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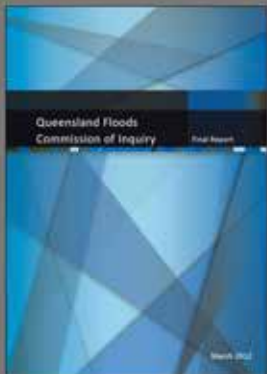
**DISASTER  
RESILIENT  
AUSTRALIA**

# THE AUSTRALIAN JOURNAL OF EMERGENCY MANAGEMENT

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**SPECIAL  
LEGAL EDITION**



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**Emergency Management  
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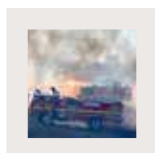
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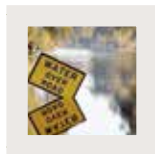
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## The Australian Journal of Emergency Management

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### ABOUT THE JOURNAL

The Australian Journal of Emergency Management is Australia's premier Journal in emergency management. Its format and content is developed with reference to peak emergency management organisations and the emergency management sectors—nationally and internationally. The Journal focuses on both the academic and practitioner reader and its aim is to strengthen capabilities in the sector by documenting, growing and disseminating an emergency management body of knowledge. The Journal strongly supports the role of the Australian Emergency Management Institute (AEMI) as a national centre of excellence for knowledge and skills development in the emergency management

sector. Papers are published in all areas of emergency management. The Journal emphasises empirical reports but may include specialised theoretical, methodological, case study and review papers and opinion pieces. The views in this journal are not necessarily the views of the Attorney-General's Department.

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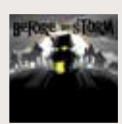
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# Foreword

By Warwick Finn, First Assistant Secretary, AGD National Security Capability Development Division and new Editor-in-Chief of the Australian Journal of Emergency Management.



**Helping educate young Australians about natural hazards and the risks they pose is key to developing and strengthening a culture of resilience in our young adults of tomorrow. To assist in this important area, the Australian Government recently launched a new national school education resource from AEMI in the form of a phone app, “Before the Storm”. On 7 March 2012, the Australian Minister for Emergency Management, the Hon Nicola Roxon MP (who is responsible for national emergency management and disaster resilience) and the local Federal Member for Latrobe, Ms Laura Smyth, launched the “Before the Storm” app with students from Harkaway Primary School in Victoria.**

At the launch the Minister said “The devastating floods here in Victoria and in New South Wales this week prove how important it is for communities to be well prepared for severe weather events, I encourage teachers to use this storm awareness tool to broaden knowledge about disaster resilience and to make it a catalyst for discussion and learning in the classroom”.

While on the subject of the February floods in country NSW and Victoria, it would be remiss of me not to recognise the extraordinary response from the emergency services and volunteers. I am sure their efforts were appreciated by the community and it is, yet again, a reminder of how we depend on these organisations and individuals during times of crisis.

In this edition of AJEM the peer reviewed articles have a legal theme focusing on emergency management and the law. My thanks to Dr Michael Eburn, a member of the AJEM Editorial Advisory Committee, for his efforts as guest editor for this edition. Articles in this issue reflect projects under the Bushfire CRC “Mainstreaming Fire and Emergency Management across Legal and Policy Sectors: Joint Research and Policy Learning” program. Some of the articles have been sourced from current students studying at the



The Hon Nicola Roxon launches “Before the Storm”.



ANU College of Law, and present some challenging and thought-provoking ideas.

We will all be aware the Council of Australian Governments endorsed National Strategy for Disaster Resilience (NSDR) provides essential direction to Australians in planning and preparing for disaster events. A recent initiative in this regard is the development of the new NSDR visual identity. It is produced below and in other places of this AJEM edition and we see it as an important tool in helping spread the Disaster Resilience message.

Looking forward, the July 2012 edition of AJEM will be the last by our current editor, Ms Anita Cleaver, who has been editor of the journal since August 2002. Many of our contributors and readership will know Anita having corresponded with her over the past 10 years. In my official capacity as Editor-in-Chief, I thank Anita, and acknowledge her efforts over the years in helping to establish AJEM in its current format and creating a product of which we are all so proud.

I look forward to being involved in the national emergency management and disaster resilience community and welcome the opportunity to serve in the capacity of Editor-in-Chief for the Australian Journal of Emergency Management (AJEM).

If you have something to say to the AJEM readership, please do not hesitate to contribute a Letter to the Editor.

**Warwick Finn**

*AJEM Editor-In-Chief.*



**The Hon Nicola Roxon with SES volunteers from Narre Warren SES, John Hall and Bill McKnight, at the launch of “Before the Storm” at Harkaway Primary School.**



## PROFILE:

### Dr. Margot McCarthy Australia's new National Security Adviser.

**On 3 February 2012, Dr Margot McCarthy was appointed the Australian Government's National Security Adviser. The National Security Adviser provides a high level of leadership, direction and coordination to the national security community as well as leads the Department of the Prime Minister and Cabinet's (PM&C) National Security and International Policy Group.**

The National Security Adviser is the principal source of advice to the Prime Minister and the Secretary of PM&C on all policy matters relating to the security of the nation and oversees the implementation of all national security policy.

Dr McCarthy brings to the job strong skills and experience from 18 years in the national security community. She was appointed Deputy National Security Adviser in March 2010 and took up the role as Acting National Security Adviser when Mr Duncan Lewis AO was promoted to Secretary of the Department of Defence last September.

In her previous role as Deputy National Security Adviser, Dr McCarthy provided whole-of-government leadership on a range of national security policy issues, including as co-chair of the National Counter-Terrorism Committee (NCTC) and co-chair of the National Emergency Management Committee (NEMC) – intergovernmental committees under the Council of Australian Governments.

As co-chair of the NEMC, Dr McCarthy was closely involved in the development of the National Strategy for Disaster Resilience (NSDR). The NSDR provides guidance to federal, state, territory and local governments, business and community leaders and the not-for-profit sector on disaster management. Dr McCarthy has been a vocal supporter of the NSDR's focus on building disaster resilient communities across Australia.

During the devastating events of the 2010-11 disaster season, Dr McCarthy played a strong leadership role in disaster relief efforts. She was actively involved in the coordination of Australian Government assistance provided to those affected by the Queensland floods, Cyclone Yasi, the Great East Japan Earthquake and subsequent tsunami and nuclear crisis.

Dr McCarthy has worked in a range of national security roles including as a Deputy Secretary in the Department of Defence and head of the Defence Security Authority, as Assistant Secretary of Defence and Intelligence in the Department of the Prime Minister and Cabinet, as Deputy Director of Intelligence in the Defence Signals Directorate and Principal Adviser to the Secretary of the Department of Defence.

Dr McCarthy is a graduate of Oxford University with a D.Phil in English Literature and, as a British Council Chevening Scholar, completed a Masters of Science in Management at the London School of Economics and Political Science.

# This special legal edition of the Australian Journal of Emergency Management in context

By Richard Thornton, Deputy CEO & Research Director, Bushfire CRC.

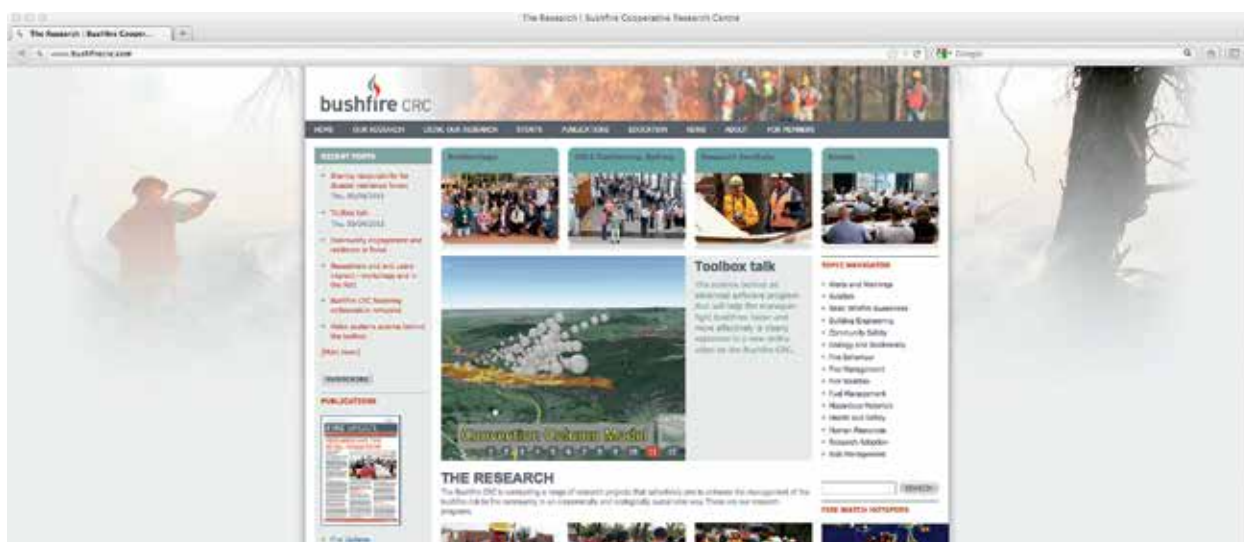
**It is an honour to provide the overview of these papers in this special edition. The topics raised in these papers are crucial to the nation and to the role of emergency management. They delve into the depths of matters needing consideration and understanding.**

These papers represent research, funded by the Bushfire Cooperative Research Centre (CRC), to address aspects of mainstreaming fire and emergency management across legal and policy sectors. Three papers, Carter (La Trobe), Eburn and Dovers (ANU) and Handmer and McLennan (RMIT University) are written by key researchers in this area. The other three, by Biggs, Fetchik and McNamara, are written by students who took part in *Australian Disaster Law*, a postgraduate law unit, designed and coordinated by Michael Eburn, and offered by the ANU College of Law in 2011. Offered as part of various Masters programmes and as part of the Juris Doctor (a postgraduate law degree), this unit, and these papers, are practical demonstrations of the work being conducted by the Bushfire CRC and the ANU to encourage new researchers to think about how law and policy impact upon Australia's resilience.

This special edition covers aspects of policy and law relating to natural disasters, discussing topics such as how success is measured in disaster response; how responsibility is shared; who should pay for disasters and how; and what are the legalities of the Commonwealth involvement in disaster response.

A crucial element of emergency management is to understand what we are trying to achieve, and equally importantly how would we measure success (Eburn and Dovers, 2012). Eburn and Dovers argue in their paper that a clear set of policy objectives is missing in many instances. They discuss a critical question raised in many inquiries, most recently the Keelty inquiry into the Perth Hills fires of 2011: 'What is the measure of success of the outcome of a bushfire?' (Keelty, 2011). They further report on initial analysis of a series of interviews with chief offices of emergency response agencies that emphasise the importance of needing to take an outcome focus to measurement, and to extend the concept to what was saved as well as what was lost. This would place the inevitability of losses in a context where the full impacts could be better judged and lessons could be learnt.

Many recent inquiries have invoked the need for shared responsibility (Keelty, 2011; Teague *et al.*, 2010), and it has been enshrined in the recent Council



of Australian Governments' strategy for disaster resilience (COAG 2011); however, what does this really mean and how should it be achieved? This is the topic discussed by McLennan and Handmer, who review various approaches from outside the Australian fire and emergency management sphere (McLennan and Handmer, 2012). They describe seven broad types of mechanisms by which sharing responsibility can be achieved and they raise the question: 'Why are particular mechanisms on the radar for Australian fire and emergency management while others are not?'

Who pays the costs of natural disasters is the topic addressed by two papers in this special edition. Biggs compares and contrasts the disaster relief arrangements with those in place for flooding in the USA (Biggs, 2012), while Carter examines the state of the retail insurance industry and the chronic issues of under-insurance in Australia (Carter, 2012). Biggs discusses the benefits and shortcomings of Natural Disaster Relief and Recovery Arrangements (NDRRA) in Australia with those of the National Flood Insurance Program in the USA and explores the changes made to the NDRRA following the 2011 Queensland floods. Biggs also examines a proposal for a national insurance scheme for Australia, which she argues could carry many of the same problems seen in the American system, in particular that it fails to discourage people from living in high-risk areas. Similarly, Carter uses the 2011 floods in Queensland to examine levels of personal insurance and presents some possible measures to increase the levels of insurance in an accessible and affordable way. Carter suggests that insurance companies should be more proactive in community education, and provide incentives to individuals who undertake risk mitigation actions. She also argues that issues be urgently addressed rather than just acknowledged as they are in the many reports into this issue.

The role of the Commonwealth Government in responding to natural disasters is also a contentious one, which is an issue picked up by two papers in this edition: one examines the basis behind and the legal underpinnings (or lack thereof) for Commonwealth intervention, and draws upon the example of the response to Cyclone Tracy in 1974 (McNamara, 2012). The second paper similarly examines Commonwealth powers in the context of the deployment of the Australian Defence Force in the Victorian Bushfires in 2009 (Fetchik, 2012). McNamara discusses how the Commonwealth stepped in to help to rebuild Darwin, and how the legal position at that stage was unclear and fragmented. He discusses the constitutional basis for powers the Commonwealth has regarding responses to natural disasters and attempts by the courts to clarify these powers. He further illustrates how much has changed since that time; however, matters still remain unclear, should such a devastating event take place today. Fetchik approaches this topic from the perspective of the Commonwealth assistance provided to response and recovery in the 2009 Victorian Fires and discusses the uncertain legal position that Australian Defence Force personnel

acting in such roles may face. She illustrates this in the context of the rights afforded to emergency response organisations and discusses whether such protections are afforded to the Australian Defence Force personnel.

I commend the authors, and Michael Eburn who took on the role of Guest Editor, for their work and their contribution to these important debates.

## References

- Biggs, R.** 2012, *Paying for disaster recovery—Australia's NDRRA and America's NFIP*, *Australian Journal of Emergency Management*, Vol 27, No.2, 26.
- Carter, R.A.** 2012, *Flood Risk, Insurance and Emergency Management in Australia*, *Australian Journal of Emergency Management*, Vol 27, No.2, 20.
- COAG.** 2011, *National strategy for disaster resilience: building our nation's resilience to disasters*, Council of Australian Governments, Canberra, ACT.
- Eburn, M and Dovers, S.** 2012, *Mainstreaming Fire and Emergency Management across Legal and Policy Sectors: Preliminary Findings on Measures of Success, Flood Risk, Insurance and Emergency Management in Australia*, *Australian Journal of Emergency Management*, Vol 27, No.2, 14.
- Fetchik, J.** 2012, 'Left and right of arc': the legal position of the Australian Defence Force in domestic disaster response using the 2009 'Black Saturday' Victorian bushfires as a case study. *Australian Journal of Emergency Management*, Vol 27, No.2, 31.
- Keelty, M.J.**, *A Shared Responsibility: The Report of the Perth Hills Bushfire February 2011 Review*, Government of Western Australia, Perth.
- McLennan, B and Handmer, J.** 2012, *Changing the rules of the game: Mechanisms that shape responsibility-sharing from beyond Australian fire and emergency management*, *Australian Journal of Emergency Management*, Vol 27, No.2, 7.
- McNamara, J.** 2012, *The Commonwealth response to Cyclone Tracy: Implications for future disasters*, *Australian Journal of Emergency Management*, Vol 27, No.2, 37.
- Teague, B, McLeod, R and Pascoe, S.** 2010, *2009 Victorian Bushfires Royal Commission: final report*, State of Victoria, Melbourne, Australia.

## About the author

**Dr Richard Thornton** is Deputy CEO and Research Director of the Bushfire CRC, a role he has held since 2004. His responsibilities include leadership and oversight of the research program and research strategy. Richard is a member of the Board of the International Association of Wildland Fire and the chair of the Editorial Advisory Committee of the International Journal of Wildland Fire.



# Changing the rules of the game: mechanisms that shape responsibility-sharing from beyond Australian fire and emergency management.

By Blythe McLennan and John Handmer,  
Centre for Risk and Community Safety, RMIT University.

## ABSTRACT

**In this paper, we look beyond Australian fire and emergency management to compare ways that responsibility-sharing – broadly conceived – has occurred in other places and sectors where risks to community safety are faced. Responsibility-sharing occurs any time there is collective action, and formal and informal institutions provide the “rules of the game” that prescribe how responsibility should be shared amongst the parties involved. We reviewed a broad sample of risk research literature in order to examine by what mechanisms responsibility-sharing institutions have been shaped in other places and sectors where risks to community safety are faced. Our review revealed more alternatives for shaping responsibility-sharing institutions than are widely considered by policy and decision makers in Australian fire and emergency management. It therefore raises an important question about why certain mechanisms are chosen, prioritised, overlooked or resisted in this sector. An alternative way of conceiving and pursuing shared responsibility is also discussed. <sup>®</sup>**

## Introduction

Within the Australian fire and emergency management sector, the concept of ‘shared responsibility’ is most commonly used to refer to the need for communities to be more self-reliant in the face of risks associated with natural hazards such as bushfire and flood. It reflects a strong recognition that public expectations and demands of emergency services in Australia may be unrealistically high, and that communities have a vital role to play in securing their own safety. However, this represents a specific understanding of a more

general idea: one that is embedded in a particular context, place and time. A broader view that compares the goals and processes of sharing responsibility across a wider range of risk and safety contexts may therefore provide some valuable food for thought about confronting local challenges.

In this paper, we therefore look beyond Australian fire and emergency management to compare ways that responsibility-sharing – broadly conceived – has occurred in other places and sectors where risks to community safety are faced. Importantly, finding ways to share responsibility amongst multiple parties, and particularly between governments and communities, is a challenge faced across a wide range of sectors. Risk research literature abounds with studies that expose responsibility-sharing dilemmas in fields such as air pollution (Bickerstaff & Walker 2002), public health (Guttman & Ressler 2001), workplace safety (Gray 2009), food safety (Henderson, Coveney & Ward 2010), transportation (Sanne 2008), policing (Hughes & Rowe 2007), and new technologies (Black & Wishart 2008). We reviewed a broad sample of this literature in order to examine by what mechanisms responsibility-sharing was shaped. A more detailed account of the review and how it was undertaken is available elsewhere [McLennan & Handmer 2011b]. In this paper, we focus on conceptualising the idea of shared responsibility in a more general, context-independent way, presenting key results, and outlining broad implications from this cross-sectoral review for Australian fire and emergency management.

## Responsibility-sharing institutions

To begin, we need to be clear about what we mean by ‘shared responsibility’. We take a broader view than the understanding most common in Australian fire and emergency management.

In the context of risk, the concept of responsibility incorporates the notion that certain parties have an obligation (be this moral, social or legal) to undertake actions to manage risk, either their own or someone else’s [McLennan & Handmer 2011a, 2012]. These obligations stem from the expectations, rules, and norms in society about the roles of various parties with respect to risk (see also Birnbacher 2001). They are forward-looking because they exist prior

to and irrespective of the event or conditions that give rise to them (Birnbacher 2001; Pulcini 2010). A party may be found to have failed to live up to the widely-held expectations, rules and norms that place obligations on them. When this happens, they are likely to be held accountable for the consequences once the risk is realised and the outcomes of risk management are not what people expected or desired. They are also likely to face some form of sanctions, formally or informally, for their perceived failure (Pellizzoni 2004; Witt 2001).

Responsibility-sharing therefore occurs when multiple parties have obligations with respect to the same goal, outcome or field of action. Another way to say this is that responsibility is shared any time there is collective action. Broadly speaking, collective action occurs when a group, whether of individuals or organisations, works together to achieve a mutual goal (Ostrom 1990; Sandler & Blume 1992). The notion is usually invoked when goals are not achievable through individual actions alone (e.g. in an uncoordinated way), but rather can only be achieved when a group coordinates to work together. The idea that increasing community bushfire safety in Australia requires collective action involving agencies and communities is not unfamiliar. For example, it was indicated strongly in the Victorian 2009 Bushfires Royal Commission's view of 'shared responsibility'. The Royal Commission stated, for example, that "individuals and communities also play an important part in contributing to community safety during bushfires, but they need support from the State and from municipal councils" (Teague, McLeod & Pascoe 2010, Vol. 2, p. 352). This emphasises the need for state agencies, municipal councils, individuals and communities to work together [McLennan & Handmer 2012]. Beyond bushfire, collective action is also central to many flood management activities. Take, for example, the construction of levees on multiple properties, for which property owners must work together in a coordinated way, usually through a coordinating entity that has some degree of government authority.

Yet the general concept of shared responsibility – and also the particular one widely held in Australian fire and emergency management – does not say anything about *how* such collective action ought to be undertaken. Exactly how should the parties work together? What relationships should they have with each other, and what particular obligations does each party have with respect to their mutual goal? Further, what are the standards for determining when one party or another has failed to live up to their obligations? In order that the parties can respond to such questions, collective action needs some kind of guidance: some "rules of the game" for people to follow. These rules are provided by institutions, usefully defined as "prescriptions that specify what actions (or outcomes) are required, prohibited or permitted and the sanctions authorized if the rules are not followed" (Ostrom & Ahn 2009, p. 28). Laws, policies and programs are all examples of formal institutions or "rules of the game"

that prescribe what is required, prohibited or permitted in collective action in various fields. These formal institutions are codified or written down and back up by some degree of formal authority. However, institutions guiding collective action can also be informal. Social norms and expectations, cultural values, and social relationships of reciprocity are all examples of informal institutions that are not written down nor formally authorised but which none-the-less influence the way people work together: often in powerful and significant ways. For example, a study by Brenkert-Smith (2010) shows how social interaction between neighbours in wildland-urban interface communities help to build informal social norms that support activities to reduce wildfire risk, such as periodic clearing of brush and undergrowth. Importantly, both formal and informal institutions are commonly backed up by sanctions. In the case of laws, these are legal sanctions, whereas in the case of social norms, the sanctions are also social, such as public shaming or social exclusion.

Many of the institutions that guide collective action prescribe how responsibility should be shared amongst some or all of the parties involved. *The Emergency Management Act 1986 (Victoria)* is one example of a formal, in this case legislative, institution that spells out the powers and responsibilities of various government parties with respect to "the organisation and management of resources for dealing with all aspects of emergencies"<sup>1</sup>. Informal institutions that shape how responsibility is shared for dealing with emergencies also exist in Australian societies. As historian Tom Griffiths (2010, p. 35.4) notes in the context of bushfire, Australian culture tends to define heroism as "staying and fighting". Griffiths highlights how "leaving early, in such a culture, might be seen to be cowardly" (p. 35.4). Such cultural beliefs can shape people's personal sense of their obligations to 'stay and defend' when a bushfire looms: individual households as much as fire-fighting volunteers. A second related example is social norms regarding the roles and responsibilities of men and women, which also shape how people plan for and respond to bushfire (Eriksen, Gill & Head 2010).

Importantly, different institutions concerning the same field of collective action do not always align in mutually reinforcing ways. So for example, the formal emergency management responsibilities laid out in different policies or pieces of legislation may conflict, as they do in Australia when it comes to the role and authority of the police in evacuations (Handmer & Tibbits 2005; Tibbits & Whittaker 2007). Formal and informal institutions may also collide, for example when local social norms discourage the clearing of trees around homes while fire agency policies support the maintenance of defensible space (Bushnell & Cottrell 2007). Formal and informal institutions regarding professional roles may also conflict in workplaces. One example from the field of workplace safety is misalignment between formal safety regulations that require near miss incidents

1. From page 4 of version 044 of the Act, incorporating amendments as at 3 November 2011.



**January 24, 2012: Melbourne, VIC. Members of the Metropolitan Fire and Emergency Services Board (MFB) tackle a grass fire at Westmeadows in Melbourne, Victoria.**

to be reported and organisational cultures that may discourage 'dobbing in' workmates. Furthermore, existing institutions – both formal and informal – may be found ill-fitting for new, unfamiliar or rare risk scenarios. This was arguably the case with the Black Saturday bushfires. Because of their ferocity, the fires were found by the Royal Commission to have exceeded the scope and capacity of existing policies and procedures (Teague, McLeod & Pascoe Vol. 2, 2010). These examples show how conflict and ambiguity can easily arise over where responsibility lies in risk management and over how to determine when a party has failed to act in accordance with their obligations.

Changing and clarifying the way responsibility is shared, either generally or for specific conditions, therefore means *altering the institutions* (e.g. laws, regulations, workplace cultures or social expectations) that prescribe the obligations of the various parties engaged in collective action. We use the term 'mechanisms' to refer to any process that shapes some type of responsibility-sharing institution, be it formal or informal. Such mechanisms may be directed and intended (e.g. making a law, or implementing a program) or emergent and unintended (e.g. constructing a social norm, resisting a cultural value). While governments have a key role in shaping institutions, they are not the only parties that can bring about – either intentionally or unintentionally – institutional change. Political dynamics, overseas events and the media, for example, all have the potential to influence social expectations of the roles of fire and emergency management agencies and of the anticipated outcomes of risk management.

## Mechanisms to share responsibility

In order to consider possible ways that conflicts and ambiguities regarding shared responsibility might be approached in Australian fire and emergency management, we therefore asked the question: By what mechanisms are responsibility-sharing institutions created or altered in the context of risk and community safety elsewhere? To answer this question, we reviewed studies in the risk research literature that described or proposed changes in risk management and community safety responsibilities [McLennan & Handmer 2011b]. The review was carried out as part of a research project being undertaken for the Bushfire Cooperative Research Centre<sup>2</sup>. In addition to fire and emergency management, the sectors covered by the review included public health, environmental risk, public security and policing, human services, social welfare, workplace safety, new technologies and transportation [see McLennan & Handmer 2011b, Appendix].

The review revealed seven broad types of mechanisms that have shaped, or been proposed to shape, responsibility-sharing institutions in a range of scenarios involving risk and community safety. These are listed below in Table 1. The examples given in this table are not a complete list of possible ways to shape responsibility-sharing, and hence the Table is not a 'shopping list' of alternatives. While we endeavoured to seek the widest possible range of mechanisms, we were limited by the scenarios, research goals and conceptual approaches of the reviewed studies. Further, we did not include mechanisms that have not yet been used in the context of risk and community safety, which might reveal innovative new approaches.

2. See <http://www.bushfirecrc.com/projects/1-3/sharing-responsibility-component-mainstreaming-fire-and-emergency-management-across-pol>.

**Table 1:** Overview of mechanisms for sharing responsibility [McLennan & Handmer 2011b]

Type	Examples	Influence on responsibility-sharing
Vision statements	<ul style="list-style-type: none"> <li>National strategies and policies</li> <li>Statements of principle</li> <li>Mission statements</li> <li>Social and ethical codes</li> <li>Non-binding declarations of rights</li> </ul>	Steer and mobilise responsibility-sharing by outlining what it should achieve or look like (not strongly enforced or formally agreed to by the parties involved).
'Hard' laws and regulations	<ul style="list-style-type: none"> <li>Constitutions</li> <li>Charters</li> <li>New, amended or extended laws</li> <li>Traditional regulation</li> <li>Quasi-regulation (enforced)</li> </ul>	Prescribe and compel responsibility-sharing through the use of legal obligations and authorised sanctions/penalties.
'Soft' interventions	<ul style="list-style-type: none"> <li>Financial incentives and disincentives</li> <li>Direct government delivery of public services</li> <li>Quasi-regulation (voluntary)</li> <li>Monitoring and evaluation systems</li> <li>Informational/persuasive campaigns</li> </ul>	Encourage responsibility-sharing by influencing decision-making, behaviour or access to services and resources.
Contracts & agreements	<ul style="list-style-type: none"> <li>Treaties and conventions</li> <li>Legally-binding voluntary contracts</li> <li>Public/private partnerships</li> <li>Hybrid public/private administration</li> <li>Voluntary non-binding agreements</li> <li>Agreed declarations of intent</li> <li>Social relationships of reciprocity</li> </ul>	Establish relationships for responsibility-sharing and clarify what is expected of the parties involved (may be binding and subject to penalty or non-binding and without penalty).
Collective inquiry & decision-making	<ul style="list-style-type: none"> <li>Votes</li> <li>Formal public inquiries – binding</li> <li>Formal public inquiries – non-binding</li> <li>Public consultation</li> <li>Deliberative/collaborative decision-making</li> <li>Participatory disaster/risk management</li> </ul>	Collectively query and/or decide where responsibility lies and/or how to share it.
Organisations & associations	<ul style="list-style-type: none"> <li>New department, committee or overseeing body</li> <li>Restructure of existing agencies/institutions</li> <li>Government-initiated community or industry associations</li> <li>Self-initiated civic or industry associations</li> <li>Multi-party partnerships and collaborations</li> <li>Policy networks</li> <li>Interagency coordination and collaboration</li> </ul>	Change or strengthen relationships amongst parties to facilitate responsibility-sharing, or create authority to influence responsibility-sharing.
Social norms	<ul style="list-style-type: none"> <li>Workplace/professional culture</li> <li>Traditional knowledge/management regimes</li> <li>Emergent organisation and leaders</li> <li>Social movement/ protest</li> </ul>	Establish informal, shared rules of engagement to share responsibility and/or impose social incentives and sanctions.

Each of the seven types of mechanism will be familiar to fire and emergency management stakeholders but not necessarily in the context of thinking about shared responsibility for community safety. Within each type, there will also be some examples that are very familiar and others that are far less so (see Table 2 for less familiar examples). Within the category of 'vision statements', the National Strategy for Disaster Resilience (COAG

2011) is one example of a policy strategy that is very well-known to Australian fire and emergency management. However, social and ethical codes, while common at the level of particular professional groups, have not been used at the larger-scale level of government-community relationships as they have been in other contexts. Similarly, there are less familiar examples of each of the other types of mechanisms.



