Disaster law is a nascent field of study in Australia.¹ Research on legal issues that impact upon hazard resilience has been pursued by scholars in individual areas of study; planning law, environmental law, tort law, constitutional law etc. The risk of climate change and developing scholarship in the area of climate change adaptation² has seen an increasing realisation that if we are to build resilient communities these areas of law must be considered as a whole.

In Australia, the Bushfire Cooperative Research Centre (CRC) has taken the initiative in this regard. The CRC is funding a joint research project on *Mainstreaming Fire and Emergency Management across Legal and Policy Sectors: Joint Research and Policy Learning*. This research is a collaborative project between the Australian National University (law and policy);³ the University of Canberra (urban and regional planning)⁴ and the RMIT (Royal Melbourne Institute of Technology) University (sharing responsibility).⁵

This paper will share some of the insights and thoughts for further study that have arisen out of our research.

Australian emergency management policy, past and present

In Australia, emergency management is very much a matter of state responsibility. Although the Australian Constitution borrowed heavily from ideas incorporated in the Constitution of the United States, our levels of governments seem quite different.

All of our States were self-governing English colonies that agreed to form a federal government to deal with issues best managed on a national level. By agreement certain powers were vested in the Commonwealth or Federal government. The Federal government has the power to make laws with respect to a defined number of subject areas (although with subsequent judicial interpretation and application to situations that could not be envisaged when the Constitution was being written, the scope of Commonwealth power has expanded). Even so the principle remains that the States have an unlimited capacity to make laws for the ‘peace, order and good governance’ of their jurisdiction, whereas the Commonwealth has only limited power.

The territories (the Northern Territory, the Australian Capital Territory and Norfolk Island) are subject to direct intervention by the Commonwealth but in each case the Commonwealth has established ‘self-government’ for the territories so their position is similar to that of the States.

Local Government has no recognition in the Constitution and no significant history independent of the States. Local Government is entirely the product of State legislation and may exercise power only in accordance with State government law and policy.

Local governments do not provide traditional emergency services. All of our police forces, fire brigades, ambulance services and our volunteer ‘State Emergency Services’ are services

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6 Australian Constitution, s 51.
7 See, for example, Constitution Act 1902 (NSW) s 5 and Constitution Act 1975 (Vic) s 16; see also Australian Capital Territory (Self-Government) Act 1988 (Cth) s 22.
8 Australian Constitution, s 122.
9 See for example the Local Government Act 1936 (NSW).
10 The State Emergency Services (SES) grew out of civil defence. Although the details vary, the SES is generally the response agency for floods, storms, tsunami, landslip and earthquake and in many states and territories provide general and road crash rescue services.
provided by the State governments. Compared to the US these services are very large when you consider we have eight states and territories\(^\text{11}\) in a land mass the same size as the continental US.

Historically the fire and emergency services were made up of local volunteers effectively coming together to form a self-help group, sometimes funded by insurance companies or local governments. Over time the various brigades were brought under the control of an organising authority or board but they remained largely independent.\(^\text{12}\) In enacting legislation the governments did not necessarily see their role as protecting people from fire. Victoria’s first fire brigade legislation, the \textit{Fire Brigades Act 1890} (Vic) was an Act to improve the administration of fire brigades.\(^\text{13}\) This Act empowered the local municipalities that had an interest in providing fire protection to do so, if they wished.\(^\text{14}\) It did not require them to do so. There was clearly no expectation that local government, let alone State government, would necessarily set up brigades to provide protection for the community, let alone for private assets, or that emergency response was a central government activity.

Today emergency management is seen as a core or central government activity. In Victoria, statutory authorities, the Metropolitan Fire and Emergency Services Board and the Country Fire Authority manage fire brigades and the delivery of fire services, subject to the direction and control of the Minister.\(^\text{15}\) In New South Wales, the emergency services are centrally located as divisions of the Government service, rather than independent statutory authorities.\(^\text{16}\) Australian governments have moved from a laissez-faire or simply enabling approach to disaster response, to providing direct personal assistance.\(^\text{17}\)

\(^{11}\) Queensland, New South Wales, Victoria, Tasmania, South Australia, Western Australia and the Northern and Australian Capital Territories.


\(^{13}\) Victoria, \textit{Parliament Debates}, Legislative Assembly, 18 June 1890, 381 (Mr Deakin).

