



The Map of Social Risk of Russia Caused by Flooding, Hurricanes, Landslides, Mudflows, and Avalanches

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More than 20 hazardous natural processes of various genesis are observed in the territory of Russia. Under such conditions, it is necessary to have the information on the hazard degree of various territories of our country to provide safe development of territories and the population. The most convenient way of presenting such information is a map of possible population losses from natural hazards, or a risk map.

A group of specialists (including the authors of this article) has made (1990) the map of danger of geological and hydrometeorological processes in the territory of Russia (to a scale 1:5 000 000). This map permits us to estimate in degrees the hazard of each of 22 geological and hydrometeorological processes for any taxon (a unite of final division into districts). The degree estimation of hazard (a hazard category) is determined by a complete set of factors, which describe volume, velocity, and other features of the process, the territory degree of exposure, the frequency of events, and the value of possible consequences. The hazard's category has 4 gradations: catastrophic, extremely dangerous, rather dangerous and dangerous.

Besides, the authors of article have a database on the facts and consequences of events of natural hazards in the territory of Russia, which allows obtaining the statistical data about human losses in each negative event: those killed, wounded, suffered material damage or life's deterioration. At the same time, this base allows us to verify and, if necessary, to correct estimation of a hazard category presented in the map. The map also provides information on the population density within each taxon.

Eventually, it permitted us to derive the algorithm of calculating individual (for any person) and social (for the population in the studied territory) risk of falling a victim of natural hazard.

In this study, we made an attempt to determine the risk for the country's population caused by five processes, which are the most hazardous in their consequences, i.e. flooding, hurricanes, mudflows, landslides, and avalanches. As a result, the algorithm of calculating individual and social risk from the listed hazards has been worked out, and the map of social risk of Russia caused by five natural hazards has been built.