

Drought Management Centre for Southeastern Europe

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Environmental agency of Slovenia

Jointly for our common future



Background

DMCSEE initiative is not new

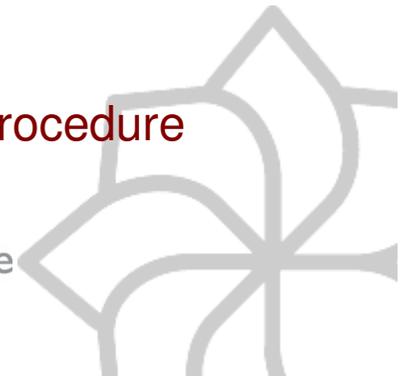
October 2004: A “Balkan Drought Workshop” in Poiana/Brasov (RO), co-sponsored by the UNCCD

April 2006: “2nd technical workshop” in Sofia (BG). Participants: UNCCD focal points, permanent representatives with the WMO + observers from UNCCD and WMO

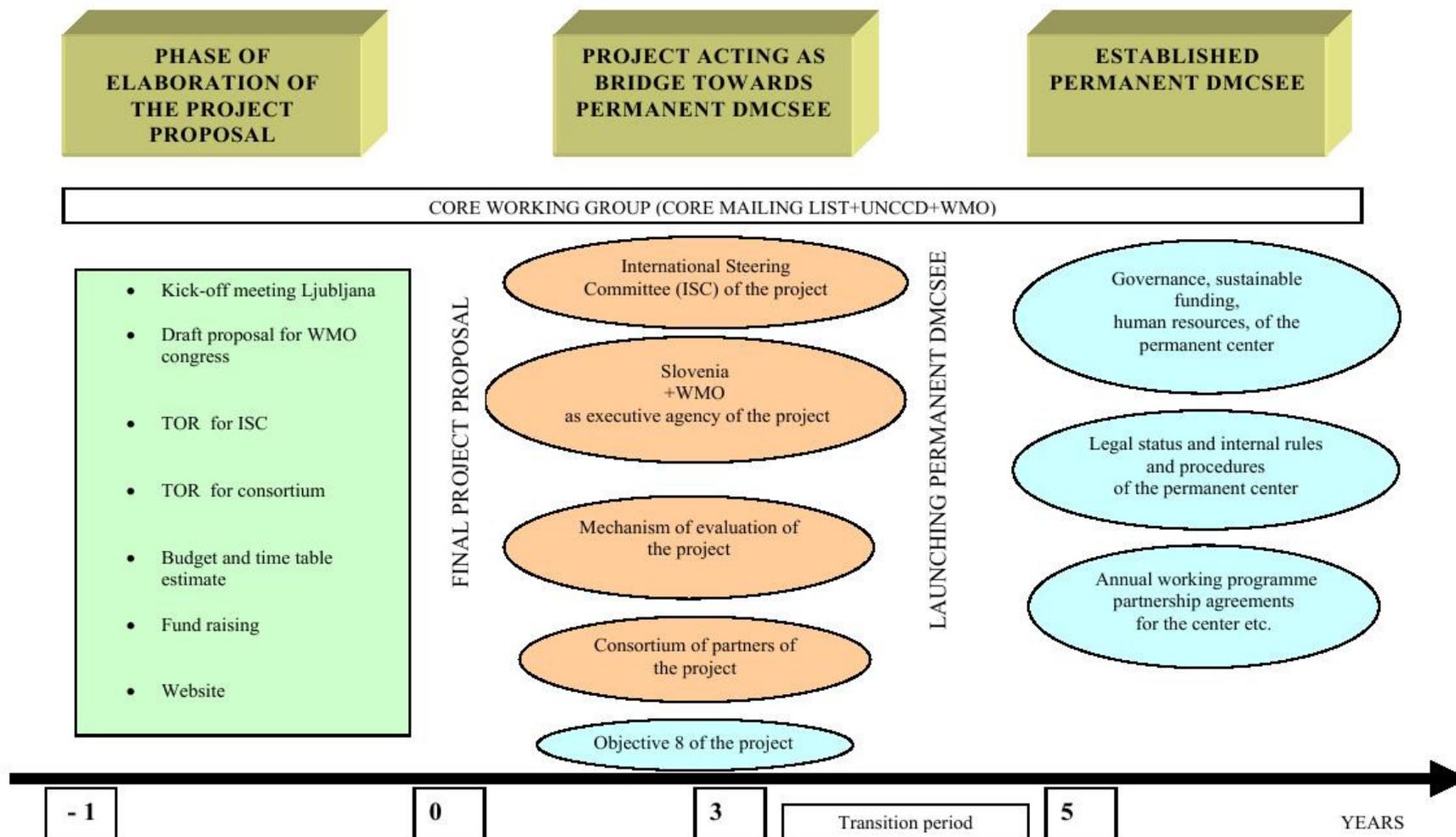
Outcomes:

- 1) Framework for the preparation of a project proposal on the establishment of a Drought Management Centre for South-Eastern Europe (DMCSEE) within the context of the UNCCD,
- 2) Further steps towards the establishment of DMCSEE

September 2006: Decision on DMCSEE host institution (procedure led by WMO as decided in Sofia).



