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On the application of communication models in approaches to socio-environmental risks minimization

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Basing on the analysis of dynamics of socio-ecological threats and risks perception, obtained from public opinion polls, it was assumed that the perception of these threats is not adequate. In particular, the perception of risks does not correspond to the real level of danger estimated from the long-term distributions of disaster losses. This situation could be recognized as a threat, because it leads to a significant increase of disaster losses and to spreading of wrong resource and environmental management practices.
The probable reasons of this situation are: 1) a heterogeneous dynamics of nature and character of the threats associated with technological, environmental and social changes (nexus, nonlinear interdependencies, systemic risks, etc.), 2) changes in the patterns of crisis reactions of various groups and communities as a result of spreading of decentralization and globalization processes, 3) incorrect risk communication strategy that does not meet the complex social dynamics, 4) inconsistency of risk communications at the level of government bodies, experts, media and social media.
To coordinate a decision-making in the field of security at the personal, group and population levels a behavioral model has been proposed. As a target function of such behavioral model, it was proposed to choose the increase of the population welfare in the framework of sustainable development paradigm and geo-ethics conception. On the basis of the developed model, ways of adaptive optimization of communication strategies of socio-environmental threats aimed to the corresponding risks minimization are proposed.
Keywords: disaster losses, risk perception, risk communications, communication model, behavioral model, adaptive optimization, decision making, geoethics, welfare