

# World Canals Conference

Climate change in Central Germany –  
Recent years as an indicator for the near  
future?



# Current trends of climate change

## Air temperature 1881 to 2100, Saxony

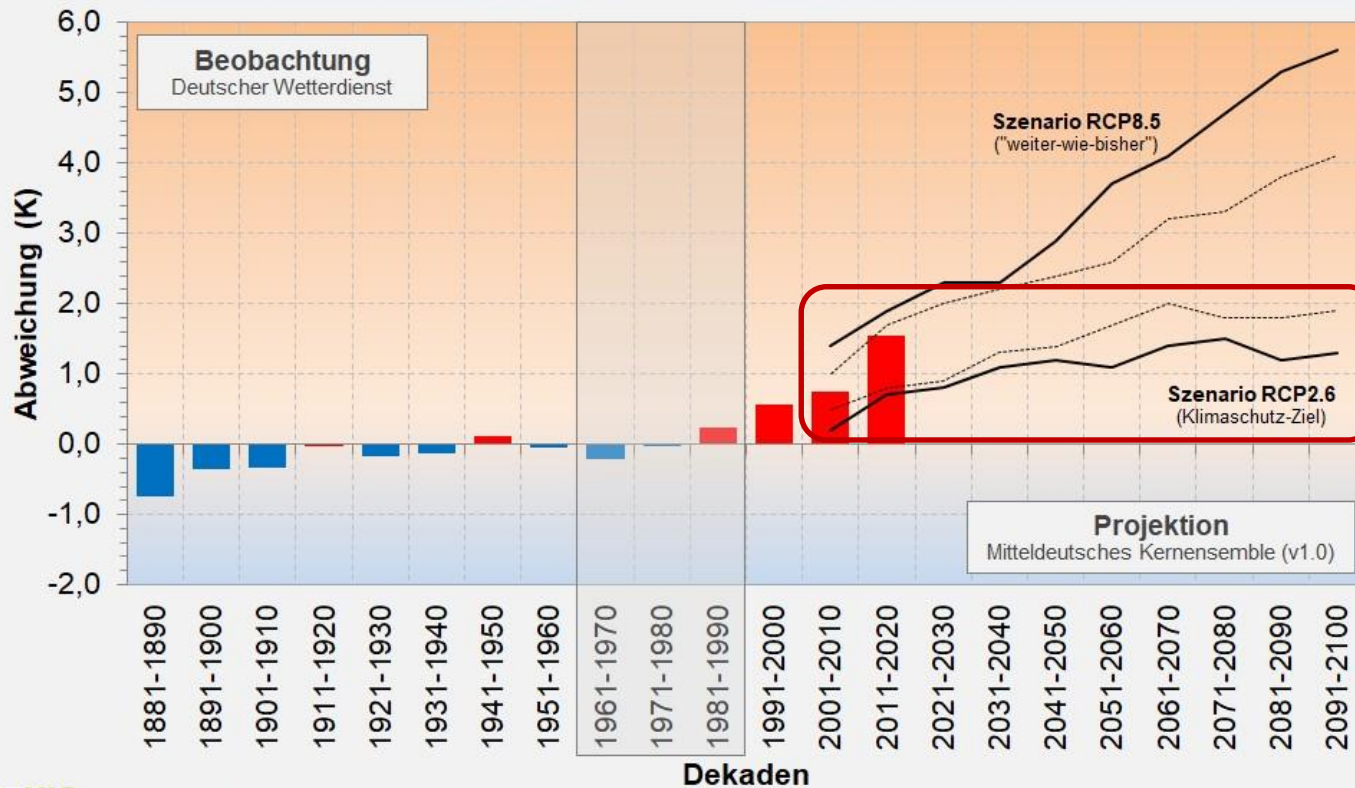
Mitteldeutsches  
Kernensemble  
(MDK, 2020)



