FUNDAMENTALS OF THE AGRICULTURAL DROUGHT MONITORING SYSTEM

Key words: climatic water balance, drought, internet monitoring of agricultural drought, soil moisture

Summary

Drought in Poland appears more frequently in the recent years, particularly since 1992. It is an important economic problem for the whole country since it may bring substantial yield losses, diminished farmers’ incomes and a rise of the prices of food products. Increased frequency of droughts is an outcome of climate changes observed recently. In the System of Agricultural Drought Monitoring weather conditions resulting in drought are defined by the climatic water balance. The system ordered by the Ministry of Agriculture and Rural Development was prepared and implemented by the IUNG-PIB. It contains computer applications that integrate meteorological data needed for calculating the climatic water balance and data from the digital soil-agricultural map that illustrates spatial differentiation of water retention in soils of different agronomic categories. The system contains tools that are used to assess drought for particular groups and species of crop plants. Results of analyses are presented at a web site in a form of maps and tables. The data presenting the risk of drought during vegetation season are prepared for monitored agricultural crops in all communes of Poland. The system of drought monitoring consists of weather and soil database, of GIS applications to process and integrate spatial data and of the internet system of data presentation.