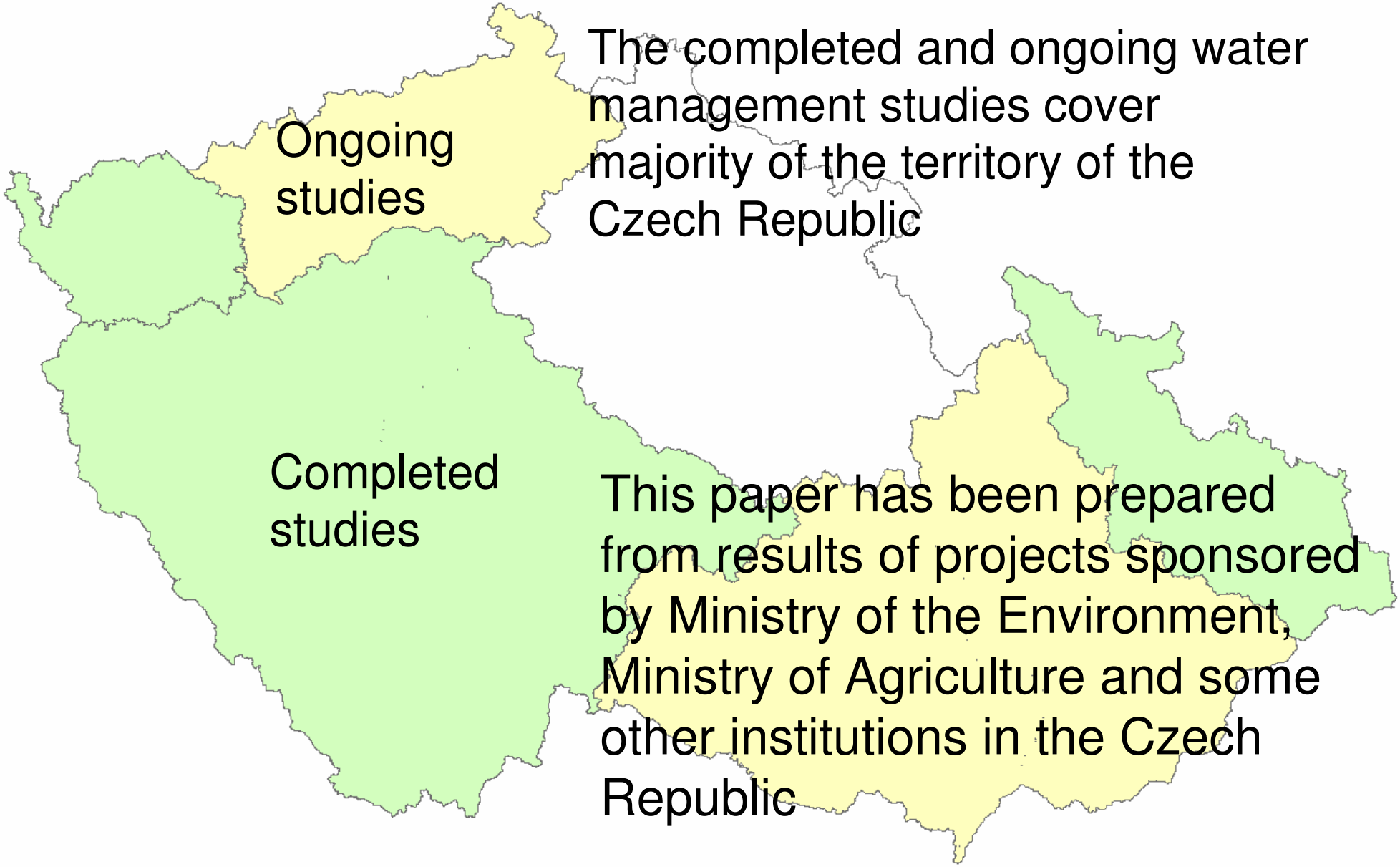
T. G. Masaryk Water Research Institute
Public Research Institution

Assessment of possible impacts of climate change on water resources in the Vltava River basin



