

People's perception of natural hazards

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Introduction: Natural hazards are extreme events of the physical environment which have the potential to affect humans, their structures, or their activities adversely. In areas where there are no human interests, natural events do not constitute hazards nor do they result in disasters. Disasters are seen as an unfolding process which is "rooted in the co-evolutionary relationship between human societies and natural systems" [1]. Natural hazards are a form of human/nature-interaction and there is a need of understanding them as a mutually constitutive process between the two systems.

Interactions between human and natural system are complex. Both systems are dynamic, non-linear and based on the interaction of single agents. The interaction of the agents' behaviour leads to emergencies and reveal bifurcation points in system's development [2]. A set of mutual constraints and enablement shapes the individual, society and environment relationship such as the political and economic setting which might influence individual location decisions or reliance on governmental risk prevention [3]. To understand individual-environment and society-environment interactions is thus as important as the human-nature relationship in vulnerability assessment because it represents the adaptive processes inherent in the human society.

Risk perception is considered fundamental for the behaviour towards risks and for the decision to take preventive measures in order to develop effective hazard management policies. Risk perception is defined as a subjective assessment process that is based on experience and on available information without referring to reliable data or complicated models. Risk perception is a construction process embedded into and determined by society and culture. Individual subjective risk evaluation is intuitive and unconscious: „Risk perception is all about thoughts, beliefs and constructs.“ [4].

Methods: There are a number of approaches and concepts that have been applied to study risk perception: the approach known as psychometric paradigm, the cultural theory of risk perception, trust-oriented concepts, the mental models approach, demographic variables, gender and others. Influences on risk perception are causes attributed to disasters, images of and associations on nature and

environment as well as experience from past events and the cultural frame of the respective society.

The paper presents results of different population surveys in Hamburg and along the German North Sea Coast on the people's perception of natural hazards. The research design combines quantitative and qualitative approaches to the perception of hazards and the judgement about major threats in the future caused by climate change.

Discussion: Although humans can do little or nothing to change the incidence or intensity of most natural phenomena, they have an important role to play in ensuring that natural events are not converted into disasters by their own actions. The analysis of people's perception of natural hazards is presented as a key element in the social science endeavour aimed at understanding human/nature interactions. The paper explains the need for the focus on perception studies as a means of 'learning from the people', and presents the rationale and structure of the future management and policy in order to develop effective information and risk communication strategies as part of an adaptive hazard management strategy.

In future, special problems will arise with the extremely long time horizons associated with recently prominent environmental policy problems, such as climate change. Policymaking for posterity involves current decisions with distant consequences. Contrary to conventional prescriptions, the amenities of future generations may strengthen the case for preserving environmental amenities as well as mitigation and adaptation strategies. People's perception of natural hazards and risks has to be included in the regional hazard management strategy.

References: [1] Oliver-Smith, A. (1999) What is a Disaster? Anthropological Perspectives on a Persistent Question. In: Oliver-Smith/Hoffmann (eds.): *The Angry Earth*. Routledge, London: 18-34; [2] Ratter, B.M.W. (2009) Complexity and Emergence – key concepts in non-linear dynamic systems. In: Glaser et al: *Human/Nature Interactions in the Anthropocene: Potentials of Social-Ecological Systems Analysis*, Ökom, München (in print); [3] Palm, R.I. (1990) *Natural Hazards. An Integrative Framework for Research and Planning*. Johns Hopkins, Baltimore; [4] Sjöberg, L. (2000) The methodology of risk perception research. *Quality and Quantity* 34: 407-418.