**ReKIS**

Regionales Klimainformationsystem  
für Sachsen, Südniederrhein und Thüringen

**Lufttemperatur in Sachsen 1881-2100: Jahr**  
Abweichung (K) gegenüber 1961-1990



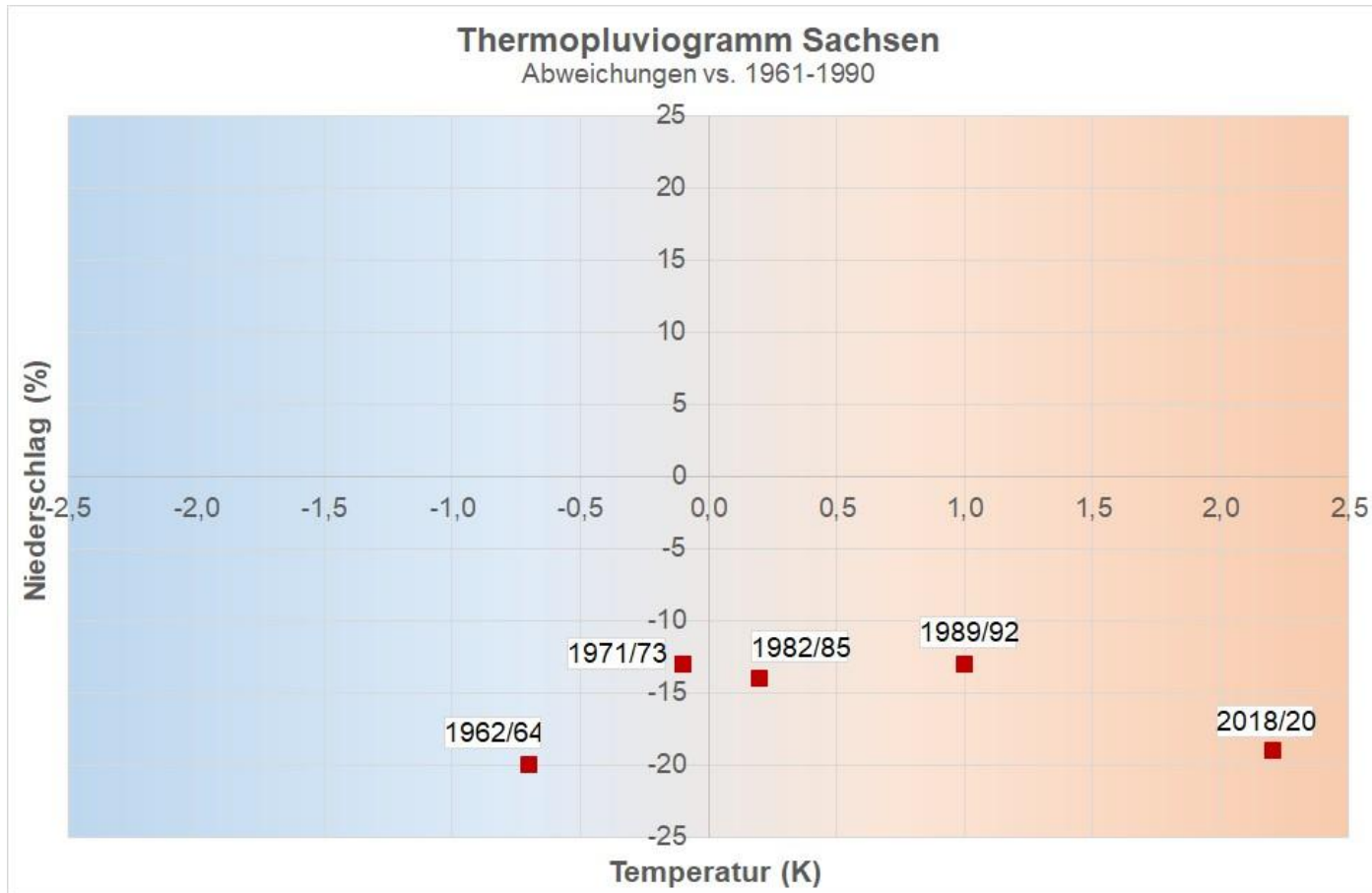
**continuously  
warming**

- mitigation goal
- projection vs. observation

precipitation deficit at higher temperature!