DRAFT PROCESS FOR THE DMCSEE



Main Events in 2009:

- **Application – SEETCP**
- **2nd International Steering Committee (ISC) meeting, Portorož, Slovenia, 6 - 8 April 2008**
- **Joint DMCSEE/JRC workshop on Drought monitoring, Ljubljana, September 2009**



Transnational Cooperation programme for SE Europe

1st call - 2-phase procedure:

1 phase (13th June 2008)

Short “expression of interest”

Full application form

(2nd phase) submitted on 21st

November 2008



The screenshot shows the homepage of the South East Europe Transnational Cooperation Programme website. The header includes the SEE logo, a search bar, and a 'Log in' button. The main navigation menu contains links for 'About SEE Programme', 'News and Events', 'Projects', 'Downloads', and 'Contacts'. A large map of the SEE region is displayed, with the text 'Jointly for our common future' below it. The right sidebar features a section titled 'The South East Europe Transnational Cooperation Programme' with a brief description and a list of priority axes: Innovation, Environment, Accessibility, and Sustainable Growth Areas. Below this, there are sections for 'Latest news and events' and 'Partner search'. The 'Latest news and events' section highlights the selection of 42 high-quality projects and the Monitoring Committee Meeting on 10-11 March. The 'Partner search' section encourages users to post their project ideas and provides a link to the project database.

Transnational Cooperation programme for SE Europe

Success of DMCSEE project!

15 partners from 9 countries

Total project budget 2.2 M€

Not all countries participate!
(not all countries are eligible)

Project kick-off meeting:

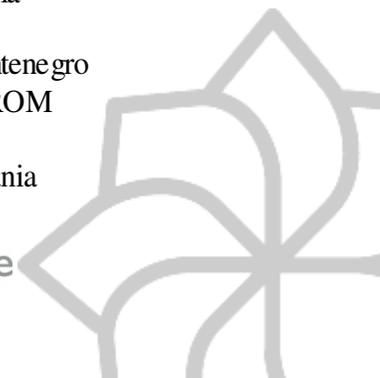
16-18 September 2009

Budapest

Moving to implementation

Environmental Agency of Slovenia	Slovenia	(lead partner)
Slovenian Institute of Hop Research and Brewing	Slovenia	
Hungarian Meteorological Service	Hungary	
VITUKI Environmental Protection and Water Management Research Institute	Hungary	
Directorate for Environmental Protection and Water Management of Lower Tisza District	Hungary	
Institute of Soil Science "Nikola Poushkarov"	Bulgaria	
National Institute of Meteorology and Hydrology	Bulgaria	
Agricultural university of Athens	Greece	
GEORAMA (non-governmental and non-profit organization)	Greece	
Meteorological and Hydrological Service	Croatia	
Republic Hydrometeorological Service of Serbia	Serbia	
Hydrometeorological Institute of Montenegro	Montenegro	
Hydrometeorological Service	FYROM	
Institute for Energy, Water and Environment	Albania	

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Foreseen outcomes of the TCP project Implemented basic drought indices

Emphasis is not put into development of i.e. new drought indices,
rather on standardization of existing software

SPI index

Precipitation anomaly, measured
by standard deviation

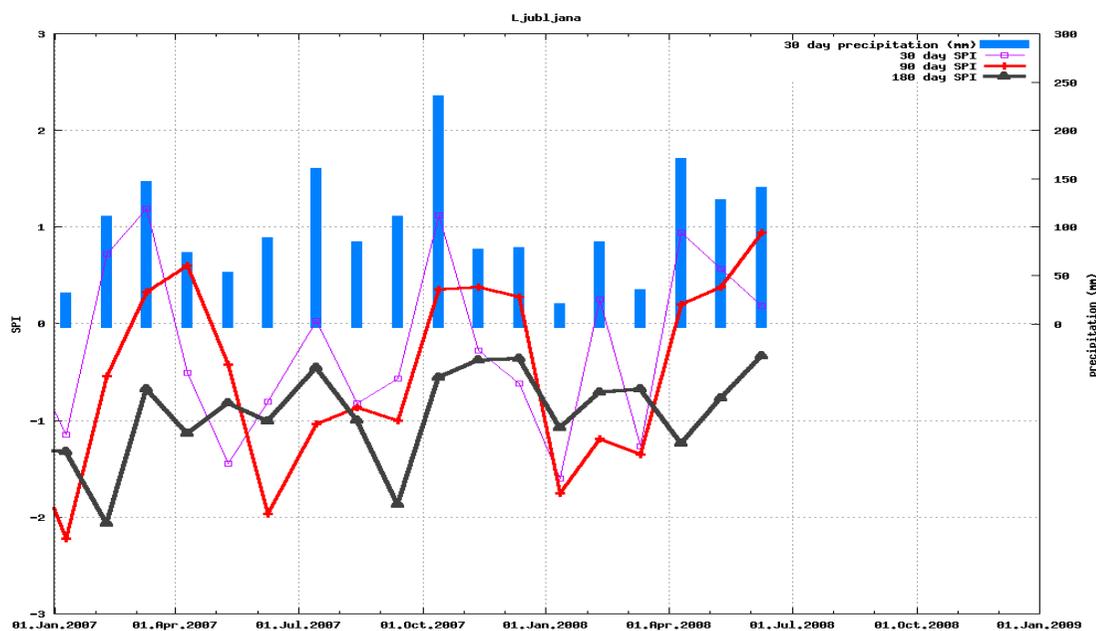
Already implemented in many countries

***SPI represents number of standard
deviations from mean***

SPI	Classification	Probability (%)
2.00 >	Extremely wet	2.3
1.50 to 1.99	Very wet	4.4
1.00 to 1.49	Moderately wet	9.2
0 to 0.99	Mildly wet	34.1
0 to -0.99	Mild drought	34.1
-1 to -1.49	Moderate drought	9.2
-1.50 to -1.99	Severe drought	4.4
-2.00 <	Extreme drought	2.3

Foreseen outcomes of the TCP project Implemented basic drought indices (SPI).