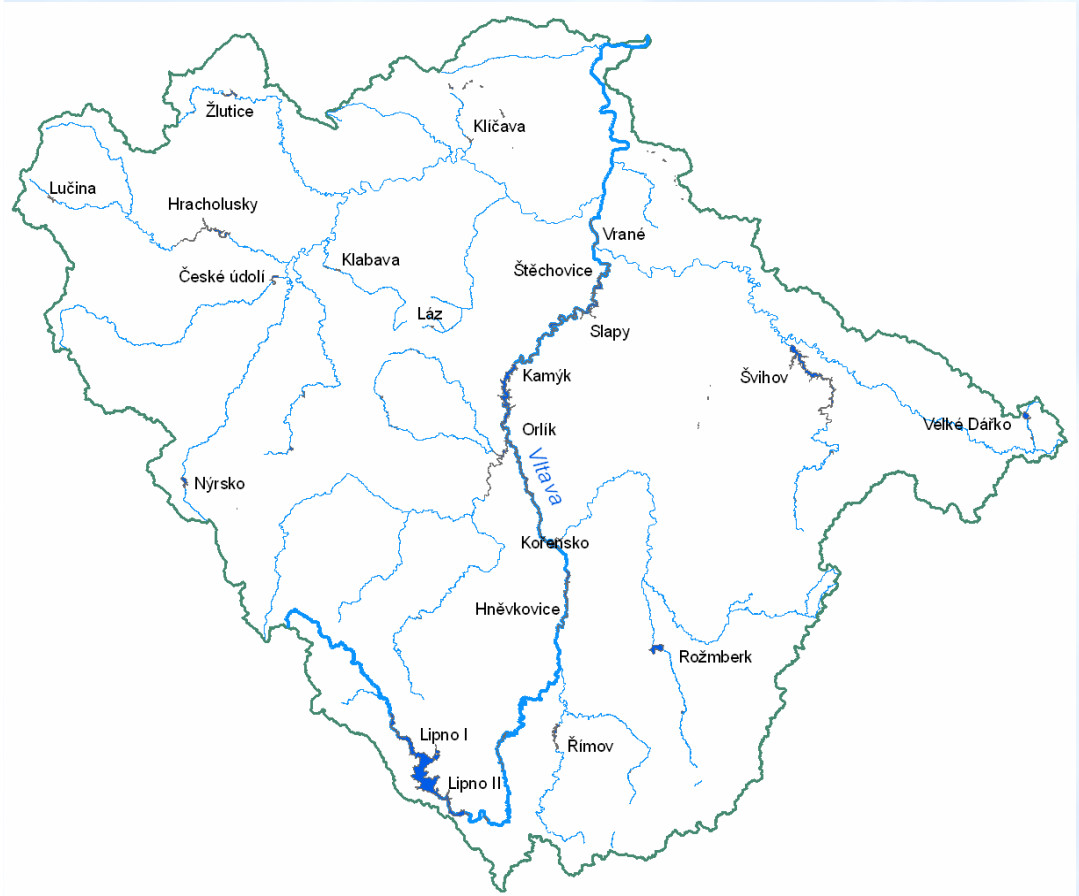
Oldřich Novický
Petr Vyskoč
Renata Fridrichová
Ladislav Kašpárek
Pavel Treml

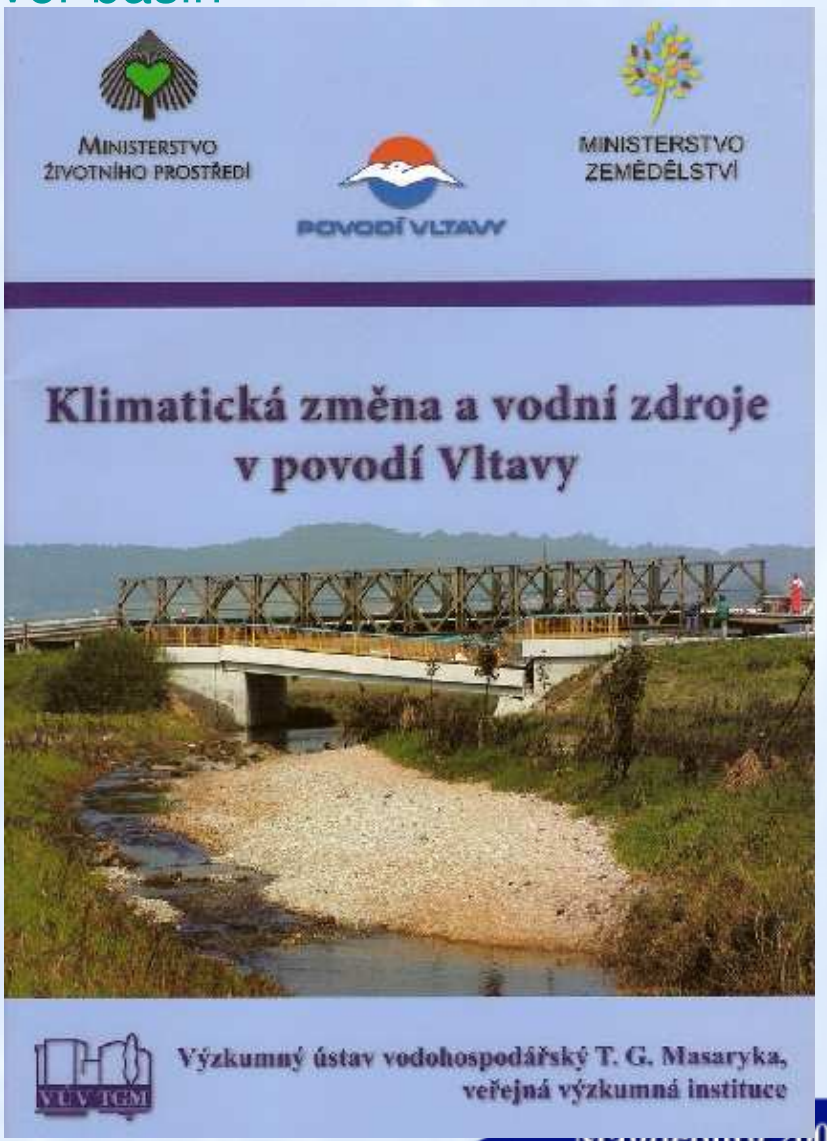


The completed and ongoing water management studies cover majority of the territory of the Czech Republic

