

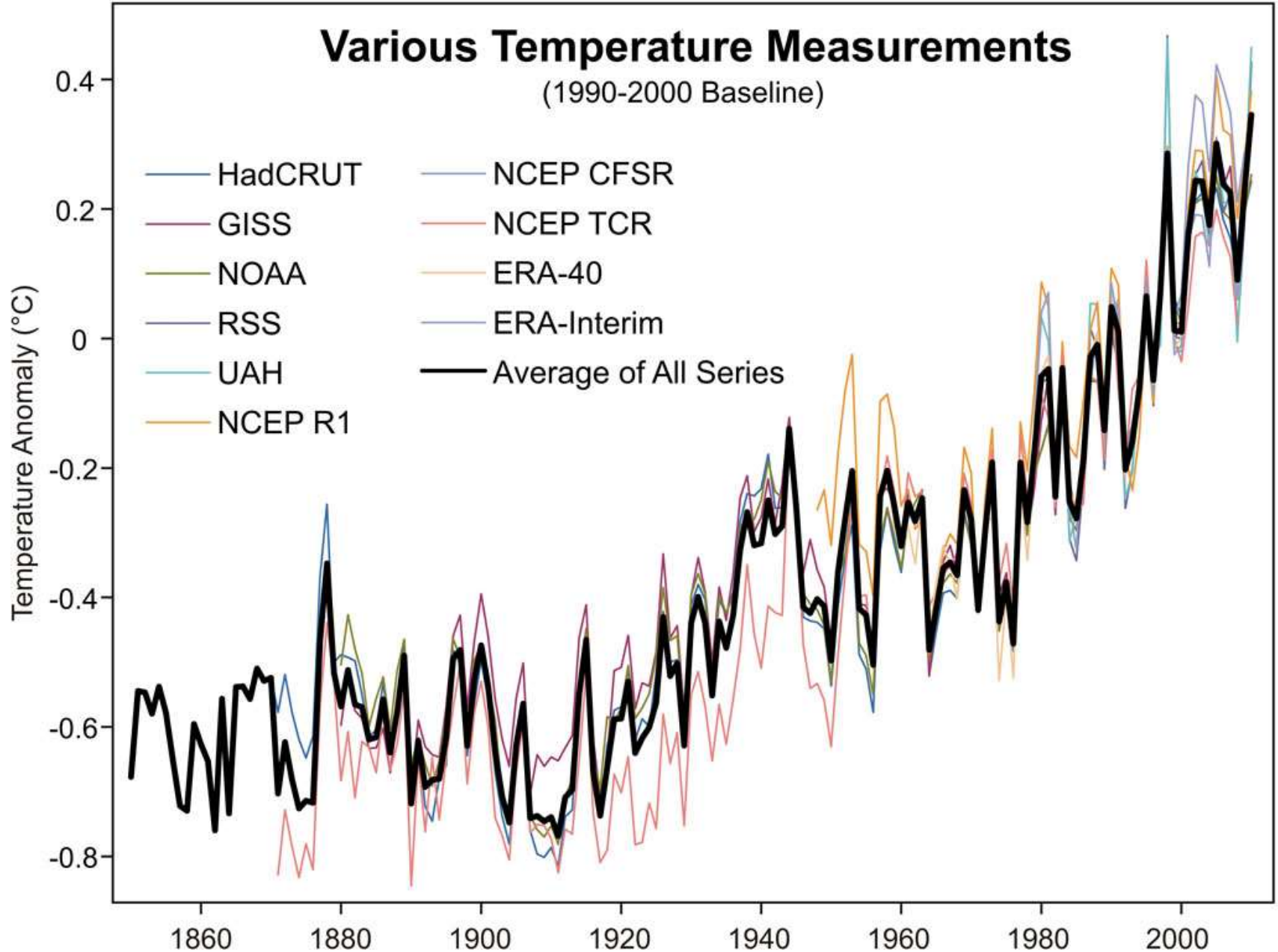
# Projekcije klimatskih promena međunarodne i nacionalne perspektive