Emphasis is not put into development of i.e. new drought indices, rather on standardization of existing software



- Distribution of common software
- Agreement on operational procedures



Foreseen outcomes of the TCP project
Implemented basic drought indices – sharing experiences.

Palfai aridity/drought index (Hungary)

$$PDI_o = \frac{\sum T(\text{Apr} - \text{Aug})}{\sum P(\text{Oct} - \text{Aug})} * 100 \quad \Rightarrow \quad PDI = c_t * c_p * c_{gw} * PDI_o$$

Evaluation of PAI-PDI in Hungary:

- 6-9 => mild,
- 8-10 => medium,
- 10-12 => heavy,
- 12 < => extreme

c_t : temperature correction factor

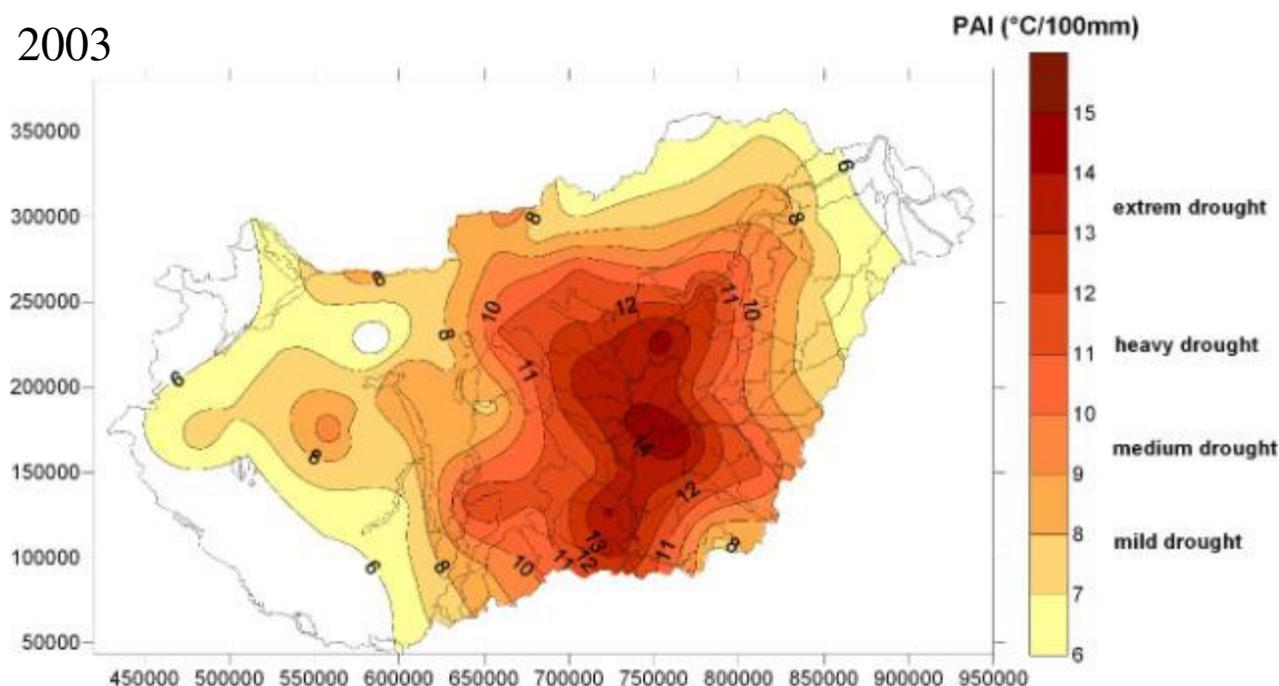
c_p : precipitation correction factor

c_{gw} : groundwater corr. factor

Foreseen outcomes of the TCP project
Implemented basic drought indices – sharing experiences.

Palfai aridity/drought index (Hungary)

2003

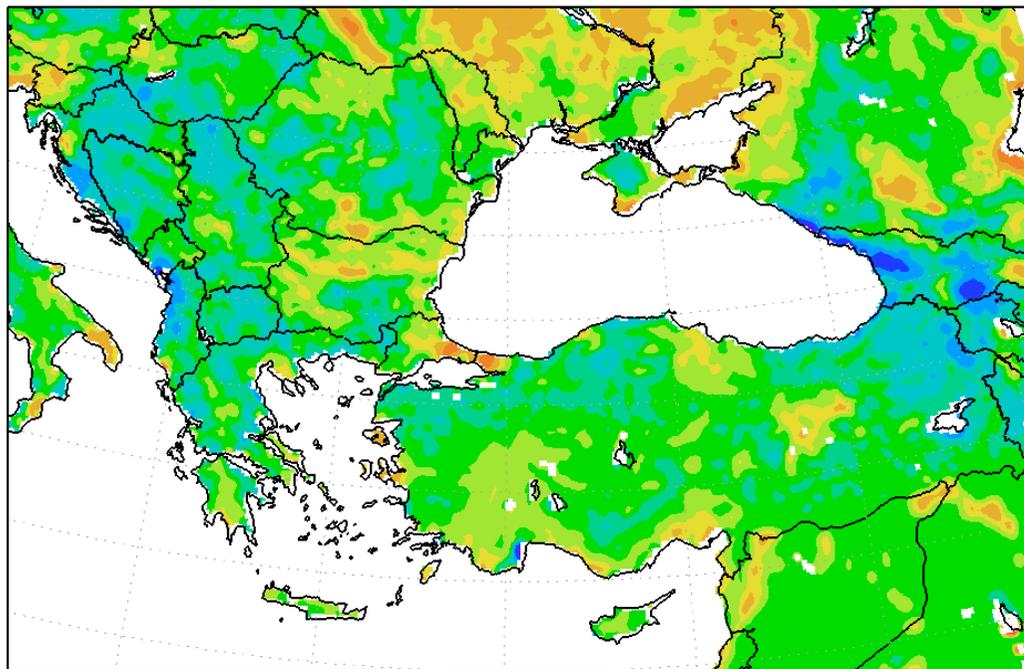


PAI/PDI depends heavily on weights prescribed for temperature and precipitation sums (optimized for summer crops in Hungary)

Can it be transferred?

