

An approach to natural hazards from the viewpoint of geosphere-humanosphere study

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Natural hazards, as taken up as a science program of the International Year of Planet Earth (IYPE), are one of the most appropriate windows of geoscientific researches, particularly those on global environment and its change, facing toward human society. However, comprehensive geoscientific study of natural hazards involves some problems on its methodology or viewpoint to be considered preparedly.

Although the pure physical processes from which hazards start are the main targets of researches in respective geoscientific disciplines, basic studies of geological, geophysical, or physical-geographical processes alone do not fully contribute to the prevention or mitigation of hazards. Although many engineering infrastructures improved the measures of hazard prevention or mitigation, their limitations are recognized and the public release of risk information is recently stressed by national or local governmental departments of construction works. Although human cognition and behavior in and after hazards are increasingly remarked as important aspects of hazard mitigation, it is lacking from the discussion that why the persons concerned were present at the hazardous or risky place.

A comprehensive geoscientific approach to natural hazards, which is not restricted in physical processes, infrastructures, or human cognition and behaviors alone, is thus required now. In the approach, it should be promoted to analyze and to integrate the system of each natural hazard as a whole. One of the ignored aspects in previous investigations of hazard prevention or mitigation is a viewpoint of public and private land-use decision based thoroughly on geoscientific knowledge. Efforts to establish the approach may contribute to the methodological development in geosphere-humanosphere studies which have the scope ranging from pure physical-environmental processes to human cognition and behavior on the planet earth.