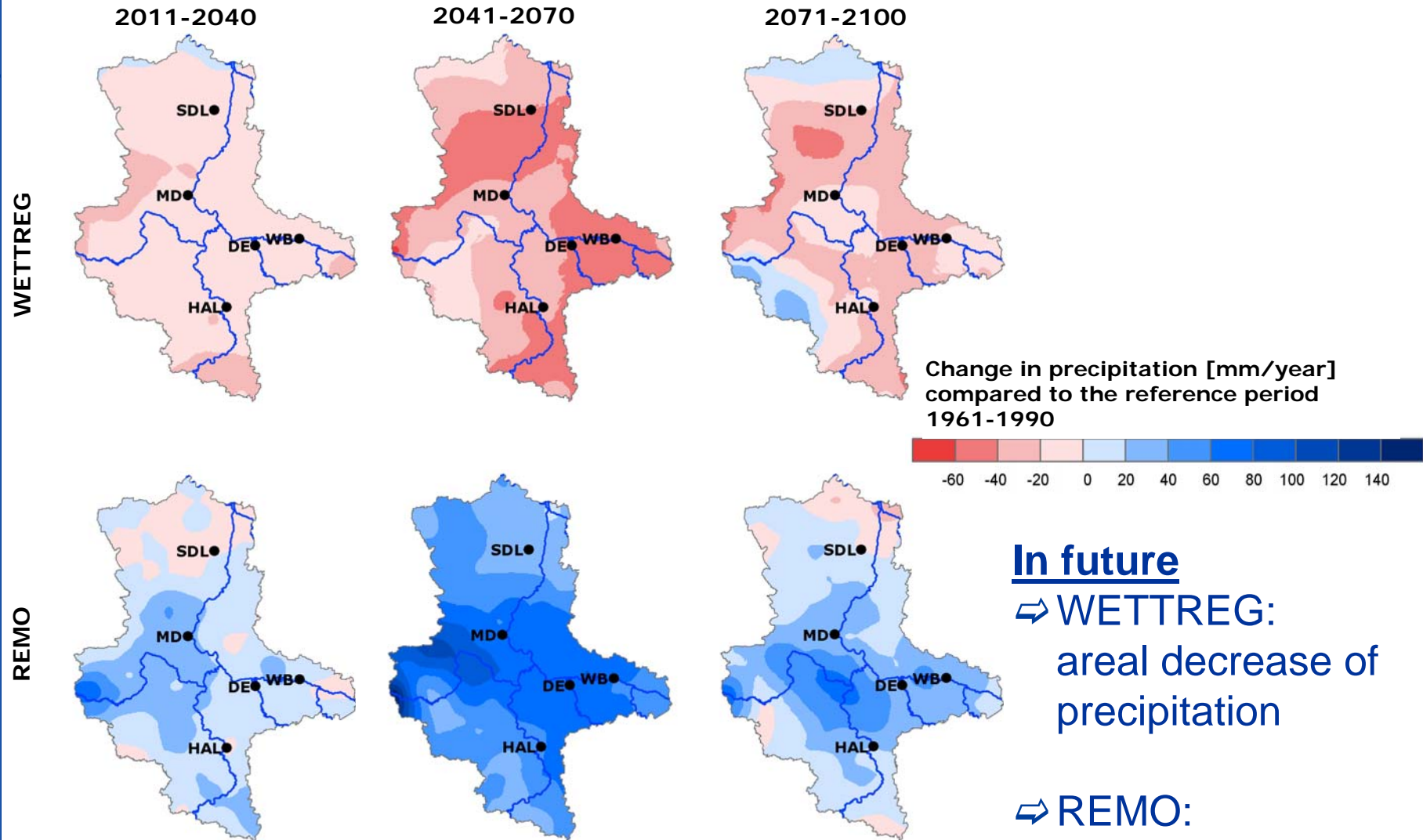


Change in precipitation

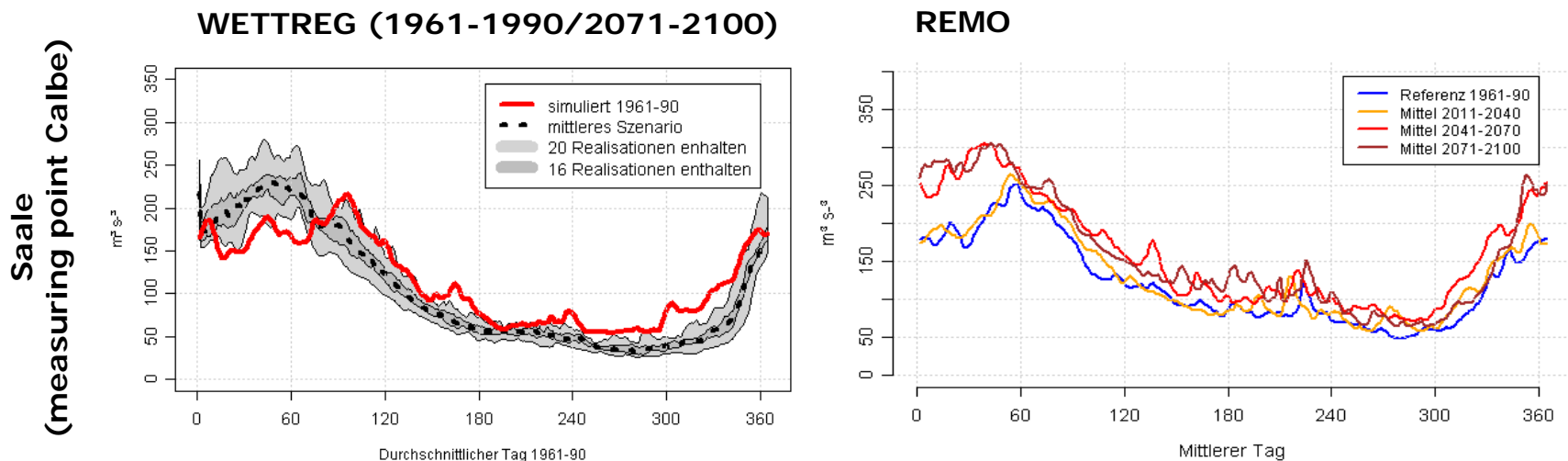


In future

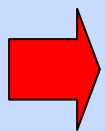
⇒ WETTREG:
areal decrease of
precipitation

⇒ REMO:
Increase of annual
precipitation

Development of run-off of rivers (Szenario A1B)

