



## Reviewing the economic efficiency of disaster risk management

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There is a lot of rhetoric suggesting that disaster risk management (DRM) pays, yet surprisingly little in the way of hard facts. Cost-benefit analysis (CBA) is one major tool that can provide quantitative information about the prioritization of disaster risk management (DRM) (and climate adaptation) based on economic principles. Yet, on a global scale, there has been surprisingly little robust evidence on the economic efficiency and benefits of risk management measures. This review shows that for the limited evidence reported the economic case for DRM across a range of hazards is strong and that the benefits of investing in DRM outweigh the costs of doing so, on average, by about four times the cost in terms of avoided and reduced losses. Most studies using a CBA approach focus on structural DRM and most information has been made available on physical flood prevention. There have been some limited studies on preparedness and risk financing. The global evidence base is limited and estimates appear not very solid, and overall, in line with the conclusion of the recent IPCC SREX report, there is limited evidence and medium agreement across the literature. Some of the factors behind the limited robustness are inherent to CBA more widely: these challenges comprise the inability to price intangibles, evaluating strategies rather than single projects, difficulties in assessing softer rather than infrastructure-related options, choices regarding a proper discount rate, lack of accounting for the distribution of benefits and costs and difficulties with assessing nonmarket values such as those related to health, the environment, or public goods. Although techniques exist to address some of these challenges, they are not very likely to easily go away. Other challenges associated specifically with DRM, such as the need and difficulty to undertake risk-based analysis can be overcome, and there have been manuals and reports providing a way forward. In an age of austerity, cost-benefit analysis continues to be an important tool for prioritising efficient DRM measures, yet with a shifting emphasis from infrastructure-based options (hard resilience) to preparedness and systemic interventions (soft resilience), other tools such as cost-effectiveness analysis, multi-criteria analysis and robust decision-making approaches deserve more attention.