



## **Sustainable management of water environment in anthropopressure area for municipal purposes, water quality improvement and utilization of renewable energy sources**

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The Authors deal with the problems of management of post-industrial areas affected by high unemployment leading to prevailing frustration, increasing migration of the population and other socially and economically adverse phenomena. This is accompanied by the considerable degradation of the natural environment and the deterioration in the quality of life of the local population. The aim of the studies is showing the possibilities to create a model to manage the resources in order to achieve sustainable development, particularly to manage water and energy in the post-industrial areas. The studies have been carried out for a region heavily industrialized in the recent past with present closed down mines. In particular, the work relates to examine the possibility of: improving the quality of the surface and underground waters, using the water as a source of low-temperature heat, storing energy and producing energy in local renewable sources, ensuring proper water retention, developing post-industrial tourism through managing the post-industrial facilities and making them available. Innovation of work is to create an integrated model of resources and the environment management, in particular water resources and non-conventional energy.

The proposals constitute a contribution to the implementation of the principles of sustainable development by focusing on three of its dimensions - economic, environmental and social. At the same time it would be a way for the sustainable management of the water environment in the areas of anthropopressure, in industrial and post-industrial areas, for the purpose of collecting water, improving water quality and the use of local energy sources. The possibility of energy storage, which is extremely important in the area of an intensive development of unconventional sources of energy (wind farms, solar sources, hydroelectric, etc.), the characteristics of which are irregular, referred to simply as chimeric sources, also exists.