Towards climate monitoring using re-analyses & climate impact indices

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UERRA Deliverable 4.5 (**KNMI**, SMHI, MF; month 48):

Set of derived indices (including uncertainty information) based on the RA data. All indicator information will be updated every month using newly available reanalysis and observational data. The trends in the indicators will be assessed.

Where are we now?

Tools to calculate climate impact indices (CII)

- R libraries climdex.pcic & climdex.pcic.ncdf: to calculate 27 ETCCDI indices CII based on stations & gridded data. New version under KNMI (EUPORIAS) includes also the ECA&D indices and some snow indices form MeteoSwiss

- Python library icclim: fewer CII. The code is validated using the above R routines and E-OBS. (CLIPC)

- Available indices online: station & E-OBS CII using the R routines.

- Future steps:
  - Calculate reanalyses (ensemble) based CII
  - Dissimination of reanalysis-based indices (how/where?)

27 indices ETCCDI
& some extras: R75p, SPI3, SPI6, etc.

www.ecad.eu/utils/mapserver/eobs_maps_indices.php

Mean bias in # of very heavy precipitation days in Winter (DJF)
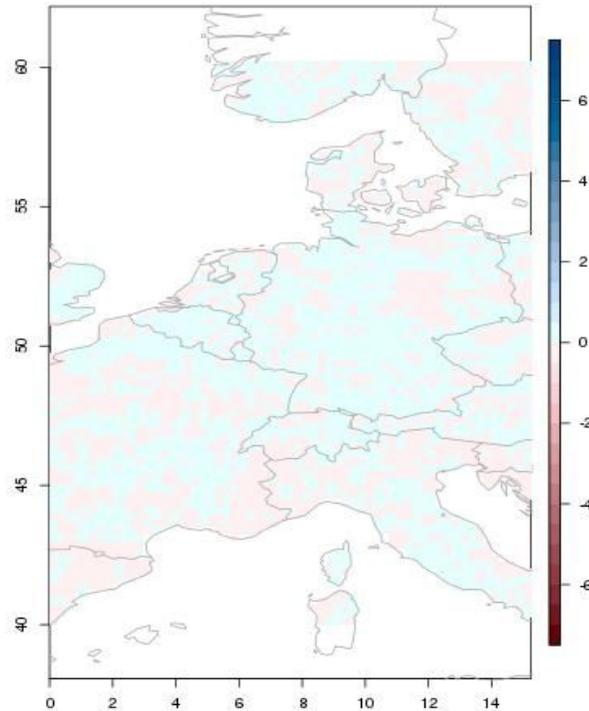
Mean bias in total precipitation in Winter [mm]
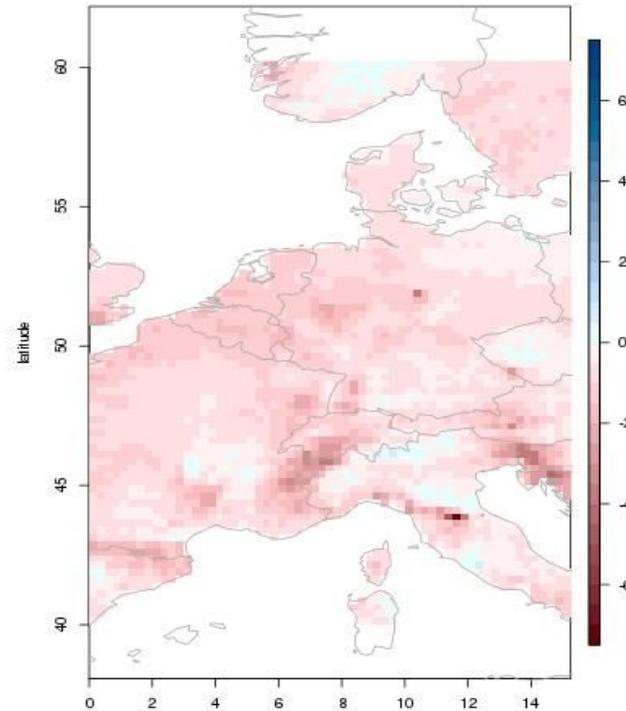
- Calculate CII using E-OBS and hindcasts (lead time 1 month, 15 ensemble members, 1981-2010) and estimate the mean bias (E-OBS – hindcast)
- Verification and skill scores (R routines) for a subset of indices
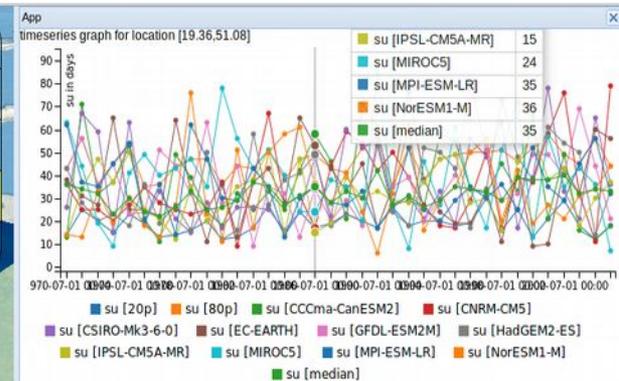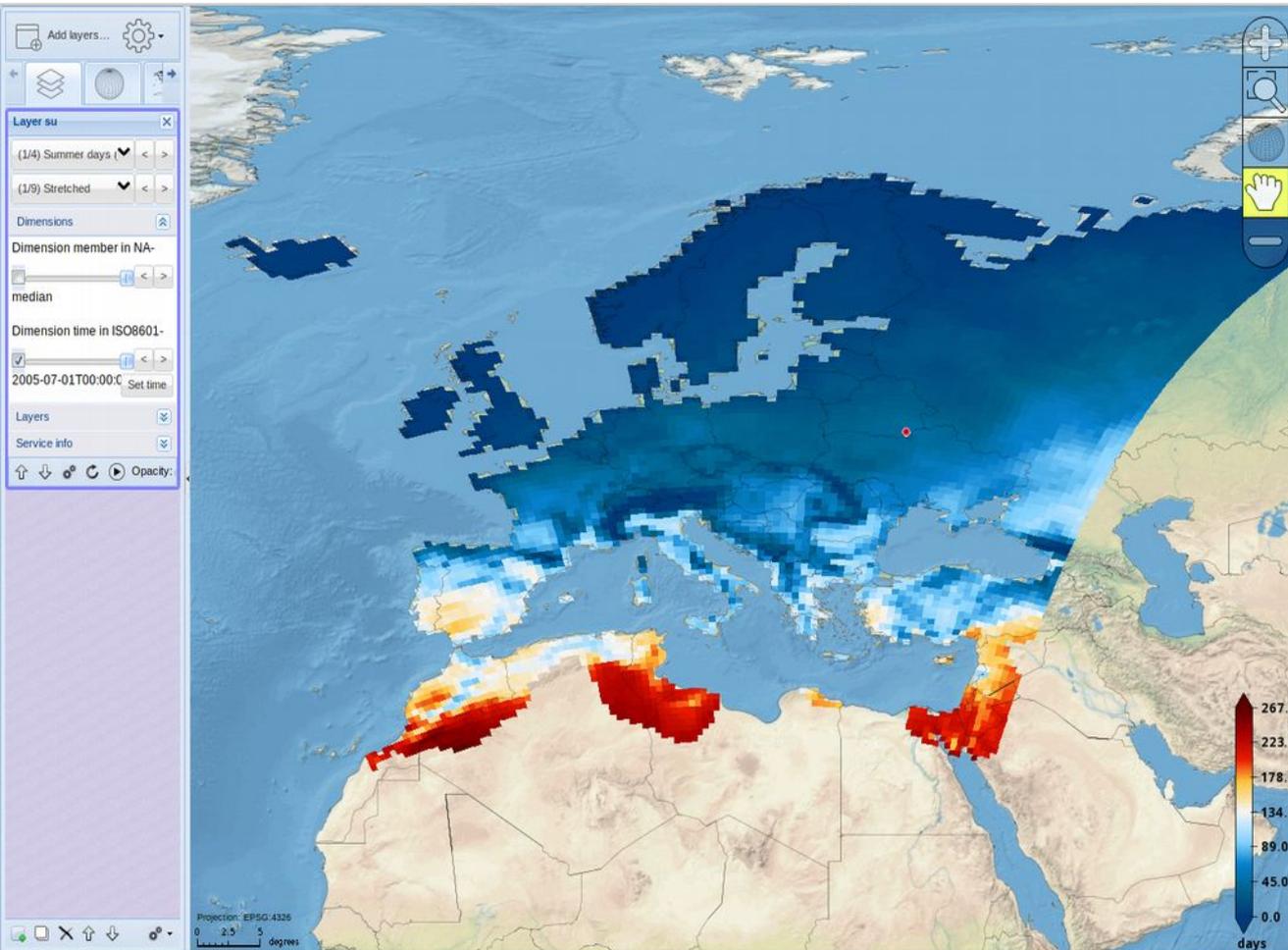
# of Summer days
Bias corrected RCM
ensemble mean
RCP4.5

Climate Indicator Bulletin

anomalies of the number of cold and warm days per year averaged over Europe