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Please note that contributions to the *Australian Journal of Emergency Management* are reviewed. Academic papers (denoted by ®) are peer reviewed to appropriate academic standards by independent, qualified experts.

historical snapshot

ANA Amana – June 1950

Just after 10.00 pm on June 26th, 1950, a farming property in the Avon Valley, became the scene of Australia's worst air disaster. This was the fateful night that the Australian National Airlines plane, ANA Amana crashed enroute from Perth to Adelaide and Melbourne, killing the twenty four passengers and five crew on board. The final flight of the Amana appears to have ended with an explosion. Several people reported that they were raised from their slumber through the sounds of the troubled aeroplane and subsequent crash.

Despite a number of investigations into this tragedy, no clear evidence could be found to determine exactly what went wrong that night. Theories abounded about water in the fuel. Although the investigators found that there was a serious dereliction of duty by ground engineers at the three airports the Amana had visited that day, no ground staff were found responsible for the accident.

Mass passenger aircraft travel was still in its infancy at the time of the Amana tragedy. Many pilots and ground crew were former military men, who displayed the same "gung-ho" attitudes to commercial flying as they had during the war. The Amana accident became a "watershed" for Australian aviation. The stringent safety procedures which mark our skies amongst the safest in the world grew from investigations into this disaster.

Source:
Beverley Tourism Management.

Feasibility and Sustainability Plan.
Dr Jim Macbeth
Tourism, School of Social Sciences and Humanities
Murdoch University
South Street, MURDOCH, Western Australia, 6150

Cover shot: © Photographer: Collette Harold. A volunteer comforts a frightened child at an accident scene.

AJEM FOREWORD

By Hon Rick Barker, Minister of Civil Defence, New Zealand

New Zealand's wild and diverse landscape, our relatively isolated geographic location, and our reliance on primary production means that New Zealanders are, and will continue to be, at risk from a broad range of hazards. Earthquakes, volcanoes, floods, storms, severe winds, tsunami, landslides, droughts, wildfires…New Zealand has them all and more! In the first quarter of 2008 alone the Ministry of Civil Defence and Emergency Management recorded 204 weather and geological events – almost half of these were earthquakes and about a quarter were heavy rain warnings. Fortunately, most of these events did not become emergencies, but they highlight the threat to New Zealanders that is always there.

Historically, natural hazards, and in particular flooding and earthquakes, have been the main focus of emergency management. Flooding is the most common natural hazard in New Zealand, and earthquakes and tsunamis are potentially the most damaging and disruptive. Probably the most underrated natural hazard is volcanic eruption. Technological development in New Zealand has created significant new hazards and risks, and increasing reliance on infrastructure has led to potentially greater community vulnerability. Hazardous substances, introduced organisms and diseases, and terrorism all may threaten public safety or adversely affect New Zealand's environment, health, and economy.

New Zealand's vision for civil defence emergency management is a 'Resilient New Zealand', with communities understanding and managing their risks. This vision can only be realised if we have participation and commitment at all levels, from the Government, local authorities, individual departments, businesses, and volunteer organisations, right down to individual families. Central to emergency management in New Zealand is an all-hazards, all-risks, multi-agency, integrated and community-focused approach. This approach is based on the 4Rs – reduction, readiness, response and recovery.

One of my key focuses for the civil defence sector in New Zealand is developing and strengthening international relationships. As disasters worldwide increase in number and severity, enhanced international cooperation is required in order to manage these events. In response to this, the Ministry of Civil Defence and Emergency Management has developed an international engagement strategy, which I endorsed in December, in order to strengthen civil defence relationships with regional neighbours such as Australia and the Pacific Island countries, as well as key partners such as the United Nations.

New Zealanders are always ready to lend a helping hand in their local communities and we are taking steps to ensure we are also able to assist the global community in an emergency. Our international engagement approach is based on three objectives:

• We want to help others – we want to be a good 'global citizen'; and

• We want to learn – to increase our domestic resilience through increased Civil Defence Emergency Management knowledge.

• We want to be helped – ensuring that the appropriate arrangements are in place should we need assistance following an event in New Zealand;

With Australia being our closet neighbour, Civil Defence Emergency Management links between our countries are especially important and I look forward to continuing to strengthen this relationship in the future.

Hon Rick Barker
Minister of Civil Defence
New Zealand

The Ministerial Council for Police and Emergency Management – Emergency Management, which meets once or twice a year to deliberateon major issues confronting the emergency sector, showed a strong cooperative willingness at its most recent meeting. This communiqué, or summary of discussions,was issued at the conclusion of the Council meeting on 26 March 2008.

Communiqué

A new spirit of cooperation has been evident during the first meeting of the Ministerial Council for Police and Emergency Management since the election of the Rudd Government, which was held today in Canberra.

Chaired by the Australian Attorney-General Robert McClelland, the Ministerial Council comprises State and Territory Ministers for Emergency Services, and the Australian Local Government Association.

The Council also welcomed New Zealand as a new member of the Council, represented by the NZ Minister for Civil Defence, the Hon. Rick Barker.

The Council endorsed the draft Australian Emergency Management Arrangements, which brings together for the first time the emergency management arrangements across all jurisdictions.

The arrangements will assist in creating more informed, safer and sustainable communities that are better able to withstand natural disasters.

The Council intends to undertake further work to identify and address gaps in existing arrangements to adopt an all hazards approach in dealing with potential catastrophic disasters.

The Council also tasked the Australian Emergency Management Committee to advise on a new public information campaign, which would better prepare local communities for emergencies and make them more resilient when it comes to responding to natural disasters.

A working group was established to report to COAG on the development and implementation of a nationally consistent emergency warning system in Australia. All Ministers agreed such a system has the potential to save lives and all expressed a willingness to work to together to ensure better responses to emergencies.

The Council also agreed to work towards implementing the National Emergency Management Strategy for Remote Indigenous Communities (Keeping Our Mob Safe). This Strategy is critical to prepare vulnerable and isolated Indigenous communities from serious disaster. The Council noted the potential for training, education and employment opportunities for Indigenous people. The Council recommended implementing a national standard for the introduction of reduced fire risk cigarettes by early 2009.

The Council noted progress towards a single incident management system and enhancing urban search and rescue capacity including working closely with our New Zealand counterparts.

The Council acknowledged the invaluable contribution of volunteers and requested a report from the Australian Emergency Management Committee on appropriate methods to recognise, recruit and retain volunteers.

The Council also noted the success of the Natural Disaster Mitigation Program in contributing to safer, sustainable communities better able to withstand the effects of natural disasters including the recent Queensland and New South Wales floods and the Victorian bushfires of 2007.

The Council also gave its unanimous support for New Zealand becoming a member of the Council and praised the presentation by Minister Barker, on public education campaigns on community disaster preparedness. The Council sees real benefit in both countries exchanging ideas about best practice in emergency management and response.

Ministerial Council for Police and Emergency Management – Emergency Management 26 March 2008

A new approach to community flood education

Neil Dufty argues that community flood education programs be broadened from 'awareness' and 'preparedness' to building community resilience.

Abstract

Although of increasing importance in a future of climate change, community flood education programs have generally been poorly designed and delivered in a relatively ineffective, 'top-down' manner. A new approach to flood education is promoted that broadens its focus from increasing awareness and preparedness levels to building flood resilient communities. Four functions of flood education are identified to help communities learn to build their resilience. Other features of the new approach are increased community participation in the design, implementation and evaluation of programs and effective ongoing education provision through local flood education plans.

Introduction

There have been many attempts at community flood education both in Australia and overseas (Molino Stewart, 2007). Most of these programs aim to raise awareness about flooding; some also aim to prepare communities for flood events.

Sadly, almost all of these programs are poorly designed, not evaluated and short term. Moreover, they generally undersell the value of flood education (Dufty, 2008).

This article describes a new approach to community flood education that is showing promise in providing effective and long term benefits to flood prone communities in some parts of Australia.

Flood education and resilience

The first feature of the new approach is that it extends the reach of flood education, from just raising awareness and preparedness levels, to helping build flood resilient communities.

According to Paton (2006a, p. 8), 'resilience is a measure of how well people and societies can adapt to a changed reality and capitalise on new possibilities offered'. In terms of flooding, resilience involves the ability of a community to not only resist and recover from a flood, but also to improve as a result of the changed realities that the flood may cause.

Flood resilient communities will be critical in an uncertain future of 'accelerated' climate change. Most climate change models predict increases in the intensity of storm events and floods exceeding the 1-in-100 year flood in parts of Australia over the next 50 years. With the limitations of structural works to protect communities already acknowledged, in a future of increased flooding risk communities may be further exposed. The ability of communities to adapt to flooding in the future is therefore paramount, not only to minimising loss of life and damages, but also in ensuring a steady path towards economic and social sustainability is maintained (Folke, 2002).

Because of its ability to help people learn and improve as a result of learning, education is well-placed to help communities build their resilience to flooding. As a result, community flood education is here defined as 'any learning process or activity that builds community resilience to flooding'. It should be noted that the term 'community' includes all spheres of government, business, industry and the general public.

In the past, raising community awareness about flooding has been the main focus of many flood education programs. The value of this focus is questionable as several researchers, such as Boura (1998) and Paton et. al. (2003), have demonstrated that there is not a strong and causal link between people being aware of a hazard and acting appropriately for that hazard.

Community educators believed some years ago that there was a linear relationship between becoming aware of an issue, clarifying attitudes and values about that issue and then acting appropriately. Awareness is now viewed as one of a nest of factors that precipitate appropriate behaviours. For example, in relation to hazards, Paton et. al. (2006a) identifies 'critical awareness' as one of a sequence of components that determine a person's adoption of a protective action.

A community flood education program should therefore be designed to not only raise awareness but also focus on the other psychological factors (including barriers) that convert people to preparedness. Furthermore,

to assist in building flood resilient communities, flood education should not just focus on preparedness, it should also relate to other components of resilience (Paton, 2006a) such as adaptive systems and competencies.

The functions of flood education

A second feature of the new approach is the clear identification of the functions of flood education in building flood resilient communities. Webber and Dufty (2008) identified the following as the functions of flood education in the new approach.

1. 'Preparedness conversion' – learning related to commencing and maintaining preparations for flooding.

2. 'Mitigation behaviours' – learning and putting into practice the appropriate actions for before, during and after a flood.

3. 'Adaptive capability' – learning how to change and maintain adaptive systems (e.g. warning systems) and build community competencies to help minimise the impacts of flooding.

4. 'Post-flood learnings' – learning how to improve preparedness levels, mitigation behaviours and adaptive capability after a flood.

These functions are related as education interventions to the 'flood cycle' in Figure 1.

Figure 1. The functions of flood education related to the 'flood cycle'
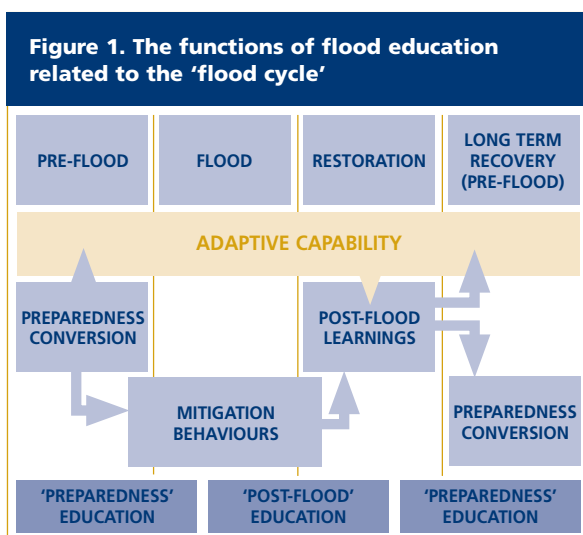
As shown in Figure 1, pre-flood or 'preparedness' education should aim to help people, organisations (e.g. businesses) and their communities commence and maintain preparations for flooding and to build competencies and systems to adapt to flood events. 'Preparedness conversion' is a prerequisite, especially in communities or parts of communities

where preparedness levels are low, for individuals, organisations and communities to commence preparedness planning. They then learn appropriate mitigation behaviours and how to improve their competencies and systems ('adaptive capability') to resist and recover from flooding. It is immediately before, during and after a flood that these behaviours, competencies and systems are activated as part of the community's resilience to the event.

After a flood, education has another important role in helping individuals, organisations and communities learn from their flood experiences (e.g. the effectiveness of mitigation behaviours and adaptive capability) and use these learnings for improvements in future flood events. Another phase of education then commences as long-term recovery becomes the pre-flood part of the new cycle.

Most attempts at flood education to date only focus on 'preparedness conversion' and improving 'mitigation behaviours', with little done on building 'adaptive capability' and community learning after floods.

Education activities related to improving the adaptive capability of a community, or part of a community, could include:

• Training SES volunteers in community education. This enables volunteers to help educate their local communities both in formal (e.g. events) and informal settings. Identifying and training community leaders in flood education so that they can help educate others in their networks.

• Developing and maintaining ongoing community discussion about flooding and coping with different local flooding scenarios. This could be achieved through the media, community group meetings and in informal settings.

• Community and agency reviews of preventative (e.g. floodplain planning) and coping systems (e.g. total warning systems, recovery systems). This could be achieved through public meetings, working groups, focus groups. Community emergency plans are another method of encapsulating many of these systems.

• Providing vulnerable community sectors (e.g. businesses), organisations (e.g. caravan parks) and groups (e.g. people of Non-English Speaking Background, aged), with specifically tailored education activities to develop their competencies to cope with a flood event.

Education activities in relation to post-flood learnings could include:

• Social research (e.g. surveys, focus groups) to find out the effectiveness of warning systems, evacuations, recovery support, flood education etc. and how they can be improved.

- Agency disaster de-briefs, the learnings from which improve systems and agency competencies.

- Oral histories. These allow people to recount their stories about the flood event and to identify learnings to better prepare and cope with future floods.

- Community de-brief meetings to identify problems in preparation, response and recovery and possible improvements.

Community participation

A third feature of the new approach is the commitment to community participation in the design, implementation and evaluation of flood education programs. The 'traditional approach' to flood education, still in widespread use, informed the community about floods and their risks through the dissemination of prepared material. It sometimes emphasised actions people could undertake to protect themselves and their property. According to O'Neill (2004, p. 5), this approach 'was often one-off and one-way, and assumed that the audience was an undistinguishable group of individuals who had the same needs and values'.

A more participatory approach to community flood and other hazard education is now promoted. According to Paton (2006b, p. 16), 'Participation in identifying shared problems and collaborating with others to develop and implement solutions to resolve them engenders the development of competencies that enhance community resilience to adversity'.

The participatory approach, although relatively new to flood education, has been well acknowledged and used in other forms of community education. For example, in education for sustainability, according to Tilbury and Wortman (2004, p. 56), 'genuine participation is essential to building people's abilities and empowering learners to take action for change toward sustainability'.

Using the participatory approach, emergency management agencies act more as facilitators to communities, rather than directing change in a 'top-down' manner. They also help the community build its capability (e.g. networks, leadership, competencies) for preparedness, response and recovery.

Flood education planning

A fourth and last feature of the new approach is the promotion of long term education planning.

Intuitively, community flood education programs should be ongoing as it is unsure when a flood event will occur. Furthermore, there is some evidence to show the value of longer term community flood education programs in comparison to short term education 'campaigns' of less than sixth months duration. For example, research

by the NSW State Emergency Service (Webber and Dufty, 2008) has shown that communities in NSW that received education programs for longer than one year have shown significantly higher preparedness levels and a much greater willingness to evacuate.

Using the participatory approach, a relatively new way to formalise longer term flood education activities is through 'local flood education plans'. These plans are developed, implemented and evaluated by local committees, usually consisting of resident and business representatives, local council and government agency staff.

In some communities, local flood education committees need to be formed to manage the development of the local flood education plans. In other communities, the management of a flood education plan can be subsumed into the function of an existing floodplain management or emergency management committee. In every case, there needs to be local commitment and drive to ensure the success of the plans.

It cannot be assumed that the local committee has specific education expertise, especially related to the design and evaluation of flood education programs. Education practitioners, such as those from the emergency management agencies, can provide expert education guidance for these committees as required.

Local flood education planning should address the four functions of community flood education identified above. It should also relate appropriate learning activities to the different community groups or sectors (e.g. ethnic groups, businesses, rural landholders, residents) involved in the plan.

Local flood education plans should strongly promote and support individual, home and business flood preparedness plans. They also should build community capacity where appropriate (e.g. networks for learning, training of volunteers) and involve the community in the planning, implementation and evaluation phases.

There is also research that shows that a cross-hazard approach to community resilience education has merit, not only in economies of scale and avoiding duplication of community effort, but also using standard preparedness messages and education activities e.g. preparing personal or business hazard emergency plans instead of just flood preparedness plans. Where possible, local flood education plans should be part of local hazard education plans (e.g. in communities at risk from both bushfires and flooding) developed by a local hazard education committee or, especially in smaller communities, a progress association or other community representative group.

A major deficiency of many flood education programs is a lack of evaluation to gauge their appropriateness and effectiveness. Evaluation should be part of the planning and

implementation of these programs and inform improvements for future programs and their education activities.

There are two categories of evaluation that should be related to these programs.

1. *Summative evaluation* which measures the program's success or failure by comparing outcomes with original goals

2. *Formative evaluation* which measures program progress against ongoing benchmarks and allows the manager to make course corrections.

An evaluation process should also be built into local flood education plans to determine the success of education programs and activities included in the plan. Evaluation of the plans should also be both formative and summative.

Evaluation should strive to gauge the appropriateness and effectiveness of the plans and their education activities by measuring success in the following:

• Delivery of the plan actions and education activities

• Levels of community preparedness

• Competencies and systems in place to adapt to a flood event

• Response including use of appropriate mitigation behaviours to a flood event

• Recovery after a flood event

• Learnings and improvements to preparedness, competencies and systems after a flood event.

A major tool in this evaluation should be social research to help measure these 'indicators of success'. This social research can include surveying of landholders and others affected by flooding, focus groups, interviews, de-briefing meetings and oral histories. Anecdotal observations from landholders and emergency agencies are useful in complementing the more quantitative methods such as surveying.

Where possible, the evaluation of community education plans and programs should involve the community or its representatives. Participatory evaluation involves local stakeholders in problem identification, evaluation design, data collection, analysis and use of results. Stakeholders include those who affect or are affected by the policies, decisions and actions of a program. Participatory evaluation has already shown to be effective in several fields including sustainable development, health and agriculture (McDuff, 2002).

The approach in practice

Although in its infancy and not yet fully evaluated, there are some indications that this new approach has merit in helping build community resilience to flooding.

NSW State Emergency Service and the Victoria State Emergency Service (VICSES) have developed their respective FloodSafe and FloodSmart programs that comply with some parts of the new approach. An evaluation of the pilot FloodSmart program in Benalla showed that the program had considerable impact in raising some aspects of community preparedness and increasing adaptive capability, at least in the short term (Molino Stewart, 2007).

To date, flood education plans have, or are being developed in four communities in NSW (Webber and Dufty, 2008). Although the impacts of these plans have not yet been fully evaluated, their main benefits at this stage appear to be:

• More community ownership in flood education

• Greater recognition and support of flood education by floodplain management and emergency management authorities

• Flood education activities planned for local needs

• Information and resources are better distributed in areas of need

• Feedback and engagement processes are at a wider and more complex level

• Flood education activities to be rolled out systematically over time

• Improvements to be made to local flood education through planned evaluation

• State-wide and regional education initiatives to be utilised where appropriate to the local situation.

One of the NSW local flood education plans has been evaluated through the comparison of social research before the plan was developed with that after parts of the plan were implemented. The Maitland flood education plan was developed by representatives of local rural landholders, businesses, residents, Maitland City Council, NSW SES and the Hunter-Central Rivers Catchment Management Authority. The comparison of social research found that there were increases in the concern of Maitland residents about flooding, their preparedness and understanding of appropriate response behaviours (Micromex, 2007). It should be noted that results are somewhat clouded by the psychological impact of the flood event of June/July 2007 that occurred during the implementation of the plan.

Conclusion

Based on hazard psychological research and learnings from community education practice, a 'new approach' to flood education is promoted that should be more appropriate and effective than that implemented in the past.

The new approach has four main features.

1. It focuses on building community resilience to flooding.

2. It has four clear functions – learning related to preparedness conversion, mitigation behaviours and adaptive capability (competencies and systems), and post-flood learnings.

3. It requires community participation in the design, implementation and evaluation of flood education programs.

4. It encourages ongoing education through local flood education plans.

It should be noted that he new approach is highly transferable to education for other natural hazards. Some of the features of the approach have already been implemented in bushfire education programs. For example, for some years the Victoria Country Fire Authority has been using community participation in ongoing preparedness learning through its Community Fireguard program.

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About the Author

Neil Dufty is a Principal of Molino Stewart Pty Ltd, based at Parramatta, NSW. He has extensive experience in implementing and evaluating community education programs, especially in environmental education. Over the past four years, Neil has conducted research into flood education programs worldwide and evaluated community flood education programs including for the Victoria State Emergency Service. Neil may be contacted at ndufty@molinostewart.com.au

Litigation for failure to warn of natural hazards and community resilience[1]

Michael Eburn discusses liability in relation to hazard warnings in the Australian context and examines whether 'blaming, naming and claiming' poses a threat to community resilience.

Abstract

Kumar and Srivastava, in their book, *Tsunami and Disaster Management: Law and Governance*, argue that governments should be strictly liable for failure to warn of impending disasters. In this paper Eburn looks at that argument in the context of Australian law and finds that bringing a legal action for failure to warn may be easier than suing responders, but such an action would still face considerable legal hurdles and may pose a threat to long term community resilience. The paper is particularly timely given the current litigation arising from the 2003 Canberra bushfires and the alleged failure of ACT emergency services to issue adequate and timely warnings.

This paper considers, in the Australian context, the potential liability of those involved in communicating hazard warnings to the community. It considers the proposition that suing the authorities for 'failure to warn' will be a reasonably attractive litigation strategy but that, if adopted, may pose a threat to community resilience. It will argue that reliance on tort (or fault based litigation) may pose a threat to community resilience.

The argument in favour of liability

Kumar and Srivastava (2006) argue that traditional tort law provides too many barriers for those affected by disasters so, they argue a new strict liability is required. They say:

> … the compensatory approach to tort law adds a vital element to the discourse on providing justice to disaster victims. Tort law is developing towards establishing a primary duty on those in whose hands lay the security and welfare of hundreds and thousands of people in the aftermath of a disaster. **It needs to be recognised that when government authorities**, businesses or individuals **fail to give adequate warnings** or take reasonable precautions against an impending danger or disaster (when possible to do so), or fail to take adequate relief and rescue measures, **they could be strictly liable**. (Kumar and Srivastava, 2006, p.40 (emphasis added)).

The role of tort law

The role of tort law is to compensate a person for the injury or losses suffered due to the neglect or misfeasance of another, rather than to allocate blame in a moral sense. Notwithstanding this, Wells, Morgan and Quick (2000) have identified three stages that form part of a tort claim; they call these the stages of 'naming, blaming, and claiming' and say these 'mark the move from acceptance of death and disaster to the widefelt need to blame.' (Wells et al, 2000, p.504). Apart from a sense of moral vindication, the identification of someone to blame brings the ability to transfer the cost of the disaster from the affected individual (or their insurer) to someone else – the government, another government or another insurer.

The Australian context

Assuming that someone wants to 'blame, name and claim', is that going to be likely or easy?

As far as likely is concerned one has to say 'yes'. First it must be remembered that that 'disasters do not label themselves' (Wells et al, 2000, p.504) that is an event like a fire, a flood, an earthquake or a tsunami are not a disaster unless and until they impact upon a vulnerable community. It is that impact that converts an 'event' or a hazard into a 'disaster' (Kent, 1987, p. 2). Once an event has impacted upon a community it 'is not surprising that post mortems … reveal weaknesses and shortcomings' (McLeod, 2003, p.iii) and affected communities can point to some decision, process or institutional failure that, had it been avoided, may have lead to different outcomes. It is relatively easy therefore, after a disaster, to find some one or some institution that can be labelled as negligent, inadequate or worse 'incompetent' (Doogan, 2006, p.165).

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1   A version of this paper was presented at the Australasian Natural Hazards Management Conference, Brisbane, July 2007.

Failure to warn will be an attractive theory of liability

Inquiries, and courts, are unwilling to blame front line responders for decisions made in the heat of the moment when faced with an unpredictable event (Eburn, 2005, p.40). Legislatures have also attempted to limit the liability of the emergency services and/or their officers for decisions in the field, particularly when an incident is classed as a state of disaster or emergency (see for example *State Emergency and Rescue Management Act 1989* (NSW) ss 62 and 62A; *Emergencies Act 2005* (WA) Part 7 and s 100; *Emergencies Act 2004* (ACT) s 198).

A failure to warn of the risk of an incident impacting upon a community is somewhat different. For the Bureau of Meteorology there is no particular legal protection, for the managers of the emergency services, choosing whether, and how to warn an at risk community, is not an exercise of a 'special statutory power' (*Civil Liability Act 2002* (NSW) s 43A) so that, in each case, they will be judged by the ordinary law of tort.

What follows is that where a naturally occurring event impacts upon a community and people want to find someone to blame an easier and attractive target for the litigation will be those charged with issuing a 'warning' to the community rather than those charged with managing the response.

The other question posed was 'would such an action be easy?' The answer to that question is 'no, it will not be easy, but it will be easier than suing other potential defendants such as responders'.

Duty of care

The first issue that must be addressed is whether any identified organisation owes a legal duty to issue a warning. This is complex but at least arguable.

First some authorities have a statutory obligation to warn (*Meteorology Act 1955* (Cth) s 6(1)(c); *State Emergency Service Act 1989* (NSW) s 8(1)(a)). Other services, including the fire brigades, police, ambulance and health services have general duties to protect people and communities from risks. Even if they are not specifically charged with a duty to issue warnings, such a power would exist as an incidental power, that is it is implied by their more general obligations.

Just because an authority has a statutory obligation or power does not mean a person affected can sue for the negligent exercise of that obligation or power. Deciding when an authority will owe a duty of care is not easy. Notwithstanding the absence of a 'clear and universal test' (*Amaca*, 2004, ¶19) some key factors that may suggest an authority owes a duty of care have arisen.

In this context the relevant factors are

- Control – does the authority control the hazard; and

- Knowledge – that is where the authority has knowledge of a particular risk coupled with a power to intervene and there is a vulnerability on the part of others, either because they cannot know of the risk or cannot take steps to protect themselves from that risk.

McHugh J of the High Court of Australia said:

> Some powers may be vested in the authorities for the protection of a specific class of persons who may be exposed to risks of harm that they are powerless to avoid and sometimes unable to identify. … If the authority is aware of a situation that calls for the protection of an individual from a particular risk, the common law may impose a duty of care. (*Graham Barclay*, 2002, p359).

An organisation involved in hazard management may not be in control of the hazard (ie the fire or the storm) but they are in control of the information and whether, and how, that information is given to the public. Further the public may be in a position of vulnerability as they not only cannot know the information they cannot know what its significance is for them. Where people cannot inform themselves particularly because the information required is specialised and requires professional skill to understand (eg information about the weather or a fire system) then an individual must depend on a professional to explain the implications so that they can make their own decisions about what is best for them.

If we consider the case of a particular fire or flood the people likely to be affected by that hazard will be reasonably identifiable (it will be the people in the predicted path of the fire or living by the river, not an unidentifiable part of the community). Although they may know they live in a fire or flood prone environment and could be expected to take general precautions they cannot know the particular risk (how will the weather impact on *this* fire, how high is *this* flood expected to go) but that is something the combat and weather agencies may be expected to know. In that context there is a situation where the authorities have particular, specific, knowledge and are aware of a specific risk to an identifiable, vulnerable individual or group. It would be arguable therefore that a common law duty to warn can arise where an identifiable group is at risk from an event and they are unable to predict the consequences of the event themselves.

Breach of duty

If a legal duty to warn is found, there must then be evidence of a breach of that duty. This will be very problematic. Kumar and Srivastava argue that:

> Neither the state nor the individual should be allowed to escape liability on the ground of lack of resources or error of judgment by weathermen or by rescuers. The liability in such cases must be strict. The state must compensate those who have suffered, become destitute, or lost their property, possessions and livelihoods. (Kumar and Srivastava 2006, p.144).

That view does not reflect the law in Australia. In Australia

> A public body or statutory authority only has those powers that are conferred upon it. And it only has the resources with which it is provided. If the common law imposes a duty of care on a statutory authority in relation to the exercise or non-exercise of its powers or functions, it only imposes a duty to take those steps that a reasonable authority with the same powers and resources would have taken in the circumstances in question. (*Crimmins*, 1999, p.10, Gaudron J).