\(^{14}\) Ibid 377.

\(^{15}\) Metropolitan Fire Brigades Act 1958 (Vic) ss 6,7 and 8; Country Fire Authority Act 1958 (Vic) ss 6 and 6A.

\(^{16}\) Public Sector Employment and Management Act 2002 (NSW) s 4C and Schedule 1

\(^{17}\) Rutherford H Platt, \textit{Disasters and Democracy} (Island Press, 1999), 20.
Shared responsibility and resilient communities

Although the State and Territory governments are now direct providers of emergency services to the community, they, and the emergency services know that they are not able to prevent all disasters. As one senior official said:

… most of the emergency management professionals who have been around for a while recognise that life loss on that scale will continue to occur. There are residual levels of risk that are acceptable to government. If they weren’t acceptable, they would throw more resources at us.

In the 1990’s, in what may be seen as a return to the self-help days of the past, the ‘state agency–centred approach to hazard management began to be replaced by a model that sought to make community members increasingly self-reliant’. In the most recent, and high level policy statement, the Council of Australian Government’s National Strategy for Disaster Resilience, Australian governments committed to strengthen:

… the nation’s resilience to disasters by:

- developing and implementing effective, risk-based land management and planning arrangements and other mitigation activities;
- having effective arrangements in place to inform people about how to assess risks and reduce their exposure and vulnerability to hazards;
- having clear and effective education systems so people understand what options are available and what the best course of action is in responding to a hazard as it approaches;
- supporting individuals and communities to prepare for extreme events;
- ensuring the most effective, well-coordinated response from our emergency services and volunteers when disaster hits; and
- working in a swift, compassionate and pragmatic way to help communities recover from devastation and to learn, innovate and adapt in the aftermath of disastrous events.

A resilient community that shares responsibility for hazard management will be a community that understands the risks that they face, knows how to, and does, prepare to face those risks, has identified steps that can be and are taken to minimise the impact of the event (for example by building hazard resistant homes or engineering solutions), has a plan on how they will react when the hazard occurs and knows what they will need, and do, after the event. Communities will plan for the recurring event but also the extreme or catastrophic event, they may put in place mitigation for the 1 in 250 year flood event but will understand that mitigation measures will not

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19 Council of Australian Governments, National Strategy for Disaster Resilience; Building our nation’s resilience to disasters, (Commonwealth of Australia, 2009).
protect them from more extreme events, such as the rare, but not impossible, 1 in 500 year flood event, and will plan accordingly.

**Understanding what is shared**

As an overarching policy goal the mutual ideas of the resilient community and shared responsibility are laudable, but translating that goal into a practical reality that will allow the Australian community to face the increased threats brought by predicted climate change will require significantly more detail. Senior emergency managers applaud the concepts of shared responsibility and resilient communities, but have doubts as to how these can be implemented or are understood:

… the problem with shared responsibility is what’s shared and what’s not – who’s responsible for what? The concept of mutual obligation is stronger – if party A doesn’t perform their obligation, party B may not be able to do their part.\(^2^0\)

… we’re saying we’re building resilient communities more for the sake of saying we’re doing something rather than the reality of actually doing something.

The policy discussion does not address resilience at the individual and local level. Emergency service chief officers are concerned that individual, and with it community resilience is decreasing rather than increasing. This can be attributed to a number of factors:

1. The emergency services are a victim of their own success and the image of the ‘hero’. Because they are able to turn up and are effective in combating most hazards most of the time, people have come to expect them to be there even during catastrophic events.

2. Increased fringe urbanisation sees more people moving into hazard prone areas without the detailed knowledge of or connections with the environment and the history of the place to understand the risks that they face. Further, demographic change in both directions – younger people out of rural areas, others moving into rural areas – has led to a loss of traditional skills and ability to engage in self-help; and

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\(^{20}\) Personal communication – in accordance with ethics approval, no identifying material is provided but the transcripts remain in the possession of the author. This is true for all non-attributed quotes in this paper.
3. A risk averse society. The community has been encouraged to undertake a risk assessment of all aspects of their lives and to avoid unnecessary risk. The lead in this area is in workplace health and safety where, in one sense, shared responsibility is paramount. Modern workplace health and safety law imposes health and safety duties on everyone involved in the workplace, from employees and visitors to a workplace, to the person undertaking the business enterprise and the supplier of goods and materials.\textsuperscript{21} That model of shared responsibility does not however, improve resilience. Under that model we share responsibility not by taking action to deal with issues but by recognising the risk and calling on others; today we do not change our own office lightbulb, rather we recognise that standing on the desk or chair is not safe and we call in the workplace electrician. Having been trained in this model of response, it is not surprise that a homeowner when faced with a natural hazard takes the risk averse response of calling on the emergency services.

