Multi-agency community engagement during disaster recovery: Lessons from New Zealand for three moderate-sized earthquake events

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ABSTRACT

Effective survival and recovery from disasters depends not just on people’s abilities to cope with the physical impacts of the event but also on how the societal environment complements and supports the complex and protracted processes of community recovery. Central to recovery is how society organizes, mobilizes and coordinates the diverse range of organizational and professional resources that can be called upon to assist recovery. This paper looks at the role of community participation in reducing anxiety and trauma in communities during three New Zealand earthquakes: The 1987 Edgecumbe, 2003 Te Anau and 2013 Lake Grassmere-Cook Strait events; and explores the effectiveness of various approaches in providing information, reducing stress, and facilitating a recovery process. It will also compare the response in these events to the larger, more complex and longer duration 2010-2011 Canterbury earthquake disaster.

Introduction

Effective survival and recovery from disasters depends not just on the physical impacts of the event but also on how the societal environment supports the complex and protracted processes of recovery [7]. Societal resources (e.g., emergency management, protective services) and organizational capabilities (e.g., to coordinate response activities on a large scale) are crucial in determining how well people adapt to stress, change and emergencies [2, 13]. The coordination of diverse professional resources is required to deal with the physical consequences of disaster (e.g., emergency management, search and rescue, rebuilding), the societal consequences (e.g., ensuring continuity of essential physical infrastructure and services) and the personal consequences (e.g., managing the traumatic stress experienced by survivors, managing relocation and so on) [7]. Effective recovery is a function of the how well such resources can be mobilized and their actions coordinated to facilitate societal recovery [13].

This paper discusses research investigating the role of community participation in reducing anxiety and trauma in communities following three New Zealand earthquakes: 1987 Edgecumbe, 2003 Te Anau and 2013 Lake Grassmere-Cook Strait events. The first two earthquakes are expanded on in Johnston et al. (2012) [7].

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The 2 March 1987 ML 6.1 Bay of Plenty earthquake (commonly known as the Edgecumbe earthquake) occurred at shallow depth beneath the Rangitaiki Plains in the Bay of Plenty [1, 10]. The main shock followed a large ML 5.2 foreshock 7 minutes previously. The earthquake caused heavy damage in Edgecumbe, Te Teko, Kawerau, and Matata to both residential properties and industry. Luckily there was only one indirectly associated death and a small number of injuries. Total losses were estimated at around NZ$374 million (in 1987 dollars). In weeks following the earthquake, the Department of Scientific and Industrial Research (DSIR) was approached by one of the impacted industries – the Caxton Pulp and Paper Mill to brief staff on issues related to the earthquake [11]. From this meeting and other feedback from the community it was identified that there was considerable misinformation relating to the earthquake. Consequently, a number of public meetings were organized by the DSIR involving staff from three divisions (New Zealand Geological Survey, Geophysics Division and Physics and Engineering Laboratory). Public meetings were held on the evenings of 14 and 15 April 1987, in Edgecumbe and Kawerau respectively. About 450-550 people attended the Edgecumbe meeting and around 250-300 the Kawerau meeting. The Edgecumbe meeting was held in the Edgecumbe College Hall and was chaired by the Mayor of Whakatane with introductions by the chairman of the Edgecumbe Community Council and by the disaster relief coordinator. The Kawerau meeting was held in the Kawerau Intermediate Hall and was chaired by the Mayor of Kawerau [11].

The 21 August 2003 Mw 7.2 Fiordland earthquake was centered ~ 10km northwest of Secretary Island at a depth of ~20km [14]. This was New Zealand’s largest shallow earthquake for 35 years and was felt strongly over much of Otago and Southland. Damage was relatively minor although spectacular, with items thrown from shelves in Te Anau and the cracking of many concrete structures [3,4]. Damage to residential properties in Te Anau is reported by Leonard et al. (2004) [8], based on responses from a community survey. Following the earthquake, the Southland District Council held a public meeting on the evening of 28 August 2003 in the Te Anau community hall. The public response to the meeting exceeded the initial expectations of the organizers with in excess of 300 people attending. Presenters from several agencies (The Earthquake Commission (EQC), GNS Science, Department of Conservation and Civil Defence Emergency Management) discussed issues around the earthquake including the cause, impacts and aspects of local and central government.

Two earthquakes in central New Zealand struck in July and August 2013 [5]. The first on 21 July 2013, the Cook Strait earthquake, was a 6.6Mw, located in Cook Strait, 50km southwest of Wellington city. The second event was the Lake Grassmere earthquake, also a 6.6Mw, 80km southwest of Wellington city. Wide spread property damage in the Marlborough Region exceeded NZ$50 million (in 2014 dollars). Less than a week after the first earthquake, a community meeting arranged by the Mayor of Blenheim, was held in Seddon, close to the epicenter of the
Cook Strait earthquake. The meeting hall sustained only cosmetic damage and was one of the few premises capable of hosting the large number of people attending. Presenters from GNS Science and the Joint Centre for Disaster Research (Massey University / GNS Science) discussed issues concerning seismological data gathered so far, and the possible psychosocial consequences of disasters such as this on the local and wider populations. Furthermore, agency and council representatives fielded queries concerning agency and council response and enquiries about how these would be progressed. Although an aftershock occurring during the meeting gave a very real reminder of the situation facing local residents, the meeting was able to continue without further interruption.

Multi-agency community engagement

The disaster recovery environment presents many challenges for government and non-government agencies, businesses, community groups and individuals. The need for effective community participation and consultation in recovery is now widely acknowledged in New Zealand recovery planning [9, 12] and lessons from the 2010-2011 Canterbury earthquakes [6]. The importance of participation and consultation relates to both its role in helping people understand and make meaning of a recent experience, and providing a collective forum for developing future community resilience. Experiences documented in our research illustrate how community participation can assist in recovery. Communication and information provision can assist with helping people understand what has happened, how the recovery process works, and what actions people need to take to recover. Community participation allows an outlet for people to articulate and solve problems, empowers them to take action, and as a result, assists in reducing anxiety and trauma and helps build resilience to cope with future events.

However, significant gaps in our current arrangements still remain. Provision of scientific information about the event was identified as important by many attendees in all three cases, to help them understand what had happened and what to expect in the future. Continued effort needs to be undertaken to ensure scientific information is easily accessible to communities following an event. The public meetings allowed the emergency management and other welfare agencies an opportunity to inform the public on welfare arrangements, on other support available, and importantly, to seek feedback from the affected population. Despite the effectiveness of the meetings, agencies involved reported only limited formal connections prior to the event and arrangements were frequently made in an ad hoc manner. Lack of prior planning for multidisciplinary and multi-agency interactions limits the effectiveness of both the response and recovery.

Conclusion

Although public meetings provide an effective vehicle for engaging the community in a post-disaster situation, it must also be remembered that there are several limitations to the process and other approaches need to be considered. This and other research highlights caution in making recovery decisions when a community is under stress. There are problems of getting communities to participate in complex decision-making in times of stress immediately after a disaster event. This may be alleviated by ensuring that communities are participating in similar participatory decision-making processes prior to an event, so that the process and structure is
familiar to them, thus putting them in a more recognizable and less stressful environment after a disaster.

References