



Problems of mapping natural hazard impact on technological systems and urban areas

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Nowadays the GIS analysis plays a very important role in natural hazard management and can be widely used in different fields of researching natural hazard impacts on the technosphere and society. However all the data for GIS analysis should be georeferenced.

The large-scale mapping can be done easily, but we always face the problem of precision when dealing with medium and small scales. We have to place on the map the exact location of each event using its precise geographic coordinates, if we are going to investigate space distribution of natural disasters and technological accidents triggered by them. We can map the real place of their occurrences using the large scale. However the small- and medium-scale mapping usually deals with "dots" or "points"; so it doesn't show the exact location where disaster happened, but only indicates a region of occurrence. In urban areas, where the population density as well as a concentration of industrial and infrastructure facilities is especially high, the number of accidents triggered by various natural hazards is bigger than in sparsely populated areas. Thereby, there will be high concentration of "dots" that mark these accidents and an overlapping is inevitable. This is a real mapping problem not only because of deformed visualization, but also for different possibilities of GIS analyses. It is also very important to show in the mapping area of natural disaster different kinds of linear objects (such as roads, railways, power lines, pipelines, etc.) as well as other social and economic objects, which can be affected by natural hazards. There are some ways of solving that kind of problems; for example, different types of natural events can be shown differently, depending on their severity, but in general the strict rules of georeferencing natural disasters in medium and small scales should be invented depending on the nature of phenomena, their influence on the area and needs of the maps' user.