If I think about every time we get a storm these days, if a tree falls over somebody's front fence or their garage, immediately they ring the SES [State Emergency Service]. So the SES … now are seeing much more demand. I think that's because the government has done a fantastic job - and these agencies, done a fantastic job in marketing themselves and telling them that they're around. So, instead of people saying, listen I'll sort that out, their immediate response is to ring the SES and they'll come and cut it down for them…

I think that's what's happening in fire too… a lot of our research is saying that people are still going to hang around until the last minute and generally they're going to want answers and somebody to tell them what to do.

The vagueness of these two concepts, shared responsibility and the resilient community, and the associated policy goals is one issue: the other is how resilient – or how vulnerable – do we want communities to be, now and in a likely more hazardous era of changed climate?

**What level of resilience should we aim for?**

A disaster-resilient nation is ‘… one in which its communities, through mitigation and pre-disaster preparation, develop the adaptive capacity to maintain important community functions

and recover quickly when major disasters occur’.\textsuperscript{22} Australia, at a national level, and even down to a state and regional level demonstrates a high degree of resilience. In 2003 uncontrolled bushfires burned into urban Canberra, the national capital, but there was no threat to the operation of the federal government. Four lives and many homes were lost, but important community functions were maintained and the city recovered reasonably quickly. Communities are rebuilding after the Black Saturday fires of 2009 in Victoria and the community has quickly rallied to assist affected householders and restore community activities in Queensland after a devastating summer of floods and severe storms in 2011 and again in 2012. These were extreme events but the impact upon the Australian community was nothing compared to the impacts of the 2004 South East Asian tsunami, Hurricane Katrina in New Orleans in 2005, the 2010-11 Pakistan floods or the 2011 Japanese earthquake and tsunami.

The fact that Australia’s populations and cities were not devastated is testament to the nation’s resilience; an ability to prepare for, and quickly recover from these events, but is our current level of resilience sufficient? Floods, fires and storms, even in the nature of the 2003 and 2009 fires, the floods of 2011 and 2012 and cyclones such as Larry (2006) and Yasi (2011) are, in the Australian context, relatively routine or, at least not out of the ordinary but ‘coping with moderate events may not be a true indicator of preparedness for a great one’.\textsuperscript{23} Although the Black Saturday fires that burned through Victoria in 2009 were devastating, claiming 173 lives and thousands of homes, worse fires can be imagined and are likely. In the context of climate change – and even within the current climate envelope – catastrophic fires will occur again and if those fires impact upon many jurisdictions at the same time, as they did in the summer of 2003 or during the 1983 Ash Wednesday fires, and impact on well-populated areas such as Sydney’s Blue Mountains, Canberra or the Adelaide Hills, the consequences may be much worse.

More and more severe events will test our national resilience but it is not feasible to create a community or a nation that is completely immune from natural hazards. Although risk exposure can be reduced, at some point the community has to identify when the costs exceed the benefits. For example, recent research emphasises the importance of reducing or removing fuels

\textsuperscript{22} Committee on National Earthquake Resilience Research, Implementation, and Outreach, Committee on Seismology and Geodynamics and National Research Council, \textit{National Earthquake Resilience} (National Academies Press, 2011), 3.

\textsuperscript{23} Ibid, 1.
immediately around houses to protect from bushfire. Requiring everyone to build a 50m concrete slab around their home may reduce the bushfire risk but would impose such a financial cost, and represent a diminution in other values that it is probably not a cost we are prepared to pay. Legally enforcing garden composition and style and vegetation clearance around tens of thousands of identified at-risk households may be unacceptable in a liberal democracy, and require an expensive and complex enforcement task. As one fire chief officer said after looking at the impact of the 2009 fires:

If you step back and you say, well, how could we have prevented that fire? Here’s the strategy … Clear every tree for 100 metres each side of the road winding up … all that littoral forest and beautiful tall timber … Get rid of all the timber cottages in the village. They’re 100 years old … made of timber and highly volatile. Put brick and concrete structures in place. Put perimeter hazard reduction around the village every two years … I can tell you now if we had put that strategy in place the public would have said f____ off … So if you step back and look at where [place name] sat in the landscape, and you look at the forest and 10 years of drought and accumulated fuel loads … what part of inevitability didn’t we get here?