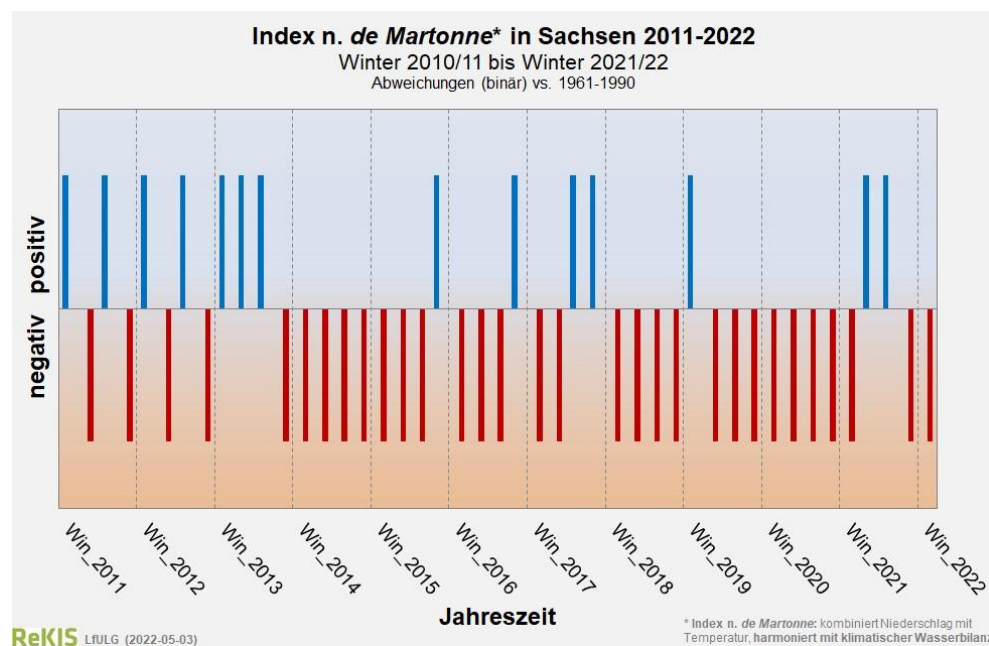
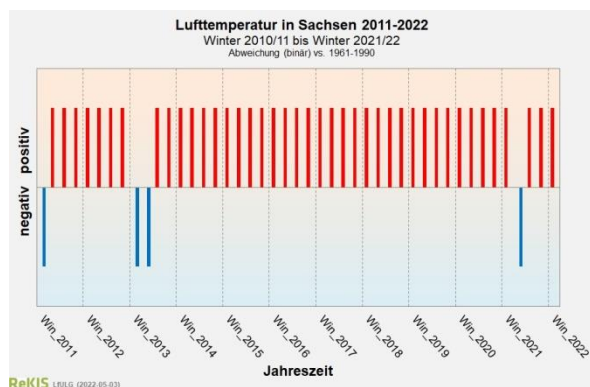
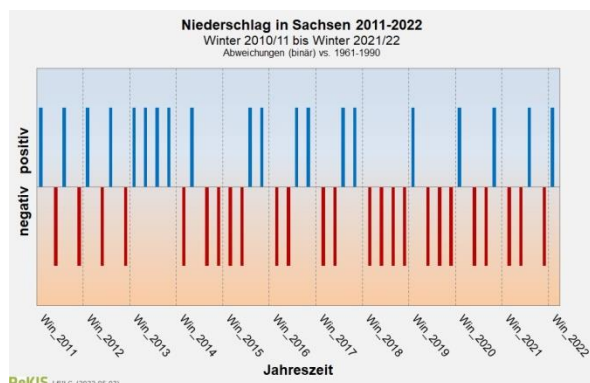
# Current trends of climate change