**Table 2:** Less familiar examples of mechanisms to share responsibility  
 (Note: inclusion in this table does not indicate a recommendation of ‘best practice’.)

Type of mechanism	Less familiar examples
Vision statements	Social and ethical codes – e.g. the vision for ‘social co-responsibility’ in Latin America and the Caribbean (UNDP & ILO 2009)
‘Hard’ laws and regulation	Charters – e.g. the Council of Europe’s proposed charter of shared social responsibilities (Council of Europe 2011)
‘Soft’ interventions	Informational/persuasive campaigns co-designed with target groups – e.g. the ‘Helping Each other Act Responsibly Together’ campaign in Zambia to reduce HIV risk amongst young people (Underwood <i>et al.</i> 2006)
Contracts and agreements	Voluntary, non-binding agreements between government agencies and private parties – e.g. the UK Department of Health’s ‘responsibility pledges’ (UK Department of Health 2011)
Collective inquiry and decision-making	Deliberative decision-making with stakeholders – e.g. the “ethical assessment” process used by the UK Committee on Radioactive Waste Management (Cotton 2009)
Organisations and associations	Community recovery coordination roles taken on by existing community organisations – e.g. cultural/religious groups’ activities following Hurricane Katrina (Patterson, Weil & Patel 2010)
Social norms	Change in workplace/professional culture – e.g. Swedish railway technician workplace culture that negotiated conflicting commitments to workplace and public transportation safety (Sanne 2008)

There is inevitably overlap and interaction amongst the seven types of mechanisms. For example, the goal of collective decision-making could be to create a voluntary contract or agreement. The creation of a new department or organisation is often accompanied by the crafting of a new vision statement of some kind. Alternatively, policies and programs might aim to influence social norms as in the case of persuasive/ informational campaigns that seek to facilitate risk-reducing social norms. Multiple mechanisms are also often actioned together. For example, complex policy packages may involve a combination of legal, regulatory, organisational and program delivery mechanisms. In any particular risk management scenario, it is most likely that alterations to multiple institutions would be needed to bring about any lasting change to the way responsibility is shared. This type of change cannot be affected through a single, agency-directed mechanism.

### Food for thought

Our review revealed more alternatives for shaping responsibility-sharing institutions than are widely considered by policy and decision makers in Australian fire and emergency management. It therefore raises an important question about why certain mechanisms are chosen, prioritised, overlooked or resisted in this sector. Of course, different types of mechanisms are more or less suited to different scenarios and conditions. It is doubtful, for example, that new legislation compelling evacuation from high-risk areas on days of catastrophic or code red fire danger would be politically or socially acceptable in Australia. Assessing the suitability of a given mechanism for a

specific issue or scenario would require more in-depth examination than was possible within the scope of this review. Yet we can still ask the more general question: why are particular mechanisms on the radar in Australian fire and emergency management while others are not?

As outlined above, ‘shared responsibility’ is most commonly used in Australian fire and emergency management to refer to the need for communities to be more self-reliant in preparing for and responding to hazard events. Further, ‘communities’ are conceived primarily as households and individuals. In this context, the pursuit of shared responsibility by agencies is likely to prioritise efforts to change the behaviour of individuals and households in ways that promote their greater self-reliance. By far the most common approach taken by agencies to do this in the past has been through persuasive education and awareness programs, described by Elsworth *et al.* (2009) as “top down” (as opposed to ‘bottom up’) community bushfire safety programs (p. 18). However, persuasive programs aimed at changing people’s behaviour are not the only approaches that might be pursued to share responsibility. Nor is greater community self-reliance the only way of conceiving the goal.

An alternative way of conceiving ‘shared responsibility’ could be to refer to the need to develop and strengthen responsibility-sharing institutions that cross some of the conventional divides in Australian fire and emergency management. This view is arguably more in line with the “whole-of-nation, resilience-based approach” called for in the Council of Australian Government’s National Strategy for Disaster Resilience (COAG 2011). A similar view was indicated in a speech to the fire and

emergency management sector by the Secretary of the Commonwealth Attorney-General's Department, Roger Wilkins, AO. (Wilkins 2010). In his speech, the Secretary emphasised the need for coordination that transcends boundaries between: agencies and departments; public and private sectors; international, regional, national and local levels; professional and traditional skills groups; and professionals and volunteers. We suggest that boundaries between agency-directed and community-based initiatives be added to the list.

The pursuit of this different view of 'shared responsibility' would likely prioritise different mechanisms compared to the current situation in Australia. It might include changes to existing organisations and associations (and the creation of new ones), the formation of contracts and agreements, and engagement in collective decision-making processes. It would also likely involve more deep-seated changes to social norms. Within these types of mechanisms, communities and other non-government parties would have a greater role in shaping responsibility-sharing alongside agencies and other professional risk managers. In 'top down' community bushfire safety programs, for example, communities have predominantly been seen as targets of agency-led campaigns rather than co-implementers or goal-setters (although this is less the case for emerging 'bottom-up' community engagement and development strategies, see Elsworth *et al.* 2009). Where mechanisms such as contracts and agreements, and collective decision-making are prioritised more strongly, communities and non-government parties are more likely to have active roles in implementation and goal-setting.

This highlights a major distinction identified in our review of the mechanisms that have shaped responsibility-sharing in other contexts. On one hand, mechanisms such as vision statements, 'hard' laws and regulations, and 'soft' interventions focus more heavily on shaping responsibility-sharing to align with a pre-determined standard or goal. On the other hand, mechanisms such as contracts and agreements, collective inquiry and decision-making, organisations and associations, and social norms are more likely to include a process for determining or negotiating goals and standards. In the latter case, there is more scope for those who are at-risk to be involved in shaping responsibility-sharing institutions that structure collective action for community safety and risk management.

While we are supportive of this alternative view of shared responsibility, we do not mean to suggest that the more common view in Australian fire and emergency management that prioritises community self-reliance is necessarily incorrect or misguided. By contrast, given the claim that communities rely too heavily on fire and emergency management agencies in Australian society, the focus on community self-reliance may be well-founded. However, we do mean to suggest that this view may be overly *particular*. The dominance of a particular, more narrowly focused view of shared responsibility curtails the consideration

of a wider range of possible ways to think about and shape responsibility-sharing in this sector. The more familiar mechanisms, such as persuasive education and awareness programs, may well be most appropriate to address some responsibility-sharing issues. However, reflecting on a wider range of alternative mechanisms could help fire and emergency management stakeholders and decision makers to consider the pros and cons of other, otherwise overlooked possibilities, which may be appropriate for addressing a wider range of issues. On a deeper level, it may also assist them to recognise and reflect on some of their own assumptions about what 'shared responsibility' means as a goal and as a process, about the nature of collective action in risk management, and about relationships between 'those-at-risk' and 'those-in-authority' [see McLennan & Handmer 2012]. Given the impetus of the National Strategy for Disaster Resilience, this broader reflection is particularly warranted in Australian fire and emergency management at the moment.

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## References

- Bickerstaff, K & Walker, G** 2002, 'Risk, responsibility, and blame: an analysis of vocabularies of motive in air-pollution(in) discourses', *Environment and Planning A*, vol. 34, no. 12, pp. 2175-92.
- Birnbacher, D** 2001, 'Philosophical foundations of responsibility', in HW Bierhoff, A Auhagen & H Bierhoff (eds), *Responsibility. The many faces of a social phenomenon*, Routledge London, pp. 9-22.
- Black, K & Wishart, J** 2008, 'Containing the GMO genie: cattle trespass and the rights and responsibilities of biotechnology owners', *Osgoode Hall LJ*, vol. 46, p. 397.
- Brenkert-Smith, H** 2010, 'Building bridges to fight fire: the role of informal social interactions in six Colorado wildland-urban interface communities', *International Journal of Wildland Fire*, vol. 19, no. 6, pp. 689-97.
- Bushnell, S & Cottrell, A** 2007, 'Living with bushfire: What do people expect', in D King & A Cottrell (eds), *Communities living with hazards*, Centre for Disaster Studies, James Cook University, Townsville, Queensland, pp. 215-53.
- COAG** 2011, *National strategy for disaster resilience: building our nation's resilience to disasters*, Council of Australian Governments, Canberra, ACT.
- Cotton, M** 2009, 'Ethical assessment in radioactive waste management: a proposed reflective equilibrium-based deliberative approach', *Journal of Risk Research*, vol. 12, no. 5, pp. 603 - 18.

**Council of Europe** 2011, *Draft recommendation of the Committee of Ministers to member states on the Council of Europe's Charter on shared social responsibilities*, Council of Europe.

**Elsworth, G, Gilbert, J, Rhodes, A & Goodman, H** 2009, 'Community safety programs for bushfire: what do they achieve, and how?', *Australian Journal of Emergency Management*, vol. 24, no. 2, pp. 17-25.

**Eriksen, C, Gill, N & Head, L** 2010, 'The gendered dimensions of bushfire in changing rural landscapes in Australia', *Journal of Rural Studies*, vol. 41, pp. 814-25.

**Gray, GC** 2009, 'The responsabilization strategy of health and safety', *British Journal of Criminology*, vol. 49, no. 3, pp. 326-42.

**Griffiths, T** 2010, 'An unnatural disaster?': Remembering and forgetting bushfire', *History Australia*, vol. 6, no. 2, pp. 35.1-7.

**Guttman, N & Ressler, WH** 2001, 'On being responsible: ethical issues in appeals to personal responsibility in health campaigns', *Journal of Health Communication: International Perspectives*, vol. 6, no. 2, pp. 117 - 36.

**Handmer, J & Tibbits, A** 2005, 'Is staying at home the safest option during bushfires? Historical evidence for an Australian approach', *Global Environmental Change Part B: Environmental Hazards*, vol. 6, no. 2, pp. 81-91.

**Henderson, J, Coveney, J & Ward, P** 2010, 'Who regulates food? Australians' perceptions of responsibility for food safety', *Australian Journal of Primary Health*, vol. 16, no. 4, pp. 344-51.

**Hughes, G & Rowe, M** 2007, 'Neighbourhood policing and community safety', *Criminology and Criminal Justice*, vol. 7, no. 4, pp. 317-46.

**McLennan, BJ & Handmer, J** 2011a, *Framing challenges for sharing responsibility: a report of the Sharing Responsibility project*, RMIT University & Bushfire Cooperative Research Centre, Melbourne.

**McLennan, BJ & Handmer, J** 2011b, *Mechanisms for sharing responsibility: a report of the Sharing Responsibility project*, RMIT University & Bushfire Cooperative Research Centre, Melbourne.

**McLennan, BJ & Handmer, J** 2012, 'Reframing responsibility-sharing for bushfire risk management in Australia after Black Saturday', *Environmental Hazards*, vol. 11, no. 1, pp. 1-15.

**Ostrom, E** 1990, *Governing the commons: The evolution of institutions for collective action*, Cambridge University Press, New York.

**Ostrom, E & Ahn, T** 2009, 'The meaning of social capital and its link to collective action', in GT Svendsen & GLH Svendsen (eds), *Handbook of social capital: the troika of sociology, political science and economics*, Edward Elgar Publishing Ltd, Cheltenham, pp. 17-35.

**Patterson, O, Weil, F & Patel, K** 2010, 'The role of community in disaster response: Conceptual models', *Population Research and Policy Review*, vol. 29, no. 2, pp. 127-41.

**Pellizzoni, L** 2004, 'Responsibility and environmental governance', *Environmental Politics*, vol. 13, no. 3, pp. 541 - 65.

**Pulcini, E** 2010, 'The responsible subject in the global age', *Science and Engineering Ethics*, vol. 16, no. 3, pp. 447-61.

**Sandler, T & Blume, L** 1992, *Collective action: Theory and applications*, Harvester Wheatsheaf Hemel Hempstead.

**Sanne, JM** 2008, 'Framing risks in a safety-critical and hazardous job: risk-taking as responsibility in railway maintenance', *Journal of Risk Research*, vol. 11, no. 5, pp. 645 - 58.

**Teague, B, McLeod, R & Pascoe, S** 2010, *2009 Victorian Bushfires Royal Commission: final report*, State of Victoria, Melbourne, Australia.

**Tibbits, A & Whittaker, J** 2007, 'Stay and defend or leave early: Policy problems and experiences during the 2003 Victorian bushfires', *Environmental Hazards*, vol. 7, pp. 283-90.

**UK Department of Health** 2011, *The public health responsibility deal*, UK Department of Health.

**Underwood, C, Hachonda, H, Serlemitsos, E & Bharath-Kumar, U** 2006, 'Reducing the risk of HIV transmission among adolescents in Zambia: Psychosocial and behavioral correlates of viewing a risk-reduction media campaign', *Journal of Adolescent Health*, vol. 38, no. 1, pp. 55.e1-.e13.

**UNDP & ILO** 2009, *Work and family: towards new forms of reconciliation with social co-responsibility*, International Labour Organization & United Nations Development Programme, Santiago.

**Wilkins, R** 2010, 'Federalism and the emergency services: paper developed from a speech presented at the AFAC/ Bushfire CRC 2009 conference', *Australian Journal of Emergency Management*, vol. 25, no. 1, pp. 3-6.

**Witt, LA** 2001, 'Responsibility in work organisations', in HW Bierhoff, A Auhagen & H Bierhoff (eds), *Responsibility. The many faces of a social phenomenon*, Routledge, London, pp. 139-48.

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# Mainstreaming fire and emergency management across legal and policy sectors.

PRELIMINARY FINDINGS ON MEASURES OF SUCCESS.

By Michael Eburn and Stephen Dovers, Australian National University.

## ABSTRACT

This paper reports on a research project, funded by the Bushfire CRC and conducted at the Australian National University, jointly by the ANU College of Law and the Fenner School of Environment and Society. 'Mainstreaming Fire and Emergency Management across Legal and Policy Sectors: Joint Research and Policy Learning' is looking at the impact of law and policy on emergency and fire management. This paper argues that an absence of clearly defined goals in emergency management policy inhibits our ability to make decisions on what are acceptable trade-offs and makes it impossible to know when Emergency Management goals have been achieved. The paper reports on the research conducted so far and identifies the next steps in the research program. <sup>R</sup>

government and cross-sectoral issue. To mainstream emergency management is to consider how other policy sectors impact upon the community's ability to prepare for and respond to various hazards.

Our research has identified that:

... fire management considerations are relevant in many policy sectors, suggesting that emergency management is a mainstream consideration but the strength of emergency management mainstreaming is not clear (Eburn and Jackman, 2011, p. 74).

In order to further 'mainstream' emergency management into broader policy and law, and to determine the priority of emergency management, or in other words, the 'strength' of emergency management considerations, clear objectives have to be identified:

Policy interventions are intended to achieve goals in relation to identified problems, and it would be expected that goals would be clearly expressed in policy statements, and form the reference point for later implementation, monitoring and review (Dovers, 2005, p. 101).

Australian governments have not, however, given a clear statement of what emergency management, across the Prevent, Prepare, Respond and Recover spectrum, is meant to achieve. The *National Strategy for Disaster Resilience* says a 'disaster resilient community is one that works together to understand and manage the risks that it confronts' (COAG, 2009) but that does not give any measure by which we can determine whether or not resilience has been achieved.

Australians will always be subject to natural hazards – floods, bushfires, cyclones and the like. As the fires from 2003 and 2009, the floods and storms of 2010/11 and floods again in 2011/12 show, Australian communities are very resilient to natural hazards having the resources to prepare for, and recover from such devastating events. Making ourselves more resilient, more flood and fire proof may be possible, but not without cost. As we strive for further evidence of resilience it may be reasonable to ask 'How prepared is prepared enough?' (Jongejan *et al*, 2011), and how much

## Introduction

This paper will report on the law and policy project being conducted at the Australian National University, jointly by the ANU College of Law and the Fenner School of Environment and Society. It will report on this research conducted so far, and identify the next steps in the research program. Other projects are also reporting in this special issue of *AJEM*.

## Is emergency management mainstreamed into law?

Emergency management has traditionally been seen as the responsibility of the emergency services, such as fire brigades and the state emergency services. Vulnerability, and the ability to protect life, property and other assets, is, however, largely defined by activities and policy settings in other sectors. This interplay of policy means that fire and emergency management should be seen as a whole-of-



are we prepared to pay, and forsake, for extra gains in community resilience? Costs we will have to pay are:

- Economic – every dollar spent on hazard reduction is a dollar not spent on some other social good and with diminishing returns, at some point we will get better returns from spending the money on the other community good, but at what point? Within the emergencies sector, there are trade-offs between different activities (e.g. fuel reduction, building improvements, community education, response capacities). How those trade-offs are to be made depends on what the objective is.
- Social – ensuring that all the bush is cleared around high risk communities, or that people live away from the coast and the threat of storm surge, or that people are limited in what and how they build on their properties will change the nature of communities and society generally; and
- Environmental – undertaking hazard reduction activities such as fuel reduction burning or building coastal protection infrastructure can have dramatic impacts on the natural environment.

Our research concluded that:

Deciding how competing demands will be assessed and balanced requires a clear view on what are the policy objectives; that is what is emergency management policy meant to achieve? ... Until there is a clear and specific goal or objective of emergency management policy, it is impossible to identify how that policy can be mainstreamed or the success (or otherwise) of the policy measured. Whatever objectives are selected, different legal and policy tools will be required to achieve them. A clear, specific and measurable goal may be “No one will die in a bushfire” but that will lead to a very different policy response than

if the goal is to ensure that “There will be no bushfires.” (Eburn and Jackman, 2011, p. 74).

The need for clear policy objectives was also referred to by former Australian Federal Police Commissioner, Mick Keelty, in his review of the 2011 Perth Hills Bushfire. As a result of that fire, no lives were lost but many people were evacuated and homes were lost. Keelty said:

There remains one question the answer to which eluded the Special Inquiry but it is an answer that requires further examination and that is: What is the measure of success of the outcome of a bushfire? Is the loss of no lives the only performance measure? If so, how many houses is an acceptable number to lose? Does one performance indicator have the potential to cloud the ‘Shared Responsibility’ of all to build resilience of our community? (Keelty, 2011, Transmission Letter p. 3).

### Measures of success

The next stage of our research will consider the question posed by Mr Keelty: ‘What is the measure of success of the outcome of a bushfire (or any hazard)?’ This will bring our research back to the question asked when we first began to consider if, and how, emergency management can be mainstreamed into law. The critical issue remains ‘what are the objectives of emergency management policy?’ Only when the objectives are identified can we determine what success looks like and what measures may be used to determine if there is, or is not, a successful outcome. It is not apparent that the social, political and thereby broader social goals of emergency management are clear or widely-understood. In an area of intense community, media and political scrutiny and interest,



December 3, 2001: Firefighters in the Perth suburb of Trigg tackle flames metres from residential houses.

©NewsPix / Megan Lewis



**February 7, 2011: Perth, WA. Bushfires seen burning at night close to houses in the Perth suburb of Kelmscott in Western Australia.**

a lack of clarity can lead to unproductive argument and an inability to agree on necessary improvements to current policy and management arrangements.

To gain insight into these issues we interviewed fire and emergency service chief officers from nearly all Australian States and Territories and asked them 'what do they understand is the measure of success that should be used in Australia?' The interviews covered a number of related issues that influence this question.<sup>1</sup> At the time of writing, interviews with sixteen emergency service leaders have been conducted. The results of those interviews are still being analysed. The discussion, below, offers some preliminary findings: more detailed analysis will be reported at a later date.

It is recognised that emergency management is much more than emergency response, it covers the entire Prevent, Prepare, Respond and Recover spectrum. It is understood that vulnerability to natural hazards including bushfires and flooding, is affected by decisions made across government sectors, not just emergency responders, so for example, decisions by local governments and state planning agencies affect our ability to prevent the impact of floods on homes or to prepare to face the fires that will come out of the Australian bush. Some aspects of these cross-sectoral decisions and their impact on living with hazards are being addressed by colleagues at the University of Canberra (on urban and regional planning) and RMIT University, Melbourne (on shared responsibility). Although recognising that the voice of the fire and emergency service chiefs are but one voice, representing as they do the 'response' agencies, it is believed that their views on law and policy and the objectives that can be realistically achieved, will help inform the broader public policy debate.

The chief officers recognise that preserving life is a fundamental objective of the emergency services but it remains an aspirational goal.

The emergency environment is dynamic, fast moving and unpredictable. An unpredictable variable is human behaviour. People will make decisions that will turn out to be wrong in the circumstances that occur, and deaths will follow. It follows that loss of life is a tragedy that the services seek to avoid, but the fact that people die during a bushfire or flood does not necessarily represent a failure by the emergency services:

... the zero death rate should always be aspirational. It should always be an aspirational goal. So you always push towards it but accept the inevitability of the event as well and then try and narrow the gap.

... that loss of life is tragic but at times unavoidable in these operations... I think if everyone has gone above and beyond their limits and really done everything they could practically and conceivably do in the circumstance, I don't think that's failure. I think there's space to learn or improve or change, but is it failure? No. I don't think so. I just don't think it is.

We can then ask 'If the answer to the question 'Is the loss of no lives the only performance measure?' is 'no', what might be the measure of success?'

One suggested measure is to measure the emergency response against plans and procedures. The argument would be that if the emergency services did all that they had planned to do, if they had responded in accordance with standards and procedures that had been developed in the calm before the storm, with appropriate community consultation and taking into account important community considerations including impact on life, economic well-being and the

1. These interviews were undertaken within the Human Research Ethics protocols of the Australian National University, which place strict conditions on use of the material to protect the anonymity and interests of the interviewees.

environment, then they would have had a successful response even if, tragically, some people died.

Most interviewees indicated a disjunct however, between a lack of clarity in overarching goals (e.g. to preserve life) and detailed operational procedures and plans:

... lawyers are writing the plans ... They are so prescriptive as to be almost irrelevant ... what we're trying to do is manage these environments legally by saying, well, you need to tighten up this and tweak that, and write a procedure for that, and close that list off, and make sure all the documentation completely minimises any exposure to risk.

Well, that's great, but then you've got the documents and then you've got the environment which you've got to operate it within. I'm yet to be convinced that the two will ever align. So, you know, tighter document control or more prescription ... probably protects the minister and protects the government ... But is that helping me as an incident controller? Probably not one little bit. It's probably forcing me to be so paranoid about the doctrine that I won't be able to use my initiative and my experience and my intuition in an operation.

The South Australian Deputy State Coroner has noted:

... one can always find fault in a setting of such complexity. The temptation to criticise the minutiae of every decision that was taken by a group of individuals or by the individuals themselves is sometimes difficult to resist. (Schapel, 2007, p. xiv).



January 17, 2005. The search investigating the deliberately lit fires on Mount Dale in Pickering Brook, Perth.

Or, in other words, 'The best laid schemes of mice and men; Go oft astray' (Burns, 1785), or '... no plan survives contact with the enemy' (von Moltke, u.d).

In a setting as complex as a developing fire, flood or storm event, errors must be made, even if they are only identified as errors when the consequences have been identified and the presence of hindsight bias makes what was merely a possible outcome, look as if it was always inevitable and foreseeable (Maguire and Albright, 2005, p. 53). Accordingly if one were to set up 'compliance with operational procedures and plans' as a measure of success, then an agency is doomed to fail.

Further, as many interviewees noted, set procedures must be interpreted by experienced staff and sometimes varied with good reason. However justified, this would allow criticism of not following procedures at some later point. If emergency responders slavishly obey procedures rather than adapt to changing circumstances, in order to avoid later scrutiny and criticism, the results in terms of lost lives and property may well at times be worse than it otherwise would be. If we aim to have procedures manuals that are completely prescriptive, there will be no room for professional judgment or experience; the only skill incident controllers will need is the ability to read (Eburn, 2012).

It is often tempting, when designing a system to measure success, to focus on measuring what is easy to measure. Annually, the Productivity Commission provides a Report on Government Services. In the context of the emergency services they measure such things as response times, number of fires contained to the room of origin, the number of deaths and the dollar value of property losses, and the number of households with smoke alarms and emergency plans and service staffing and funding levels (Productivity Commission, 2012, pp 9.2-9.32). These measures focus attention on response agencies and local communities and households. However, in the context of mainstreaming and the issue of success measures, other actors play an important role. These include local and state agencies that determine planning and development, agencies that place infrastructure and other assets in the landscape that require protection, and communications and health services providers. Should the Productivity Commission also measure such things as the 'number of houses built in at-risk locations per year'?

Many chief officers took the view that it would be appropriate to measure success by comparing the actual losses with potential losses, that is to measure the 'outputs' rather than the 'inputs'. The Commission does provide some 'output measures' (the value of property losses, the number of people killed etc) but these are raw numbers, without context. As one chief officer said '...we are very scant on outcome measures. That's largely because ... the outcome measures are quite difficult to measure.'



In terms of the 2009 Black Saturday fires, 173 people tragically died, but as a non-Victorian chief officer said:

... we need to get better at measuring what we save. ... if you look at the extent of the impact and how many people could have potentially died, and how many people were in that area and didn't die... That to me is probably quite successful...

So that 173 people dead sounds big, and it is, but ... if they said, look, 15,000 people were directly impacted by this fire and tragically we lost 173. It still sounds bad but at least there's a bit of context around it.

Another, also a non-Victorian, said:

... five million people or something in Victoria and you'd say 173 from five million is ... as good as it gets and nobody is prepared to stand up and say that and I don't think anybody could actually stand up and say 173, what a really good outcome that was. But the reality of it is, is it probably might have been as good as it gets because it's about what are people prepared to sacrifice ... we might be able to prevent fires in the rural landscape from occurring, all we have to do is concrete over everything. But are people going to be prepared to accept that, are they going to be prepared to live in that environment? No, they're not. So we have to say there is a risk associated with doing anything, and the risk is that there be lives and properties put at risk.

Excellence, or perfection, cannot be the measure of success; 'Whilst one always strives for excellence, excellence is not to be equated with absolute perfection' (Schapel, 2007, p. xiv). Perhaps the only measure of success is:

... passing the scrutiny of an intelligent and reasonable critic.... all you can hope for is that reasonable people, reasonable, intelligent people and dispassionate people are fine that it went reasonably well under the circumstances and there were no large systemic failures.

Not that there was a perfect outcome, not that it could not have been better, but that 'it went reasonably well under the circumstances and there were no large systemic failures.'

## Conclusion

This paper has reported on research being undertaken at the Australian National University on *Mainstreaming Fire and Emergency Management across Legal and Policy Sectors: Joint Research and Policy Learning*.

We have determined that there is a depth of emergency management mainstreaming, that is emergency management considerations are relevant in a number of areas of law, but the strength of that mainstreaming, how important those considerations are and whether they take priority over other factors is unclear, suggesting that mainstreaming is 'weak'.



**July 15, 2009: Marysville, VIC. Marysville Patisserie reopening in Glenferrie Road, Malvern after the original was destroyed during the bushfires. Owners Ashraf and Christine Doos carry out the original sign from the destroyed shop still covered in ash. The sign is the only thing they managed to save from the fire-razed patisserie. Pic. David Caird. The Marysville Patisserie recently re-opened in Marysville.**





**November 26, 2011: Margaret River, WA. Cowaramup volunteer firefighters spot extinguishing fires in Prevelly after bushfires swept through the Margaret River region of Western Australia.**

We are now returning to our first question about mainstreaming emergency management. We cannot effectively incorporate emergency management considerations into other areas of law and policy until we determine what we are trying to achieve. We will, with further analysis of our research data and supported by reference to legal and political principle and theory, make further contribution to the discussion that the community has to have about what it is we are trying to achieve. Are we trying to meet the aspirational goal of zero deaths, or the goal of communities, and agencies and interests outside the emergency sector, that understand and appreciate their risks and understand that, at the end of the day, they need to answer the question ‘What are **you** going to do about it?’

## References

- Burns R.**, 1785, *To a Mouse, On Turning Her up in Her Nest with the Plough*, English translation <<http://www.robertburns.org>>.
- COAG (Council of Australian Governments)**, 2009, *National Strategy for Disaster Resilience: Building our nation's resilience to disasters*, Commonwealth of Australia, Canberra.
- Dovers, S.**, 2005. *Environment and Sustainability Policy: Creation, Implementation, Evaluation*. Sydney: Federation Press.

**Eburn, M. and Jackman B.**, 2011, *Mainstreaming fire and emergency management into law*, *Environmental and Planning Law Journal*, Vol 28, pp 59-76.

**Eburn, M.**, 2012, *Margaret River Bushfire Inquiry*, <<http://emergencylaw.wordpress.com/2012/02/>>, 24 February 2012.

**Jongejan R.B., Helstoot I., Beerens R.J.J and Vrijling J.K.**, 2011, *How prepared is prepared enough*, Vol. 35, No. 1 *Disasters* pp. 130-142.

**Keelty, M.J.**, *A Shared Responsibility: The Report of the Perth Hills Bushfire February 2011 Review*, Government of Western Australia, Perth.

**Maguire, L.A. and Albright, E.A.**, 2005, *Can behavioural decision theory explain risk-averse fire management decisions* Vol. 211 *Forest Ecology and Management* 47-58.

**Productivity Commission**, 2012, *Report on Government Services 2012*, Commonwealth of Australia, Canberra.

**Schapel, A.E.**, 2007, *Inquest into the Deaths of Star Ellen Borlase, Jack Morley Borlase, Helen Kald Castle, Judith Maud Griffith, Jody Maria Kay, Graham Joseph Russell, Zoe Russell-Kay, Trent Alan Murnane And Neil George Richardson*, South Australian Coroners Court, Adelaide.