Climate change projections  
international and national level

Vladimir Djurdjevic

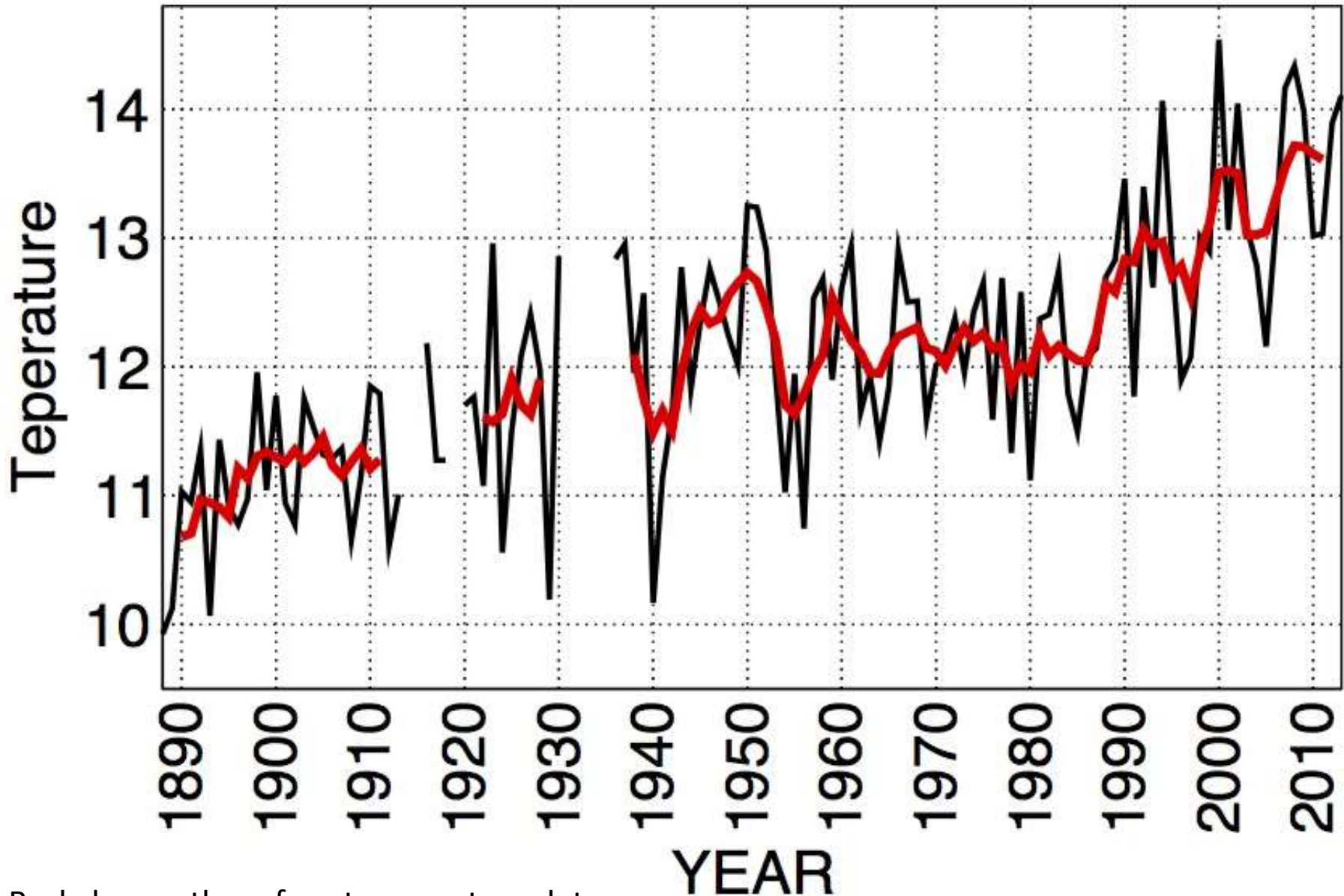


# Anomalija srednje globalne temperature od 1850. godine

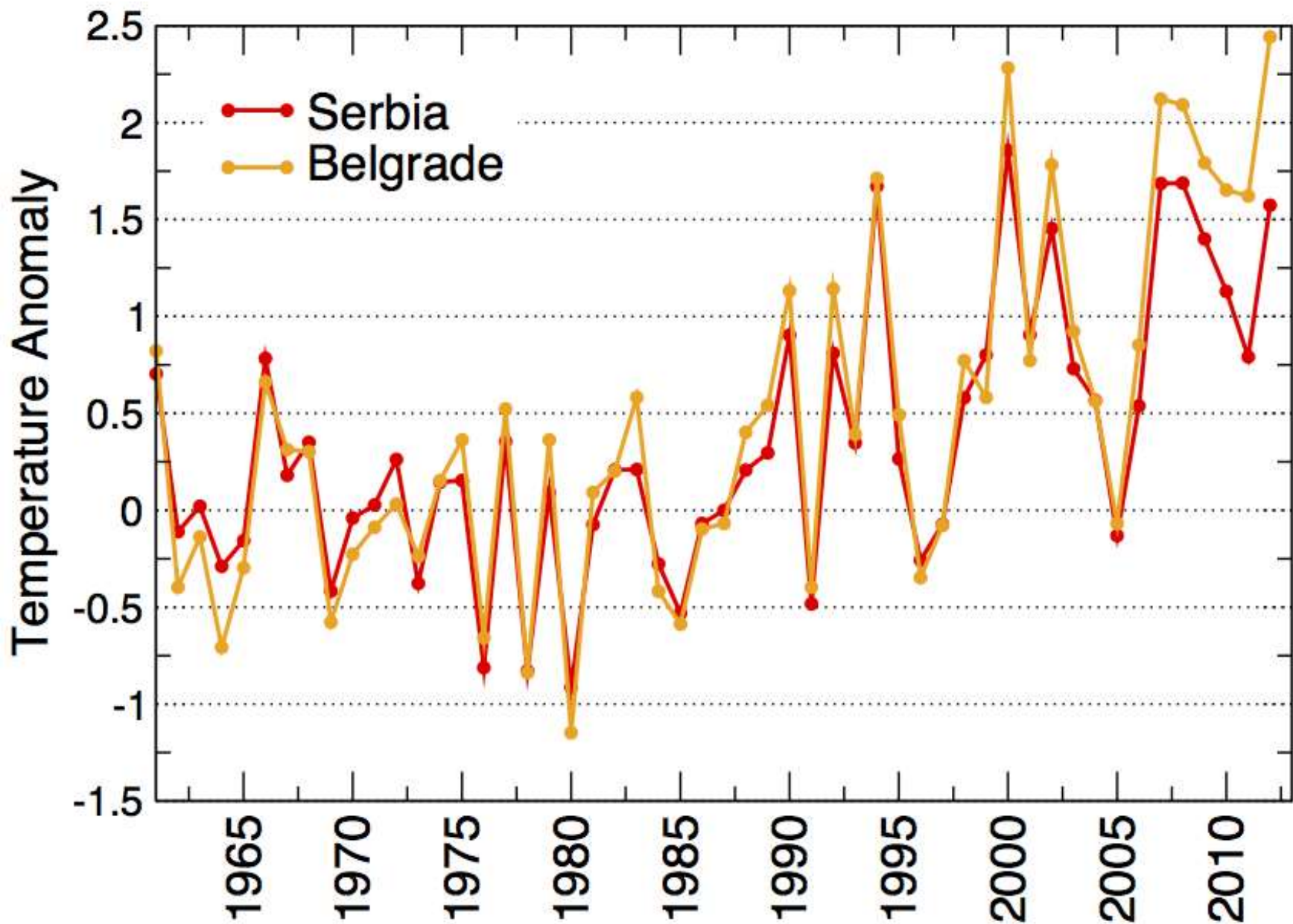


# Belgrade

- Annual mean
- 5 year running average



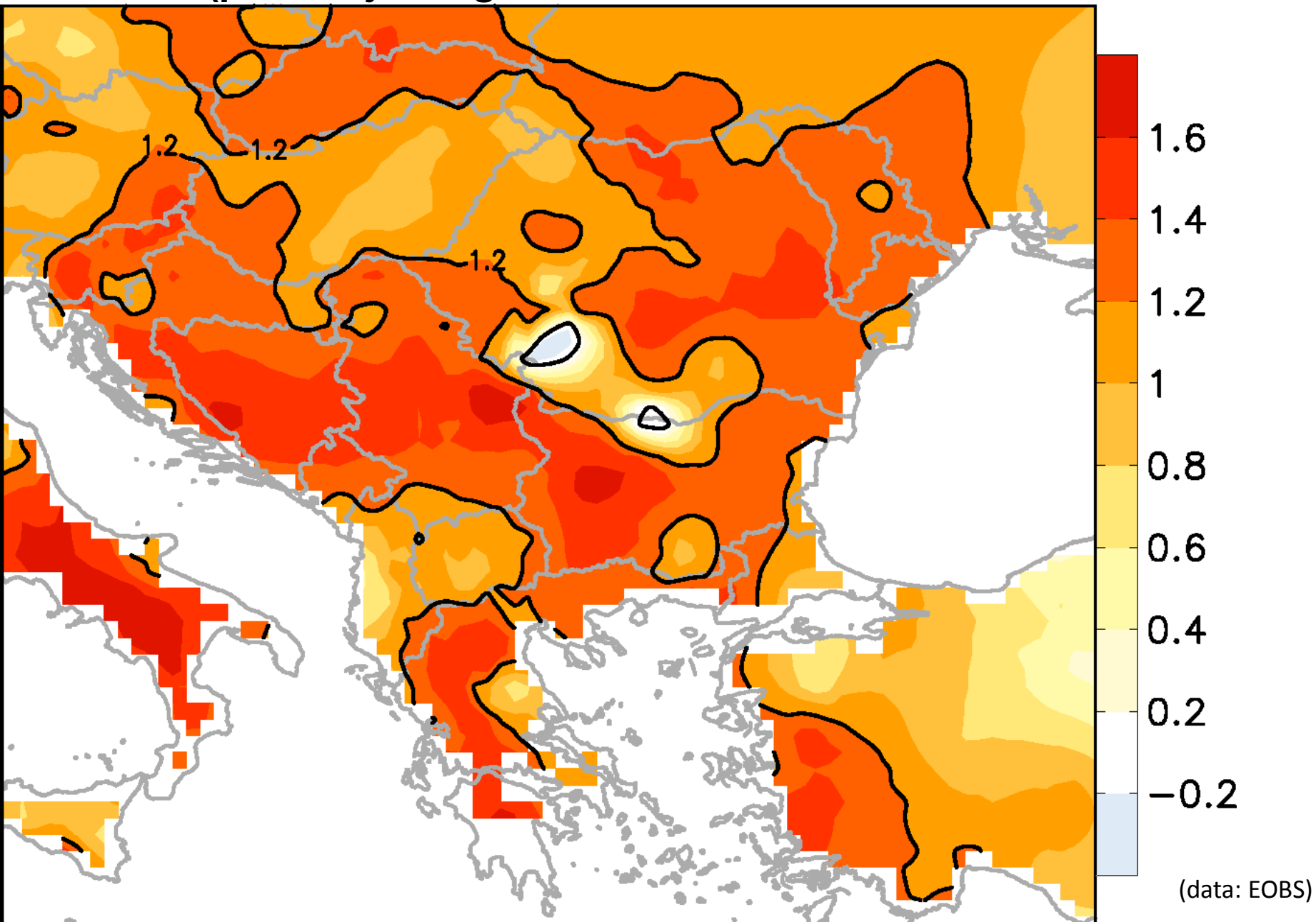
# Trend porasta temperature $\sim 0.3$ °C/dekadi



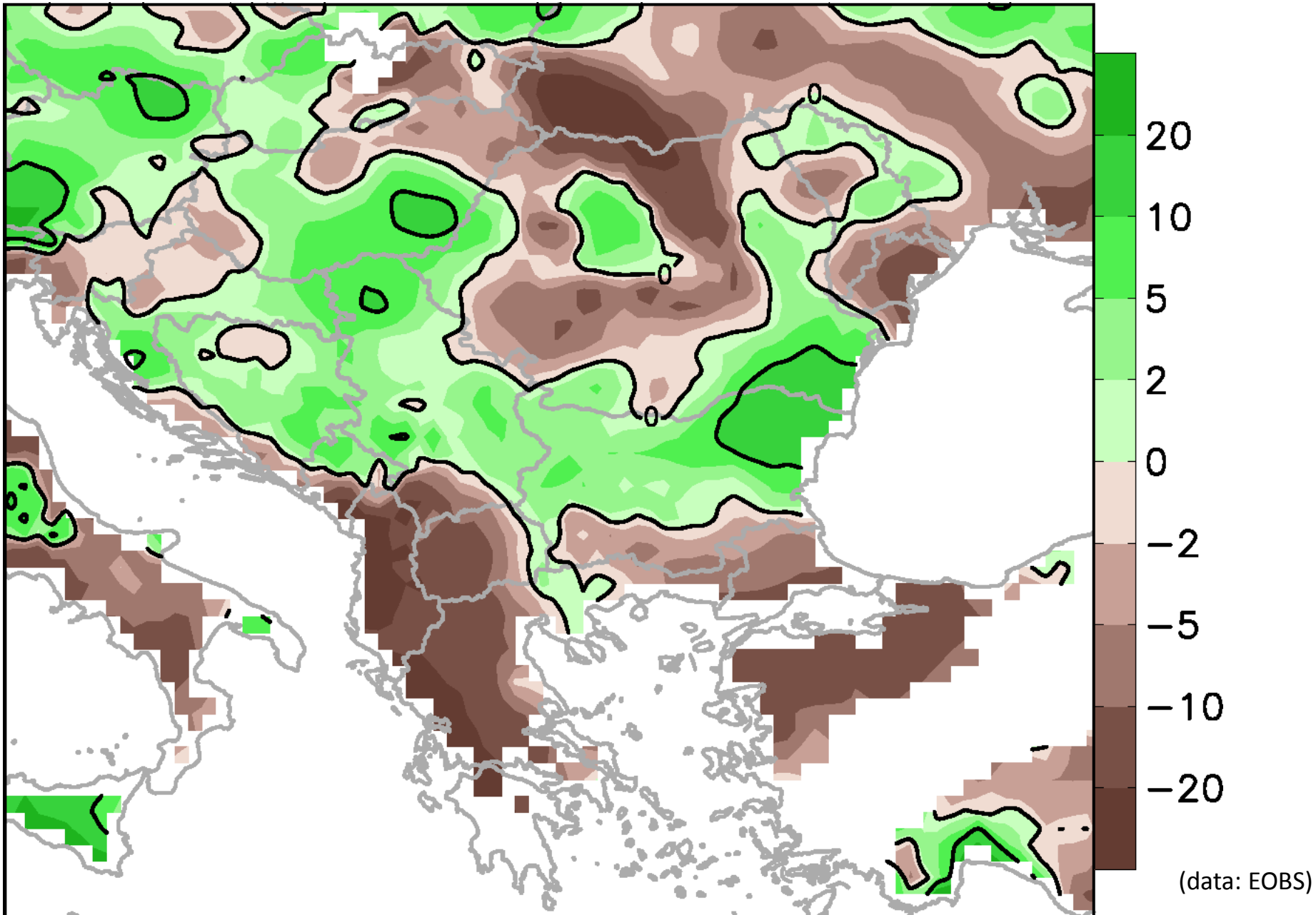
(data: RHMZS; Drugi nacionalni izveštaj prema UNFCCC)



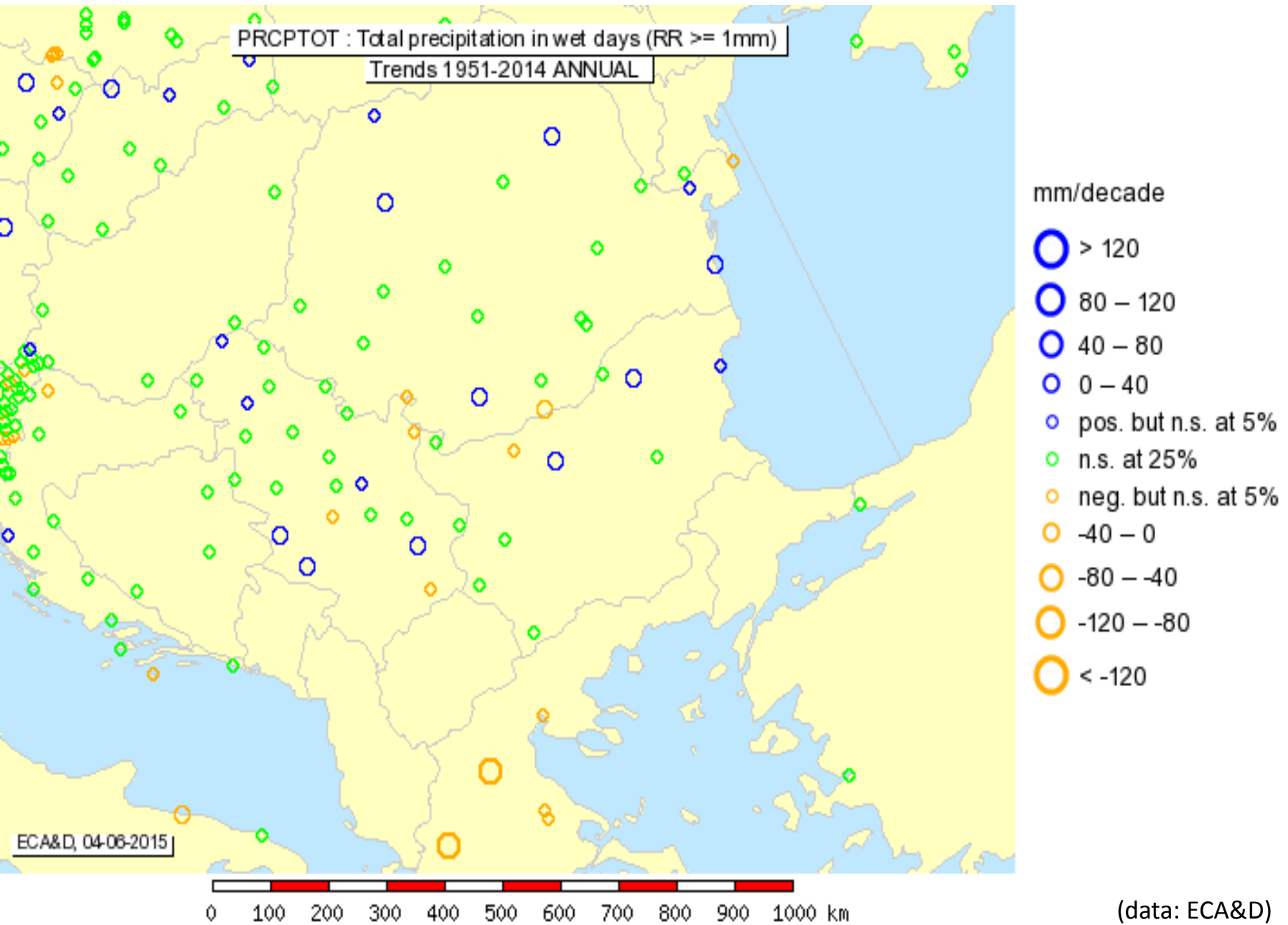
Anomalija teperature (°C) leti (jun-jul-avg) u periodu 1985-2014 (poslednjih 30 godina u odnosu na 1961-1990)



