



## **Rural Disaster Risk Reduction in New Zealand**

Tyler Barton (1), Thomas Wilson (1), Sarah Beaven (1), and Nicholas Cradock-Henry (2)

(1) University of Canterbury, Department of Geological Sciences, New Zealand (tyler.barton@pg.canterbury.ac.nz), (2) Landcare Research, Landscape Policy and Governance Team, P.O. Box 69040, Lincoln 7640, New Zealand

New Zealand is a small, relatively wealthy country disproportionately reliant on primary industries, and is vulnerable to a range of natural hazards, from extreme weather to seismic activity. This setting presents unique challenges and opportunities relating to rural disaster risk reduction (DRR). This presentation discusses the underlying drivers of rural disaster risk and methods for addressing it, by highlighting rural DRR issues, successes, and opportunities within a dynamic multi-hazard environment. Two case studies are presented. North Canterbury, on New Zealand's South Island, has been affected by multiple natural hazards in the past 5 years, most notably in 2016 when a large (Mw 7.8) earthquake and associated aftershock sequence coincided with the end of a severe multi-year drought. Semi-structured interviews with affected emergency managers and rural organizations revealed extensive social and economic impacts for rural households, which may not be adequately understood or planned for by emergency managers and policy makers. For example, the official response mechanism and policies in place did not provide for livestock welfare needs immediately following the earthquake, although this was found to be a high priority for farmers. The second case reports on Project AF8, a South Island-wide collaborative effort between emergency managers, private organisations, and researchers, which aims to reduce risk by enhancing coordination and disaster response planning for a large magnitude earthquake. The scenario exercise – which was co-created and implemented with emergency management, critical infrastructure, research scientist, and various other community actors – exemplifies a more collaborative, multi-level approach to rural DRR. Findings demonstrate the effectiveness of co-creation methods, in particular knowledge transfer and relationship-building via a trusted forum for emergency managers to exchange ideas and experiences, and discuss current best practices. Overall, the results of the two case study examples demonstrate the value of collaboration and knowledge co-production. By gaining insight into the local, contextually-dependent drivers of risk, and creating spaces for greater engagement between science, policy-makers and practitioners, the resilience of rural regions in New Zealand, and internationally, could be improved.