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FORECASTING OF ECOLOGICAL AND ECONOMIC CONSEQUENCES OF FLOODING OF COAL MINES

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Purpose. The main objective of the paper is to determination of the impact of groundwater near coal mines on the health of the local population in order to compensate for this impact on the cost of treatment for people

Methodology. According to the goals, data on the impact on the occurrence of eleven kinds of serious illnesses of twelve types of pollutants have been used to construct predictive models by methods of panel research..

Findings. To build the panels variable models about 3000 TB data were used oncological diseases and pathologies, certain conditions that occurred during the perinatal period, anemia, stroke, acute myocardial infarction, pathology of pregnancy and postpartum period, bronchial asthma, bronchitis, eczema and other chronic exacerbations of diseases and circulatory system diseases.

In accordance with them, concentrations in the waters of such harmful impurities as chlorides, sulfates, mineralization, biochemical oxygen consumption of nitrates, nitrites, petroleum products, phosphates, content of soluble oxygen, chemical oxygen consumption, pH level and suspended matter content were set.

The calculation of the number of people who will be ill in subsequent periods because of a certain concentration of harmful substances can use economic compassionate mechanism through planning the cost of purchasing drugs for the treatment of the diseases.

According to the obtained models, the conclusion is drawn: during modeling with the purpose of forecasting the amount of social damage influenced by factors of both ecological and non-ecological origin, and most importantly, in the absence of a direct relationship between these factors, the use of mathematical apparatus of regression analysis with constraints on model parameters , taking into account the influence of factors of technogenic loading and nonlinear periodic models, on the basis of which the component of models is calculated, which accumulates the influence of factors of non-ecological origin (Economic, social, hereditary, multifactorial) at the level of social loss is an effective method for solving this type.

Keywords: economic-mathematical model, priori information, forecasting, restrictions on the parameters, the economic mechanism of environmental, social damage, technogenic pollution

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