State legislatures have made it even harder to sue a public authority. In New South Wales for example, a person can only sue an agency for breach of a statutory duty if the action, or inaction, of the authority was 'so unreasonable that no authority having the functions of the authority in question could properly consider the act or omission to be a reasonable exercise of its functions.'(*Civil Liability Act 2002* (NSW) s 43; see also *Civil Law (Wrongs) Act 2002* (ACT) s 111; *Civil Liability Act 2003* (Qld) s 36; *Civil Liability Act 2002* (Tas) s 40; *Wrongs Act 1958* (Vic) s 84(2)). A plaintiff will therefore have to show that a failure to warn, or a failure to issue an adequate warning was not merely negligent but so unreasonable that no authority could have considered it was performing its statutory obligations in all the circumstances that were then present.

Further despite Kumar and Srivastava's (2006) argument that authorities should not escape liability due to a lack of resources the question of resources is an essential consideration in Australia. Again legislation has made it clear that in asking whether a statutory authority has acted reasonably, the court must take into account the resources available to that authority and the other responsibilities that the authority may have. A court cannot question how an authority may allocate its resources between its particular functions (*Civil Liability Act 2002* (NSW) s 42). Again this makes suing responders problematic. A plaintiff cannot complain that the fire brigade only despatched one, two or even no units to a reported fire particularly in a major event when all the resources are on the ground. The courts will not generally hear an allegation that the resources should have been deployed in some other way. This is equally true when it comes to failure to warn, particularly for the emergency service where the duty to warn of oncoming hazards is only one of its functions, so how it allocates its resources between the various tasks, including responding to the emergency as well as managing its media relations, is not subject to judicial review.

What this does mean is that an agency charged with warning a community will not be negligent for the decisions it made when it comes to establishing its resources, the weather bureau cannot be sued for failing to invest in the biggest and best satellite systems when it has to make resource decisions based on a number of competing resource demands. Unlike the fire brigades however, the decision to issue a warning using the resources one has carries, presumably, little opportunity cost so a court may be unlikely to see whether a warning was issued or not, or the nature and scope of the warning, as a question of resource allocation. Again the point to be made here is not that suing a warning agency for failure to warn will be easy, but it will be easier than attempting to sue a response agency for failure to respond to the hazard.

Damage

Finally the plaintiff will have to prove damage, that is had the warning been given the outcome for them would have been different (*Rogers*, 1992; *Chappel*, 1998, *Rosenberg*, 2001). In the case of fire that may mean, as the ACT Coroner found, that people would have been better prepared to defend their homes or could have made earlier decisions to remove valuable items, pets or themselves out of harms way. The High Court, when dealing with negligent failure to warn by medical practitioners, has warned that one must approach a plaintiff's claims that they would have responded differently if warned of a risk, with caution. It must be remembered that after the event, the plaintiff knows exactly what will happen, but the duty to warn is not a duty to accurately predict an outcome but to warn of a risk (*Rosenberg*, 2001). In context that may mean a plaintiff will argue 'If I'd been told the fire was going to impact upon my home I would have stayed or moved my possessions' but that is not the correct test. The authorities, before the event, can at best predict, with varying degrees of confidence, that a certain area or population may be affected. They are unlikely to be able to predict the exact impact or who exactly will be impacted. The question for a court in subsequent litigation is, therefore, would the plaintiff have done something differently if warned 'There is a risk that you may be affected', not if told 'your house will be destroyed by fire'.

The threat to community resilience

None of the issues raised by the litigation are insurmountable, but they are arguable. To say that they are arguable, rather than they are clear cut, means that the litigants may well spend many months or years bringing evidence and making legal argument. The path to tort compensation will be rocky, time consuming, stressful and unpredictable.

Relying on tort action to bring out the failings in the emergency management (including the failure to warn) or to provide financial compensation can pose a threat to community resilience. 'The term community resilience recognises that communities operate as networks and groups, rather than as discrete individuals' (O'Neill, 2004) litigation is however, an intrinsically individual process, where the focus is on the individual's relationship with the defendant (in order to determine if there is a duty of care) and the individual's losses. This means that litigation can be a threat to community resilience; that is the ability of people to operate in networks and to develop a community response to hazards and hazard management. Some potential examples of how litigation is a threat to community resilience are:

- '[N]aming, blaming, and claiming' converts a disaster from an event for which we are all responsible to one for which an individual or an authority can be blamed. The disaster becomes an abnormality caused by a failure rather than an event that the community can take responsibility for. Kumar and Srivastava (2006) refer to those 'in whose hands lay the security and welfare of hundreds and thousands of people in the aftermath of a disaster'. The Canberra Coroner referred to 'those charged with responsibility for keeping the community safe from fire.' (Doogan, 2006, p.30). A successful tort action means that the event was someone's 'fault' and the 'victim' does not have to take responsibility for their own actions or failure to prepare (Cohen et al, 1996). This may well persuade the community that disasters are unnatural, avoidable and some one else's (generally the government's) responsibility.

  To rely on tort litigation to remedy alleged defects in performance, after the event, reinforces the belief or the expectation that the emergency services will, with 'lights and sirens come flying down the road … and they'll take the responsibility away from you.' Communities, if they are to be resilient need to '… understand the nature of where they live and the fact that fire [or flood or storms are] … part of the natural environment, and at some time quite often, if it's not "if", it's "when" you're going to have to experience it.' (*Gardner*, 2004, ¶58) By seeing adverse events as the fault of someone else, the requirement on communities to take an interest in the hazards they face is reduced.

- Tort litigation is a threat to community resilience by forcing people to remain locked in the past. To yet again take the Canberra bushfires as an example, the people involved in that event have had to give evidence to, and wait for a number of public enquiries including the *Inquiry into the Operational Response to the January 2004 Bushfires in the ACT; the House Select Committee on the Recent Australian Bushfires*; the ACT Coroner's inquest (2003 – 2006) and now the associated civil litigation. Each inquiry or trial is looking at the events over a short period, at actions taken in the hours and minutes as the fire progressed. Members of the community and the emergency services are asked again and again to go over the decisions made at that time. Community resilience cannot be established by repeatedly asking the same questions.

- Tort litigation does not encourage recovery.

  Recovery is defined as: 'The coordinated efforts and processes to effect the immediate, medium and long term holistic regeneration of a community following a disaster'. (Norman, 2006, p.16.)

  A community may want to recover, but there is an incentive in tort litigation for the plaintiff to remain focused on the poor outcomes rather than the possibilities of recovery. If the plaintiff has 'recovered' their damages will be less than if they can show ongoing adverse consequences.

- Tort litigation is a blunt tool for delivering justice. The only remedy the court has is to award money damages though for some plaintiffs there may be a desire that some other sense of vindication will come through. In many cases the money will flow not to the victims of the disaster but from the resources of the government (or the governments' insurer) to another insurer. As a loss shifting exercise it is of limited value in major disasters where governments, the community, non-government organisations and insurers already come to make good the losses as far as money can do that. The costs of disasters are already spread across the community by way of insurance premiums, government and insurer support for the emergency services and the overwhelming generosity of the broader community who donate to emergency relief funds. The situation is not the case where a person must sue in negligence or receive no assistance or compensation for their losses.

- Tort litigation is not designed to discover 'the truth' rather it is an adversarial process designed to establish the legal elements required to succeed. It is a complex process surrounded by legal processes and rules of evidence. It does not have the objectives of a public inquiry that is set up to actually consider the lessons that may be learned from the process. Where there is a fear of litigation, potential witnesses may be unwilling to give evidence to public enquiries. Wells, Morgan and Quick (2000) report that

  Where the institutional processes relating to major accidents (disasters) is primarily focused on apportioning blame, facts will be concealed or seriously distorted by the adversarial process … (Wells et al 2000, p. 5, , citing Hood and Jones, 1996).

- Parties to civil litigation may settle a matter on confidential terms thereby restricting the flow of information and avoiding the public naming that a plaintiff may desire. The share of the tort damages are not spread across the community but only to those ready willing and able to embark on the litigation process.

Conclusion

This paper was inspired by the chapter in Kumar and Srivastava's book *Tsunami and Disaster Management: Law and Governance* where they argued for an increased use of tort litigation as a way of enhancing justice for disaster 'victims'. They argued that '… those in whose hands lay the security and welfare of hundreds and thousands of people in the aftermath of a disaster' should be strictly liable for any failure to warn the community of the impending disaster.

It is argued here that this is the wrong approach. Tort liability is an individualistic response to a disaster and could divide a community and threaten their resilience. It is unlikely that tort actions will actually enhance responders and managers desire to act in the best interests of the community. Tort action with its culture of blame will discourage volunteers, and distort the distribution of funds so that resources are expended on litigation and what is available for relief is not distributed on the basis of need, but the basis of blame. A community response, based on community ownership of prevention, preparation, response and recovery will do far more to benefit both the community's, and the individual's recovery, than encouraging people to litigate.

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Paramedics' perceptions of risk and willingness to work during disasters

Smith, Morgans, Qureshi, Archer, and Burkle Jr., report on a study investigating the factors motivating paramedics' willingness to work during disasters.

Abstract

Paramedics, as emergency healthcare workers and 'frontline' responders, are expected to be both willing and able to respond when disaster strikes. In reality, paramedics may be reluctant to work when the situation poses a possible threat to their own safety, their co-workers, or that of their families. Consequently, can ambulance services expect to have an adequate supply of paramedics that will be willing to work during disasters? Through the use of paramedic focus groups, this study demonstrates that ambulance services should not assume that all paramedics will be willing to report to work during disasters. This willingness to work is directly influenced by paramedics' perceptions of risk, as well as the type, duration, location, and visibility of the disaster. The impact of this should be considered in emergency preparedness and planning.

Introduction

When major emergencies and disasters occur, employers, emergency planners, and even the public may *assume* that paramedics will be willing to work. In *reality* however, paramedics may be reluctant to work when the situation poses a possible threat to their own health and safety, or that of their co-workers and families. Such reluctance could be detrimental to the ability of the health care system to cope with the surge of demand on resources that is synonymous with major emergencies and disasters (Chua 2004, Verma 2004, Koh 2005), placing further stress on an already overcrowded and stretched emergency health care system. This issue is of particular concern in highly populated urban areas, particularly during health-related and non-conventional disasters, as the density of the population may encourage the rapid spread of infection or contamination in the event of health disasters and chemical, biological, radiological, and nuclear (CBRN) events . A ready and willing prehospital workforce will be a vital component of any strategy designed to protect the health and well-being, and ultimate

survivability, of the community following a disaster. Given the importance of having a willing prehospital workforce during disasters, coupled with our current lack of understanding regarding this willingness to work, this study was designed to investigate how paramedic's perceive the risks involved with working during a disaster, and ultimately, whether this risk perception impacts on their subsequent willingness to work during these events. The findings of this research will provide emergency planners with a key insight into what concerns paramedics have in regards to responding to disasters, and how these concerns can be addressed prior to a disaster occurring on our soil.

Background

Reports from the US, Canada, Asia, Israel, Germany, and Australia highlight that during conventional and non-conventional disasters (such as hurricanes, outbreaks of infectious disease, warfare and terrorism) emergency health care workers will not always be willing to report to work. A study of Israeli health care workers reported that 58% of respondents were not willing to report to work during a non-conventional missile attack (Shapira 1991). A Hawaiian study which examined the willingness of doctors and nurses to work in field hospitals during mass casualty events identified that respondents were more likely to be willing to work during natural disasters, with willingness influenced by perception of risk, perceived knowledge, and self-perceived ability to provide the type of care required (Lanzilotti 2002).

A number of studies have been conducted in New York following the September 11th terrorist attacks and the subsequent anthrax outbreak. These studies investigated the ability and willingness of emergency health care workers to respond to work during catastrophic disasters and terrorist related events. Barriers to being willing and able to work during these events included childcare, eldercare, transportation, personal and family health concerns, and compensation (Qureshi 2002, Qureshi 2005), fears for personal and family safety (DiMaggio 2005), perception of inadequate or too little training and education, and the lack of necessary equipment to respond to large scale events (Reilly 2007). Furthermore, emergency health care

providers report a decreased willingness to work during a prolonged disaster situation, and at no time will 100% of all personnel rostered to work actually report for duty (Syrett 2007).

During the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003, infectiousness of SARS was substantially higher among health care workers than the general population, especially those working in hospitals and prehospital care (Maunder 2004). Indeed, during the outbreak, Toronto suffered significant personnel and logistical problems in providing prehospital services to patients during the outbreak (Maguire 2007). Approximately half of Toronto's prehospital personnel were exposed to the disease, and many workers needed to be quarantined (Silverman 2004). Emergency health care workers believed that they were at high risk of becoming infected, with some refusing to care for the ill, and imposing self-quarantine on themselves to protect family members from potential exposure (Chua 2003, Koh 2005, Stein 2004).

A German study (Ehrenstein 2006) investigated ethical issues involved with the management of patients during an influenza pandemic. Of the 644 respondents in this study, 182 (28%) reported that it would be professionally acceptable for health care workers to abandon their workplace during a pandemic in order to protect themselves and their families. However, 52% did not find this ideology acceptable. Of interest, only a minority (32%) of hospital administration staff reported a willingness to work during an influenza pandemic while a greater number of health care providers (65% of doctors and 54% of nurses) reported an self perceived obligation to treat patients during a health disaster.

Most recently, two studies presented at the 2007 Society for Academic Emergency Medicine Annual Meeting in the United States examined the psychological barriers that may keep emergency health care workers from reporting to work during a disaster (Irvin 2007, Kruss 2007). These studies identified that healthcare workers would be more likely to report to work if they felt their role was important and that they could be effective in doing their job. 'Workers want to know that the role they play will be meaningful, and, if they put themselves out there for the benefit of others, their institution will in turn be taking care of them and their families' (Kruss 2007). Other factors that were found to impact on willingness to work included; a belief that the workplace was safe, that travelling to work will be safe, the perceived likelihood of contracting illness and exposing family members would be low, and confidence in the protective personal equipment (PPE) provided (Irvin 2007, Kruss 2007).

Nationally, a 2007 study investigated Australian paramedic's perception of risk in relation to pandemic influenza (Watt 2007, Tippett 2007). The findings of this study indicate that higher levels of perceived risk were directly associated with decreased confidence in both PPE, and strategies for protection from exposure. Of interest, 94% of the 725 respondents reported that they would want to know if a work colleague had been exposed to a known case of pandemic influenza illness, with 70% reporting that they would be *concerned* about working with them, and 40% reporting that the would *refuse* to work with them (Watt 2007, Tippett 2007). When discussing issues surrounding voluntary and enforced quarantine during a pandemic, 74% of respondents reported that their family would not be happy with the concept of 'home quarantine'. Study respondents reported that suitable support systems during a pandemic would include; subsidised vaccinations, frequent communications, financial support, quarantine away from the home, and counselling support for family members (Watt 2007, Tippett 2007).

With risk of injury, infection, illness, and contamination being inherent in the provision of emergency health care, paramedics need to find a balance between concerns for their own safety and the safety of their colleagues and family, and their duty to respond to work during a disaster situation (Singer 2003). Finding this 'balance' will depend largely on the way that paramedics perceive the risks involved with responding during disasters, and how these perceptions shape the subsequent risk assessments they make when deciding if they are willing to work or not. This research moves towards identifying how paramedics find this balance, by way of investigating how they perceive the risks involved with disaster response, and their willingness to work during such events.

Methods

A total of 58 Victorian paramedics participated in this study (55 attended focus groups and 3 were interviewed individually). A total of twelve focus groups were conducted throughout the state of Victoria during 2006 and 2007. Ethics and Research Approval were sought and obtained from the relevant committees, and no identifying information was recorded for any participant. A plain language statement explaining the project was made available and informed consent was given by each study participant. Two facilitators were present at each focus group. One facilitator conducted the interviews. Each focus group was attended by 3-8 paramedics and was 90 minutes in duration. The format, use of semi-structured questions, and the use of scenarios, were developed according to qualitative research guidelines (Bender 1994).

The focus groups and interviews were facilitated by the use of three scenarios:

Scenario One

A high speed passenger train had derailed in a major urban region. The derailment had associated traffic, structural, fuel, and fire hazards. An estimated 20–100 people will need treatment and transport.

Scenario Two

An explosion, with suspected chemical, biological, and radiological (CBR) involvement, and fire hazards, at the second largest building in the Central Business District (CBD). Initial reports indicate that this may be a series of bombings, and is potentially a terrorist attack. An estimated 15,000–20,000 people were in the building at the time of the explosion.

Scenario Three

A two part, escalating scenario that required participants to indicate their perceived risks and willingness to work at critical time points. This scenario involved cases of human-human transmitted Avian Influenza in Victoria, Australia, and escalated through suspected cased to confirmed cases.

The focus groups and interviews were audio-taped and transcribed, with each transcription reviewed by the principal investigator and members of the research team for accuracy. Each focus group and interview transcript was examined for emergent themes. Thematic analysis was conducted manually by members of the research team. Individual themes were identified by reviewing the text of each transcript. The individual themes highlighted were then compared to identify recurring and salient issues across the focus groups and interviews.

Results and Discussion

Analysis of the transcripts of these focus groups and interviews identified two primary streams of discussion, one exploring the key *risks* perceived with disaster response, and the second exploring the primary *concerns* paramedics have in being asked to respond to disaster situations.

Perceived Risk

Analysis of the discussions relevant to each disaster scenario highlighted a number of key perceived risks associated with the *type* of disaster situation involved. Essentially, the way that paramedics perceived risk

was directly influenced by the type of disaster, and the potential for that disaster to impact on their family. Threats to the health, wellbeing, and safety of self, colleagues, and family were often expressed as risk of *injury, death, exposure, infection*, and *illness*. Risk of injury was primarily related to conventional disaster scenarios (that did not involve health related or CBRN issues) *'I could get hurt', 'My partner could get hurt', 'This scene may not be safe'.* In contrast, discussion of non-conventional disasters identified perceived risk of exposure, infection, illness, and death *'I could get sick', 'I could take this home with me', 'My family could get sick'.* Of note, none of the study participants reported death as a risk associated with responding to conventional disasters . However, death was a risk associated with responding to non-conventional disasters (health related disasters or disasters involving some aspect of CBRN) *'We do not know what we are dealing with… I could die'.*

Primary Concerns

Throughout the discussions of paramedics' risk perception during disasters, a 'hierarchy of concerns' emerged, highlighting a recurring set of themes (Figure 1.)

Figure 1. Hierarchy of Concern

HEALTH & SAFETY
'Will I be safe?' 'Will my colleagues be safe?' 'Could I get sick?' 'Could I take something home to my family?'

RESPONSIBILITY
'This is my duty' 'What are my professional obligations?'

TRAINING, EDUCATION
'Am I ABLE to do my job?'

COMMUNICATION, INFORMATION
'Will I be able to make an accurate risk assessment?'

MISTRUST OF EMPLOYER
'Can I trust that my employer will give me the most accurate information to make my risk assessment?'

The first theme or 'concern' raised in all scenarios was the issue of personal health and safety. Threats to health and wellbeing of self, colleagues, and family (in terms of potential injury, exposure, infection, illness, and death)

December 6, 2007. A paramedic helps a woman at a fire at 570 Bourke Street Melbourne, Victoria.

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were the most frequently reported perceived risks of disaster response.

"…I mean, you have to look after number one, so yeah, I am definitely going to be worried about how safe the scene is…"

'Paramedic safety is constantly threatened by inadequate training for these kinds of events, and inadequate equipment to deal with them…makes you wonder what the point is when you think about the futility of the task …?"

Discussion of health and safety concerns was often followed with a discussion of 'responsibility' and 'duty of care'. While many paramedic's perceived their health and safety to be primary concerns when responding to a disaster or mass casualty event, these concerns were often reported to be negated by their desire to fulfil their professional responsibilities.

"It's my job…"

"Yeah I would go, I mean, that's why I wear this uniform…"

"This uniform and this job comes with a responsibility to turn up…"

"That is what we are trained for, why put on the uniform if you are not prepared to take the good jobs with the bad..."

Paramedic's often reported the need for improved disaster-focused education and training. A reoccurring theme was the reported feeling of inadequate and infrequent training in Personal Protective Equipment (PPE) in mass casualty response, specifically, for potential Chemical, Biological, Radiological, and Nuclear (CBRN) events.

"If we had better, and more frequent training for the CBRN and unknown stuff, then I would be happier to turn up to work if something happened…"

"I just don't think we have enough training, or PPE, for this stuff, I would definitely feel better about going in if we were better resourced…"

"What's the point of only training a small core group of paramedics to deal with this stuff, I mean, if something like that actually happened, we would all be expected to turn up, not just the boys with the proper suits and training…"

Improved communication strategies were of paramount concern to paramedics.

"Without decent communications and information, we are flying blind…"

"I would feel more willing to work during a disaster if the service was up front about what they know and what they don't know…"

"Let's face it, most of your risk assessment is going to happen before you get to the job, and that is where you need sufficient communication… to help us make decisions…"

"Communication during a disaster will be vital, we will need the most accurate information available, and we will need it as soon as it comes to hand…"

Another common theme expressed across all disaster scenarios was the need for current and reliable information.

"I want enough information, and it needs to come from the services quickly, so that I can look after number one…"

"I would expect information coming from the services to be wrong, I would expect it to be slow coming…but in the end, I will rely on that information until I get to the scene and can see for myself…"

"I think it's always safe to assume that nearly everything that you're told is likely to be wrong…and let's face it, in the early stages of something like this, no one will have a clear picture of what is going on…"

"There will be a lot of speculation, and the more that information is transmitted, and re-transmitted, the more incorrect it becomes…the services need to provide us with reliable information so we know what we are getting ourselves into…"

Paramedics also reported several other 'barriers' to being willing to work during disasters. These included access to childcare and eldercare, and the ability to communicate with family members whilst responding to the disasters.

"I would want to be there and I would want to help, but my wife is a nurse, and we have two little kids at home, so which one of us has to stay home and not turn up to work? If the service has pre-set childcare structures in place, it would make it easier for my wife and I to say, ok, we will drop the kids off at such and such a place, and we will know they will be safe, and we can both go to work. I don't think the services have thought about that."

"It's not only childcare that is the problem, I have my mother living at home with us, I would need to know that she was safe and cared for before I could respond to a disaster scene, especially one that could potentially be ongoing, like 9/11."

The need to be able to communicate with family members during a disaster was a strong theme. Paramedics consistently reported the need for pre-designated communication channels and strategies for them to be able to contact their loved ones, and also for their loved ones to be able to get current information as the disaster or event unfolds.

"I need to know that I can contact my family if I need to, and that they can find out what is going on..."

"Look at 9/11 and London, the families were watching everything on tv and knew how bad things were, but when they rang the stations, no one was answering, and comms couldn't tell them anything, and with the phone systems down, you didn't know what was going on…"

Paramedics frequently reported that they would not trust the ambulance services to provide them with current and accurate information during a disaster, and that the information provided to them when responding to large-scale events would be incorrect or misleading. The issue of mistrust was particularly dominant in the discussions of avian influenza and potential emerging infectious diseases, with paramedics reporting they would seek information from outside of the ambulance services before making their personal risk assessments.

"How can we do our jobs safely when we cant even rely on the services giving us correct, up to date information… you basically get no information, in fact, it is more likely to be misleading…"

"I think most ambo's are quite cynical about the services, we don't feel like they will be looking after our welfare, there will definitely be a lack of information… I mean, we know they have information now on bird flu, but it isn't filtering through to the troops on the ground…"

There were differences in perception of risk and willingness to work for conventional and non-conventional disasters. Perception of risk for conventional disasters focused largely on safety, whereas threats to health and wellbeing of self and family (exposure, infection, and illness) were the most

CFA firefighters use a hydraulic platform to rescue a man who was electrocuted on the roof of a church.

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frequently reported perceived risks of responding to non-conventional disasters. Paramedics were more willing to work during conventional disasters (*"It's my job"*, *"It's my responsibility"*) than during non-conventional disasters (*"I could get sick"*, *"My family could get sick"*, *"I could take something home with me."*).

Paramedics reported that conventional disasters tend to be more localised (in time and place) and visible (being able to see what is happening), making it easier for paramedics to conduct a personal risk assessment about responding to the disaster. When a disaster is not visible or localised the perception of risk increases, due in part to the difficulty in accurately assessing the risks involved with responding to the event. This increased perception of risk then corresponds with paramedics reporting a decreased willingness to work.

The duration of a disaster also impacted on perception of risk and willingness to work. Perception of risk increased the longer that a disaster situation lasted for, resulting in fewer paramedics reporting willingness to work as disasters develop. This theme was particularly evident during discussions of non-conventional disasters, where paramedics reported that they would become less willing to work as the disaster developed, especially if the agent or illness had not been identified, along with appropriate treatment and vaccination options being made available.

While the majority of study participants indicated that they would be willing to work during conventional disasters, this willingness decreased when the situation became non-conventional and less visible. The primary reason reported for this decreased willingness to work was the 'unknown' aspect of non-conventional disasters. You can *see* a derailed train. You can *see* a building on fire. You can't *see* a biological agent. You cannot *see* infection. Non-conventional disasters were also

Rescue workers survey the wreckage of a Thai airways passenger jet after it crashed on the resort island of Phuket.

perceived to be less localised (in both time and space). The longer an event lasts for, the fewer staff that will be willing to work.

Non-conventional disasters also have a larger impact on the family of the paramedic, with some paramedics reporting they would self-impose quarantine if they were required to work during a health related or non-conventional disaster. Once the issues of exposure, illness, and infection enter into the personal risk assessment paramedics make each time they enter a scene, the more difficult that risk assessment will be. In addition, paramedics with families have to expand their personal risk assessment to think of the impact on their families, and the possibility that they may *"bring something home with them."*

These issues need to be addressed at the training and education level, and also at the emergency service management level. Many of the barriers to being willing to work raised by study participants are amenable to intervention. Specifically, issues such as childcare, eldercare, transport, risk communication strategies, and communication with family members are issues that emergency services can address today.

Conclusion

This study demonstrates that ambulance services should not assume that all paramedics will be willing to report to work during disasters. The primary risks highlighted were *injury, exposure, infection, illness,* and *death*. The key concerns paramedics had related to *health and safety, communication issues*, the need for *accurate and timely information*, and the need for *suitable training and education*. Paramedic's often reported a difficulty in finding a balance between *safety* and *duty of care*, and a *mistrust* of ambulance services management. Study participants were more willing to work during

conventional disasters *"It's my job", "It's my responsibility"* than during non-conventional disasters *"I could get sick", "My family could get sick", "I could take something home with me"*, with factors such as visibility, localisation and duration influencing willingness to work.

Of importance to emergency planners, a large majority of study participants reported that their willingness to work during bio-events and non-conventional disasters would increase if they were provided with adequate *'safety measures'*, and *'protective equipment'* and *'training'*. Emergency planners should also take note of another recurring theme in the results from these studies – the impact of *childcare*, and *eldercare* obligations. The need for emergency health care workers to provide care and reassurance to family members needs to be recognised and addressed in emergency preparedness plans. The inability to fulfil these obligations may have a profound influence on willingness to report to work. These findings are important as they provide emergency planners with an insight into the key risks and concerns that need to be targeted in future disaster preparedness plans, and specifically, for targeted education and training programs in the future.

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An interdisciplinary analytical study on the risk preparedness of Bam and its cultural landscape, a world heritage property in danger in Iran[1]

Alireza Fallahi reports on a study investigating the extent to which opportunities presented by the Bam Earthquake in Iran 2003 contributed to the City's current resilience.

Abstract

Cultural heritage is very important in fostering a quality of life with value and pride in all civilizations. It comes together with an historic message and information that the cultural materials transmit from the past to the present and the future. Therefore, the protection of world cultural heritage from natural and man-made disasters has been a focus both nationally and internationally for the last fifty years. There are a number of examples indicate the extent of the irreplaceable destruction of heritage by natural disasters, such as Arg-e Bam.

Similar to most disasters, the 2003 Bam earthquake presented windows of opportunities for disaster mitigation, risk preparedness, physical planning, and socio-economic and cultural developments. The earthquake damaged a significant part of the historical areas of city and created an opportunity for developing a resilient community that could be used as a model city for other parts of the country.

The Bam disaster created new opportunities for the city's exceptional cultural heritage and further developments in tourism. Publicity focused on the earthquake provided an opportunity for further development and growth of the city's unique and internationally reknowned date production, renovation of the old irrigation systems, and expansion of the city's related industries. The city could also use this disaster to reshape its physical planning and development by introducing new planning ideas and innovations.

Now, more than four years after the disaster, this article analyses the extent such opportunities were exploited and proposes strategies and recommendations for future risk preparedness planning in Bam. It outlines a study, findings of which indicate that without undertaking an integral approach in terms of physical, social and cultural aspects, there will be little chance to find suitable and sustainable growth.

Introduction

Bam has a rich cultural heritage which includes first and foremost, the Arg-e-Bam. Being a symbol of cultural identity for the population of Bam and the entire Kerman province, Arg-e-Bam is the largest architectural earthen complex in the world with international recognition. The oasis city is said to have been founded between the 4th and 6th centuries. It flourished as a commercial centre on the silk-road and was a mighty fortified town.

