

Analytical evaluation of the soil degradation risk

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Observations on natural environment show that in the era of modern industrial development the nature experiences various kinds of the undesirable effects, and as a result deterioration of its conditions takes place, it degrades. Disturbances and certain changes of natural environment are the elements of united global processes. That's why both common physical laws and individual regularities caused by specific indicators of separate elements are clearly reflected on geographic system and its elements. Temporal and space variability of indicators best of all determines the condition of natural environment and the risk of projected threat.

Accurate quantitative assessment of environmental condition is almost impossible, that's why the application of approximation methods is acceptable, to which end is necessary to use the current mathematical possibilities and select the most appropriate model, which makes possible a problem solution using valid approximation.

The environment consists of a great number of elements, which are accompanied also by a great many processes; it is desirable but virtually impossible to take into account all these elements, that's why it is important to select the basic elements, which play the leading role in the environment's functioning.

In our case a soil has been selected as the basic element of environment, since existence and future of mankind is directly related to it.

The work objective is a quantitative assessment of condition of fertile soils of Georgia and elaboration of approximation (probable) methods for calculation of risks of hazardous undesirable situations.

The necessity of these methods is driven by soil preservation with minimal losses that in its turn will promote harmonic coexistence of mankind with environment and radical improvement of the current situation.

Soil, as well as natural environment consists of a great number of elements and processes, which accompany these elements. Consequently, disordered motion permanently occurs in the soil, which in this regard is similar to Brownian motion, which is usually studied using stochastic kinematic equations.