This paper has been prepared from results of projects sponsored by Ministry of the Environment, Ministry of Agriculture and some other institutions in the Czech Republic

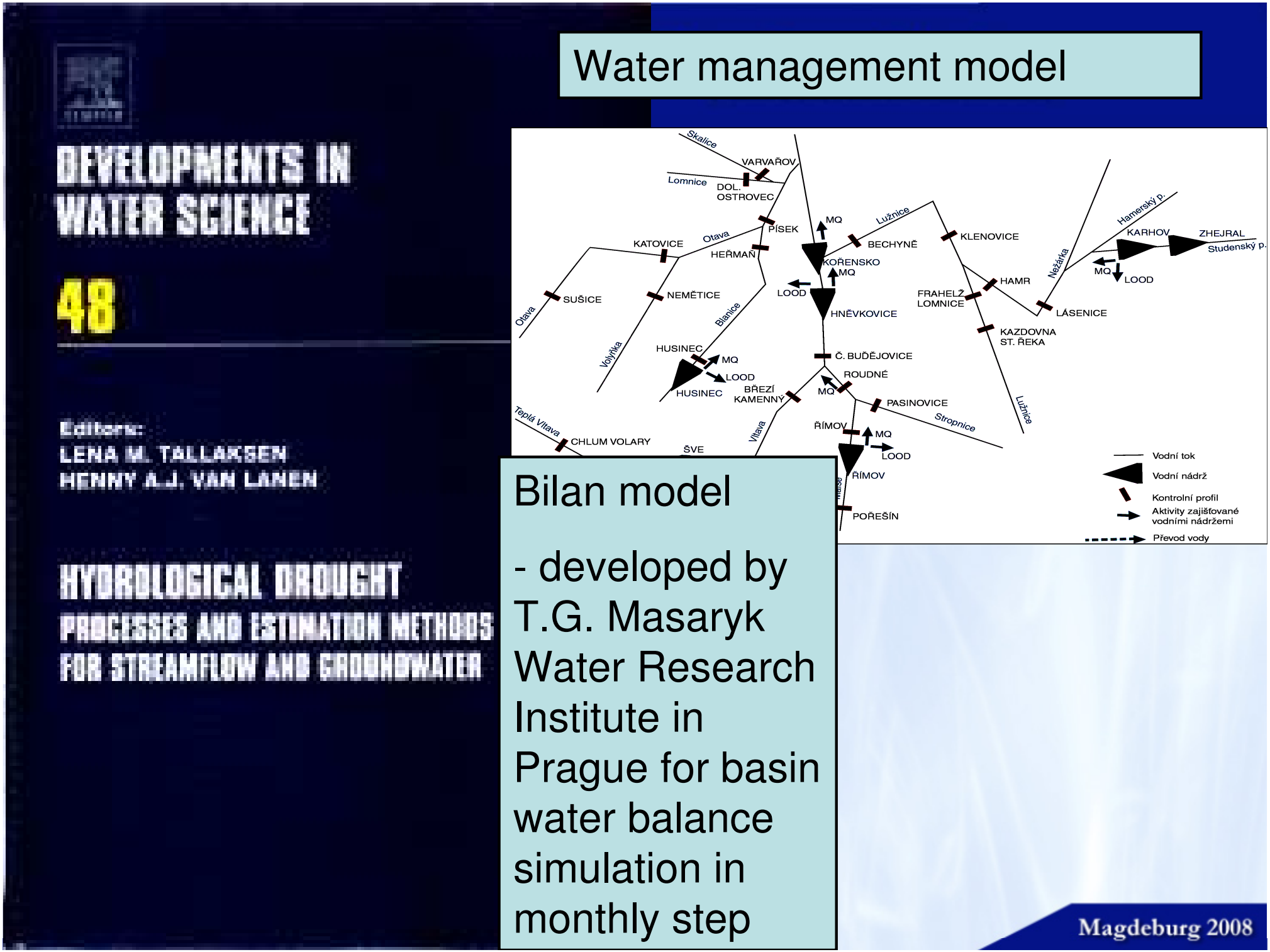
Impacts of climate change in the Vltava River basin





Oldřich Novický a kol.:
Klimatická změna a vodní zdroje v povodí Vltavy http://heis.vuv.cz/projekty