The 2003 Bam Catastrophe led to the destruction of a number of historical buildings and cultural landscapes, hence exemplifying the urgent need for a risk preparedness program in these areas. Despite the fact that Iranian authorities had extensive experience in post-disaster reconstruction, they faced two new major challenges in the case of Bam. In the first instance, contrary to the previous earthquakes which mainly affected rural areas, the bulk of damages in Bam occurred in the center of an urban area; and secondly, this urban area had considerable historical significance.

In this regard, the UNESCO World Heritage Committee was held in China six months after the Bam disaster and registered as a World Heritage site and also inscribed on the World Heritage In Danger List. Some of the criteria for such selection were as follows:

- Bam developed at the crossroads of important trade routes at the southern side of the Iranian high plateau, and it became an outstanding example of the interaction between the various influences.

- Bam and its Cultural Landscape represent an exceptional testimony to the development of a trading settlement in the desert environment of the Central Asian region.

- The city of Bam represents an outstanding example of a fortified settlement and citadel in the Central Asian region, based on the use of mud layer technique (Chineh) combined with mud bricks (Khesht).

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1 This article has been extracted from a joint project between UNESCO Tehran Cluster and Shahid Beheshti University, which was finalized in late 2007.

- The cultural landscape of Bam is an outstanding representation of the interaction between man and nature in a desert environment, using the qanats. This system is based on a strict social network with precise tasks and responsibilities, which have been maintained in use until the present, but has now become vulnerable to irreversible change.

Study context

The effort to cope with the complex nature of catastrophe, its successes and failures encompasses lessons valuable both to Iranian and international bodies who have to deal with disastrous situations. To document and analyze the experience, an inter-disciplinary study has to be conducted which would take into account the pre- and post-earthquake periods, and would examine the existing strengths and persisting weaknesses in earthquake preparedness and mitigation in Bam. In this respect, heritage properties and historic areas seem to be considered in three ways (Hidetoshi 1999):

- as a 'patient' for whom prevention and preparedness measures should be provided,

- as a 'educational sample' from which methods of disaster prevention and reduction may be learned,

- as a 'value' which has allowed communities to be preserved and strengthened their traditions and cultures over decades. (Roberts, 1999)

There is evidence indicating that 'risk prevention' is supplied as one of the excuses for destruction. It is often claimed that 'adobe and dried brick structures' are weak against earthquakes; hence we must demolish them and compile stronger structures. This concept of disaster prevention devalues adobe and dried brick structures and is also reflected in parts of current laws (building regulations). As a result, certain strong and secure buildings which exist within appropriate climatic and structural conditions are unfortunately being eliminated by this system of restriction called 'strengthening old buildings'. (Murosaki, 1999). In addition, following the Bam earthquake, a number of old buildings were destroyed. Although the earthquake was the immediate cause, this destruction instigated a process of urban renovation. This occurred as during the process of reconstruction, many elderly buildings and structures were demolished in order to allow for the construction of stronger and sturdier structures. However, due to lack of a comprehensive urban design guideline, this destruction did not have a positive and harmonized impact upon the traditional architecture and community infrastructure.

Research questions

Considering the 'relief to development cycle' in relation to disaster prevention and preparedness in historic districts of Bam, the following questions should be addressed and answered:

- How can we protect historic districts from earthquakes?

- How can we prepare an appropriate risk preparedness strategy in historic areas?

- To what extent may strengthening policies increase risk preparedness and disaster prevention capabilities?

- Is there any possibility to successfully administer disaster preparedness programs in regards to Bam, keeping in mind its status as a World Heritage In Danger Property?

- What sorts of risk preparedness measures are required within the management plan of cultural property?

- What are the ways of strengthening the protection of World heritage property, in particular endangered properties?

- What is the role of local people?

Risk preparedness in historical areas

To investigate and derive appropriate responses to the mentioned questions, it appears that we need to examine the relation between historic areas or traditional buildings and disaster risk preparedness from the following three points of view (Hidetoshi 1999):

a. Materials and disaster preparedness

The first point of view lies in a consideration of the vulnerability of traditional adobe and dried brick structures in the event of earthquakes. It should be noted that even though some buildings may be destroyed easily, others may not. A number of earthquake incidences have indicated that different buildings experience varying degrees of damage. For instance, in the case of Bam, dome shaped buildings survived in the majority of cases. This means that the safety of a building against an earthquake is influenced not only by the materials used but also by the type of construction and methods of disaster prevention. In other words, if the materials used are not vulnerable, or if a building is architecturally constructed in a certain way, or if the necessary disaster preparedness measures have been implemented, there remains a high chance that the adobe and dried brick structure will not be destroyed. It is worth mentioning that evidence provided following the 2003 Bam earthquake indicated that few

modern buildings survived while a number of traditional buildings were able to withstand the tremendous force of the natural disaster. This exemplifies the idea that traditional and customary disaster prevention schemes were much more successful.

b. Culture and disaster preparedness

The second point of view is to consider the relation between culture and disaster preparedness. If we look at disaster preparedness from the point of view of culture, it may be recognized that the more affluent a culture is, the stronger the interest in disaster preparedness. Indeed, the motivation for disaster preparedness lies in the belief that there is something to protect, something to love, something to be proud of. If the object of love is lost, the desire to protect will also be lost. If the culture of adobe in a historic district is lost, interest in disaster preparedness will also be lost. Therefore this must not be allowed to take place if future prosperity and survival is to be achieved.

If we look at culture from the point of view of disaster preparedness, the relationship and link between them can further be exemplified. For instance, it is well known that traditional earthen framed windows, plastered walls and tile roofing, which are designs all richly remindful of the culture of traditional buildings, have been devised for the purpose of preventing disaster. This has altered many cultures to become more mindful and understanding and to strive for disaster management and hence has been referred to as "disaster subculture". It appears that this disaster subculture is alive in the traditional landscapes in most of the Iranian historical areas. (Tehrani 2007)

c. Technology and disaster preparedness

The third point of view is to consider disaster preparedness and its relationship with progression in technology. It is clear that technology is, without a doubt, a part of culture. This means that any form of disaster preparedness must be aligned with not only the culture of the society but also the technological capabilities with which they possess. (Adachi 1999)

The issue here is what and the way in which new materials, such as concrete and new techniques are introduced and incorporated. The uniqueness of a given culture must not be compromised by introducing these materials and techniques in an inappropriate or incompatible manner. In this sense, a spirit of acceptance and willingness must also exist if such hybrid constructions and developments of landscape are to be successfully carried out.

FEMA (2005) has also recently proposed a framework to study risk preparedness in historical areas. In this four steps model, the resources within communities should be organized and then the possible risks to be assessed. To develop a mitigation plan and then, to implement a plan and monitor progress are the next steps in this model (Fig. 1). The mentioned model was little modified and used in field trip and concluding remarks.

Field trip

On 29th December 2006, the field study trip for undertaking a household survey commenced in historic areas of Bam. The team representing the University of Shahid Beheshti, Reconstruction Research Department,

Fig. 1 Proposed framework for the study (FEMA 2005)
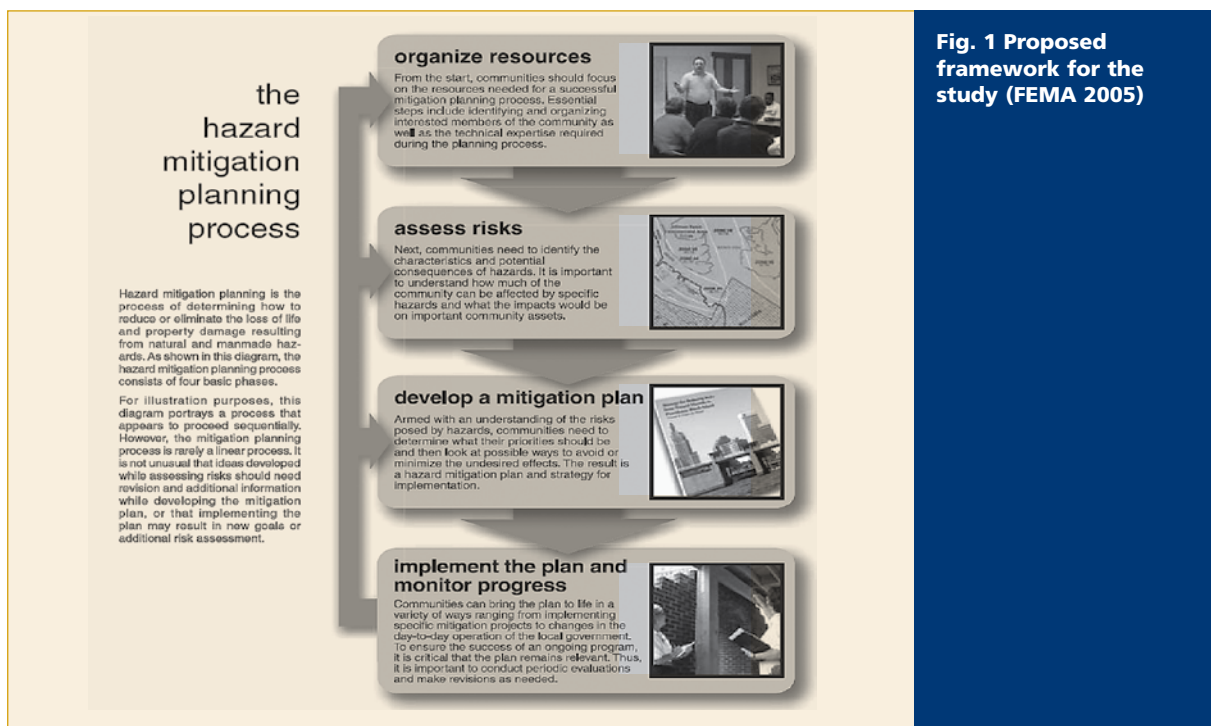
comprised of 3 supervisors and 13 postgraduate students. During the duration of the team's stay, a minibus, provided by the Housing Foundation, was used for travel. The Housing Foundation is a NGO responsible for the reconstruction of the city of Bam. The team was invited to use a room at the Cultural Heritage Organization (CHO), near Arg-e-Bam (Bam Citadel), as a temporary headquarter. The number and locations of historical buildings and cultural sites were outlined by comparing pre- and post-earthquake maps.

On the map of the city, seven regions were outlined and selected according to the residential and commercial facilities and historical buildings and heritage sites (Fig. 2). Previously prepared in three types (A, B and C), blank questionnaires were distributed between the 13 students who had been organized into seven groups, each group focusing their efforts on one particular region within the city.
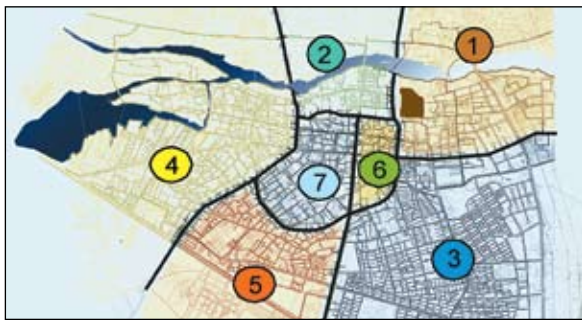

Fig. 2: The City of Bam was divided into seven regions according to the number of historical buildings and cultural sites for undertaking the field research (source: author)

Survey results

As mentioned earlier, the interviews were carried out of three community groups in Bam, as follows:

Group A: People with business affected by cultural heritage;

Group B: People with deep interest in cultural heritage;

Group C: Ordinary people.

Below reveals the findings derived from interviews, questionnaires and field work with local authorities, academics, Business persons and other social groups within Bam:

- Arg-e Bam is a symbol of culture, tradition and history within Bam. For this reason, it represents and conjures a sense of identity and pride within the community. It is this representation which warrants the urgency of its reconstruction, particularly that of its main entrance. The next priority deals with the restoration of Imam shrines and mosques, following by the reconstruction of other historic buildings.

This sequence of priority coincides with the viewpoint of Bam's residents.

- There exits significant differences between the residents of Bam whom hold long entrenched historic within the area and those who have migrated during the post-earthquake period in regards to their feelings of belonging to Arg and other historic sites.

- There does not exist significant differences between low, middle and high social classes in regards to their feelings towards Arg and Bam's overall Heritage.

- Those individuals whom remained residents of Bam after the disaster posses much stronger feelings of affection and attachment towards Bam.

- Younger residents, that is, those under the age of 20, lack awareness about Arg-e Bam and other historic monuments. Therefore, there is an urgent need to educate and train residents in this regard an order to improve cultural awareness and to build a framework of prevention and preparedness. Hence, to form a "culture of prevention" within all levels of society, particularly in schools.

- Some people have been involved in burning date and palm trees and bushes in an attempt to alter the land from agricultural to residential. This has been undertaken in order to financially gain from the difference in price between these two lands.

- Mobilization of local people within councils and their participation, interest and effort in preserving historic areas (90% participants in election).

- Support is required for palm and date tree owners in order to assist in deterring plants diseases and other epidemics.

- Relations must be strengthened between the District Governor, Mayor, The CHO and other related stakeholders.

- An integrative view in risk preparedness within the framework of a comprehensive urban management program must be collaborated in regards to all stakeholders and sectors if success is to be achieved.

- Greater responsibility must be allocated toward the private sector in order to persuade them to assist in maintaining historical buildings (eg. Through renovation). One such action may be turning Amery or Arsham Houses into motels.

- Greater authority and enforcement powers should be granted in order to assist the CHO in regulating a number of protective guidelines. This would allow historic areas to be protected to a much greater capacity and risk preparedness programs can be enforced much more easily.

- There exist 4 main elements in Risk Preparedness: planning, regulation, budget and people participation.

After extracting all data collected during conducting the survey in Bam, quantitative data were put in tables, and quantitative analysis was done. Tables enclosed with this report show the data quantitative analysis.

Qualitative data and information was also extracted and put in a special section for presenting qualitative information. The section titled "Survey findings" was designed to extract and present attitudes of people interviewed during the survey conduction in Bam. These findings have been analyzed using SWOT technique (Table 1).

Table1. Survey results SWOT			
T (Threat)	**O (Opportunity)**	**W (Weakness)**	**S (Strength)**
After the earthquake, increasing numbers of outsiders (migrants) resulted in both, a decrease of local interest in cultural heritage preservation, and a decrease in social relations. These outcomes negatively affected the community's sense of belonging and Bam's heritage.	Native residents of Bam feel deeply attached and aligned with their culture. This has meant that they strongly support and even participate in any program in regards to cultural heritage preservation.	We should be aware that UNESCO regulations and guidelines regarding cultural heritage areas, such as those within Bam, may place certain obstacles in the development process.	Attitudes regarding cultural heritage values, are being influenced by living conditions in Bam, hence any improvements in peoples lives affect positively upon their attitudes regarding heritage values, and preservation programs.
Shortage of income after the earthquake disaster for those involved in the tourism industry forced many to change careers. Therefore, at the present time, there is a very low level of tourism within Bam. The reconstruction programs of Arg-e-Bam should be sped up in order to restore tourism activities and business for the wellbeing of the economy.	Local residents believe that Arg-e-Bam and other heritage elements have been inherited from their fathers, and they hence feel a sense of pride and attachment to the monuments and sites. Such feelings are the reason for their willingness to participate in any preservation program.	Cultural behavior was deeply affected in a negative way after the earthquake. Neighborhoods are disappearing, and peoples' relations are deteriorating.	Most local persons link their family's history to the city, particularly with Arg-e-Bam, and its cultural heritage values.
City infrastructure and international tourism have influences upon one another. Tourists demand quality infrastructure, while good and prosperous conditions attract tourists and hence result in tourism development. Problems with infrastructure can affect heritage preservation and interest in a negative way.	Local people used to present Arg-e-Bam as a symbol of their cultural heritage and link their identity to the Arg. They were proud of the Arg and its great values. For these reasons, they are willing to participate in any heritage conservation program.	After the earthquake migrants (outsiders) are affecting the local urban community of Bam in a negative way, by not following cultural traditions and local social values.	National tourism, prior to the earthquake resulted in the establishment of favorable social relations throughout the nation. These relations led to the providing of assistance during the earthquake disaster period.
Many gardens are being changed into buildings with small flats/apartments. Continuity of this problem can destroy the historical landscape heritage of Bam.	Local citizens live, at the time being, with hope in the reconstruction of the Arg as the most valuable element of their common identity. They are willing to take part in any reconstruction or preservation program of the Arg-e-Bam and its cultural heritage.	After the earthquake, people lost their trust in sun-dried brick structures. This trust should be rebuilt through research and scientific works.	Bam is a city that presents and defends the Iranian urban culture and its values, on the border regions of Balouchestan which can be affected by Pakistan and Afghanistan.

Main issues and problems

1. Sever destruction to the Arg and other cultural heritages, and reconstruction and conservation of CH may last a long time, and people fade up.

2. Authority does not pay attention to public participation, so people lost trust in local authority and do not show good will to participate in programs.

3. City damage and lack of infrastructure may reduce tourism, so the city and its CHs may decline in development process.

4. Outsiders are creating shortage in house stock, and invading palm farms, so date and orange product reduction may reduce interest in heritages.

5. Outsiders are changing cultural interest in Bam, so long stay of them and destruction may reduce people interest.

6. Lack of trust in government and local offices, turned people to see registration of the cultural heritage of Bam, may put some obstacles on the development process of the city.

7. When the qanats were destroyed, villagers became poor, and they moved to live inside the city, so many native people have left Bam and are not willing to come back. This may reduce interest in CHs.

8. Outsiders turned the city to be a nest for drug dealers, smugglers and thieves, so cultural Heritage of Bam may be under risk of destruction and theft.

9. Some were killed by earthquake, for living in traditional houses, so traditional houses are disappearing in Bam.

10. Many cultural heritages' sites were destroyed by earthquake, so fear from earthquake may destroy traditional building style.

11. Outsiders are changing cultural interest in Bam, and reducing safety,so security for international tourism may be affected.

12. Migrants came to get money allocated to Bam-earthquake victims, so city cultural face may change, and people role in conservation may decline.

13. Mismanagement of reconstruction process have caused problems for people, so distance between people and local authority may increase in a dangerous way.

14. Heritage protection face problems of shortage in many aspects, so Cultural Heritage of Bam may be under risk of destruction and theft.

Action plan

Based on the international literature and the findings from field survey in Bam, the proposed action plan, including operational and organizational aspects, is folded in four sections:

1. Organize local Bam resources

As mentioned in chapter two, the first step to organize resources is to assess community support. The survey results indicate that the high percentage of local Bam people is willing to participate in various stages of heritage conservation. However, the local authority should attract their trust in this regards. The next step is to build up the planning team, in both governmental and community levels. Findings from interviews show that there are some organizations, such as the Islamic Council, Basiji and young Bamis which should be organized in several teams. The third step in organizing resources is to give people the real opportunities to be involved and engage in planning and decision making processes. The recent Parliament Election in Bam indicates that people are interested in expressing their ideas and participate in decision making process.

Organize human resources in Bam

Assess community support	Build up the planning team	Engage the public
Majority of people support the government activities in heritage conservation	Islamic City Council, Basij and other NGOs	Mobilization of local people within councils and their participation, interest and effort in preserving historic areas (90% participants in election)

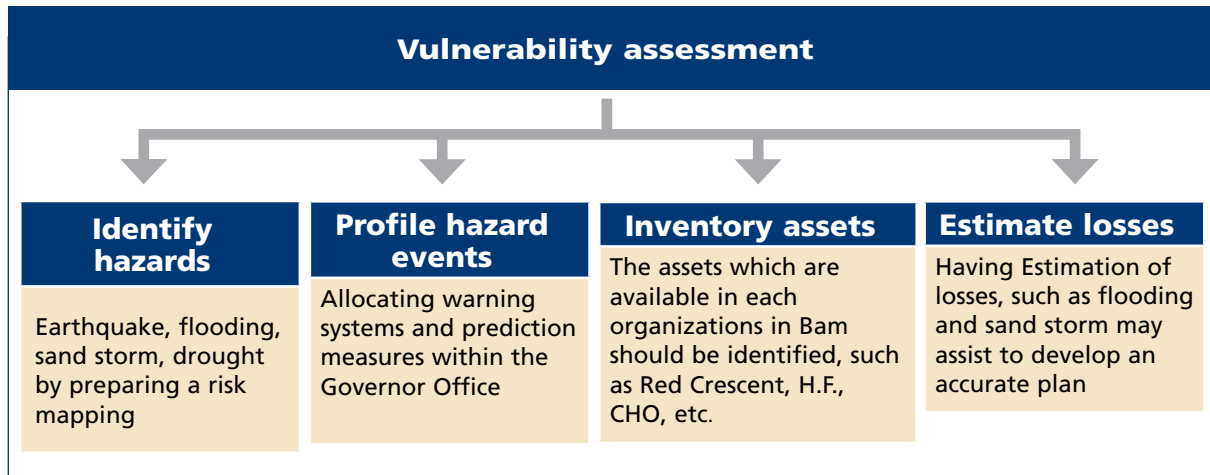### 2. Vulnerability assessment

As mentioned in chapter six, there exist a number of hazards that threat Bam, such as earthquake, flooding, sand storm or strong wind and drought. The first step is to **identify hazards** that need to prepare a number of risk mappings for each individual hazards (Table 2). For instance, some people have been involved in burning date and palm trees and bushes in an attempt to alter the land from agricultural to residential. This has been undertaken in order to financially gain from the difference in price between these two lands. The second step is to **profile hazard events**. The third step **inventory assets** which deals with identifying all assets available in individual organizations in Bam, such as personnel and equipments. The last step deals with **estimating losses**.

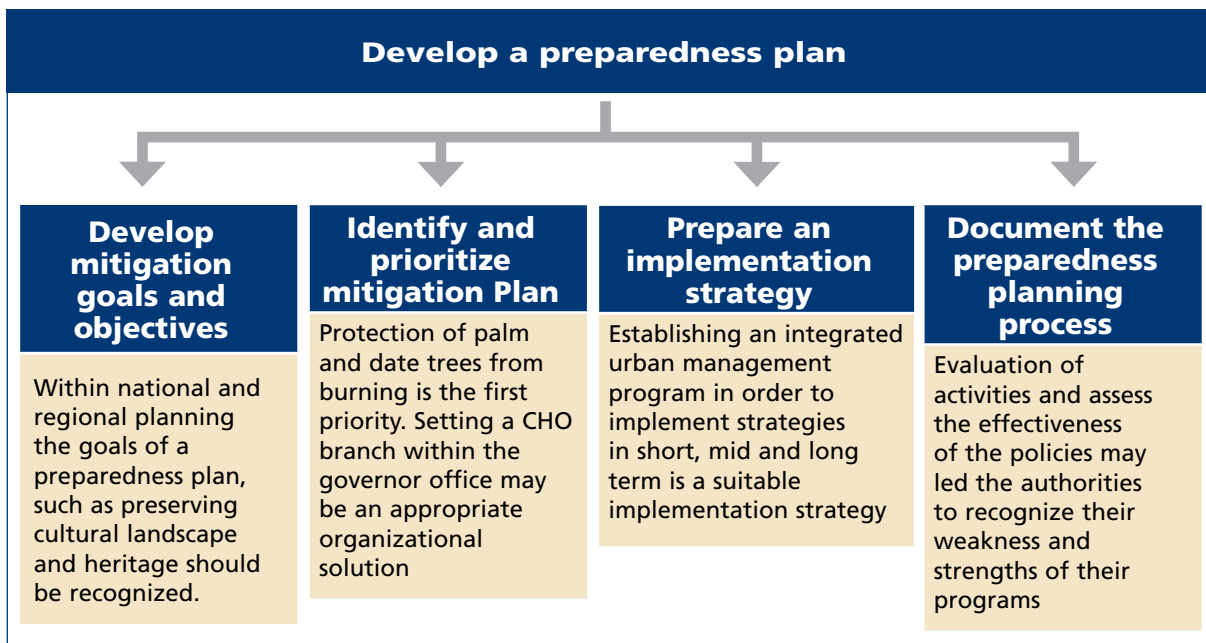| Table 2: Hazards in Bam and priorities in risk preparedness	
Hazards in Bam	**Priorities in risk preparedness**
Earthquake	Building earthquake resistance structures according to the 2800 building code, risk reduction strategy in urban planning and developing the culture of prevention
Flooding	Building soil dykes, clearance and construction of flood pathways
Sand storm or strong wind	Planting Ghaz and Kahoor trees around desert areas in order to deter the passage of wind
Drought	Efficient water management and agriculture by supervising qanat, upgrading early warning systems

Vulnerability assessment

Identify hazards

Earthquake, flooding, sand storm, drought by preparing a risk mapping

Profile hazard events

Allocating warning systems and prediction measures within the Governor Office

Inventory assets

The assets which are available in each organizations in Bam should be identified, such as Red Crescent, H.F., CHO, etc.

Estimate losses

Having Estimation of losses, such as flooding and sand storm may assist to develop an accurate plan

3. Develop a preparedness plan:

First step, the g**oals and objectives of risk preparedness in Bam** should be recognized. This should develop through the national and regional planning process within the country. As far as the heritage conservation objectives is concern, the cultural landscape and historical sites should be approached as an integrated planning in Bam. For instance, if privatization is a goal, therefore a number of historic buildings should be managed by private sectors. The next step is to **prioritize mitigation actions**.

It appears that the first priority in risk preparedness in Bam is to **protect palm trees and burning date trees**. Preparation an **implementation strategy** is the next step. It is worth mentioning that the general governor office has a vital responsibility to lead such activities in the framework of urban management policy by participating all related stakeholders. It seems that a CHO branch should be established within this office to look after heritage conservation in City. Such branch should be given the authority to follow up legally the problems related heritage conservation and historical and buildings and cultural sites. The last step is **documenting all mitigation planning process** in order to learn lessons from them.

Develop a preparedness plan			
Develop mitigation goals and objectives	**Identify and prioritize mitigation Plan**	**Prepare an implementation strategy**	**Document the preparedness planning process**
Within national and regional planning the goals of a preparedness plan, such as preserving cultural landscape and heritage should be recognized.	Protection of palm and date trees from burning is the first priority. Setting a CHO branch within the governor office may be an appropriate organizational solution	Establishing an integrated urban management program in order to implement strategies in short, mid and long term is a suitable implementation strategy	Evaluation of activities and assess the effectiveness of the policies may led the authorities to recognize their weakness and strengths of their programs

4. Implementation the plan and monitor progress

Having **updated information and data** regarding historical buildings and cultural sites is the first step. It is worth mentioning that CHO should work closely with the general governor and other local authorities to evaluate and monitor such activities. The second step is **interagency coordination agreement** in order to share information and data. Third step deals with **public education and training** which can be achieved through schools, local managers public information and media and other extension programs. The findings of the field survey show that younger residents, that is, those under the age of 20, lack awareness about Arg-e Bam and other

historic monuments. Therefore, there is an urgent need to educate and train residents in this regard an order to improve cultural awareness and to build a framework of prevention and preparedness. Hence, to form a "culture of prevention" within all levels of society, particularly in schools. The last step is **rehearsals** that are the only way to keep plans fresh, especially during extended periods without disasters. Rehearsals invariably expose gaps that otherwise might be overlooked. Rehearsals must be conducted system-wide and taken seriously. System-wide means that all the stakeholders which would be involved in a real disaster situation, from central to local authorities, should be rehearsed.

Implementation the plan and monitor progress			
Updated information and data	**Interagency coordination agreement**	**Public education and training**	**Rehearsals**
CHO office may coordinate all related data and information	Sharing information via different organizations within the framework of integrated urban management	Schools of Bam are the first priority for education and training of cultural heritage values and the ways of preserving them	Rehearsals are the only way to keep plans fresh, especially during extended periods without disasters and risk preparedness programs

Conclusion

The study reveals that it is not appropriate to discuss the structure of traditional buildings or landscapes without understanding the relation between culture and risk preparedness. After all, the purpose of disaster preparedness is to protect culture, life, significant monuments, traditions and history. The findings indicate that without undertaking an integral approach in terms of physical, social and cultural aspects, there will be little chance to find a suitable and sustainable solution. It is clear that refined culture has been created, transmitted and developed as a result of risk preparedness. Culture which has been protected and nurtured by disaster preparedness must not be destroyed by merely "disaster physical reconstruction". In this respect, the following strategies can be outlined:

1. Bam Cultural Landscape is well known globally, so international assistance and technology available to help.

2. Identity linkage between people and cultural heritage, so people interest to work within a conservation program, should be well considered.

3. Cultural heritage attract tourists, and tourism helps economy develop of the city and the region.

4. Good connections between heritages, palms, qanats, cultural behavior, will turn conducting development program to help conservation.

5. People love heritages and feel proud about them, so local people can help as tourist guides.

6. More than 2000 year history support cultural heritage, so people of Bam are desperate to see international tourists coming.

7. Cultural heritages are useful for the people, but the reconstruction of their life is the most important.

8. Because of people awareness on heritage values and keeping photos of heritage prior to earthquake, CHO can get help from local people on documentation.

