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**Environmental safety in water management in the Upper Vistula regional cities
in 2010-2020**

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Dissertation abstract

The diagnosis of the water management system in provincial cities in the Upper Vistula Water Region area, focuses on three forms of water crisis, which include flooding, shortages and contamination of drinking water, present in urbanized areas during the decade (2010-2020). Identifying the relationship of urban water policy with each of these areas using the examples of Kraków, Kielce and Rzeszów allows not only a comparative analysis, but also an evaluation of the current condition of the risk management system and the level of security and resilience in this area. Does water management in the area under review maintained at a sustainable level? The review centers around an attempt to answer, among other things, this research question by treating the issue of the water crisis in a collective manner.

In order to fulfill the need for a holistic approach to build an objective diagnosis of water sector management, a comprehensive study was carried out, including stakeholder identification, development of qualitative data (derived from reporting and financial documentation and legal, organizational, strategic and technical procedures) and quantitative data (based on found statistical data), as well as survey research including verification of the level of intersectoral cooperation, sense of security and awareness of residents and management institutions. Due to the interdisciplinary nature of the research problem, the analysis includes legal, organizational, financial, economic, educational and cultural and natural resource aspects at each level of the ecological security management system, especially water security.

The logical and substantive structure of this research work consists of seven chapters. The structure of the dissertation was systematized by dividing it into theoretical, analytical and diagnostic sections. At the outset, the methodology of the research is defined, including: the research problem, the subject and scope of the research, the objectives, hypotheses, the methods and techniques adopted, the assumptions and limitations of the research, but also the evaluation of the source material and the literature on the subject. In the next stage, the theoretical aspects of environmental security and types of hazards in urban environments, as well as urban resilience during the water crisis were presented, which became the beginning of the characterization (including: the evolution of protection and consequences) of their types, namely flooding, deficit and contamination of drinking water. Next, methods of action in the face of danger were identified through a cross-section through past crisis events in the urban centers under study (Krakow, Kielce, Rzeszow), as well as regulations at the local, national, or European level, and the decision-making process in place within the urban fabric. An in-depth analysis of documentation, statistical data, characteristics and results of surveys (addressed to

residents and management entities), became the basis for verification of the actual state of affairs. Subsequently, a synthetic compilation of the features of the system was made by analyzing the results of the review, identifying the relations of urban water policy, as well as a comparative analysis of its level in the cities under consideration. The final result is a complete diagnosis of the water crisis risk management system, and further multidiscipline recommendations for its condition in the future, along with an outline of the prospect of continuing the study. The review of the elements that make up the state of affairs during the period under study allowed the achievement of the objectives and verification of the hypotheses. Thus, an evaluation of the water management system in Krakow, Kielce and Rzeszow was carried out, together with the determination of the degree of analogies and divergences, and the relations of urban water policy were identified from the perspective of the threat and management of flooding, contamination and drinking water deficit.

The research process carried out in the areas presented, facing the current problems of development of the urban fabric has a special socio-economic utility, as it comprehensively captures the research issue from a security perspective, trying to diagnose the water crisis management system. The results and conclusions can be the first step in the long process of creating a proper administration, which is the one that seeks to achieve the status of resilience to the threat of water in urbanized environments in the future. In addition, the work represents material that can be subjected to continuation, collation and/or confrontation in subsequent studies (with expansion of the material, temporal or spatial scope).