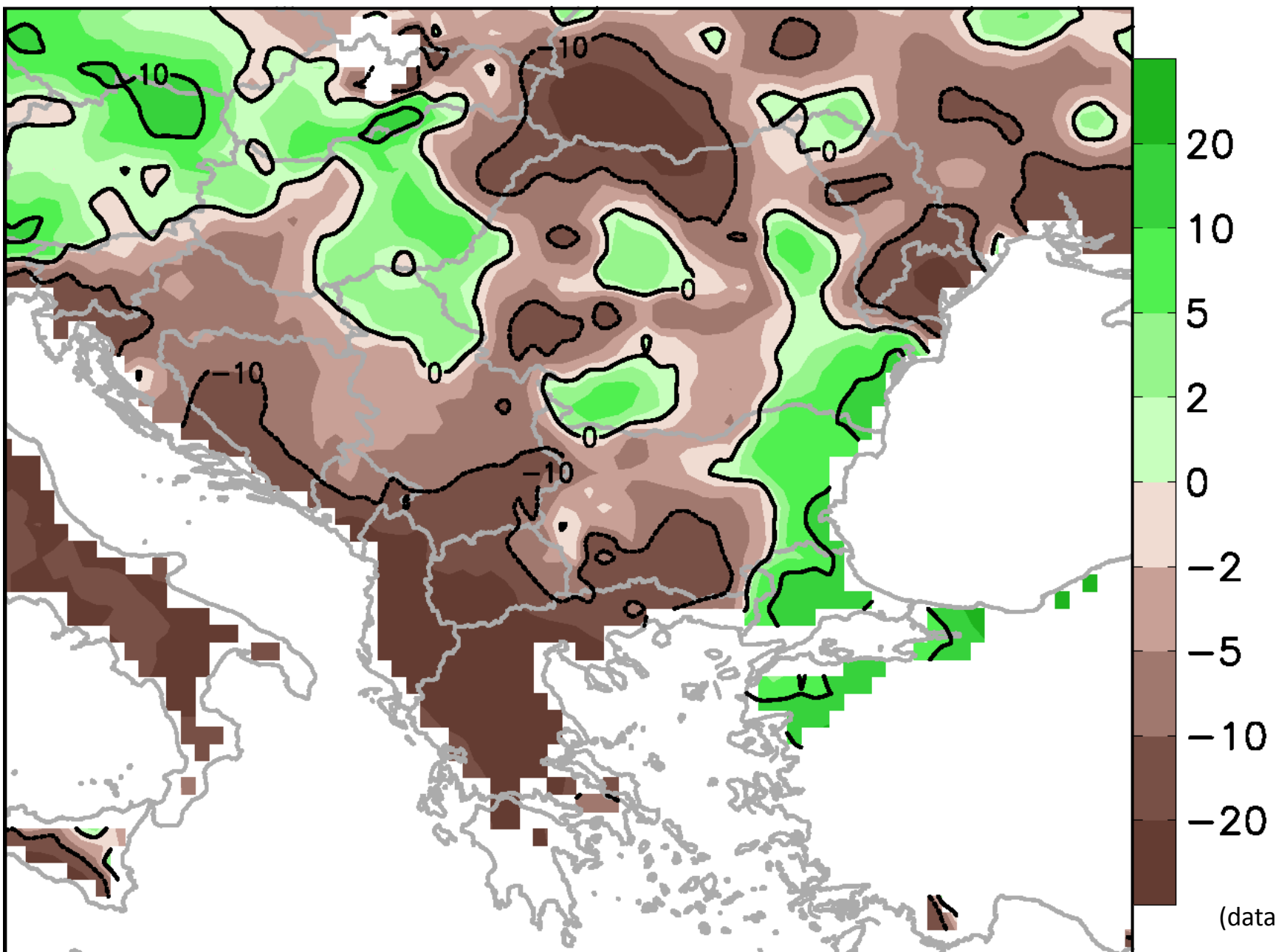
**Anomalija godišnjih padavina (%) u periodu 1985-2014 (poslednjih 30 godina) u odnosu na 1961-1990**



# Trend padavina (PRCPTOT $\geq 1$ mm/day) za period 1951-2014



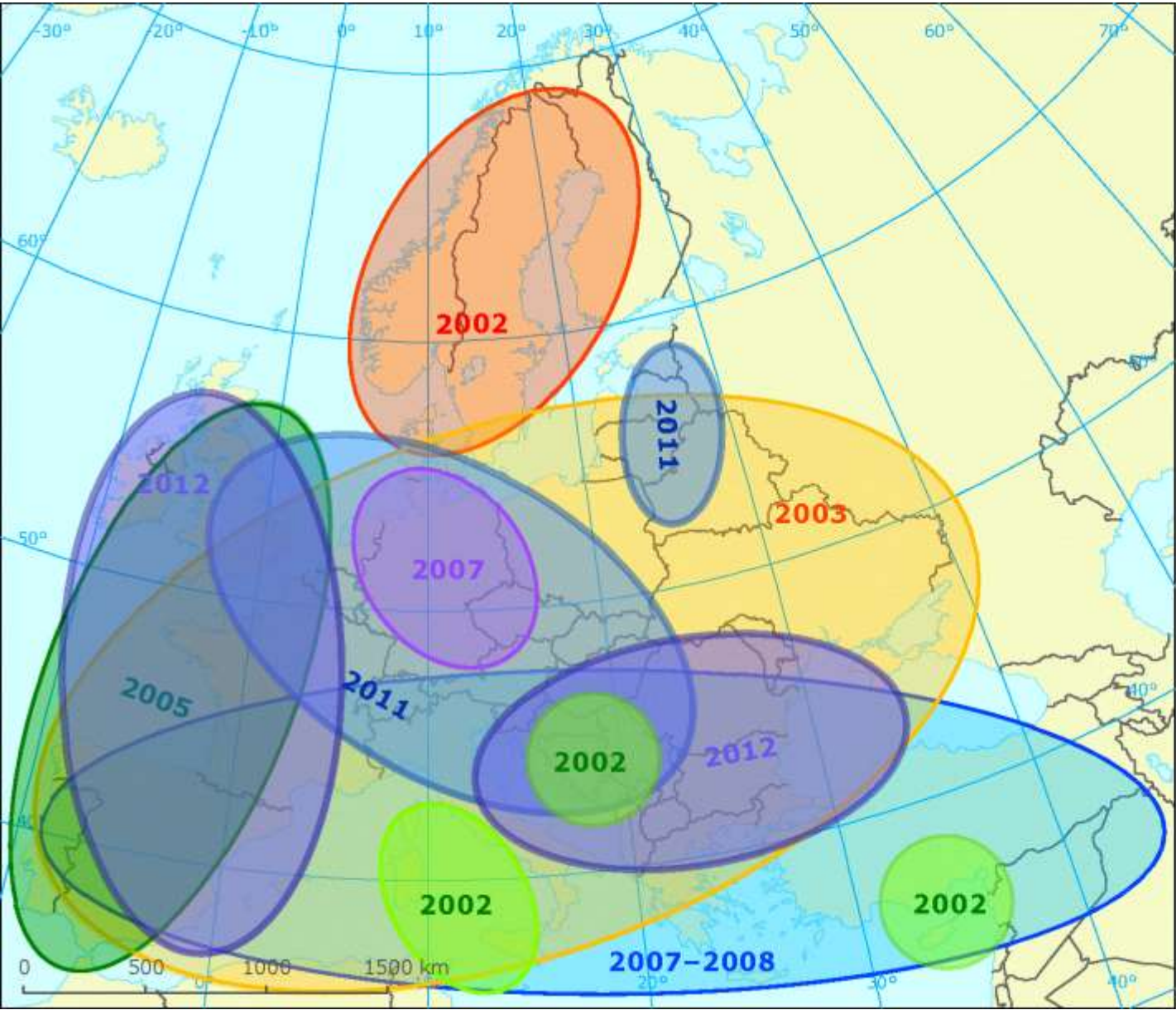
Anomalija padavina (%) leti (jun-jul-avg) u periodu 1985-2014 (poslednjih 30 godina) u odnosu na 1961-1990



(data: EOBS)



