

# PROBLEM OF NATURAL AND MAN-MADE DISASTERS IN RUSSIA ON REGIONAL AND GLOBAL SCALES

Chesnokova Irina <sup>1</sup>, Koff Gregory <sup>2</sup>

## ABSTRACT

With the development and complication of our present civilization, the growth of the size and density of the population on the Earth and, as a consequence, the expansion of developed territories, has increased the number and scales of technogenic catastrophes. Nature also responds with a growth of catastrophes, which seriously damage the economic and social development of humankind. Damage from natural and man-made disasters is well known. From the data of the German insurance company "Munich Re", the 1990s were record years for amounts of natural hazards leading to losses of tens of thousands of lives. In 1999, 700 natural catastrophes took the lives of more than 70,000 people. The economic losses from natural cataclysms for the last 10 years constituted US\$535 billion, of which US\$160 billion were attributed to 1996 and almost US\$80 billion to 1995.

In the developing countries where the population and territorial expansion grows especially rapidly, relative losses in gross domestic product (GDP) due to natural catastrophes are much greater than in the developed countries, and the absolute amount of victims is always higher.

Natural disasters, in contrast to man-made catastrophes, are more rare but they have a powerful destructive effect and often cover large territories. The developing countries suffer from them most often. They have neither sufficient information nor methods to predict such events, a lack of estimates and methods to control these risks, poor governmental structures to respond to and resolve the consequences of natural catastrophes, and poor knowledge of insurance and legal spheres useful to solve such problems.

The economic consequences of natural hazards depend on the type of natural process, the size of the damaged territories, the structure of economic development and present economic situation in the region, and, finally, population density.

Different causes of the origin of dangerous natural processes taking the form of catastrophes and leading to emergency situations can be identified. First of all, these are natural causes connected with the geological and geophysical processes in the Earth's crust as well as processes in the atmosphere and in the World Ocean. They are of stochastic character with aperiodic changes of their frequency of occurrence and intensity. The effect of cosmic factors (solar activity, parade of planets, etc.) is actively discussed. Therefore, it is difficult or even impossible to predict dangerous natural processes, but methods of their reference to certain territories can often be found. Dangerous natural events in Russia and their consequences.

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<sup>1</sup> Irina Chesnokova, Doctor of Sciences, Senior researcher worker Russian Academy of Sciences, Water Problems Institute, Moscow, Phone (495) 2088876, 6246773, Fax (495) 6240407, E-mail: ichesn@rambler.ru.

<sup>2</sup> Gregory Koff, Doctor of Sciences, Professor, President of Research and Development Centre for Studying Damage Risk from Dangerous Geological Processes, Moscow, Phone (495) 2088876, 6246773, Fax (495) 6240407, E-mail: koff@georisk.ru.

For a long time, Russia has been intensively developing due to gaining mastery over new territories and new resources, even over those territories where there is a likelihood of increased frequency of occurrence of dangerous natural processes. At present the average multiyear damage from dangerous natural processes in Russia constitutes 7-10% of GDP each year. It should be noted that damage connected with social losses (expenditures on recovering health, reconstruction of dwellings, work, and the psychological cost of despair) is excluded from this estimate, although those are the main criteria of human life. Also, no account is taken of the losses connected with economic activity within the damaged region, its budget, and investment policy.

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