**von Moltke H, u.d.**, *Helmuth von Moltke the Elder*, <[http://en.wikipedia.org/wiki/Helmuth\\_von\\_Moltke\\_the\\_Elder](http://en.wikipedia.org/wiki/Helmuth_von_Moltke_the_Elder)>

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# Flood risk, insurance and emergency management in Australia.

By Rachel Anne Carter, La Trobe University.

## ABSTRACT

The recent flooding events in Queensland in 2011 and the recent flooding occurring in New South Wales in 2012 have exemplified the existence of institutionally entrenched inadequacies within the current insurance regulatory regime. The biggest manifestation is the high penetration of inadequate insurance coverage. The consequence of inadequate insurance is economic mayhem for those who have endured property losses arising from weather-related disasters. This paper reviews the lessons from the Queensland floods (December 2010 – February 2011) and identifies that two major issues are the cost and availability of flood cover. It is argued that if insurers assist with mitigation measures, by assisting home owners to understand and prepare for floods, they reduce the cost to insurers, and therefore of insurance, which will ultimately be a benefit for all. <sup>R</sup>

## Flood risk insurance in Australia

The recent events and the flooding in NSW in February – March 2012 should resonate as a warning regarding the potential catastrophic weather related events to come. Despite 99 percent of Queensland being deemed a disaster zone due to the cumulative effects of Cyclone Yasi and the flooding (December 2010 – January 2011), the ferocity and intensity of weather-related disasters remains persistent. Economically the property losses endured as a result of the natural disasters is steadily increasing as more people and more infrastructure remains positioned within a close proximity to disaster zones.

Although some progress has been made since the Queensland floods of 2011, there remains a failure to implement economic and efficient action to make flood insurance affordable and accessible.

This paper is based on research being conducted with assistance from the Bushfire CRC on the role

of insurance in responding to natural hazards. It will identify some causes of underinsurance, with particular reference to floods, and consider steps that individuals, insurers and governments may take to both increase the uptake of insurance whilst also increasing community resilience.

## Lessons learnt from the Queensland flooding (December 2010 – January 2011)

The economic implications of the Queensland flooding coupled with Cyclone Yasi were devastating. These catastrophic events decimated personal property and destroyed critical state infrastructure. The total damage bill arising from the flooding was over \$10 billion in property and infrastructure losses in addition to \$30 billion due to the flow on effects to productivity and the Australian economy (Price Waterhouse Coopers, March 2011, 2; House of Representatives Standing Committee on Economics, June 2011, 3). The effects are still being felt in some of the worst affected areas where the full extent of the economic repercussions is yet to be seen.

The Australian people are currently contributing towards the Temporary Flood and Reconstruction Levy to help fund the recovery process (*Tax Laws Amendment (Temporary Flood and Reconstruction Levy) Act 2011* (Cth)). Despite the Temporary Flood and Reconstruction Levy being used to help pay for the \$3.9 billion which the Commonwealth is required to contribute under the National Disaster Relief and Recovery Arrangements ('NDRRA') regime, (Senate Economics References Committee, 2011, 1-3) this money does not deal with the prevention of a future event. From a fiscal perspective, simply acting after an event rather than addressing mitigation and resilience is not ideal (Carter, 13 May, 2011, 17). The question thus remains in relation to the current flooding, whether the Australian people will be called on again to assist through the continuance of the current levy (beyond its initial collection period) or through an increase in the amount charged under the current levy. Despite a promise that the Temporary Flood and Reconstruction Levy is implemented as a temporary measure, it is possible that in the future this could continue. Prime Minister Julia Gillard has currently promised a limited timeframe for the operation



**February 13, 2008. Townsville, QLD. Cars and trucks line the Bruce Highway south of Townsville waiting for flood water to recede.**

of the Levy, however should the need arise given the Levy is already implemented it would be easier for the government to revise its initial implementation and legislate to continue its existence.

A key lesson from the Queensland flood experience was the need for action to reform the existing insurance and regulatory regime in light of an increased natural disaster threat. Commonwealth parliament has received a number of reports<sup>1</sup> which have highlighted and exposed predictable problems without providing any real solution or means of achieving a practical, effective and economically viable solution. Whilst these reports are useful, they lack the capacity to force or command action, rather it is the decision of the Commonwealth government to actually accept the findings and implement changes.

The crux of this inadequacy is manifested in the individuals who are being continually exposed to natural disasters. Despite the risk increasing, many have inadequate insurance and thus will not be able to financially survive a natural disaster should this cause them significant economic losses. The solution centres on a greater usage of the insurance market. Although this sounds ironically easy, the real challenge is creating systemic changes to pricing and availability to enable more people to have affordable coverage. Queensland's floods demonstrated inadequacies with flood coverage in terms of access to cover and affordability. There was also confusion amongst some insureds who honestly believed they were insured for flood but found out, post

event, that their belief was misguided or their coverage varied from the level of coverage they thought they had (House of Representatives Standing Committee on Social Policy and Legal Affairs, February 2012, 37 – 50). In some instances some insureds realised after the event that they were not covered due to the confusion over the term 'flood' and the differences between riverine and flash flooding. Most insurance policies covered losses incurred through flash flooding, yet in many policies an exclusion clause operated to preclude coverage where the cause of the inundation was riverine flooding (Neumann, House of Representatives, 29 February 2012, 102).

The Australian Government has addressed the issue of problems with the flood definition and proposed a new definition. Currently the proposed definition has not been adopted despite the *Insurance Contracts Amendment Act 2012* (Cth) being passed into law on 23 March 2012. The proposed definition suggests "flood means the covering of normally dry land by water that has escaped or been released from the normal confines of any lake or river, creek or other natural watercourse whether or not altered or modified or from any reservoir, canal or dam" (Explanatory Memorandum, 2012, 14 [1.14]). The *Insurance Contracts Amendment Act 2012* (Cth) vows to implement a standard uniform definition of flooding, although the details of the precise definition were not enunciated, the likelihood is that the actual definition will largely replicate the proposed definition. Addressing the issue of creating a uniform flood definition encompassing riverine flooding, flash

1. In the aftermath of the Queensland flooding some of the reports looking into insurance include Treasury's *National Disaster Insurance Review: Inquiry into Flood Insurance and Related Matters*; Senate Economic References Committee's Report on *The Asset Insurance Arrangements of Australian State Governments*; House of Representatives Standing Committee on Social Policy and Legal Affairs, *Inquiry into the Operation of the Insurance Industry During Disaster Events*; Queensland's Flood Commission of Inquiry, *Inquiry into Flood Insurance*.





**March 13, 2012: Barmah, VIC. Paddocks off Gearys Road submerged by floodwaters following flooding in Barmah, Victoria.**

flooding and other forms of inundation is a means of seeking to redress the confusion over the parameters of flood coverage. This will resolve the confusion over a multiplicity of definitions employed by different insurers, which will be beneficial to both insurers and the insured. A standard definition of flood however, will not address the bigger issues of access and affordability.

Until a suitable resolution is sought to deal with these issues there will be implications for individuals, the state, insurers and emergency managers. It is however to be noted that the starting point should not be on implicating the insurance industry and placing blame but rather in seeking to achieve workable solutions involving all of the key stakeholders (Carter, 20 January 2011, 1).

### **Reflections from the Queensland floods**

Given their financial constraints and their legal obligations to shareholders and the need to ensure solvency, insurers cannot act as welfare or quasi welfare services. More people need to have full insurance coverage and the system should better facilitate this objective.

Although the aftermath of the Queensland flooding saw an increase in the availability of flood coverage, the cost of this in some areas is simply too prohibitive. The justification for this is the use of actuarially sound modelling techniques, which indicate a significant risk for these areas. The problem is thus the high risk exposure of some properties force insurers to charge high premiums, which many of the residents particularly in the lower socioeconomic areas struggle to afford (Van den Honert and McAneney, 2011, 1170).

Furthermore, the cost of insurance coverage has continued to increase because of the payouts made by the industry and the external pricing pressures imposed from the reinsurance market.<sup>2</sup> The consequence of raising insurance premiums will be to force more people from the insurance market and this will continue to weigh heavily upon society, again implicating the Australian taxpayer who will by necessity be the insurer of last resort.<sup>3</sup> (Carter, 2011 (Vol 14), *Wild Fires- The Legal Regulatory System of Insurance and Emergency Services Funding*, 75 – 77).

2. The external pressure from the reinsurance market includes the threat of reinsurance increasing dramatically in light of the 2010 being the worst year on record for losses arising out of catastrophic events worldwide. See Stephen Warwick, June 2011, Impact of the Australian/ New Zealand Catastrophes- the Market's Reaction and the Lessons Learned for the Reinsurance Industry, paper presented at 9th Conference on Catastrophe Insurance in Asia, Beijing, China.
3. The terminology of the Australian taxpayer being the insurer of last resort is often brandied about without due consideration for its economic meaning. The author uses this terminology in light of the specific grants to individuals in the aftermath of the flooding to assist those without insurance to rebuild their property or to make repair to their property.



## How insurers can help: Education of flood risk and flood intelligence<sup>4</sup>

Individuals should find out as much information as possible about the potential risks to enable them to prepare. It is essential that individuals exercise individual responsibility to protect their own property. It is easy for people to be complacent and not feel that there is a risk or be naïve and think the risk would never affect them personally (Emergency Management Australia, 2009, 53). They should, therefore, be encouraged to assist themselves through education and then with assistance take steps to mitigate their risk. Education and mitigation should be supplemented with adequate insurance coverage and insurers should in their own interests, assist shareholders to understand and mitigate their risks.

Although the responsibility of obtaining education falls upon an individual, access to risk education should involve the stakeholders: insurance companies, the State and emergency management. The expertise of the emergency management sector can be combined with the financial resources of the State and insurers to create training regimes which could be offered in a number of different forums including online and face-to-face delivery modes.

The delivery of education in risk exposure could help alleviate the problems associated with the cost of insurance. The insurance industry could offer premium discounts amounting to a certain proportion or percentage of the overall premium in return for an insured's time and effort in undertaking an approved training course. Further discounts could be provided for implementing mitigation measures. The provision of such discounts may provide sufficient incentive to prompt individuals to undertake their own responsibility in lowering their risk exposure.

The premium discounts for an insured undertaking an approved form of education in relation to risk exposure awareness coupled with subsequent mitigation can be modelled on the defensive driving course discount paradigms.<sup>5</sup> This model can give sufficient incentive for individuals to engage in disaster education. The motivation for insurers to invest into this scheme is that education can encourage action to be taken. In undertaking mitigation measures the insured would also reduce the probability of a loss to insured property and so reduce the insurers risk exposure.

Equipping individuals with sufficient knowledge is the starting point to entrench moral hazard and ensure personal responsibility is afforded. Given the huge

economic costs incurred through natural disasters, insurance should be the primary means of promulgating a more socially entrenched economic protection mechanism. (Carter, July 2011, 6 – 7) Problematically, under the current paradigm there is an inadequate insurance penetration, something which needs to be addressed and resolved. Reports have found that some individuals were not fully aware of their potential exposure and due to this were risk adverse, whereas if they had known of their exposure, they may have taken up insurance coverage (House of Representatives Standing Committee on Social Policy and Legal Affairs, 2012, 37 – 50).

Individuals should also put into play preventative measures both before the occurrence of a disaster as well as a contingency plan about what they should do during a disaster. The planning should encompass both protection of an individual and his/her family as well as ensuring their house and contents survive a natural disaster.

## Obligations to be imposed upon the insurance industry

Insurance is a commercial business thus; solutions are likely to be favoured in instances where there is an actual or projected profit. The inability of the insurance industry to provide sustainable insurance coverage at an affordable rate was specifically addressed by the Insurance Council of Australia (ICA). The ICA affirmed that the burden of providing flood cover at affordable rates Australia wide was too onerous for the industry<sup>6</sup> without significant governmental assistance (Insurance Council of Australia, July 2011, 2).

## Investment in flood mapping and formal planning mechanisms

Insurers are economically in a position which would enable them to invest in long term programs facilitating widespread mitigation mechanisms. Insurers could seek to use the investment in such programs as a means of ensuring a greater penetration of insurance and more business [should greater levels of adequate insurance be reached].

Given insurers rely upon modelling of risks; the starting point is to ensure there are sufficient means to model the risk as accurately as possible. One problem which has been cited in relation to flooding is that there are often inadequate flood maps. When accurate modelling cannot be undertaken and the risk is unknown the

4. 'Flood intelligence is the product of a process of gathering and assessing information to assist in the determination of the likely effects of flood upon a community.' See Emergency Management Australia, 2009, Flood Preparedness Manual- Manual 20: Australian Emergency Manual Series, Australian Government (Attorney General's Department).

5. Some insurers provide a cheap or free defensive driving course for young insureds and offer them premium discounts for satisfactory completion. The objective behind this program is that theoretically those who undertake this driving course are more likely to be safer on the roads, which in turn will reduce the number of car accidents and thus reduce the losses for insurers..

6. The ICA in referring to the inability to provide coverage nationwide were specifically talking about the areas that were most exposed to flooding. The vast majority of residential property in Australia can be covered by flood insurance obtained based upon existing insurance models. See Insurance Council of Australia, July 2011, Response to 2011 Natural Disaster Insurance Review, Australia.

industry does not want to take on the risk. Investing in improving the flood mapping of Australia and ensuring that the mapping is provided to the necessary agencies and authorities is pertinent (Insurance Council of Australia, July 2011, 7; Insurance Council of Australia, 19 January 2011, 1).

Mapping alone is not the only way in which the industry can increase access to insurance, as there are some areas which due to the risk it is either not possible to get cover or the cost is exorbitant. The Insurance Council of Australia has suggested that currently approximately 'Seven percent of residential property in Australia is exposed to predictable and repetitive flooding causing an average of \$400 – \$450 million in damages per year.' For the remaining properties which are not at an exceptionally high risk of flooding the penetration of flood coverage is questionable whereby only 54 percent of insurance policies for household building and contents cover in Australia include coverage for flood damage (Insurance Council of Australia, July 2011, 2).

However, with flood mapping there is likely to be more clarity in terms of the perceived and actual risk which will mean that insurers are more certain of their exposure and thus able to price based upon this. Knowing the risk exposure is likely to reduce the cost of cover for the consumer. Greater knowledge of a risk and the ability to model this mean insurers do not need to make over conservative and inflated estimates, but rather can price with more certainty.

## The State

It is very difficult to create a proper demarcation defining at a micro level the precise roles and responsibilities of individual stakeholders (and then subdividing within the stakeholder group). Yet it is imperative that the system promotes insurers and governments working together to combat the challenge that catastrophic losses pose. It is imperative that the Australian government has a formalised means of entrenching a greater concentration of adequate insurance throughout Australia. The Australian Government needs to assist in ensuring adequate levels of insurance across society so that they are not implicated as the insurer of last resort. If the government continues to operate as an insurer of last resort without the existence of a paradigm designed to assist in investing for such risks, it places pressure on them whilst discouraging the uptake of adequate levels of insurance. Therefore it would be much better for the Australian Government to demarcate their responsibility and have contingency plans in place in order to satisfy their objectives.

## The way forward

There is no simple solution to the problem of inadequacy of insurance in Australia (particularly in relation to flood risk). Despite this, we cannot continue to keep our head in the sand knowing what the problem is and in fact producing reports which similarly

acknowledge the problem (Treasury, 2011, 9 – 19; House of Representatives Standing Committee on Social Policy and Legal Affairs, 2012; Queensland Flood Commission of Inquiry 2011) without implementing any realistic solutions. The issue of natural disaster insurance was raised in the aftermath of the Queensland flooding and has been hugely beneficial in raising the profile of this issue. The inquiries conducted into this issue indicate the crux of the problem is the implications which inadequate insurance has upon society and upon the economic well-being of individuals after an event. (Treasury, 2011, 9)

Given the enormity of the problem, it would be advisable to start by undertaking mitigation and enhancing flood mapping so modelling can be more accurate (Mortimer, Bergin and Carter, February 2011, 1 – 5). In order to get individuals involved in mitigation, the starting point should be in the provision of education to individuals via a variety of different formats. The key to the facilitation of education to reduce property losses is to couple this with premium discounts for undertaking mitigation. It is important to reduce the expectation mentality of individuals, (Carter, 2011 (Vol 6), Taxing the Taxed) instead promoting the acquisition of adequate levels of insurance coverage and in doing so rewarding prudent insureds for undertaking measures which are likely to result in more resilient properties and fewer overall damages (Wilkins, April 2011).

## References

- Asia Insurance Review**, 7 March 2012, *Australia: Cheaper for Insurers to Prevent Flooding* (online).
- 
- Asia Insurance Review**, December 2011, *Australian Insurers Welcome Standard Flood Definition* (online).
- 
- Barnette, R., Elks, S.**, 8 February 2012, *Fears Families will be forced out of Insurance as Cover Becomes More Expensive*, *The Australian*, Australia.
- 
- Carter, R.A.**, 2011, *Taxing the Taxed- Duplication of Taxation in Property Insurance and Its Social Implications*, *Journal of Australian Tax Teachers Association*, Vol 6.
- 
- Carter, R.A.**, 13 January 2011, *Flood Insurance Must be Made Accessible to All*, *The Australian*, Australia.
- 
- Carter, R.A.**, 20 January 2011, *Don't Blame the Insurers- Blame the System*, *The Punch*, as accessed at [www.thepunch.com.au](http://www.thepunch.com.au)
- 
- Carter, R.A.**, 13 May 2011, *Evidence to Senate Economics References Committee*, *Hansard* (Senate Economics References Committee), Canberra.
- 
- Carter, R.A.**, July 2011, *Economic Management of Disaster and Resilience: Remediating the Insurance Problem*, *International Association of Emergency Management Bulletin*, Vol 28 (7), Falls Church, Virginia.
- 
- Emergency Management Australia**, 2009, *Flood Preparedness Manual- Manual 20: Australian Emergency Manual Series*, Australian Government (Attorney General's Department).

**Explanatory Memorandum, Insurance Contracts Amendment Bill 2011 (Cth)**, 2011.

**Explanatory Memorandum, Insurance Contracts Amendment Bill 2012 (Cth)**, 2012 (*revised explanatory memorandum*).

**House of Representatives Standing Committee on Economics (Craig Thompson MP)**, June 2011, *Inquiry into the Income Tax Rates Amendment (Temporary Flood Reconstruction Levy) Bill 2011 and the Tax Laws Amendment (Temporary Flood Reconstruction Levy) Bill 2011*, Commonwealth of Australia, Canberra.

**House of Representatives Standing Committee on Social Policy and Legal Affairs**, 2012, *Inquiry into the Operation of the Insurance Industry during Disaster Events*, Commonwealth of Australia, Canberra.

**Insurance Contracts Amendment Bill 2011 (Cth)**.

**Insurance Contracts Amendment Act 2012 (Cth)**.

**Insurance Council of Australia**, 19 January 2011, *More Flood Mapping Data Needed in Queensland*, Media Release, as accessed at <http://www.insurancecouncil.com.au/media/35666/qld-flood-maps-190111.pdf>

**Insurance Council of Australia**, 5 March 2012, *Insurers Monitoring Flooding in Five States and Territories*, Media Release, as accessed at <http://www.insurancecouncil.com.au/media/85274/050312-nsw-and-vic-floods-update-final.pdf>.

**Insurance Council of Australia**, July 2011, *Response to 2011 Natural Disaster Insurance Review*, Australia.

**Mortimer, E., Bergin, A., Carter, R.A.**, February 2011, *Special Report: Sharing the Risk- Financing Australia's Disaster Resilience*, Australian Strategic Policy Institute, Canberra.

**National Insurance Brokers Association**, 2012, *Response to Inquiry into the Operation of the Insurance Industry During Disaster Events*, as accessed at [www.niba.com.au/resource/NIBA%20response%20Inquiry%20into%20the%20operation%20of%20the%20insurance%20industry%20during%20disaster%20events%20Final.pdf](http://www.niba.com.au/resource/NIBA%20response%20Inquiry%20into%20the%20operation%20of%20the%20insurance%20industry%20during%20disaster%20events%20Final.pdf)

**Neumann, B.**, *House of Representatives Hansard-Constituency Statements: Insurance Industry (SPEECH)*, House of Representatives, Commonwealth of Australia, Canberra.

**Prevention Web**, 29 February 2012, *Insurance Industry Responds to Inquiry*, *Business Spectator* (online), as accessed at <http://www.businessspectator.com.au/bs.nsf/Article/Insurance-industry-responds-to-inquiry-RX7WS?opendocument&src=rss>

**Price Waterhouse Coopers**, March 2011, *What Would you Like to Grow? Economic Impact of Queensland Natural Disasters* as accessed at <http://www.pwc.com.au/about-us/flood-support/assets/Economic-Impact-Qld-Natural-Disasters.pdf>

**Queensland's Flood Commission of Inquiry**, 2011, *Inquiry into Flood Insurance*, The State of Queensland.

**Senate Economics References Committee**, 2011, *The Asset Insurance Arrangements of Australian State Governments*, Commonwealth of Australia, Canberra.

**Tax Laws Amendment (Temporary Flood and Reconstruction Levy) Act 2011 (Cth)**.

**Treasury**, 2011, *National Disaster Insurance Review: Inquiry into Flood Insurance and Related Matters*, Commonwealth of Australia, Canberra.

**Van den Honert, R. and McAneney, J.**, 2011 'The 2011 Brisbane Floods: Causes, Impacts and Implications'. *Water* 2011, 3, 1149-1173.

**Warwick, S.**, June 2011, *Impact of the Australian/New Zealand Catastrophes – the Market's Reaction and the Lessons Learned for the Reinsurance Industry*, paper presented at 9th Conference on Catastrophe Insurance in Asia, Beijing, China.

**Wilkins, M.**, 11 April 2011, *Building Australia's Resilience to Natural Disaster*, CEDA, Sydney, as accessed at <http://www.cgu.com.au/news-media/cgu-insights/Pages/BuildingAustralia'sresiliencetonaturaldisaster.aspx>

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# Paying for disaster recovery: Australia's NDRRA and the United States' NFIP.

By Ruth Biggs, Australian National University.

## ABSTRACT

**This paper examines the issues surrounding financial recovery from natural disasters with an emphasis on floods. Prompted by the flooding in Queensland in 2010-2011 and the National Disaster Insurance Review, the discussion focuses on the current recovery program administered by the Commonwealth government, the National Disaster Relief and Recovery Arrangements and compares this with the federally funded flood insurance program which operates in the US – the National Flood Insurance Program. The paper concludes that a national insurance scheme similar to the National Flood Insurance Program is not appropriate in Australia. <sup>R</sup>**

## Introduction

Australia is prone to significant and frequent natural disasters. It is expected that the 'sea change' phenomenon will lead to an increase in the costs of disasters due to an increase in urbanisation of coastal regions (Thomas *et al.*, 2011). (The 'sea change' phenomenon refers to a trend for people to move, and often retire to coastal areas, and increasing the population and urbanisation of these areas. Every disaster has the potential to impact a larger population where local knowledge and experience of risks has been diluted leading to a decrease in community resilience). While there may be doubt about the impact changes in weather patterns may have on the frequency of natural disasters, concentrated population along the coast gives scope for greater damage and therefore greater financial costs for recovery.

The question of how to cover the financial costs of natural disasters in Australia is particularly relevant after the release of the report of the National Disaster Insurance Review (Trowbridge *et al.*, 2011) which was prompted by recent natural disasters particularly the Queensland floods of 2010-11. This paper will examine the Australian National Disaster Recovery and Relief Arrangements and compare them to the National

Flood Insurance Plan in the United States. This comparison is important to make clear that although there have been calls to reform flood 'insurance' there are significant differences between schemes that are designed to protect community infrastructure (such as the NDRRA) and those to assist homeowners (such as the NFIP). Communities need to understand the difference in order not to be confused and to believe that reforms to one will resolve issues in the other. It will also be shown that there are risks in adopting a national domestic disaster insurance scheme and such a scheme, such as the NFIP, may not be appropriate in Australia.

## The Queensland floods

Between December 2010 and January 2011 over 70 towns in Queensland were subject to flooding. Heavy rainfall across the state led to flash flooding. Towns were cut off when highways were closed and a significant proportion of the state's infrastructure was damaged or destroyed. The damage bill was estimated as being close to \$30 billion (ABC News, 2011). In the aftermath, the Commonwealth imposed a levy on taxpayers across Australia (*Tax Laws Amendment (Temporary Flood & Cyclone Reconstruction Levy) Act 2011* (Cth); *Income Tax Rates Amendment (Temporary Flood & Cyclone Reconstruction Levy) Act 2011* (Cth)) to help fund the Commonwealth's contribution to the disaster relief.

The systems in place for financial recovery have been brought under increased scrutiny as a result of the Queensland floods and other natural disasters which occurred around that time and it is argued that there are ways in which arrangements for financial recovery can be improved.

## Australia's Natural Disaster Relief and Recovery Arrangements (NDRRA)

It is generally assumed that under the Constitution it is the responsibility of the states and territories to manage disaster relief in their individual jurisdictions (Eburn 2011, p. 82). The Commonwealth government provides funding to assist with financial recovery from natural disasters under the Natural Disaster Relief

and Recovery Arrangements (NDRRA). The NDRRA is administered by the Attorney-General's Department and is governed by the National Disaster Relief and Recovery Arrangements Determination 2011 (McClelland, 2001). States may claim NDRRA funding when a natural disaster occurs and where they have spent more than the prescribed threshold amount in responding to the event.<sup>1</sup> The Commonwealth will provide funding of between 50 and 75 per cent of the state or territory's expenditure to repair or rebuild infrastructure and loans it may have made to businesses or others in need (McClelland, 2001, [3.3]). The NDRRA is intended to assist states in their recovery from disasters and not to be the only means by which they are protected from the financial costs of disasters (McClelland, 2011, [3.3.2(e)]). States may also protect themselves from the financial costs of recovery by insuring against losses. Funding from the NDRRA is provided to states although individuals may indirectly receive assistance through grants given to needy individuals (McClelland, 2011, [3.3.2(e)]).

### The 2011 amendments

Following the 2011 Queensland floods, the NDRRA was amended to require states to insure their own losses and to ensure access to 'reasonably adequate capital' (McClelland, 2011, [4.5.1]). States are required to have their insurance arrangements assessed by an 'independent and appropriate specialist' and to make this assessment available to the Commonwealth (McClelland, 2011, [4.6.1]).

Senator Xenophon made it clear that he wanted the requirement for insurance so that the Commonwealth was not forced to make such significant payments in the future and to avoid any temptation for the states to rely on the Commonwealth.

There is an enormous amount of public money that needs to be spent, quite justifiably, to assist Queensland and the policy question is whether less money could have been spent if there were appropriate insurance policies in place (Senate Economics Legislation Committee, 2011, p. 34).

The concept of 'reasonably adequate capital' was not defined and is therefore a subjective standard. However, given that this requirement was included in the legislation to seek to reduce the amount the Commonwealth might have to pay, it is reasonable to expect that the states would have access to enough capital to cover the cost of all but the most extraordinary of natural disasters. They should have access to enough capital to ensure that a levy to help fund recovery is not required in the future.

The requirement for states to have their own disaster insurance may reduce the amount which the Commonwealth will be required to pay for future

natural disasters. However, given the cost of taking out insurance, states may only be able to afford to take out coverage for a small proportion of their infrastructure and may still be underinsured. When the amendments were announced, the acting Premier of Queensland, Paul Lucas stated that the insurance requirements were a win for overseas insurance companies, not the people of Queensland:

'Make no mistake, insurance of this type – if you can get it – is not delivered by local insurers over the counter. It is delivered by international insurance conglomerates that do it to make a profit' (Lucas, 2011).

If a state or territory does not comply with the requirement for insurance coverage, the level of NDRRA assistance available may be reduced. This may leave states in the difficult situation where they cannot afford, or obtain, insurance but may be disqualified from NDRRA assistance if they do not obtain the required level of cover. This leaves them facing significant costs to repair infrastructure which they may struggle to meet.

### The United States' National Flood Insurance Program (NFIP)

Established in 1968, under the *National Flood Insurance Act* (US), the National Flood Insurance Program (NFIP) is administered by the Federal Emergency Management Agency (FEMA). Before the program was established it was nearly impossible to obtain flood insurance from the private insurance industry (FEMA, 2002, p.1). The program now provides insurance to individuals for properties and contents through arrangements with private insurance companies as well as policies purchased directly from FEMA (FEMA, 2002, p. 22).

Unlike the NDRRA, which is primarily intended to provide assistance to states for infrastructure, the NFIP provides insurance to both communities and individuals. Individuals may only purchase insurance if their community is involved in the Program. Although participation is voluntary, communities which are classified as flood-prone will not be given Federal assistance for buildings in hazard areas unless they are involved in the NFIP (*Housing and Urban Development Act 1986*, s 202).

Communities that are involved in the NFIP are required to engage in floodplain management including adopting a floodway and the construction of levees or floodwalls to a required standard. Buildings in areas of high flood risk which are mortgaged must be protected by flood insurance (*Housing and Urban Development Act 1986*).

As part of the NFIP, States provide technical assistance to communities to help them comply with their floodplain management obligations.

1. Each state has two different thresholds based on State revenue. The amount the Commonwealth will pay is determined according to whether expenditure on disaster recovery meets these thresholds. The thresholds for 2011-12 can be found at <http://www.em.gov.au/Documents/NDRRA.++2011-12+NDRRA+State+Territory+Thresholds.pdf>.





The National Flood Insurance program is administered by the U.S. Federal Emergency Management Agency.

## Problems with the NFIP

### Temporary measures

The original purpose of the NFIP was to 'provide temporary flood insurance to property owners who were unaware they were in flood-prone areas' (Black, 2005, p. 1, emphasis added). Buildings constructed before the implementation of the scheme are subject to lower, subsidised insurance fees even though they may be at more risk than more recent buildings. Although the fees for newer buildings are 'actuarially fair', they are not high enough to adequately compensate for the discounted price on older buildings.