## Changes of temperature/precipitation (Saxony)



# simultaneously & continuously onset of meteorological extremes!

## Current trends of climate change Chronology of seasons since 2011 (Saxony)

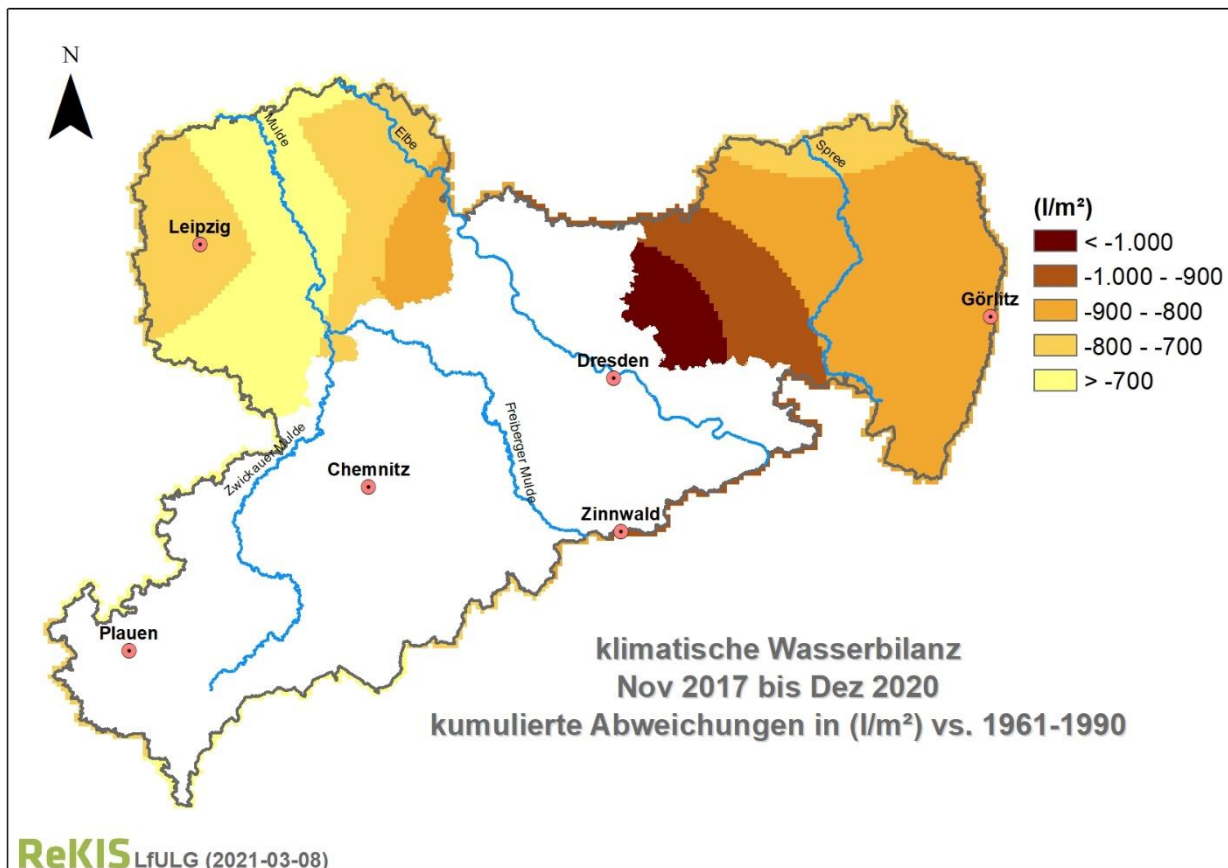


vapour saturation deficit



# Effect of precipitation deficit increased by effects