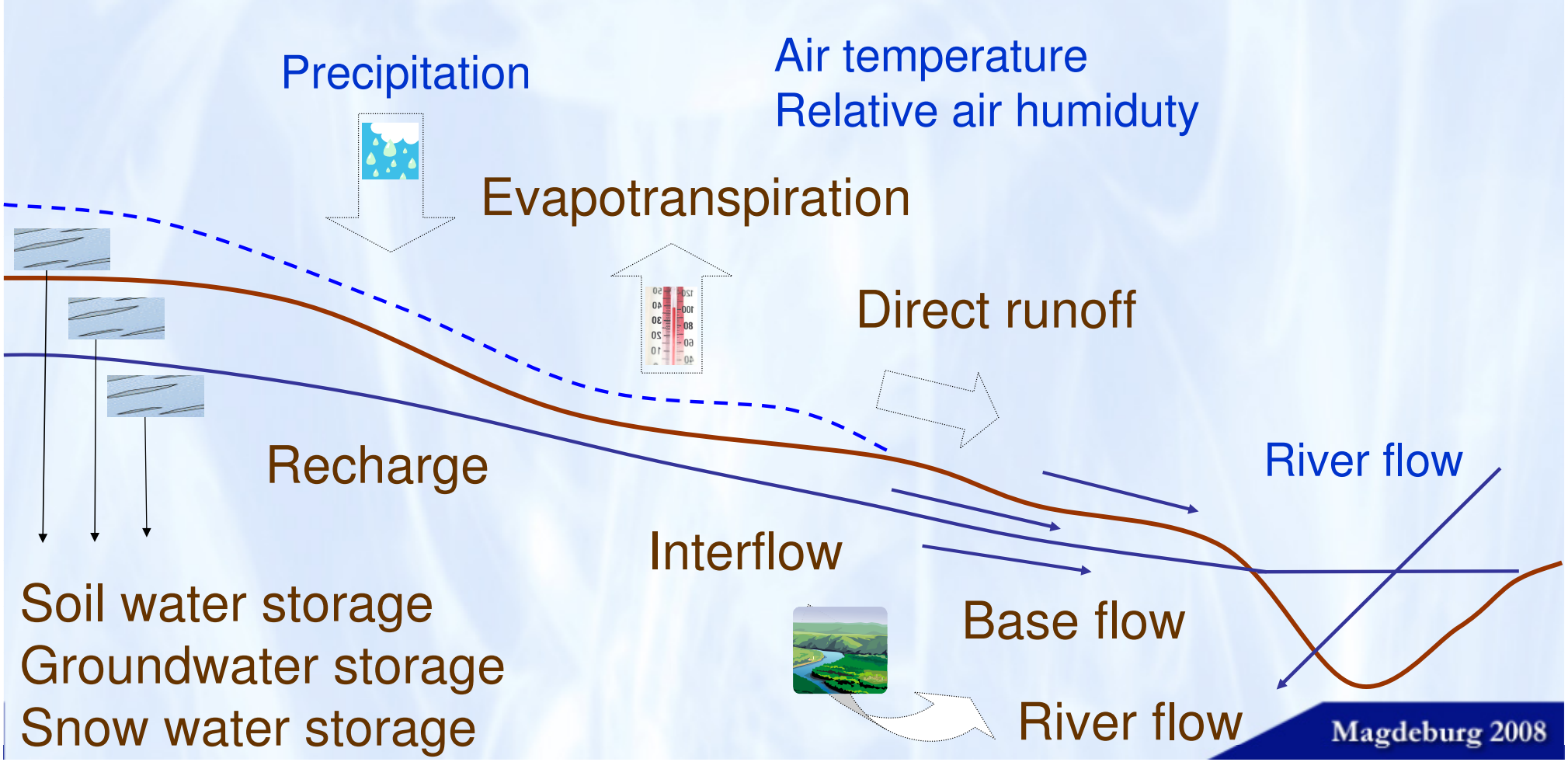
Water management model



Bilan model

- developed by T.G. Masaryk Water Research Institute in Prague for basin water balance simulation in monthly step

