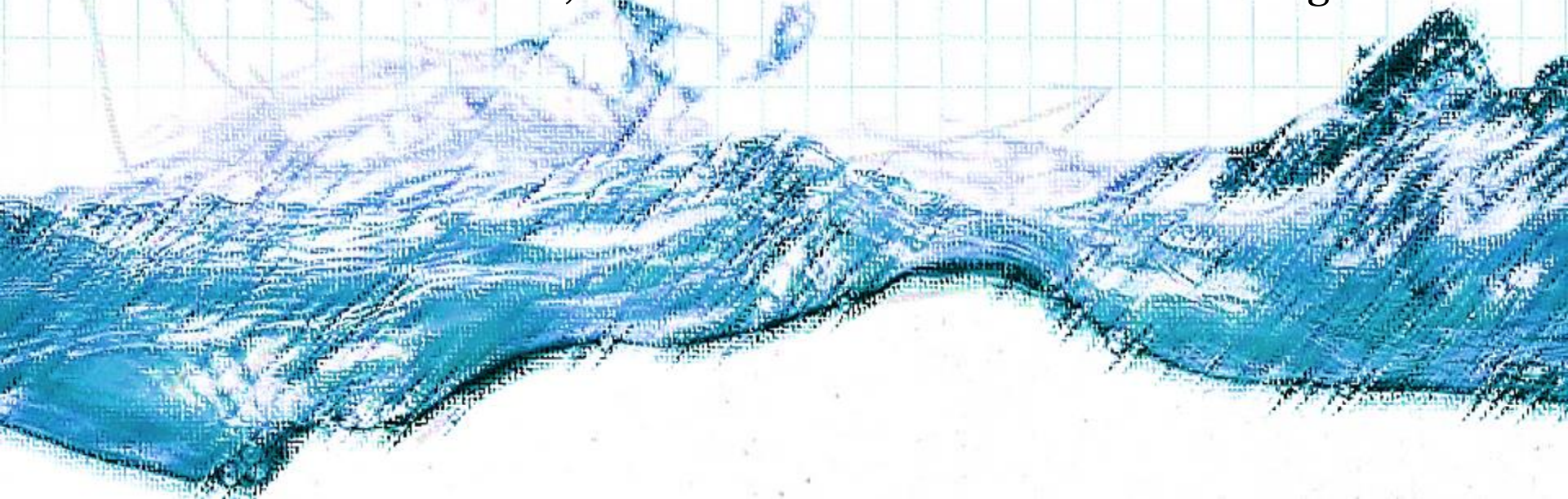


CLIMATE CHANGE IMPACT ON HYDROLOGICAL EXTREMES

Analysis of low flow uncertainties under varying climatic conditions

Marzena Osuch, Renata Romanowicz and Wai K. Wong

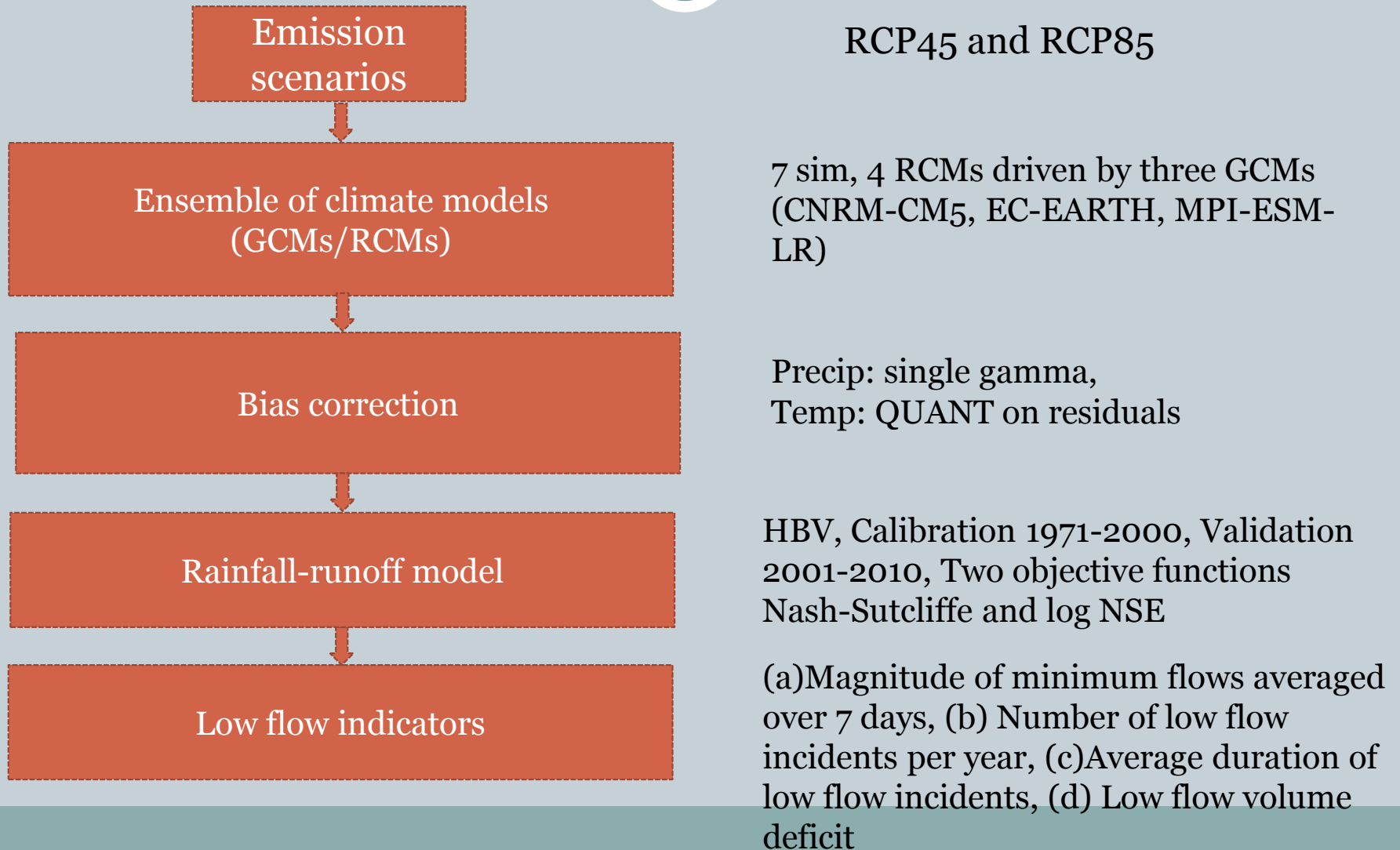


Supported by a grant from the Norwegian Financial Mechanism

- The estimation of projected changes of low flow indices and their uncertainty in selected catchments in Poland
- Quantification of the contribution of the emission scenarios, climate models, two future periods, catchments and objective functions to the spread in the projected changes in low flow indices using ANOVA
- Analysis of influence of objective function applied for model calibration on the estimated changes in low flow indices



Study area





- Results indicate increases in AM7 and decreases of number of events, number of days under threshold, duration and volume deficit for all tested cases
- Substantial differences between catchments were found. Smaller changes are projected for mountainous catchments and larger for lowland catchments.
- Differences between two future periods (2021-2050 and 2071-2100) are statistically significant for all analysed indices
- Differences between emission scenarios (RCP45 and RCP85) are statistically significant for AM7 only
- Comparison of results obtained for two objective functions indicate that differences are statistically significant for AM7, number of low flow events and duration of low flow events.