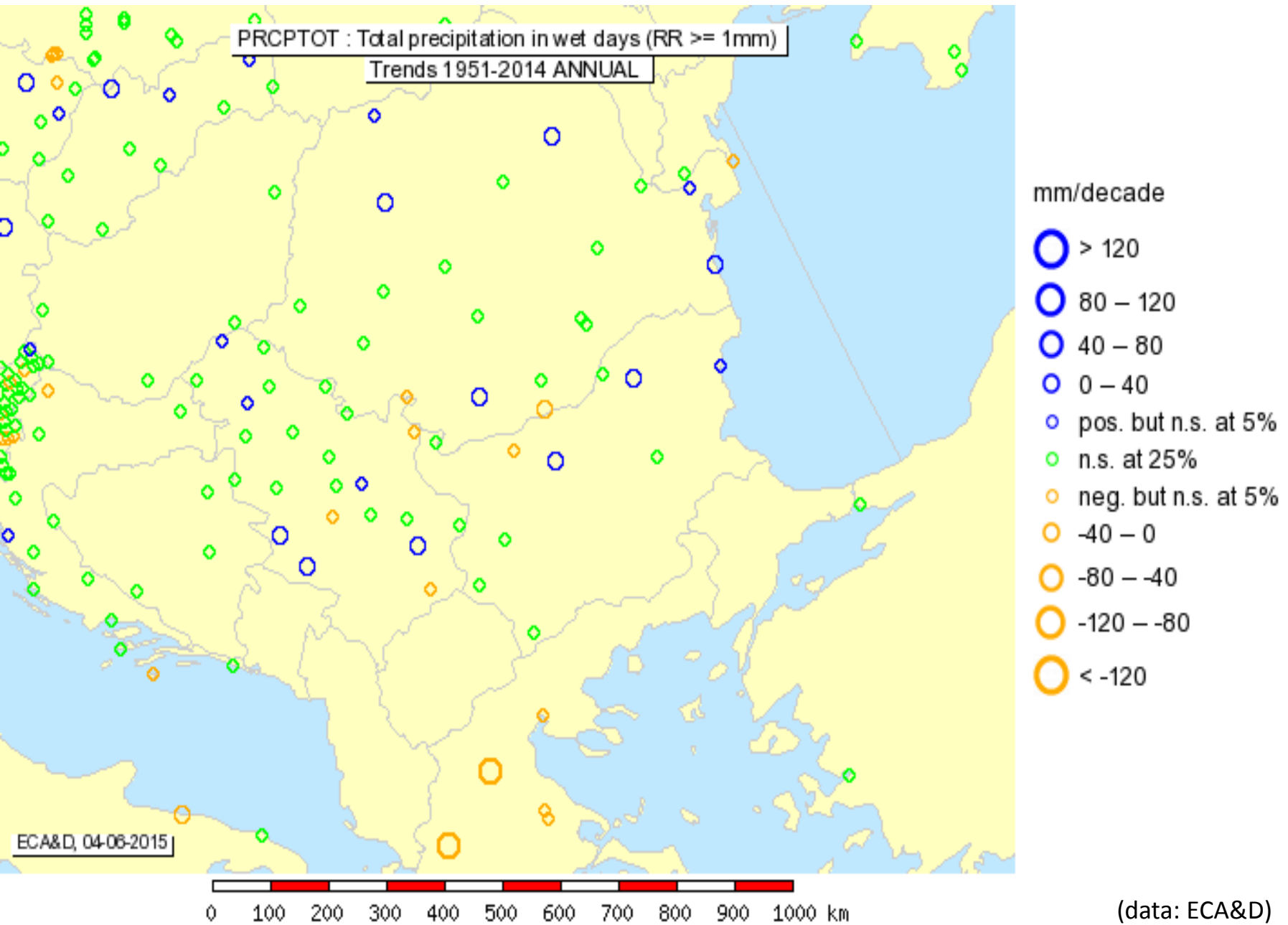
# Epizode suša od 2002.



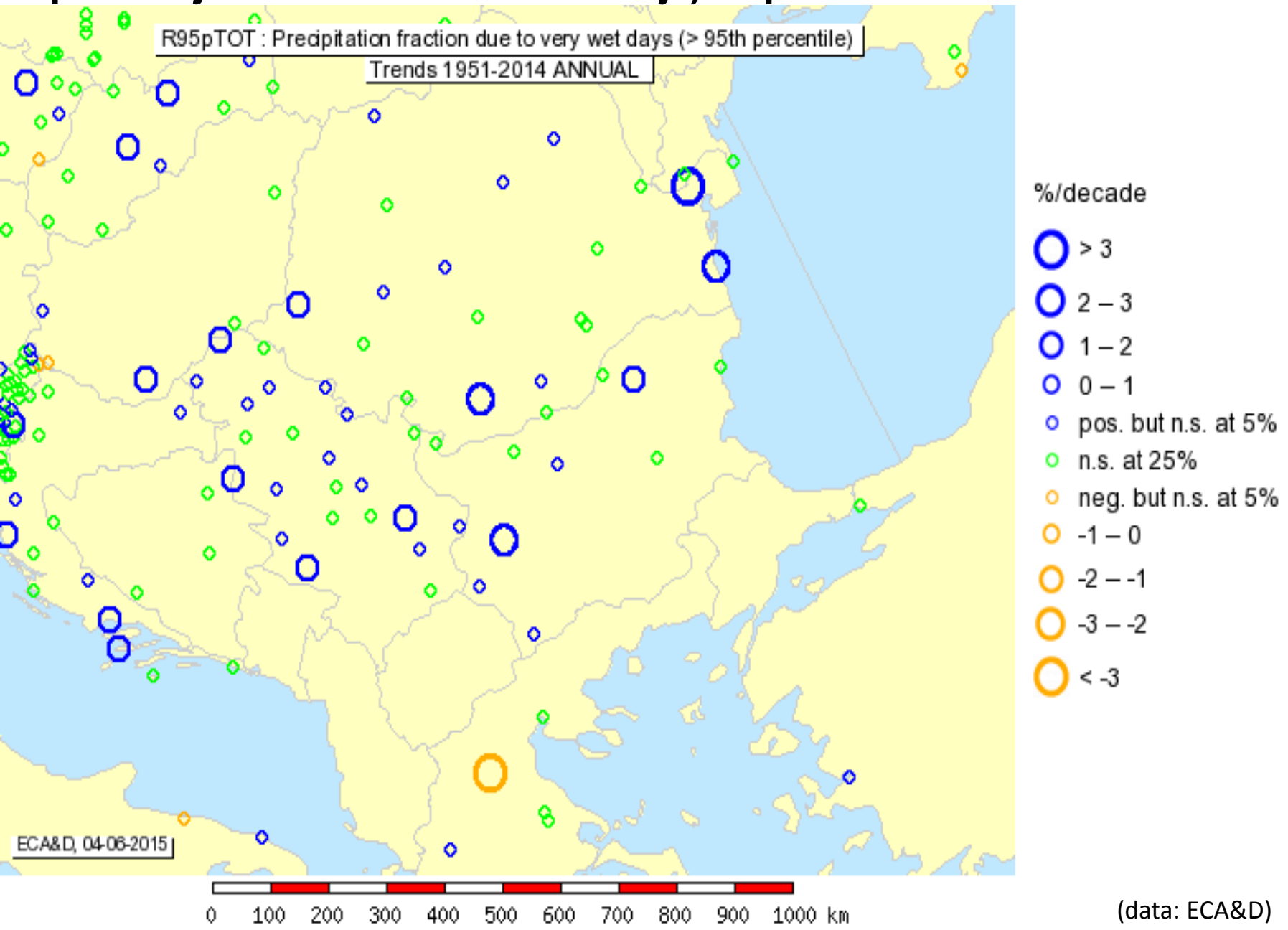
**Water scarcity and drought events in Europe during the last decade**

(EEA, 2012)

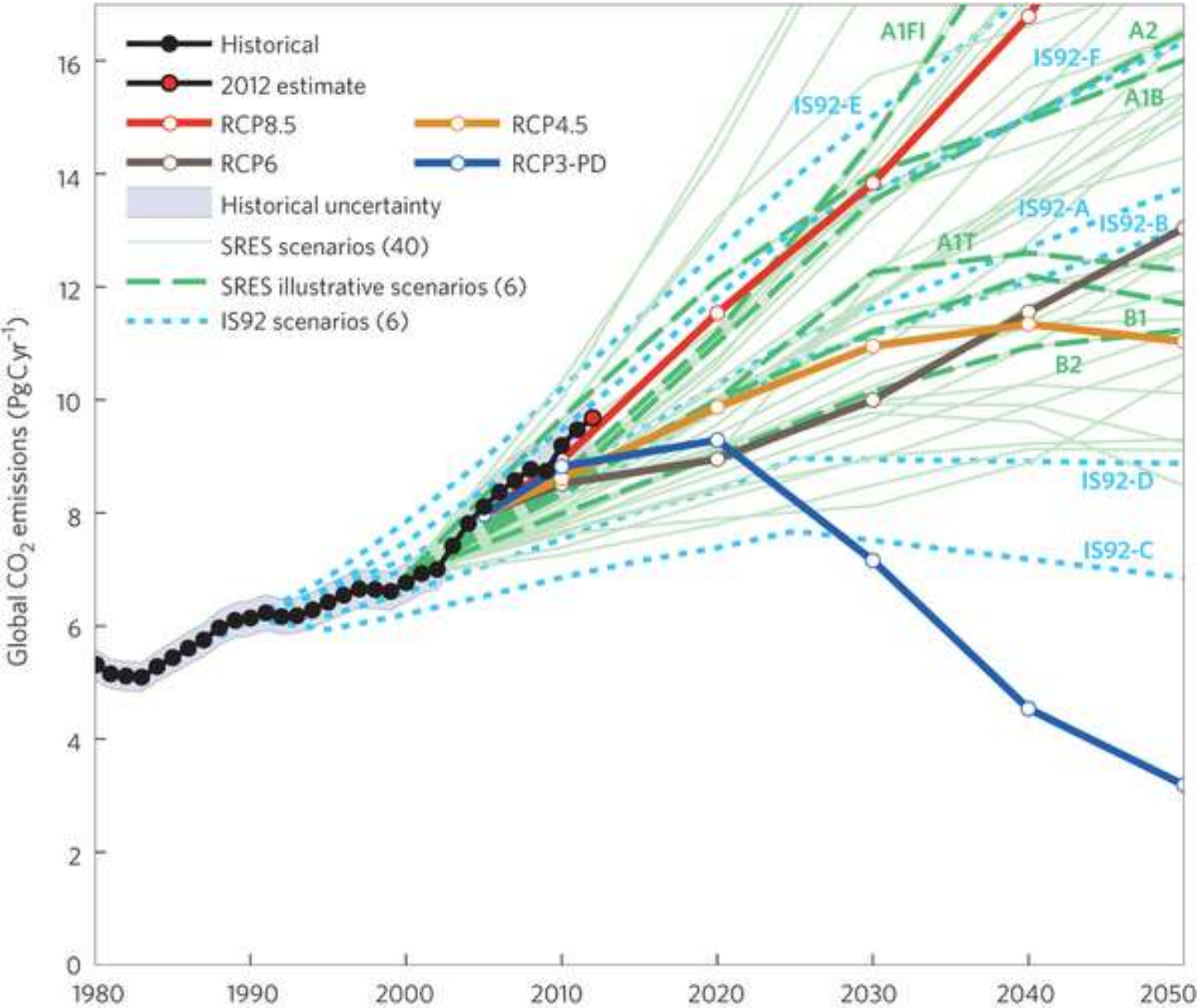
# Trend padavina (PRCPTOT $\geq 1\text{mm/day}$ ) za period 1951-2014