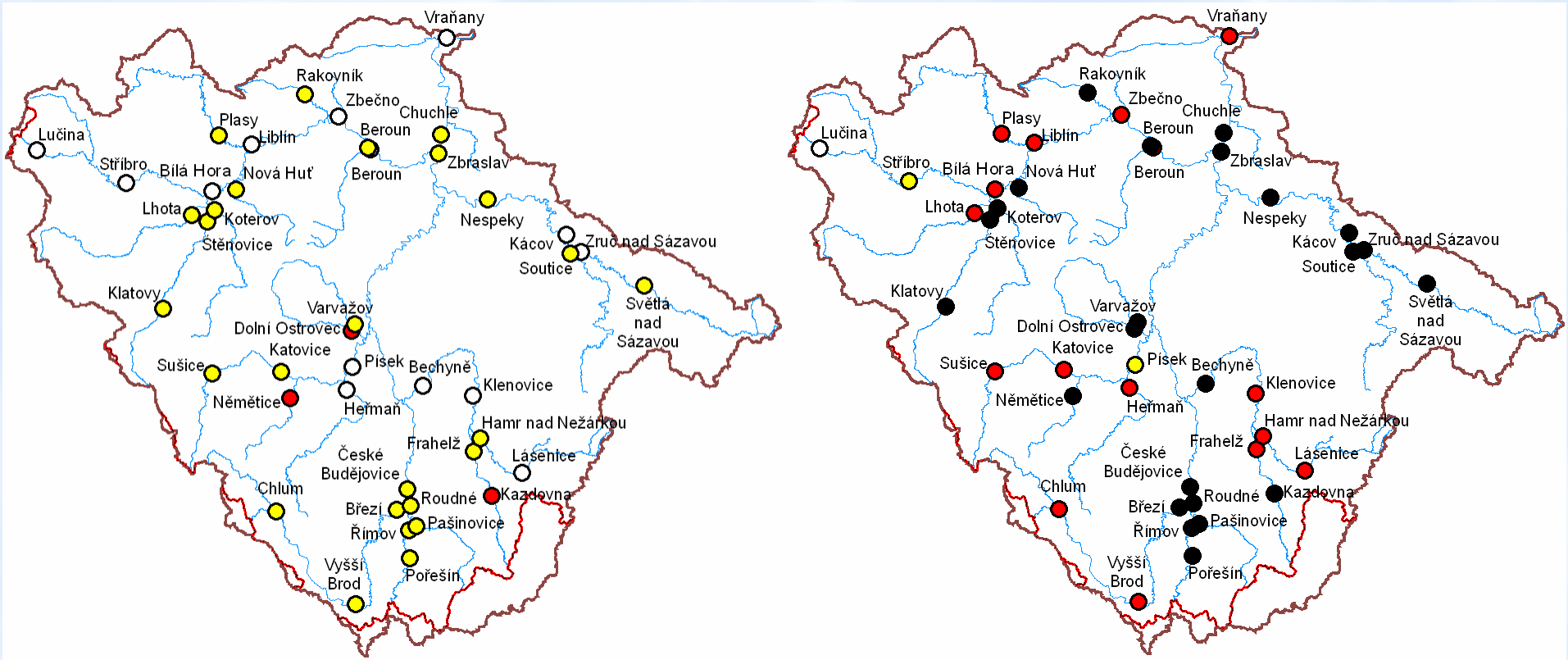
Model Bilan


Precipitation
Air temperature
Relative air humiduty
Evapotranspiration
Direct runoff
Recharge
River flow
Interflow
Base flow
Soil water storage
Groundwater storage
Snow water storage
River flow

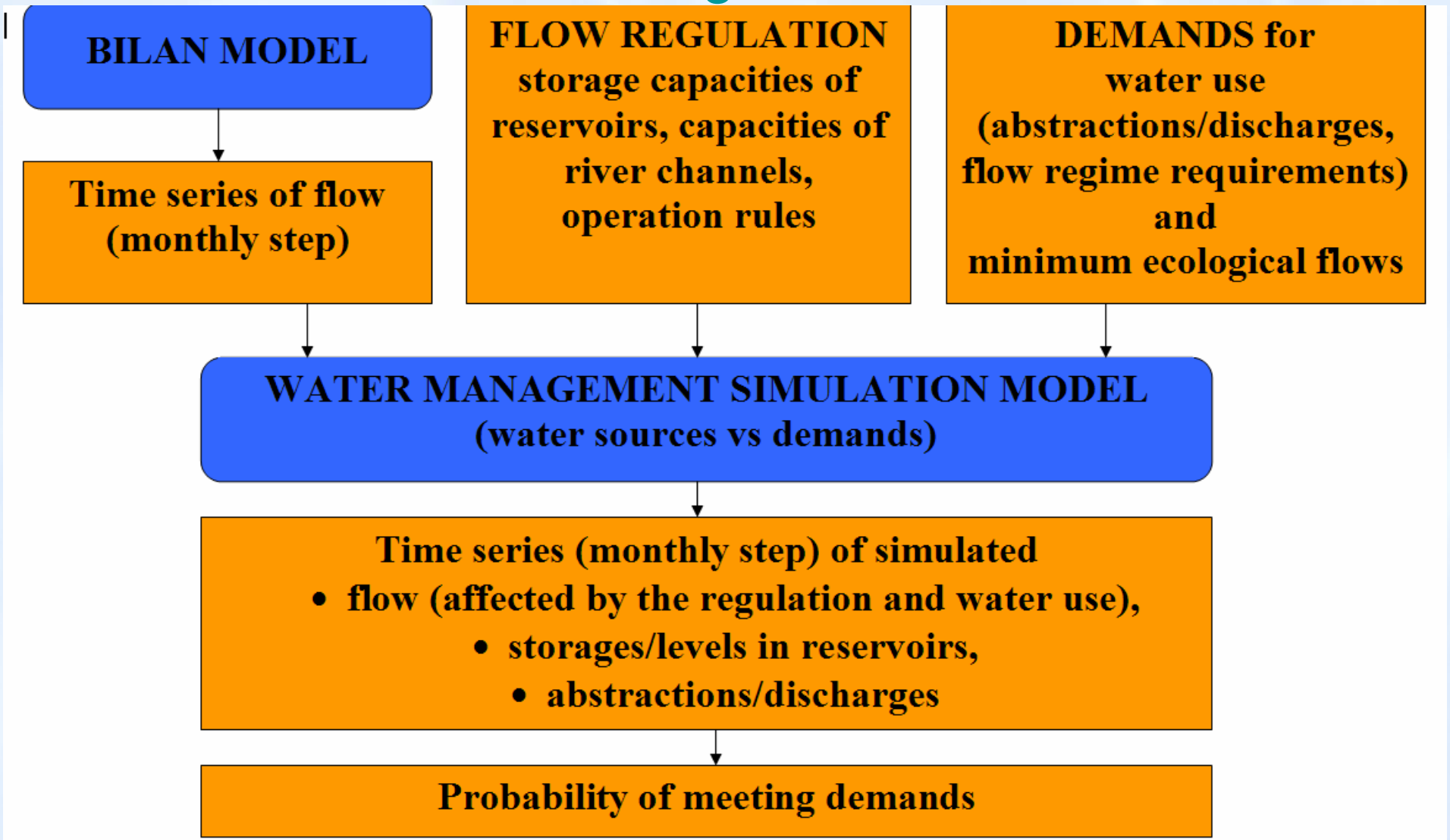
Decrease in mean river flow at water gauging station

