

October 2014



Working as one A road map to disaster resilience for Australia

Paul Barnes, Anthony Bergin and Daniel Nichola

Natural disasters cause widespread disruption, costing the Australian economy \$6.3 billion per year, and those costs are projected to rise incrementally to \$23 billion by 2050.¹

With more frequent natural disasters with greater consequences, Australian communities need the ability to prepare and plan for them, absorb and recover from them, and adapt more successfully to their effects.

Enhancing Australian resilience will allow us to better anticipate disasters and assist in planning to reduce losses, rather than just waiting for the next king hit and paying for it afterwards.

Given the scale of devastation, governments have been quick to pick up the pieces when major natural disasters hit. But this approach ('The government will give you taxpayers' money regardless of what you did to help yourself, and we'll help you rebuild in the same risky area.') has created a culture of dependence. This is unsustainable and costly.

In 2008, ASPI published *Taking a punch: building a more resilient Australia*. That report emphasised the importance of strong leadership and coordination in disaster resilience policymaking, as well as the value of volunteers and family and individual preparation, in managing the effects of major disasters.



Country Fire Authority fire truck is pictured in front of flames while fighting a bushfire at the Bunyip State Forest near the Victorian township of Tonimbuk, 7 February 2009. AAP Image/Andrew Brownbill.

This report offers a roadmap for enhancing Australia's disaster resilience, building on the 2011 *National Strategy for Disaster Resilience*. It includes a snapshot of relevant issues and current resilience efforts in Australia, outlining key challenges and opportunities.

The report sets out 11 recommendations to help guide Australia towards increasing national resilience, from individuals and local communities through to state and federal agencies.

This paper considers a number of factors to improve disaster resilience in Australia:

- the recruitment and sustainment of volunteers and the need to encourage early awareness and training in safety and disaster-related skills
- options for strengthening coordination between the federal and state disaster management agencies, especially in relation to assessing needs for preparation, planning and response to major catastrophic events
- solutions for gauging levels of resilience in communities and the adoption of self-sufficiency
- ensuring that lessons rediscovered or reinterpreted after post-disaster commissions of inquiry and reviews are implemented in practice and shared nationally
- establishing national curriculum and capability needs for emergency management agencies to improve professionalisation in the sector.

The national agenda for disaster resilience

With projections of increased future threats from climate variability and greater vulnerability because of urbanisation and reliance on technological systems, the need for greater coordination in preparing for major disruptions and recovering from them has never been more important. While natural hazards can't be prevented, the ways that societies prepare for, respond to and recover from their impacts are under human control.

Over the past decade, many natural disasters have triggered government assessments and reports. Notable instances have included:

- 2002: *Natural disaster in Australia: Reforming mitigation, relief and recovery arrangements*
- 2004: National Inquiry on Bushfire Mitigation and Management
- 2005: *Review of Australia's Ability to Respond to and Recover from Catastrophic Disasters*, Australian Emergency Management Committee
- 2009: Victorian Bushfires Royal Commission
- 2010: *The incidence and severity of bushfires across Australia*, the Senate Select Committee on Agriculture and Related Industries
- 2011: *A Shared Responsibility: The Report of the Perth Hills Bushfire February Review*
- 2011: *Review of the 2010–11 Flood Warnings and Response—final report*
- 2011: Queensland Floods Commission of Inquiry
- 2011: *National Strategy for Disaster Resilience* (see box).

A recent report by the Australian Business Roundtable for Disaster Resilience and Safer Communities (ABDRSC) found that numerous government-led inquiries, reviews or updates in relation to natural disasters have been conducted since 2011.² The most recent examination is now underway: the Productivity Commission's final report into national disaster funding arrangements is due at the end of this year.

A 2011 review and analysis of recent Australian disaster inquiries by the Monash University Injury Research Institute identified the following common strategic issues and themes that needed to be addressed to enhance Australia's disaster management arrangements:

- critical infrastructure resilience
- state emergency management arrangements
- shared responsibilities between emergency management agencies
- professionalising the emergency management workforce
- research and databases
- gaps and opportunities from post-disaster evaluations.³

The National Strategy for Disaster Resilience

In December 2009, the Council of Australian Governments (COAG) agreed to adopt a whole-of-nation, resilience-based approach to disaster management. It recognised that a national, coordinated and cooperative effort is needed to enhance Australia's capacity to prepare for, withstand and recover from disasters.

The *National Strategy for Disaster Resilience*, which was adopted by COAG in February 2011, provides high-level guidance on disaster management to federal, state, territory and local governments, business and community leaders and the not-for-profit sector.

The strategy identifies seven priority outcomes to enhance Australia's disaster resilience:

- Leading change and coordinating effort
- Understanding risks
- Communicating with and educating people about risks
- Partnering with those who effect change
- Empowering individuals and communities to exercise choice and take responsibility
- Reducing risks in the built environment
- Supporting capabilities for disaster resilience.

The strategy calls for an integrated, whole-of-nation effort encompassing enhanced partnerships, shared responsibility, a better understanding of the risk environment and disaster impacts, and an adaptive and empowered community that acts on that understanding.⁴

Similar findings arose from a review of deficiencies in large-scale operations in 32 major disasters in the United Kingdom.⁵ Common factors included:

- poor working practices and organisational planning
- inadequate training
- ineffective communication
- no system to ensure that lessons were learned and staff taught
- no monitoring/audit mechanism
- previous lessons/reports not acted upon.

An American study found similar deficiencies in the US:

- the need to radically improve training and exercises
- the need for a comprehensive, nationwide capability to gather and validate information learned from incidents, develop and vet corrective actions, and disseminate them to those who must inculcate the changes

- the need for incentives to institutionalise lessons-learning processes at all levels of government.⁶

It's evident that some of these deficiencies are shared in all three countries, particularly deficiencies in organisational learning, which can be delivered effectively by establishing standards and evaluation regimes for state-based agencies with disaster planning, response and recovery roles.