9. Arg-e-Bam was the main reason for causing high international interest to the earthquake, so speeding up the reconstruction process of the city will help attracting more tourists and, economic development.

10. Native people of Bam were wealthy and well educated, so they did not use to steal cultural heritage.

11. Even wealthy people of Bam preferred to live in traditional houses, so they are willing to rebuild their houses according to CHO instructions.

12. Local people started to rebuild the Imamzades' shrines, so traditional life is returning to Bam by real people participation.

13. Qanats, palm farms, cultural sights and traditions of people are related, so traditions can be used to well manage the reconstruction of city infrastructure.

14. Local people love humanity, and their identity and their deep roots in local culture, so people can help as tourist guides which will increase international tourism.

15. People are proud of living near Arg-e-Bam, because it is one of the most valuable global heritages, so speeding up the reconstruction process of the city will help quick restoration by people assistance.

16. Local people can keep eyes on the Arg preventing it from demolishing and theft, Local people love heritages and believe in their restoration.

Recommendations

- Speeding up reconstruction programs of urban infrastructures.

- Establishing a department for dealing with cultural heritage aspects within the Local Governor Office.

- Establishing training courses for local people by the Cultural Heritage Organization

- Employing local educated and experienced people and training them regularly.

- Supporting the local cultural and social organizations.

- Educating and training local people by the Cultural Heritage Organization.

- Supporting local NGOs that love cultural heritage.

- Encouraging building new hotels and restaurants.

- Subsidizing reconstruction of traditional and clay made houses.

- Establishing a university in Bam specified on cultural heritage affairs..

- Establishing research institute on cultural heritage affairs in Bam.

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Differentiated adjustment to the 1991 Mt Pinatubo resettlement program among lowland ethnic groups of the Philippines

Jean-Christophe Gaillard presents the results of a study on the adjustment of two ethnic groups to the post-disaster resettlement program after the 1991 Mt Pinatubo volcano eruption in the Philippines.

Abstract

This study focuses on the adjustment of two lowland ethnic groups of the Philippines, i.e. the Kapampangans and the Ilokanos, to the resettlement program set up in the aftermath of the 1991 Mt Pinatubo eruption and lingering lahars. Victims from both ethnic groups challenged the layout of the resettlement site and the design of the houses. However, the Kapampangans maintained strong links with their native village while the Ilokanos proved to be loosely tied to their territory. The different adjustments to the resettlement program is traced to different ethnic histories and cultures. The top-down and technocratic nature of the resettlement process failed to consider these ethnic factors.

Introduction

Resettlement through geographical relocation is usually considered as the worst alternative to spur people's recovery in the aftermath of a disaster (e.g. Davis, 1978; Oliver-Smith, 1991; Quarantelli, 1984). Resettlement is a very complex process that goes beyond the mere re-housing of the victims. It implies the social reconstruction of homes, social and political ties and livelihoods (e.g. Aysan and Oliver, 1987; Cernea, 1997). These ties are rooted in long cultural, social, economic and political histories (e.g. Scudder and Colson, 1982; Quarantelli, 1984; Aysan and Oliver, 1987) and are often constrained by structural forces (e.g. Wisner et al., 2004). These links are further materialized by visible or invisible cultural symbols which are very much associated with particular places and therefore hardly transposable to new settlements. Re-establishing such a community-place relationship in a new environment requires a long period of time which is in inadequateness with the wish of disaster victims to settle back as quickly as possible (e.g. Davis, 1978; Scudder

and Colson, 1982). For these reasons, resettlement often fails to foster sustainable post-disaster recovery (Oliver-Smith, 1991).

Differences between ethnic groups' response to natural hazards have been stressed at different phases of disaster management, including the post-disaster reconstruction stage (e.g. Perry and Mushkatel, 1986; Bolin, 2006 for syntheses). It is indeed compulsory in the planning of post-disaster resettlement to consider the cultural characteristics of the victims (e.g. Davis, 1978; Aysan and Oliver, 1987). Aysan and Oliver (1987: 12) stress that "the success or failure of any recovery programme relies, in the end, on its capacity to satisfy the cultural needs and requirements of the people who have been victims of the catastrophe." Following the 1906 San Francisco earthquake, Bowden et al. (1977) note that some ethnic groups were more open to the idea of relocation than others. Similarly, Girard and Peacock (1997) underscore that, subsequent to Hurricane Andrew that devastated Florida in 1992, white communities were more eager to be relocated than black people who feared to be further segregated and eventually to lose their standard of living. Unequal incomes between Hispanic and Anglo-American communities greatly affected the capacity of the victims to afford a permanent resettlement solution following the 1983 Coalinga earthquake (Bolin, 1986). Culture and ethnicity are also of great importance in the way victims adjust or not to the sites chosen by the authorities for resettlement (Oliver-Smith, 1994). After the 1963 Skopje earthquake, Davis (1977) indicates that most of the Macedonian victims relocated in other regions of the former Yugoslavia went back to their native town less than two months after their resettlement because their children could not speak the local language. Boen et al. (2001) similarly show that the resettlement of Muslim Indonesians among catholic communities following the 1992 earthquake and tsunami that hit the island of Flores turned out to be a failure and most of victims went back to their original villages.
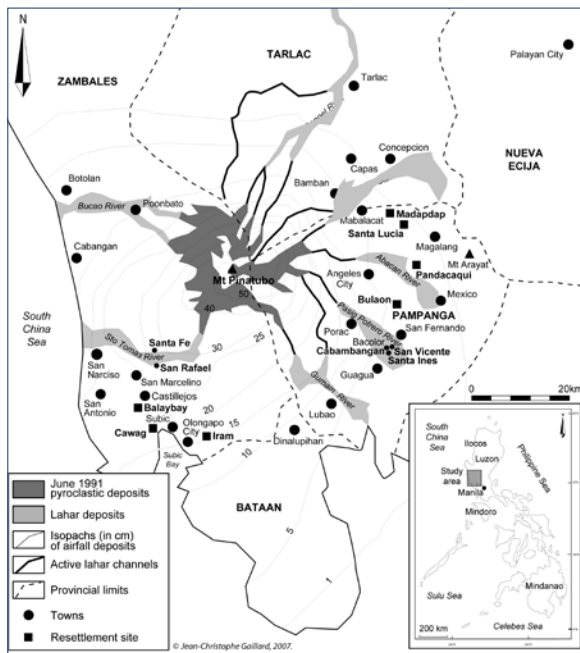
Fig. 1: Extent of the Mt Pinatubo Volcanic erruption 1991.

Fig. 2: One of the thirteen resettlement sites.

This paper further investigates how the different ethnic groups which were victim of the Mt Pinatubo lahars in the 1990s adjusted to the post-disaster resettlement program set up by the Philippine government. It addresses both the relocation and re-housing dimensions of resettlement. Noteworthy is that this study only considers lowland ethnic groups and does not encompass the Aetas who live on the slopes of the volcano. The case of the Aetas has been extensively described elsewhere (e.g. Seitz, 1998; Macatol and Reser, 1999-2000). Firstly the paper documents the 1990s Mt Pinatubo lahars and the resettlement policy. Secondly it describes the methodology used for the study. Thirdly the paper focuses on the differences observed between ethnic groups in their adjustment to the resettlement program. Fourthly it emphasizes the causes of such differences and finally it offers some recommendations to foster sustainable post-disaster recovery.

The 1990s Mt Pinatubo lahars and the official resettlement policy

In June 1991, Mt Pinatubo, located on the island of Luzon in the Philippines, violently awoke after five centuries of quiescence in what is considered to be the second most powerful volcanic eruption of the 20th century (see Figure 1). Since then, destructive lahars (volcanic debris flows), triggered by typhoon-associated downpours, tropical monsoon rains and lake break outs, have flowed down the flanks and foothills of the volcano (Umbal 1997). Official figures show that almost 1000 people were killed by the eruption and lingering lahars (Department of Social Welfare and Development Region III, 1999). Overall, about two million people from nine

different ethnic groups were affected. The economic losses probably reached more than one billion US dollars and more than 140,000 houses were totally or partially destroyed, thousands of public infrastructures were affected and tens of thousands hectares of farmland were buried under deep pyroclastic and lahar materials (Leone and Gaillard, 1999).

An intergovernmental structure, the Task Force Mount Pinatubo, which became, in 1992, the Mount Pinatubo Commission (MPC), was created to develop and implement the government policy of resettlement and oversee other rehabilitation works. Eruption and lahar lowland victims were relocated in 13 sites which were chosen by the government for being safe from lahars, for their well-drained soils and for being easily connectible to water networks. Relocation sites are huge, uniform and are all organized around a central plaza housing the main public buildings (police stations, health center, playgrounds) (see Figure 2). Planners acknowledge that resettlement centers were designed to optimize available fundings. Each family received a piece of land of 94-m2 and a 27-m2 concrete house equipped with sanitary facilities. The lack of sufficient budget forced the authorities to build houses which first characteristic is to be cheap. In parallel, kilometers of roads and an electric network as well as scores of school buildings were built to meet the needs of the victims. A number of projects, especially the creation of 'productivity centers,' were designed to provide the victims with new jobs near the biggest resettlement areas. From the governmental perspective, resettlement sites and surrounding productivity centers should have been the place where natural resources from Northern Luzon would have been transformed into finished products for the Manila market (Mount Pinatubo Commission, 1994).

Study areas and methodology

This study focuses on two communities of different ethnic origins similarly affected by the lahars of Mt Pinatubo. The first one originates from the villages of Cabambangan, San Vicente and Santa Ines which form the centre of the town of Bacolor in the province of Pampanga. In 1990, there were 11,277 people who lived in these villages known as the cradle of the Kapampangan ethnic group. Between 1991 and 1997, Bacolor was progressively buried under almost ten meters of lahar deposits brought by the Pasig-Potrero river. Ninety-five per cent of the population was relocated in four resettlement sites, Bulaon, Madapdap, Pandacaqui and Santa Lucia, respectively located in the neighbouring municipalities of San Fernando, Mabalacat, Mexico and Magalang (see Figure 1).

The second community formerly lived in the two neighbouring villages of Santa Fe and San Rafael on the outskirts of the town of San Marcelino in the province of Zambales. In 1990, these two villages gathered around 7,300 inhabitants from the Ilokano ethnic group. Santa Fe and San Rafael were buried by lahars of the Santo Tomas river between June 1991 and October 1993. The only bridge connecting Santa Fe to the rest of the municipality of San Marcelino was washed away on 15 June 1991, thus isolating the community. The inhabitants of Santa Fe and San Rafael were mostly relocated in the Balaybay resettlement site, in the neighbouring municipality of Castillejos. Some were also directed towards Cawag in Subic and Iram in Olongapo (see Figure 1).

The upcoming discussion draws on Oliver-Smith's (1991) framework of factors that are critical in affecting people's adjustment to post-disaster resettlement. These factors include the location of the relocation site, the layout of this site, the design of the house and the degree of popular input in the resettlement process. The study relies on a questionnaire-based survey conducted in August 2004 among lahar victims relocated in the Bulaon and Balaybay resettlement sites. At that time, there were 273 families from San Rafael and Sta Fe relocated in Balaybay and 970 households of Cabambangan, Santa Ines and San Vicente resettled in Bulaon. The 20-item questionnaire intended to document the victims' involvement in the decision-making process and people's view on the location of the resettlement site, its layout and the design of the houses. Further questions addressed the relationships that the resettlers maintained with their native villages. Sixty-four face to face interviews were conducted in Bulaon resettlement and 15 in Balaybay or a ratio of around one interview for 18 households. The questionnaire-based survey was complemented by a series of interviews with people from the civil society and disaster management sectors. These included the Mount Pinatubo Commission (MPC), other

government agencies (Department of Social Welfare and Development, Department of Environment and Natural Resources, Department of Public Works and Highways, Department of Health, Department of Agriculture, Department of Education), local government units (LGUs) and non-government organizations (NGOs). Field work was completed with the collection of secondary written documents such as journal publications, conference proceedings, and relevant press clippings from regional and national newspapers.

People's adjustment to resettlement

The survey provides a snapshot of the resettlers' profile that complements early surveys by the Mount Pinatubo Commission (1994) and other research endeavours (e.g. Nelson, 1997). In Balaybay, one third of our interviewees were farmers before the eruption of Mt Pinatubo in 1991 while the rest were engaged in small retailing businesses, studies, overseas works and other low-skill jobs. Today, one third of them are jobless and twenty per cent own small retailing shops. Before lahars buried Bacolor, there was a significant proportion of jobless (17 %) and almost ten per cent of the people engaged in small-scale commercial businesses. Conversely, eight per cent of the interviewees were farmers. In 2004, the proportion of jobless doubled to one third of the resettlers of Bulaon. Eleven per cent also tended to small retailing shops while the rest relied on a large range of mostly low-skill activities. Noteworthy, interviews with key informants show that both study areas were known for hosting a substantial number of rich families but, if those were also victims of the lahars, they had enough resources to resettle on their own outside of the governmental relocation sites. Overall, seventy-three per cent of the victims relocated in Balaybay and seventy per cent of those resettled in Bulaon consider that their standard of living has been decreasing since the eruption of Mt Pinatubo. In 1998, a survey conducted by the Mount Pinatubo Commission matched the results of our interviews and evaluated the unemployment rate at twenty-six per cent in the resettlement sites or 15 percentage points higher than the regional average. At the same time, sixty-four per cent of the population of the resettlement sites were living below the poverty line set by the Philippine government or less than 200 dollars per year and per capita (Mount Pinatubo Commission, 1999). Another study by Nelson (1997) estimated the unemployment rate at thirty-three per cent and showed that sixty-one per cent of the victims living in the resettlement centers complained about insufficient incomes. One of the major issues was the lack of farm land that may have enabled former farmers to re-establish their pre-eruption livelihoods. Initially, the Mount Pinatubo Commission had dedicated large tracts of lands for agricultural activities. However, the annual increase in the number of victims, with the recurrence of

lahar flows, compelled the commission to progressively convert these farm lands into housing lots (Mount Pinatubo Commission, 1995). The survey thus confirms the critical importance of access to livelihoods and other resources in the success or failure of post-disaster resettlement (Cernea, 1997).

Table 1. Assessment of the Bulaon and Balaybay resettlement sites by lahars relocatees in August 2004

Question		Bulaon % of the respondents	Balaybay % of the respondents
Involvement of the victims	Yes	12	0
	No	88	100
Location of the site	Positive	50	60
	Negative	5	40
Layout of the site	Positive	30	20
	Negative	70	80
Design of the house	Positive	91	87
	Negative	9	13

Difficulties in accessing resources in the resettlement sites are rooted in the lack of popular input in the decision-making process. It is widely acknowledged that the participation of the victims in the planning of the resettlement is a prerequisite to sustainable post-disaster recovery (Davis, 1978; Scudder and Colson, 1982; Oliver-Smith, 1991). However, the Mt Pinatubo resettlement program was top-down in nature and few decisions trickled down to the victims (Anderson, 1993; Banzon-Bautista, 1996). In both Balaybay (100 % of the people surveyed) and Bulaon (88 %) resettlement sites, most of the relocatees were not involved in the choice and layout of the site and in the design of the houses. They were forced to accept the program planned by the Philippine government. Only in the village of Cabambangan in Bacolor, a significant fraction of the people (43 %) were asked, through the village chief, to choose which of the resettlement sites they preferred.

Poor choices of site for relocation and inadequate layouts are frequent causes of failure for such resettlement programs (e.g. Aysan and Oliver, 1987; Oliver-Smith, 1991). In Balaybay, however, sixty per cent of those interviewed admit that the site is fine, yet poorly accessible for thirty-three per cent of the victims (see Table 1). In Bulaon, fifty per cent of the relocatees agree with the site but twenty-seven per cent say that in any way they had no other choice. Seventeen per cent also consider that it is too far from Bacolor. More problematic is the layout of the resettlement sites which is challenged by respectively seventy per cent and eighty per cent of the people of Bulaon and Balaybay.

In Balaybay, sixty per cent complain about the lack of running water system, thirty-three per cent about the small size of the lots and twenty-seven per cent about the lack of public facilities. In Bulaon, forty-five per cent of the people critic the small size of the lots, forty-four per cent the lack of trees and other vegetation, twenty-eight per cent the overall difference with their native villages. As in many other instances (e.g. Davis, 1978; Aysan and Oliver, 1987), the design of the house is however the main issue with only thirteen per cent of positive rating for the people of Balaybay and nine per cent in Bulaon. In Balaybay, forty per cent of the relocatees judge that it is too small, especially the kitchen and the bathroom. Therefore, seventy-three per cent of the people enlarged their floor area by building additional rooms or adding terraces. In Bulaon, seventy-eight per cent of the resettlers consider that the house is too hot and sixty-two per cent that it is too small with the same critics regarding the bathroom and the kitchen. Eighty-one per cent of the people built additional rooms or added a second floor to their small house.

Table 2. Relationships maintained by Bulaon and Balaybay relocatees with their native vilages in August 2004

Question		Bulaon % of the respondents	Balaybay % of the respondents
Visit to the native village	Once a week or everyday	23.5	0
	Once a month	18.8	26.7
	Once a year	20.3	46.7
	Special occasion	35.9	6.7
	Never	1.6	20
Precinct of vote	Native village	100	0
	Relocation site	0	100
Will to return to the native village	Yes	67.2	33.3
	No	20.3	53.3
	Do not know	12.5	13.3

If the people of Balaybay and Bulaon are similarly challenging their resettlement site and houses, significant differences arise when it comes to the relationship they maintain with their native village (see Table 2). Most of the people of Balaybay (47 %) visit their native villages of Santa Fe and San Rafael once a year, mainly to visit friends or relatives. Twenty per cent of those surveyed never go back to San Marcelino. On the other hand, forty-two per cent the people of

Bulaon maintain regular relationships with Bacolor on a monthly or more often basis. Some (9 %) actually go back to their native village everyday to attend to their land or to do some business. Thirty-six per cent admit that they visit back Bacolor for special occasions like fiestas, commemorations, special masses, birthdays, weddings, etc. The fiestas and the masses are actually consensual events as respectively sixty-nine per cent and twenty-seven per cent of the people go back to Bacolor for these reasons. In addition to maintaining strong links with Bacolor, the resettlers reproduced in Bulaon the territorial and identity markers that remind their native town. Administrative subdivisions, churches, schools are all named after the village where the victims come from. The village councils of the native villages are also maintained and overlap with the new administrative units organized by the Mount Pinatubo Commission (see Figure 1). Memory is further kept through the

Fig 1. Anti-drug campaign in the Bulaon resettlement site launched by the Cabambangan youth village council (SK- Sangguniang Kabataon).

Fig 2. Conflicting interests in the Bulaon resettlement site. The 'Iwasan ang Dengue' signboard shows a health program in facing dengue outbreaks provided by the municipality of San Fernando. On the other hand, the lighting system is supplied by the Mayor of Bacolor Buddy Dungca.

religious ceremonies and the local or municipal fiestas of Bacolor. Such a reproduction of territorial markers does not exist in Balaybay.

The most startling difference between the people of San Marcelino resettled in Balaybay and those of Bacolor relocated in Bulaon is however the place where they registered for casting their electoral vote. One-hundred per cent of the inhabitants of Balaybay registered in Castillejos as soon as they reach the evacuation centres where they stayed during the construction of the resettlement site. On the other hand, one-hundred per cent of the people of Bulaon still vote in Bacolor. During the 2000 census of population, many victims from Bacolor also refused to be counted in San Fernando (Orejas, 2000). This aspect is crucial since the registration on the voter lists on one or the other municipality determines the amount of a tax, the Internal Revenue Allotment (IRA). This tax constitutes an important part of the towns budget. It is then easy to imagine the conflicting interests than can occur between the mayor of San Fernando and that of Bacolor. The first one provides the 'exiled' community with the basic commodities (water, electricity, collection of the garbage…), while the second one justifies the registration of the victims on his electoral lists by the state of calamity (see Figure 2).

Finally, thirty-three per cent of the victims relocated in Balaybay plan to go back to Santa Fe and San Rafael. On the other hand, sixty-seven per cent of the people of Bulaon want to move back to Bacolor as soon as possible. A large number of victims actually already relocated back in Bacolor despite the lingering lahar threat as well. In 1997, an informal census conducted by American sociologist K. Crittenden counted 592 people in Cabambangan, Santa Ines and San Vicente (Lacsamana and Crittenden, 1997). Eventually, the 2000 national census recorded 2,115 people in the same area or an increase of 1,523 people who came back from the different resettlement sites.

Ethnic factors in differentiating responses to resettlement

The people of Balaybay and Bulaon similarly challenge the resettlement program of the government. Yet, they greatly differ in their attachment to their native villages. The Kapampangans of Bulaon maintain strong links with Bacolor while the Ilokanos of Balaybay seldom go back to San Marcelino and never reproduced territorial markers. The reason for these dissimilar behaviours lies in different ethnic histories, social systems, values and cultures.

The very strong attachment of the people of Bacolor to their native town has been widely acknowledged (Crittenden, 1997; Lamug et al., 1999; Gaillard, 2002). When the Spanish conquistadors discovered

the southeastern foothills of Mt Pinatubo in 1571, they found large Kapampangan communities in the place now known as Bacolor. The town eventually bears a rich history and cultural heritage. From 1706 to 1904, Bacolor was the provincial capital of Pampanga. It had even been elevated to the rank of national capital of the Spanish government during the two years of British occupation of Manila from 1762 to 1764 (Henson, 1963; Larkin, 1993). Following the eruption of Mt Pinatubo, the town has never been abandoned (Crittenden, 2001; Gaillard, 2002). The role of the parish church is particularly interesting to explain why the people of Bulaon regularly come back to attend masses, fiestas and other ceremonies. Given its history and remarkable architecture, the church was, until the awakening of Mount Pinatubo, more a symbol representing Bacolor to the inhabitants of the neighboring municipalities. With the crises and the ceremonial practices that took place in at that time, it acquired a stronger meaning beyond its architectural and religious value. A female interviewee reflected this in the following quote: "I do not believe in God and I never went to Church before Mt Pinatubo erupted but now I regularly attend the Sunday mass just to meet my former village mates". The church indeed allows the people of Bacolor, scattered in many resettlement sites, to meet once a week and maintain a collective existence as a single community. On the other hand, San Rafael and Santa Fe were founded during the first half of the 19th century by early Ilokano migrants from the Ilocos region in Northern Luzon (Apostol, 1956; de Jesus, 1990). After the eruption of Mt Pinatubo, some Ilokano victims from Zambales accepted to be relocated in the far away islands of Mindoro and Mindanao (Dueñas, 1992). On the other hand, the original village of Santa Fe was totally abandoned. In 1993, some of the victims came back to the area with the support of the Mount Pinatubo Commission but they settled on the foothills surrounding their former villages. The ability and willingness of the Ilokano people to move and establish pioneer settlements all over the Philippines has been widely acknowledged (e.g. Fonacier, 1953; McLennan, 1980). The resettlement of the Ilokano victims of the Mt Pinatubo lahars shows that, in comparison to the people of Bacolor, the lack of long-term rooting of the Santa Fe and San Rafael community to its territory served as a significant factor which favoured sustainable geographical relocation. The Ilokano ethnic history of pioneer movements further facilitated the uprooting and re-rooting of the victims.

One significant feature of the Kapampangan and Ilokano social systems directly relates to their ethnic histories and had a substantial impact on their adjustment to post-disaster resettlement. Aysan and Oliver stress that kin and lineage may have a strong influence on location and residence (1987). Among Kapampangans, attachment to the native place is rooted in vertical kin ties and pride in the ancestors. Family genealogies are very important and often carefully accounted by elders or family leaders (Henson, 1963). The inhabitants of Bacolor particularly take pride in their famous ancestors who were involved, at the end of the 19th century, in the emergence of a very influential Kapampangan culture. The souvenir of the forefathers is maintained through many statues which have been consistently exhumed after each lahar onslaught (Gaillard, 2002). For the victims who were relocated, resettlement was thus often associated with an unacceptable uprooting from the birth and death place of the ancestors. Along with economic hardship in the relocation sites, the strong attachment of the resettlers to their native town explain why some of them choose to definitively go back to Bacolor. On the other hand, Ilokano migrants who settle in rural areas rather emphasize horizontal kin ties over vertical relationships (Pertierra, 1988). Place attachment is not rooted in centuries of family genealogies and thus facilitated post-disaster uprooting as long as relatives of the same generations were kept together, which happened in most cases. Thus, none of the former territorial markers of Sta Fe have been kept or transferred to the new settlements on the flanks of the surrounding hills or towards the Balaybay resettlement site.

A popular image associated with Kapampangans by non-Kapampangans is that they are "boastful" and "spendthrifts" (Filipinas Foundation, 1975; Arceo, 1984). This belief is not new and often traces its origin to the rich and fertile central plain of Luzon where the Kapampangan people are gathered. In the 17th century, Friar Joaquin Martinez de Zuñiga mentioned that "the Pampangos (English for Kapampangan) enjoy fame from being courageous, but I do not find anywhere in their history anything that supports this belief". On the other hand, Ilokanos are often stereotyped as "frugal" or "thrifty" and simple in their way of life (Purisima, 1918; Aquino, 2000). This is often explained by the harsh environment and scarce resources of the Ilocos

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Mount Mayon volcano in Albany province, Phillipines, in December 1999.

Fig. 3 House designs.
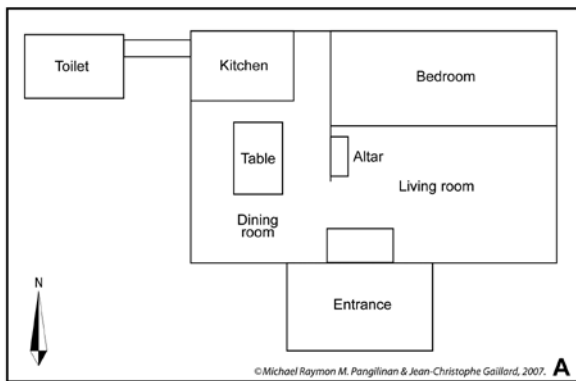
A traditional Kapampangan and Ilokano house.

Resettlement House design.

region (Jocano, 1982). Inquiry into the Family Income and Expenditure Survey of 1988 shows that, before the eruption of Mt Pinatubo, Kapampangans indeed spent eighty per cent of their monthly incomes versus only sixty-nine per cent for the Ilokanos. A female interviewee in Balaybay explicitly linked the alleged opposing characters of both ethnic groups to their capacity to adjust to the resettlement site: "Ilokanos are hard-working and frugal people who were able to cope with geographical relocation and harsh economic environment. But Kapampangans have a hard time to adapt to the resettlement sites which do not satisfy their daily needs". Some Ilokano families actually gave up electricity and other amenities they formerly enjoyed in Santa Fe and San Rafel when they moved to the Cawag resettlement site in Subic.

Kapampangan and Ilokano material cultures differ too. Traditional houses are of particular importance in the adjustment of lahars victims to resettlement. In both Bulaon and Balaybay, the houses provided by the Mount Pinatubo Commission were built as cheaply as possible. They are small, follow a simple four-wall architecture and use substandard materials. Resettlement houses thus do not follow the design of traditional Kapampangan and Ilokano houses (see Figure 3 and Galang, 1940). Kapampangan houses usually distinguish by their large kitchen as cuisine is a major pride of the locals (Dizon, 1992). However, houses in the resettlement sites do not

have any kitchen but only a small sink at the back. The roofs made of simple metallic sheets which turn out to be very hot also differ from traditional palm-leaves roofs or modern sturdy roofs of Kapampangan and Ilokano houses (Hila et al., 1992).

Recommendations

The dissimilar responses of the Mt Pinatubo lahars victims relocated in Balaybay and Bulaon resettlement site lie in the unique history and culture of their ethnic group. The Ilokano of San Marcelino proved to be loosely tied to their native villages and overcame the social uprooting induced by their resettlement in Balaybay. On the other hand, the Kapampangan of Bacolor were strongly attached to their ancestral territory and struggled to adjust to the Bulaon relocation site. There are several unplanned implications of such differences in the adjustment to resettlement. Those include territorial conflicts between local governments (Gaillard, 2002), massive abandonment of the resettlement sites, scam regarding the occupancy of abandoned houses (Orejas, 1998) and inadequate or useless facilities. To avoid such impediments, it is fundamental to integrate those behavioural divergences in post-disaster resettlement planning. Indeed, if ethnic factors are often recognized, they are still rarely and fully included in disaster management policies. Integrating ethnic factors requires a fine understanding of the local context. The involvement of the victims in the decision-making process is also of critical importance and a prerequisite to fully understand the ethnic dimension of resettlement and to foster sustainable disaster recovery. In the case of the Mt Pinatubo disaster, the top-down and technocratic nature of the resettlement process which focused first on infrastructure and housing overlooked the intrinsic differences between lowland ethnic groups. Only the obvious specificities of the upland Aeta indigenous people were considered as worth a particular resettlement program, yet often considered as a failure (e.g. Seitz, 1998). It is of particular concern that following the 1993 eruption of Mt Mayon in Southern Luzon, the Philippine government similarly forced the relocation along the seashore of communities formerly living on the slopes of the volcano. These resettlers did not know how to fish or to swim (Cola, 1994). In summary, taking into account ethnic factors in post-disaster resettlement militates for a contextual approach of disaster management (e.g. Mitchell et al., 1989; Gaillard et al., 2008). What works in one place with one community should not be taken for granted and apply elsewhere without careful study of the victims' cultural, social, economic and political fabric.

