Changes in the hydrological regime along the Vistula River course HUMDROUGHT project

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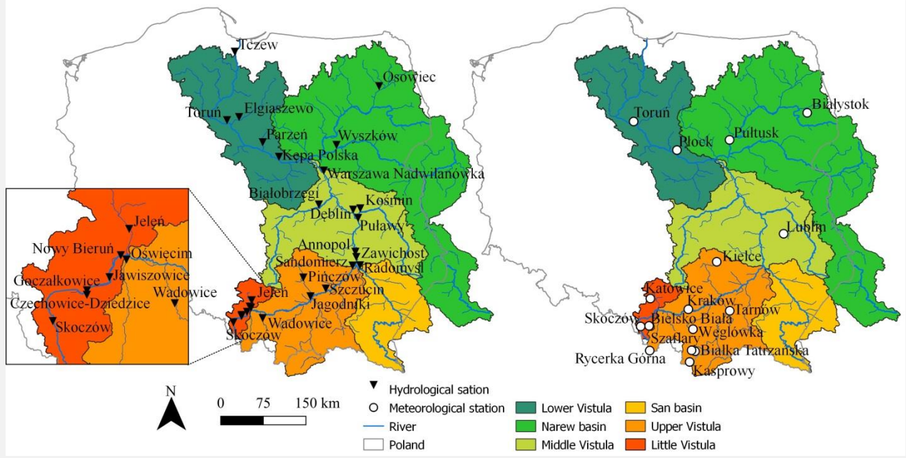
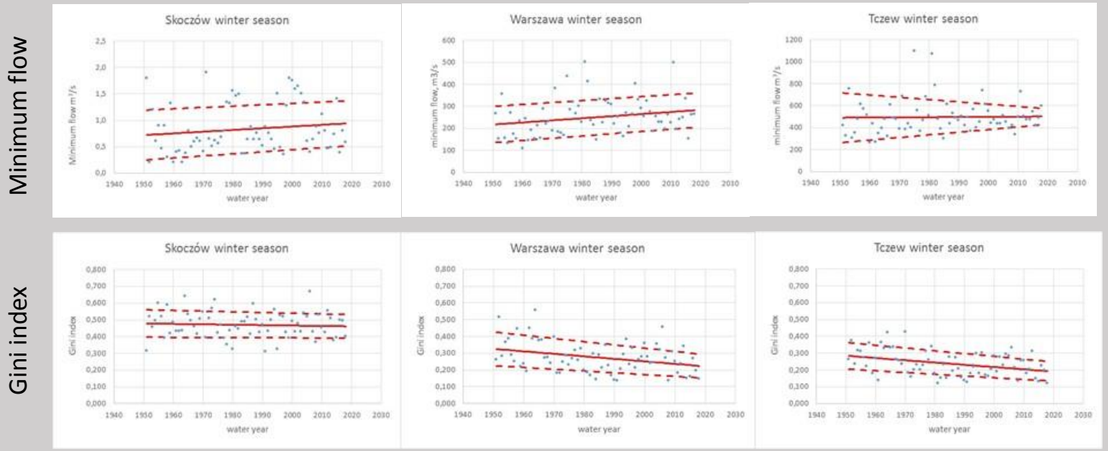
Study area, data and methods

The flow data from 15 hydrologic stations situated along the Vistula course,
12 in the Vistula basin in the period 1951-2018,
precipitation data from 16 stations (1952-2018 or 2014) were used in this study.
The data were analysed in annual and seasonal time frames.
11 characteristics of flow regime, 11 characteristics of precipitation regime and the structure of daily precipitation were studied. The Mann sequential test was used to detect trends in the characteristics of runoff and precipitation.
The temporal changes in the mean value and standard deviation of above characteristics were assessed.



Temporal changes in the mean value and standard deviation



Conclusions:

1. The winter maxima generally decrease while the minima increase.
2. In the most part of stations the winter daily flows show significant decrease in concentration, so bigger uniformity, in stations along the Vistula and in its basin.
3. Surprisingly, the summer minima do not reveal downward trends.
4. The annual precipitation totals do not show trends in the average value, while the share of snowfall and the number of days with snow cover decrease in the majority of stations.
5. The mean value of the maximum dry spell length remains constant

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