of evapotranspiration

## Current trends of climate change 2018-2020: potentially available water resources



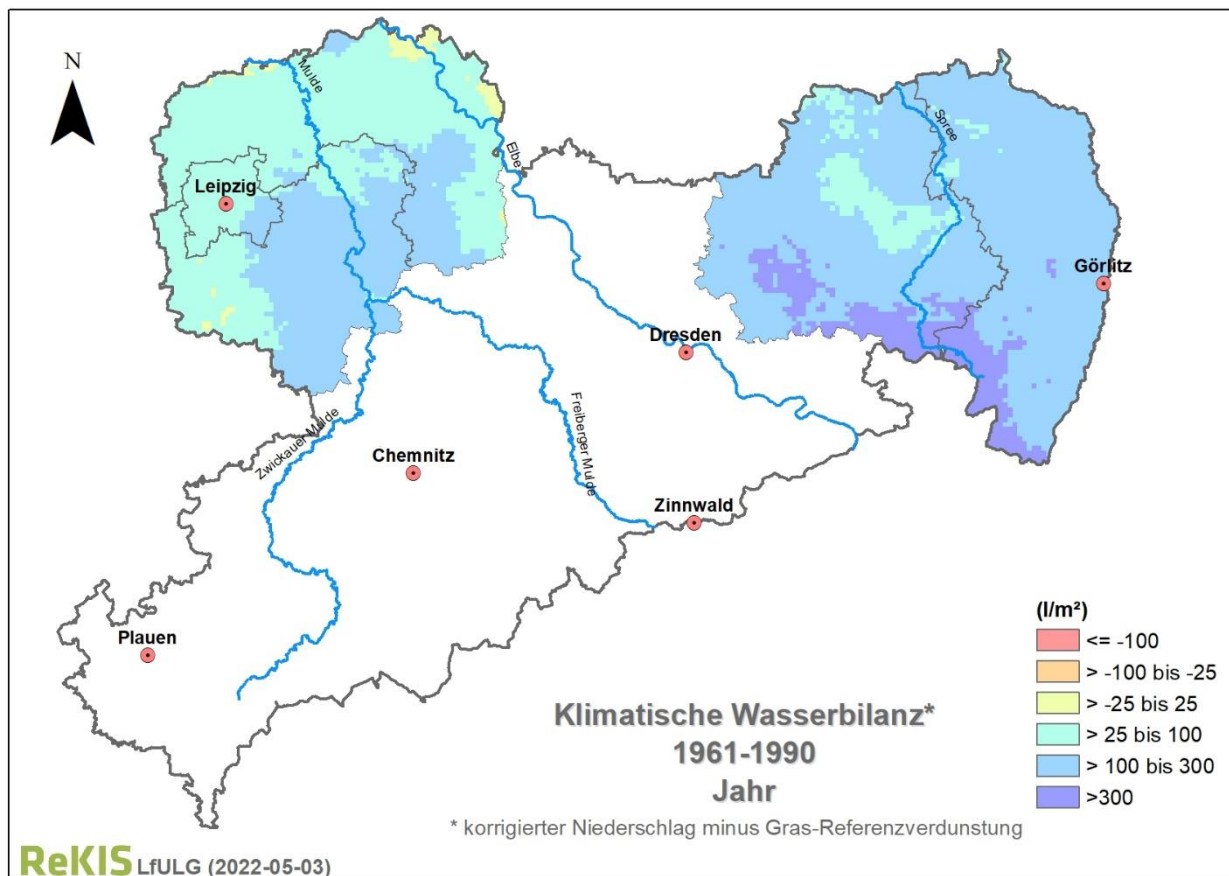
# Current trends of climate change

## Potentially available water resources

### North Saxony

#### 1961-1990

PP: 646 mm  
ET<sub>p</sub>: 557 mm  
