

Small watershed management as a tool of flood risk prevention

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Abstract According to the International Disaster Database (CRED 2009) frequency of extreme hydrological situations on a global scale is constantly increasing. The most typical example of a natural risk in Europe is flood – there is a decrease in the number of victims, but a significant increase in economic damage. A decrease in the number of victims is caused by the application of current hydrological management that focuses its attention primarily on large rivers and elimination of the damages caused by major flood situations. The growing economic losses, however, are a manifestation of the increasing intensity of floods on small watercourses, which are usually not sufficiently taken into account by the management approaches. The research of small streams should focus both on the study of the watercourse itself, especially its ecomorphological properties, and in particular on the possibility of flood control measures and their effectiveness. An important part of society's access to sustainable development is also the evolution of knowledge about the river landscape area, which is perceived as a significant component of global environmental security and resilience, thanks to its high compensatory potential for mitigation of environmental change. The findings discussed under this contribution are based on data obtained during implementation of the project “GeoRISK” (Geo-analysis of landscape level degradation and natural risks formation), which takes into account the above approaches applied in different case studies – catchments of small streams in different parts of the Czech Republic. Our findings offer an opportunity for practical application of field research knowledge in decision making processes within the national level of current water management.

Key words flood risk; small watercourse; water management; environmental change