RCAO B2

HIRHAM A2



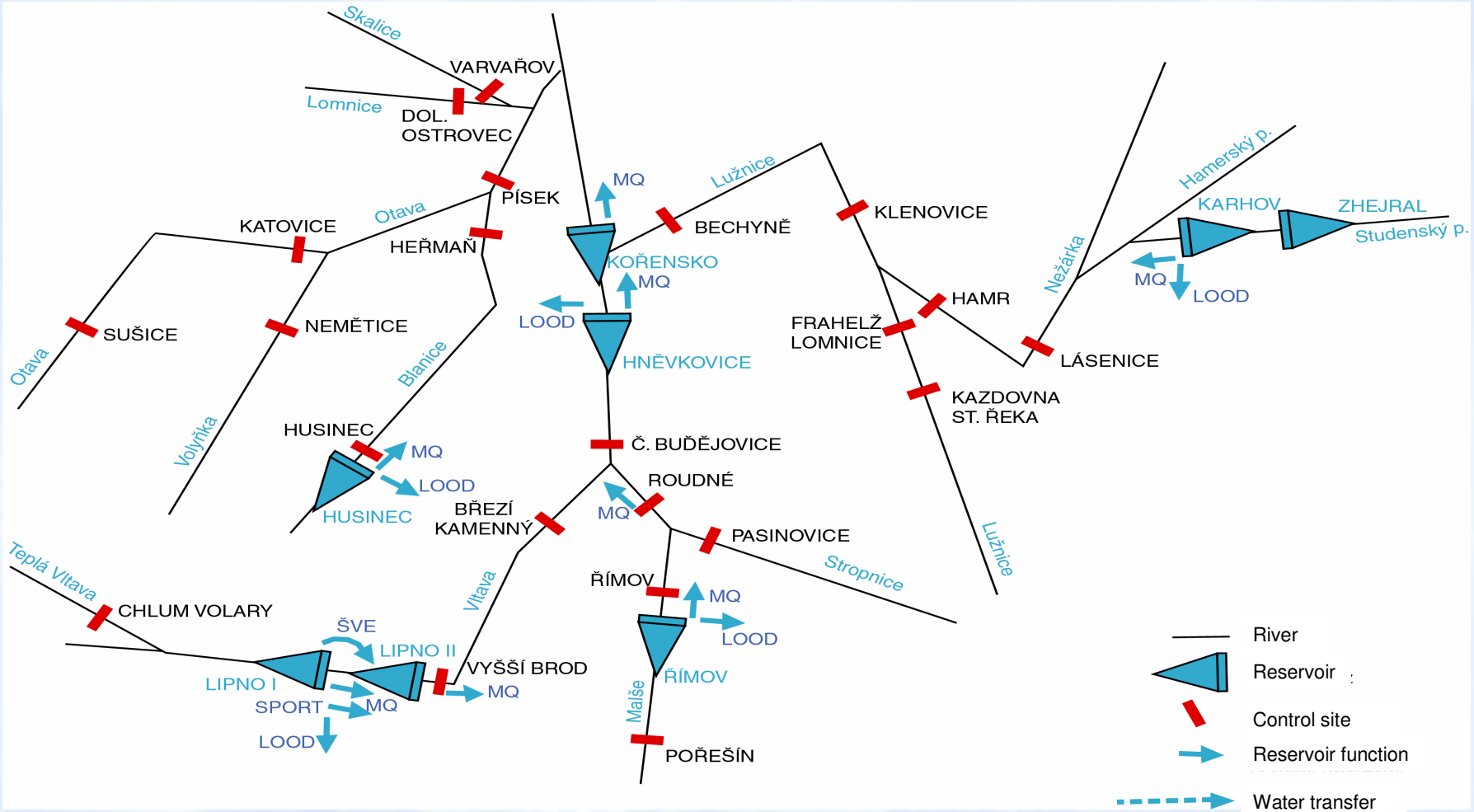
Water Management Model



Meeting of the demands: categories

	Category
	Meet the demands (100%)
	Meet the reliability requirements (99,5-95% depending on water use)
	Do not meet the reliability requirements

Water management: Upper Moldau



Availability of water resources to meet the water demands (86 sites calculated)