Foreseen outcomes of the TCP project Application of NWP for drought monitoring

70 Days Accumulated Water Balance (RR-EVP) Anomaly [mm]
Time Period 21 May – 29 Jul 2009

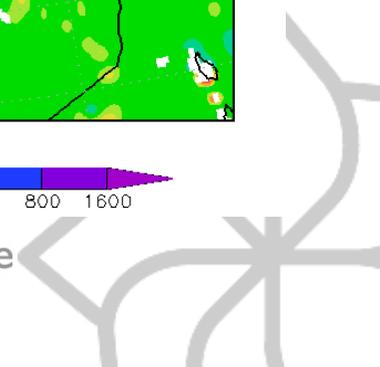


POSSIBLE PRODUCT:

**Accumulated Water
Balance over 70 days
Anomaly**

GRADS: COLA/IGES -1600 -800 -400 -200 -100 -50 0 50 100 200 400 800 1600

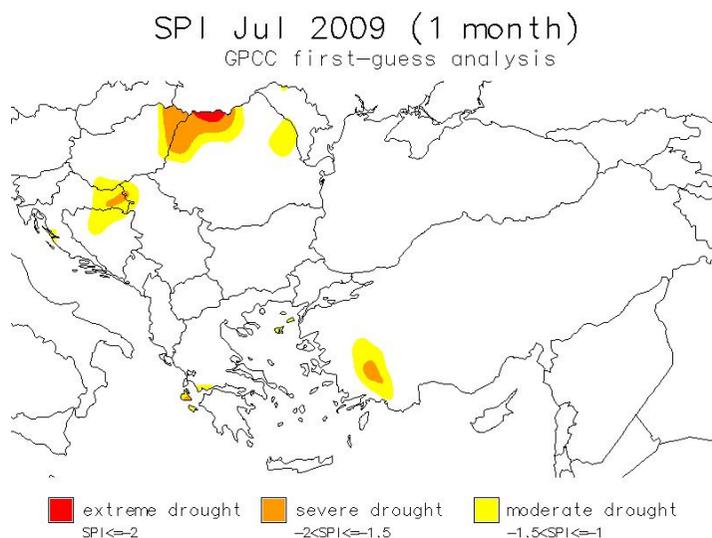
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Foreseen outcomes of the TCP project

Overview of existing procedures for climatological mapping

Can we do better than just using global datasets (such as GPCC)?
(SPI calculated on GPCC data available on www.dmcsee.org)



- Most countries have implemented climatological mapping procedures; can we use them for drought indices mapping?

**- Training in Budapest
January/February**

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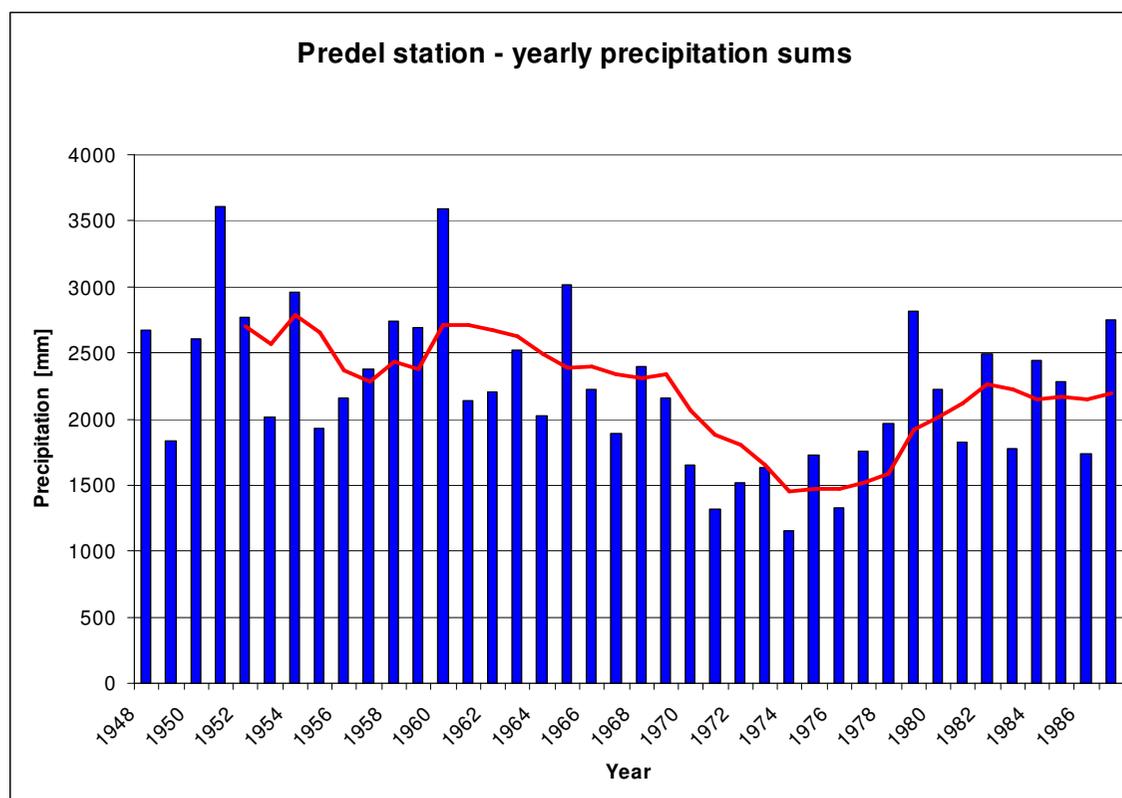
Foreseen outcomes of the TCP project Implemented data quality and homogenization methods

