



Prepared for the future? Evaluating the costs and benefits of voluntary work for natural disaster management under a changing climate – data on recent flood events, stakeholder needs and policy applications

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Voluntary emergency and relief services, such as fire brigades or rescue organisations, form the backbone of disaster management in most of European countries. In Austria, disaster management relies on the cooperation between governmental and non-governmental institutions: When a disaster occurs, the volunteer organizations act as auxiliaries to the responsible disaster management authority. The assessment of costs and benefits of these emergency services is a crucial component of risk and disaster management strategies, since public means are getting scarcer and these costs can reach critical levels for low-income municipalities. As extreme events and emergency operations are likely to increase due to climate change, the efficient allocation of public budgets for risk and disaster management becomes more important. Hence, both, the costs and the benefits must be known, but voluntary and professional work is hardly documented and assessed comprehensively. Whereas the costs of emergency services can be calculated using market values and an analysis of public and institutional budgets, the benefits of voluntary efforts cannot be assessed easily.

We present empirical data on costs of voluntary and professional emergency services during the floods of 2002, 2005 and 2013 in Austria and Germany on different scales, obtained from public authorities, fire brigades and by means of public surveys. From these results, we derive a calculation framework and data requirements for assessing costs of emergency services. To consider the different stakeholders needs of administration, emergency institutions and voluntary members, we carried out workshops, first to identify future challenges in voluntary work for disaster management instigated by climate change and second, to develop approaches how the voluntary system can be uphold when facing increasing adverse impacts of natural hazards. The empirical results as well as the workshop outcome shall be translated into policy recommendations and research needs to derive strategies for strengthening resilience at the local and regional level and to design appropriate incentives.