# Trend padavina sa ekstremnim dnevnim akumulacijama (R95pTOT - top 5% najvećih dnevnih akumulacija) za period 1951-2014



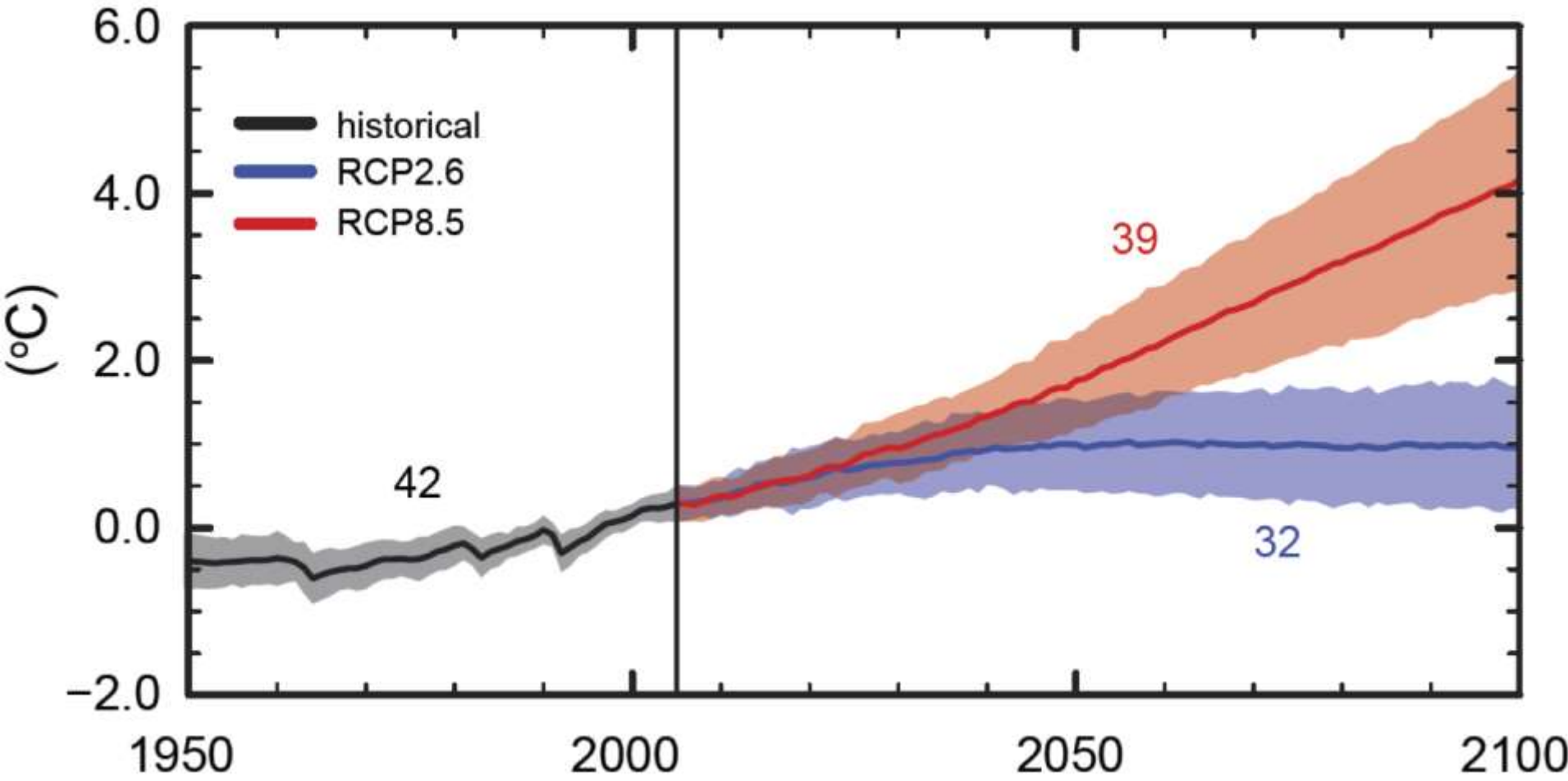
# IPCC – Scenarija globalnih emisija GHG od FAR do AR5



(Peters et al., 2013)



# Srednja globalna temperatura do 2100 u zavisnosti od budućih emisija GHG gasova (anomalija u odnosu na 1986-2005)



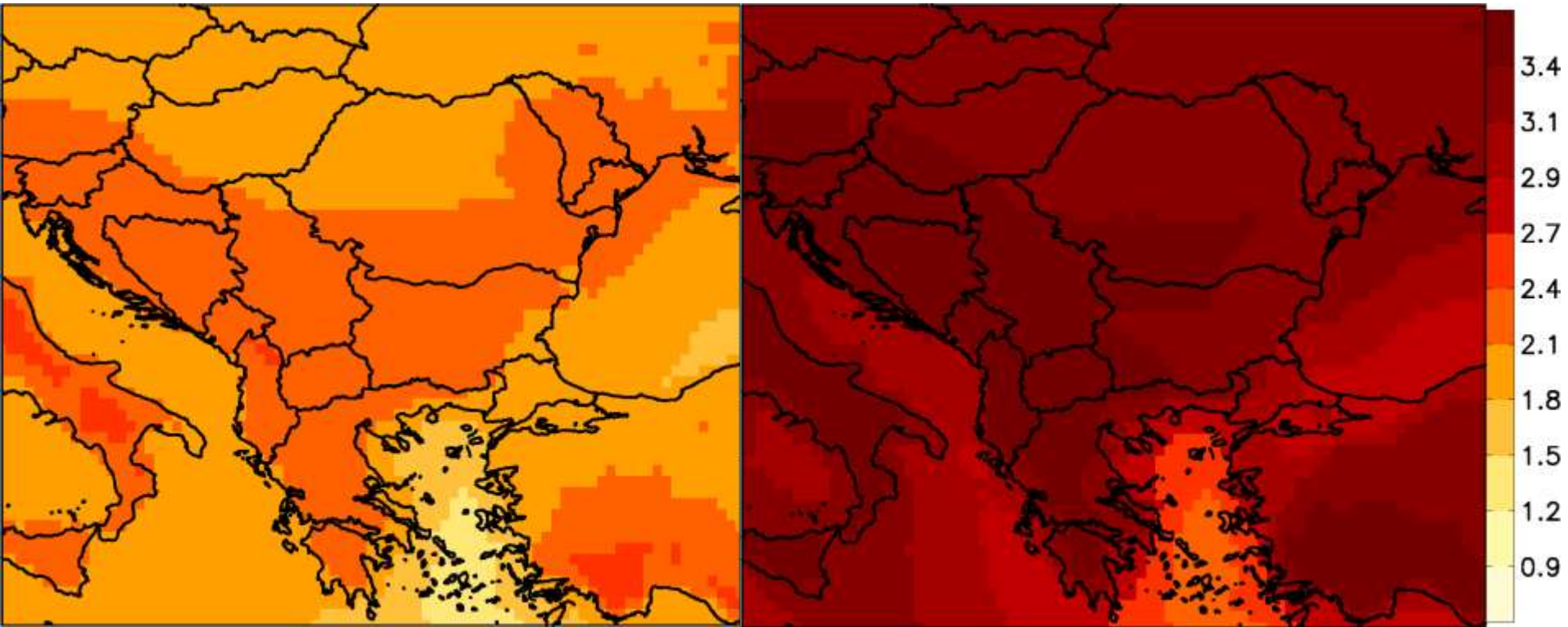


# EBU-POM regionalni klimatski model (25 km res.)

## A1B scenario – Povećanje srednje godišnje temperature (°C)

2041-2070 w.r.t. 1961-1990

2071-2100 w.r.t. 1961-1990

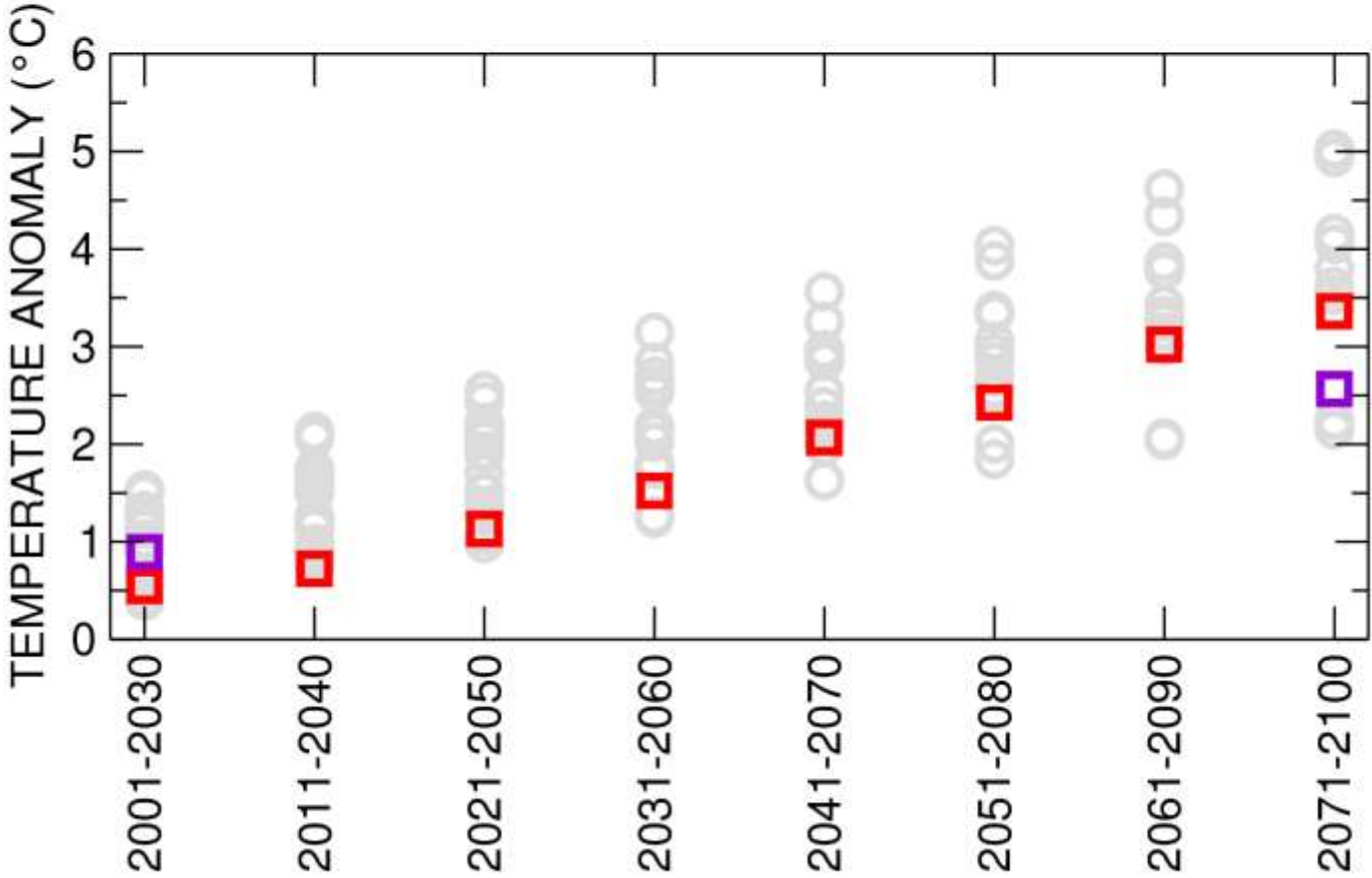


(SRB SNC, 2015)

