
EDITORIAL

The changes of climate ongoing in today's world have been having and will have a major influence on many sectors of the economy and the functioning of society, thanks to the impact atmospheric phenomena exert on different elements of the geographical environment megasystem. Undoubtedly, the branches of the economy most vulnerable to climatic phenomena can be taken to include agriculture, forestry and water management, though also of course power supply, construction, transport, tourism, and so on. A very important aspect relating to climate change concerns the frequency and strength of extreme events, given the ways these determine, not only the course of many natural, social and economic processes ongoing in the environment, but also the quality of human life.

In terms of the content of its articles, this volume links up with research carried out under an International Project entitled: "Impact of climate change and adaptation of some sectors of the national economy in Poland and Bulgaria". This has been participated in by three research units, i.e. the National Institute of Meteorology and Hydrology of the Bulgarian Academy of Sciences (NIMH-BAS), the Institute of Geography and Spatial Organization of the Polish Academy of Sciences (IGSO PAS), and the Institute of Agrophysics of the Polish Academy of Sciences.

The specific aim of the Project has been to study the impact of climate change on the environment - i.e. soil, water resources, and irrigation and drainage systems, as well as to define the impact of climate change on the urban environment and human health. In the years since the beginning of the 21st century both Bulgaria and Poland have been experiencing an increased frequency and magnitude of extreme weather events such as severe and prolonged droughts (2007) and devastating floods (2005 and 2014), as well as winters that are either warm and snowless (2013) or very cold and with heavy snowfall (2012). The effect of these extreme events is reflected strongly in various sectors of the national economies of Bulgaria and Poland, and sometimes assumes disaster dimensions. Hazardous weather phenomena commonly play a role in such sectors as agriculture and forestry, transport, tourism and energy, as well as the management of the distribution of water resources, irrigation and drainage.

The research carried out to date makes it clear that further climate change will influence crop yields, livestock management and the localization of production. The growing likelihood that extreme weather events will occur combines with their severity to increase the risk of crop failures considerably. Climate change also impacts upon soils, reducing their contents of organic matter - the main factor underpinning fertility. In Poland, the influence is seen in earlier sowing of crops in spring. In turn, where forests are concerned, the consequences are likely to include a change in condition and level of productivity, as well as in the geographical ranges of certain tree species. Moreover, disturbances to the surfaces of forest areas will encourage both fires and pest outbreaks.

This volume presents the results of research from the first year of implementation of the aforesaid Project. It is opened by the article entitled: "The present and future state of the climate in Poland and Bulgaria", which characterises the two climates, as well as changes they are expected to go through as time passes. There then follow discussions of agroclimatic conditions in Bulgaria and agriculture adaptation, as well as an investigation into soil moisture reserves and meteorological conditions as these impact upon the principal soil types present in Bulgaria. Further issues treated in this volume are an assessment of the occupational heat stress risk among agriculture workers in Poland and Bulgaria, and a consideration of the biothermal contrasts experienced by people travelling within or between Poland and Bulgaria, as well as daily amplitudes of air temperature in Poland and Bulgaria in a comparison study. The volume closes with an article entitled: "The process of the spatial develop-

ment of large cities in Poland and its adaptation to climate change: opportunities and threats”, which discusses an issue of great importance from the point of view of the quality of human life, i.e. the development of large urbanised areas and their adaptation to climate change.

In the view of those implementing the Project, further studies will allow for determinations in regard to yet-further very important issues relating to climate change, the environment and human-kind, inter alia the emergence of urban heat island phenomena, or else the threat posed by a further increase in human mortality rates brought about by heatwaves.

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