Climatological processing of data and data quality control is of great importance for drought monitoring due to fundamental definition of drought being anomaly from normals.

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Foreseen outcomes of the TCP project Implemented data quality and homogenization methods



Predel (precipitation station
in W Slovenia)

Was there decade of
drought 1970s?

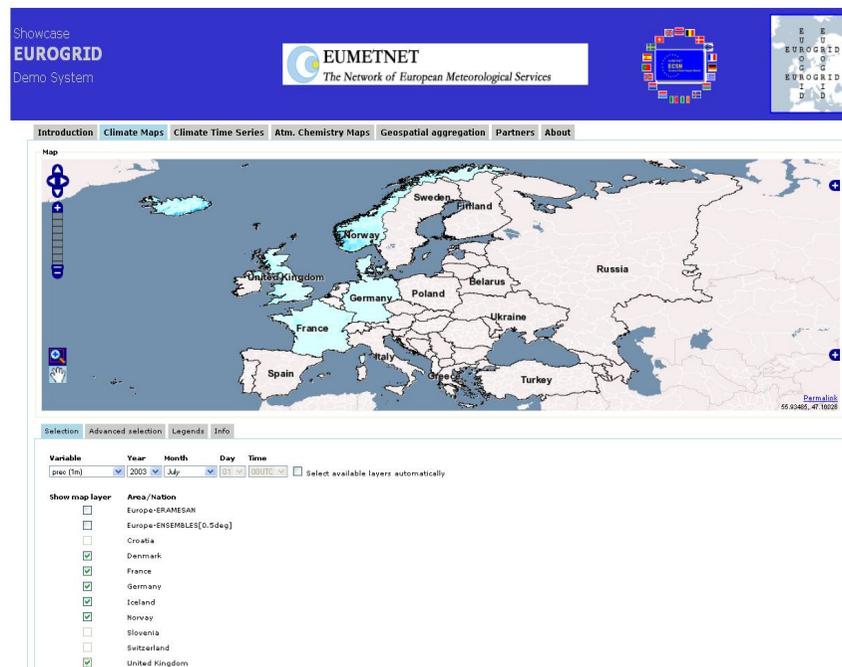
**No, ombrometer was
leaking!!!**



Foreseen outcomes of the TCP project

Overview of existing procedures for climatological mapping

Can we use experience from existing projects?

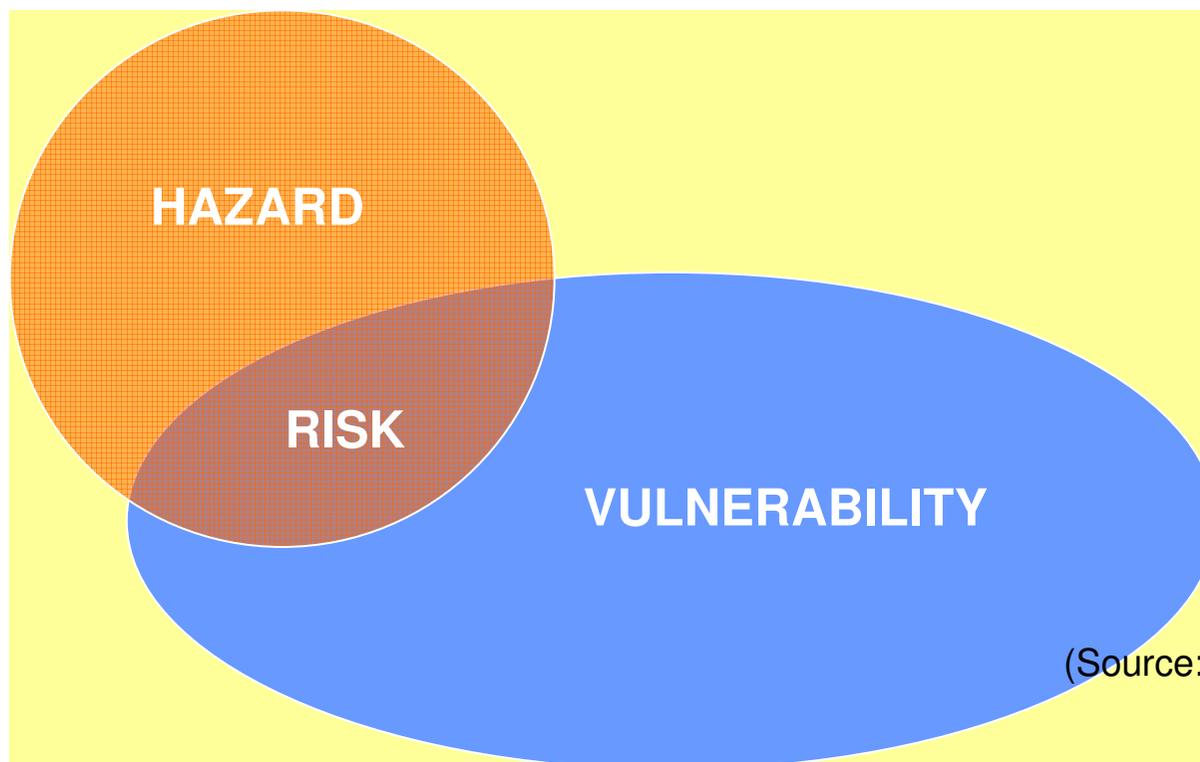


- EUROGRID project:
 - ambition to provide regional products without inconsistencies across national borders
 - web based platform for dissemination of standardized products prepared in national framework