**CWB: 89 mm**



# Current trends of climate change

## Potentially available water resources

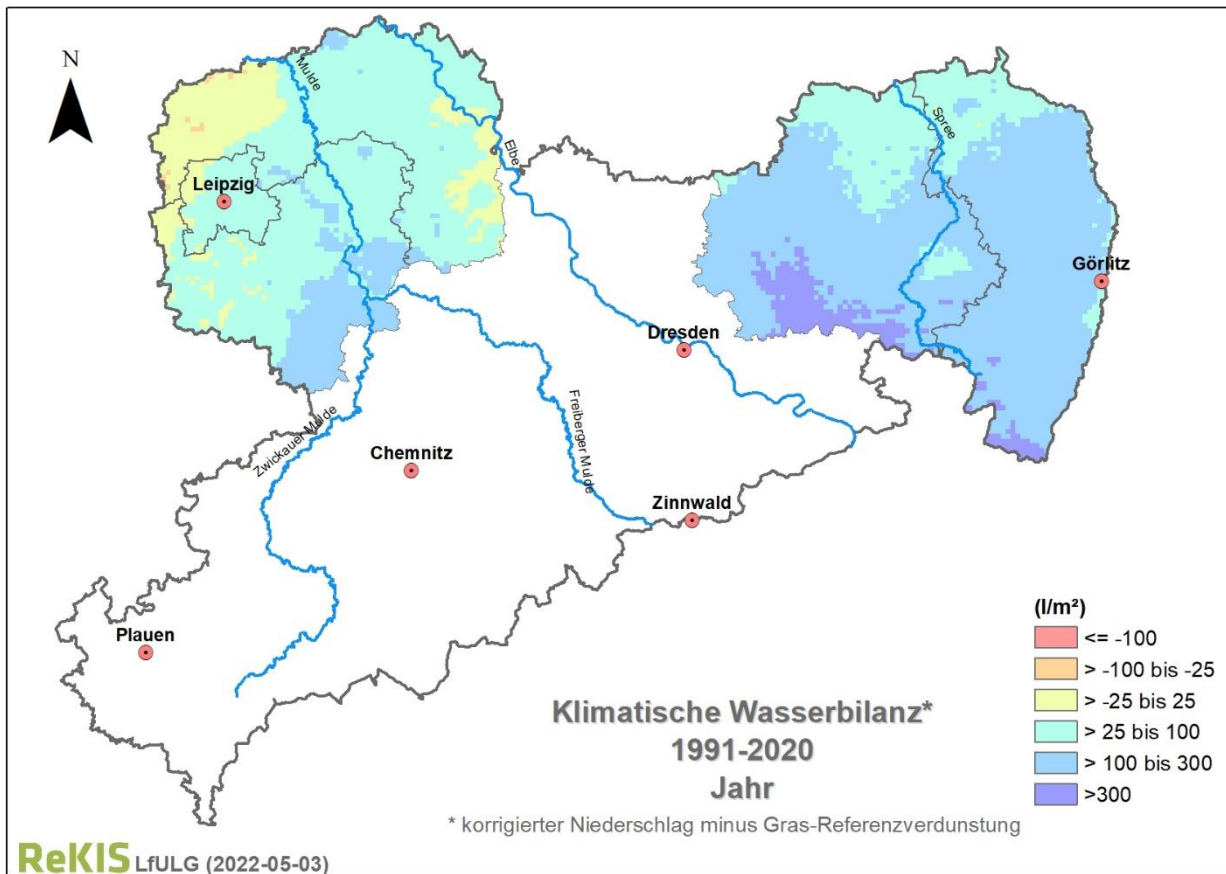
### North Saxony

#### 1961-1990

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#### 1991-2020

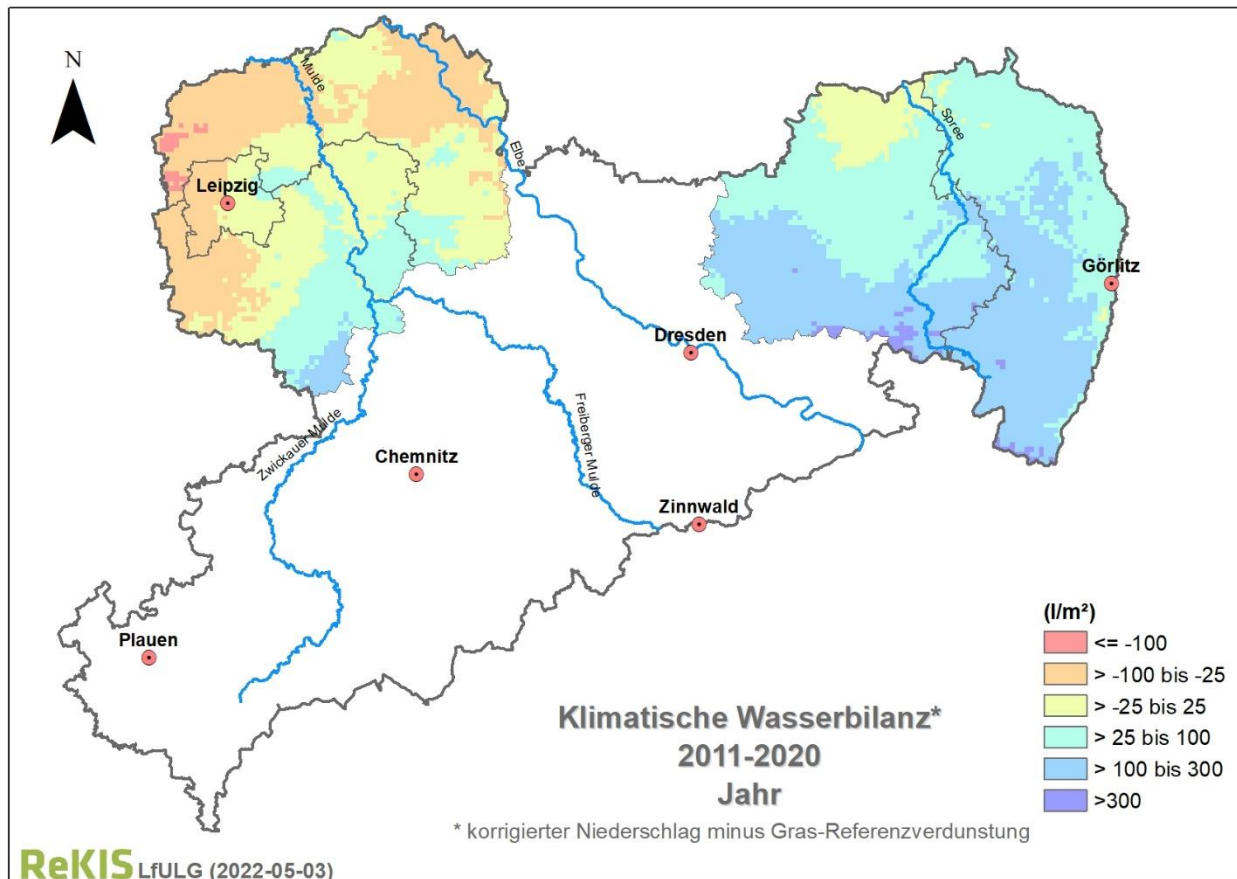
PP: 668 mm (+3%)  
ET<sub>p</sub>: 612 mm (+10%)  