Acknowledgements

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Role of building codes and construction standards in windstorm disaster mitigation

David Henderson and John Ginger from James Cook University, examine the role of Australia's building code and construction standards in a number of windstorm disaster mitigation situations.

Abstract

It seems the incidence of severe weather resulting in damage to buildings and infrastructure — causing distress and hardship to communities — is on the increase. Is this reported damage indicating deficiencies in Australia's building standards?

Recent damage surveys have shown that the majority of contemporary structures remained structurally sound protecting their occupants, thereby meeting the life safety objective of the Building Code of Australia. However, there were examples of houses designed and built that did not conform to the relevant standards, because of the use of incorrect design parameters, poor construction practices, and inappropriate materials. It is recommended that continuing education is required in all steps of the building process.

Introduction

Tropical Cyclone Larry crossed the North Queensland coast in the early morning of Monday 20th March 2006, causing severe damage to buildings, agriculture, and infrastructure for power, communications and services in the Innisfail region (Figure 1). Wind damage extended well into the Atherton Tablelands and flooding was reported in the Innisfail area, the Tablelands and into the Gulf country.

The cyclone caused significant community disruption within the affected area. Lifelines (e.g. power, phones, and roads) were severely disrupted. It took weeks to restore communications and power, with some properties un-connected for months. The repair of houses has continued into its second year.

The Australian Building Codes Board (ABCB) sets the societal risk for the performance of buildings, in the Building Code of Australia (BCA-2007), with the objectives of safeguarding people from injury arising from structural failures, loss of amenity and protecting property. This paper discusses wind loading on buildings, the BCA's structural provisions, and assesses these with observed damage to low-rise structures in windstorms.

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Figure 1: Damage in Mourilyan from TC Larry.

The Building Code of Australia

The BCA's (2007) structural performance requirements specify that a building or structure, to the degree necessary, must resist the wind actions to which it may reasonably be subjected and;

- Remain stable and not collapse,

- Prevent progressive collapse,

- Minimise local damage and loss of amenity, and

- Avoid causing damage to other properties.

The Australian Building Codes Board sets the societal risk for the ultimate limit state strength of a structure, in the Building Code of Australia (BCA, 2007). The level of risk is evaluated depending on the location and type of structure as shown in Table 1. For example, a hospital has a higher level of importance (Level 4) that an isolated farm shed (Level 1). From Table 1, the design level for housing (Importance level 2 as noted in the Guide to the BCA 2007) is to be a minimum annual probability of exceedance of 1:500. The Wind loads for housing standard (AS-4055, 2006) derives its wind loads for housing based on housing being Level 2 importance.

Accordingly, a house is required withstand its ultimate limit state design wind speeds thereby protecting its occupants. For cyclonic region C (Figure 2) as defined in AS/NZS 1170.2-2002, the regional 10 m height 3 second gust wind speed (VR) for a 1:500 probability is 69 m/s, a mid-range Category 4 cyclone. This wind speed has a nominal probability of exceedance of about 10% in 50 yrs.

AS/NZS 1170.0:2002 provides designers with load combinations including wind actions to be applied on structural components and checked against their design strength. Failure occurs when the combined load exceeds the component's strength. Structures designed according to AS/NZS 1170.0:2002 should have a negligible probability of failure (i.e. < 0.001 or as a percentage, < 0.1 %) at ultimate limit state loads, that is, failures of structural elements would not be expected to occur at the ultimate limit state design load. However some component damage is expected at wind speeds close to the design loads.
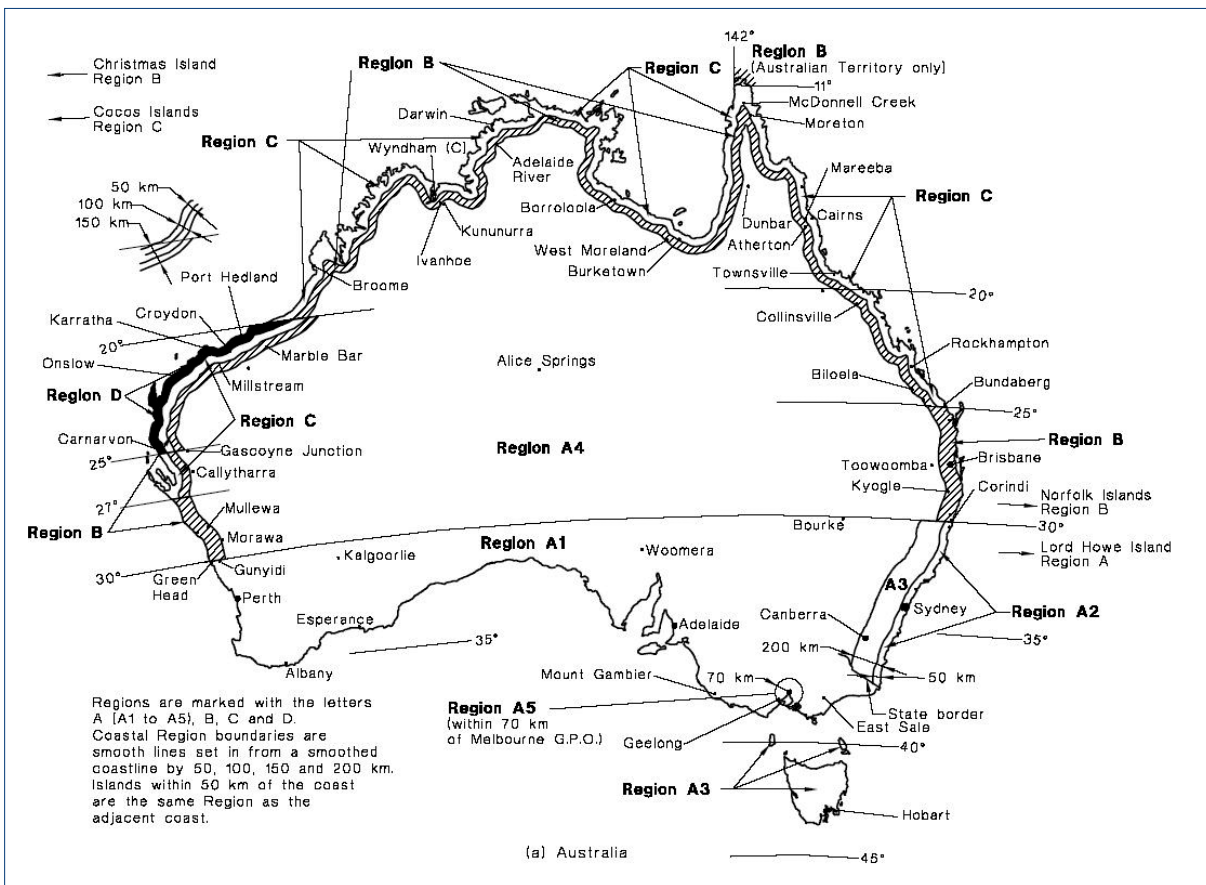

Figure 2: Wind Regions of Australia (AS/NZS-1170.2, 2002)

Wind regions for design

Windstorms can broadly be classified according to their meteorological parameters as: tropical cyclones, thunderstorms, tornados, monsoons and gales. Different parts of the world are influenced by these various types of storms. Cyclones generally impact on coastal regions in the tropics, and extend hundreds of kilometres and therefore have the potential to cause the most damage. Thunderstorms and tornados are much more local, with their influence affecting distances of up to 10's of kilometres. A tornado impacting on a community in Australia is a relatively rare occurrence, compared to that of the US. Nevertheless, tornadoes can generate extremely high wind speeds and cause extensive destruction in local areas. For more detailed information on the different types of windstorms see texts such as Crowder (1995) and Holmes (2001).

These variations in weather systems are accounted for in the Australian and New Zealand Standard for structural design wind actions, AS/NZS 1170.2:2002, which divides Australia into several regions, as shown in Figure 2. Wind loads used in the design of structures (e.g. houses, shops, large storage sheds, 4 to 5 storey apartments, etc) are calculated from the data specified in AS/NZS 1170.2 which excludes tornados from its scope of wind actions.

Wind loads

The design wind speed, for a particular site must take account of factors that can either increase or decrease the local wind speed (i.e. building height, topography, shielding from other structures, suburban terrain, etc). As the pressure experienced on a structure is proportional to the wind speed squared, a small increase in wind speed gives a much larger increase in load. Therefore a building on a hill-top location, that is designed without proper consideration for the increase in wind speed over the hill, is at an increased the risk of failure.

Figure 3 is a representation of the pressures acting on a simple structure showing the high suction pressures at the leading edge of the roof. If there is a breach in the building envelope on a windward face such as from a broken window or failed door, the interior of the house is suddenly pressurised. These internal pressures act together with the external suction pressures significantly increasing the load on the cladding and structure. Depending on the geometry of the building, the increase in internal pressure caused by this opening can double the load on the structure, thereby increasing the risk of failure especially if the building has not designed for a dominant opening.

Damage from recent events

Significant damage to buildings and other structures has been reported following the impacts of cyclones and thunderstorms in recent years. This section will detail the findings from some recent investigations, to highlight recurring themes that are used for assessing the provisions in the BCA and relevant Standards.

Tropical Cyclone Larry

The CTS conducted a detailed study of the performance of buildings in the Innisfail region and relevant codes and standards following the category 4 Tropical Cyclone Larry (Henderson et al., 2006). The study estimated that peak gust wind speeds that impacted on the region were in the order of 50 to 60 m/s (referenced to 10 m height in open terrain), as shown in Figure 4, which is less than the region's ultimate limit state design wind speed of 69 m/s.
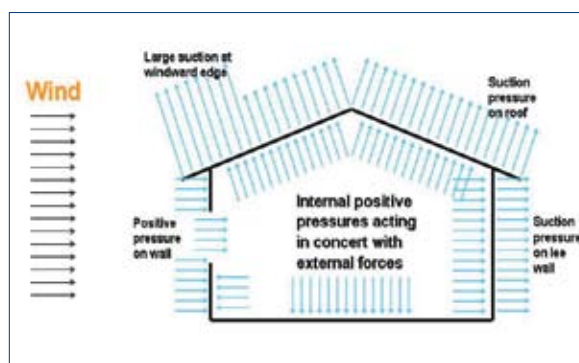

Figure 3: Wind forces with a dominant opening in windward wall

An external survey of nearly 3000 houses, was conducted by the Cyclone Testing Station and Geoscience Australia in order to obtain an overview of the extent of the damage to housing. The survey enabled quantification of the housing stock and the types of damage sustained, in terms of the damage classes and the percentage of damage as shown in Figure 5. The classification of houses into pre and post 1985 relates to the introduction of revised engineering deemed to comply provisions in Appendix 4 of the Queensland Home Building Code (1981).

Most of the contemporary houses (post 85) were slab-on-ground houses, with reinforced masonry walls. Figure 5 shows contemporary housing suffered less structural damage than pre-1985 housing as a result of the improvements specified in the revised standards.

Figure 5 shows about 5% of post-85 houses suffered failures from wind loading (Damage Class 3-7). These failures were generally caused by under strength connections details resulting from incorrect AS4055 site classification (e.g. building a C1 house on a C3 site), the use of inappropriate building materials, errors in

construction or poor maintenance. There were examples of structural damage to contemporary elevated houses shown in Figure 6 which is attributed to their hill-top locations which experience higher wind loads than the structural detailing catered for. Many adequately designed contemporary houses which were subjected to higher wind speeds due to topography had minimal damage.

An external damage survey of commercial and industrial sheds showed that approximately 30% of these "engineered" buildings suffered damage ranging from loss of cladding through to complete collapse. This amount of damage is concerning, especially as these failures took

Figure 5: Damage to houses following Cyclone Larry
(Henderson et al., 2006)

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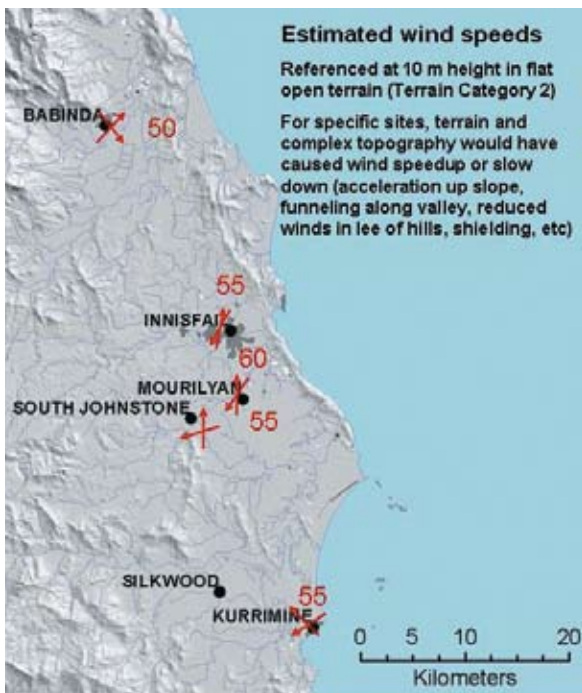Figure 7: Failure of cold formed steel frame shed

Figure 4: Estimates of wind speed in flat open terrain
(Henderson et al., 2006)

place at wind speeds significantly lower than the design value, exceeding the level of failures acceptable according to the BCA and relevant Standards. Of the buildings that had roller doors, 60% had failed doors, often causing additional internal damage and in some cases leading to structural failures. The major structural failures were mainly in the thin cold formed steel frame sheds (Figure 7). The heavier hot-rolled steel framed sheds performed better, notwithstanding the failure of the roller doors, or failures due to corrosion of elements.

Cyclonic wind induced fatigue of metal cladding and battens can greatly reduce the material's strength eventually leading to its failure. The reduction in capacity which can be as much as half of the static strength was documented following Cyclone Tracy (Walker, 1975). Since then, the various Codes and Standards have prescribed fatigue load criteria in order to evaluate products that are used in cyclonic regions.
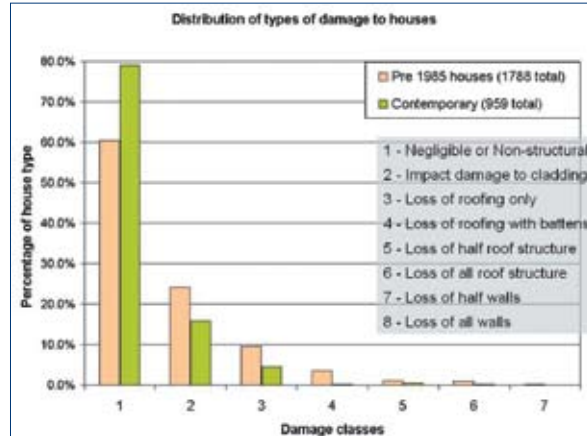
Fatigue failure of metal cladding was observed in a few instances, but for these cases the cladding was not installed correctly with fixing centres exceeding the required spacing.

Although Figure 5 showed that about 80% of contemporary housing suffered minimal structural damage it was noted that many houses were subjected to water ingress as shown in Figure 8. A recent GA and CTS supported survey conducted by Melita (2007), details building envelope failures during TC Larry. He found that approximately 75% of post-85 houses suffered water ingress through breaches in the building envelope (broken windows, punctured cladding, failed fascia or guttering, etc) or through window "seals", vents and under flashings. In many cases this has necessitated the refurbishment or replacement of internal linings and building contents.

Tropical Cyclone Larry was a fast moving event, which meant that the duration of strong winds was relatively short. Hence, buildings experienced fewer wind pressure fluctuations and less debris impact as well as a shorter period in which rain was being driven into buildings. The reduced duration of intense winds also minimised the potential for fatigue failure of metal cladding, fixings and battens. Had the cyclone been travelling slower but with the same gust wind speeds, the debris damage, water penetration and cladding damage would have been worse.

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Figure 6: Elevated house on side of hill

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Figure 8: Ceiling damaged by water ingress from debris impact to gable

Dubbo thunderstorm

A damage investigation was conducted by AGSO and CTS in the Eastern suburbs of Dubbo following a thunderstorm on the 6th January 2001. The peak gust wind speed was estimated to be about 40 m/s which is slightly lower than the region's design wind speed. There was significant damage to residential and commercial structures due to the wind load, debris impact, heavy rain and hail (Stehle and Henderson, 2001).

An external survey of housing, showed that approximately 5% suffered damage, mostly to tiled roofs from wind loads and debris impact (note that this excludes internal damage from water ingress, etc), in stark contrast to the more extensive damage suffered by commercial and industrial sheds. Figure 9 shows a shed with loss of cladding, buckled top hat purlins and buckled plates at the portal frame knees following the failure of the windward roller door. Note that the door has been laid back mostly in place following the event.

Approximately 50% of the sheds in the surveyed industrial area suffered some damage. The damage was mostly to roof and wall cladding and to roller-doors, with the damage levels ranging from negligible to structural collapse. There were a large number of roller door and window failures, which instigated more severe damage. It appears that the poor performance of engineered construction may be attributed to application of low internal pressure based on the assumption

that the buildings would remain nominally sealed. This assumption is invalid when considering the large percentage of roller door failures at lower than design level wind speeds..

Damage Investigations – Learning the same lesson

These damage surveys have resulted in findings similar to those carried out after TC Winifred (Reardon et al., 1986), TC Vance (Reardon et al., 1999), TC Ingrid (Henderson and Leitch, 2005), and TC George (Boughton and Falck, 2007). A summary of these findings are;

• Overall, contemporary construction performed well in resisting the wind loads (as it should have as the wind speeds were less than the regions design wind speed). Generally these newer buildings had external damage mainly to roller doors and attachments such as guttering, facias etc.

• There was extensive water ingress in both damaged and "undamaged" construction.

• Where structural failures from wind forces were observed on contemporary houses, they were associated with poor construction practice or application of incorrect (ie low) site design wind speed.

• Breaches in the building envelope (from failed doors or windows, or debris impact) exacerbated the potential for failure from the resulting high internal pressure.

• Corrosion or rot of connections and framing elements initiated failures.

Performance of the BCA

Findings from the damage surveys show the majority of contemporary houses remained structurally sound protecting their occupants, thereby meeting the life safety objective of the BCA. However, even these buildings, were subjected to water ingress resulting in a loss of amenity, in addition to failures of elements (i.e. doors, fascias, guttering, etc) with the potential to impact other buildings, thus failing to meet some objectives and performance requirements of the BCA.

Design Issues

Damage investigations and recent design detail audits of low-rise industrial sheds and houses, have shown errors by designers when selecting parameters, from AS/NZS 1170.2 and AS 4055. These errors have included the use of low design site wind speed, local pressure factors and internal pressure coefficient. The misinterpretation of these design criteria results in the use of components and connections of inadequate strength to withstand the design wind loads and consequently a higher probability of failure.

Figure 9: Structural failure of shed from failure of roller door on windward wall

Internal pressurisation of the building can occur from failure of an element (door, window, soffit, etc) from direct wind pressure or from wind driven debris impact. The damage investigations revealed; (a) some elements (roller doors, awnings, etc) did not have an adequate wind load rating and therefore did not conform to the relevant standard, and (b) in some cases the debris impact load was significantly higher than the 4 kg mass projected at 15 m/s that is specified in the AS/NZS 1170.2 test criterion. The wind resistance of buildings could be improved significantly by applying internal pressures resulting from a dominant opening.

Construction Issues

Inspections of houses under construction in both cyclonic and non-cyclonic regions have revealed common construction faults that can significantly reduce the capacity of structural elements, leading to the failure of the structure. Typical faults were missing framing anchors, misalignment of truss cleats, minimal fixings for windows and incorrect truss spacings and poor fixing installations shown in Figures 10 and 11. Design standards and manufacturers data do not account for these types of faults and poor construction practices. This is another reason why damage surveys show higher than expected failures of contemporary

Figure 9: Roofing screws missed top hat batten.

Figure 10: Gun nails over driven in bracing panel.

construction. A missing or poorly installed fastener can result in the failure of a building, as adjacent fixings are overloaded and fail in a cascading effect.

Water Ingress – Loss of Amenity

Water ingress can cause damage to internal linings, resulting in costly repairs, potential long term durability concerns and mould growth, in addition to the loss of amenity. Water ingress and associated damage to "non-structural" components of the house can be expected when heavy rain occurs with wind speeds greater than about 30 m/s. This damage will arise from the ingress of rain-water with a pressure difference across the envelope (i.e. net positive pressure across the roof and wall), and also from the envelope being damaged by flying debris or failure of soffits, gutters and fascias.

The pressure developed across the building envelope during windstorms frequently exceed the serviceability test pressures specified in AS 2047 (1999) for window resistance to water ingress. Therefore if a severe storm event is accompanied by rain, water ingress can be expected. The only means of minimising water ingress is by incorporating adequate seals for all windows, vents, doors, flashings, etc. However, this solution maybe untenable partly because of the prohibitive cost and the impracticality of completely sealing the envelope.. Resilience of the building could however be improved by a combination of (a) reducing water ingress by complying with a higher serviceability test pressure, (b) using water resistant internal linings and (c) occupant education to the fact that wind driven rain will enter the house. It is recommended that cost effective methods of improving the resilience of buildings against water ingress during severe storms be examined.

Conclusions and recommendations

Post windstorm damage surveys have shown that houses designed and built to the revised standards since the mid-eighties, perform better structurally than houses built prior to that. The studies have also indicated that the current suite of loading, design and construction standards are effective without being overly conservative. However, there were examples of houses designed and built that did not conform to the relevant standards, because of the:

- Use of unconservative design parameters, for example not accounting for high internal pressure caused by a dominant opening, or use of incorrect wind speed up or shielding multipliers.

- Poor or faulty construction practices such as unattached or missing fasteners, overdriven nails, component or connection spacings in excess of specified minimum distances.

- Inappropriate use of materials for durability requirements (corrosion, rot, etc), and

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- Use of products that have not been designed, tested or installed for appropriate wind region (unrated roller doors and awnings, cladding and battens that have not been fatigue tested).

Education and awareness of the consequences in making unconservative design assumptions, and of faulty construction (e.g. damage to property and risk to life) is required in every step of the building process (regulation, design, construction, certification and maintenance) and by all parties (designer, builder, certifier, and owner).

Education and awareness is needed in the areas of:

- Correct interpretation of BCA provisions,
- Correct application of design standards,
- Testing and certifying building materials, connections, etc to the relevant standards,
- Diligent construction practices, and correct application of materials and components as per manufacturers instructions, and
- Appropriate inspection and certification at time of construction, and
- Ongoing inspections and maintenance for serviceable life of building.

We are all a part of disaster mitigation. The resilience of our communities is up to all of us.

Acknowledgements

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Legal risks of volunteer firefighters – how real are they?

Elsie Loh examines Australian legislation arguing that perception regarding firefighters' protection from liability may not be reality.

Abstract

Australian fire services outside major metropolitan areas depend highly on volunteer firefighters. As volunteers, they are accorded protection by legislation from personal liability for any damage or harm caused in the course of their volunteering. Volunteer firefighters are protected under two types of legislation – legislation that apply to all types of volunteers and legislation that specifically protects volunteer firefighters. This paper examines the extent to which volunteer firefighters are protected by both sets of legislation. It will also outline the exceptions and the important discrepancies and gaps in protection that volunteers and fire services should be aware of. The paper concludes that volunteer firefighters are well covered by immunities from legal liabilities, although there are some gaps in the coverage.

Introduction

There are 194,000 volunteers serving in the various state and territory fire services organisations in Australia (SCRGSP, 2007). This is compared to the 12,000 full time equivalent paid firefighters in the country. There is no doubt that the Australian fire services will be significantly impacted if volunteers cease serving because of any fears of personal legal liability arising in the course of their volunteering. As a couple of volunteer firefighters, Mr Robin Box, First Lieutenant and Deputy Group Officer, Moyhu Group of Fire Brigades, Carboor Rural Fire Brigade, and Mr Tony Menz, Captain, Buffalo River Country Fire Association, told a federal inquiry:

"[The fear of liability] has affected the effectiveness of brigades getting in and doing their job. We tend to be told, 'If in doubt, get out.' We have better resources, much more expensive equipment and more training and yet our ability to get water onto a fire has deteriorated because people are worried about the liability. If you say, 'Go in and do it' and something happens, they do not want it on their neck …"

Unfortunately, the way the law operates today, if you do something and it goes wrong, you know you are going to cop it—so you don't do it. People have got the wind up (Hansard, 2003, p.66)".

In May 2002, a panel of experts headed by Hon David Andrew Ipp was appointed by the Commonwealth to investigate the area of tort law in Australia in light of concerns about the increase of litigation and occasional high profile awards of damages for personal injury claims in Australia. A tort is a civil wrong where one party (the plaintiff) alleges another party (the defendant) has done something that has caused harm to the plaintiff for which he/she is entitled compensation. In the context of bushfire emergencies, the torts of assault/battery, trespass and negligence are the most relevant. After their investigations, the Ipp Panel states in relation to volunteers' liability that it:

"…is not aware of any significant volume of negligence claims against volunteers in relation to voluntary work… (Ipp Report, 2002, p. 170)".

This is also the case in relation to Good Samaritans. A Good Samaritan is a person who, in good faith and without expectation of payment or other reward, comes to the assistance of a person who is apparently injured or at risk of being injured. Such a person is also usually immune from liability under common law and legislation in the event the person the Good Samaritan is attempting to help is injured from the rescue. The Ipp Panel recognises that it has not been able to find any cases in Australia where Good Samaritans have been sued by the people they were trying to help. The Ipp Report states that the Panel is:

"…not aware, from its researchers or from submissions received by it, of any Australian case in which a good Samaritan (a person who gives assistance in an emergency) has been sued by a person claiming that the actions of the good Samaritan were negligent (Ipp Report, 2002, p. 170)."

The Ipp Report proposes that it is unnecessary for any further protection for volunteers to be enacted in statute as there is sufficient protection by the common law (which is made of decisions and reasons for decisions made by judges sitting in court based on the factual cases which are brought before them).

Statute law (which is also known as "legislation") is made of legal rules enacted by Parliament. Statute law overrides the common law where there is conflict between the two. Where statute is silent on an issue, then the common law is applicable. The Ipp Report also found that cases against volunteers are negligible and the fears are unfounded. Despite these findings, all states and territories as well as the Commonwealth have introduced protection clauses for volunteers in statutory law. Further, all states and territories except for Tasmania and Queensland (and the Commonwealth) have introduced protection clauses for Good Samaritans. This fear of personal liability, however unfounded, indeed appears to be very real in the public mind (Tibballs, 2005).

This paper summarises legislative protection in relation to volunteers in the context of fire fighting and the 'Prepare, Stay and Defend or Leave Early' policy (the Policy) (see AFAC, 2005). The Policy emphasises that in the case of bushfires, often the safest option for people caught in the path of a bushfire is to remain in their homes so that they are (i) protected from the radiant heat of the oncoming fire and (ii) able to take measures such as putting out invading embers to protect their homes from being destroyed by the fire. If homeowners feel they are unable to protect their homes whether it is due to physical impairment or lack of preparedness, then it would be safer for these people to leave early long before the danger of the fire presents itself. The policy recognises the most dangerous option is to evacuate through the fire front and that most houses are lost due to ember attack which can greatly be controlled by able-bodied people in the building (Handmer and Tibbits, 2005).

General principles also exist in our common law that determine when personal and legal liabilities are incurred by an individual. Common law is made of decisions and reasons for decisions made by judges sitting in court based on the factual cases that are brought before them. Parliament, however, also enact law in the form of legislation that has, in some cases, amended the position in the common law. The extent to which the common law has been amended by legislation is different in every state and territory. This article does not focus on the common law position dealing with legal liabilities but limits its analysis to the two sets of legislation which have immunity provisions that cover (i) all volunteers (to the extent it covers volunteer firefighters) and (ii) volunteer firefighters specifically. The legislation that relates to volunteers in general has only been introduced within the last seven years by all States and Territories. These volunteer protection provisions are in addition to the protection already accorded to volunteer firefighters by the relevant fire

services legislation (see references). The paper also highlights the gaps in legislation that volunteers and fire service organisations should be aware of, including where changes would provide greater clarity and/or better protection.