# A1B scenario – Povećanje srednje godišnje temperature (°C)

## SRES A1B

- ENSEMBLES RCMs
- EBUPOM - ECHAM5
- EBUPOM - SXG



30 YRS. AVERAGE PERIOD

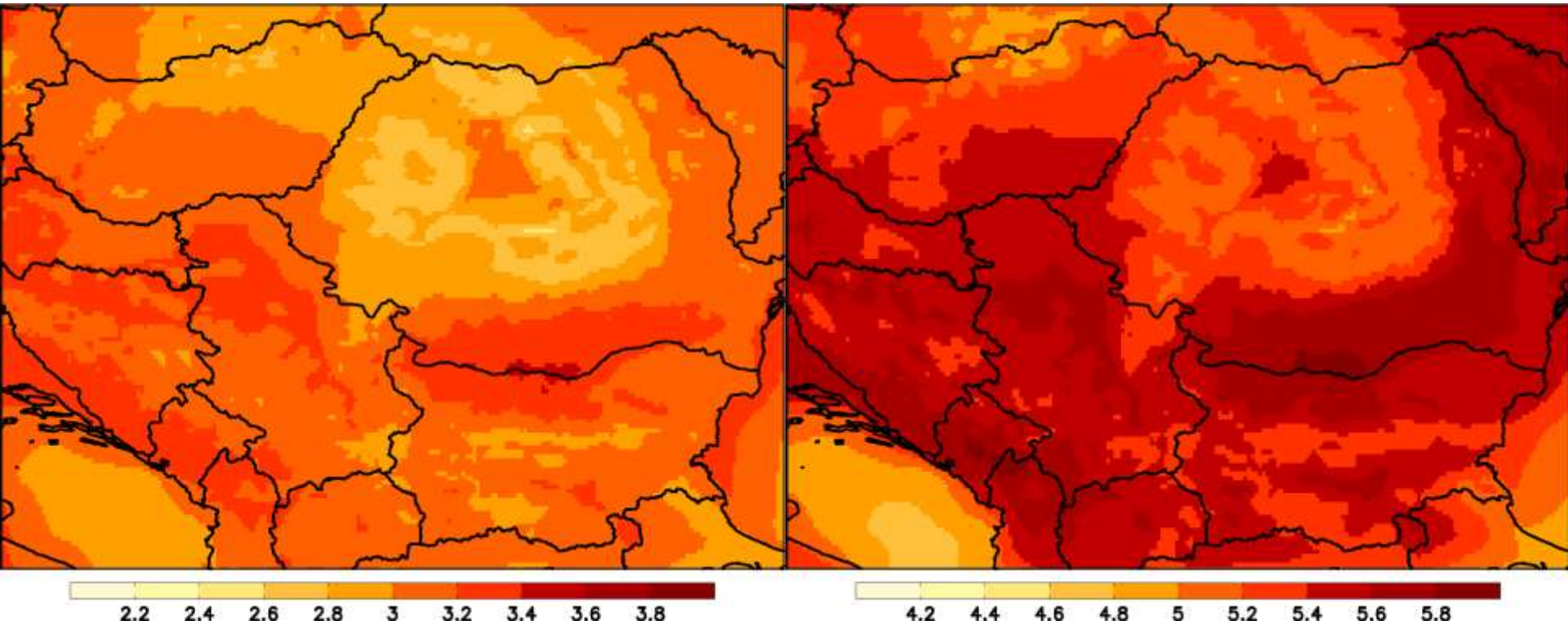
(SRB SNC, 2015)

**NMMB - model (8 km res.)**

**RCP8.5 - Povećanje srednje godišnje temperature (°C)**

**2041-2070 w.r.t. 1971-2000**

**2071-2100 w.r.t. 2071-2100**

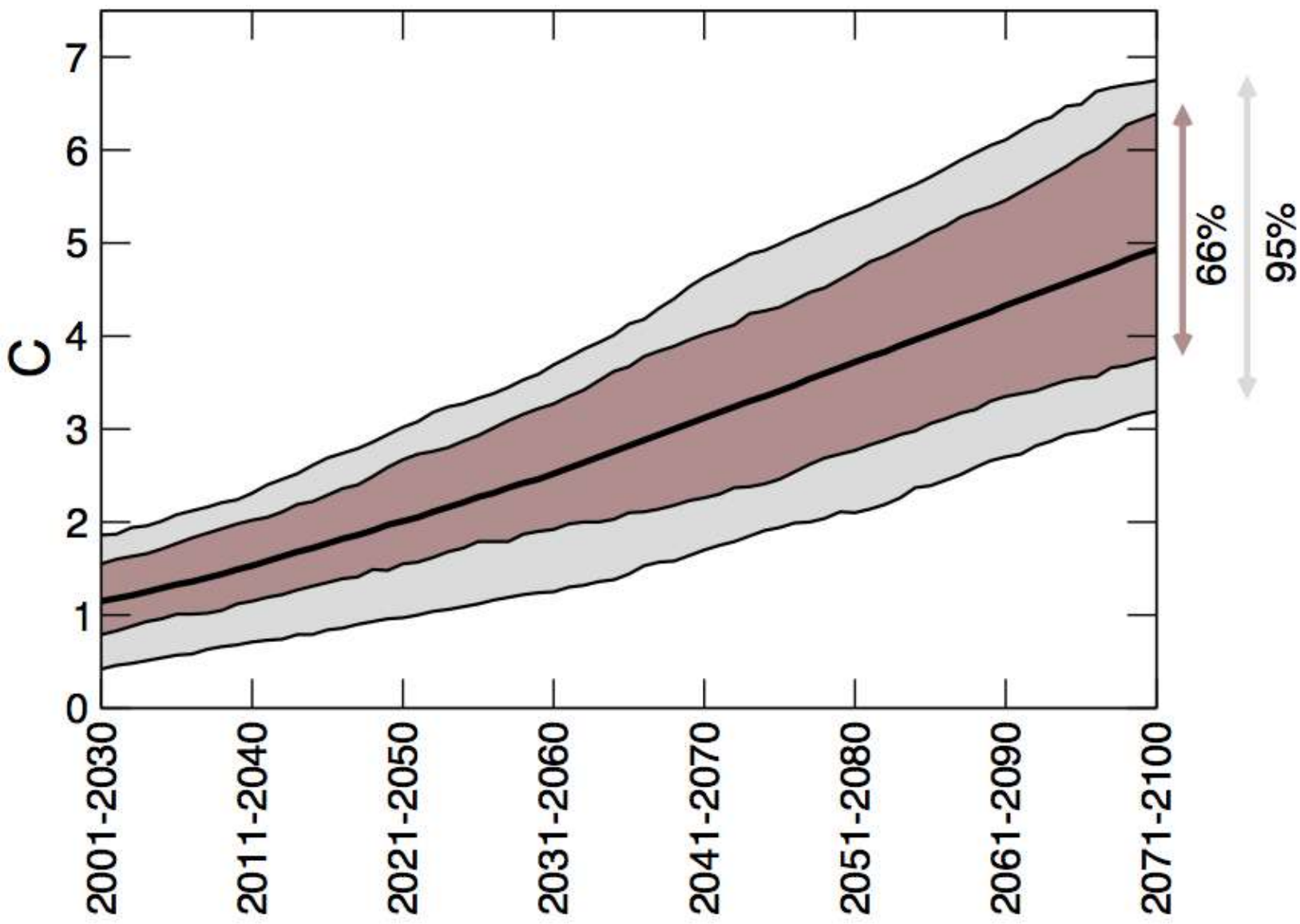


(ORIENTGATE - RHMS,  
Djurdjic and Krzic, 2014)

# CIMIP5 – Multi-Model ansambl (39 modela)

RCP8.5 (IPCC AR5)

30-godišnji pokretni srednjak odstupanja temperature (°C)



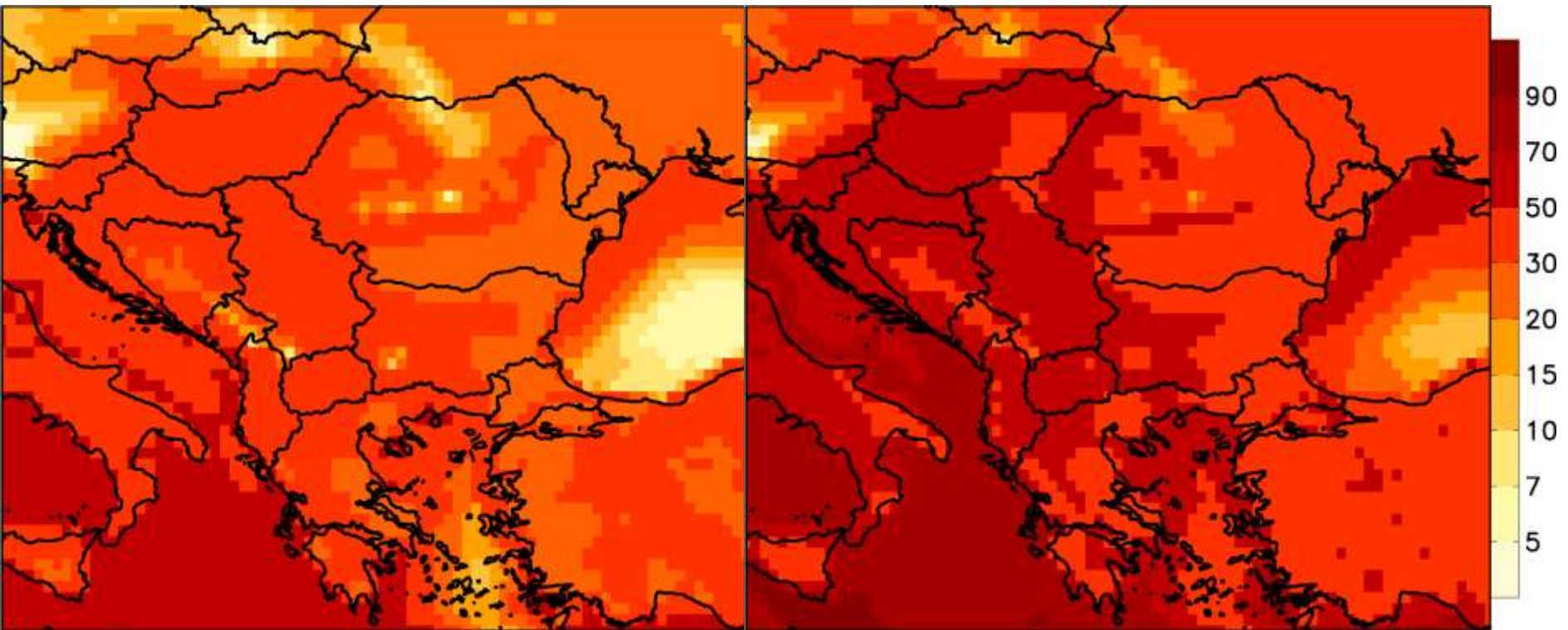


# EBU-POM regionalni model (25 km res.)

A1B scenario – Promena broja letnjih dana (TX>25 °C) (dan/godini)

