



Theory and practice of natural risk assessment in terms of integrated index

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Different indices are applied in theory and practice of natural risk assessment. The number of dead or injured, individual risk, probable overall losses, the amount of destroyed and affected buildings and constructions, etc. are among the most widely used indicators. Yet, they couldn't afford an instance to evaluate the total damage caused by a particular natural disaster in fairly comprehensive manner. To solve this problem, the recurrence interval of emergency situations of natural origin ranged according to various categories (levels) of heaviness is suggested to act as an integrated index for natural risk assessment. Emergency situations are classified by levels of impact heaviness on the basis of evaluation of the final results and duration of recovery of any economic unit influenced by dangerous natural phenomena. Boundary values of geophysical parameters of such phenomena are determined corresponding to particular categories of heaviness (these estimations were made with the help of extensive database on emergency situations of natural origin entitled 'Disasters' and developed since 1992). The recurrence interval of emergency situations was evaluated using long-term weather data, existent catalogues of dangerous natural processes and phenomena, thematic maps characterizing their distribution, frequency and quantitative parameters. Recurrence maps corresponding to each category of heaviness were compiled for particular dangerous natural phenomena. Afterwards, all recurrence intervals of phenomena typical for given categories of heaviness were summarized and recurrence maps were made for each category of heaviness. Natural risk maps characterizing the frequency of emergency situations in three categories of heaviness were compiled for the whole territory of Russia and the similar map of the frequency of

emergency situations of the third level was compiled for the whole world.