It has been suggested that in order to cover catastrophic years the discount for houses built before 1974 should be removed. It is argued that the owners of such houses are now aware of the high risk of flooding and should be required to pay the same premiums as other homeowners. Riggs (2004) suggested that subsidies for repetitive loss properties should be phased out.

### High levels of debt

In January 2009 the NFIP was \$19 billion in debt (Kousky, 2010, p. 3). This is largely due to the fact that the premiums are designed to cover years where there are 'average' levels of flooding. In years where there are 'catastrophic' levels of flooding the program does not have sufficient funds to cover all the claims and is forced to borrow money from the Federal government. There have been suggestions (Kousky, 2010) that premiums should be increased in order

to save money for 'catastrophic' years. However, it has also been noted that stockpiling funds could lead to the perception that too much has been collected and calls for premiums to be reduced could follow. It is also possible that stockpiled funds might be diverted to other projects. Saving money to pay for natural disasters is likely to prove difficult unless the government were to prescribe an amount which must be saved or allocate funds to be invested to increase the overall level of funds available for disaster recovery. If there is no requirement to save then the money collected in premiums could be spent on other projects leaving little for the 'rainy day'.

### Subsidised insurance encourages people to live in high-risk areas

The NFIP may actually encourage people to build and live in areas which are flood-prone: 'Federally subsidised flood insurance encourages people to build homes where they otherwise would not. It also encourages lenders to finance mortgages they otherwise would not' (Black, 2005, p. 1). Even after a property has been damaged by a flood there is no requirement to rebuild in a safer location and there is evidence that a substantial proportion of the claims for assistance under the NFIP relate to properties which have received assistance in the past (*Flood Insurance Reform Act 2004* (US), s. 2).

### Comparing the NDRRA and NFIP

While both the NDRRA and the NFIP provide financial assistance to recover from floods, the scope of the assistance is different.

The NDRRA provides financial assistance to states to repair their infrastructure as well as to partially reimburse disaster relief payments (McClelland, 2011, [1.1.1]). It is, in effect, a national insurance scheme for the states although it is only intended to supplement measures taken by the states to pay for recovery; it is not supposed to cover the full cost (McClelland, 2011, [1.1.2]). The states must have some insurance arrangements to ensure that they can contribute to the costs of recovery, and they must have made payments, in excess of the prescribed threshold, before they become eligible for NDRRA assistance. Although some assistance may be provided to individuals through the reimbursement of grants to needy individuals (McClelland, 2011, [3.3.2.(e)]), this is incidental and does not usually provide sufficient assistance for people to rebuild or repair their houses. Instead, any benefit gained by individuals is likely to have come via the states as recovery payments. Individuals who wish to be insured against losses as the result of flooding are required to take out private insurance cover. The inclusion of flooding on insurance plans is an issue which is currently under consideration because it has become clear that many individuals who believed their plan covered flooding were not actually covered. However, this is a separate issue and does not relate to the NDRRA.

In comparison, the NFIP provides assistance to both governments and citizens. It is much more individualistic as it is designed to assist those in high risk areas to obtain insurance. Communities can receive assistance to help pay for infrastructure and individuals may also receive payments. Unlike the NDRRA, the scheme requires contributions from those who want to benefit from assistance. Communities are required to mitigate against flooding and also make financial contributions if they wish to receive assistance after flooding. Individuals may receive direct financial assistance if they have taken part in the scheme by paying for the insurance. The government lowers its risk by requiring that individuals who wish to take part in the scheme must be in communities which are also involved. The communities must have taken steps to mitigate and thus reduce the risk of flooding. The mitigation involves building levees and undertaking floodplain management. Communities may also undertake mapping to help determine which areas are most at risk of flooding. The cost of undertaking these programs is borne by the community and is a way of ensuring that communities do actually contribute to the mitigation of flood risk.

NFIP insurance is similar to private insurance except that under the NFIP, insurance premiums are subsidised and do not accurately reflect the risk. The result is that individuals are not required to make a contribution which is in line with their risk. This may lead to inequities whereby individuals end up living in areas where they should perhaps not due to the availability of insurance which reduces the real cost of flood damage.

The methods of funding for the NDRRA and NFIP are quite different. The funds for the NDRRA are taken out of consolidated revenue and there are no dedicated funds for the scheme. Instead, the government is able to allocate as much or as little as required each year. However, with the extraordinary demands for assistance in 2011, the government imposed the flood and cyclone levy to raise additional funds (Gillard, 2011). The NFIP is funded by insurance premiums but is allowed to borrow money from the Federal government. This money is supposed to be repaid with interest (*National Flood Insurance Act 1968*, s 3) although it is possible that given the current high level of debt, the funds may not be repaid. Under the NFIP, communities and households are required to maintain NFIP insurance once they have received assistance from the scheme. There is clear evidence that 'repetitive-loss properties' make up a large number of the claims made under the scheme (*Flood Insurance Reform Act 2004*, s 2). This leads to significant losses for the scheme as the premium income from such properties is not enough to compensate for the losses caused by repeated flooding.

## **A national insurance scheme for Australia?**

It has been stated that in Australia the cost of natural disasters increases in future years the funding situation will become unworkable if it is not changed'

(Latham, McCourt & Larkin, 2010, p. 16). A proposal for a natural disaster insurance scheme was considered in 1976 but enthusiasm for the scheme waned and it never eventuated. There have been renewed calls for such a scheme particularly after recent, significant natural disasters. Chris Latham, a partner at PricewaterhouseCoopers, is a key advocate for a national insurance scheme as he believes that it would provide certainty: 'People need certainty around this sort of thing rather than just hoping someone will step in and look after them once they've lost their house' (Sexton, 2010). Latham believes that a national scheme would not be too costly as home insurance premiums might fall if natural disasters are no longer included in the cover.

However, not all insurers believe that a national scheme would be helpful. The Insurance Australia Group (IAG) stated that a national scheme would lead to higher premiums and encourage people to live in flood-prone areas because those living in such areas would not have to pay the real cost for protection (Johnston, 2011).

The National Disaster Insurance Review panel also recommended that an agency be created to 'manage the national coordination of flood risk management and to operate a system of premium discounts and a flood risk reinsurance facility, supported by a funding guarantee from the Commonwealth' (Trowbridge *et al*, 2011, p. 3). Although the details of the proposed body are not given, it does seem to bear some resemblance to the NFIP in several respects. The proposed agency would provide premium discounts like the NFIP and would also coordinate risk management. The NDIR does recommend that if a national insurance scheme were to be implemented then discounts would be phased out over time (Trowbridge *et al*, 2011, p. 10).

The NFIP experience should lead to caution when considering a national insurance scheme for flooding. Some of the problems experienced by the NFIP were examined above.

## **Conclusion**

Following the Queensland disasters of 2011, there were calls to amend the NDRRA. Members of the Commonwealth Parliament were outraged that, rather than obtain private insurance, Queensland had relied on the NDRRA to establish the Commonwealth as the State's insurer. At the same time individuals were shocked to discover that their insurance policy did not cover them for damage caused by flood although some insurers did try to cover losses where possible even if this was not envisaged under the policy. As a result there were calls to amend the various schemes by which Australians pay for the costs of disasters, and in particular, floods.

There is however confusion between the schemes. The NDRRA is a scheme to assist the states to pay for the costs of restoring community assets and infrastructure. It was not intended to replace domestic insurance. Steps to amend the NDRRA

scheme, to require the states to take out insurance in the private market may go some way to reduce the Commonwealth's exposure to costs during the next flood disaster; a disaster that is occurring in NSW and Victoria at the time of writing but will have little implications for individual citizens.

Amendments to the NDRRA should not, however, be confused with suggestions to give better protection to individuals. One suggestion to improve the level of domestic insurance is to introduce a national flood insurance scheme. As discussed above, the United States has such a scheme in the NFIP. Although the aims of the NFIP were noble, the fact that it does not discourage people from living in flood-prone areas and is in such a large amount of debt mean that the introduction of a similar system in Australia may not be wise. The federal government should encourage private insurance companies to provide sufficient flood protection for individuals and states should be encouraged to make their own arrangements to finance recovery where possible.

## References

- ABC News**, 2011, 'Flood costs tipped to top \$30b', 18 January 2011, <<http://www.abc.net.au/news/2011-01-18/flood-costs-tipped-to-top-30b/1909700>>.
- Black, C.G.**, 2005, 'Subsidizing Disaster', *National Centre for Policy Analysis – Brief Analysis No 525*, <<http://www.ncpa.org/pdfs/ba525.pdf>>.
- Eburn, M.**, 2011, 'Responding to Catastrophic Natural Disasters and the Need for Commonwealth Legislation', *Canberra Law Review*, Vol. 10, Iss. 3, p. 81.
- Federal Emergency Management Agency (FEMA)**, 2002, *National Flood Insurance Program – Program Description*, <<http://www.fema.gov/library/viewRecord.do?id=1480>>.
- Flood Insurance Reform Act 2004 (US)**, *Public Law 108-264*.
- Gillard, The Hon. Julia, Prime Minister of Australia**, 2011, 'Rebuilding after the floods', <<http://www.pm.gov.au/press-office/rebuilding-after-floods>>.
- Housing and Urban Development Act 1986 (US)**, 42 USC 4106.
- Income Tax Rates Amendment (Temporary Flood & Cyclone Reconstruction Levy) Act 2011 (Cth)**
- Johnston, E.**, 2011, 'IAG warns against national disaster insurance scheme', *Sydney Morning Herald*, 5 March 2011, <<http://www.smh.com.au/business/iag-warns-against-national-disaster-insurance-scheme-20110304-1bi69.html>>.
- Kousky, C.**, 2010, 'Reforming the National Flood Insurance Program' *Resources for the Future – Issue Brief 10-01*, <<http://www.rff.org/RFF/Documents/RFF-IB-10-01.pdf>>.
- Latham, C., McCourt, P. & Larkin, C.**, 2010, 'Natural Disasters in Australia: Issues of funding and insurance', *Paper presented at the 17th General Insurance Seminar, The Institute of Actuaries of Australia, Gold Coast*, p. 16 <<http://www.actuaries.asn.au/library/events/GIS/2010/NaturalDisastersInAustralia-Paper.pdf>>
- Lucas, P.**, 2011, 'Senator Xenophon hits Queenslanders below the belt', *Division 2 News – Councillor Paul Tully – City of Ipswich (Online)*, 3 March 2011, <<http://division2news.blogspot.com/2011/03/senator-xenophon-hits-queenslanders.html>>.
- McClelland, The Hon. R, Attorney General**, 2011, *National Disaster Relief and Recovery Arrangements Determination 2011* < [http://www.em.gov.au/Documents/NDRRA%20-%20Determination%202011%20-%20Version%201%20\(PDF\)%20-%20Web%20update.pdf](http://www.em.gov.au/Documents/NDRRA%20-%20Determination%202011%20-%20Version%201%20(PDF)%20-%20Web%20update.pdf)>
- National Flood Insurance Act 1968 (US)**, 42 USC 4017 1310.
- Riggs, R. W.**, 2004, 'Issues and Perspectives on Floodplain management', *Background reading for the 2004 Assembly of the Gilbert F. White National Flood Policy Forum*, pp. 124-127, <[http://www.ltrr.arizona.edu/~coles/Thesis/Readings%20and%20Lit%20review/2004\\_White\\_Forum\\_BackgroundPapers.pdf](http://www.ltrr.arizona.edu/~coles/Thesis/Readings%20and%20Lit%20review/2004_White_Forum_BackgroundPapers.pdf)>.
- Senate Economics Legislation Committee**, 2011, *Parliament of Australia, Canberra*, 11 March 2011. <[http://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate\\_Committees?url=economics\\_cte/flood\\_levy\\_bill\\_2011/hearings/index.htm](http://www.aph.gov.au/Parliamentary_Business/Committees/Senate_Committees?url=economics_cte/flood_levy_bill_2011/hearings/index.htm)>.
- Sexton, R.**, 2010, 'Expert calls for national disaster insurance scheme', *The Age (online)*, 8 November 2010, <<http://www.theage.com.au/national/expert-calls-for-national-disaster-insurance-scheme-20101107-17iyq.html>>.
- Tax Laws Amendment (Temporary Flood & Cyclone Reconstruction Levy) Act 2011 (Cth)**.
- Thomas, M., King, D. Keogh, D.U., Apan, A. and Mashtaq, S.**, 2011, 'Resilience to climate change impacts: a review of flood mitigation policy in Queensland, Australia', *The Australian Journal of Emergency Management*, Vol. 26, No. 1, p. 8.
- Trowbridge J., Minto J and Berril J, Commonwealth of Australia**, 2011. 'Natural Disaster Insurance Review – Inquiry into flood insurance and related matters' (Commonwealth of Australia, 2011) < [http://www.ndir.gov.au/content/report/downloads/NDIR\\_final.pdf](http://www.ndir.gov.au/content/report/downloads/NDIR_final.pdf)>.

## About the author

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# 'Left and right of arc': the legal position of the Australian Defence Force in domestic disaster response using the 2009 'Black Saturday' Victorian bushfires as a case study.

By Janine Fetchik, Australian National University.

## Introduction

Use of the military other than for external defence, is a critical and controversial issue in the political life of a country and the civil liberties of its citizens... Given that there must be a permanent Defence Force, it is critical that it be employed only for *proper purposes* and that it be subject to *proper control* (emphasis added).<sup>1</sup>

Although concerns, such as those raised by Justice Hope, have traditionally focused on using the Australian Defence Force (ADF) in situations where operations may impact on civil liberties,<sup>2</sup> ADF involvement in disaster response has received no similar attention. Although disaster response is not an activity associated with infringements on civil liberties, and emergency services are seen as having a 'protective' function, they do exercise this protective function for the greater good, not necessarily for that of the individual. Emergency services actually have great latitude as concerns individual rights; for example, fire brigades can lawfully damage, destroy, or enter property. Further, disaster response is not the sole realm of emergency services. In recent history, the ADF has operated in this 'space' regularly. When parts of the Australian community are devastated the ADF is there, supporting the community, alongside state-based emergency services.<sup>3</sup>

It is therefore perplexing that, compared to other activities,<sup>4</sup> ADF participation in disaster response lacks specific regulation beyond a sole Departmental policy that does not clearly regulate the activities that ADF personnel may undertake. In lieu, domestic civil and criminal laws of general application, which do not contemplate the use of the ADF in this way, fill the void. Consequently, the 'left and right of arc'<sup>5</sup> applicable to ADF disaster response activities is not well defined. This paper explores that 'left and right of arc' from a legal perspective using the Victorian 'Black Saturday' bushfires as a case study.

## Commonwealth authority in domestic disaster response – where does the ADF fit?

The simplistic answer is that the ADF fits wherever the Commonwealth government decides. As an apolitical tool of the government, use of the ADF is not limited to the 'naval and military defence of the Commonwealth and of the several States'.<sup>6</sup> Provided Commonwealth authority exists to undertake a particular action then any available means may be used to implement that action, including the ADF.<sup>7</sup> Understanding the ADF's 'left and right of arc' thus requires an understanding of two factors: the

1. Justice Hope, 'Protective Security Review' (Parliamentary Paper No. 397, Parliamentary Library, Parliament of Australia, 1979), 142 (quoting Edmund Burke, *Works* (Rivington, 1815), volume V, 17).
2. And indeed, Justice Hope's comment referred primarily to the use of ADF resources for protecting Commonwealth interests or states from domestic violence, following the 'Siege of Bowral' in 1974.
3. ADF involvement in disaster response can be traced back at least as far as the Hobart fires (1967) and Cyclone Tracy (1974) and has been seen more recently in response to the Victorian 'Black Saturday' bushfires (2009), the Queensland floods and Cyclone Yasi (2011).
4. For example: war and war-like operations are governed by the laws of war, as translated into domestic laws; border protection activities are guided by customs, immigration and fisheries laws; and counter-terrorism or domestic violence operations are regulated by *Defence Act 1903* Pt IIIAAA.
5. The phrase 'left and right of arc' is used within the ADF to describe to the permissible area (or 'arc of fire') within which a soldier, sailor or airman may direct fire from his/her weapon. The phrase has idiomatically come to also refer more broadly to the direction that a commander gives to a subordinate in order to guide the manner in which the subordinate undertakes duties or tasks. Thus, the phrase idiomatically refers to the freedoms and limitations that apply to the conduct of a certain duty or task.
6. *Constitution* s 51(vi).
7. For example: for example Operation RESOLUTE, in which ADF assets support and enforce fisheries, customs and immigration laws through the North-West maritime approaches; Operation OUTREACH, in which ADF assets supported the Northern Territory Emergency Response (also known as the 'NT intervention'); or the 'Army Aboriginal Community Assistance Program' in which the Army provided construction, health and training support to Indigenous communities across the country.



Commonwealth's authority to respond to disasters; and the Commonwealth's intent as to the use of the ADF in furtherance of its authority.

### a) Commonwealth authority

The *Constitution* contains no head of legislative power that could support general Commonwealth disaster response legislation at least as concerns the states.<sup>8</sup> Although a 'mish-mash' of powers under s 51 could support Commonwealth legislative involvement in some disaster response areas,<sup>9</sup> they do not provide authority to legislate broadly for disaster response across all hazards. To do so the Commonwealth could rely on the 'external affairs' power,<sup>10</sup> a referral of power from one or more states under *Constitution* s 51 (xxxvi), or some aspect of disaster response being incidental to the government's executive authority (and therefore within *Constitution* s 51 (xxxix)). To date, no state has made any such referral and the Commonwealth has not sought to rely on the 'external affairs' power for this purpose.

The Commonwealth must therefore rely on a form of executive power – which has unclear limits. Although 'executive power' is not defined (or even described) in the *Constitution* and clear judicial definition has proved elusive, it is likely that the Commonwealth relies on prerogative power (a form of executive power representing the residue of the monarch's unique powers, privileges and immunities such as the power to enter treaties and declare war) for its involvement in disaster response.<sup>11</sup>

The common law has long recognised a prerogative power to 'protect the state in time of war or emergency, or to keep the peace', which can be exercised such that public safety may trump common law rights and interests, such as freedom of speech or movement.<sup>12</sup> Further, a body, established and conferred

with functions, impliedly has an 'ancillary power' to protect itself in order to perform its functions.<sup>13</sup> The current disaster response framework (in which Commonwealth physical assistance is preceded by a request from the affected state or territory, and is only provided in circumstances where resources of the state or territory are unable to cope) appears to be broadly consistent with this prerogative power.<sup>14</sup> However, the limits of the prerogative (and therefore Commonwealth authority) in this area are unclear, particularly in light of *Pape*<sup>15</sup> in which the majority recognised the existence of:

- a. executive power that allows the government to respond to crises like 'states of emergency' or 'natural disasters' (without further explanation);<sup>16</sup> and
- b. a category of executive authority, implied from the existence of the Commonwealth and its character as a polity – that is, a sort of 'nationhood' power.<sup>17</sup>

Irrespective of whether the prerogative or the 'nationhood' power is the source of authority there is no legal controversy in the Commonwealth using the ADF to give effect to its executive authority.

### b) The ADF's role

In the absence of specific legislative authority underpinning ADF involvement in disaster response<sup>18</sup> two policies guide the ADF's disaster response activities:

- a. Defence White Paper 2009 – Defending Australia in the Asia Pacific Century: Force 2030; and
- b. Defence Instruction (General) OPERATIONS 5-1 Defence Assistance to the Civil Community – policy and procedures (DI(G) OPS 5-1).

8. The situation is, of course, different for the Territories for which the Commonwealth has more extensive legislative powers under *Constitution* s 122.

9. For example: quarantine(s 51(ix)), astronomical and meteorological observations (s 51(viii)), lighthouses, lightships, beacons and buoys (s 51(vii)), and postal, telegraphic, telephonic and other like services(s 51(v)).

10. Noting that the 'external affairs' power allows the Parliament to legislate to give effect to treaties entered into by the executive regardless of whether the subject matter of the treaty is of an 'external' nature or would normally fall within the enumerated legislative heads of power. See: *R v Burgess*; *Ex Parte Henry* (1936) 55 CLR 608; *R v Sharkey* (1949) 79 CLR 121; *New South Wales v Commonwealth* (1976) 135 CLR 337; *Koowarta v Bjelke-Petersen* (1983-84) 153 CLR 168; *Commonwealth v Tasmania* (1984-85) 158 CLR 1; *Polyukhovic v Commonwealth* (1991) 172 CLR 501; *Horta v Commonwealth* (1994) 68 ALJR 620.

11. Anne Twomey, 'Pushing the boundaries of executive power – Pape, the prerogative and nationhood powers' 34 *Melbourne University Law Review* 313, 316. See also: *Pape v Commissioner of Taxation* (2009) 238 CLR 1, 126 (French CJ) ('*Pape*').

12. Michael Eburn, *Emergency Law* (The Federation Press, 3rd Edition, 2010), 101; Twomey, above n 11, 325-6. See also *Burmah Oil Co (Burma Trading) Ltd v Lord Advocate* [1965] AC 75; and *R v Kidman* (1915) 20 CLR 425, 440 (Isaacs J)6.

13. Twomey, above n 11, 333.

14. Simply put, it is intrinsically within the Commonwealth's interest as a polity to ensure the continued stable functioning of each state or territory. Therefore, if a state or territory indicates that it lacks the resources to cope with a disaster (and thus implicitly indicates that there may be, if the disaster is not appropriately addressed, a risk to its continued stable functioning) the Commonwealth has a clear self-protection interest in assisting that state or territory.

15. [2009] 238 CLR 1.

16. *Ibid*, [232] (Gummow, Crennan and Bell JJ).

17. [2009] 238 CLR 1.

18. With the exception of Defence Act 1903 s 50D, which allows the Governor General to order ADF reservists to render compulsory service in certain circumstances including situations involving "civil aid, humanitarian assistance, medical or civil emergency or disaster relief" either domestically or abroad.



**ADF Staff assisting in the bushfire recovery.**

**White Paper.** The most recent White Paper (2009) characterises the ADF's role in disaster response as an element of national security. This is demonstrated by disaster response tasks falling within Defence's highest strategic priority (deter and defeat armed attacks on Australia):<sup>19</sup>

The ADF will also need to be able to respond to an increasingly complex *domestic security environment*, in which the lines between traditional concepts of external and domestic security are increasingly blurred. In this context, the ADF has to be able to contribute to the deterrence and defeat of attacks by non-state actors... and to support civil authorities in relation to *domestic security and emergency response tasks* (emphasis added).<sup>20</sup>

This is further illustrated by the White Paper's commentary on national security:

Of course, our national security involves many concerns other than those involving the use of armed force. The security of our community, our nation's economy and the integrity of our environment can all be threatened by illegal activities (such as people smuggling, illegal fishing and the drug trade), by pandemic disease outbreaks and by quarantine breaches. Natural disasters such as cyclones, earthquakes, floods and bushfires can also threaten the security and safety of the Australian people.

The ADF and other agencies of Defence have significant capabilities that can be used to support domestic security, border protection, counter-terrorism, emergency response and disaster recovery. Defence support to these contingencies is available under either the 'Defence Assistance to the Civil Community' mechanism, or as 'Defence Force Aid to the Civilian Authority', as provided under Part IIIA of the *Defence Act, 1903*. Defence's vital role in supporting domestic security and emergency response efforts will continue, and Defence will continue to support these areas of Commonwealth responsibility.<sup>21</sup>

This is a significant shift in policy. The previous White Paper (2000) included disaster response tasks within the fourth (of four) strategic tasks: peacetime national tasks (including coastal surveillance, emergency management and other ad hoc support to wider community needs), not as a 'national security' priority.<sup>22</sup> However, just as the Commonwealth's executive authority in the disaster response field has unclear limits, so does 'national security' as a concept from which to guide ADF involvement in this area. It is thus even more perplexing that ADF disaster response activities are not more clearly regulated.

19. Australian Government Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030 [Defence White Paper 2009] (2009)* 13.

20. *Ibid* 54.

21. *Ibid* 24.

22. Australian Government Department of Defence, *Defence 2000: Our Future Defence Force [Defence White Paper 2000] (2000)* xi-xii.

**DI(G) OPS 5-1.** 'Defence Assistance to the Civil Community' (DACC) is the mechanism by which Defence translates the higher-level (White Paper) policy relating to disaster response into action. DI(G) OPS 5-1 establishes the DACC framework and reaffirms the government position that emergency response is the responsibility of the states and territories but adds that using Defence resources is a last resort.<sup>23</sup>

In practice, state and territory emergency managers have two ways of accessing ADF disaster response resources. A request can be made directly to a local Commander or through Emergency Management Australia. The latter method will likely result in the *Australian Government Disaster Plan* (COMDISPLAN) being activated and this makes the full range of Commonwealth physical assistance resources available – not just the ADF.

DI(G) OPS 5-1 does not provide authority for Commanders to make offers of assistance. Whether this is related to perceived limits on Commonwealth authority is unclear. It is also unclear whether the Commonwealth could direct ADF resources to respond in the absence of a request. Furthermore, DI(G) OPS 5-1 does not provide any clear guidance about specific tasks that ADF members may be permitted to undertake whilst engaged in DACC activities.

## The ADF in the context of the Victorian bushfires

The ADF's involvement in the 'Black Saturday' (7 February 2009) bushfires in Victoria (known as Operation VIC FIRES ASSIST) started at 6.19am on 8 February 2009<sup>24</sup> with the establishment of a Joint Taskforce (JTF 662).<sup>25</sup> JTF 662 was staffed primarily by reservists belonging to Victoria's 4th Brigade<sup>26</sup> and had approximately 450 personnel operating in nine locations within 48 hours of its establishment.<sup>27</sup>

In totality, Operation VIC FIRES ASSIST involved approximately 800 personnel (at any one time) and included a wide range of tasks.<sup>28</sup>

The legal danger is that in the intensity of an emergency, with lives at risk, ADF members will not hesitate to do whatever they can to help.<sup>29</sup> This is risky because action undertaken in response to an emergency may interfere with people's rights, for example: entering, damaging or destroying property or closing roads.

Each state and territory has legislative arrangements establishing various emergency service agencies and empowering such agencies to lawfully take action that could otherwise constitute a tort or crime.<sup>30</sup> However, none specifically contemplates the possibility that ADF personnel will be used to augment emergency services. Therefore, ADF personnel have no more power or authority when assisting emergency services than any member of the public. But, unlike a private person, ADF personnel do not qualify for protection against civil liability under 'Good Samaritan' legislation because assistance rendered by ADF members (in that capacity) occurs in the course of paid duty.<sup>31</sup> Therefore an ADF member (or the Commonwealth as the 'employer'),<sup>32</sup> if subject to a civil suit arising from disaster response activities, may (in the absence of any other legislative protection) only be able to rely upon common law defences, such as 'necessity'. Further, some actions may give rise to criminal liability.

In South Australia, Queensland, the Northern Territory and the Australian Capital Territory powers exist in some circumstances for some emergency officials to direct a person to assist during an emergency.<sup>33</sup> People complying with these directions are exempted from liability in most circumstances.<sup>34</sup>

The *Country Fire Authority Act 1958* (Vic) (CFA Act), which provided the source of authority for Country

23. The phrase 'left and right of arc' is used within the ADF to describe to the permissible area (or 'arc of fire') within which a soldier, sailor or airman may direct fire from his/her weapon. The phrase has idiomatically come to also refer more broadly to the direction that a commander gives to a subordinate in order to guide the manner in which the subordinate undertakes duties or tasks. Thus, the phrase idiomatically refers to the freedoms and limitations that apply to the conduct of a certain duty or task.

24. Victoria, 2009 Victorian Bushfires Royal Commission, *Interim Report* (2009) Chapter 11, 284.

25. Defence Reserves Association, 'Joint Task Force 662 – Operation VIC FIRES ASSIST' *The Australian Reservist* (2009) 16, 16.

26. All reservists who were part of JTF 662 rendered service voluntarily, that is, they were not 'called out' compulsorily by the Governor General.

27. Defence Reserves Association, above n 26, 16.

28. For further details about the ADF's activities contributing to the emergency response to the Black Saturday fires see: Australian Government Department of Defence, *Defence Annual Report 2008-09* (Volume 1) (2009), 135-137.

29. For an illustrative example see the comments of Sapper Brooke Bishop in Defence Reserves Association, above, n 26, 17.

30. For discussion as to why such legislation is important, see: Eburn, above n 12, 100-102.

31. *Civil Law (Wrongs) Act 2002* (ACT) s 5; *Civil Liability Act 2002* (NSW) part 2; *Personal Injuries (Liabilities and Damages) Act 2003* (NT) s 8; *Law Reform Act 1995* (QLD) part 5; *Civil Liability Act 1936* (SA) s 74; *Wrongs Act 1958* (Vic) s 31B; *Civil Liability Act 2002* (WA) part 1D.

32. The term 'employer' is used in the absence of a more suitable term, noting that ADF members serve 'at the pleasure of the Crown' and therefore the relationship between an ADF member and the Commonwealth is not one that can be described as employer/employee. See Defence (Personnel) Regulations 2002 reg 117.

33. *Emergency Act 2004* (ACT), ss 34, 150C, 160A; *Fire and Emergency Services Act 2005* (SA) ss 42, 97, 118; *Emergency Management Act 2004* (SA) s 25; *Disaster Management Act 2003* (Qld) ss 77, 107, 112; *Public Safety Preservation Act 1986* (Qld) s 8; *Disaster Act 1982* (NT) s 37.