CURRENT CONDITIONS

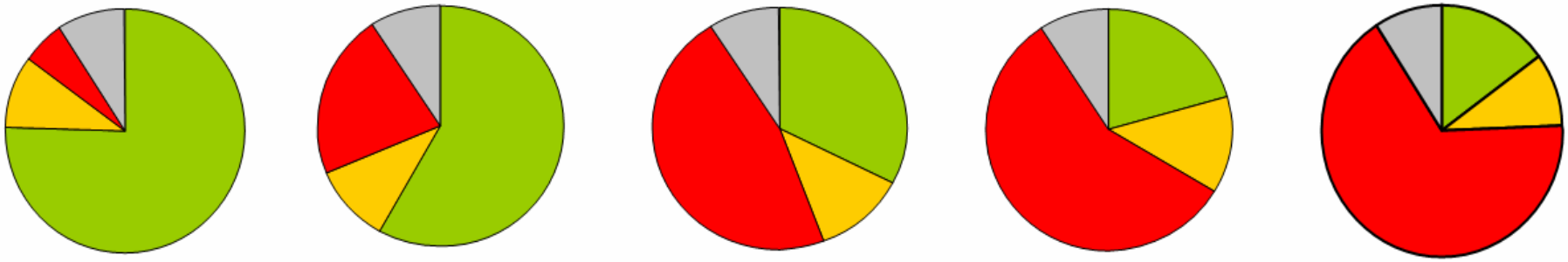
CLIMATE CHANGE CONDITIONS (4 VARIANTS)