A resilient community is not therefore, a community that has been so engineered that no flood or fire can occur; rather it is one that has made assessments about the risks it is willing to accept. It has negated the foreseeable, unacceptable risk but is prepared to live with and respond to the residual risk.

The National Strategy for Disaster Resilience identifies the objective of building resilience but gives no indication on how we will identify when the goal has been reached or how resilient communities should be; should community infrastructure be designed to withstand the 1 in 100 year flood, or the 1 in 1000 year event? Increasing resilience brings increased costs and trade-offs. Important questions arise and the answers to them will determine the appropriate approach to risk: What is the acceptable level of risk? Who is to determine whether an area is ‘too risky’? Through what process are such decisions made? What are the trade-offs we are prepared to accept?

Recent events and the inquiries following events such as the Black Saturday fires and the floods in Queensland and Victoria in 2011 make it clear that there is considerable difference across the

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Australian population in terms of their expectations. Increased hazard impacts in the face of climate change will exacerbate this somewhat confused situation.

Responding to community expectations

There are many issues that are important to responding to community expectations. Two that are relevant in the context of comparing Australia’s recent history and the experience of Colorado, particularly in light of recent events, are addressing the communities expectation to receive warnings of hazards, and incorporating emergency management across legal areas, and in particular land use and planning.

Warnings

Although Australia wants to develop resilient communities, as noted earlier, some of the steps we are taking may in fact be decreasing resilience. We encourage people not to take risks but to call on others, such as the emergency services. One of the increasing demands is that the emergency services will give timely, accurate and personalised warnings regarding the impact of natural hazards, such as fires. The adage is that fire agencies must now put as much effort into putting out information as they put in to putting out the fire! This is creating a problem for the emergency services:

… there's a challenge for us in that often the actions that we take to build community resilience can have a counter-intuitive effect… People expect warnings now to be delivered by phone and SMS and on the radio and television. If they're not warned, then they're not happy. If they're warned and it's too late, then they're not happy.

… we’ve reached a point where over promising is causing problems and I think the best example of this over promising is this warnings scenario… I think what people are hearing is “I’ll receive a personalised message to tell me exactly what to do in my circumstance right now in regards to this fire.” I know that that's not what the fire service or what government agencies are saying [but] … I can listen to telephone calls from people that are ringing things like bush fire hotlines and they’re very much, you know, should I be increasing my insurance on the shed and should I let the horses into the top paddock?... It's an expectation that’s been created and, of course, when it doesn’t work out people are quite - well, rightly or wrongly, upset that they didn’t receive the level of service they’re expecting from government and its agencies.

… if we haven't been able to do what we said we're going to do - and that is warn people … we're going to be under scrutiny and probably deserve to be. That's going to be a
challenge for us… [because] we're not tested yet on that. You know, will we get the warnings out appropriately, will the emergency alert system work - it probably won't.

… my personal view … is that the level of community warning in particular is unachievable and I think that we’ve probably done ourselves a disservice in even considering that we can provide a level of public warning that’s commensurate with the community’s expectations.

So what happens is we set an expectation in the community that if something happens, they’ll be warned… It’s an impossible thing to satisfy because we can’t tell everybody and not everyone’s going to listen to the radio and have their phone on… once upon a time in the community people took responsibility for finding out things for themselves instead of it being provided to them and I think we’ve got to get back to that somehow.

The expectation is heightened by past experience. Recently there was a small fire in an area that had been devastated by the 2009 Victorian bushfires. A small fire that could be easily managed by the Country Fire Authority, but past experience and the Royal Commission had heightened expectations:

… there was a little fire and there was quite a lot of debate in the community that actually ended up in parliament … around a warning that was put out for a little fire… There was a lot of criticism that people in the community did not get their text message on their phone, even though this thing was a hectare in size and was put out within 30 minutes.