34. *Emergency Act 2004* (ACT), s 198; *Fire and Emergency Services Act 2005* (SA) s 127; *Emergency Management Act 2004* (SA) s 32; *Disaster Management Act 2003* (Qld) s 144; *Public Safety Preservation Act 1986* (Qld) s 47; *Disaster Act 1982* (NT) s 42.

Fire Authority (CFA) members to fight many of the Black Saturday bushfires,<sup>35</sup> does not establish a similar power (nor does any other Victorian emergency legislation), however it does allow CFA members<sup>36</sup> to control and direct:

[A]ny persons who *voluntarily place their services at his disposal* either individually or as members of any fire fighting organization (whether established by or for the purposes of a statutory authority or body corporate or not) *whilst they remain present at the scene of the fire* (emphasis added).<sup>37</sup>

Where a person complies 'with any direction given under this Act' he or she is not liable for any thing that is done, or omitted, in good faith compliance with the direction.<sup>38</sup>

So how, if at all, do these provisions apply to ADF personnel assisting Victoria's emergency services, specifically when that assistance could otherwise be characterised as a crime or tort? To illustrate the point, consider the following fictional scenario:

- a. A section of ADF personnel belonging to a JTF assisting an emergency service response to a significant bushfire in regional Victoria have been tasked to construct a firebreak through a specific area several kilometres from the fire front.
- b. Doing so would require the personnel to enter private property and would likely result in damage to that property.
- c. The personnel nevertheless undertake the task, believing that this measure may help to control the fire and ultimately save lives.
- d. The wind changes and as a consequence the firebreak is unnecessary.

The CFA Act clearly indicates that the holder of a statutory function under that Act cannot be held liable for exercising that function (and this is generally true of other similar emergency services legislation across the country).<sup>39</sup> However, it is unclear whether the same exemption from liability would extend to ADF personnel. It is even less clear what, if any, action an ADF member engaged in such a task could take to prevent a potentially stressed resident or community member from interfering with the task.

In respect of the CFA Act, the phrases '*voluntarily places their services at his disposal*' and '*whilst they remain present at the scene of the fire*' are critical although neither have been judicially considered. In relation to the first phrase, it is relevant that ADF

personnel always remain subject to the command and control of their military chain of command while participating in DACC tasks.<sup>40</sup> This, of course, differentiates ADF personnel from a private person, who is directed by an incident controller or brigade captain. The provision does not, on its face, contemplate giving direction to groups of organised individuals, such as units or sections of ADF personnel. Whether this means, however, that ADF personnel *cannot* 'voluntarily place their services' at the disposal of a CFA member is not clear. Further, if an ADF member(s) could do so, the effect, if any, that this would have on the authority of the chain of command is similarly unclear. In relation to the second phrase, there is no guidance as to how proximate a person must be to be considered "at the scene". Noting that some activities – such as constructing firebreaks, blocking roads, or evacuating people – may take place several kilometres from the fire front, there is doubt whether directions to undertake these types of activities would even fall within the authority of this provision.

A further issue concerns the capacity of fire victims to make insurance claims for damage caused by ADF personnel. Under the CFA Act, damage caused by an officer exercising functions under the Act in response to a fire is, for insurance purposes, considered to have been done by the fire.<sup>41</sup> This provision does not specifically extend to a person who volunteers to assist and who places themselves under the control and direction of a CFA member. In other states and territories, where there is a legislated 'requirement to assist', the law provides that the actions of a person assisting are deemed to be the actions of the emergency service. In the absence of a similar provision, policy holders in Victoria may have difficulty claiming on their policy on the basis that damage done by the ADF may not be deemed to be damage done by fire.

It is possible that a court interpreting this provision of the CFA Act, may conclude that directions passed down the chain from an Incident Controller to an ADF Commander and then to ADF personnel on the ground provide a strong enough nexus to infer that the ADF personnel in question are acting under the direction of the CFA. However, as tasks are given more general descriptions and as ADF personnel operate further away from the incident command centre, and possibly exercise more initiative, it is conceivable that such a link with the CFA may become more tenuous.

Unfortunately, the Victorian Bushfires Royal Commission provided little commentary on ADF involvement in Black Saturday and there is even less commentary from the ADF (beyond describing its

35. *Country Fire Authority Act 1958* (Vic) s 30.

36. Provided a delegation of this authority has been made by the Chief Officer in accordance with *Country Fire Authority Act 1958* (Vic) s 28(1).

37. *Country Fire Authority Act 1958* (Vic) s 30(b)(iii).

38. *Country Fire Authority Act 1958* (Vic) s 95(1).

39. *Country Fire Authority Act 1958* (Vic) s 92.

40. Attorney-General's Department (Cth), *Australian Government Disaster Response Plan (COMDISPLAN)* (2008), 13: deployed assets remain the responsibility of the parent agency; DI(G) OPS 5-1 (2004) 23.

41. *Country Fire Authority Act 1958* (Vic) s 93.





**May 6, 2009: Long Gully, VIC. Black Saturday 100 days on. Long Gully Gerald Egan (77) in front of the burnt out remains of his family property.**

contribution in general terms and the achievements that this enabled). Although there is no evidence that any legal issues or controversies arose, it remains the case that there are some unresolved questions about the use of ADF personnel in responding to fires. It is also conceivable that other situations may raise similar questions – for example, roadblocks or land and personal searches.

## Conclusion

Given the possibility that the ADF lack authority to undertake some 'augmentation' type tasks during disaster response activities, questions arise about the extent to which the common law or prerogative could support these tasks and ensure that the Commonwealth and ADF personnel avoid liability. Similar questions arose following the 'Siege of Bowral' in 1974 when the ADF was deployed to protect visiting heads of government from 'domestic violence' and to undertake Commonwealth 'self protection' tasks. In the context of the use of the ADF to protect the Commonwealth and the states and territories from acts of domestic violence and terrorism, these issues have been resolved by legislation,<sup>42</sup> and a clear 'left and right of arc' now exists.

However, the constitutional framework underpinning Commonwealth involvement in disaster relief is far less robust and a comprehensive legislative solution has not been established. Consequently, the Commonwealth's authority to respond to emergencies (short of catastrophic disasters or crises that seriously threaten the continued functioning of one or more state or territory) is not clear. This is particularly so noting the High Court's decision in *Pape*<sup>43</sup> in conjunction with

the Commonwealth's characterisation of disaster relief as an element of 'national security'. It is yet to be seen what, if any, impact these developments will have in the disaster response field.

Returning to the comments of Justice Hope, there is little doubt that using the ADF to respond to emergencies is a proper purpose. What appears lacking is proper control – not in the sense that ADF personnel may unduly infringe upon civil liberties per se, but rather the actions of ADF personnel could give rise to civil or criminal liability. Disaster response tasks can be physically risky. If the 'left and right of arc' is insufficiently clear such tasks may also be legally risky for ADF personnel and the Commonwealth.

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## Waiver

The views and arguments in this *paper* are my own, rendered in a private academic capacity. This *paper* has not been written on behalf of the Australian Defence Force, the Royal Australian Air Force, or any other related person or organisation, and should not be taken as expressing any form of official view. Official publications referred to in this *paper* carry an "unclassified" security classification.

42. See *Defence Act 1903* (Cth) Part IIIAAA

43. [2009] 238 CLR 1.

# The Commonwealth response to Cyclone Tracy: implications for future disasters.

By Joe McNamara, Australian National University.

## Introduction

Cyclone Tracy was a disaster on a scale unparalleled in Australian history. It caused millions of dollars in damage and destroyed most of Darwin (Chamberlain, Doube, Milne, Rolls & Western 1981, 97). It also exposed inadequacies in Commonwealth responses to disasters of its magnitude (Robertson 1999, 55).

Of Darwin's population of 45,000, over 30,000 people were subject to an evacuation overseen by the Natural Disasters Organisation (NDO), a Commonwealth body whose powers were poorly defined at the time of the cyclone (Jones 2010, 223). Even now, there remains significant confusion about the Commonwealth's role in disaster relief. No legislation exists that immediately addresses this issue (*Emergency Management Australia* 2011). Additionally, while there are disaster plans in place outlining how organisations relate to one another, these are unenforceable (*Australian Government Disaster Response Plan* 2008). They also place most responsibility for disaster relief with the states (*Australian Government Disaster Response Plan* 2008).

This paper will review the government response to Cyclone Tracy and determine the legal authority behind the Commonwealth's actions. In doing this, sources of Commonwealth power will be outlined, and their scopes and implications identified for application to future disasters.

## The events of Cyclone Tracy

By international standards, Cyclone Tracy was comparatively small. Until 2008, it held the record for smallest cyclone area, with gale force winds extending only 50km from its centre (*Hurricane Research Division-Frequently Asked Questions* 2009). Despite this, its effect on Darwin was devastating.

The first signs of the cyclone's imminence were detected by satellite almost a week prior to its landfall (Wilkie & Neal 1976, 474). Darwin had been threatened by Cyclone Selma weeks earlier, but had escaped unscathed, leading the population to assume that Cyclone Tracy would be similarly uneventful (Phelts 1999, 45). However, on the afternoon of Christmas Eve, high winds, storm clouds and rain were reported (Cyclone Tracy Exhibition 2007). The cyclone itself hit Darwin at about 2am on Christmas Day (Cyclone Tracy Exhibition 2007).

By the following morning, the majority of Darwin had been destroyed. Although it had survived major cyclones in 1897 and 1937, the city was unprepared for an incident of this magnitude (*Cyclone Tracy Exhibition* 2007). Most houses were built in the tropical style and were vulnerable to cyclones. Electrical services and running water had been disabled (*Cyclone Tracy Exhibition* 2007), while communications between Darwin and other parts of the country had been severed (Robertson 1999, 55). No-one took charge of the situation until 6.20am, when Major General Stretton, then head of the NDO, was notified (Robertson 1999, 55). The NDO had been created only a few months prior to Cyclone Tracy, as a response to catastrophic flooding in Brisbane that highlighted the Queensland State government's inability to cope with the demands of a major emergency (Dwyer 2006, 41). Similar events had occurred in 1967, when major fires devastated Hobart, overwhelming the Tasmanian government (Jones 2010, 222).

Once notified, Major General Stretton travelled to Darwin, where the decision was quickly made to place him in command, answerable only to the Prime Minister. Despite Major General's obvious military background, this was not a military endeavour (Robertson 1999, 56). Military personnel were deployed, but forbidden from carrying weapons (Head 2001, 273). Meanwhile, local officials were largely unsuccessful in organising themselves. There was no organised response to the disaster, and all the decisions were made by persons other than the local Northern Territory authorities (Jones 2010, 223). The next day, it was determined that Darwin was capable of supporting less than a quarter of its population, so the decision was made to evacuate, with residents leaving the city in military and civilian aircraft as well as by road (Jones 2010, 223). By 31 December, Darwin's population had been reduced to 10,500, and the emergency was declared over (Robertson 1999, 58).

In the aftermath of the cyclone, it became apparent that Darwin needed extensive rebuilding. The Commonwealth established the Darwin Reconstruction Commission, which was tasked with the responsibility of reconstructing the city in fewer than five years. This was in fact accomplished in fewer than three years. Nevertheless, the Commonwealth government was criticised for using the opportunity



December 1974: Darwin, NT. An injured survivor of Cyclone Tracy stands in front of the wreckage of a building in Darwin.

to re-create Darwin according to its own designs (1975 *Cabinet Records- Selected Documents* 1975).

The historical context in which these criticisms were made is important. The Prime Minister of the time, Gough Whitlam, was seeking to expand the role of Federal government into areas traditionally controlled by the States, such as education, through Specific Purpose Payments—packets of Commonwealth funding tied to purposes determined by the Commonwealth (Dwyer 2006, 43). Unlike other Commonwealth funding arrangements such as the normal s96 process, Specific Purpose Payments needed to be routed through State parliaments for approval. The Whitlam government made more extensive use of these Payments than any earlier government, paving the way for future governments to expand Commonwealth influence into areas such as health and education (Dwyer 2006, 43).

Ultimately, Darwin was rebuilt, but the trauma and social and political ramifications of Cyclone Tracy continue to this day.

## The Commonwealth response

The Commonwealth response raises several important legal issues.

### a. Northern Territory self-government

The Commonwealth has the power to make laws with regard to the Territories (*Commonwealth of Australia Constitution Act 1900* [Cth], s 122). The Northern Territory was granted self-government in 1978 (*Northern Territory (Self Government) Act 1978* [Cth]), four years after Cyclone Tracy. Thus, in 1974, the Territory was under the direct, legislative control of the

Commonwealth. The Commonwealth could exercise full authority in Darwin in circumstances that would not apply in any Australian State (*Commonwealth of Australia Constitution Act 1900* [Cth], s 122). Even now, while the Northern Territory has self-government, the Commonwealth could exercise legislative authority should it be required.

### b. The Commonwealth Constitution and disaster response

There is no doubt, that, given s 122 of the Commonwealth Constitution and the absence of Territory self-government, the Commonwealth was able to take direct action in the Northern Territory in 1974. What is not so clear is whether they could take similar action in 2012, or in one of the Australian States.

The Commonwealth may only act when it is permitted to do so by the Commonwealth Constitution. In contrast, State constitutions include clauses authorising those States to make laws relating to their peace, order and good governance. This has been held to mean that they can legislate on any subject not explicitly covered by the Commonwealth Constitution (*Union Steamship Co Ltd v King* [1988] 166 CLR 1), making disaster relief a State responsibility.

Commonwealth heads of power are articulated primarily in s 51 of the Constitution. While there is nothing specifically authorising disaster relief, there are several sections which allow the Commonwealth to involve itself in the relief process.

A second potential head of power is the external affairs power (*Commonwealth of Australia Constitution Act 1900* [Cth], s 51(xxix)). Where the Australian government has entered into treaties, the external affairs power can



be used to transform the obligations in these treaties into domestic law (*Commonwealth v Tasmania* (1983) 158 CLR 1). The *International Covenant on Economic, Social and Cultural Rights* contains rights to adequate food, clothing and housing, and requires governments party to the treaty to take steps to ensure that their citizens have access to those rights (*International Covenant on Economic, Social and Cultural Rights*). As the treaty was not ratified until 1975, the Commonwealth was not obliged to abide by it in 1974, but was obliged not to undermine it. Arguably, allowing Darwin to stay devastated without attempting to rebuild it would have demonstrated a blatant disregard for the provisions of the *Covenant*, and thus undermined it.

Another relevant head of power is the nationhood power. Section 51 (xxxix) grants the Commonwealth power over matters related to the role, operation and powers of government. Section 61 of the *Covenant* vests executive power in the Queen via her representative, the Governor-General. These sections have been held to grant the Commonwealth government, in particular the Executive, a wide range of powers associated with national, executive government (*Theophanous v Herald & Weekly Times Ltd* (1994) 182 CLR 102). Potentially, this could include responding to natural disasters that occur on a scale necessitating a national response. *Pape*, discussed below, expands on this issue.

### c. The role of defence

A general authority for the Commonwealth to deploy the defence force can be found in s 51(vi) of the Constitution. Specifically, the Commonwealth has the power to deploy forces within Australia in response to perceived threats against Commonwealth interests. It may protect itself from existential threats, even when

those threats are not of a military nature (*Australian Communist Party v Commonwealth* (1951) 83 CLR 1).

There is a perception that the use of the defence force in civilian settings should be tightly controlled (White 2005, 438). Thus, politicians are reluctant to order such deployments unless the existence of the Commonwealth is under threat. It is unlikely that a natural disaster could occur on this scale. Even the 2011 floods in Queensland had only a minor effect on the national economy, with the GDP falling by 0.4% (*Economic Impact of the Queensland Floods 2011*), and led to no civil disturbance or violence.

State governments may request military aid in dealing with disasters. The circumstances under which this can be requested are outlined in the *Defence Assistance to the Civil Community* guidelines. It is worth noting that they may have been invoked in the circumstances of Cyclone Tracy. However, the cyclone hit with very little warning, and in the immediate aftermath of the event there was no effective local government, so there would have been no-one capable of requesting military aid (Robertson 1999, 57).

### d. Martial law

The status of the soldiers involved in disaster relief efforts is unclear. Major General Stretton made it clear during Cyclone Tracy that he was acting in his civilian capacity as director of the NDO (Head 2001, 273). His refusal to declare martial law actually earned him criticism from other military figures at the time (Head 2001, 273). Australia has no martial law tradition, so any declaration to that effect would have been controversial, especially given the lack of concrete legal authority to support it.



December, 1974. Darwin, NT. Then Prime Minister, Mr. Gough Whitlam, M.P. (first white car) inspects the wrecked suburb of Casuarina after Cyclone Tracy hit Darwin.

© NewsPix / Bruce Howard



## Legal and political developments since 1974

Since Cyclone Tracy, there have been several developments which could affect the form a Commonwealth response would take today. The justification for intervening in disasters has been clarified by a line of cases culminating in *Pape v Commissioner of Taxation* and legislation has been passed which authorises compulsory evacuations and grants powers to officials to control the movements of persons in disaster-affected areas. If an event such as Cyclone Tracy took place today, it is likely that the practical response would be similar to what happened in 1974, but it would be on much more solid legal ground.

### a. *Pape v Commissioner of taxation*

One potential legal justification for Commonwealth involvement in disasters like Cyclone Tracy is the nationhood power. Because this power is not explicit, and has its roots in the equally undefined royal prerogative, a line of cases has developed in an attempt to clarify it.

The Constitution was created in the legal context of the day. In 1901, it was considered unnecessary to define the royal powers outlined in s 61. Because the Constitution was originally an expression of British imperial power, its descent from the British royal prerogative was clear (Kerr 2011, 26).

In 1994, Theophanous suggested that, rather than being authorised by imperial power, the power underlying the Constitution came from its democratic mandate (*Theophanous v Herald & Weekly Times Ltd* (1994) 182 CLR 102). This decoupled the nationhood power from royal prerogative, requiring the courts to define the power (Kerr 2011, 26). *Vadarlis* concerned the power to deport aliens, traditionally part of the royal prerogative, and whether this could be justified under the nationhood power. Here, the court reaffirmed the *Theophanous* principle that the nationhood power was separate from the royal prerogative, stating that the nationhood power authorised the Commonwealth government to legislate on topics it should logically be able to as a national government (*Ruddock v Vadarlis* (2001) 110 FCR 491).

More recently, *Pape* concerned the legality of the stimulus package introduced in response to the Global Financial Crisis. It hinged directly to the Commonwealth's ability to respond to disasters, albeit not necessarily natural ones. *Pape* reaffirmed the nationhood description from *Vadarlis*, defining the power as covering subject matter suited to national government by its nature (*Pape v Commissioner of Taxation* [2009] HCA 23 [233]). The majority also noted that, like defence power, the nationhood power was elastic, and could expand in times of national emergency (Kerr 2011, 39). This could authorise the creation of national-level responses to natural disasters. Thus, it could now be used to justify executive actions such as those seen in *Vadarlis* and in the deployment of the NDO and the ADF after

Cyclone Tracy. The *Pape* decision was the first to mention disaster relief as part of the nationhood power, which will make it easier for future disaster relief efforts to stand up to scrutiny.

This being the case, *Pape's* implications are not totally settled. It was noted by the minority that 'emergency' was an extremely vague category of events, too broad to hang a major constitutional doctrine from (*Pape v Commissioner of Taxation* [2009] HCA 23 [347]). It would also be easy to distinguish other disasters from the Global Financial Crisis, which happened over several months and involved no physical danger to individuals or property. By comparison, Cyclone Tracy caused massive destruction in fewer than 24 hours. As uses of the nationhood power are asserted on a case-by-case basis, these factual differences are important (Kerr 2011, 39).

### b. Compulsory evacuations

There was little need for compulsory evacuations in the aftermath of Cyclone Tracy. Most inhabitants of Darwin, when confronted with the reality of their situation, were ready to leave and did not need to be persuaded (Robertson 1999, 57). Nonetheless, when compulsory evacuations are necessary, legislation authorising them now exists. The powers and obligations of emergency services personnel differ between States, with whom legislative power resides. Rather than one overriding Commonwealth Act, there are a number of disparate State Acts, each granting different powers (Loh 2007, 5).

The relevant Northern Territory Acts are the *Fire and Emergency Act 1996* (NT), which authorises a nominated incident controller to order persons to vacate land (*Fire and Emergency Act 1996* (NT), s 20), and the *Disasters Act 1982* (NT). Unlike similar legislation elsewhere, the *Fire and Emergency Act* does not make ignoring such orders an offence. Thus, it is unclear what the consequences of doing so would be. It is also unclear whether persons other than the incident controller, such as soldiers or emergency services personnel, are able to order persons to leave areas (Loh 2007, 5). While the incident controller can delegate other persons to act for them, it does not authorise persons who are not the incident controller to take similar actions.

## Conclusion

Disaster response management has traditionally been the responsibility of local and State governments. However, as events like Cyclone Tracy demonstrate, it is possible for natural disasters to overwhelm local and State governments, necessitating the involvement of the Commonwealth. When this happened in 1974, there was unclear and fragmented legal support for the actions taken by the Commonwealth.

Since that time, several changes have taken place. The power of the Commonwealth to intervene in national emergencies was increased in *Pape*. The nature of large-scale disaster relief is such that it would likely fall

within the scope of the nationhood power as defined by that case. The Commonwealth is also better placed to provide funds for reconstruction due to larger resources pool.

Nonetheless, despite these changes, disaster relief is still conceived of as primarily a State responsibility. While Australia is much closer to having a defined Commonwealth response to natural disasters than it was in 1974, there remain ambiguities as to what exactly could be done if Cyclone Tracy were to happen again.

## References

**Bradley, T** 2011, 'Reconstructing Queensland after the Floods: Overview of the Queensland Government's Legislative Response', *Australian Property Law Bulletin*, vol. 25, no. 7, p. 258.

**Chamberlain, E R, Doube, L, Milne, G, Rolls, M & Western, J S** 1981, *The Experience of Cyclone Tracy*, Australian Government Publishing Service, Canberra.

**Commonwealth of Australia Constitution Act** 1900 (Cth).

**Commonwealth v Tasmania** (1983) 158 CLR 1.

**Cyclone Tracy Exhibition** 2007, Northern Territory Government, viewed 02 March 2011, <[http://www.nt.nt.gov.au/online\\_resources/cyclone\\_tracy](http://www.nt.nt.gov.au/online_resources/cyclone_tracy)>

**Defence Act** 1903 (Cth).

**Defence Legislation Amendment (Aid to Civilian Authorities) Act** 2000 (Cth).

**Disasters Act** 1982 (NT).

**Dwyer, A** 2006, 'Cyclone Tracy and Whitlam's 'New' Federalism: Implications for the Management of Natural Disasters in Australia', *Australian Journal of Emergency Management*, vol. 21, no. 3, pp. 41-43.

**Economic Impact of the Queensland Floods, Macquarie Group**, viewed 02 March 2011, <<http://www.macquarie.com.au/mgl/au/advisers/keep-up-to-date/oxygen/march-2011/economic-update>>

**Fire and Emergency Act** 1996 (NT).

**Head, M** 2001, 'The Military Call-Out Legislation- Some Legal and Constitutional Questions', *Federal Law Review*, vol. 29, no. 2, p. 273.

**Hurricane Research Division - Frequently Asked Questions** 2009, *Atlantic Oceanographic and Meteorological Library, US Department of Commerce*, viewed 02 March 2011, <<http://www.aoml.noaa.gov/hrd/tcfaq/E5.html>>

**International Covenant on Economic, Social and Cultural Rights**, opened for signature 16 December 1966, entered into force 3 January 1977.

**Jones, R** 2010, 'Managing the National Response: The Canberra Story', *Australian Meteorological and Oceanographic Journal*, vol. 60, pp. 221-223.

**Kerr, D** 2011, 'Executive Power and the Theory of its Limits: Still Evolving or Finally Settled?', *Constitutional Law and Policy Review*, vol. 13, no. 2, pp. 22-26.

**Loh, E** 2007, 'Evacuation Powers of Emergency Workers and Emergency-Service Organisations in Australia', *Australian Journal of Emergency Management*, vol. 22, no.4, pp. 3-5.

**Natural Disaster Relief and Recovery Arrangements** 2011, Attorney-General's Department, viewed 28 March 2011, <[http://www.ema.gov.au/www/emaweb/emaweb.nsf/page/emergencymanagement\\_recoveringfromemergencies\\_naturaldisasterreliefandrecoveryarrangements\\_naturaldisasterreliefandrecoveryarrangements](http://www.ema.gov.au/www/emaweb/emaweb.nsf/page/emergencymanagement_recoveringfromemergencies_naturaldisasterreliefandrecoveryarrangements_naturaldisasterreliefandrecoveryarrangements)>

**Northern Territory (Self Government) Act** 1978 (Cth).

**Pape v Commissioner of Taxation** 2009 HCA 23.

**Phelts, B** 1999, 'Mission Impossible? The Restoration of Electricity after Cyclone Tracy', *Journal of Northern Territory History*, vol. 10, p. 45.

**Queensland Reconstruction Authority Act** 2011 (QLD).

**Robertson, H** 1999, 'Darwin's Churchill: The Role of Major-General Alan Stretton in the Days Following Cyclone Tracy', *Journal of Northern Territory History*, vol. 10, pp. 55-58.

**Ruddock v Vadarlis** 2001 110 FCR 491.

**Theophanous v Herald & Weekly Times Ltd** (1994) 182 CLR 102.

**Union Steamship Co Ltd v King** 1988 166 CLR 1.

**White, M** 2005, 'The Executive and the Military', *University of New South Wales Law Journal*, vol. 28, no. 2, pp. 438.

**Wilkie, W R & Neal, A B**, 'Meteorological Features of Cyclone Tracy' (Paper presented at 'Natural Hazards in Australia', Canberra, May 1976).

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# Moving from theory to praxis on the fly: introducing a salutogenic method to expedite mental health care provision in disaster situations.

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(ORIGINALLY PRESENTED AT THE AUSTRALIAN RURAL AND REMOTE MENTAL HEALTH SYMPOSIUM IN CANBERRA, 2 NOVEMBER 2009)

## Introduction

Not a lot is known about most mental illness. Its triggers can rarely be established and nor can its aetiological dynamics, so it is hardly surprising that the accepted treatments for most mental illnesses are really strategies to manage the most overt symptoms. But with such a dearth of knowledge, how can worthy decisions be made about psychiatric interventions, especially given time and budgetary restrictions?

This paper introduces a method, extrapolated from Salutogenics; the psycho-social theory of health introduced by Antonovsky in 1987. This method takes a normative stance (that psychiatric health care is for the betterment of psychiatric patients), and applies it to any context where there is a dearth of workable knowledge. In lieu of guiding evidence, the method identifies reasonable alternatives on the fly, enabling rational decisions to be made quickly with limited resources.

An emergency psychiatric response is the sort of time-critical intervention that might not be well informed by enough evidence to proceed quickly but must regardless. Whatever the nature of the emergency, it is the very nature of catastrophes that they catch people unprepared; in recent history we've seen bushfires, floods, earthquakes, tsunamis, storms, volcanoes, landslides and winds. The events are diverse in nature, but the effect on people is consistent and devastating.

It is the nature of emergencies that they are sudden and catastrophic (Galambos 2005). A swift turn of events means that some people lose their lives and other lives are put on tenterhooks. The initial damage tends to be physical and material, but mental health issues follow close behind. Whatever the emergency

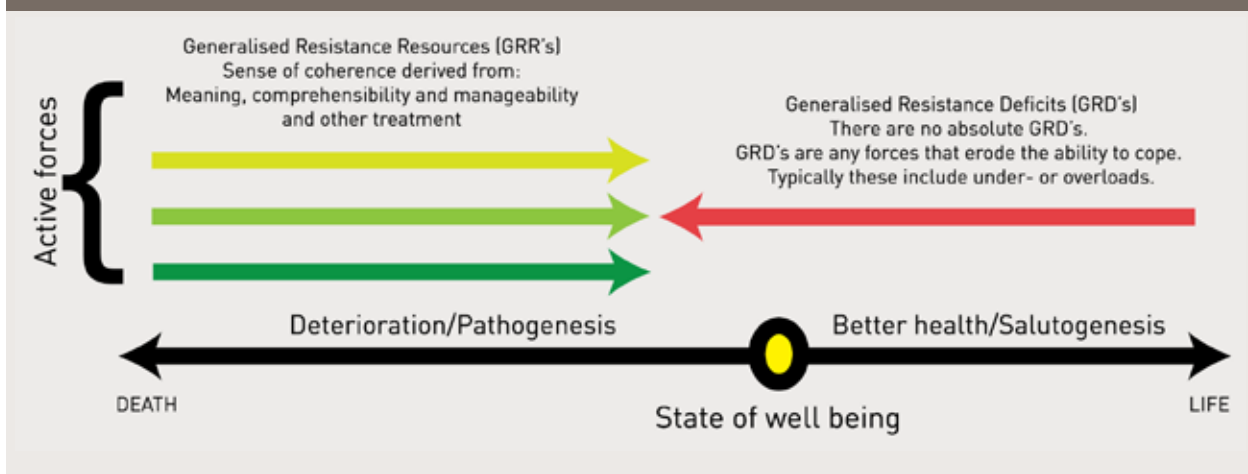
event; be it tsunami, bushfire, storm, flood or earthquake, the initial impact of the disaster only spells the beginning of the catastrophe. Because of supply interruptions, provisions for basic needs such as communication, shelter, food, sanitation and water as well as health services and social networks, matters tend to deteriorate after the initial shock. It is at this early stage when mental health issues begin to compound a disaster.