'General' Volunteers Protection Provisions

Fire service organisations in Australia (and the Australian public) would plunge into crisis should volunteer firefighters across Australia decide to withdraw their services. It is therefore understandable that the introduction of legislative protection against civil liability for volunteers in general is of particular interest to the fire services sector. The relevant 'general' volunteers protection provisions for the states and territories are the Wrongs Act 1958 (Vic), Civil Liability Act 2002 (NSW), Volunteer Protection Act 2001 (SA), Volunteers (Protection from Liability) Act 2002 (WA), Personal Injuries (Liabilities and Damages) Act 2003 (NT), Civil Law (Wrongs) Act 2002 (ACT), Civil Liability Act 2002 (Tas) and Civil Liability Act 2003 (Qld). These provisions apply to all volunteers in the respective state or territory, including volunteer firefighters.

There are three main definitions that are outlined by legislation which must be considered before the volunteer protection provisions apply. These are as follows:

1) Definition of the individual concerned – Does this person fall within the definition of a "volunteer"?

2) Definition of the activity of the individual – Is this person performing "community work"?; and

3) The status of the organisation that organised the activity – Is the relevant organisation a "community organisation" as defined by legislation?

Additionally, the volunteer must show that his or her act was performed in "good faith", a concept that will be discussed below.

Should the above considerations be satisfied, then the question is whether the volunteer or the type of liability falls within an exception or is excluded from being covered by the protection provisions.

A. Definition #1 - Volunteer

To be accorded protection, the individual must firstly fall within the definition of a volunteer as outlined in the relevant legislation. The definition of a volunteer is pretty much consistent throughout all jurisdictions, being a person who does not receive remuneration for their services[1]. This does not include a person

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1   Wrongs Act 1958 (Vic) s35; Civil Liability Act 2002 (NSW) s60(1); Volunteer Protection Act 2001 (SA) s3; Volunteers (Protection from Liability) Act 2002 (WA) s3(1); Personal Injuries (Liabilities and Damages) Act 2003 (NT) s7(7); Civil Law (Wrongs) Act 2002 (ACT) s6; Civil Liability Act 2002 (Tas) s45; Civil Liability Act 2003 (Qld) s38.

performing work under a court order. Most jurisdictions however allow for the reimbursement of costs that may have been incurred by the volunteer during the course of their service and/or provide for regulations to specify limits to the amount a person can receive without losing their status as a volunteer.

B. Definition #2 – Community work

The volunteer must be found to be performing community work to qualify for protection. The definition of 'community work' differs slightly across the jurisdictions but the list of purposes include charitable, benevolent, educational and sporting. Other purposes which are included in the definition depending on the jurisdiction are cultural, philanthropic, religious, political, protecting the environment and assisting physical or mentally disabled people[2]. Fire-fighting could easily be classified as being benevolent in nature and carried out for the public good. This activity would undoubtedly fall within the definition of "community work" across all jurisdictions.

C. Definition #3 – Community organisation

The organisation for which the volunteer is connected with must be one which is responsible for organising the community work in question (which the volunteer was engaged in). This organisation must have a particular status or be a particular 'type'. Across all the jurisdictions, the 'body corporate' and 'corporation' are recognised as a 'community organisation'. The definitions of 'community organisation' in most jurisdictions also include government organisations (ie. 'public entities', 'public service bodies', 'authorities of the State', 'the Crown', 'state agencies or instrumentalities or departments' or 'statutory authorities'). It is noted that for-profit organisations can also be covered under this definition. Unincorporated entities are also covered in some jurisdictions such as 'church or other religious groups' and 'registered political parties'. This means that most fire services in Australia would also fall under this definition as they are all government organisations in one form or another and would fall under the definition of 'community organisation' in their respective jurisdiction (see Table 1). The Victorian[3], South Australian[4] and Tasmanian[5] fire services are also corporate bodies/corporations and would therefore fall within the definition of 'community organisation' on this basis. Further, section 56(9) of the Fire and Emergency Act 1996 (NT) provides that "A volunteer fire brigade …be deemed, for the purposes

of the Associations Incorporation Act, to be an association incorporated under that Act…"

The ACT fire services, however, do not fall under the definition of 'community organisation' as defined by section 6 of ACT's Civil Law (Wrongs) Act 2002. Section 6 requires the 'community organisation' to be a corporation and does not make any provisions for organisations that may be government or government-related bodies to be included under the definition. The ACT Fire Brigade and the Rural Fire Service are the operational arms of the ACT Emergency Services Agency (the Agency). The Agency is part of the Department of Justice and Community Safety and, as such, is not a corporation. This means that volunteers from the ACT Fire Brigade and Rural Fire Service are not legislatively protected under the ACT's Civil Law (Wrongs) Act 2002. Volunteers from the ACT Fire Brigade and Rural Fire Service are instead protected under the Emergencies Act 2004 (ACT) only (see later discussions). The Emergency Services Authority which was clearly a corporation under section 7(2) of the old Emergencies Act 2004 existed prior to the Agency.. Subclause 7(2) was removed when the Agency was created in 1 July 2006 and integrated with the Department of Justice and Community Safety (DOJCS, 2007). This transition effectively removed the protection accorded to volunteer firefighters provided by the Civil Law (Wrongs) Act 2002. This example emphasises the importance of paying close attention to the seemingly small discrepancies and omissions that exist in different state/territory legislation and the potential significant effect such discrepancies and omissions may have.

D. Good faith

Most states and territories in Australia have different legislation outlining the liabilities of volunteers which means that it is important that the volunteer or the organisation for which the volunteer is practising is aware of their immunities and the exceptions to these immunities. Please note that as there is no Commonwealth fire agency, the Commonwealth Volunteers Protection Act 2003 (Cth) will not be covered in this paper. Generally, liability for any negligent act is transferred from volunteer to the organisation if the volunteer has acted 'in good faith' (see Table 2). This concept of "good faith", however, is not clear as it is undefined in legislation and judicial guidance on its definition is limited.

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2   Wrongs Act 1958 (Vic) s36; Civil Liability Act 2002 (NSW) s60(1); Volunteer Protection Act 2001 (SA) s3; Volunteers (Protection from Liability) Act 2002 (WA) s3(1); Personal Injuries (Liabilities and Damages) Act 2003 (NT) s7(7); Civil Law (Wrongs) Act 2002 (ACT) s6; Civil Liability Act 2002 (Tas) s44(1); Civil Liability Act 2003 (Qld) s38.

3   See Wrongs Act 1958 (Vic) s34 and Public Administration Act 2004 s5(1)(a); Civil Liability Act 2002 (NSW) s60; Volunteer Protection Act 2001 (SA) s3; Volunteers (Protection from Liability) Act 2002 (WA) s3(1)(a); Personal Injuries (Liabilities and Damages) Act 2003 (NT) s7; Civil Liability Act 2002 (Tas) s44; Civil Liability Act 2003 (Qld) s34 and s38.

4   Metropolitan Brigades Act 1958 (Vic) s6(2) and Country Fire Authority Act 1958 (Vic) s6(2).

Table 1: Type of entity of fire service organisations (see Australian Government, 2007, p. 8.5-8 DOJSC, 2007, p.7)

Jurisdiction	Type of Fire Service	Type of Entity	Reports to
NSW	Fire Brigades	Government Department	Minister for Emergency Services
	Rural Fire Service	Government Department	Minister for Emergency Services
VIC	Metropolitan Fire and Emergency Services Board	Statutory Authority	Minister for Police and Emergency Services
	Country Fire Authority	Statutory Authority	Minister for Police and Emergency Services
QLD	Fire and Rescue Services (Incorporates Rural Fire Service)	Division of the Government Department (of emergency services)	Minister for Emergency Services
WA	Fire and Emergency Services Authority of WA	Statutory Authority	Minister for Police and Emergency Services
SA	Metropolitan Fire Service	Body Corporate	Board of the SA Fire & Emergency Services Commission
	Country Fire Service	Body Corporate	Board of the SA Fire & Emergency Services Commission
TAS	Fire Service	Operational arm of State Fire Commission (Established by fire service Act 1979)	Minister for Health and Human Services
ACT	Fire Brigade and Rural Fire Service	Operational arms of ACT Emergency Services Agency as part of the Department Of Justice & Community Safety	Minister for Health and Human Services
NT	Fire & Rescue Service	Branch of Government Department (of Police, Fire & Emergency Services)	Director reports to the Commissioner for Police who then reports to the Minister for Police, Fire & Emergency Services
	Bushfires NT	Division of Department of Natural Resources Environment and the Arts (NEAT)	Chief Fire Control Officer reports to CEO of NEAT who reports directly to Minister

For example, in Central Estates (Belgravia) Ltd v Woolgar (1971), a decision of the Court of Appeal of the United Kingdom, Phillimore LJ, expounds at 650 on the difficulties that are encountered by courts in giving a definitive statutory interpretation to the expression 'in good faith" (my emphasis):

"Was the claim made otherwise than in good faith? Counsel could not help us very much. One said that a claim was not made in good faith when it was made in bad faith. Another said that a claim must be dishonest if it was to be described as made otherwise than in good faith. It was said that a claim would not be made in good faith if the facts stated in it were untrue to the knowledge of the tenant or if the claim was made for some ulterior motive. One counsel said that it all depended on `quo animo' the claim was made and another said that motive must be distinguished from intention ...I have come to the conclusion that the only course that this court can follow is to deal with this matter on the facts of this case."

Generally, courts in Australia have also unhelpfully found that what is 'good faith' will depend on the circumstances of each case (Bankstown City Council, 2005, at 59). In the past, courts have defined it as meaning 'without any indirect or improper motive' (Argouin, 1961, at 115). More recently, the Federal Court has emphasised the notion of honesty, although this requires more than honest incompetence. In Mid Density Developments Pty Ltd v Rockdate Municipal Council (1993), Gummow, Hill and Drummond JJ describes the concept at paragraph 27:

" 'Good faith' in some contexts identifies an actual state of mind, irrespective of the quality or character of its inducing causes; something will be done or omitted in good faith if the party was honest; albeit careless… Abstinence from inquiry which amounts to a wilful shutting of the eyes may be a circumstance from which dishonesty may be inferred…On the other hand, 'good faith' may require that exercise of caution and diligence to be expected of an honest person of ordinary prudence (Mid Density Developments, 1993, at 468)."

Table 2: Standard of care required	
Jurisdiction	**Standard required**
Victoria*	"A volunteer is not liable in any civil proceeding for anything done, or not done, in good faith by him or her in providing a service in relation to community work organized by a community organization." *S37(1) Wrongs Act 1958 (Vic)*
NSW	"A volunteer does not incur any personal civil liability in respect of any act or omission done or made by the volunteer in good faith when doing community work: (a) Organized by a community organization, or (b) As an office holder of a community organization." *S61 Civil Liability Act 2002 (NSW).*
South Australia	"Subject to the following exceptions, a volunteer incurs no personal civil liability for an act or omission done or made in good faith and without recklessness in the course of carrying out community work for a community organization." *S4 Volunteers Protection Act 2001 (SA).*
ACT*	"A volunteer does not incur personal civil liability for an act done or omission made honestly and without recklessness while carrying out community work for a community organization on a voluntary basis." *S8(1) Civil Law (Wrongs) Act 2002 (ACT).*
Western Australia	"A Volunteer does not incur civil liability for anything that the volunteer has done in good faith when doing community work." *S6(1) Volunteers (Protection from Liability) Act 2002 (WA).*
Northern Territory	"A volunteer does not incur personal civil liability for a personal injury caused by an act done in good faith and without recklessness while doing community work for a community organization." *S7(1) Personal Injuries (Liabilities and Damages) Act 2003 (NT).*
Tasmania	"A Volunteer does not incur civil liability for anything that the volunteer has done in good faith when doing community work." *S47(1) Civil Liability Act 2002 (Tas).*
Queensland	"A volunteer does not incur any personal civil liability in relation to any act or omission done or made by the volunteer in good faith when doing community work – (a) Organized by a community organization; or (b) As an office holder of a community organization." *S39(1) Civil Liability Act 2003 (Qld).*

*Note: Victorian CFA volunteers and ACT volunteer fire-fighters are not protected under these Acts which provide protection to volunteers generally. Text has been provided for comparative purposes only.

This means that a court will consider what a person's state of mind actually was, as well as how a reasonable person with the same level of experience and expertise would have conducted themselves in the same circumstances in determining whether the act or omission was done in 'good faith'.

Whatever the precise definition of 'good faith', it is generally accepted that what is required of 'good faith' is no different nor less than what is required in common law for liability, being 'reasonable' (which is the relevant standard in relation to negligence). Therefore, volunteers will generally be protected under these new volunteers' protection provisions if they can show their acts were in good faith, even though their acts may have been un-reasonable (ie. could not pass the 'what a reasonable man would do' test). If their acts had been reasonable in the first place (a higher standard than 'good faith') then they would have nothing to fear.

The term 'good faith' is used in all jurisdictions except in the ACT where the term 'honestly' is used instead. The term 'honestly' (or 'honesty') may have the same connotation as 'good faith' but this is not definite as neither terms are defined by legislation nor have they been clearly interpreted by the Courts.

Further, it should also be noted that the act or omission of the volunteer must also be 'without recklessness' (as for example in the wilful shutting of the eyes by the volunteer as to the consequences of his or her act or omission) in South Australia and the Northern Territory.

It is important to be also aware of the additional requirements imposed by the NSW and Queensland legislations that exempt protection if it can be shown that the volunteer failed to exercise 'reasonable care and skill' and 'due care and skill' respectively. Therefore, it would appear that NSW and Queensland have legislated for a standard of care for volunteers similarly to that expected in common law, and no additional protection from liability actually exists for volunteers in these jurisdictions. The legislation in NSW and Queensland that seemingly provides protection for volunteers actually only restates the position in common law that requires rescuers must show that they have acted reasonably or else be found liable in negligence.

E. Exceptions and excluded liabilities

Even if it is found that the protection provisions are applicable, there are exceptions that 'disqualify' the volunteer from protection (see table 3). All jurisdictions provide that protection will not be available if the volunteer knew or ought reasonably to have known that the action was outside the scope of the activities authorised or contrary to instructions given by the organisation.

Further, a volunteer would not be protected from liability if his or her ability to provide the service in a proper manner was impaired by alcohol or drugs, unless the substance was consumed involuntarily or for therapeutic reasons. In New South Wales, however, it is irrelevant whether the alcohol or drugs were taken for therapeutic reasons. Volunteers in NSW should therefore ensure that they are not 'active' while taking therapeutic drugs and if they are, to ensure that the therapeutic drug they are taking will not 'significantly' impair their ability to provide the service in a proper manner. The ACT is silent on the issue of whether immunity will still apply even if the drug was taken voluntarily and/or if it was for therapeutic reasons. However, the provision refers to 'recreational drug', not just 'drug' or even to alcohol. There is no definition provided in legislation for what constitutes 'recreational drug' but this would most likely include all drugs which are not used for medicinal purposes, such as alcohol, marijuana, cocaine, ecstasy, speed, and heroin. In South Australia, the term 'recreational drug' is also used but this is defined by legislation to mean "drug consumed voluntarily for non-medicinal purposes and includes alcohol."

In Northern Territory, the immunity will not apply if the volunteer did the act while intoxicated. Section 16 of the Personal Injuries (Liabilities and Damages) Act 2003 (NT) states that a person is considered 'intoxicated' if it was found that she or he had a blood alcohol reading of 0.08 or more at or about the time of the relevant incident. It is unclear in the NT Act whether it needs to be shown that the volunteer's ability to provide the service had been impaired from being intoxicated however in Australia it is a criminal offence to provide volunteer services while intoxicated. Further, it does not appear that this would include impairment due to drugs due to the narrow definition accorded to 'intoxicated' in section 16. Similarly, the relevant provision in Queensland provides only that the volunteer be intoxicated to be disqualified from protection. Unlike the Northern Territory provision, however, it clearly also requires that the volunteer 'failed to exercise due care and skill' when doing the work.

There are other exceptions. In other states protection is provided by general emergency services legislation however inVictoria, the protection of the Wrongs Act 1958 (Vic) will be denied if the volunteer is a member of the CFA or SES. Significantly, CFA and SES members, including volunteers, are instead covered under the specific legislative provisions of s92 of the Country Fire Authority Act 1958 (Vic) and s42 of the Victoria State Emergency Service Act 2005 (Vic) respectively.

In NSW and Queensland, the legislation does not protect volunteers from liability if the volunteer was committing an offence at the time. Similarly, in the ACT, the protection will not apply if the act of the volunteer involves a threat or act of violence or creates serious risk to the health and safety of the public (as such acts do not fall within the definition of 'community work').

The legislative protection, or immunity, provided for NSW volunteers is not confined to personal injury cases. Section 59 provides that immunity applies to civil liability of any kind, including property, except for defamation. On the other hand, Northern Territory legislation will not provide protection in relation to damage to property therefore protection is only from civil liability for personal injury.

Finally, there are other liabilities that are excluded from coverage under the protection provisions of state legislation. There are variations between states but the list of exclusions includes liabilities that are covered under compulsory third party motor vehicle insurance, defamation, discrimination and liabilities covered under workers' compensation legislation.

F. Liability of Fire Service Organisations

Generally, it appears that the legislation provides protection for negligent acts by volunteers since the immunity provisions protect volunteers from personal liability only. However in some instances the legislation expressly transfers that liability to the Emergency Service Organisation (ESO) that is then ultimately vicariously liable. This is similar to the way an employer is often liable for their employee's acts. While volunteers are on duty they are considered by the ESO as equivalent to an employee and therefore much of the same protection and expectations apply – this is certainly the case when volunteers make compensation claims, and probably bears on the issue of liability and protection as well. The Civil Liability Act 2003 (Qld) is silent on the issue of whether the liability is transferred to the community organisation. It would appear that the Civil Liability Act 2002 (NSW) unsatisfactorily leaves the position unclear in that jurisdiction. This is because section 3C of the Civil Liability Act 2002 (NSW) specifically states that the Act not only excludes or limits the civil liability of a person but also operates to exclude or limit the vicarious liability of another person for that tort. This may mean that in accordance with the common law principles of vicarious liability, the 'principal' (the community organisation) cannot be found liable because its 'agent' (the volunteer) is excluded from liability by

Table 3: Exceptions to immunity (a non-exhaustive list)

Jurisdiction	Exceptions to protection
Victoria*	The immunity does not apply if (s38(1) and (3)): - The volunteer knew, or ought reasonably to have known, that the action was outside of the work undertaken by the organization or contrary to instructions. - The volunteer's ability to provide the service in a proper manner was impaired by alcohol or drugs, unless consumed involuntarily or for therapeutic reasons. - If the volunteer is a member of the CFA or SES (s35(3)).
NSW	The immunity does not apply if: - The volunteer knew, or ought reasonably to have known, that the action was outside of the work undertaken by the organization or contrary to instructions (s64). - The volunteer was committing an offence at the time (s62). - The ability of the volunteer to exercise reasonable care and skill when doing the work was significantly impaired by alcohol or a drug voluntarily consumed (it is irrelevant whether for therapeutic reasons or not) (s63).
South Australia	The immunity does not apply if: - The volunteer knew, or ought reasonably to have known, that the action was outside of the work undertaken by the organization or contrary to instructions (s4(3)). - The volunteer's ability to provide the service in a proper manner was impaired by a recreational drug or alcohol, unless consumed involuntarily or for therapeutic reasons (s4(2)).
ACT*	The immunity does not apply if: - The volunteer knew, or ought reasonably to have known, that the action was outside of the work undertaken by the organization or contrary to instruction (s8(2)(d)). - The volunteer's capacity to carry out the work properly was, at the relevant time, significantly impaired by a recreational drug (s8(2)(c)). - Involves threat or act of violence or creates serious risk to health/safety of the public (s7(2)).
Western Australia	The immunity does not apply if: - The volunteer knew, or ought reasonably to have known, that the action was outside of the work undertaken by the organization or contrary to instructions (s6(3)(a)). - The volunteer's ability to provide the service in a proper manner was impaired by alcohol or drugs, unless consumed involuntarily or for therapeutic reasons (s6(3)(b) & (4)).
Northern Territory	The immunity does not apply if: - The volunteer knew, or ought reasonably to hace known, that the action was outside of the work undertaken by the organization or contrary to instructions (s7(2)(a)). - The volunteer did the act while intoxicated (s7(2)(b)). - The damage relates to personal damage only rather than personal injury (s4(2)).
Tasmania	The immunity does not apply if: - The volunteer knew, or ought reasonably to have known, that the action was out of the work undertaken by the organization or contrary to instruction (s47(3)(a)). - The volunteer's ability to provide the service in a proper manner was impaired by drugs or alcohol, unless consumed involuntarily or for therapeutic reasons (s47(3)(b) & (4)).
Queensland	The immunity does not apply if: - The volunteer knew, or ought reasonably to have known, that he or she was acting outside scope of activities authorized by the organization or contrary to instructions (s42). - The volunteer was committing an offence at the time (s40). - The volunteer was intoxicated and failed to exercise due care and skill when doing the work (s41).

*Note: Victorian CFA volunteers and ACT volunteer fire-fighters are not protected under these Acts which provide protection to volunteers generally. Text has been provided for comparative purposes only.

the volunteer protection provisions in the Act. This, however, is unclear and is still subject to interpretation by the court.

Particular provisions in Victoria, South Australia, ACT, Western Australia and Tasmania provide that the liability, that under certain circumstances would,apply to the volunteer, instead attaches to the community organisation. This means that though the community organisation will not be liable for any act (or omission) of a volunteer that is done in good faith (honestly and/ or without recklessness) it would nevertheless still be liable for acts committed by the person that are not reasonable. This appears to be a form of vicarious liability that has been adopted in the legislation that does less to protect volunteers than it does to protect the public, and that changes the usual stance taken in common law. The doctrine of vicarious liability does not usually apply to volunteers but only to employees, as acknowledged by the Ipp Panel in their 2002 Report:

"11.22 Section 4 of the Volunteers Protection Act 2001 (SA) protects volunteers from personal liability in certain circumstances. S 5 provides that the liability that would, but for s 4, rest on the volunteer, attaches instead to the community organisation for which the volunteer works. The effect of section 5 is to create an exception to the basic rule that vicarious liability attaches to the relationship of employer and employee. Volunteers are not employees of the organisations for which they work because there is no contract of service between them. In some situations, the common law imposes vicarious liability for the negligence of independent contractors. Likewise, voluntary workers are not independent contractors of the community organisations for which they work because there is no contract for services between them. The common law sometimes imposes vicarious liability on the basis that the negligent person was an 'agent' of the person held vicariously liable. Typically, voluntary workers would not be agents (in the relevant sense) of community organisations for which they work (Ipp Report, 2002, p. 170)."

The object of the Ipp review was to limit liability and quantum of damages arising from personal injury and death and to make recommendations for capping awards to plaintiffs and other reforms aimed at reducing spiralling payouts and premiums. Though the Panel was able to acknowledge that organisations are generally not liable for the acts of their volunteers in common law, it was unable to make any recommendations that would expand the protection of volunteers (such as to recommend that volunteers be protected in other states and territories in the same way as in South Australia) as this would be contrary to their objectives:

"11.23. It follows that a recommendation by the Panel that community organisations should be vicariously liable for the negligence of volunteers who work for them would be in conflict with the objectives of the Terms of Reference because it would expand rather than limit liability for negligence (in this case, the negligence of others). In particular, such a recommendation would adversely affect the interests of not-for-profit community organisations, contrary to the clear intent of Term of Reference 3(f) (dealt with in Chapter 4). We therefore make no recommendation on this issue (Ipp Report, 2002, p. 170-171)."

It would appear that states and territories have nevertheless proceeded to widen the immunity provisions to include volunteers in this way despite the findings made by the Ipp Panel and the objectives of the review. The following are the dates on which the protection provisions (very similar to South Australia's provisions) were assented to by the respective state/territory after the release of the Ipp Report: the ACT - 10 October 2002, Victoria - 22 October 2002, Western Australia - 14 November 2002 and Tasmania 4 July 2003.

It was mentioned here earlier that a legislative provision is merely a 'form' of vicarious liability that has been adopted – as recognised by McGregor-Lowndes and Nguyen (2005) in their observation of the Personal Injuries (Liabilities and Damages) Act 2003 (NT). With slightly different wording to that adopted by Victoria, South Australia, ACT, Western Australia and Tasmania, the Northern Territory legislation appears to have also placed the volunteer in the same position as an employee through a vicarious liability arrangement. The Act states that the community organisation is liable for the acts of the volunteer "as if the volunteer were an employee of the community organisation". As McGregor-Lowndes and Nguyen (2005) observe, this is confusing as the provision has an exception that states volunteers would not be protected if they were "acting outside the scope of activities" or "acting contrary to instructions". These exceptions also exist in the legislative provisions of Victoria, South Australia, ACT, Western Australia and Tasmania.. The confusion arises because the common law principle of 'vicarious liability' requires that an employer be liable for acts done by the employee even if they were contrary to the instructions of the employer. All that needs to be shown is that the employee was acting in the course of their employment. As mentioned previously, volunteers do not as a matter of course, fall within a recognised category where common law vicarious liability applies. This means that while an employee may be protected even for acts done contrary to instructions, the volunteer is not accorded the same protection.

Table 4: Transfer of liability to third party	
Jurisdiction	**Transfer of liability to third party**
Victoria	Any liability resulting from an act or omission that would but for s37(1) attach to the volunteer attaches instead to the community organisation (s37(2)).
	Section 37(2) does not override any protection from liability that would have applied to a community organisation if the thing done/not done by the volunteer had been done/not done, by the community organisation (s39(1)).
	The principal organisation who coordinated the community work would be accorded the liability if there are more than one organisation involved in the work (s39(2))
	The State will incur the liability instead of the community organisation if the community organisation is a public entity or public service body within the Public Administration Act 2004 or another person or body acting on behalf of the State (s39(3)).
NSW	Any provision of the Act that excludes or limits the civil liability of a person for a tort also operate to exclude or limit the vicarious liability of another person for that tort (s3C)
South Australia	A liability that would, but for this Act, attach to a volunteer attaches instead to the community organisation for which the volunteer works (s5(1)).
ACT	A liability that would, apart from this part, attach to a volunteer, attaches instead to the community organisation for which
	The volunteer was carrying out the relevant community work. (s9(1)).
	The territory may assume liability of community organisations of volunteers by agreement where the community organisation carries out a function that is a recognised government responsibility (s10).
Western Australia	A community organisation incurs the civil liability that, but for the operation of section 6(1), a volunteer would incur for a thing done by the volunteer when doing community work organised by the community organisation (s7(1)).
	The operation of the s7(1) is subject to any protection from liability that would have applied to the community organisation if the thing done by the volunteer had been done by the community organisation (s7(2)).
	The principal organisation who coordinated the community work would be accorded the liability if there are more than one organisation involved in the work (s7(3))
	Liability that would be incurred by a community organisation that is a State agency is incurred by the State instead (s7(4)).
Northern Territory	A community organisation incurs the civil liability that would, but for subsection (1), have been incurred by the volunteer doing work for that organisation; and is liable for the personal injury caused by the act of the volunteer as if the volunteer were an employee of the community organisation (s7(3)).
	Liability that would be incurred by a community organisation that is an Agency department of the Territory is incurred by the Territory (s7(4)).
Tasmania	A community organisation incurs the civil liability that, but for the operation of s47(1), a volunteer would incur for a thing done by the volunteer when doing community work organisation by the community organisation (s48(1)).
	This is subject to any protection from liability that would have applied to the community organisation if the thing done by the volunteer had been done by the community organisation instead (s48(2)).
Queensland	No express transfers of liability to the community organisation or State.

*Note: Victoria's CFA volunteers and ACT volunteer fire fighters are not protected under these Acts, which provide protection to volunteers generally. Text has been provided here for comparative purposes only.

There are arguments that this trend should and/or will change due to the fact that volunteers are increasingly being recognised as important contributors in organisations (whether profitable or non-profitable) and deserve equal protection as such. For example, Volunteering Australia's model code of practice for organisations involving volunteer staff requires that "appropriate and adequate insurance coverage for volunteer staff" be provided for by organisations (Volunteering Australia, 2005, p.1). This is especially true in the fire service organisations (FSO) in Australia where the majority of firefighters are volunteers. McGregor-Lowndes and Nguyen also argue that legislative protection of volunteers should increase on the basis that volunteers often undergo the same rigorous recruitment processes as paid employees and there are arguably very little practical and social differences between these two groups. For example, Volunteering Australia's national standards for involving volunteers in not-for-profit organisations recommend common employment practices in recruiting volunteers, including reference checks, screening and interviews, job descriptions, induction processes, ongoing training, grievance procedures, discipline, termination and exit interviews (McGregor-Lowndes and Nguyen, 2005). It should be noted that Volunteering Australia has created its recommendations for volunteers in general, not just emergency services volunteers In the context of the FSOs, however, this argument does not carry as much weight as there are vast differences between volunteers and professional firefighters in the way they are recruited and the level of skill and training required of both groups. Nevertheless, as examined here and later, legislation exists providing wide protection of volunteers and courts have generally interpreted legislation in a way that encourages rescue of people in emergency situations (see eg. Brown, 2003).