RISK CONCEPT:

risk = hazard x vulnerability



Both, natural hazard due to climate variability, and more subjective vulnerability, cause risk of drought impacts

(Source: MEDROPLAN)

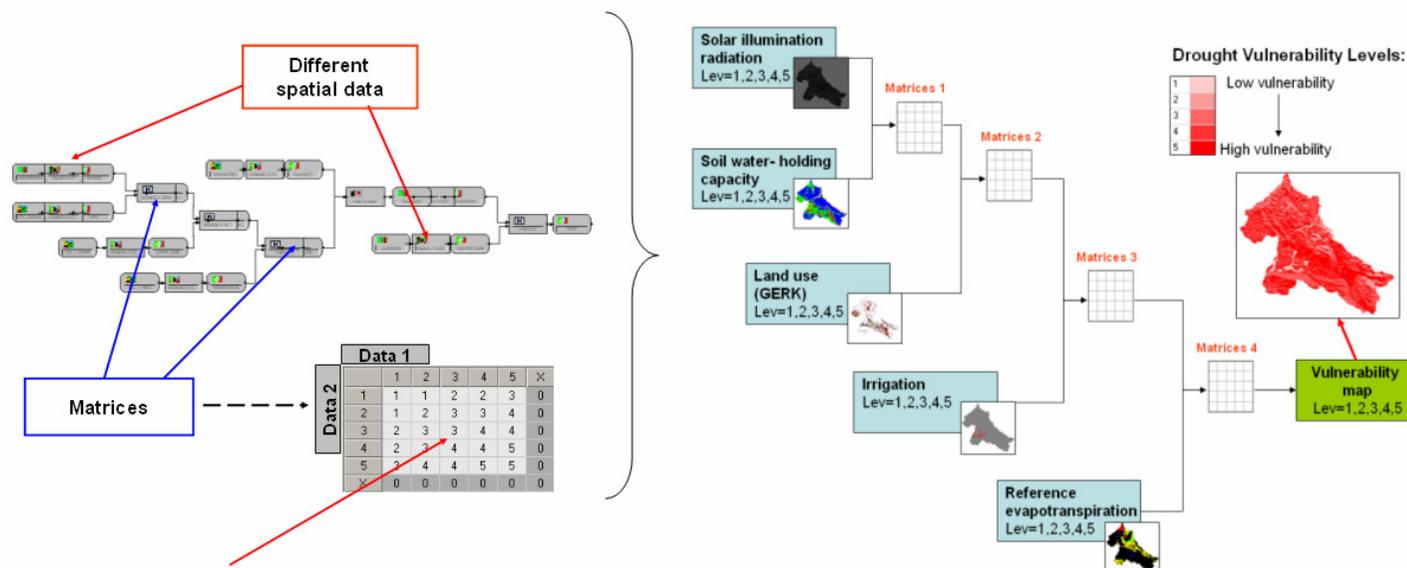
Common future



Foreseen outcomes of the TCP project

Vulnerability assessment using interaction matrices method

Composition of the model in a GIS software:



Weighting values for these parameters were obtained from expert judgement.

The technique combines an interaction matrix methodology with GIS map overlaying.

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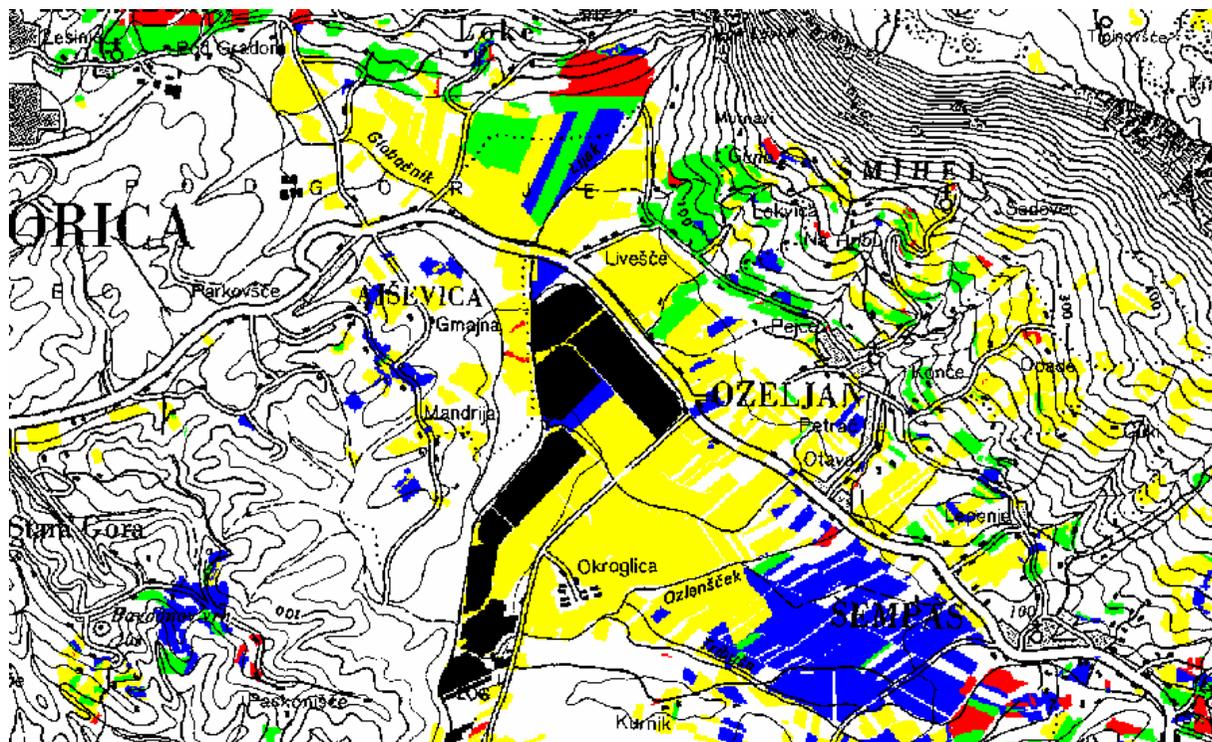
Foreseen outcomes of the TCP project