It is a conceit to think of mental and physical health as separate issues. Although they are distinct, the two are intimately related. One will exacerbate the other<sup>1</sup>. That is, mental stress tends to make physical illness worse and vice versa. For this reason it is imperative that service providers address mental issues as quickly and appropriately as possible after a catastrophic event, just as they will food, shelter and sanitation.

Delays in the provision of all forms of emergency care can be caused by indecision about what is suitable action. The question of appropriateness always calls for normative decisions based on subjective opinion – and those opinions are difficult to justify in life and death situations – especially when providing a limited resource to one person might mean someone else will go without. The outcome, sadly, is that decisions sometimes aren't made and this only makes matters worse. It is for the psychological comfort of the decision makers that they (we) want to rely on evidence to make decisions. Evidence based decisions are easily justified and move the burden of decision making to scientists elsewhere. And fair enough. There's little doubt that empiricism is the most suitable way forward in the circumstances where empirical evidence exists and is available at hand (Galambos 2005). This is, sadly, rarely the case.

1. This is true in situations where the emergency was an unusual occurrence. In situations where emergencies are regular and expected, such as in the North East of NSW, which is subject to frequent flooding, events cause some psychological stress, but probably don't trigger mental illness as such (Little 2009).

Figure 1: Antonovsky's salutogenic theory (1987)



The scientific method is very specific and conclusions can only be proven if they are drawn in isolation from any confounding variables that might otherwise influence the data. Not just is this clinical approach divorced from reality, but more significantly, the findings tend to be incremental and as such there isn't enough empirical data to answer most basic real world problems. I am an architect and I specialise in mental health design<sup>2</sup>. Like emergency services provision, there is a huge onus on evidence to generate any innovations in this area of the profession.

As with emergency services provision, evidence is time consuming to locate and analyse, and in many cases it turns out to be irrelevant in any case. There are few clients who are willing to encumber their design bills with much time for research, and yet, decisions need to be made constantly because architectural problems are incredibly consequent. One minor change here will affect something else elsewhere. Like the problems that face providers for emergencies, the problems we face are incredibly complicated and open ended, often with no clear solutions. Thus we usually have two ways forward. To continue to do things the way they have always been done – even if we suspect those methods are dated or plain wrong. Or we have to take risks and improvise. But I have been faced with these problems and have tried both methods and found them both deficient – so I developed a methodology that allows reasonable decisions to be made on the fly. And the same methodology can be easily adapted to enable quick and appropriate decision making for various logistical tasks in emergency situations.

Firstly it is important to understand that every provision means the denial of something else because resources are always limited in some way. It's like going and ordering at a restaurant. Out of the twenty dishes presented you'll only get to choose one. If the choice is yours, there's a fair chance it will be the best choice. If the choice is left to someone else – your spouse for example, you might be disappointed.

The defence that 'beggars can't be choosers,' is unhelpful. It is not the spirit of fine dining to be classed as a beggar! Significantly, the more victims of emergencies can be spared a similar attitude the better.

Aaron Antonovsky's salutogenic theory (1987) demonstrated that the distinction between sickness and health is indistinct and a person's level of well-being will be somewhere on the continuum between death and a theoretical state of perfect health. Antonovsky found that a person's state of health reflects a person's sense of coherence. The more a person feels they understand and make a contribution to the world around them, the stronger their resistance to illness.

Antonovsky breaks down a sense of coherence into three domains of importance. A strong sense of coherence is supported by feelings of **comprehensibility, manageability and meaningfulness** (Golembiewski 2010, 2012). Ultimately a SOC builds a *dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected* (Bahrs, Heim *et al.* 2003). These categories can be extrapolated to find easy application in emergency situations as a salutogenic method. When applied to emergency care, **comprehensibility is the matter-of-fact understanding of the situation a subject finds him or herself in**. In a disaster situation this can mean information; who, why, what, where, how and when. **Manageability**, the next of the principles of salutogenic theory extrapolates to mean **action and empowerment** and in an emergency situation it will be the things that enable survival, things like food, water, communication, shelter and things that can be done to lessen the impact of the disaster. **Meaning** is the most illusive of all the salutogenic principles, yet it is in many ways the most important. Meaning always comes into question during disasters, yet it is the hardest issue to address. Meaning is the subject of the big question; "but why?" If meaning

2. I also have some experience with emergency services provision; I was part of Bangun, a UNSW effort to assist survivors of the 2004 Boxing Day Tsunami. (Golembiewski, Ho & Wong 2004)



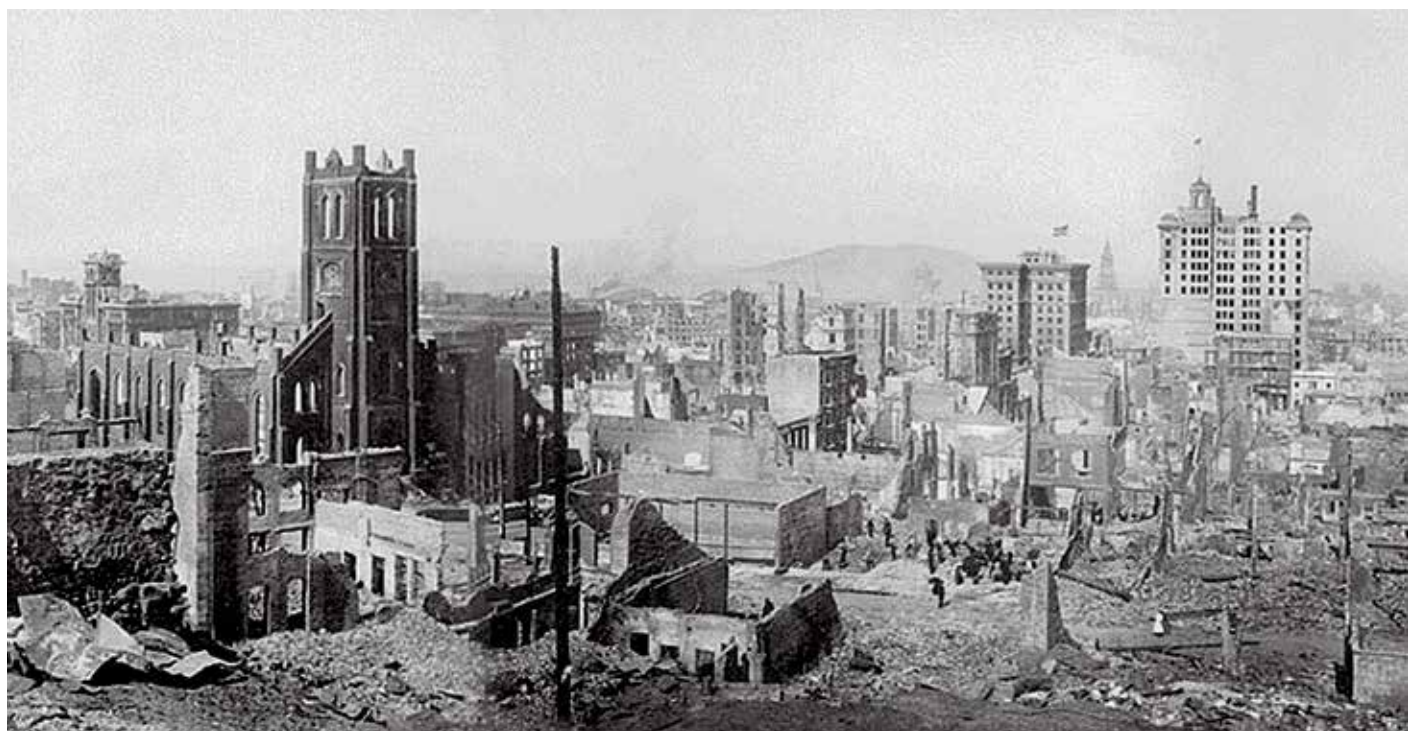
can be sustained, then survival in the most difficult and horrific circumstances becomes possible (Frankl 1963). This kind of survival gives others hope. It is the stuff of miracles, and it is through these miracles that meaning is fostered in others.

A salutogenic methodology for emergency care ensures that the best interests of the victims of disasters are always maintained with a holistic perspective, even when dealing with the minutiae of service provision. It is an approach to understanding the individual's needs holistically and in such a way that the effort isn't likely to interfere with the psycho-social needs of the subjects. This method is intended to be used by communication officers through to people at the cold face because it is simple to remember and easy to apply. It's just a matter of keeping three things at the forefront of mind: Comprehensibility, manageability and meaningfulness, and having an idea of how these concepts work on the ground. With more complex projects (such as architecture or emergency service provision), each decision can be analysed with respect to the three salutogenic categories to see how elements relating to a sense of coherence can be incrementally supported. It is important to remember that this method is designed for use on the fly and mistakes are okay, to make an error of judgement using a salutogenic theory is better than having no theoretical basis whatsoever.

**Comprehensibility is maintained when people are kept abreast of what's happening.** In the case of the Victorian fires, there was a need for information about where the fires were heading and at what velocity. Information is also needed about the emergency response. When will help arrive? People need to know who is dead and who survived. They need to know about

the safety of their family, friends, pets and livestock. They need to know if their homes are in danger or if there is anything left of them. These are all very profound issues and quality information is an extremely important tool for the maintenance of a sense of coherence. The inverse is also true. Rumours and lies are harmful (Freyd, Klest *et al.* 2005). And so too can be 'shielding' survivors from the truth (although this is a complex issue in itself because the truth is rarely definitive and hope must also be maintained as much as possible). It might be really tough to tell a mother that her child has died, but if it is absolutely and unavoidably true, there is no protecting her from that fact. Yes, sympathy is called for and it might be 'the last straw', but it is an inevitable last straw, and at the very least it shouldn't come with added ugliness from deceit and distrust (Meyer 1969).

When information is given in an emergency, accuracy and honesty is imperative. Under promising allows expectations to be exceeded, carrying a strong message of hope and that everything is working out as well as possible. Disappointment on the other hand might be taken as betrayal. The art of making promises has implications for higher levels of coherence. When stressed, people might be excused for making unreasonable demands. They might, for instance, extract promises that are difficult or impossible to keep. Who, after all, wants to deny someone who is desperate and might have his or her life in danger? Who wouldn't prefer to lie and say, 'don't worry. Everything will be fine?' But a hastily made guess that 'someone will be there to help in a couple of hours,' can start doing damage at 120 minutes and 1 second (Alomes 2009). The reason is because the promise suddenly becomes questionable, and at this point meaning starts to erode (Golembiewski 2009).



San Francisco earthquake.

Whether it is the provision of food, water, shelter, blankets or medical services, **most aid and emergency provisioning focuses on improving manageability** – usually helping people to help themselves. Its critical, but the obviousness of this area of concern tends to dominate emergency provisioning. Needs – physical ones are the squeaky wheel of emergency care. Information and material support enables people to act. And when people act, and feel that they can do something, their overall sense of coherence improves. This is good for health outcomes, and having people move from stunned/disabled mode to being an active participant in the rescue effort means another hand (with local knowledge) at the helm.

The absence of the things that make life manageable has obvious consequences, although they are not as significant as we tend to assume. Lack of food, water and shelter will be a source of stress that will make outcomes worse, but with meaning and comprehensibility needs looked after, people can go a long time without basics. As Frank Lloyd Wright famously said, “give me the luxuries of life, and I’ll gladly go without the necessities.”

**Meaning is the most difficult aspect of the salutogenic theory to understand and to provide for, but it is nevertheless the most important.** Meaning is the glue of life. It is what makes lives whole and fulfilled. In psychotherapy, it is only when our life’s narratives are revealed to be meaningful that there is release and resolution (Clarkson 2006). Meaning is the force that binds social groups together and is a major purpose of religious belief (Obeyesekere 1981, Dirckheim 1976) All aesthetics, literature, art, and all other ubiquitous abstracts of human endeavour relate to and contribute to meaning (Golembiewski 2012).

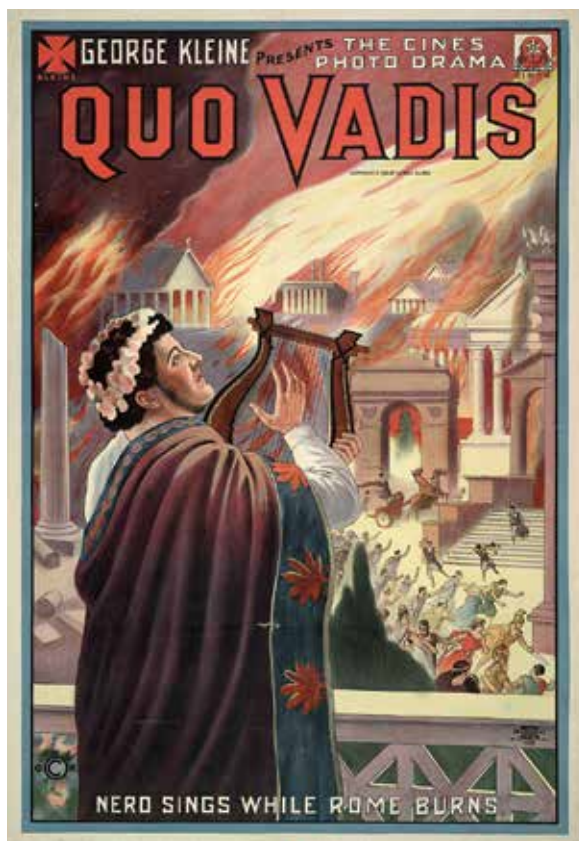
Meaning gives people the power to withstand inhuman conditions, starvation, illness, and extreme conditions (Frankl 1963). There are theories about why and how meaning gives people such tenacity, but it is not the purpose of this paper to go into these debates (For more information, see Golembiewski 2009).

Whilst meaning is associated with arts and the complexities of culture, there is no suggestion that reading poems will be of any use to someone who has just lost their family in a bushfire (on the other hand, it might happen to be just what’s needed!) In emergency situations meaning can be defined as whatever is of critical importance to the subjects. It means concern for life, for the people they care about, and sometimes for significant cultural constructions like religion, history and tradition. Meaning is what creates the desire to stay alive. And the desire to stay alive keeps people alive. Meaning comes from anywhere and everywhere, but there are some sources that are especially potent. Sometimes the emergency effort itself can contribute meaning, after all, being needed is a big one. Emergencies are situations where the people who are needed, are needed to the extreme. Thus involvement in the rescue operation is a good way to help people through their grief and hardship. This is true to the extent that fire-fighter’s have commonly been found to be arsonists, lighting fires, so they can fight them and feel significant as humans. By fighting fires, the arsonists found camaraderie and intense personal narratives, both of which are critically important contributors to a sense of meaning (Australian Institute of Criminology 2005).

Under normal circumstances meaning is a stable constant for most people. It waxes and wanes a bit, but in circumstances of extreme displacement it







becomes mobile. Meaning is based on a personal ontology – a holistic foundation of connections, meaningful associations and distinctions and narratives that are created throughout a person’s entire life. As things are found to ‘make sense’ they contribute to this holistic body of knowledge and order. And things that don’t make any sense and cannot be understood directly challenge a person’s ontology, causing severe disturbances until everything makes sense again (Golembiewski 2009). In emergency circumstances meaning can be a double-edged sword. The power of meaning to do good by maintaining a person’s psyche can suddenly come under fire. The elusiveness of meaning means that it is particularly susceptible to inversion. Meaning can suddenly become meaningless – especially in extreme circumstances. And meaningfulness undermines a salutogenic framework like nothing else can. This causes bizarre and frightening expressions such as mutism or emotional shut-down (Reach Out 2009). In fact, there is every possibility that the atomisation of an ontological framework is the root cause of every single case of mental illness – especially the psychoses (Searles 1966; Golembiewski 2009).

The capacity for the ontology to flip makes the protection of meaning the single most important function of the emergency caregiver. The well-accepted model proposed by Maslow (the hierarchy of needs model), places meaning as a ‘higher’ need that can only be considered once the stability of ‘lower’ needs such as shelter or food is established. This truism is false. Rather it is the ontology the ‘highest need,’ that

is the foundation upon which everything is known. The ontology is the product of self-actualisation. Without a strong ontology, a person loses the capacity to think, feel, or even act. But people can go without basic needs or make do indefinitely if the struggle is meaningful. There is meaning in place and even in the narrative of hanging in there against the odds.

Of course the maintenance of someone else’s body of wisdom and experience isn’t possible because we still have no means to occupy somebody else’s mind. So how can we help? We can be on the lookout. As we know that emergencies trigger ontological challenges we can encourage people to find direction when they most need it. Getting survivors active and involved in the emergency effort when they look like they might otherwise take a turn for the worse can be a good idea. We can be encouraging, helping the survivors of disaster understand that all that is humanly possible will be done and that the things will work out as well as can reasonably be expected. It is important, however not to overplay this, as dashed promises or misinformation are often the tipping point to despair (Alomes 2009). In catastrophes, the survivors must be allowed to feel that they can trust the providers and care they are getting. Consider the anger after Hurricane Katrina when misinformation about looting caused the mobilisation of armed troops with orders to shoot. The McLeod Commission noted that the greatest failure of the bushfire response was the misinformation that the response team disseminated in good faith (McLeod 2003).

Frequently ontological shifts mean that old spiritual models will be dismissed. In these circumstances missionaries for various faiths can do a lot of good, even as they prey on the victims of disaster. Rigid belief systems offer support when it is most needed, like a crutch, but have a tendency to fail people down the track (Antonovsky 1987). In emergencies missionary activity can be a double edged sword of its own – often missionaries are very experienced and generous caregivers who ask nothing in return, but cultural suitability of service provision is an issue that cannot be overlooked. Culture is a very important source of meaning and is a context for our life’s narratives.

When Nero famously played the fiddle while his city burned, was he mad or was he reaching for the thing that gave him meaning and a sense of control at a time of extreme disempowerment and inevitable death? In emergency situations even empirically tested and well-accepted theory and information may not apply. Catastrophes both change the normal order of things and the speed with which decisions have to be made. So it is essential that people who are to go out and face emergencies are equipped to make clever decisions on the fly. An extrapolation of salutogenics (a salutogenic method), is a fine tool for such circumstances, because it is easy to guess how little efforts might be amplified once projected onto a simple salutogenic framework; how does an action affect manageability, comprehensibility and the sense of meaning? Is the sum force on the coherence continuum likely to be life supporting or not?

## References

**Alomes, V.** (2009). *Alive and Well; A new and total approach to suicide prevention and community well being in rural areas.* Australian Rural and Remote Mental Health Symposium. Canberra, Beyond Blue National Depression Initiative.

**Antonovsky, A.** (1987). *Unravelling the Mystery of Health.* San Francisco, Jossey-Bass Inc.

**Australian Institute of Criminology** (2005). *Firefighter arson.* Canberra, Commonwealth of Australia.

**Bahrs, O., S. Heim, et al.** (2003). *Salutogenesis in General Practice; How to use the Potential of Doctor-Patient-Communication to Promote Health 2nd Conference on Making Sense of: Health, Illness and Disease.* St Hilda's College, Oxford.

**Bunk, S.** (2004). *World on Fire.* Public Library of Science. Northwest\_Crown\_Fire\_Experiment.png. Northwest Territories, Canada.

**Carson, N.** (2009). *Smoke mixes with clouds over Warrandyte on the afternoon of the 8th of February. Looking northeast.* 2009\_bushfires\_Warrandyte\_wikicommons.jpg. Warrandyte, Wikicommons.

**Clarkson, J. D.** (2006). *The Dream Not Yet: a journey into the not so mystic world of psychotherapy.* Claremont, Western Australia, J G Clarkson Assoc.

**Ellsworth, W. L.** (1990). *The San Andreas Fault System. Earthquake history, 1769-1989.* R. E. Wallace (ed.). California, United States Geological Survey. 1515: 152-187.

**Factoryjoe** (2009). *Maslow's hierarchy of needs under creative commons licence,* Wikicommons.

**Frankl, V. E.** (1963). *Man's Search for Meaning: An Introduction to Logotherapy.* New York, Pocket Books.

**Freyd, J., B. Klest, et al.** (2005). "Betrayal trauma: Relationship to physical health, psychological distress, and a written disclosure intervention." *Journal of Trauma & Dissociation* 6(3): 83-104.

**Galambos, C. M.** (2005). "Natural Disasters: Health and Mental Health Considerations." *Health and Social Work* 30(2): 83-87.

**Golembiewski, J.** (2009). *We are our architecture.* Science and Non-duality Conference. San Rafael, California, Centre for Consciousness Studies, (University of Arizona) Available through; [Conference.recording.com](http://Conference.recording.com). SND29-315 DVD 3/3.

**Golembiewski, J.** (2010). "Start making sense; Applying a salutogenic model to architectural design for psychiatric care." *Facilities* (Emerald Publishing Group PLC.) 28(3).

**Golembiewski, Jan.** (2012). *So you're going to design a mental health facility? How to make it future-proof.* *World Health Design Scientific Review*, 5(2), 74-79.

**Golembiewski, J., B. Ho, et al.** (2004). *Shelter.* In P. Droege & S. Hawken (Eds.), *Bangun: A response manual for tsunamis and other natural disasters* (pp. 3.1-3.24). Sydney: UNSW. (<http://www.fbe.unsw.edu.au/courses/bangun/manual.asp>) This is an open source resource. No rights have been retained.

**Johnson, K.** (2009). *Awakening in prison. Science and Non Duality Conference.* San Rafael, Centre for Consciousness Studies, (University of Arizona). SND C14

**Little, A.** (2009). *Service network approaches to supporting rural communities following disasters.* Australian Rural and Remote Mental Health Symposium. Canberra, Australia New Zealand Mental Health Association.

**McLeod, R.** (2003). *Inquiry into the Operational Response to the January 2003 Bushfires in the ACT.* ACT, Department of the Chief Minister.

**Meyer, B.** (1969). "Truth and the physician." *Bulletin of the New York Academy of Medicine* 45(1): 59.

**Obeyesekere, G.** (1981). *Medusa's Hair; an essay on personal symbols and religious experience.* Chicago, University of Chicago Press.

**Quo Vadis** (1924). *Quo Vadis poster.* Rights expired.

**Reach Out.** (2009). "After someone has died." From <http://au.reachout.com/find/articles/after-someone-has-died>.

**Records of the Office of the Chief Signal Officer** (1906). *San Francisco Earthquake, National archives and Records Administration.*

**Searles, H.** (1966). "Concerning the development of an identity." *Psychoanalytic Review* 53(4): 7-30.

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**Jan Golembiewski** is an architect and neuroscientist. He is a specialist in architecture to improve patients' sense of well-being.



# Applying Intelligence Surveillance Reconnaissance for dynamic emergency management and a new perspective for US Department of Defence Architecture Framework.

By H. Keith Quarles, Thomas A. Mazzuchi, DSc; Shahram Sarkani, PhD and Timothy J. Eveleigh, DSc The George Washington University.

## ABSTRACT

In the past few years if we have learned anything about emergency management and weather-related disasters it is that they are unpredictable. Many studies and models have been developed regarding planning and preparation for such occurrences. Emergency management organisations at various governmental levels will choose a model based on their specific requirements or possibly budgetary restrictions. But in either case detailed planning will generate individual Courses of Action (COA) due to different scenarios obtained from a model. When situations arise that do not follow the model then the Emergency Operations Centre (EOC) and the Incident Commander (IC) are thrown into a foot race to create a new COA because time can mean everything in disaster situations. To assist military commanders with current and timely information, Intelligence Surveillance Reconnaissance (ISR) has grown into a critical system for the successful planning and coordination of operations. The timely input of new information allows for personnel and equipment to be utilized in the most effective manner possible. The integration of ISR systems with the emergency management system could serve the EOC and the IC with the same timely and accurate information needed to convert the current reactive modelling process into a dynamic process in order to keep pace with fluid, real world events. <sup>®</sup>

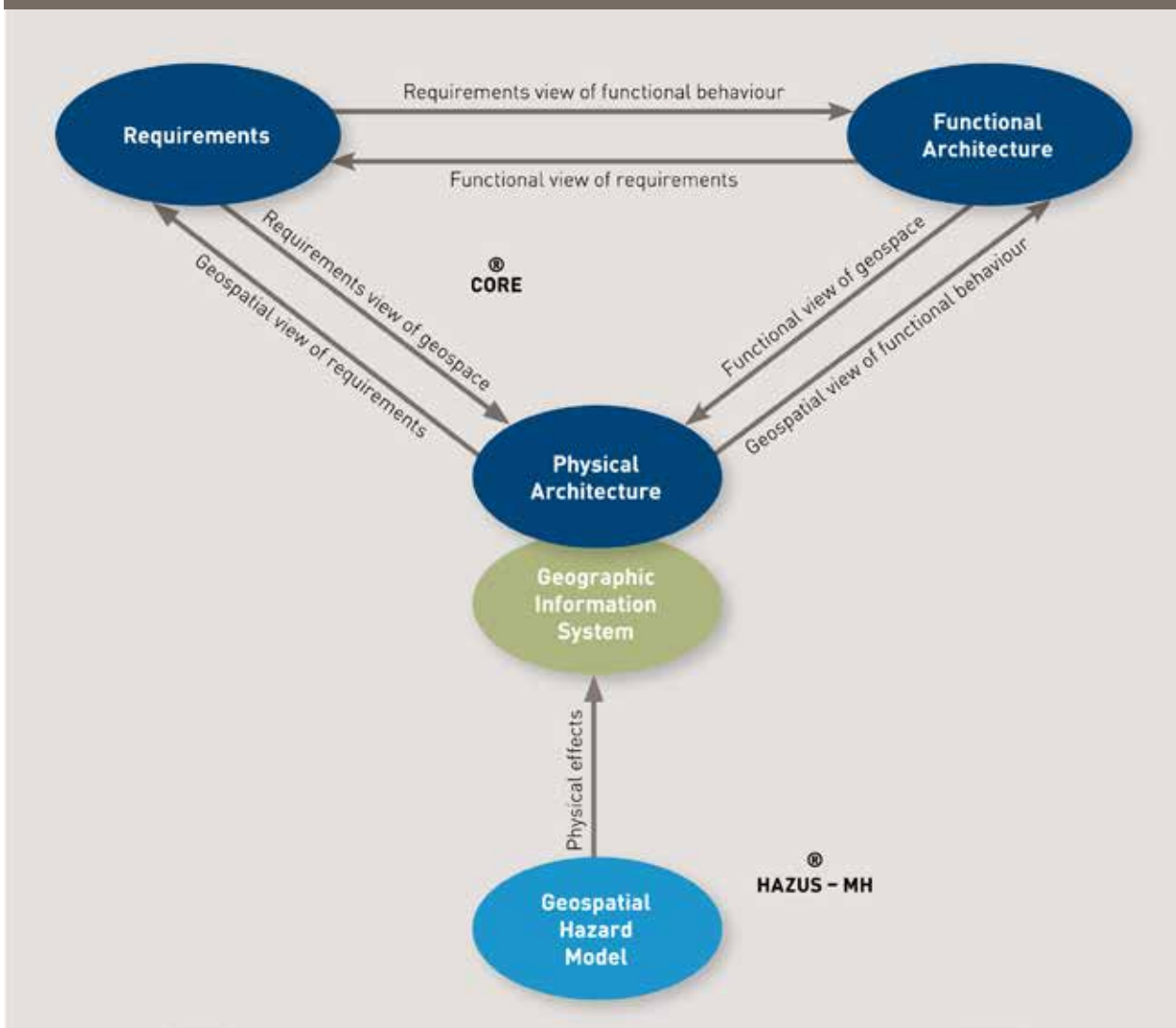
## Introduction

In the past few years if we have learned anything about emergency management and weather related disasters it is that they are unpredictable. Many studies and models have been developed regarding planning and preparation for such occurrences (Schaffer, 2010). Emergency management organisations at various governmental levels will choose a model based on their specific requirements or possibly budgetary restrictions. But in either case, detailed planning will generate individual Courses of Action (COA) due to different scenarios obtained from a model. When situations arise that do not follow the model then the Emergency Operations Center (EOC) and the Incident Commander (IC) are thrown into a foot race to create a new COA because time can mean everything in disaster situations, as noted with the western US wildfires during the summer of 2010, Hurricane Katrina (Sovada, 2008), and the earthquake devastation in Haiti relief effort (Cruz, 2010).

The military is probably the best benchmark for plan development and having an alternate plan ready for implementation. This may be due to a common saying within the military, 'no plan survives first contact with the enemy' (Moltke *et al.*, 1993). Not that the overall plan is forgotten but a strategy of 'adapt and overcome' is implemented to move beyond the roadblocks to success. A part of that adaptive nature is feedback. New information is obtained and a new plan is generated in order to continue the mission. In today's planning environment, technologic advancements in Intelligence, Surveillance and Reconnaissance (ISR) fill a large part of that feedback loop.