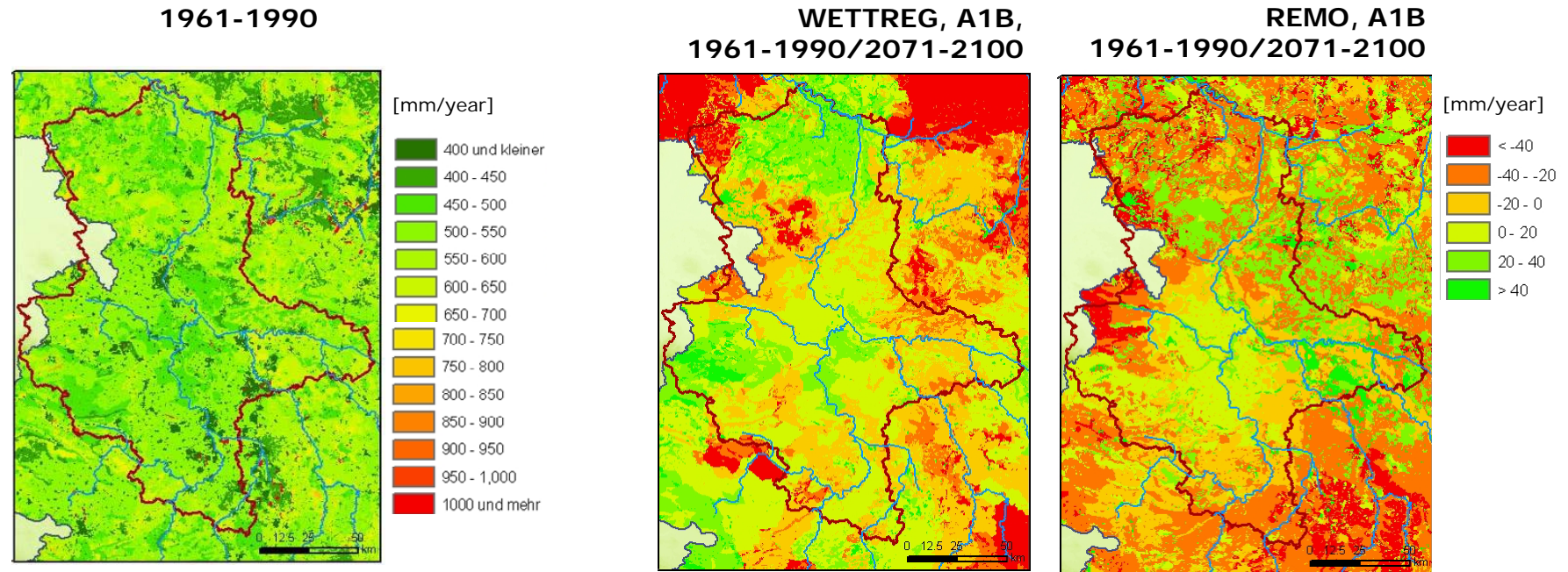


- ⇒ Shift of the mean peak flow in early spring
- ⇒ The decrease in summer flows (WETTREG, in REMO increase) could lead to an increase in water shortages in summer
- ⇒ Partly all the realizations of the model WETTREG are below the mean simulated runoff in the years 1961-1990