The first major test of the automated warning system was in Canberra in 2011 when a fire in a factory released a cloud of toxic gas. Using the recently introduced automated warning system the ACT Emergency Services Authority tried to warn the community to stay inside and take certain protective measures. There was criticism of the government in that many people did not receive the messages and the SMS messages had spelling errors so that some people did not believe they were genuine.25

In the Mitchell fire, the system was overwhelmed. Two messages were sent out. Of the first 100% of landline numbers were dialled, but only 63% of SMS messages were delivered. With the second warning only 20% of the landline numbers were dialled and again 63% of the SMS

25 The spelling errors were apparently because the words needed to be spelled phonetically so the computer that was reading the message when it was sent by landline, could actually say the word, the spelling errors were ‘Insadents’ for incidents and ‘Resadents’ for residents; Emergency Services Authority, Use of Emergency Alert during the Mitchell Hazardous Material Fire 16 September 2011, (ACT Government, 2011), 3.
messages were delivered. Apart from landlines being busy or unanswered, the failure to communicate was a systems failure.

In preparing the campaigns, there was an expectation that the alerts issued for the target area would be delivered within 30 minutes due to the nature and urgency of the incident. The system captured the identified areas and accepted the allocated campaign time nominated by the ESA. It was not until the results of the two campaigns were provided that it was identified that a significant number of phone messages and SMS messages were not delivered as the time specified for the system to dial all of the numbers with billing addresses in the target area proved to be too short… the system does not provide a warning to the operator that the proposed campaign is too short.\(^\text{26}\)

But was that a failure:

We've gone from zero to 18,000 in three years. So I would regard that as progressive and moving towards success. I don't regard that as failure at all. If I couldn't talk to anyone three years ago and now I can talk to 18,000 people in half an hour, I think that's progressive towards a successful outcome. But because I didn't hit, you know, bingo, 80,000 in half an hour in one hit people said, you failed.

The demand for better communications has been a constant call out of post event inquiries. The demand to have radio networks that work in fires is repeated but has not yet been fully achieved. Smoke and weather affect the signals, hilly and remote areas impact upon ability to communicate and radio towers are destroyed by fire. Even though we cannot guarantee communication across fire fighting units, the community is demanding instant access to warnings because they are used to SMS messages, in normal times, without the stresses on the system, to be delivered instantly.

The demand for warning is moving from an expectation to a legal duty.\(^\text{27}\) Whether there is yet a common law duty, that will sound in damages, for failure to warn, remains to be seen,\(^\text{28}\) but we can predict that this is coming with the consequent extra demands on our fire and emergency services.

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\(^{27}\) Fire Services Commissioner Act 2010 (Vic) s 24.

Land use planning and maintaining the Asset Protection Zone (APZ).

Emergency management is much more than the traditional area of ‘response’. In Australia we talk of the need to ‘prevent, prepare, respond and recover’ from natural hazard events. A large part of preparing for, and minimising the impact of floods, fires and other events, is to plan for them and to take steps to ‘harden’ assets, whether they are homes or vital infrastructure, so that they are not adversely impacted. In order to this emergency management has to be incorporated into all aspects of governance and most importantly into land use planning.29

In Australia hazard management is broadly incorporated into legal regimes including planning regimes, though with differing degrees of strength. One impediment to strong mainstreaming is the tendency, in law, to use vague terms or concepts. The law requires people or agencies to act “reasonably”, actions must be “proportionate” to the harm to be avoided, decision-makers may be required to “consult” with or “consider” the views of others. Although Parliaments could pass laws with rigid, clear rules there is little desire to do so. Rigid rules may have unintended consequences in cases that are outside those that were anticipated when the law was passed or may be politically unpopular as they leave no room to move when politically attractive opportunities arise.

Planning for communities has conflicting demands; on the one hand there is the need to plan for what are rare but catastrophic events, balanced against increasing demand for housing, the need to stimulate investment and economic activity, the desire to maintain a natural amenity and conservation and bio-diversity imperatives.

In the immediate consequence of a fire or flood that causes loss of life or property, the focus is on planning to prevent similar outcomes, but as time passes, the communities focus can easily shift to others priorities,30 particularly if the Report of the Inquiry is released and the subsequent absence of flood or fire (remembering these are in fact rare events) lulls the community into

thinking the ‘problem’ that caused the last disaster has been solved, so we can now build in the
safe, secure and erroneous belief that ‘it won’t happen again’.

