



## **The concept of the operational drought hazard assessment scheme**

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Due to the unfavorable climate change scenarios, the improvement of drought safety has become one of the key priorities for the Polish National Hydrometeorological State Services. Therefore the Institute of Meteorology and Water Management has commenced to develop and implement a set of tools for operational drought hazard assessment. A drought hazard assessment scheme is to be implemented onto the operating system of hydrology supporting work of hydrological forecast office. The system supports work of hydrological forecast office and its configuration helps to obtain more efficient and detailed hydrological forecasts, especially in case of extreme events. The so-far developed tools can be streamlined into four categories: long term data analysis, triggers identification, vulnerability assessment and hazard estimation.

The basic principle of the operational drought hazard assessment scheme is the qualitative assessment of both the risk of drought occurrence and the intensity and duration of drought events. This is achieved with the use of selected drought indicators values estimated from the current measurements of the hydrological and meteorological parameters in combination with the long-term data analysis. The variety of the existing and commonly applied indicators and triggers allow for selecting a set of them adjusted to the availability of the required data and ability to run on the operational bases from one hand and to facility to characterize main spatial and temporal features of the drought phenomena on the analysed area on the other hand. To set up a benchmark for the latter a long term meteorological conditions and hydrological regime observations together with the reported drought claims were analysed in order to develop the spatial and temporal patterns of the meteorological and hydrological drought occurrence for the area of investigation. The selected drought indicators were then validated against these results in an attempt to verify their ability to follow these patterns.