2041-2070

2071-2100



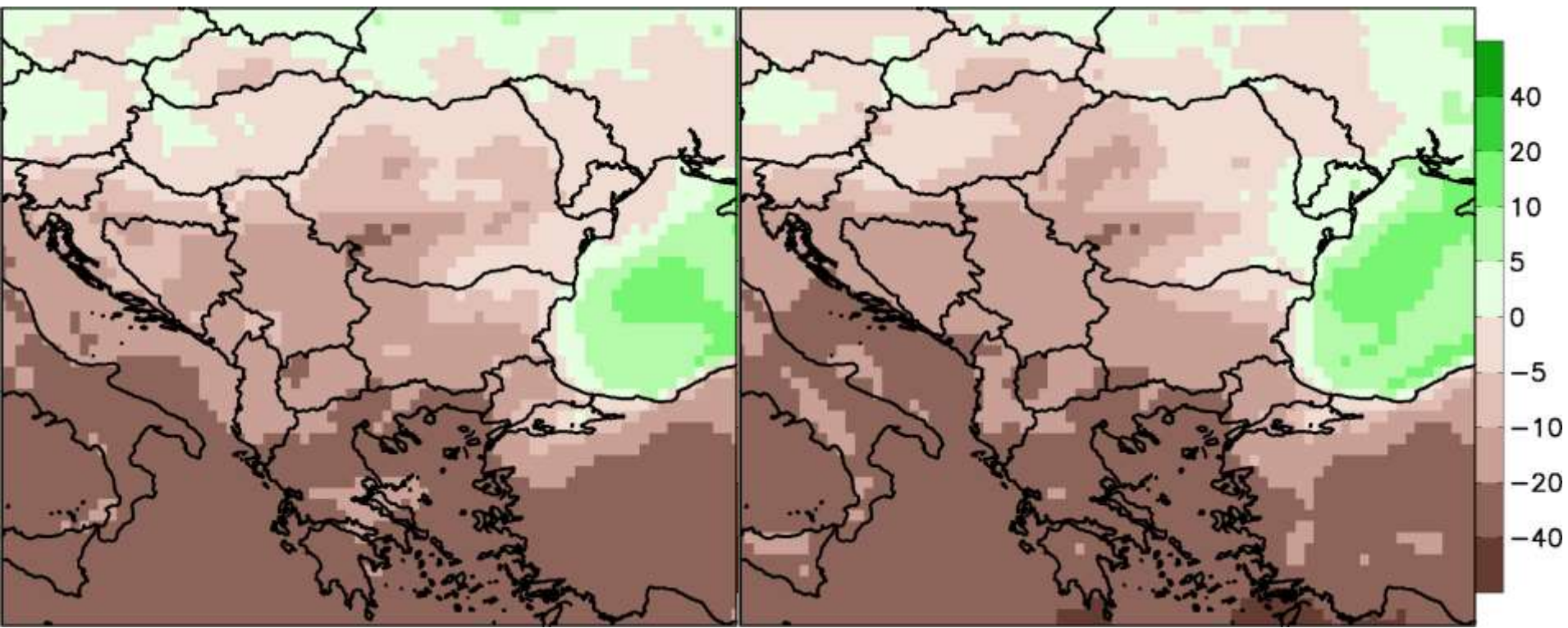
(SRB SNC, 2015.)



# A1B scenario – promena godišnjih padavina (%)

2041-2070

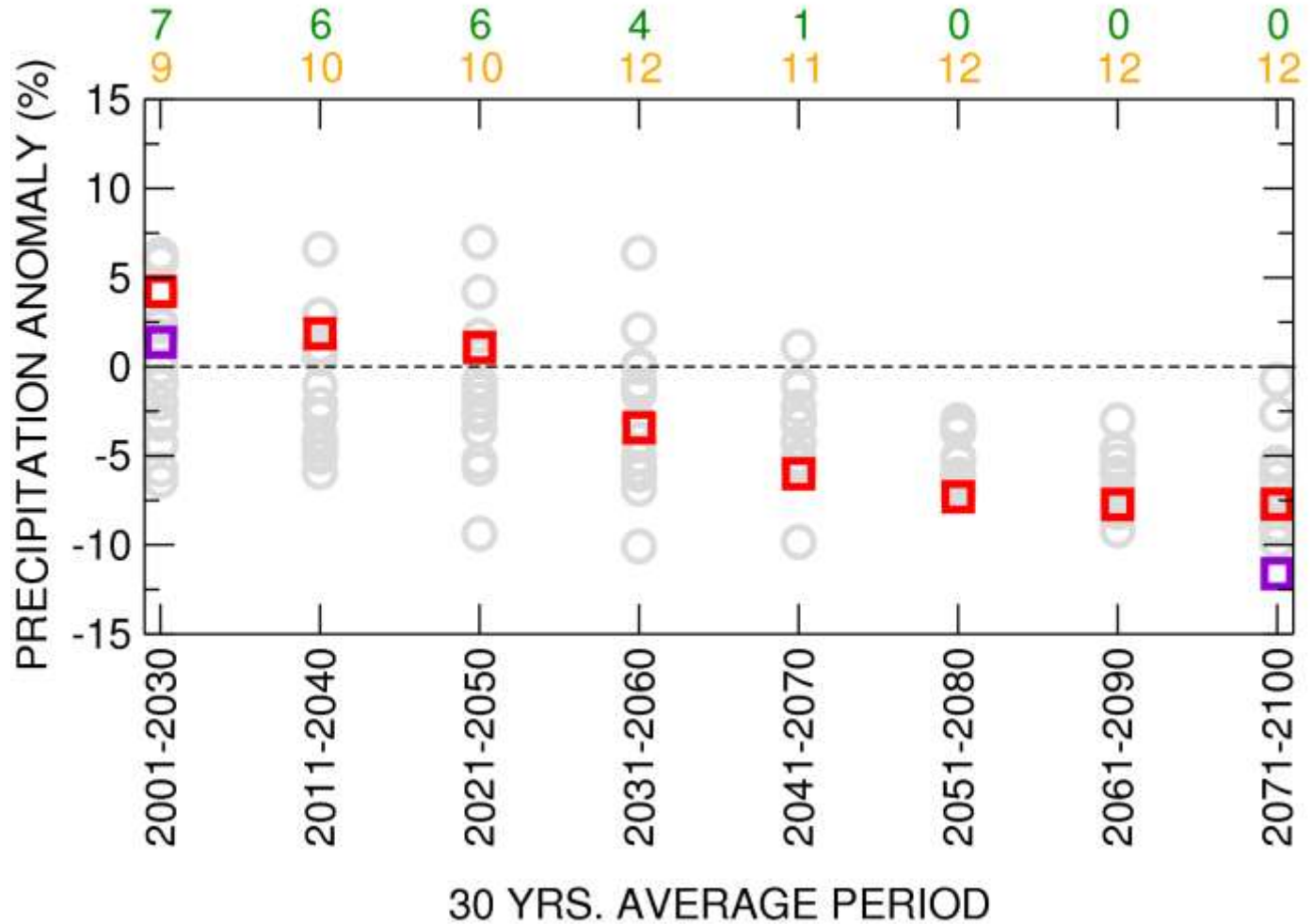
2071-2100



(SRB SNC, 2015, in prep.)