Vulnerability assessment using interaction matrices method

Showcase: W Slovenia

Small agricultural
region

Catalogue of farming
plots (incl. cultures)
available



Foreseen outcomes of the TCP project

Vulnerability assessment using interaction matrices method

Showcase: W Slovenia

Vulnerability assessment
in 5 categorical classes

(based on:
Exposure to solar radiation
Soil type
Proximity of irrigation
infrastructure
....



Foreseen outcomes of the TCP project

Vulnerability assessment using interaction matrices method

Showcase: W Slovenia

2006 drought damage report

In 5 classes, in % of
crop loss

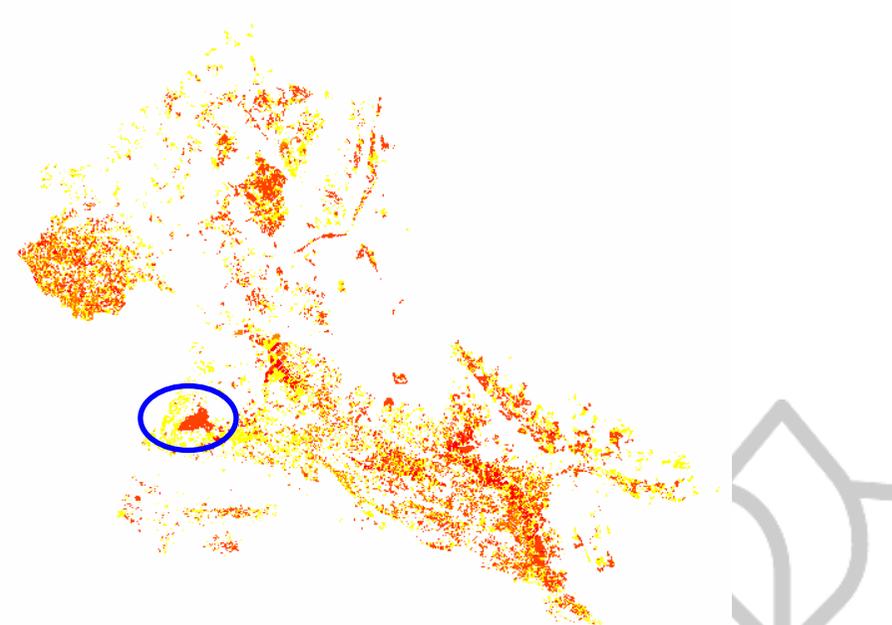
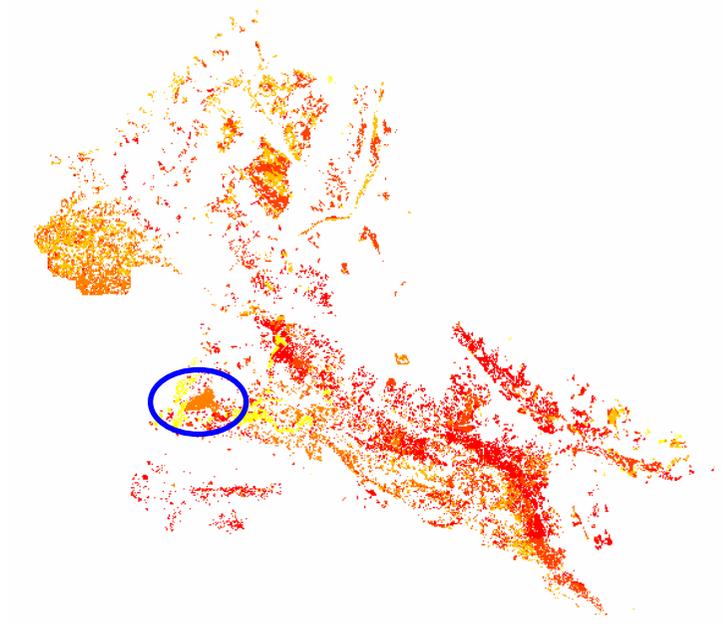
(from 0 to 80%)



Foreseen outcomes of the TCP project

Vulnerability assessment using interaction matrices method

Showcase: W Slovenia (left: vulnerability estimate; right: 2006 damage report)