**CWB: 56 mm (-37%)**



# Current trends of climate change

## Potentially available water resources

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### 1991-2020

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### 2011-2020

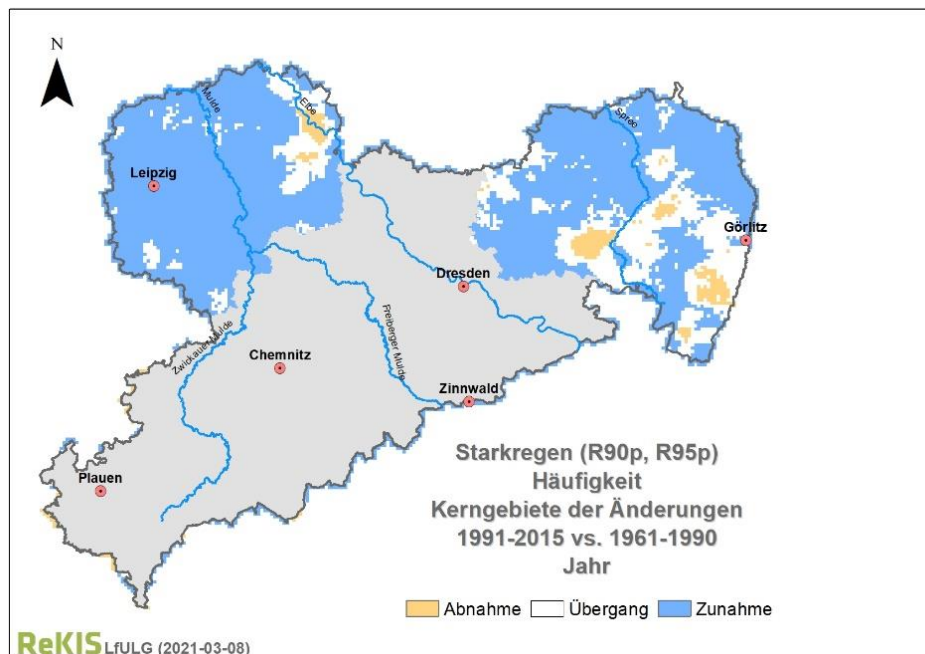
PP: 616 mm (-5%)  
ETp: 626 mm (+12%)  
**CWB: -10 mm (-111%)**