There may be occasions where several FSOs may be working together to fight a cross-territory fire or where one organisation is called upon to help another organisation with a fire in the latter's territory. In Western Australia, Victoria and Tasmania, if there is more than one FSO involved in an emergency response event, then the FSO that is principally responsible for incident control (ie. coordinating the response) would be held vicariously liable. This may mean that an FSO may be held vicariously liable for the wrongful acts of an interstate volunteer fire-fighter or one from a different emergency services organisation who is aiding the response in their territory. This kind of liability is not clear in the other states and territories.

In some states indemnity agreements are allowed to be entered into where the volunteer agrees to provide the community organisation with an indemnity should the organisation suffer any loss arising from the volunteer's wrongful acts or omissions. Most jurisdictions in Australia do not allow such contracts to be enforced though NSW and Queensland still allow volunteers to enter such contracts. This may be because their provisions do not of themselves make the community organisation vicariously liable for the volunteer's liability.

In some jurisdictions, provisions have been made to allow the state or territory government to assume the liability of the FSO. For example, the ACT allows the Territory to assume liability at the discretion of the Minister where the community organisation is carrying out a 'recognised government responsibility', which is the case with an FSO.

Legislation in Victoria, the ACT, Western Australia and the Northern Territory expressly transfers liability on to the relevant State or Territory where the community organisation is a State agency, department, public authority or similar representative of the government. Other States are silent on this issue and may wish to push Parliament for further legislative clarification on this issue.

Protection from Specific Emergency Service Legislation

As well as the protection available to volunteer firefighters in the general volunteer protection provisions in each State and Territory, legislation which specifically cover fire services also have protection clauses for their fire services members (see Table 5). These include the Fire Brigades Act 1989 (NSW), Rural Fires Act 1997 (NSW), Fire and Rescue Services Act 1990 (Qld), Fire and Emergency Services Act (SA), Fire Services Act 1979 (Tas), Emergencies Act 2004 (ACT), Metropolitan Fire Brigades Act 1958 (Vic), Country Fire Authority Act 1958 (Vic), Fire and Emergency Services Authority of Western Australia Act 1998 (WA), Bushfires Act 1980 (NT) and Fire and Emergency Act 1996 (NT). These provisions are also relevant to volunteer firefighters acting under the relevant Acts but are restricted to fire fighting activities of members and not to acts or omissions done in the event of a state of emergency or disaster. Powers and immunities during these periods are covered by other legislation which are not considered here. The protection clauses in legislation that is specific to the fire services can be generally classified into three types which are further discussed below – those that make no change to the common law, those that reinforce the notion of vicarious liability (but with the significant variation in that it applies also to volunteers) and those that appear to make changes to the common law by lowering the standard of care required (Eburn, 2005).

A. No changes

The Queensland legislation appears to be mere re-statements of the current common law position. The relevant sections provide that there is no liability

Table 5: Form of protection in fire services specific legislation		
Jurisdiction	Party Protected	Form of protection and conditions under which it will be provided
NSW	Crown (State), Minister, Commissioner, and Members or fire services	Immune from any claim for any act done or omitted to be done in good faith, and for purposes of executing any Act (s78 fire brigades Act 1989 (NSW) and s128(2) Rural Fires Act 1997 (NSW)).
QLD	Any person acting pursuant to Fire and Rescue Services Act 1990 (Qld)	The individual is not liable for anything done, or omitted to be done bona fide and without negligence by an person for the purpose of any Act (s129(1) of the Act). An individual who exercises their power under the Fire and Rescue Services Act 1990 (Qld) to forcibly remove someone is not liable to be charged with any offence in respect of that use of force – provided that the force used was reasonable (see s129(2) of the Act)
SA	A member of emergency services, a person appointed or authorised to act under relevant Act by Commission or other person	Immune from civil liability for honest acts or omissions in the performance of a power or function under the Fire and Emergency Services Act 2005 (SA) or in carrying out direction or requirement given or imposed at scene of fire/emergency (s127 of the Fire and Emergency Services Act). A volunteer fire-fighter can only be personally sued if it is clear from the circumstances of the case that the immunity conferred by the legislation does not extend to the case or if the Crown contests its liability.
ACT	An Official (the Commissioner, member of emergency services – including volunteers, etc.) (see s198(1) Emergencies Act 2004 (ACT)	An official is not personally liable for any act or omission done honestly and without recklessness in the exercise of a function under Emergencies Act 2004 (ACT) or in reasonable belief that conduct was in exercise of Act (s198 Emergencies Act 2004 (ACT)).
Tas	A brigade or an officer, fire-fighter, employee or agent of the Commission or a brigade (including volunteers)	Does not incur any liability in respect of an act/omission done by them in good faith, where act is related to operations directed to extinguishing, or preventing the spread of a fire or reducing the risk of a fire occurring, or to the training of persons in the carrying out of any of those operations. Relevant reference: s121 Fire Services Act 1979 (Tas).
Vic	Members of the MFB	The individual is not personally liable for any act or omission done in good faith in the exercise of a function under the relevant Act or in reasonable belief that conduct was in exercise of the Act. Relevant references: s54A Metropolitan Fire Brigades Act 1958 (Vic).
	Members of the CFA (including volunteer workers)	The individual is not personally liable for any act or omission done in good faith in the exercise of a function under the relevant Act or in reasonable belief that conduct was in exercise of the Act. Relevant references: s92 Country Fire Authority Act 1958 (Vic).
WA	Member/officer of private fire brigade or volunteer fire brigade. Volunteer fire fighter (carrying out work within Bush Fires Act 1954).	The individual is not liable for anything done in good faith in the performance or purported performance of a function under the emergency services Acts. Relevant reference: Fire and Emergency Services Authority of Western Australia Act 1998 (WA) s37.
NT	Individual acting under Bushfires Act 1980.	A person who causes damage in the course of exercising a power conferred on him by this Act is not liable in respect of that damage 9s53 Bushfires Act 1980 (NT)).
	A member of fire and emergency response groups - includes volunteers	No action can be brought for any act or omission done in good faith by the person under or for the purposes of Act or Regulations (s47 Fire and emergency Act 1996 (NT)).

where the act or omission was done "without negligence" of an officer. This is, of course, the current common law position – that the exercise of statutory power which is not negligent cannot attract liability even if damage was caused.

B. Reinforces vicarious liability (significant for volunteers)

Further other legislation (see next paragraph) appears to only reinforce the doctrine of vicarious liability. The common law doctrine of vicarious liability provides that an ESO, as the employer, would be liable for acts done by the employee officer, if the member was acting within the scope of their employment or authority. To disprove vicarious liability, the ESO must show that the conduct of the volunteer or employee was so far removed from what was authorised as to be beyond the control or influence of the ESO.

For example, section 92 of the Country Fire Authority Act 1958 (Vic) provides that a person is not liable for an act done "in good faith" and section 127 of the Fire and Emergency Services Act (SA), a person is not liable for an "honest act or omission". Similarly, section 198 of the Emergencies Act 2004 (ACT) provides protection for acts done "honestly and without recklessness" and section 121 of the Fire Services Act 1979 (Tas) provides protection for acts related to fire fighting activities that are not done in "bad faith". An individual's liability is, therefore, reduced from the test of 'reasonableness' to one of 'good faith' or 'without recklessness'

The Acts also state that liability that would, but for the provisions in specific sections of the legislation, apply to the person is to lie against the Crown. Similar to the provisions covering volunteers generally (as discussed above), this means that the Crown will be liable for acts committed by the person which are not reasonable. This, of course, is in accordance with the doctrine of vicarious liability. It would appear that Parliament intends for these sections to merely clarify the applicability of the doctrine in the area of emergency service.

As discussed previously, however, this doctrine of vicarious liability does not usually apply to volunteers, only employees. Volunteer firefighters therefore have wider protection under the fire service specific Acts discussed in this section than in Acts covering volunteers generally. Volunteer firefighters are accorded the same protection as employed firefighters as they are both protected under the same provisions in the relevant fire services legislation. This is especially important for NSW and Queensland where there are no specific provisions in their respective 'general' civil liability acts that protect volunteers.

C. Changes to the common law – lowers standards

Other legislation, however, do change the common law significantly by changing the standard of care that is expected from a duty to take reasonable care to a duty to act in "good faith" or to act "honestly and without reckless disregard". These include section 78 of the Fire Brigades Act 1989 (NSW), section 128 of the Rural Fires Act 1997 (NSW), section 54A of the Metropolitan Fire Brigades Act 1958 (Vic), section 37 of the Fire and Emergency Services Authority of Western Australia Act 1998 (WA), section 53 of the Bushfires Act 1980 (NT) and section 47 of the Fire and Emergency Act 1996 (NT). The effect of these acts is that liability of the member concern is removed completely even if it can be shown that the conduct was not "reasonable" but only if "good faith" or "honestly and without reckless disregard" can be established.

Some legislation expressly removes liability from the member of the emergency service and the government if good faith can be shown. Others are silent on whether an action can be brought against the emergency service and/or the government where the member has acted in good faith. Under the doctrine of vicarious liability, however, if the member is not liable, then the employer will not be liable either. Though silent, it would appear that these sections also provide protection for the member and ESO.

The protection accorded by legislation differs according to which State or Territory the emergency worker and/or service is in. There is no doubt that it is Parliament's intention that some form of protection is accorded to ESOs and their members. Of course, none of these provisions have actually been brought to Court and been interpreted to date. Though the above analysis is helpful to give some idea as to immunities that exist for practitioners in the emergency area, the extent of protection these provisions actually provide (above that which is accorded in common law) is yet to be seen.

Conclusion

There are general provisions in state and territory legislation dealing with civil liability that provides protection for volunteers. It would appear that a volunteer fire-fighter would be protected under these provisions as they, the type of work they do and their organisation would fall within the definitions as set out in the Acts. The extra element of "good faith" would need to be shown and ensure that they do not fall within any exceptions and liabilities that are outlined by the relevant Acts. In relation to Victoria, CFA volunteers would not be covered as the Wrongs Act 1958 (Vic) specifically states that they are not covered under the Act. CFA volunteers in Victoria are therefore covered under the fire services Act Further, the Civil

Law (Wrongs) Act 2002 (ACT) do not apply to ACT volunteer firefighters as the Emergency Services Agency is not a corporation and therefore fails to fall within the definition of 'community organisation'. ACT volunteer firefighters are also therefore only protected under its specific fire services Act.

It has been shown in this paper that specific fire services legislation provides volunteer members with a higher level of protection (with one exception)either (i) by providing complete protection to volunteer firefighters from personal liability (in NSW, Western Australia, Northern Territory and Tasmania) and in some circumstances expressly protecting the fire service organisations from liability or (ii) by extending the doctrine of vicarious liability to volunteers (in South Australia, Victoria and ACT – if it was applicable), so that they are treated the same as employees. This means that volunteer firefighters would be protected even if their actions were contrary to the instructions of the employer (which is not the case under general volunteer protection provisions).

While volunteer firefighters may therefore prefer to seek protection under their specific fire services legislation in most States and Territories (and must do so if they are a CFA member or part of the ACT fire services) this may not be the case in Queensland. It would appear that section 129 of the Fire and Rescue Service Act 1990 (Qld) does not accord any extra protection to a volunteer fire-fighter on top of what is provided under common law (therefore, the standard of care is still at the level of "reasonableness"). As this is the case, the volunteer fire-fighter may prefer to seek protection under section 39(1) of the Civil Liability Act 2003 (Qld) which requires the volunteer to show the he or she has acted in 'good faith' in order to be protected. Whether through the general volunteer protection provisions or by specific fire services legislation, volunteer firefighters (and in some cases fire service organisations) are well protected from liability, though there are variations on the level of protection between states and territories.

The persistent problem of emergency law is the lack of uniformity between the states and territories in Australia which adds to the uncertainty (and nervousness) that already exists among practitioners in the area. Nevertheless, trends, arguably, have shown an increase in the number of volunteer firefighters from 2002 to 2005 (although also see McLennan & Birch who demonstrate a recent downward trend) which indicate that despite some confusion that may exist in relation to this area, volunteers are nevertheless still enthusiastic to participate and contribute to their local fire service organisations. There has however been a decrease in the numbers of volunteer firefighters in the last financial year, dropping from 222,000 in 2004/2005 to 194,000 in 2005/2006 (SCRGSP, 2007). It is of continued importance therefore that fire service organisations continue to be aware of their liabilities, even as third parties, in order to manage their and their volunteers' risks. Of note is also the nervousness that has arisen in Victoria from the Linton inquiry that has coloured the volunteer fire sector leading to the situation in Victoria regarding 'perceived' vs. 'actual' liability

Acknowledgements

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Future challenges for volunteer based emergency services

Deb Parkin explores the challenges facing Australia's emergency management volunteer sector and their implications for Emergency Service leaders.

Abstract

The issues of declining volunteer numbers are now well established. Aging population, rural population decline, climate change, the changing of family dynamics and the complex whole-of-life pressures facing individuals impact on the willingness and ability of individuals to volunteer time for community service. The challenge for the leadership of Emergency Service Organisations is to expand their volunteer base at a rate that corresponds with the population in growth areas whilst maintaining service delivery standards to small remote communities where population is declining.

Introduction

Context

To remain viable many Australian emergency service organisations depend on the strength and commitment of a base of volunteer members. Without them, governments and communities at large would be unable to cope with disasters or fund the resources and services required to deal with them.

Declining Numbers

Volunteer numbers have declined rapidly over recent decades. In 1993 the decline in the participation rates of volunteers in Victoria's Country Fire Authority (CFA) was 'identified as a significant strategic risk to CFA' (CFA submission, Impact of Structural Change in the Victorian Economy, 2001 p8). Research carried out by Woodward in 1997 (see Woodward, 1999), and supporting data from the Australian Bureau of Statistics (ABS) (see Lyons & Fabiansson, 1998) documented the actual decline in CFA rural/regional volunteer numbers of about 15,000 during the period from 1990 to 1997, this represented a rate of between 4.4% and 4.8% per annum. At the time, the CFA's response to this was stark. Commenting in a Victorian Government submission in 2001, it was noted that "at that rate, if unchecked, the volunteer emergency services workforce... could be halved in 10 to 15 years and be gone within a generation." (CFA submission, 2001 p8).

Increasing Workload

Declining volunteer numbers coupled with increasing demands for accountability and responsiveness to community expectations has directly impacted on the amount of work volunteers are involved in. 'These requirements have added significantly to the number of hours volunteers must allocate annually to... activities. Many volunteers have been unable to meet these new demands on their time and have therefore found it necessary or convenient to resign'. (CFA submission, 2001, p23).

Past research (see McGill 1996; Lyons & Fabiansson 1998; Reinholtd & Smith, 1998; Aitken, 1999; Oster 2000; CFA Submission 2001; EMA Volunteer Summit Report 2001; Emery 2001; Ford 2002 & 2003; Aldridge, 2003; and others) shows that demands on emergency service volunteers and their respective organisations have continued to increase as community expectation for support during emergencies have 'grown more quickly than... the capacity of the sector to meet them' (Emergency Management Australia – Volunteer Summit, 2001 p5). One source of pressure is demographic change. Emergency services now operate 'in an environment where economic and social pressures have become major factors in maintaining a viable and vibrant volunteer base.' (Emergency Management Australia – Volunteer Summit, 2001 p5). For example Foster (1997) notes that on the demand side,

> *'increases in population in the outer Melbourne areas over the last 5 years have been in the range of 10% and 25%. This directly increases the number and complexity of risks to which brigades are required to respond.' (p5)*

Conversely, volunteer supply is diminishing – 'for many organisations, new members are few and existing volunteers are under stress from increasing workloads and organisational change.' (Reinholtd & Smith, 1998. p1). As Murray (2000) suggests, the 'world is far more complex than it was... demands... are constant, compelling and often competing, so it is not always clear how... skills and resources can best be deployed' (see Green, 2007, p23).

Increasing liability

Murray (2000) argues that 'it is not time that is bringing change but the evolution of... society' (Green, 2007, p23). Changes in community expectation have impacted on the legal position of Emergency Service Organisations (ESOs). As communities demand to be kept safe and to be kept informed, there is increased focus on the legal responsibilities of emergency organisations that demands a higher level of accountability than ever before. This has lead to 'perceived and actual fear about the extent of legal liability that may rest with an ESO or its people after an incident' (Dunlop, 2004. p30). The Volunteer Fire Brigades Victoria Association's noted in their response to the Victorian OH&S Act Review Discussion Paper that, 'there is a genuine fear amongst volunteers about litigation... where volunteer members have been reluctant to take leadership offices... because of the potential for litigation' (VFBV., 2003 p3).

Catalysts and response

The extent of the impact of declining numbers, increasing workload and increasing liability has been recognised in the field. "The significance of these challenges... [have] been widely recognised in recent years, both in terms of the critical role played by volunteers, and in terms of the extent to which the volunteer culture is under threat." (Reinholtd & Smith., 1998 p2).

Triggers

Linton

In December 1998, 5 firefighters died as a result of wildfire entrapment in the Linton fire. A number of issues emerged from the study of the Linton fire, Reducing the Risk of Entrapment in Wildfire (CFA, July 1999), that highlighted some of the key risk factors that need to be addressed to minimize the likelihood of similar tragedies.

The State Coroner, Graeme Johnstone, stated that "the evidence at these Inquests has identified a number of key causative factors in the areas of management systems, supervision and instruction, information transfer, training and experience that have effectively led to the deaths" (Coroners Report, Linton 2002. p596). The recommendations impacted nationally resulting in the establishment of rigorous standards and qualifications for fire fighter training and development. The challenges of skills acquisition and skills maintenance places particular pressure on volunteers.

September 11

The impact of the terrorist attack on the World Trade Centre on September 11, 2001 has resounded throughout the world and has had particular impact on the emergency management sector. "More than 2,600 people died at the World Trade Centre, 125 died at the Pentagon; 256 died on the four planes. The death toll surpassed that at Pearl Harbour in December 1941." (9/11 Commission Report, 2002. pg2)

The 9/11 Commission Report, Final Report of the National Commission on Terrorist Attacks upon the United States, Executive Summary (2002) highlights a number of weaknesses in the structure and operating procedures within the government bodies and agencies responsible for prevention, preparation, response and recovery to disasters.

The emphasis of the Commission Report is on the need for unity, unity between agencies and organisations to achieve coordinated multi agency response. As security and terrorism become increasingly significant issues, the Emergency Management system needs to be able to embrace a very wide group of participants more effectively than has been done in the past and is evidence that the effort spent on risks associated with new hazards may be at the expense of that spent on 'traditional' hazards.

Climate change

CSIRO modelling, based on IPCC projections, suggests that annual average temperature in Australia is expected to increase by between 0.4° to 2.0° C by 2030 and by between 1.0° to 6.0°C by 2070. Under these conditions the following shifts in Australian weather patterns are considered likely;

- An increase in potential evaporation and heat-waves, and fewer frosts. Where rainfall reductions are accompanied by increasing evaporation trends, severe drought is expected.

- Rising sea levels

- Progressively less rainfall and higher temperatures

- Frequent alternations between heavy rains and prolonged droughts

- Increasingly extreme weather patterns – more intense tropical cyclones and storm surges. (Allen Consulting, 2004. p7)

Williams (2007), argues that the "trends we are witnessing with global warming, [and] over-accumulated fuels in fire-prone forests . . .suggest that the fire protected strategies we have used in the past may no longer serve us so well in the future". How prepared are emergency services to deal with longer droughts and heavier rains, storms that could be more violent and occur more frequently, changing incident of pests and disease?

Additionally, the Federal Police Commissioner, Mick Keelty argues that "climate change is going to be the security issue of the 21st century" (Canberra Times, 2007, pg1) and that it has the "potential to wreak havoc, cause more deaths and pose national security issues like we've never seen before". (Anderson, 2007). He continued with:

> "a catastrophic drop in rainfall will lead to a massive failure in crops and a rise in hunger, and to diseases becoming rampant. Rising sea levels will flood low-lying areas, forcing people off the land. The consequence will be mass displacement of people . . . and social unrest." (Canberra Times, 2007, p1).

All have the potential to impact negatively on emergency management capability and capacity.

Value of volunteers

Value of the volunteer contribution

The value of the contribution that the tens of thousand volunteers make to the Australian Economy had long been underestimated until Hourigan (2001) released a report with the aim to;

- Highlight the breadth, and the significant value, of the contribution made by the volunteers... to the community; and

- Present estimates of the economic value of... volunteer activities.

Other objectives of the report were to encourage the establishment of formal methodologies and standards of reporting the economic contribution of volunteers and, to promote awareness of the economic contribution and the consequences should these contributions cease. As a result of this work "the 'free' labour and other contributions made by volunteers... have been estimated (very conservatively) to save the Victorian community a minimum of $470 million per annum (based on data for the 2000/01 financial year). Continued decline in volunteer numbers and volunteer participation therefore has the potential to impact the State's public finances." (CFA Submission, 2001)

Volunteer Summit

Emergency Management Australia (EMA), in conjunction with the Department of Family and Community Services, conducted a National Summit for volunteer leaders and managers from within the emergency management sector in response to the United Nations declaration that 2001 should be the International Year of Volunteers. The Summit, entitled Value your Volunteers or Lose Them focused on the goal of strengthening volunteerism within the emergency management sector.

The summit report states that "there is no way that governments could fund even a small fraction of the services provided by the volunteers and [without volunteers] the Australian community would be forced to accept much less support than we generally take for granted". The report also states that volunteers are the "backbone of the emergency management structures throughout Australia" (EMA Summit Report2001. p5). The delegates of the Summit "consider that their sector is largely taken for granted and that this has led to under funding for essential protective clothing, safety equipment, training, and in some cases inadequate legal protection." (EMA Summit Report 2001. p7)

Summary

The 'triggers' listed above are examples of the increasing pressures on emergency service organisations, the high level of community expectation and the resulting increase in workload for volunteers that contribute to volunteer decline. External trends have the potential to impact on the way emergency service organisations operate and their service delivery standards. The impact of climate change and the increasing threat of terrorism must influence the provision of emergency services yet there is little literature available on the treatments, trends and issues to date.

Future challenges

Impact of Socio-Demographic change

Socio-economic changes impact significantly on volunteerism in emergency service organizations and have been the subject of investigation and analysis by a large number of researchers, (see Reinholtd & Smith, 1998; Lyons & Fabiansson, 1998; Woodward, 2000; Woodward & Kallman, 2001; and others). These researches have "developed conceptual frameworks for understanding the interactions between them and how these factors have impacted on local communities (and on volunteerism)" (CFA submission, 2001).

Reinholtd & Smith's (1998) research explored the concept that "factors such as population growth, rural and urban mobility, and increasing cultural diversity present challenges to service providers [that] increase the demands for, and complexities of, service delivery by volunteers and create complex management issues." (p1)

Population

It has been well documented that population distribution is rarely static in either Australia or other countries (refer Australian Bureau of Statistics (ABS) reports). While some areas experience growth others experience population decline, the effects of which can have serious impact on local communities. Population levels can be extremely volatile in some of Australia's

more remote communities especially where employment activity contributes to the population base. (McKenzie, 1994; Reinholtd & Smith, 1998; Aitken, 2000).

The Department of Sustainability and Environment's September 2003 newsletter Projections, Projections, Projections reviews New population projections of Australia and states:

> "In all projections, the age structures of the population become more skewed to older ager groups. . . Victoria's median age increase from 35.3 in 2002, to 42.4 in 2031 and 45.5 in 2051. The number of children would drop by 38,000 by 2031 and 57,000 by 2051. Contrast this with the over 60 population – projected to grow by 480,000 by 2031 and by over 600,000 by 2051. . .[as a result] population growth rates are bound to fall owing to ageing populations and below replacement level fertility rates". (p3)

This significant decline in the 'younger' age group and the dramatic increase in the number of forty five to sixty (plus) year olds "signal an increasing difficulty for recruitment of volunteers". (CFA submission, 2001. p4). Two key challenges exist for ESO's; the ability to expand the volunteer base at a rate corresponding with the population in growth areas and, the ability to maintain service delivery standards to small remote communities where population is declining. "It is possible that in future high population mobility and volatility will also challenge the notion of the volunteer base as a permanent fixture, or the point from which services are delivered." (Reinholtd & Smith, 1998. p15). This would suggest that emergency service organisations need to review recruitment strategies that attract the interest of the 'younger' population and then look at ways to arm them with transferable skills, whilst providing support to existing volunteers in the maintenance of service delivery standards.

Legal Issues

One change that is having notable impact on retention and recruitment of volunteers is the increasing demands in relation to the law. In October 2001, 400 volunteers from a wide range of volunteer organisations met to discuss some of the issues facing emergency service volunteers in Australia (see Volunteer Summit Report –Value your Volunteers or Lose Them). One of the major recommendations of the Summit centered on the theme of Legal Protection with the aim of "better levels of legal protection of volunteers against claims of negligence during the conduct of volunteer work". (CFA submission 2001. p5). In a Summit presentation by Mr Peter Smith from the Australian Volunteer Coast Guard, reference was made to the result of extensive public scoping in the United States where the "US Congress enacted... legislation and in their preamble... declare[d] that 'the willingness of volunteers to offer their services is deterred by the potential for liability

actions against them. As a result, many non-profit and private organisations have been adversely affected by the withdrawal of volunteers'." (Summit Report 2001, p39). Participants at the Summit noted that the level of legal protection for volunteers in Australia was deficient and that all organisations represented needed to review the legal risks that their volunteers faced to enable legislative amendments and policy to be developed.

Dunlop's paper, Legal issues in Emergency Management: lessons from the last decade presented at the Safer Sustainable Communities Australian Disaster Conference in September 2003 addresses "the significant changes and understanding about the law that applies to emergency management" (p26). She states that the last ten years has seen significant changes in law of negligence that have particular implications for emergency service agencies. "Changes in community expectation have influenced the degree of judicial and quasi-judicial scrutiny of Emergency Service Organisations (ESOs)" (p26).

Dunlop (2003) points out that ten years ago ESOs "were rarely sued, rarely questioned and rarely thought to be affected by legislation such as Occupational Health and Safety Acts" (p26). Dunlop provides a simple comparison of the inquests into the Ash Wednesday bushfires of February 1983 and the Linton Inquiry of 2000. Thirteen volunteer CFA firefighters lost their lives in a single incident at Upper Beaconsfield during Ash Wednesday in 1983. The volunteer firefighter responsible for the initial deployment of the firefighters was called as the primary witness and commenced giving evidence at 11.43am on the 4th of November, 1983 and concluded at 4.00pm on the same day. Only four other witnesses were called. The Linton inquest commenced in July 2000. It concluded after sitting for 98 days during which time 175 witnesses were called, 94 of whom gave evidence orally to the Court and the 15 major witnesses each gave evidence for between 3 and 8 days. "This comparison demonstrates both the increased scrutiny and the increased complexity that come with the modern inquiry into a disaster. This complexity arises in part because of the ever increasing complexity of the law as it applies to ESOs" (ibid, p27). It is unlikely that this level of scrutiny will diminish in the short term.

Time Factors

Time demand on volunteers is a factor that has been identified repeatedly throughout the available research. Aldridge (2003) states, "it is a proven fact that the family and work commitment is the greatest factor in volunteer loss" (p11).

Further analysis of the data collected showed that "time demands was the most frequent reason for leaving CFA" (Woodward & Kallman, 2001. p91). The definition of

'time demands' was identified as work commitments (51%), family commitments (25%) and personal commitments (21%).

Aldridge (2003) argues that "unfortunately with the increases in work and family commitments the workload of volunteer firefighters is also increasing with a higher number of incidents and greater administrative load." (p8). He goes on to suggest that "this is an area where timely research may have a favourable impact, if conducted and acted upon." (p6). Renholtd & Smith's (1998) research identified that 'time commitment' was the "most common internal factor discouraging both males and females from volunteering" and that "Organisations reported that time limitations most commonly discourage potential volunteers' supporting the suggestion that time limitations not only motivate volunteers to leave but may be effective in discouraging others from volunteering to join the emergency services." (p42)

Summary

The impact of these changes on ESO's contributes not only to a reduction in volunteer numbers but also to inefficiencies in service delivery and increased financial pressures. Population movement contributes to a reduction in the number of people available to volunteer and to the loss of local experience, skills and equipment (particularly Personal Protective Clothing) that result in increased costs for the agency and higher workloads for remaining volunteers. Social change has meant that individuals tend to look to their own needs rather than those of their community as time becomes a more precious commodity.

This changing environment demands a more practical approach in the way that ESOs manage their volunteers. For example, population movement requires transferable skills across a range of disciplines and creates an opportunity for agencies to promote "the value of national qualifications which are universally recognised and therefore portable not only within the emergency sector, but to... outside employment" (CFA Submission, 2001. p6). Population movement also demands that agencies develop the ability to support existing volunteers to avoid workload burn out. Structural change provides an opportunity for agencies to support local communities by developing partnerships with business and industry that create employment opportunity. Social change means re-thinking recruitment strategies to address the 'what's in it for me' attitude and to attract youth. Strategies need to clearly promote what the individual will gain from the volunteer experience.