# SRES A1B

- ENSEMBLES RCMs
- EBUPOM - ECHAM5
- EBUPOM - SXG

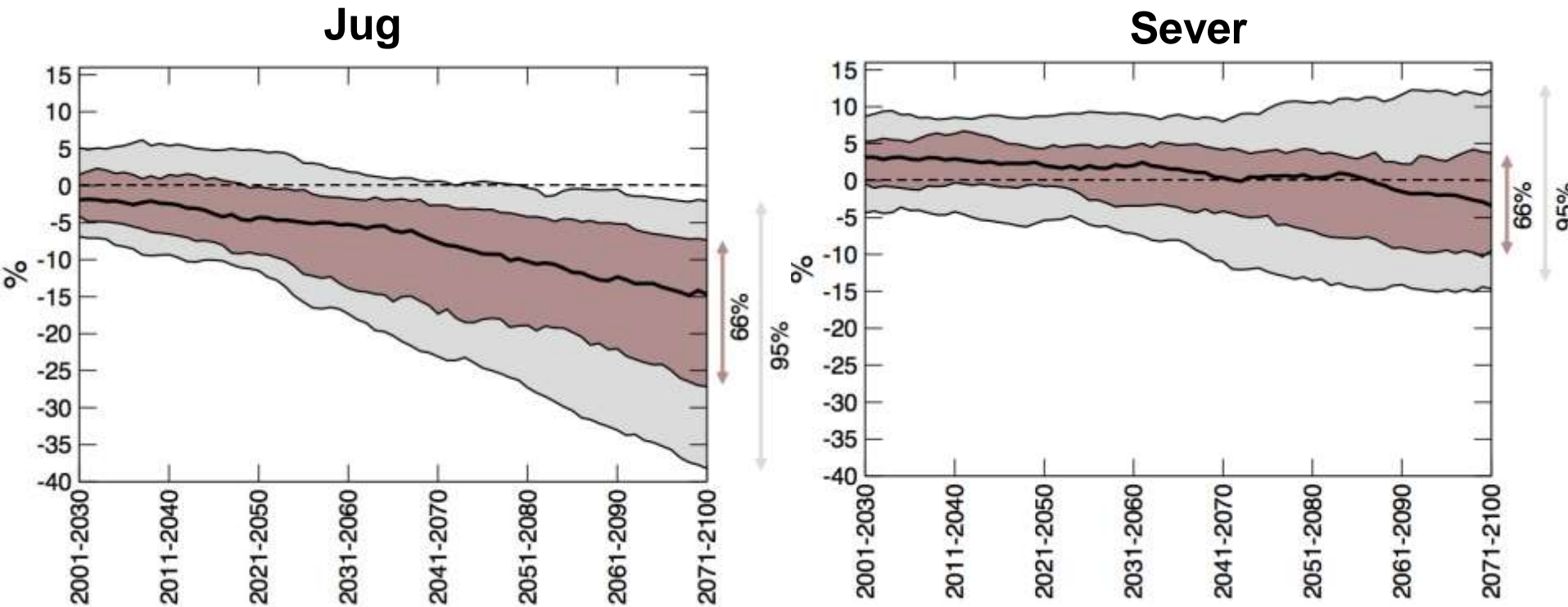


x - number of models with positive anomaly

x - number of models with negative anomaly

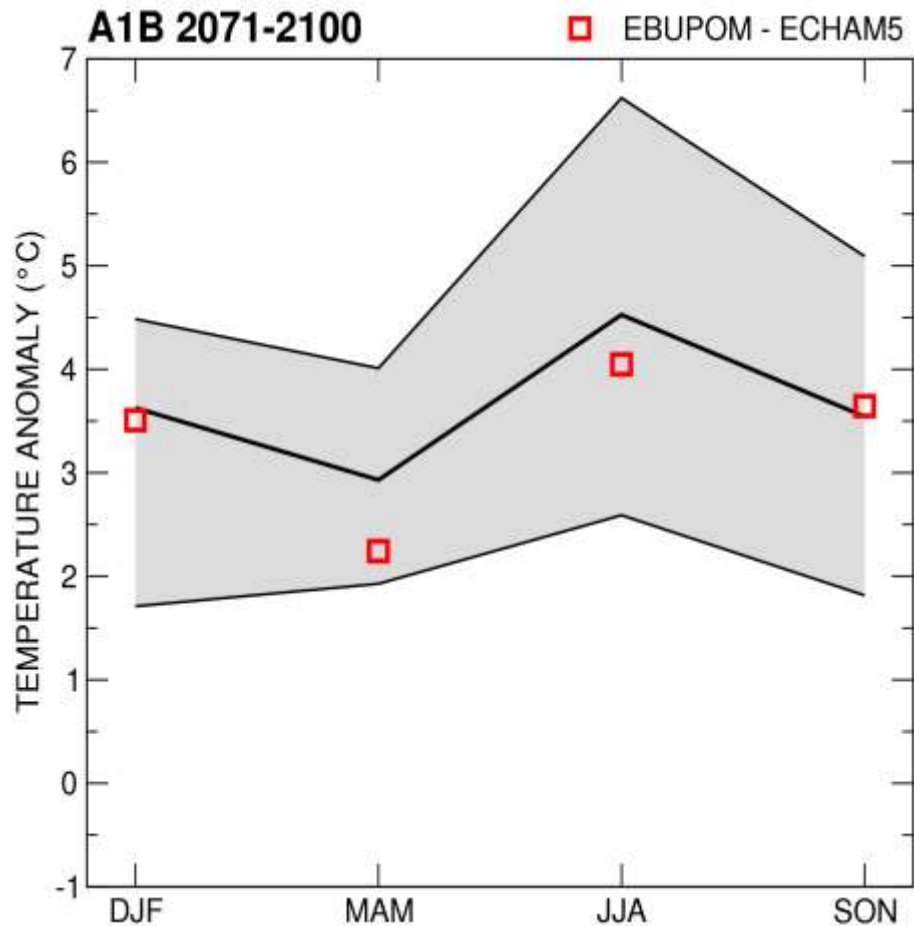
# CIMIP5 – Multi-Model ansambl (39 modela) RCP8.5 (IPCC AR5)

## 30-godišnji pokretni srednjak promena padavina (%) u regionu

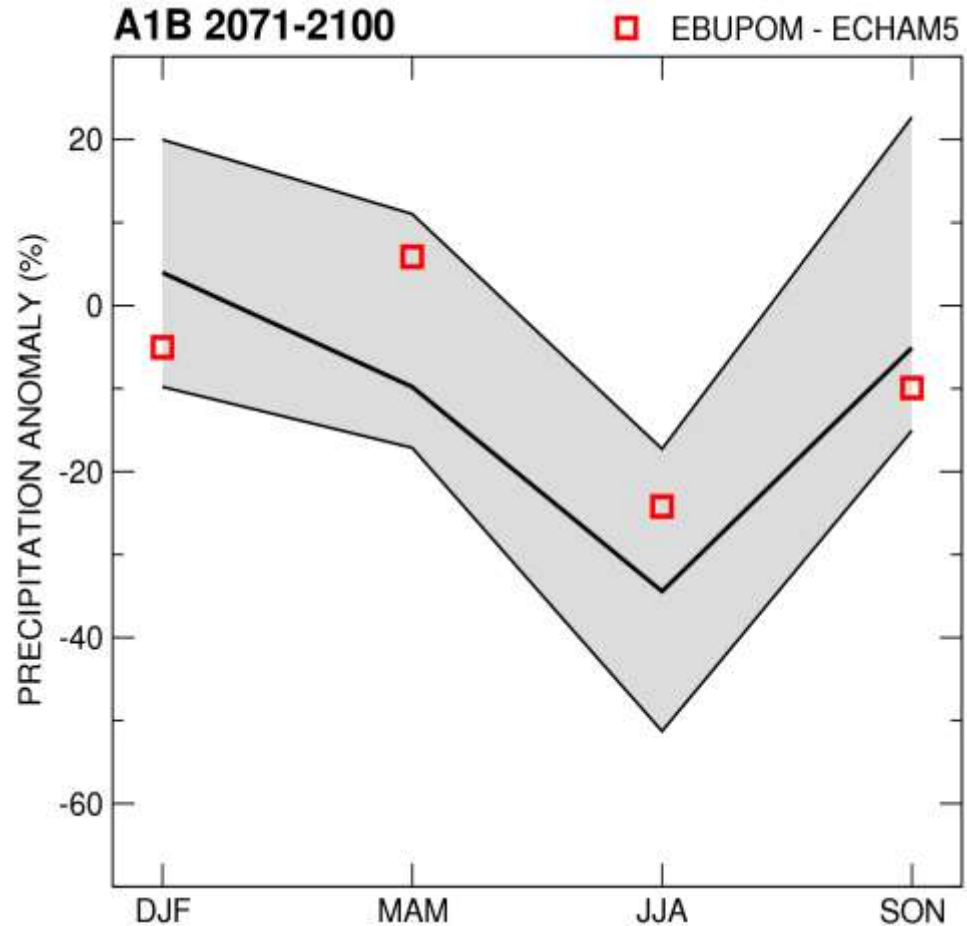


# Sezonske promene - Srbija

## Temperatura



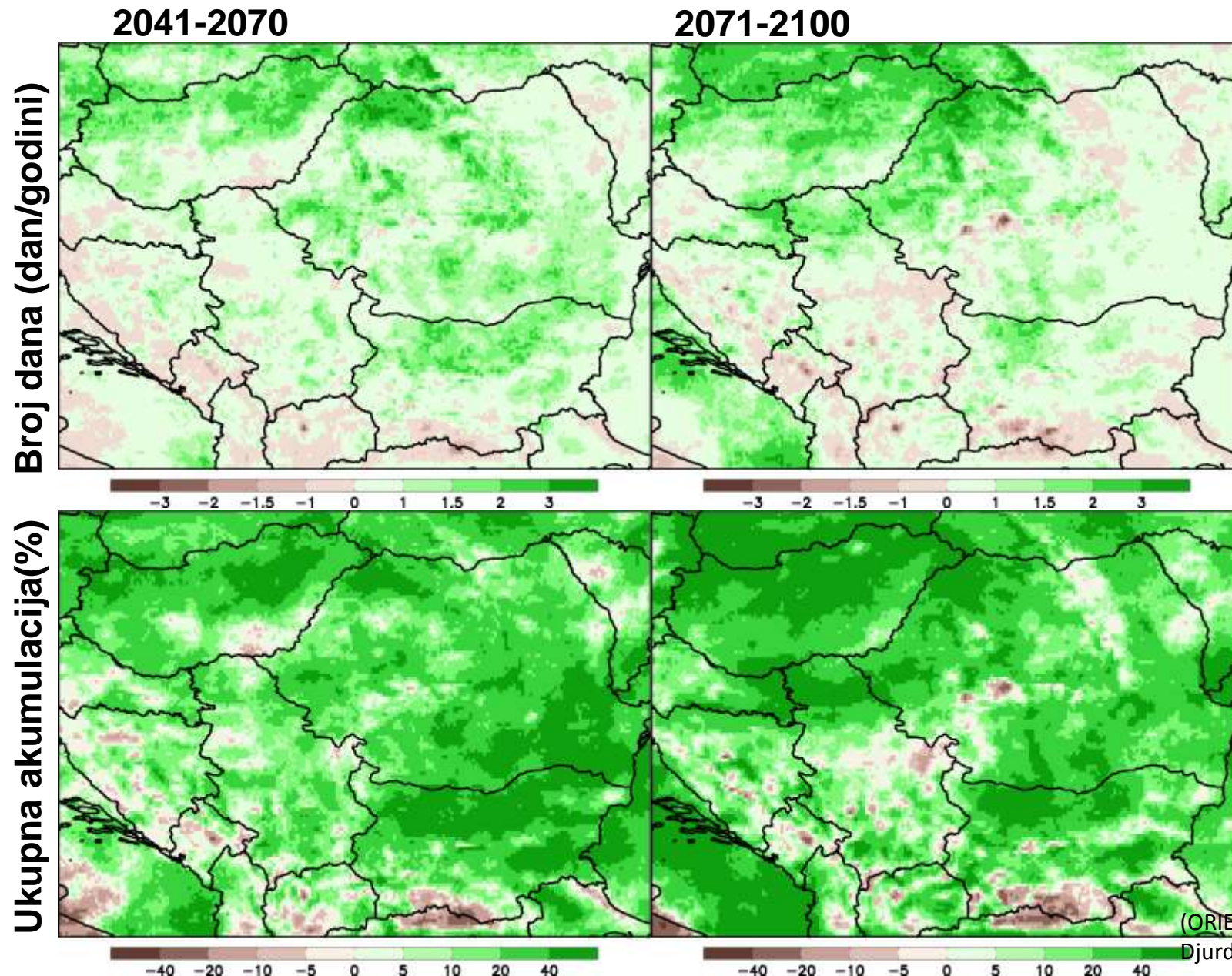
## Padavine





# NMMB - model (8 km res.)

## RCP8.5 scenario – promena top 5% najačih padavina





## Rezime budućih promena u slučaju izostanka redukcije emisija gasova staklene bašte

- Temperatura:
  - Dalji porast temperature
  - ~4°C do kraja veka
- Padavine:
  - Neizvestan znak promene u narednih nekoliko dekada
  - Deficit u drugoj polovini veka
    - ~-10 % na godišnjem nivou
    - moguće do -50 % za sezonu jun-jul-avgust
- Intenziviranje ekstrema, za pojedine i pozitivna promena učestalosti

Trenutni plan međunarodne zajednice je da se kroz dogovor o smanjenju emisija gasova staklene bašte, ograniči porast srednje globalne temperature na maksimalno 2 °C.

# H v a l a