"ISR is the integrated capability to task, collect, process, exploit, and disseminate accurate and timely intelligence" (U. S. Air Force, 2002). This is a critical function for the military commander to have in order to successfully plan and conduct operations. The timely input of new information allows for personnel and equipment to be utilized in the most effective manner

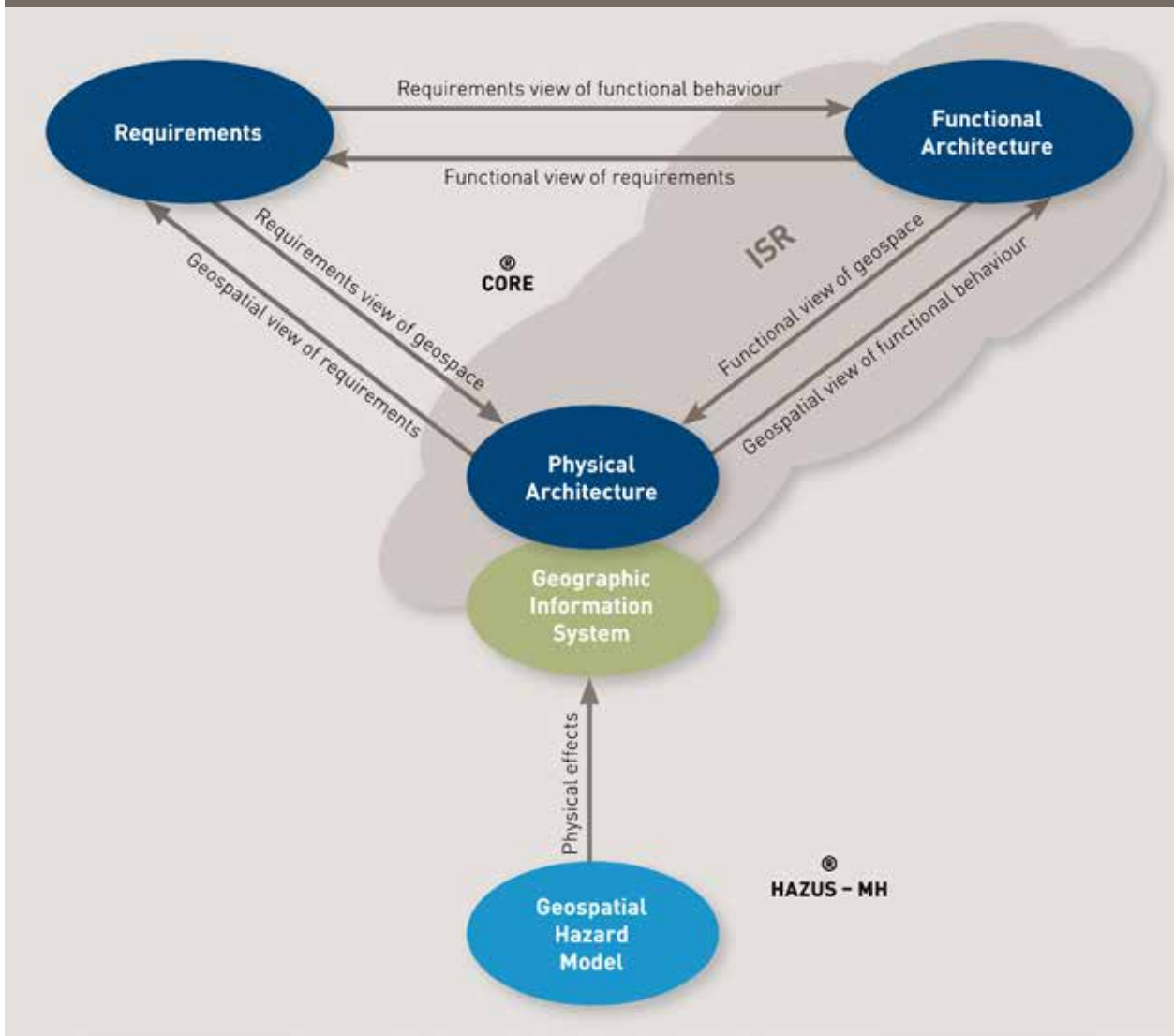
Figure 1: Geographic Information System (Adapted from Eveleigh, 2006).



possible. The assets that are tasked to collect the required information encompass satellites, manned, and unmanned vehicles; these same capabilities are becoming available to civilian disaster planners particularly in settings where federal and state (e.g. National Guard) resources become involved. A growing area of ISR is within the unmanned aerial vehicle (UAV) community. Some examples of UAV's are Predator and Global Hawk. The Department of Defence defines UAV's as "a powered aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable, and can carry a lethal or nonlethal payload" (Staff, 2007). In 1982 the Israelis proved how useful UAV's can be when conducting operations in the Bekaa Valley, Lebanon. Israeli forces used unmanned systems for ISR and to activate Syrian air defence systems, allowing other aircraft and surface-to-surface missiles to destroy the now active air defences (US Air Force). In subsequent years, a US joint services program developed the RQ-1 Predator system. The US Air Force in 1996 eventually took control of the program. A growing area of UAV capability is in the disaster relief support role.

After the 7.0 magnitude earthquake hit the country of Haiti, a Global Hawk was tasked to provide high altitude damage assessment imagery. The priority was to capture images of key infrastructure such as airstrips, bridges, and ports throughout the country, where relief efforts could gain entrance to reach injured and trapped people (Force, 15 January 2010). In 2007, a Predator was acquired by NASA for earth science studies, technology development, and possible support of wildfire fighting in the western United States. Within that year NASA received a request for assistance from the National Interagency Fire Center and the California Office of Emergency Services. The Predator was equipped with a thermal-infrared imaging system, capable of seeing through heavy smoke and darkness to identify hot spots, flames, and temperature differences (NASA, 2007). The collected data was sent to NASA's Ames Research Center where it was overlaid on Google Earth maps, then transmitted in near real time to the Interagency Fire Center in Boise, Idaho, to assist fire incident commanders in allocating their resources (NASA, October 2007).

**Figure 2:** Geographic Information System (integrated model).



Linked ISR systems fit within the Systems-of-Systems engineering paradigm defined as “an interoperating collection of component systems that produce results unachievable by the individual systems alone.” (Haskins, 2007). The integration of ISR systems with the emergency management system could serve the EOC and the IC with the same timely and accurate information needed to convert the current reactive modelling process into a dynamic process in order to keep pace with fluid, real world events.

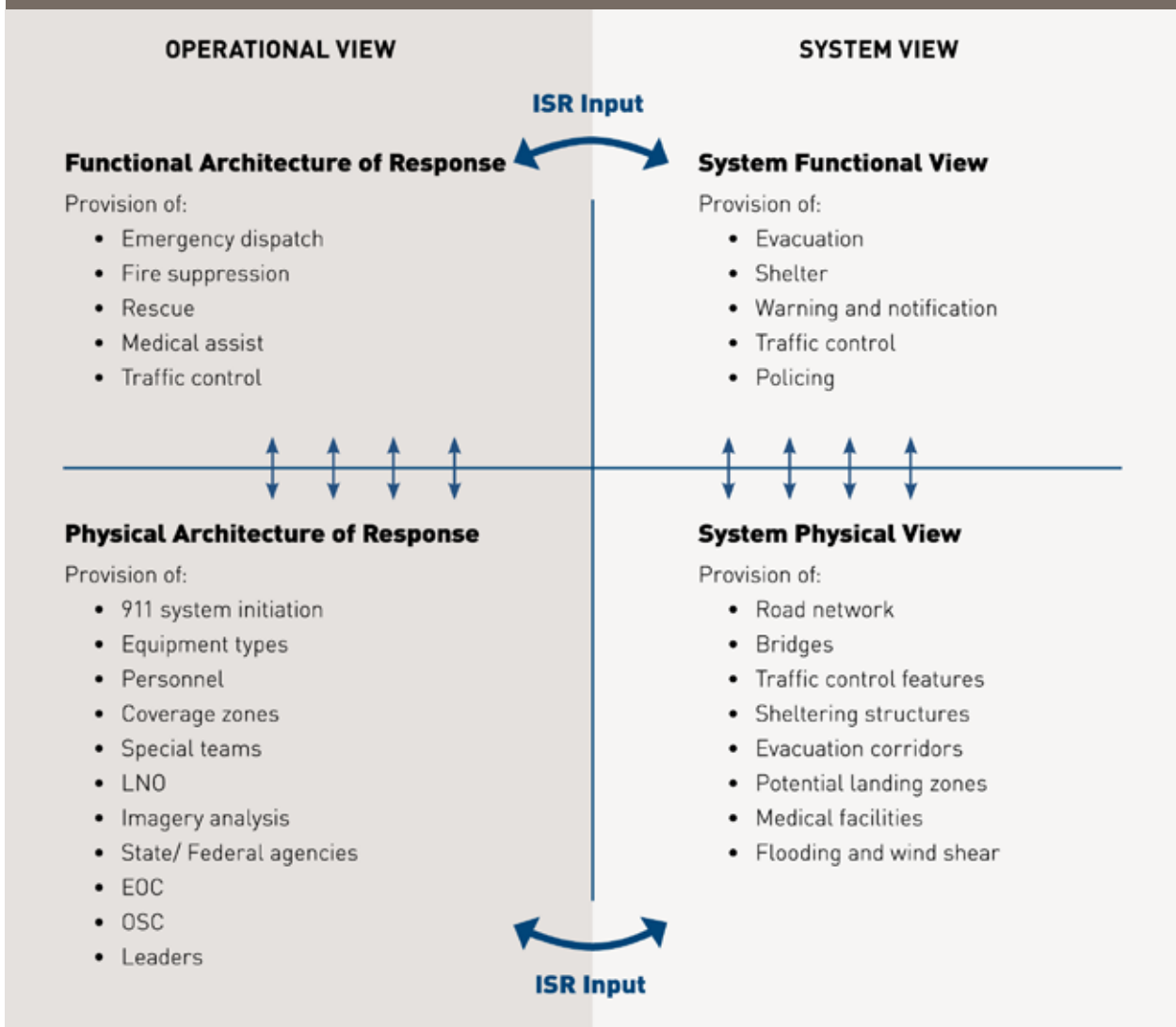
Eveleigh [2005] proposed combining a systems engineering design model with a geospatial model to improve disaster management. Eveleigh concluded that “this technique has great potential to advance disaster management practice and help disaster managers understand the complex interface between natural, human and technological systems.” (Eveleigh, 2006). This paper will explore the advantages of incorporating a systems engineering approach to developing a feedback loop for decision makers in the emergency management system. The paper will begin with a flooding hazard model identifying the critical infrastructure nodes and decomposing those nodes

into a free body wire diagram. The wire diagram will be used to reduce background noise and highlight the targeted points of interest. A perspective of the US Department of Defence Architecture Framework (DoDAF) will be introduced for possible modelling of the physical and functional architectures during a disaster. The use of the DoDAF architecture-derived modelling framework will be evaluated and conclusions will be discussed.

### Method

This study takes the methodology introduced by Eveleigh and extends it in a dynamic way. In Eveleigh’s study, a systems engineering design approach was taken that linked modelled disaster requirements to a functional architecture representing disaster response system behaviours and a physical architecture representing a realizable solution. Additionally, a Geographic Information System (GIS) (Figure 1) was used to augment the physical architecture to assign its elements to real world objects and locations (e.g. bridges, roadways, buildings) (Eveleigh, 2006).

Figure 3: Functional flow block diagram.



The combined systems engineering design/geospatial model was shown to provide a new methodology for disaster management practitioners as it was able to couple physical effects (e.g. flooding, wind damage) to physical infrastructure that provided critical response system functions (e.g. evacuation, fire protection, safe havens).

When ISR is integrated into the disaster management process shown above we get a new and dynamic view of the changing physical world. ISR will provide the feedback on specific 'targeted' points of interest that have been developed in the planning phases of disaster management or due to 'ad hoc' requirements that arise in real world events (Figure 2). ISR has the potential to update the content of the infrastructure GIS keeping it more current as well as to monitor and confirm the ongoing effects of a natural hazard e.g. flooding, wind effects. This approach will not only keep the models more current and potentially capable of tracking the progressive failure (and recovery) of function-providing infrastructure but will allow ISR assets to be used more effectively by allowing them to be focused on the monitoring of critical physical nodes.

ISR is a process used by the military for many years. This process includes the integrated capabilities to task, collect, process, exploit, and disseminate accurate and timely information (Baier and Rower, 2002). The collected information must be exploited and fused with other sources of exploited data to form valuable information prior to dissemination. In our improved model, ISR provides fresh information on the modelled physical architecture through geospatial analysis. Part of that analysis will also include information on the functional architecture allocated to physical elements of the sensed infrastructure. "Functional and material flows are useful means to portray and model dependency between functions" (Eveleigh *et al.*, 2006). Eveleigh has shown with his combined model that disaster management functional architectures can be decomposed into networks of functions which are linked to geospatial objects. Our approach, like his, models physical infrastructure using ESRI's ArcGIS software and hazard effects using FEMA's HAZUS-MH "Multi Hazard" disaster modelling program. Depending on the disaster type or hazard to be mitigated, some geospatial objects will require a higher degree of scrutiny or 'targeting' than others as they are linked to critical nodes in the



disaster management functional model. For example, a certain bridge may be a key physical node in the system of features that are allocated to a "provide regional evacuation" functional model. When disaster effects (e.g. coastal and riverine flooding, wind blast) are generated by HAZUS-MH the geospatial objects at greater risk are identified by their role in the functional model. A Functional Flow Block diagram can then be created to show the infrastructure (main roadways, hospitals, elderly care facilities, power and communications centres) without background clutter for clarity. Since the functional architecture is in turn linked to the geospatial objects, a target list can be quickly generated that will identify hazards to the functional architecture. The target list can then be evaluated by the EOC or the IC for possible ISR collection with target priority. ISR assets would be tasked to provide imagery or Full Motion Video (FMV) for analysis and feedback to the EOC or IC.

## Results

Modelling with HAZUS-MH for flooding and following Eveleigh's approach of tying functionality to physical locations allowed us to identify infrastructural elements providing essential functionality in danger of flood inundation that should be targeted for ISR monitoring. When ISR is incorporated into the modelling process, the resulting architecture framework is shown in Figure 3. The architecture will be described below.

We adapted the DoDAF viewpoint structure to show the linkage between the operational context and the system context and how they relate to ISR input. However, for disaster response, a new paradigm on the DoDAF architecture emerged. System views will describe the systems within the community or region involved in the disaster. Within that system, a system physical view contains the physical features that make up the region which are elements that can provide an actual service. The system functional view models the functions of those features. The operational views represent the emergency management system and its attributes within a functional and physical response to the disaster. The operational function of the response will show what the emergency management response activities could be. And the operational physical architecture of the response will identify the 'who' and the 'where' of the response. The ISR input for the functional views will provide information on the degradation of system element functionality and of disaster response. Lastly, the ISR input for the physical views will provide status of community physical elements, damage assessments and timely updates for determining physical elements in danger of rising flood waters.

## Discussion

A combined model was proposed by Eveleigh (Eveleigh *et al.*, 2006) which explored physical effects from disasters and their impact on both the physical and functional architecture of a disaster management (DM) system. A natural extension for the combined

model was to provide a dynamic capability to DM decision makers using ISR. ISR has been used in conjunction with previous disasters but only as a tool for generalized monitoring, not treated as a system to be integrated into the larger DM system. "At the operational level, the ISR community did not have an ISR plan ready to rapidly provide damage assessments following a catastrophic natural disaster within the United States" (Sovada, 2008, US Air Force, October 2005). Using a systems engineering modelling methodology, we have developed an architecture for incorporating ISR into DM. The modified DoDAF viewpoints will allow us to "move away from looking at isolated situations and their causes, and start to look at the disaster system as a system made up of interacting parts" (Simonovic, 2011). When reviewing the modified DoDAF architecture we start in the lower right quadrant and move counter clockwise through the four separate views. When a disaster strikes a community, the system physical view in the lower right quadrant will be impacted first. As the physical elements become damaged we follow view linkages to DM functions allocated to the physical elements and can access functional damage to the community DM systems. This can be seen in road networks being damaged which will then impact the evacuation function. In the upper left quadrant, the emergency functional response will respond to the community functional damage. An example of this is simply the emergency response system responding to the community 'system' functional needs. Based on the emergency functional response, we move to the lower left quadrant to determine asset response, i.e. specific teams and equipment that will support the functional response. In other words, if the functional response requires fire suppression then the physical response will be the Firefighters and fire trucks. We then move back across to the lower right community 'system' physical view. The response physical elements are tied to the community 'system' physical view through the asset and team physical location within the community. The counter clockwise spiral will continue to move through the quadrants in a tightening loop with ISR feedback. The ISR feedback will provide timely analysis of the damaged element functionalities and/or the recovery of the physical elements.

ISR imagery analysis for targeted infrastructure will provide real time information that could allow equipment and personnel to work longer in dangerous areas. For populated areas with limited roadway access, the roadways often form choke points as rising flood waters begin to deny alternate routes. As the roadways close down, a UAV could provide an over watch function on the last remaining open roadways. This will prevent sending personnel out to each potential choke point in order to just sit, observe and report as the waters rise. Personnel numbers will be at a premium and should be employed in much more productive way. However, UAV's are the recommended asset for missions that are considered dull, dirty, and dangerous (Cruz, 2010; Cambone, 2005). With the capability to loiter over a target for extended periods of time, the UAV is well suited for this tasking. UAVs could potentially provide imagery (including radar) and real

time information to ground crews as to when they must leave to prevent being trapped.

## Conclusion

We have shown that the addition of ISR to the disaster management system and decision making process can provide the dynamic facet needed for real time feedback modelling. The modified DoDAF viewpoints have shown how the ISR system could be merged with the disaster management system model to create a new combined system model that is adaptable and responsive. While ISR may have been used in previous disaster responses, the planning and coordination needed to effectively merge the two systems fell short. Neither the ISR community nor the disaster management community had developed any pre-planning for working together. We have shown how the establishment of a systems engineering architecture model can be utilized to insert ISR into the disaster management system. We believe that this will assist the disaster management community to understand the complex relationships that exist between the ISR community, decision makers, and the physical/functional architecture during and after a disaster.

## References

- Baier, F. & Rower, N.** 2002. *Information Operations*. In: *Force, U. S. A. (ed.)*. HQ AFDC/DR.
- Cambone, S. A.** 2005. *Unmanned aircraft systems roadmap 2005-2030*, Washington D.C., *Defense Technical Information Center*.
- Cruz, H. L.** 2010. *Role of DoD Unmanned Aerial Vehicles for Homeland Security*. *Masters*.
- Eveleigh, T., Mazzuchi, T. & Sarkani, S.** 2006. *Systems engineering design and spatial modelling for improved natural hazard risk assessment*. *Disaster Prevention and Management*, 15, 636-648.
- Eveleigh, T. J.** 2006. *An approach for combining a systems engineering design model with a geospatial model for improved disaster management and impact modelling*. *THE GEORGE WASHINGTON UNIVERSITY*.
- FORCE, U. S. A.** 15 January 2010. *480th ISR Wing Supports Disaster Relief Efforts*. *Print News Today [Online]*. Available: <http://www.acc.af.mil/news/story.asp?id=123185802> [Accessed 17 January 2010].
- Haskins, C.** 2007. *Systems Engineering Handbook A Guide for System Life Cycle Processes And Activities*. In: *INCOSE (ed.)*.
- Moltke, H., Hughes, D. J. & Bell, H.** 1993. *Moltke on the art of war: selected writings*, *Presidio Pr.*
- NASA.** 2007. *Release 07-58: NASA Aircraft Aiding Southern California Firefighting Effort Edwards Air Force Base*. Available: <http://www.nasa.gov/news/index.html> [Accessed 7 January 2010].
- NASA.** October 2007. *Wildfire Imaging Flights by NASA's Ikhana UAV Conclude*. Available: <http://www.nasa.gov> [Accessed 12 January 2010].
- Schaffer, C.** 4 June, 2010. *RE: Emergency Management Interview with City Public Safety*. Type to QUARLES, K.
- Simonovic, S. P.** 2011. *Systems Approach to Management of Disasters: Methods and Applications*, Wiley.
- Sovada, J. P.** 2008. *Intelligence, Surveillance, and Reconnaissance Support to Humanitarian Relief Operations within the United States: Where Everyone is in Charge*. *Masters*, Naval War College.
- Staff, J.** 2007. *Joint Publication 1-02: Department of Defense Dictionary of Military and Associated Terms*. Washington, DC.
- U. S. AIR FORCE**, *The U. S. Air Force Remotely Piloted Aircraft and Unmanned Aerial Vehicle Strategic Vision*.
- U. S. AIR FORCE**, 2002. *Air Force Doctrine Document 2-5. In: Command, A. F. D. (ed.)*.
- US AIR FORCE**, October 2005. *Air Force Support to Hurricane Katrina/Rita Relief Operations: Joint Lessons and Observations*. In: *FORCE, H. U. S. A. (ed.)*. Washington D.C.

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# AIIMS Doctrine: have we got the fundamentals right?

By Geoff Conway, Principal Consultant, Crossbow Consulting Services.

## ABSTRACT

**The Australasian Inter-service Incident Management System (AIIMS) has been the foundation of Command and Control doctrine for fire and emergency services in Australia and New Zealand for over 20 years. The three key principles on which it is based, management by objectives, functional management structures and span of control are tried and tested ideas that have served the system well. However, given the number of major natural disasters in Australia and New Zealand in the past 15 years there is a huge body of lessons learnt on which to draw, and an opportunity to look again at these fundamental ideas and concepts to be sure they are meeting the needs of AIIMS users.**

The Australian Inter-service Incident Management System (AIIMS) is founded on three key principles; *Management by Objectives*, *Functional Management Structures* and maintaining a manageable *Span of Control*. If principles are the fundamental truths on which other ideas depend then it is worth asking if these three ideas provide enough guidance for those who use AIIMS.

Understanding the three key principles is critical to the effective application of AIIMS. Without this understanding the system can, and on occasion has, become a rigid set of rules that do not readily support the 'all hazards – all agencies' model that is central to emergency management in Australia and New Zealand.

AIIMS identifies a number of attributes that describe other important concepts that guide the use of the System such as *adaptability* and *scalability*, and *uniform terminology*. Unfortunately these ideas are rarely discussed by those who advocate for, and train personnel in, the use of AIIMS yet some of these attributes are arguably just as important as the three principles. Much of the training material developed to support the teaching of incident managers about AIIMS does not examine these attributes closely, or discuss

how they should be applied in making AIIMS and the three principles work for any particular incident.

The Australasian Fire and Emergency Services Authorities Council (AFAC) AIIMS Steering Committee, the body charged with the custody and oversight of AIIMS, recently commissioned a comparison of AIIMS doctrine (AFAC, 2012) with other Incident Management Systems used in Australia and overseas. In particular it compared the systems used in New Zealand, the United Kingdom and the United States. The results of this analysis are revealing, especially in relation to the identification, explanation and application of high level principles and underpinning concepts.

As indicated at the beginning of this article, the fundamentals underpinning emergency management systems in Australia, as described in *Emergency Management in Australia – Concepts and Principles – Manual 1* (EMA, 2004), are that arrangements developed by all jurisdictions should be applicable to all hazards and be integrated, that is applying to all relevant organisations, agencies and the community. These ideas are the foundation of state and territory arrangements.

AIIMS has been developed to ensure that it could be applied in this *all hazards–all agencies* environment and for the past twenty years has been successfully applied to a huge range of multi-agency incidents. However, not all agencies in Australia would agree that AIIMS continues to achieve this as effectively as the modern world needs it to. Commissioner Greg Mullins of Fire and Rescue NSW has expressed concerns on challenges faced in the past in applying AIIMS to some of the complex structural incidents the fire fighter must manage. Chief Officer Trevor White, Director of Operations for VICSES explains that his organisation has modified the management structure of AIIMS to more readily support the challenges of managing major protracted flood events (VICSES, 2011). In particular, the task of gathering intelligence on the likely impact of floods on communities has required the elevation of this work as a function of the IMT. Police Services across Australia have developed their own incident management system, the Incident Command and Control System (ICCS) for the management of terrorist-related events. This system is based on the principles of AIIMS with modifications to the structure to meet some of the unique challenges of police operations.

There are a number of other agencies that have developed incident management systems to guide their staff on how to organise for response to emergency incidents. The Australian Government Department of Agriculture, Fisheries and Forestry recently established a Bio-security Emergency Preparedness Working Group that is working on an incident management system to address bio-security hazards. This system was still in draft format at the time of writing. The Department of Transport has taken the same approach to the management of marine casualties developing an incident management system that addresses the complexity of that hazard and the challenges of managing multiple jurisdictions in the marine environment. All these systems have varied the AIIMS model.

Observers outside the emergency management environment have also raised concerns about how AIIMS is structured and applied. The Victorian Bushfires Royal Commission in their interim and final reports were concerned that AIIMS did not give the appropriate weight to the obligations an incident management team had for the provision of warnings and advice to the community during an incident. This view has led to the introduction of the *public information* function as part of the AIIMS Management structure. This change has now been incorporated as part of the AIIMS Third Edition 2011 Revision (AFAC, 2011).

Given these concerns and action taken by many agencies to vary from the traditional AIIMS model it is difficult to sustain the idea that AIIMS continues to be a truly all hazards all agencies system.

So what is really going on here? If we compare AIIMS with other systems, in particular the principles and underpinning concepts that they identify as the foundation of their systems and the way they apply these, part of the answer starts to emerge.

The three principles on which AIIMS is based, *Management by Objectives*, *Functional Management* and *Span of Control* appear in most systems that have been developed both in Australia and overseas. However, with the exception of the New Zealand Coordinated Incident Management System (CIMS), most of these models share a common weakness. They all provide multiple lists of principles, attributes, characteristics, system benefits or some other descriptive list of concepts that underpin the system. There is little consistency between these lists and it is not always easy to find the important ideas on which a system is based.

The National Incident Management System (NIMS) applied in the United States describes two fundamental principles—*flexibility and standardisation*. These are supported by a number of *systems characteristics* including *common terminology*, *management by objectives*, *modular organisational structures* and *manageable span of control*. Also of interest to this discussion are the key attributes of an incident management system identified in the recently released *International Standard on Societal Security – Emergency Management: Requirements for Incident Response*, ISO

22320 (ISO, 2011). This document identifies *scalability*, *the need to be adaptable to any type of incident*, *the ability to integrate different response agencies*, and *flexibility to the evolution of an incident* as the most important ideas to apply to the building and application of an incident management system.

The New Zealand CIMS identifies seven key concepts on which their system is built, including some ideas common with AIIMS, but adding *common terminology and integrated communication systems*, among others. There are clear differences in what jurisdictions consider to be important. What emerges from this analysis is a set of mixed messages about the important ideas that guide the way we manage emergencies at incident level.

If AIIMS users are going to be able to apply the system in an *all hazards – all agencies* environment then there are at least three other concepts that should be highlighted and understood in the context of the existing principles. They are *flexibility*, *scalability* and *unity of command*.

NIMS identifies *flexibility* as a key principle for the application of that system. The US Department of Homeland Security, the custodians of NIMS, strongly emphasise this idea. They state that “.. flexibility is essential for NIMS to be applicable across the full spectrum of potential incidents...” (FEMA, 2008). Boin and t’Hart (2010) make a similar point in their discussion of the lessons that emergency managers can learn from research when they suggest that, “Effective crisis management depends on principles and processes that assure flexibility and a smooth flow of information; formal structures play a facilitative role at best.”

A rigid approach to the application of AIIMS, whether it be the structure of the incident management team, the format of a planning process and incident management plan, or the manner in which incidents are classified, has and will continue to undermine the usefulness of the System. But more importantly this rigidity will compromise the capacity of agencies and incident controllers to respond to the incident with which they are confronted. Flexibility must be a key principle underpinning AIIMS.

The principle of functional management structures for incident management teams is shared with virtually every other system developed around the world. One of the key ideas guiding the development of a functional incident management team (IMT) is *span of control*, identified in AIIMS as a foundation principle. But there is a problem here because span of control is not the only idea that must be applied to building an IMT to ensure it works. The other critical idea is *scalability* (i.e. structuring the IMT in a way, and at a size, that reflects the needs of the incident). The AIIMS manual identifies scalability as an attribute of the system but does not discuss its application other than in general terms, when it indicates that the delegation of various functions of incident management “will depend on the size and complexity of the incident” (AFAC, 2011 p 12). There is also some general guidance provided



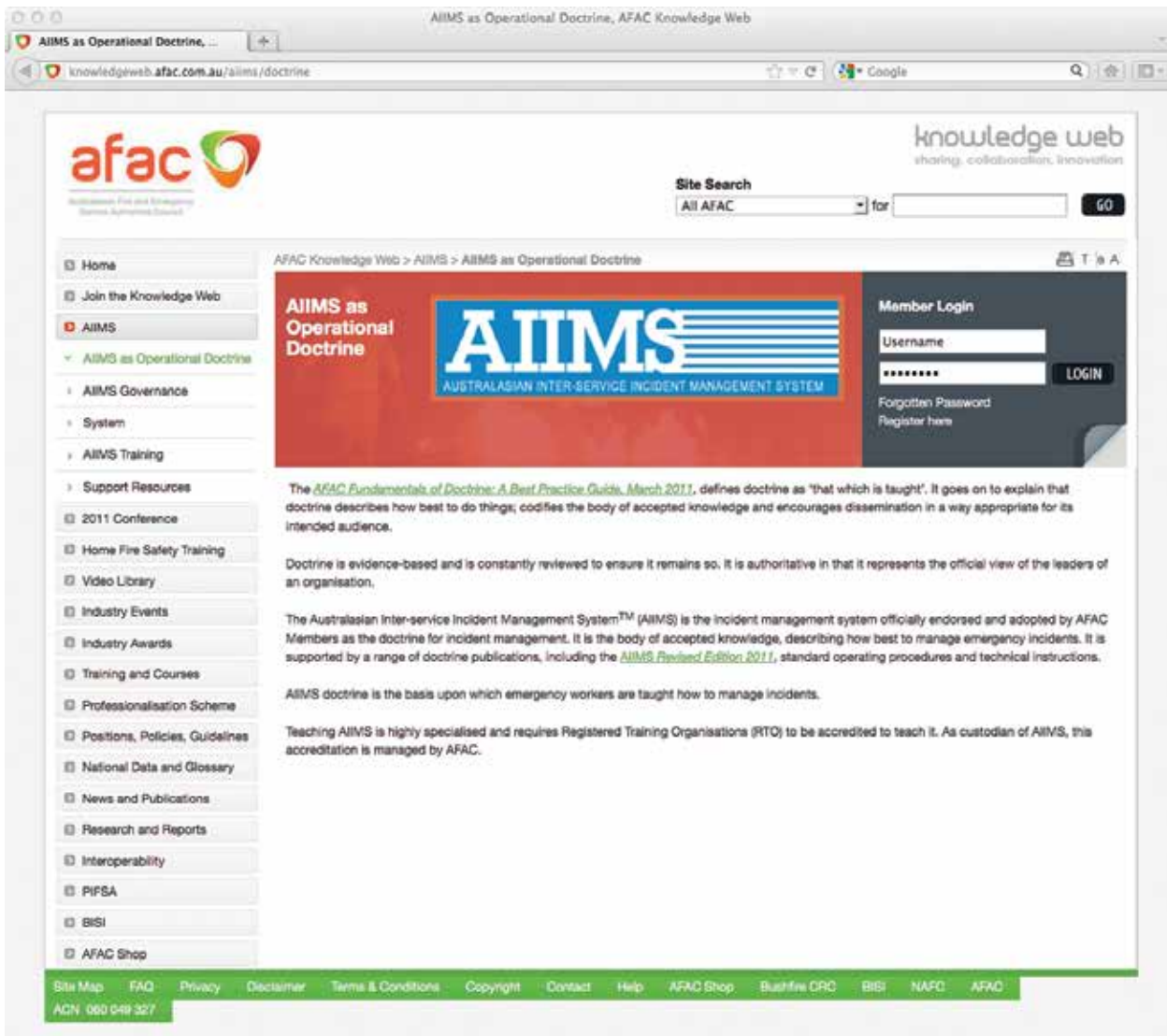
in the discussion of incident classification, but once again the discussion does not reference the scalability concept or emphasise how important it is in building an appropriate IMT for the task.