There has also been limited discussion on the impact of changing legislation on volunteers except from the perception of the law makers who, quite correctly, cite significant issues for the ESO but do not necessarily address the issues from the perspective of the volunteer. As identified in the recommendations of the Volunteer Summit of 2001, EMOs must take the time to get the feedback from the ground up if they are to provide the support really needed by the volunteers.

CFA's Submission on the Impact of Structural Change on Volunteerism Within CFA (2001) refers to the outcomes of the Volunteer Summit, Value your Volunteers or Loose Them (2001) in its conclusions by noting that the 'volunteers themselves have identified recognition (by way of adjustments to policies affecting volunteers), easier access to training (especially through the TAFE system), better levels of legal protection and some form of monetary support for employers of volunteers and for the out-of-pocket expenses of volunteers themselves' (p33) as examples of some the tangible support that is needed to secure the long-term viability of volunteer participation. It is interesting to note here that reference to training is not made specifically in relation to operational training (which is often considered the 'only' training) indeed, providing training over a wider spectrum - office administration for example; could be of benefit to both to volunteers and community.

Further research is required into the opportunities for developing partnerships with government, industry, employers and volunteers with the view to strengthening communities. Investigation of existing resources and services within and external to agencies, is needed to assess opportunities for agencies to develop and implement programs within brigades and brigade communities.

Conclusion

Decline in volunteer numbers continues to be an issue for emergency service organisations. The decline can be contributed to environmental, socio and economic changes that effect demographic profiles and employment opportunities. These changes result in increases in volunteer workload, time demands and the potential for legal liability. The issues are now well established. Aging population, rural population decline, climate change, the changing of family dynamics and the complex whole-of-life pressures facing individuals impact on the willingness and ability of individuals to volunteer time for community service. The challenge for the leadership of Emergency Service Organisations is to expand their volunteer base at a rate that corresponds with the population in growth areas whilst maintaining service delivery standards to small remote communities where population is declining.

Reinholtd & Smith (1998) argue an 'Agenda for Improvement' for Emergency Service leadership is to "maintain a thorough understanding of the issues surrounding volunteering and actively promote the needs and role of volunteers in a variety of forums." (p61). Reinholtd (1999) further argues that "the key to long-term viability will be dependent upon the emergency services ability to foster an environment of co-operation" (p9). Ford (2002) states that ESOs have to find ways to "reduce the workload and pressures affecting brigades and volunteers [through sharing] the workload by encouraging other members of the community into our brigades to help with tasks other than fire fighting" (p3).

Volunteer workload management must become a priority of Emergency Service Leaders if service delivery capability and capacity are to be maintained or, in some cases, delivered.

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Community based disaster preparedness: Need for a standardized training module

Ajinder Walia examines the issues and challenges in some international examples of community-based disaster management calling for a standardized global training module.

Abstract

Disasters act as great levelers defying all existing social differences and stratifications, affecting all, and in a unique way, unifying the communities across boundaries. The community is usually the first responder to any disaster. This social capital is a crucial strength on which the community balances its existence in a disaster scenario. Realizing this need, varied models of community-based disaster risk reduction are run globally. Training is an integral component of all such programmes. However, the implementation of training modules for community based disaster risk reduction face various challenges including a project mode approach, duplication of efforts, lack of standards for training, lack of sustainability, mainstreaming it with various development projects, integration of the local resources with components of the programme, and dearth of trained experts who are meant to interface with and support local communities. So, whereas there is a need to develop a standard module for Community Based Disaster Preparedness (CBDP) in a country, there is also no need to 'reinvent the wheel'. Collation of existing strengths of the training modules would be a better strategy. There is a need to develop and evolve a standardized training module for streamlining CBDP practices carried out by various organizations in a country to ensure that CBDP doesn't become a one-off project based activity but rather a continuous process of development.

Community: Nature and Division

The term 'community' is used very loosely and has been given different interpretations by different people. Broadly speaking, community is defined as a geographic area of social living, having common centers of interests and activities and marked by some degree of social

coherence (Rao, 2006). It is a close knit sociological group sharing an environment and bound together by intent, belief, resources, preferences, needs, risks and a number of other common conditions that affect the identity of those involved and their degree of adhesion. As a whole, the constant need for identification propels the communities to get inter-organized and further get differentiated and stratified on the basis of class/race, power and caste due to economic and cultural drivers. This stratification is the reason for the manner in which each community, and subsequently, society interacts internally or as a whole. On the basis of social superiority and inferiority the higher strata receive more power, property and prestige than the lower ones. Futhermore, relationships between community members are often embedded in different sets of values and unequal power relations, thereby making some members dominant and others being marginalized

Disasters: The great levelers

Today, our populations and communities have become increasingly vulnerable to disasters and this has been aggravated by the micro-level issues of rapid environmental degradation, resource depletion and global warming/climate change as well as the macro-level issues of poverty, illiteracy and lack of safety nets, amongst others. Thus when disasters strike a geographical location, they tend to disproportionately alter the social fabric leading to widespread damage and losses of lives and resources. As the state counts up the human and economic losses, or administers relief, those who experience disasters are conceptualized as a homogenous group called 'victims', a category which overlooks differences in terms of gender, caste, class, age or physical and mental ability (Fordham, 1999). The disruptions, thus, defy all existing social differences and stratifications, affecting all, and in a unique way, unifying the communities across boundaries. Being the first to suffer, the affected community usually becomes the first real time responder in any disaster situation ignoring the inherent differences and stratifications of the community. This 'community spirit' or the social capital is thus a crucial strength on which the community balances its existence in a disaster scenario.

Community Based Disaster Preparedness (CBDP): Process and Importance

The concept of disaster risk management aims at reducing vulnerabilities of the affected populace, and is most effective at the community level where specific local needs can be met. In isolation, the institutional interventions often prove to be insufficient as they tend to ignore local perceptions, needs, potential value of local resources and their inherent capacities. Most often they are unsuccessful in trickling down their influence at the community level leading to the failure to utilize the social capital (Living with Risk, 2003). The process of CBDP aims at the following:

1. The community should be made well aware of the risk they are living with.

2. They must possess the necessary know - how to deal with impending disasters.

3. Communities must have a well laid down plan of action / list of activities, which they should follow to prevent the repercussions of a disaster.

4. Each one in the community is aware of his/her responsibilities in an emergency situation/disaster.

The rationale for involving communities in disaster preparedness and mitigation activities is based on the following assumptions:

1. Communities in disaster affected areas are the real sufferers and are the first responders as well.

2. Communities in high risk areas have often developed their own coping mechanisms and strategies to reduce the impact of disaster. It is important to appreciate this local knowledge and resources, and to build on them in order to improve the capacity of people to withstand the impact of disasters.

3. Ownership of disaster reduction should not be stripped from local people who would be left even more powerless in case external intervention does not occur.

4. Disaster reduction activities should be based on participatory approaches involving local communities as much as possible, considering them as proactive stakeholders and not passive targets for intervention.

5. Involvement and participation of communities will ensure a collective and coordinated action during emergencies.

6. Building community leadership and a chain of trained community cadres through participatory approach can help harness the resilience and resourcefulness of the community to cope.

7. Solution is sustainable if it comes from people themselves rather than thrusting upon them.

8. Furthermore it is not only the 'big' disasters that destroy life and livelihoods. Accumulated losses from small floods, droughts and landslides can exceed the losses from big disasters and contribute significantly to increased vulnerability at the local level. These disasters attract little media attention and communities are often left on their own to cope with the destruction. This provides another reason to invest in Community Based Disaster Preparedness.

CBDP: Models of Operation

Realizing the need to invest in community based disaster preparedness, various countries and organizations have developed models of community based disaster risk reduction. During the formation, planning and implementation of projects, several partnerships between government, non-government, academic institutions, bilateral and multilateral organizations with specific focus on building the capacities of a community are established. From disaster prone Bangladesh to Philippines, from Cambodia to the vulnerable India, different community based projects and initiatives led by various agencies have highlighted the partnership issues in the regional, sub-regional, national and local level. A look at the various initiatives and models available to involve communities in the process of disaster management clearly delineates the difference in approach towards CBDP by various multilateral and bilateral organizations, Non-Government Organizations (NGOs) and the local governments. This is demonstrated by a few examples:

1. The Philippine Disaster Management Forum emerged from the Reflection Workshop on Community Based Disaster Management held in the Philippines in February 2002. It is composed of organizations and individuals implementing, supporting and advocating for Community Based Disaster Management (CBDM). One of its members, the Citizens Disaster Response Center/Network (CDRN), is recognized as a key organization which has implemented CBDM since 1984. By working together with communities, CDRN has developed strategies to enhance capacity of the community by forming village level disaster response committees, developing local early warning systems, organizing rescue teams, and diversifying local sources of livelihood.

2. CARE-Bangladesh has implemented the Bangladesh Urban Disaster Mitigation Project (BUDMP) since July 2000. Five modules in Bengali language were developed on Basic Disaster Management; Municipal Disaster Management Committee (MDMC); Volunteers Training, including Participatory Rural Appraisal (PRA) tools; Training of Trainers and Participatory Monitoring and Evaluation. BUDMP also emphasizes the importance of awareness generation among community groups and other

sectors in placing Community Based Disaster Risk Management (CBDRM) on the political agenda. Posters, billboards in vulnerable wards, signboard on rickshaws, newsletters, bulletins, actual demonstration, cultural events, idea sharing workshops, cross visits, organizing commemoration activities for the National Disaster Preparedness Day on March 29, are among the various ways and forms used.

3. In 2000-2001, the government of Indonesia asked the Bandung Institute of Technology (BIT) to implement a community empowerment project in cooperation with the Asian Disaster Reduction Center (ADRC). The Bandung Project aimed to help local residents cope with flood risk. Two flood-prone districts were selected as test cases for town watching. Local residents walked around their communities with BIT experts to discuss specific factors that could improve their capacity to live with risk. As a result, local residents proposed measures such as road improvements, construction of protective embankments and better definition of natural watercourses in order to reduce future risk factors.

4. Community-Based Flood Mitigation and Preparedness Project (CBFMP) has been implemented jointly in Cambodia since 1998 by Asian Urban Disaster Mitigation Programme with the Cambodian Red Cross (CRC), Participating Agencies Cooperating Together (PACT), the International Federation of Red Cross (IFRC) and Red Crescent Societies (RCS) in 23 villages in 3 districts in 3 provinces – Kang Mesas District in Kampong Cham, Kien Svay District in Kandal, and Peam Ro District in Prey Veng. The process for reducing flood vulnerability involved: (a) selecting project sites, targeting the most vulnerable communities; (b) selecting community members as volunteers and training them to work with communities in reducing vulnerabilities; (c) organizing communities and establishing village-level Disaster Management Committees (DMC) as a coordinating body; (d) identifying, estimating and ranking local disaster risks through risk mapping; (e) building consensus on mitigation solutions; (f) mobilization of resources and implementation of community mitigation solutions; (g) drawing and sharing lessons from implementation process; and (h) replication and overall improvement of the CBDM and preparedness system .

5. SNAP (Seattle Neighborhoods Actively Prepare) Programme assists the residents of the city of Seattle, US to be prepared for any potential emergency. The programme focuses on every household to have a Family Disaster Plan, Build a Supply Kit and set up an Out-of-Area contact. SNAP is a simple and flexible process, designed to help neighborhoods create plans that are specific to the neighborhood needs by listing out an entire kit for team building

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Lilian Jeter delivering a lecture at the Australian Institute of Public Safety.

through guidelines, pamphlets, and easy to use and comprehend documents for various phases of response, which are made freely available on the web for use. The programme offers training to those interested in guarding their neighborhoods.

6. In India, CBDRM activities are being organized at various levels. In most of the vulnerable areas, local NGOs are working with the communities to mitigate their risks. For e.g. Bharitya Agro Industry Foundation (BAIF) is working in drought prone areas of Rajasthan in Community Pasture Development Programme. The international NGOs also collaborate with the local NGOs to carry out such activities. For e.g. SAVE THE CHILRDREN is working in collaboration with local NGOs and carrying out Child Centered Drought Preparedness Programmes in Rajasthan. At the national level, Government of India has launched a project on Disaster Risk Management in collaboration with United Nations Development Programme (UNDP) in 17 states and 169 vulnerable districts of the country. The programme basically focuses on carrying out various CBDRM activities ranging from developing plans and manuals, awareness generation, conducting mock drills to developing Standard Operating Procedures (SOPs) and information booklets and making Disaster Management Committees / Teams in the villages.

Training: An Integral CBDP Activity

The concept of Community Based Disaster Preparedness is practiced under different names like Community Based Disaster Preparedness, Community Based Disaster Management or Cambodian Community Based Flood Mitigation Programme but in reality all these programs have the same purpose, which is to reduce the negative impact of disasters. The main understanding behind all

such activities is to find ways and measures to prevent, mitigate or to reduce the impact and risks of disasters through participation and involvement of communities. The aim remains the same for all the programmes but the means to achieve that aim differs in various countries and organizations. The effectiveness and quality of the end product however, depends upon the means and ways adopted to achieve it.

CBDP is a process in which training for capacity building is one of the major components. Different modules for CBDP are being run by different players like Government organizations (GOs), NGOs, multilateral/bilateral organizations and Institutes in collaboration with one another as well with other allied agencies. Training forms a vital component of all activities and it requires not only imparting knowledge but also development of skills and a change in attitudes of the participants. However, such an investment in the development of human resource can only be sustained to the extent that the value of risk reduction is institutionalized. A community should be ready to accept the management of hazards as a way of life and prevent them from becoming disasters.

Strengths and Weaknesses of the existing modules:

The existing modules of training in CBDP are being run by varied agencies and organizations and they happen to address one or more vital aspects of the process. The module developed by Asian Disaster Preparedness Center (ADPC) on CBDM is an interesting and highly interactive module. It is laden with role plays and group exercises with a focus on CBDM planning. The module also includes a specific session on conflict management, which aims at dealing with divergent views in the community. The module developed by International Federation of Red Cross (IFRC) focuses on sensitization of key players of the community, developing Community Based Teams (CBT) and development of plans. It emphasizes on the application of various PRA tools to involve the community in the process of management of disasters. Indian Red Cross (IRC) has developed a simple and pictorial Training of Trainers (TOT) curriculum for CBDM. The curriculum deals with overview of various hazards and the role of Indian Red Cross in various disasters that have occurred in India. It covers natural as well as human made disasters and is laden with dos and don'ts to be done before, during and after a disaster. Under the UNDP-Government of India (GOI) Disaster Risk Management (DRM) project, which is launched in India, training for the community is largely carried out by State Administrative Training Institutes (ATIs), thereby ensuring a localized approach.

The commonality between all these modules is that they emphasize on clarifying the basic concepts of

Ambassador for Community Safety Week, world lifesaving champion, Paul Lemmon.

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disaster management and have included hazard, risk, vulnerability and capacity analysis as the basis for development of plans for the community. The modules emphasize participation of the community and hence participatory appraisal tools and techniques is also a common thread that runs through the modules.

However, these modules do not cover the entire gamut of CBDP process adequately. In the ADPC module, an input on physical and psychosocial health of the community is not dwelt upon. Moreover, experience sharing with members of the community is not focused upon, and simulation exercises are left on the creativity of the participants. The module developed by IFRC focuses more on the use of PRA tools and development of plans. It however, ignores the aspect of involvement of the more vulnerable groups and a mechanism for updation of the plans. The TOT module developed by IRC does not detail out the process of development of plans and conducting awareness generation activities. The Disaster Risk Management project run by UNDP and GOI does not have a standard module for carrying out the training of the community members and largely depends upon State ATIs to run this errand for them.

Issues and Challenges

A report in July 2004 on Emergency Capacity presented its analysis for the Interagency Working Group (IWG), with participation from CARE, United States of America (USA); Catholic Relief Services; International Rescue Committee; Mercy Corps; Oxfam Great Britain; Save the Children, USA and World Vision International. Amongst the various issues that were deliberated upon, an important aspect which came forward was the way in which the community building activities were being

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Members of the Public Safety Response Team moving debris in Rankin Street, Innisfail following Tropical Cyclone Larry.

tried and implemented by NGOs. There were some interesting observations:

1. NGOs try a variety of means to build community capacity in preparedness, mitigation, and response, without any tested and accepted models.

2. Results of these efforts have neither been well monitored nor the impact well measured. Minimal interagency learning is taking place.

3. Weak capacity of country offices of the NGOs and their partners was also a reason for the limited success of community capacity building.

4. Further, there was an immediate need to standardize practices, for example, the need to promote Sphere's charter and standards with local government, local NGOs, and communities affected by disasters.

5. IWG members also faced challenges to operationalise community participation at multiple levels in multiple aspects of humanitarian work, as called for in the Sphere guidelines. There is a sense of belief that NGOs are not doing 'enough of this' and 'not doing it well', which is reported in a 2003 global study by Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP), that says: "Involving affected populations in operations to ensure their survival is one of the most difficult challenges confronting the humanitarian world. Despite the rhetoric, and enshrinement of the notion in the Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief, the participation of affected populations in humanitarian action remains, for the most part, extremely limited." (ALNAP, 2003)

6. There is an absence of generally accepted standards for community participation in emergencies.

7. It is often difficult to sustain the motivation and preparedness level of the communities in a situation where the larger sections of civil society, Government, media and general public remain immune to the need for internalizing the culture of disaster prevention and preparedness.

8. Establishment, consolidation and empowerment of similar structures at provincial, district and local levels also has to be looked into. Assisting their establishment, capacity and growth must become a focus of external support interventions.

Apart from the issues highlighted by the ALNAP study, an important area that needs to be looked into is the issue of global sustainability in such programmes. Sustainability, whether it is at local level or at global level is only possible if the CBDP activities and programs aim at participation and empowerment of the community. Empowerment and participation are like two sides of the same coin, as, one is not effective without the other (Delicia, 1999). Hence, the challenge of such programs and projects lies in marginalizing the concept of external facilitation and focusing more on participatory approach, in true sense of the word. The challenge of inculcating a participatory approach is linked to the appropriateness and sensitivity of the CBDP activities with the culture of a community. Capturing the local relevance and incorporating it in any international or national programs has to be dealt in a very delicate manner to encourage community participation.

Some of the other challenges include linking the macro-level initiatives with micro-level initiatives and mainstreaming it with various development projects, supporting the training activities with adequate awareness material, involvement of the more vulnerable groups and dearth of trained experts who are meant to interface with and support local communities.

Making a case: Development of a standardized CBDP module

Various organizations in different countries are carrying out CBDP programmes with a project based approach. Sometimes these programmes tend to be concentrated in some pockets and may become isolated.
This also creates the risk of duplication of efforts and the community initiative ceases as soon as the project ends. The process of institutionalizing this training is not focused upon or looked into. Consequently, many community based teams become defunct after the project closes. The modules currently practiced do not take into account the different needs of varied actors like the community, local governments, community based teams, women etc. Morever, there is a need to develop a mechanism to ensure maximum utilization of the trained community members. Trained community members should take up the task of percolating the training received not only amongst their peers but also to every member of their community.

So, whereas there is a need to develop a standard module for CBDP, there is also no need to 'reinvent the wheel'. A better strategy would therefore be to collate all the existing modules, review them meticulously, incorporate their strengths, learn from their experiences on the field and to take adequate measures to address the problems and challenges so as to fill in the lacunae. This brings in the need to develop and evolve a standardized training module for streamlining CBDP practices carried out by various organizations (GOs/NGOs/ multilateral/bilateral organizations) in various countries. This shall further lead to design and implementation of joint training for community participation in emergency work.

The exercise for identification and development of standards must have the key aspects of sustainability, flexibility and local relevance ingrained in them with focus on educating the communities. Although standardization of the module has to be global, it should have enough flexibility, scope and space for local relevance of each country. The spirit of partnership and community participation must be accentuated upon to make the activities sustainable at a global level. Further, CBDP activity should not be viewed in isolation but rather a component ensuring good governance in a country. The module development thus becomes challenging as all the aforementioned aspects must become an integral part of the different layers and players it caters to. Finally, the key to the success of any such module will be to ensure that CBDP doesn't become a one off project based activity but rather a continuous process of development.

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About the Author

Ajinder Walia has a doctorate in Sociology and is currently working as a faculty member in National Institute of Disaster Management in India. She is primarily working in the field of social issues pertinent to disasters focusing on gender and disaster management, community based disaster risk reduction and disaster prevention through schools.

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BOOK REVIEW

Editor: Miriam H. Middelmann, Geoscience Australia
Publisher: Australian Government
ISBN: 0 978-1-921236-60-0 (Hardcopy)
0 978-1-921236-61-7 (Web)
Reviewer: Claire Sullivan, Attorney-General's Department

"An excellent risk analysis resource to aid decision-making in disaster mitigation."

Natural Hazards in Australia: Identifying Risk Analysis Requirements is an outcome of the 2004 Council of Australian Governments natural disasters review into reforming mitigation, relief and recovery arrangements its contents also relate and contribute to the National Risk Assessment Framework (2007) that identifies the need to produce consistent information on risk.

The report is one of the most comprehensive and succinct accounts on natural hazards in Australia; providing a review of all known natural hazards in Australia. It addresses the impact of natural disasters, their occurrence in the Australian setting, respective known costs, climate change influences and the factors required in risk analysis (though, not a risk analysis of the hazard). Information gaps and data constraints to the risk analysis of natural disasters are also identified. The report concludes with an overview of the roles and responsibilities of the Australian community – from the Australian Government level to the general community – in managing the risks posed by natural hazards.

A central source on the process involved in analysing risk, this report highlights how long-term data collection and risk analysis will aid research and policy development to benefit the resilience of communities in being prepared for, responding to, and recovering from natural disasters.

The report is a must read for policy makers and those involved in research and risk analysis in the fields of emergency management, land use planning and construction management.

While the report does not present recommendations, it highlights the needs and gaps in risk analysis, policy and partnerships. It draws the reader's attention to what is lacking and what is needed rather than what should or could be done.
The report may also assist readers to improve individual levels of preparedness for natural disaster events and address gaps that currently exist.

The publication offers many opportunities for government and the wider community to consider how they can work together through community engagement and public/private partnerships.
The report suggests that through such efforts we can build our awareness and preparedness for managing the potential impacts of climate change, with the resources available and knowledge of the risks posed, to limit the impact of such events upon our Australian community.

BOOK REVIEW
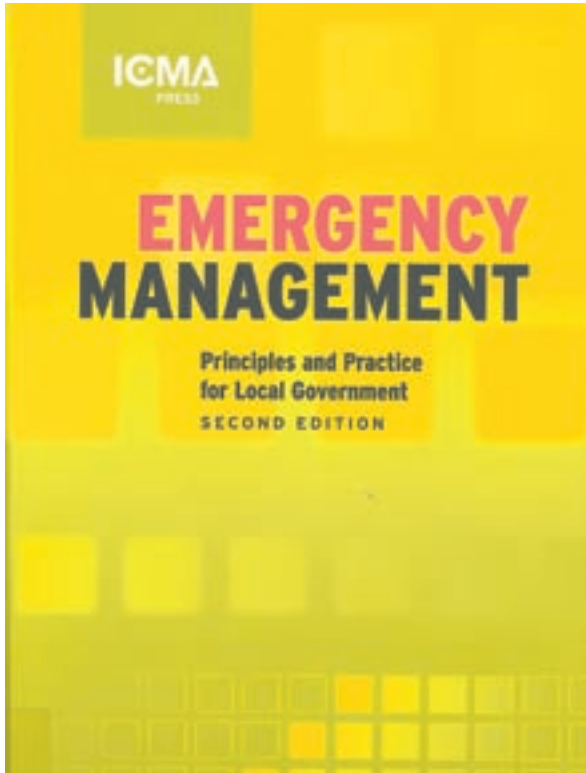
Author: Kathleen Tierney
               University of Colorado, Boulder
Editor: William L. Waugh Jr.
               Georgia State University
Publisher: ICMA Press
               International City/County
Management Association
ISBN: 978-0-87326-719-9
Reviewer: David Parsons, Sydney Water

Emergency Management – Principles and Practice for Local Government is a US publication and is therefore based on the US operating environment. The book does however provide a wealth of information for Australian Emergency managers. The text draws together information from more than two dozen authors each a specialist in their own field within Emergency Management. The central theme of the text is managing an emergency management program at local government level. The major sections of the text cover context and organisation of Emergency Management, functions and phases of Emergency Management and major issues in Emergency Management. The publication takes an all hazards approach to the topics covered.

The text is very comprehensive and contains a large number of interesting case studies. The content also challenges many past ideas and proposes new approaches for the future. For example the old command and control approach is replaced by a dynamic and network-centred approach. The text raises concern over ICS zealots who can hamper the flexibility required in a large scale disaster. Case studies include the World Trade Centre, Hurricane Katrina, Space Shuttle Columbia, Chicago Heatwave and Tokyo Subway Sarin Attack. Of great interest in the text are examples of local government authorities providing mutual aid support following Hurricane Katrina. The range of support required was diverse and over a long period of time.

Community vulnerability is covered extensively throughout the publication. An interesting case study outlines the creation of recovery strike teams after Hurricane Katrina and their use in mutual aid. The text also looks at new technology and its application in emergency management such as the internet and GIS systems.

The central theme of this publication is that successful emergency management depends on communication, collaboration and coordination. The proposal is that successful local emergency management is based upon the community being effectively networked into the world.

This text was enjoyable to read with many interesting ideas and case studies. Although some chapters are highly US-centric there are ample new ideas that may be applied to the Australian context. This text would be a valuable resource for persons studying emergency management or managing a local government emergency management program.

BOOK LAUNCH

Challenging emergency and disaster policy.

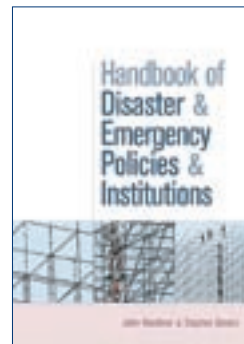### Launch of The Handbook of Disaster and Emergency Policies and Institutions.

Prof Will Steffen, Director of the ANU's Fenner School, introduced Maj. Gen Howard who placed the book in its historical context and the two authors who each summarized some of the key challenges for disaster policy in the coming years.

The book's central premise is that emergencies and disasters are likely to challenge societies more in the future as vulnerability increases in the face of economic, demographic and global environmental change.

The publication offers a forward-looking and strategic view of the policy and institutional settings required to support operational emergency management.

The book will be reviewed in the next edition of the Australian Journal of Emergency Management.

On 10 April, Maj. Gen B.W. (Hori) Howard, AO, MC, ESM former Director General of EMA, Director General of the NSW State Emergency Service and Chair of the NSW State Emergency Management Committee and current Chair of the Australian Council of State Emergency Services of the Australian Emergency Management volunteer forum, launched Professors John Handmer and Stephen Dovers' new book entitled The Handbook of Disaster and Emergency Policies and Institutions at the Forestry Lecture Theatre at the Australian National University.

Handmer, J and Dovers, S. (2007) The Handbook of Disaster and Emergency Policies and Institutions, London: Earthscan. For further details and purchase information please see http://www.earthscan. co.uk/?tabid=1020.

interesting websites
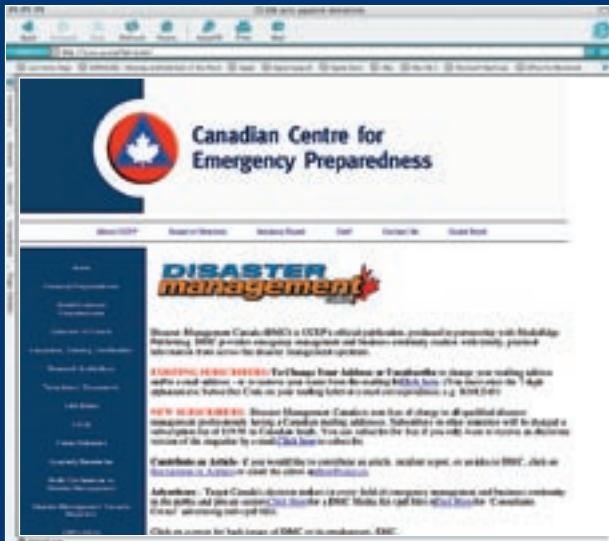
Disaster Management Canada
www.ccep.ca

This website is the Canadian Centre for Emergency Preparedness's official publication and provides emergency management and business continuity readers with timely, practical information from across the disaster management spectrum. Several past editions of Disaster Management Canada are available on-line.

Not unlike the Australian Journal of Emergency Management the Journal endeavours to extend the body of knowledge in emergency management by publishing scholarly local and international articles on a variety of aspects of emergency management as well as papers that inform the sector's field practitioners.

The Emergency Planning Society
www.the-eps.org

The UK Emergency Planning Society, its branches and its various groups organise conferences, workshops, working parties, studies and seminars to examine emergency planning practice and experience, and provides advice to its members on good practice. Information and reports are disseminated throughout the emergency planning community.

The website contains online copies of its seasonal Blueprint Magazine containing several very informative articles on the emergency management profession.

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