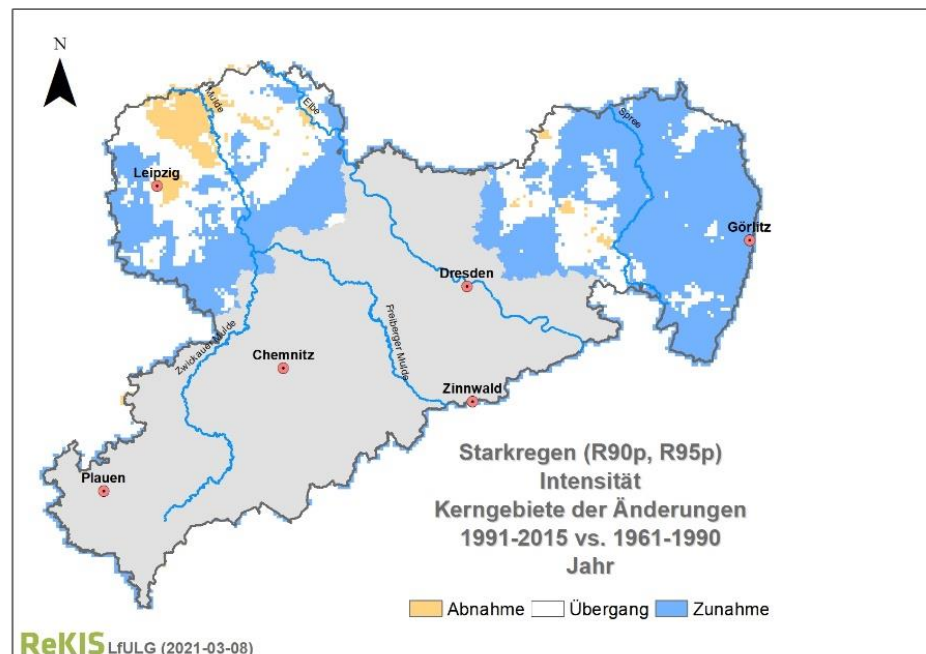
# Current trends of climate change

## Precipitation: heavy rain

I heavy rain: onset & intensity, 1991-2015 ( $\Delta$  vs. 1961/90)



onset (PP90p, PP95p)



intensity (PP90p, PP95p)



# Current trends of climate change

## Messages

- | natural variability is increasingly superimposed by a warming trend, which entails complex effects
- | increased risk in the occurrence of weather-related extremes, including their simultaneous and /or prolonged occurrence
- | the changes in the temperature and precipitation regime increasingly favor the build-up or the manifestation of drought
  - longer-term precipitation deficits and short-term surpluses occur simultaneously;
  - high temperatures increase the effect of a precipitation deficit, as a result of evaporation;
  - the measured temperature development is progressing faster compared to the projected one

# Current trends of climate change

## Challenges

### I Conversion of the potential into usable water supply ...

- water management
  - land management (use, management) for water retention in the landscape water balance
- supra-regional cooperation
  - provision of the joint climate data (incl. Guidelines for the use of data)
  - technical support/ advice

# Thank you for your kind attention!

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## ReKIS

Regionales Klimainformationssystem  
für Sachsen, Sachsen-Anhalt und Thüringen

ÜBER UNS VERANSTALTUNGEN AKTUELLES KONTAKT

DARSTELLUNGSOPTIONEN



ReKIS WISSEN

ReKIS KOMMUNAL

ReKIS EXPERT

## ReKIS KOMMUNAL

Ein zentraler Auftrag von ReKIS besteht in der Unterstützung der Menschen vor Ort bei der Bewältigung der Herausforderungen des Klimawandels.

JETZT ANZEIGEN

[www.rekis.org](http://www.rekis.org)

Herausforderung Klimawandel in Sachsen