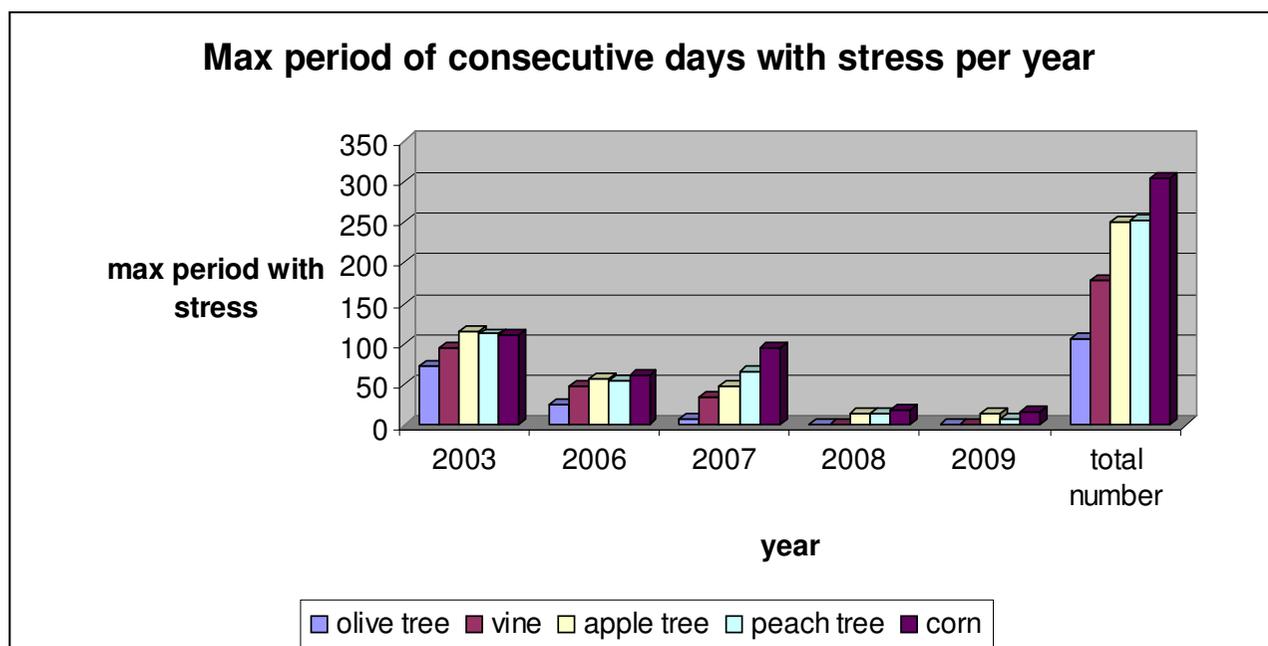


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Foreseen outcomes of the TCP project

Vulnerability assessment using crop-yield model



Can crop-yield model simulations help us understanding vulnerability to drought in agriculture?



Collaboration with JRC

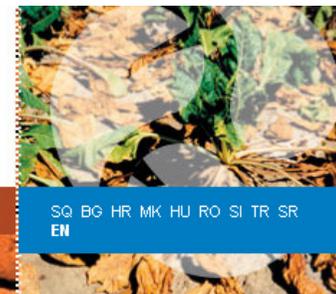
Agreement signed in 2008

Joint workshop on Drought monitoring was organized in September this year

30 participants from all DMCSEE member countries

Practical work with homogenization software and drought monitoring software (available on-line)

Transfer of JRC's state-of-art technology



Joint DMCSEE - JRC Workshop

Ljubljana, 21st - 25th September 2009

Workshop was organized jointly and financed by Environmental Agency of Slovenia, which is hosting DMCSEE, and EU's Joint Research Centre - Institute for Environment and Sustainability. Main topic of the workshop was presentation of state-of-art in drought monitoring tools in Europe - mainly European Drought Observatory (which is available on-line in test mode) and to get acquainted with on-going DMCSEE activities for preparation of SEE regional drought monitoring tools.

- [Workshop agenda](#)
- [List of participants](#)
- [SPI and PDSI software \(CD content\)](#)

Presentations (in PDF format) and some photographs taken during the workshop are available below.

Pictures



previous 1 2 3 4 ... next

Related documents

-  [Presentation of JRC activities \(8,8MB\)](#)
Presentation of Drought Activities at JRC - Development of a prototype for the European Drought Observatory, presented by Stefan Niemeyer (JRC).
-  [Presentation of DMCSEE activities \(1,1MB\)](#)
Presentation of Drought Management Centre for Southeastern Europe (DMCSEE) activities, presented by Gregor Gregorič (EARS).

Founding countries:

- Albania
- Bosnia and Herzegovina
- Bulgaria
- Croatia
- FYROM
- Greece
- Hungary
- Moldova
- Romania
- Slovenia
- Turkey
- Montenegro
- Serbia

Founding agencies:

- WMO
- UNCCD



Future Activities

- February 1st – 5th 2010:

- DMCSEE project Consortium meeting; please assure participation!
(HU, BG, HR, RS, MN, MK, SI)

- following by training on climatological data processing:

Practical training with MISH (optimal interpolation) and MASH
(homogenization) software

Practical training with SAGA free GIS software (incl. Geostatistical modules)

Practical training on SPI calculation

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Future Activities

WMO/DRR project:

Staff secondment (cum. 6 man/months)

- according to DMCSEE/ISC decision, support will be allocated for candidates from Bosnia and Hercegovina and Turkey

-ToR

Next regular ISC planned in spring 2010.

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DMCSEE project - dedicated session
foreseen for next BALWOIS conference



BALWOIS
Water Observation and Information System
for Decision Support
Ohrid, Republic of Macedonia, 25-29 May 2010



future

