnia and Herzegovina 1

7 EU countries
3 Non-EU countries
15 partners
9 ASP partners

Project budget: 1.974.750,00EUR
Duration of project: 30 months (January 2017 – June 2019)
DriDanube project

GENERAL OBJECTIVE
• Project aims 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;

SPECIFIC OBJECTIVES
• New drought monitoring services will be developed and prepared for operational use;
• Unified drought risk protocol based on the Civil Protection Mechanism will be prepared;
• Improve drought emergency response in the Danube region.
Main Result & Outputs

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

**TOOLS**

- **Drought User Service**
  Methodology for drought impact assessment
  Methodology for drought risk assessment

**STRATEGY**

- **Strategy to improve drought emergency response**

**PILOT ACTIONS**

**LEARNING INTERACTIONS** on regional and national level

Soil Water Index - SWI, SE Slovenia, August 2017
First trigger to think about drought policy on EU level – drought 2003


Strategy to improve drought emergency response
First steps of EU drought policy

- **2006 / 2007**: In-depth assessment of water scarcity and droughts in the European Union
- **2007**: Communication on WS&D
- **2008, 2009, 2010**: Follow-up reports “Addressing the challenge of water scarcity and droughts in the European Union”
- **2012**: Blueprint – policy review WS&D

**Blueprint 2012 – Policy review**
- Objectives 2007 (revert WS&D trends) not achieved
- Next WFD cycle: further integration of water quantity issues into sectoral policies

**Mission of DriDanube project** – developing Drought strategy in Danube region.

*Source: van Ek, 2014*
Capitalization of drought-related projects in DriDanube project

Source: http://www.droughtmanagement.info/idmp-activities/idmp_kee
Integrated Water management

Basis: Monitoring

Measures of water management

- Measures to increase efficiency of irrigation
- Measures to reducing leakage in water distribution network
- Natural water retention measures
- Wastewater recycling
- Rain water harvesting
- Drought monitoring/ forecasting
- Market-based or incentive instruments
- Education of public on water saving measures
Cooperation options

**Early drought warning** in SEE/Danube region/Alpine region:
- active countries participation in existing platforms (global, regional – EDO, DMCSEE), exchange information inside/outside the countries).

**Drought management as a part of national legislation** (national commitments)
- Europe/WFD, UNCCD/NAP, Civil mechanism, CCAdaptation strategies...

**Networks**
- DMCSEE and consortium partners, *Alpine countries*.

**Common projects**
- GWP/IDMP, WMO, Adaptation fund, FAO (study visits);
- secondment of staff (WMO support, Adaptation Fund);
- project calls (enlarge DriDanube in Alpine space, DTP projects cooperation or new initiatives?).

**Public awareness /capacity building**
- drought news/impacts information sharing, media;
- guidelines, manuals, trainings, publications;
- common project events (workshop)
Project webpage:
http://www.interreg-danube.eu/dridanube