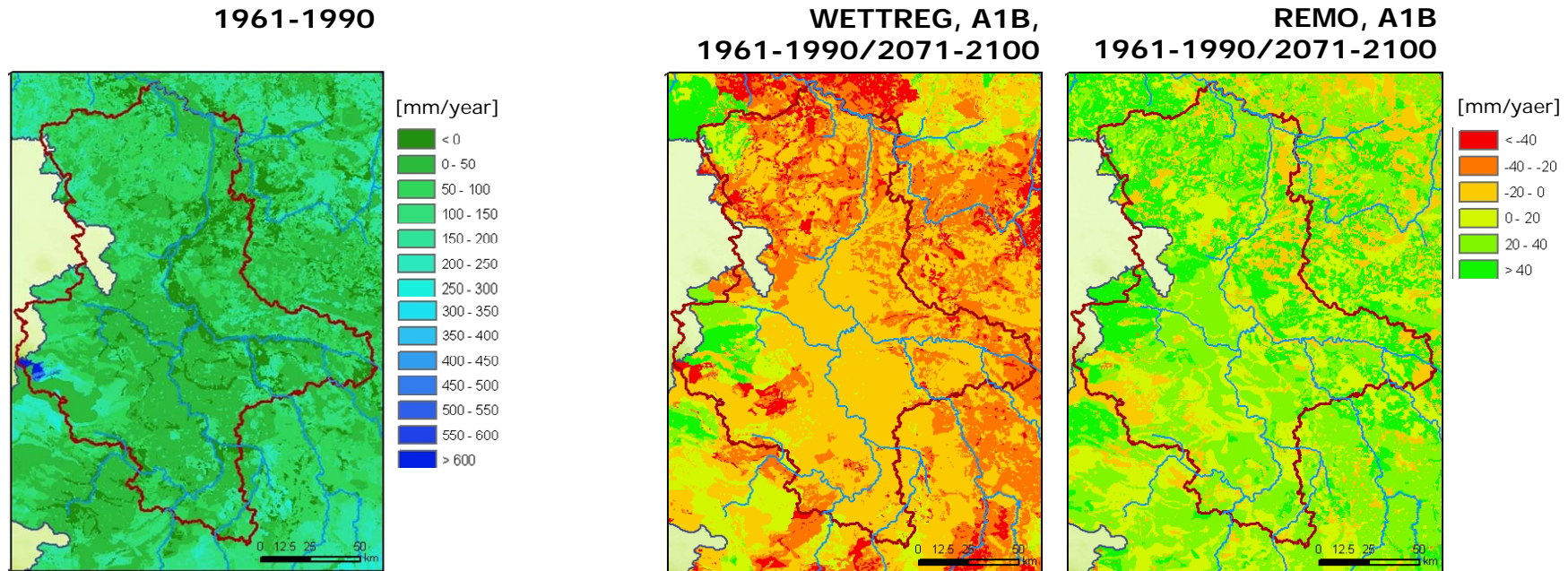
The WETTREG results are supported by the previously observed trends and the results of the scenarios GLOWA-Elbe project, the results of model REMO not.

Change in real evaporation



- ⇒ WETTREG: negative changes predominate, for example, in the east and northwest of the Altmark; in the north and highlands increases are recorded
- ⇒ REMO: Decrease in evaporation, except landscapes on the southern edge of the lowland
- ⇒ the decreasing trends cause drought stress for vegetation
→ can lead to yield losses in agriculture and forestry

Changes in groundwater recharge



- ⇒ WETTREG: state wide declines in ground water recharge in Sachsen-Anhalt, except in the high altitudes of the Harz
- ⇒ REMO: state wide increase in groundwater recharge
- ⇒ The groundwater recharge is particularly sensitive to changes in precipitation and evaporation → increase only in areas of more precipitation, e.g. in the area of the Harz (model WETTREG)

Key Points of the analysis



Currently being monitored:

- a shift of the peak flow in early spring
- a decrease of runoff in summer



Future development:

- ⇒ The trend is likely to continue (decrease in summer runoff, especially in the Elbe and Saale)
- ⇒ Despite an increase in winter precipitation groundwater recharge could decrease due to increased evaporation
- ⇒ The warming of water bodies and the decline in summer runoff could complicate compliance with environmental parameters and the availability of cooling water
- ⇒ The development of floods is uncertain, small and medium floods would tend to occur more frequently