RCAO-B2

RCAO-A2

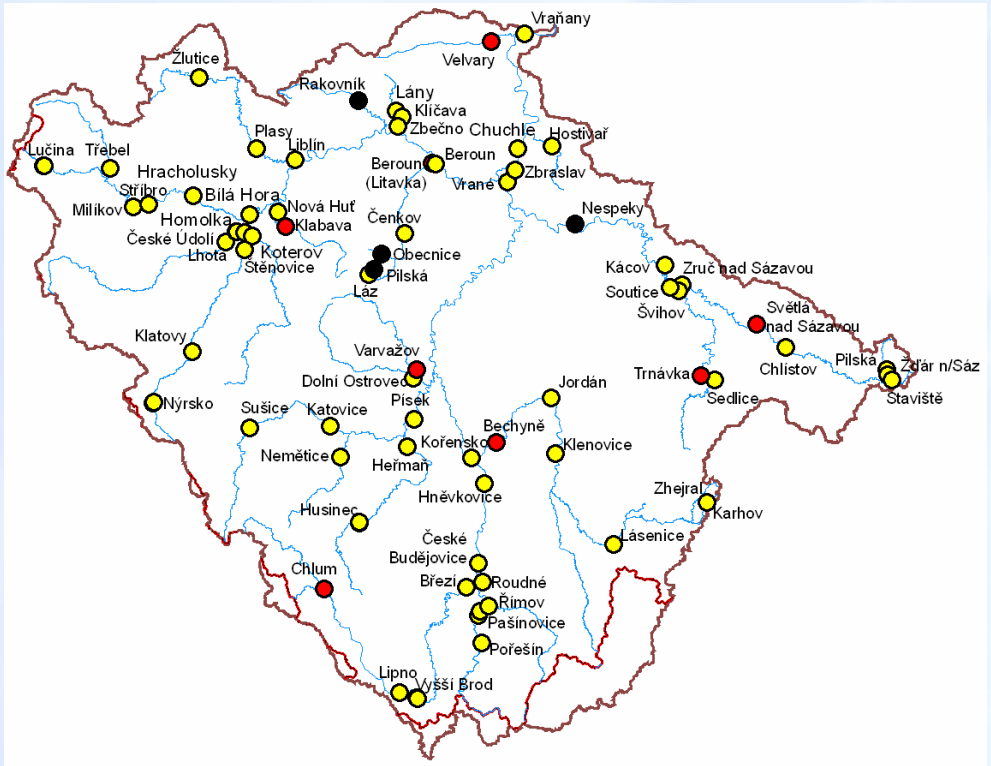
HIRHAM-B2

HIRHAM-A2

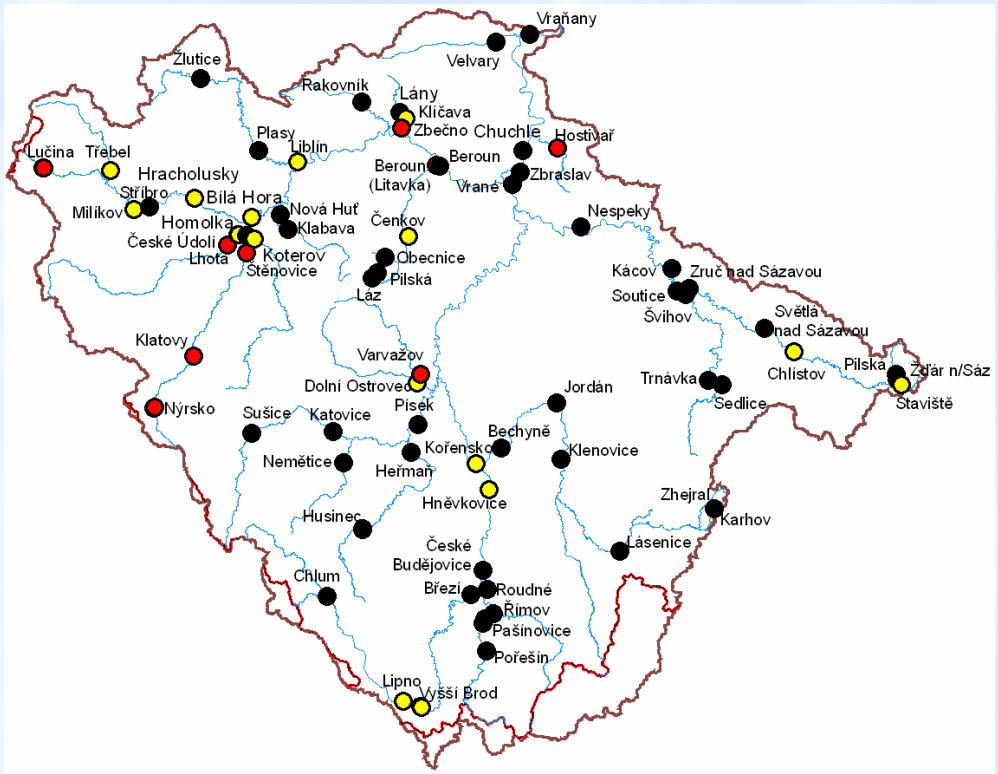


	Meet the demands (100%)
	Meet the reliability requirements (99,5-95% depending on water use)
	Do not meet the reliability requirements
	Data not available

Availability of water resources to meet the water demands



Current conditions



HIRHAM A2

Legend

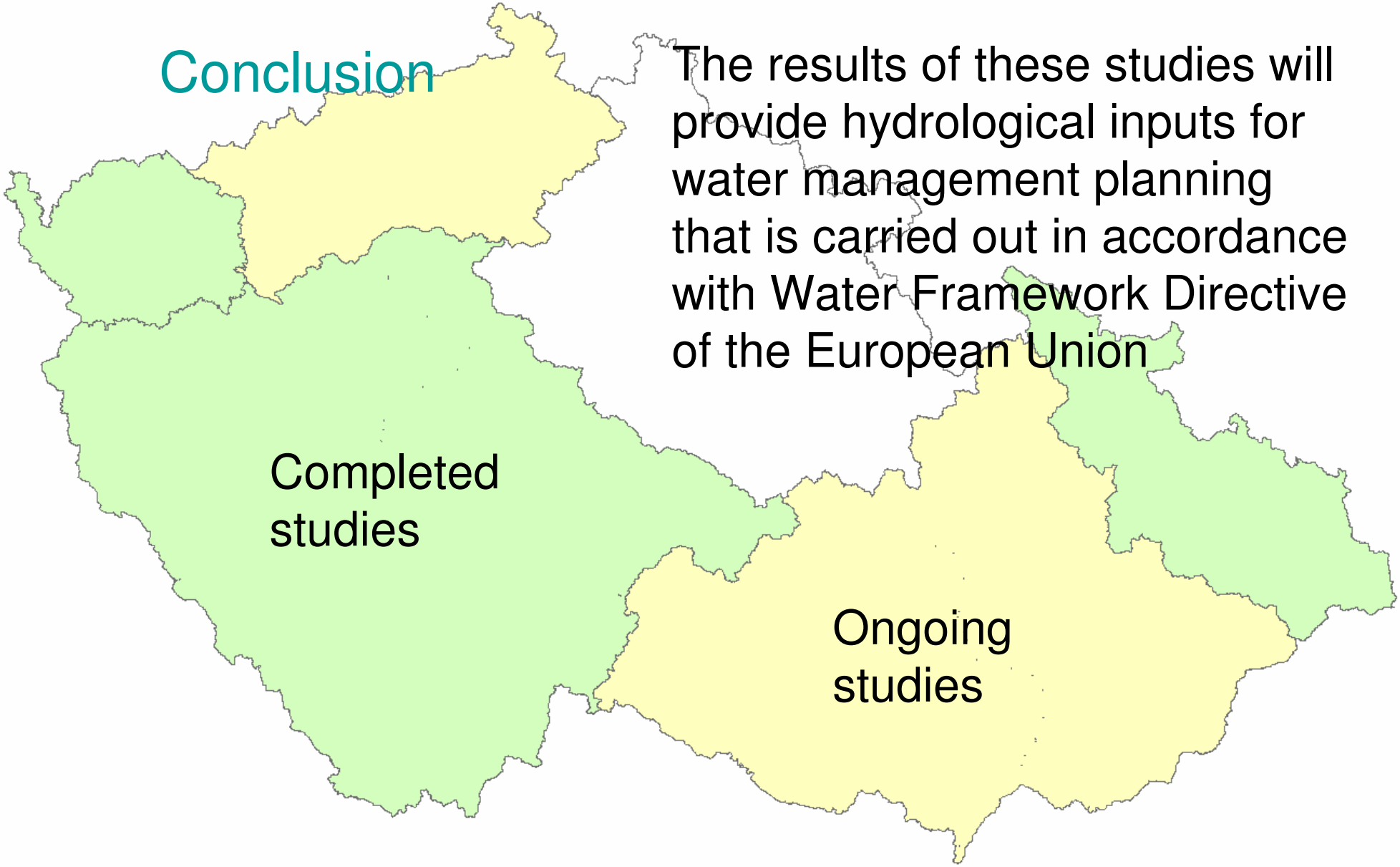
- River
- Boundary of the Vltava River basin
- Boundary of the Czech Republic

Water resources

- Meet the demands
- Meet the reliability requirements
- Do not meet the reliability requirements

Conclusion

The results of these studies will provide hydrological inputs for water management planning that is carried out in accordance with Water Framework Directive of the European Union



Thank you for your attention