Even where emergency planning is expressly required, the provisions may be weak or at least
unclear. For example, the *Environmental Planning and Assessment Act 1979* (NSW) requires
local authorities to refuse development consent in bushfire prone areas unless, either:

1. The development complies with the requirements published by the NSW Rural Fire
   Service; or

2. They have “consulted” with the Commissioner of the Rural Fire Service regarding the
   measures to reduce the bushfire impact risk.\(^\text{31}\)

An obligation to “consult” indicates that emergency management considerations are incorporated
into the legislation but does not define what, or how the consultation is to take place or the
weight to be given to the Commissioner’s concerns. A decision-maker may, consistently with
the legislative provisions, consult as required, but still decide that whatever adverse impact there
may be on emergency management is overridden by other policy considerations.\(^\text{32}\)

The Victorian Bushfires Royal Commission report noted that standards for building in bush fire
prone areas only applied to future developments. There was no power to insist on retrofitting
already existing buildings with fire protection measures. They also noted that in the immediate
aftermath of the 2009 fires, the state government committed to rebuilding devastated
communities and by so doing, lost the opportunity to think about whether or not it was safe to
put communities there, or to insist on more rigid bushfire protection measures.\(^\text{33}\)

All Australian jurisdictions have processes in place to remove planning decisions from local
authorities. There are appeals from the decisions of local authorities to a tribunal or special
court. These tribunals generally speaking exercise the planning power *de novo*, that is they

\[^{31}\text{Environmental Planning and Assessment Act 1979 (NSW), s 79BA.}\]

\[^{32}\text{See, eg JML Designs Pty Ltd v Blue Mountains City Council [2008] NSWLEC 1244.}\]

\[^{33}\text{Teague, B, Pascoe S and McLeod R, 2009 Victorian Bushfires Royal Commission (Government of}
simply make their own decision rather than review the earlier decision maker’s decision. A developer with a strong economic interest may well be able to apply more resources to challenging a decision than the Council can employ to defend it. The court has a number of processes in place to facilitate a negotiated settlement putting up barriers to a local authority simply insisting that a development not occur.

On Victorian council refused development consent for an area near a council rubbish tip. The developers took the matter to the Victorian Civil and Administrative Tribunal (VCAT) which allowed the development to proceed. When methane gas was detected in the area, residents sued the Council, not for allowing the development (which they had wanted to prohibit) but for negligence in the management of the land fill site. The Ombudsman criticised the Council for failing to lodge a Supreme Court appeal against the VCAT decision. Here the council has attempted to manage what it saw as an unacceptable risk but accepted the umpire’s decision when the developer exercised its rights according to law, but was still condemned and ultimately liable for $13.5 million when the very risks that it foresaw occurred.

Jurisdictions have provisions in place to allow development applications to be considered by the State rather than local government when the development is deemed to be of ‘state significance’. These tend to be very large projects, with most projects being valued at $30 million or more. The issue of a project of major significance and economic value to the state may well lead to a downplaying of hazard risk.

The development conditions for fire and flood safety are imposed at the consent stage. Once the consent has been granted, even if it is subject to requirements to maintain an asset protection

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34 See, for example, Land and Environment Court Act 1979 (NSW) ss 39(2) and (3).
39 Ibid, 2.
zone, sprinklers, standalone water supply for fire fighting or the like, local governments lack the resources, the power, and perhaps the political will to require that the defensive measures are maintained. In simple terms a developer may be required to build a swimming pool to provide the capacity for a water supply, but there is no requirement for the resident to actually fill the pool.40

What follows is that although we have provisions in place to regulate development in hazard rich areas, the provisions are reasonably weak, largely applying only to initial development rather than ongoing maintenance, and where decision making can easily be moved away from local communities.

Conclusion
Disaster law, in Australia, is not a recognised field of study. It remains the case that issues are still studied in isolation but the imperative brought by climate change may change that in the future.

In our research we have identified that emergency management considerations are incorporated into other areas of law but with varying degrees of ‘strength’. The Australian governments are seeking to develop resilient communities but there is much that is missing from that discussion. How resilient do we want to be or, more importantly, how much are we prepared to pay both in cost as well as social and landscape amenity to protect ourselves from rare but catastrophic events? That policy debate needs to be had, but is avoided in the general discussion that we need to build resilience or we need to have land use planning regimes to stop people living in areas that are ‘too’ risky.

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