NIMS identifies this concept as a key management characteristic of Command Management when the principle of 'modular structures' is explained, and provides guidance throughout the NIMS documentation on how it is applied (FEMA, 2008, p 47). The notion of a 'modular' management structure incorporates both the concepts of span of control and scalability as interdependent ideas.

The advice provided to Fire and Rescue Service personnel in the UK in relation to incident management and scalability is different in many ways to other models, but they make one very pertinent point. In the Fire and Rescue Manual Vol.2 – Fire Service Operations – Incident Command, the discussion on *Organisation of the Incident* they makes it clear that "There is no advantage in over structuring an incident with additional tiers [of management] if they are not needed" (2008, p 33).

The idea of scalability is acknowledged as an underpinning concept in most incident management systems reviewed by the AIIMS Steering Committee in its comparative analysis, even though at times it is hard to find in the supporting documentation. It is critical to the application of the principle of functional management and flexibility. If 'span of control' is considered important enough to be a principle of AIIMS then scalability warrants similar emphasis.

The third concept arising from the comparative analysis that is worthy of further consideration is that of *unity of command*. The current edition of the AIIMS manual does not make reference to this idea even though it is central to the application of the system. In its simplest terms, unity of command requires that there be one person in control/command and that there is a single reporting line for all those involved in the response. The extension of this concept is that for any incident there is one plan to which all agencies involved in the response work. It may be that many involved in emergency and incident management see this as a statement of the obvious.



<http://knowledgeweb.afac.com.au/aiims/doctrine>

Given the complexity and scale of emergencies experienced in Australia over the past ten years the need for an effective multi-agency response becomes critical to the support and protection of communities under threat. With the potential for many agencies to be involved, the pressure on the control agency to provide structure and planning is huge. When this does not occur in the time frames expected, the temptation for supporting agencies is to pursue their own course with the risk being that such a course will compromise unity of command and the objective set by the control agency.

Concerns in relation to incident action planning have been raised by the Victorian Bushfires Royal Commission, the Victorian Flood Review (2011, p 133-134) and the report of the Special Inquiry into the Perth Hills Bushfire in January 2011 (2011, p 103-104). The importance of all agencies working to a common objective and one consolidated plan is emphasised by all these reviews. The identification of unity of command as an underpinning principle of AIIMS would seem worthy of consideration.

Changes to operational doctrine have been constant throughout the history of emergency management, driven both internally by agencies undertaking reviews of their own performance or externally as a consequence of formal scrutiny. Whatever the prompt for change might be any change is often hard won. For example, the proposal to elevate the role of information to the community within the AIIMS structure to a function in its own right was explored by the AIIMS Steering Committee on a number of occasions between 2003 and 2009 without resolution. It was not until the examination of the issue and subsequent recommendations by the Victorian Bushfires Royal Commission that change was achieved.

In his Keynote address to the 2011 AFAC Conference, AFAC President Commissioner, Lee Johnson, said of the emergency services, "Our greatest risk is not climate change or technology but failure to adapt/innovate and drive a mantra of continuous improvement through our sector. In an historical sense, evolutionary change is preferred, however the odd revolutionary change may well be needed to undertake the corrections necessary to ensure relevancy in the services delivered to citizens."

The current consideration of AIIMS doctrine by the AIIMS Steering Committee is very much part of a process of continuous improvement. The Steering Committee is actively engaged in preparing the fourth edition of the AIIMS Manual. Close scrutiny of the way in which principles and underpinning concepts are described and referenced in AIIMS doctrine will be a central part of that work.

There is no charter for revolution but it is clear from the comparison of AIIMS with other incident management systems there are things that can be learnt and refinements that will benefit all AIIMS users. If we can provide clear guidance to users on all the critical concepts on which AIIMS is based it should be much easier for incident managers to apply the System flexibly and effectively.

## References

**AFAC**, 2012, *Comparative Analysis – Incident Management Systems A comparison between the Australasian Inter-services Incident Management System and other Command and Control Systems in use within Australia and Overseas*, Australasian Fire and Emergency Services Authorities Council, Melbourne.

**AFAC**, 2011, *AIIMS Third Edition 2011 Revision*, Australasian Fire and Emergency Services Authorities Council, Melbourne.

**Boin, A., and 't Hart, P.**, *Organising for Effective Emergency Management: Lessons from Research in Australian Journal of Public Administration*, vol 69, no 4, pp 357 – 371.

**Comrie, N.**, 2011, *Review of the 2010-11 Flood Warnings and Response*, Victorian Government. Melbourne.

**Emergency Management Australia**, 2004, *Emergency Management in Australia – Concepts and Principles – Manual 1*, EMA, Canberra.

**HM Department of Communities and Local Government**, 2008, *Fire and Rescue Manual Vol. 2 Fire Service Operations – Incident Command*, The Stationery Office, Norwich.

**ISO**, 2011, *ISO 22320, Societal security – Emergency management – Requirements for Incident Response*, ISO, Geneva.

**Keelty, M. J.**, 2011, *A Shared Responsibility – The Report of the Perth Hills Bushfire February 2011 Review*, West Australian Government, Perth.

**US Department of Homeland Security**, 2008, *National Incident Management System*, FEMA, Washington.

## About the author

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## National Strategy for Disaster Resilience

### KEY MESSAGES

#### **Disasters will happen**

Natural disasters are inevitable, unpredictable and significantly impact communities and the economy

#### **Disaster resilience is your business**

Governments, businesses, not-for-profit, communities and individuals all have a role to play and to be prepared

#### **Connected communities are resilient communities**

Connected communities are ready to look after each other in times of crisis when immediate assistance may not be available

#### **Know your risk**

Every Australian should know how to prepare for any natural disaster

#### **Get ready – then act**

Reduce the effects of future disasters by knowing what to do

#### **Learn from experience**

We reduce the effects of future disasters by learning from past experiences





## Library Services – Northern Territory Department of Health

*Sean Petrie – Health Services Regional Librarian, Alice Springs Health Library*

The Northern Territory’s Department of Health (DoH) provides an extensive suite of services that support the health and wellbeing of Territorians. This includes provision of acute care services provided through the Department’s five public hospitals and delivery of a range of community based services covering areas such as; aged and disability programs, mental health services, oral health, hearing health, cancer screening services, women’s health, and more. This all takes place in a complex environment characterised by extreme distance and physical isolation. Ensuring that client access to information isn’t inhibited by geography is a key role for Library staff.

In addition to providing the sorts of resources and services traditionally offered by health libraries – access to comprehensive print and electronic resources, document delivery, reference services, etc – the Library is also extending its role in a number of new and exciting areas. This includes its work in supporting the Department’s Clinical Guideline Program and the realignment of its services and facilities to support the Department’s goal of becoming a ‘Learning Organisation’.

### Clinical guidelines

A major function of the library is to support the development and use of evidence based clinical guidelines. It does this by:

- delivering training on how to write evidence based guidelines
- providing research assistance and literature searches for finding evidence
- managing PROMPT, the Department’s web-based document management system which provides organisation wide access to approved clinical policies, procedures and guidelines

Two Guideline Librarian positions have been created to support the program while the Guidelines team is housed in the library.

### eLearning

The Library is also playing a key role in supporting the Department’s eLearning Project, a key plank of its ‘Learning Organisation’ strategy, by developing the eLearning Library. The eLearning Library provides:

- a central, interactive, flexible ‘teaching and learning’/meeting space
- an interactive SmartBoard, projectors and associated technology
- WiFi access, copying and printing facilities, borrowable laptops
- 3 group training/computer lab facilities with secure access for after-hours use.

The Library has also established a specialised position, the eLearning Librarian, to support staff in their eLearning endeavours. The position supports and facilitates eLearning by linking the library’s resources with online courses, providing advice on copyright, and training departmental staff on the use of eLearning tools as well as information literacy and eLearning training modules.

### Membership

Full library membership is available, upon application, to all NT Department of Health and NT Department of Children and Families staff. Special membership categories have been created for other practising health professionals in the NT who either lack alternative access to library services or who are employed by organisations with an MOU with the Library. Members of this latter group also have access to a comprehensive collection of leading, online information resources through the Library’s eLibrary4hp portal.

### Web address

Visit the Library’s website to find out more about its services, resources and opening hours. Contact details for individual branches are listed below.

<http://www.health.nt.gov.au/Library/index.aspx>

Branch	Address and contact details
<b>Darwin Health Library</b>	Ground Floor, Building 4, Royal Darwin Hospital, Tiwi Ph: (08) 8922 8961 Email: LibraryRDH.ths@nt.gov.au
<b>Katherine Health Library</b>	Ground Floor Katherine Hospital Ph: (08) 89739036
<b>Alice Springs Health Library</b>	Liebig Building, Alice Springs Hospital Ph: (08) 8951 7966
<b>Tennant Creek Health Library</b>	Please contact the Alice Springs Library
<b>East Arnhem</b>	Level 1, District Office Gove District Hospital Ph: (08) 89870262





<b>Australian Police Medal (APM)</b>
<b>Federal</b>
Assistant Commissioner Ramzi JABBOUR
Superintendent Christopher John LINES
<b>New South Wales</b>
Assistant Commissioner Peter BARRIE
Sergeant Paul George BATISTA
Senior Sergeant Ronald Charles DORROUGH
Detective Chief Superintendent Wayne Desmond GORDON
Detective Inspector Paul Yervan JACOB
Inspector Mark Anthony MINEHAN
Detective Superintendent Peter James O'BRIEN
Detective Chief Inspector Brad Edmund TAYLER
Detective Inspector Peter YEOMANS

<b>Victoria</b>
Superintendent John Joseph BLAYNEY
Assistant Commissioner Andrew Stuart CRISP
Senior Sergeant Steven Gordon DEVESON
Senior Sergeant Gaetano Joe ILARDI
Superintendent Geoffery Allan NEWBY
Inspector Stephen James WADDELL
<b>Queensland</b>
Senior Sergeant Peter Raymond FLEXMAN
Inspector John FOX
Senior Sergeant Kevin Thomas GLEESON
Detective Superintendent Daniel Christopher MAHON
Detective Senior Sergeant Karyn Melinda MURPHY
Chief Superintendent Raymond George PRINGLE

<b>Western Australia</b>
Assistant Commissioner Duane Garnet BELL
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<b>Tasmania</b>
Inspector Anthony Paul CERRITELLI
Commander Mark MEWIS
<b>Northern Territory</b>
Assistant Commissioner Mark Leonard PAYNE
Senior Sergeant Andrew Peter PUSTERLA

<b>Australian Fire Services Medal (AFSM)</b>
<b>New South Wales</b>
Mr Jeffrey James BOWER
Mr Anthony Michael CAMILLERI
Mr Russell Geoffrey DEAVES
Mr Paul Jack GLEESON
Mr Peter MURGATROYD
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Mr Trevor Robert MILLS
Mr Allan James MORTON
Mr Alan Norman RHODES
Mr Leslie John VEARING
Mr Bruce Leonard VINE

# Australia Day HONOURS LIST

<b>Queensland</b>	<b>Ambulance Services Medal (ASM)</b>	<b>South Australia</b>	<b>Queensland</b>
Mr Ian William BIRBECK	<b>New South Wales</b>	Mr Malcolm Latimer HANCOCK	Mr Peter Andrew GOULD
Mr Brian Francis CLERK	Dr Ronald John MANNING	Mr David John TINGEY	Miss Carrollyn Anne HENNESSY
Mr Antonio PERNA	Ms Maureen Ann ROBERTS	<b>Tasmania</b>	<b>Western Australia</b>
Mr Charles Isaac SMITH	<b>Victoria</b>	Mr Desmond Reginald LANE	Mr David Emmanuel CLARK
Mr John Stanley WATSON	Dr Andrew Kenneth BACON	<b>Northern Territory</b>	Mr Leslie Alexander HAYTER
<b>Western Australia</b>	Mr Bryan Charles CASS	Mr Michael James McKAY	Mr William John NORRIS
Mr Russell Joseph HAYES	Mr Stephen John HUMPHREYS	<b>Emergency Services Medal (ESM)</b>	<b>South Australia</b>
Ms Marion Kaye MACDOUGALL	Mr Ian Robert JARVIE	<b>New South Wales</b>	Ms Lynette Joy BERGHOFER
Mr Roderick Malcolm MACDOUGALL	Mr Daniel James McGENNISKEN	Mr Mark David DARLING	Mr Donald Wayne ROSE
Mr Jeffry John SMITH	Mr Mark Edward ROGERS	Mr Rolf Leonard GARDA	<b>Tasmania</b>
<b>South Australia</b>	<b>Queensland</b>	Mr Trevor Gordon MILGATE OAM	Mr Gregory Donald FRENCH
Mr Terence John BEESTON	Mrs Michelle Susan BAXTER	<b>Victoria</b>	Mr Andrew James LEA
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Mr Colin Edwin TRIFFITT			

# IN PROFILE:

## James McGowan AM



*Seen at a State Disaster Management Group (SDMG) meeting during the TC Yasi-Queensland floods of 2010-11, Jim McGowan AM (right) consults with the head of Emergency Management Queensland, Assistant Director-General Bruce Grady.*

## Quiet leadership earns respect: James McGowan AM

**The citation for Jim McGowan's Membership of the General Division of the Order of Australia (AM) in this year's Australia Day Honours was, as citations often are, ultra-brief: "For service to public administration in Queensland through the development and implementation of public sector management and training reforms and to improved service delivery"**

However Jim McGowan's public service has been anything but brief. Across 35 years his dedicated contribution has always been for the community, if not always for the emergency sector. From rural school teacher to Director-General, Queensland Department of Community Safety at his retirement last September, Jim has been recognised for his quiet leadership in areas of service that span education, industrial relations, justice, and emergency management.

The irony of his connection with flooding in the sunshine state cannot be ignored. As Jim explained recently, "My service to the public seems to have come full circle when my career as a teacher was delayed for a week by the 1974 floods, then to finish

my public service career by leading the response in the aftermath of last year's massive flooding and Cyclone Yasi."

From his early Queensland Education Department service as a rural teacher in the mid-1970s at Chinchilla on the Warrego Highway west of Brisbane, to rise through being a High School Principal in the city, to senior department roles as Manager Industrial Relations and then Director, Human Resources for the state, Jim made a substantial contribution to Queensland education. He was even an industrial advocate for the teacher's union for a few years early in his career.

He moved in 1999 to be General Manager, Public Sector Industrial and Employee Relations in the Department of Employment, Training and Industrial Relations and from there to be Deputy Director-General of the Department of Industrial Relations for four years to 2004. Not shy of taking on a heavy portfolio Jim then became Director-General of the Department of Justice and Attorney-General in 2006 before moving in 2008 to become Director-General of Emergency Services. This role morphed into the Director-Generalship of the Queensland Department of Community Safety in 2009.

It was in this latter role that Jim was overseer of emergency services operations during several tropical cyclones in 2010-11 including the Category 2 TC Anthony and the massive Category 5 TC Yasi which led to the huge Queensland floods of last year. Going with the territory when in such a senior position, Jim was often seen at the side of his Minister, local mayors as well as the Premier visiting areas devastated by these natural disasters. Although there have been other big cyclones and floods in Queensland during his time as DG, Jim admits the immensity of impact and breadth of community involvement during last year's events will remain the highlight of his emergency management career.

"There was just so much dedicated and commendable effort, by both permanent staff and volunteers, in the most trying of conditions and circumstances – and so constantly intense across four long months. Seeing the superhuman effort by everyone has left me with a sense of real pride in the emergency services of this country."

Jim recalls an experience that will leave its mark on his memory for long time; "Standing on the beach at Tully Heads and seeing the extent of damage wrought by the cyclone, plus witnessing the trauma it caused for so many people, it's been a very humbling experience," he says. "And looking at the support in Toowoomba and the Lockyer Valley and the clean-up in Brisbane, there was so much extraordinary effort by ordinary people, showing the fantastic community spirit not just by Queenslanders but by Aussies everywhere."

Throughout his time with the Department of Emergency Services Jim represented Queensland on the high level National Emergency Management Committee (formerly the Australian Emergency Management Committee). And for the last year of this role he was chairman of the NEMC Capability Development Sub-Committee which oversaw many national projects in the emergency sector.

Not affected, but one of the challenges he would rather forget, was the occasion of being verbally abused by a government minister at a Christmas party a couple of years ago. Sadly the media latches onto such public displays with relish but the DG would not be drawn to respond, staunchly keeping his counsel – a trait for which he was renowned.

Jim admits to always having a strong interest in public administration, which along with his change management experience, became the core of his expertise in leading a refocus of emergency management frontline services in his state. "The changes were a challenge but they have really been quite seamless", he adds.

So having just returned with his wife, Kaye from a well-earned extended holiday overseas, what lies ahead for this Australian honours recipient? "I will continue to contribute where I can to the National Emergency Management Committee for a while, not the least by sharing some of the lessons learned through the 2010-11 Queensland emergencies," he says. He has also taken up a post as Adjunct Professor of Public Administration at Griffith University in Brisbane.

All that suggests we will not see Jim McGowan AM bowing out just yet from the world of public service in Australia.



# IN PROFILE:

## Andrew James Lea ESM

### Emergency management reformer recognised: Andrew James Lea ESM



Andrew James Lea ESM

**Enhancing emergency management services, developing all-hazard capabilities and generally reforming the Tasmanian State Emergency Service through times of rising expectations and hefty fiscal pressures, has been no mean feat for Andrew Lea, who this year was awarded the national Emergency Services Medal for his contributions to the sector.**

The citation for Andrew's award opens with: Mr Lea has provided outstanding leadership during enormous change in an environment of increased community expectations...introducing a range of reforms and initiatives to build the capabilities and capacity of the SES at national, state and regional levels in the areas of policy, planning, preparedness, education, training, community capacity building, capability development activities and service delivery.

Andrew took up the role of Director SES in 2001 after 21 years in the Australian Navy, attaining the rank of Lieutenant Commander. Since then he has been a strong advocate in promoting the SES and developing programs to support recruitment, retention, training, and recognition of both the SES volunteers and permanent staff.

"I'm quite proud of what we have achieved since I started as Director 11 years ago," says Andrew. "Volunteer numbers have grown considerably, retention has improved and we continue to impress the public and other authorities with our abilities, our commitment and our image and reputation." He says the formula for this has been quite simple in principle: "We must value and support our people as best we can."

Andrew has overseen the promotion of emergency risk management to the community through the management of a number of emergency risk mitigation funding programs that have attracted investments from Commonwealth, state and local governments. He's played a key role in the review and drafting of his state's Emergency Management Act 2006, which replaced and improved previous emergency management legislation. Of this challenging exercise Andrew says: "The rewriting of our emergency management legislation in 2006, with more flexible powers, broader application across the full emergency management spectrum and more streamlined governance arrangements, has been a significant highlight of my service."

For most of Andrew's time as SES Director, he has also represented Tasmania on the Australian Emergency Management Committee (now the National Emergency Management Committee). In addition he represents his state on a number of other national committees such as the NEMC Community Engagement Sub-Committee and the Australian Council of State Emergency Services, and he chairs the Australian Tsunami Advisory Committee and the National Flood Advisory Committee.

Supporting Tasmania's response to interstate disasters has been one of the highlights of Andrew's career to date. "The enthusiasm, commitment and professionalism of our volunteers with all their operations, particularly the recent deployments to Victoria (Melbourne storms, 2010) and Queensland (floods and TC Yasi, 2011) have been a gratifying experience."

Andrews believes that as Director of an organisation such as his, it's been important to keep in tune with what's happening at all levels, to keep in touch with volunteer issues and trends and to meet emerging needs. "Our organisation also has broader whole-of-government emergency management responsibilities, which require a different set of needs," he says.

"Meeting all requirements is not always easy in practice with budget and resource pressures and growing expectations, but I'm proud of how we have all pulled together to build the SES we have today. It's really been a team effort."

During his tenure as Director, the SES has responded to significant emergencies in Tasmania and interstate. These include the August 2007 floods in all regions of Tasmania and the April 2008 hurricane-force winds that caused considerable damage around the State, search and rescue operations, widespread storm and wind damage in January 2009, response to pandemic (H1N1) between April and August of 2009, as well as last year's massive storms and floods in Victoria and Queensland. More recently there has been the SES response and emergency management coordination following significant Tasmanian flooding in 2011.

Among the other highlights Andrew identifies are the improvements in the profile and identity of the Tasmanian SES with the provision of uniforms, long service awards and medals, better equipment and vehicle standards, and improved internal and external engagement. "We've been able to maintain high equipment standards, better training and volunteer support despite growing pressures," he adds.

"I am driven and motivated by the enthusiasm of our staff and volunteers. My regular visits to our volunteer units remind me just how lucky we are to have such committed and willing volunteers, wanting to give so much back to their communities.

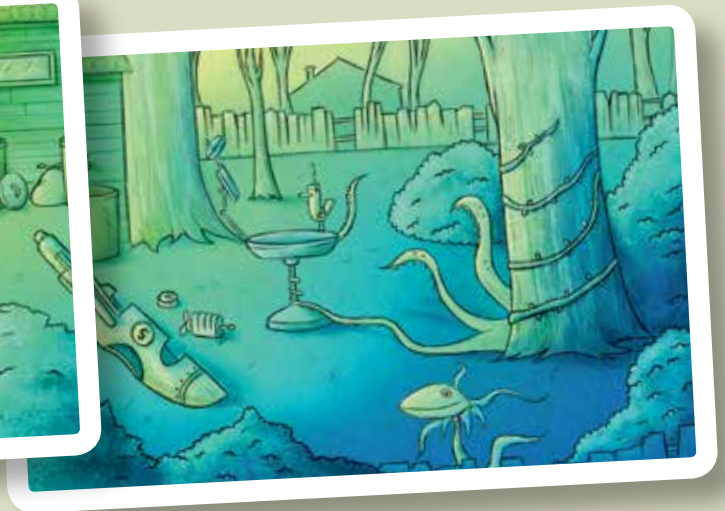
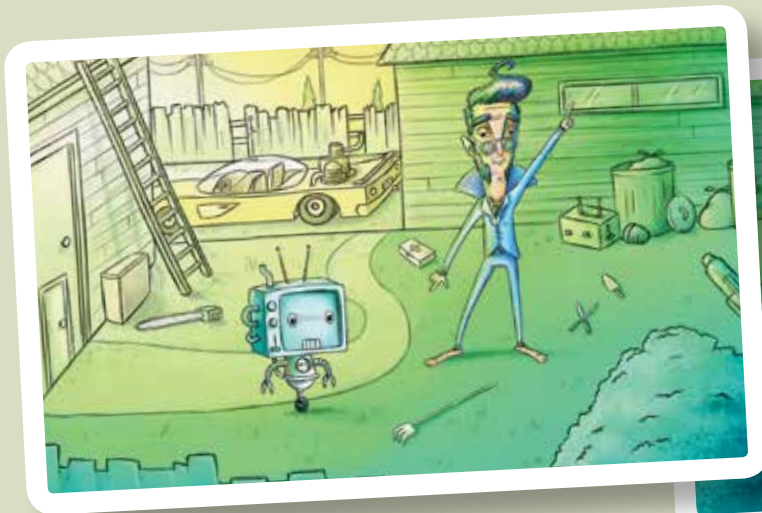
"While I've been honoured with the ESM, the recognition should really go to my colleagues in the Tasmanian SES for their great team effort," he said.

# BEFORE THE STORM:

## IPHONES AND IPODS GET KIDS READY 'BEFORE THE STORM'

Before the Storm is an education product from the Australian Emergency Management Institute's (AEMI) School Education Program, in support of the COAG National Strategy for Disaster Resilience.

Based on the Severe Storm Action Guide produced by the Attorney-General's Department in consultation with State Emergency Services, this free educational iPhone/iPod touch game is designed to assist students (aged 10 -15 years) and their families become better prepared for what to do before, during and after a major storm.



### The Before the Storm Story

Using a gothic house as its setting, students are invited to join a world of a mad scientist, a cyborg robot, iGor, The Thing, Wolfman Elvis and their beasties as work their way through a series of tasks in preparing the house for an impending storm. Students need to find items that they will need for an emergency kit and once they have found these items, they will need to use the items to prepare for before and when the storm hits.

The game is broken into four stages:

1. Storm preparation;
2. Storm threatening;
3. During the storm; and
4. Clean-up after the storm and has to be followed sequentially.

Before the Storm also introduces concepts of recovery after disaster events, including cleaning up safely after a storm and repairing items that have been damaged.

**During the launch the Hon Nicola Roxon MP, Attorney-General and Minister for Emergency Management said the game was a timely reminder of how important it is for communities to be disaster resilient, and well prepared for severe weather events. She went on to say, “Big storms can be frightening for kids but learning what to do when a natural disaster strikes will be as easy as pulling out your iPhone and playing Before the Storm”.**

*“The devastating floods here in Victoria and in New South Wales ..... prove how important it is for communities to be well prepared for severe weather events.”*

*“I encourage teachers to use this storm awareness tool to broaden knowledge about disaster resilience and to make it a catalyst for discussion and learning in the classroom,”*  
*Ms Roxon also said.*

More information about the ‘Before the Storm’ game can be found on the Emergency Management for Schools website [www.em.gov.au/schools](http://www.em.gov.au/schools). The game is available at Apple-iTunes, search for Before the Storm or AEMI.

Sitting beside Before the Storm are a number of additional resources that have been developed through AEMI’s School Education program, all with the overarching aim of building disaster resilience in communities through schools, their students and their communities. AEMI’s School Education resources using different mediums to aid this process, catering to different learning styles and learning needs.

**Living with Disaster** – A digital stories series captures the stories of young people following disasters and allows them to depict their story through image, text and music.



**Disaster Mapper** – which is a web-based resource that utilises media, text and images to show over 50 events covering 10 disaster types that have occurred in Australia from late 1800’s to current day.



**Dingo Creek** – *The Disaster & Dingo Creek – The Recovery* are engaging, easy to use multimedia learning tools with accompanying classroom activities and resources. The players travel back in time to save the fictional small community of Dingo Creek from a disaster that has struck the town. In the second game, players explore how to build community resilience as they help the community recover. Dingo Creek provides interactive content for students and teachers that is based on real life issues and problems that affect a community during and after a disaster.







**Australian Government**  
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## **Australian Emergency Management Institute**

The Australian Emergency Management Institute (AEMI) is a Centre of Excellence for education, research and training in the emergency management sector.

In support of the COAG National Strategy for Disaster Resilience (2011) AEMI:

- Provides education and training
- Conducts strategic activities
- Undertakes applied research
- Promotes community awareness and resilience

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<b>5 – 8 June</b>	<b>Community in emergency management</b>
<b>18 – 20 June</b>	<b>Manage recovery functions and services</b>
<b>19 – 22 June</b>	<b>Coordinate resources for a multi-agency incident</b>
<b>26 – 29 June</b>	<b>Risk based land use planning</b>
<b>26 – 29 June</b>	<b>Community in emergency management</b>

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# News and information about disaster events from credible sources, in one place, on your smartphone.

The free DisasterWatch phone app was released in December 2011 to improve access to disaster information via mobile devices.

The DisasterWatch app contains news and information about disaster events in Australia via direct feeds from credible, authoritative agency sources in the States and Territories and nationally. There are 39 feeds from 22 different organisations on the application.

Refreshing every 15 minutes ensures that information is current. It is important to note that the app does not provide direct emergency warnings to users.

The DisasterWatch app helps implement the Council of Australian Governments' National Strategy for Disaster Resilience, especially in communicating with and educating people about disaster risks.

DisasterWatch is available from the Android Market and from Apple-iTunes.

**For more information visit**  
**[www.em.gov.au](http://www.em.gov.au),**  
**or email [images@ag.gov.au](mailto:images@ag.gov.au)**





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Entries close Friday 6 July 2012



*Building a disaster resilient Australia*