The establishment of inspectors-general for emergency management in Queensland and Victoria creates an opportunity to ensure effective planning and response for disaster management and effective learning of valuable post-disaster lessons.

Eleven actions to build a more resilient Australia

Disaster resilience is a responsibility shared by the community, the private sector, and federal, state and local governments: building it is everybody's business. This section

outlines 11 broad measures to enhance our ability to better prepare for, recover from and adapt more successfully to disasters.

Strengthen federal–state links

By definition, post-disaster inquiries are retrospective. Their recommendations for change can be lost without mechanisms to implement those changes and assess improvements.

However, as a result of significant changes in both Queensland and Victoria (see box), there's an opportunity to rethink how state governments coordinate disaster preparedness, response and recovery vis-a-vis Australian Government arrangements, and to reappraise how the Australia – New Zealand Emergency Management Committee (ANZEMC) engages with state government agencies.

There's a benefit from re-confirming alignment between the work of ANZEMC's four subcommittees⁷ and state-based groups.

Emergency Management Australia (EMA) should facilitate discussions among the states to identify prescriptive and performance-based standards for emergency and disaster management.

This would provide a means to achieve efficiencies of scale, improve cost-effectiveness, and contribute to a dataset of performance and operational standards at the national level. Such a dataset could assist in ensuring coordination in resource planning and interjurisdictional operations. Additional assistance could be provided to support state agencies by reinforcing availability of the EMA Australian Emergency Management Knowledge Hub as a clearinghouse of useful information for communities' and professional response groups.

Emergency management organisational changes: Queensland and Victoria

In addition to moving specific frontline emergency response and coordination roles to the newly established Queensland Fire and Emergency Service⁸, Queensland has established the Inspector-General Emergency Management to:

- ensure the interoperability of systems across portfolio agencies and those who support Queensland disaster management arrangements
- ensure compliance by Queensland Government agencies with their emergency or disaster management responsibilities
- establish and implement a performance standards and assurance framework to direct, guide and focus the work of all agencies across all tiers of government to desired outcomes of Queensland disaster management arrangements
- conduct regular benchmarking and quality assurance exercises with public safety agencies to ensure that standards remain contemporary
- provide independent advice and leadership to government on any matter in relation to emergency management or interoperability between agencies within the public safety portfolio
- work with emergency services, government departments and the community to identify and continuously improve community resilience, volunteer capacity and disaster and emergency management arrangements.

In Victoria, the new Inspector-General for Emergency Management operates within the Department of Justice but separately from the functional diarchy (CEO and the Emergency Management Commissioner) of the newly created statutory body, Emergency Management Victoria.

The Victorian Emergency Management Commissioner is to oversee and ensure a coordinated response to major emergencies, manage the State Control Centre, provide timely and accurate advice on major emergencies to the Victorian Government, manage the consequences of major emergencies, coordinate recovery activities, and set operational standards and procedures for emergency management.

To achieve this, EMA needs more than the current case-by-case acceptance of its role by other federal and state agencies.

EMA needs a mandate from Cabinet to lead the government's response to significant crises. This will give it the power to ensure that all national agencies are properly coordinating planning for disaster mitigation and the monitoring, testing and exercising of their emergency response plans as part of the government's broader crisis-management responsibilities. It will also minimise the duplication of effort.

EMA could also be given a mandate to coordinate state and territory resources when the requirement for disaster response exceeds any jurisdiction's capacity and support from other jurisdictions is needed.

The ABRDRSC has recently suggested the establishment of a disaster resilience adviser in the Department of the Prime Minister and Cabinet.

We'd support that suggestion, but there's no need to establish a new position: the job description fits that of the Director-General, EMA, who should answer directly to the Justice Minister, who is responsible for emergency management. In his role as resilience adviser, the EMA Director-General could lead in developing a national resilience scorecard with the jurisdictions (see 'Measure progress in national resilience' section below).

A further benefit of national and state cooperation could be in developing the use of unmanned aerial vehicles (UAVs), particularly in bushfire response but also for post-damage assessment and wider disaster management.

The National Aerial Firefighting Centre is developing approaches to coordinate national cooperative arrangements for acquiring and using UAVs in firefighting. It could take a direct national role in coordinating protocols for the use of UAVs in other civilian disaster responses.

A national approach is also needed to ensure a reliable emergency communications system. The Australian Government could make emergency broadcasting capability a telecommunications and broadcasting obligation: it should use its regulatory sway to deliver an effective emergency broadcasting system to enable emergency service-to-service communications across states. Part of the spectrum could be

made accessible or dedicated to emergency management for that purpose.

Invest in mitigation

It's now time to focus properly on mitigation, and not just response and recovery. The Productivity Commission's September 2014 draft report on national natural disaster funding arrangements highlights the significant fiscal inefficiency of the current approach.⁹ The report finds that the current arrangements create a financial disincentive for state and local governments to invest in mitigation efforts and insurance coverage. As long as the states pay only a fraction of the cost of restoring essential assets damaged by a natural disaster, they may be reluctant to pay the full costs of strengthening important and vulnerable infrastructure. As a result, those arrangements tip the balance from investment in planning and mitigation to applying for federal support to repair or replace assets.

Key points from the Productivity Commission's draft report include the following:

- Australia is exposed to natural disasters, and effective planning and the mitigation of resulting damage and disruption are essential tasks for governments, businesses and households.
- Governments generally overinvest in post-disaster reconstruction, and underinvest in mitigation practices that would limit the impact of natural disasters in the first place. Therefore, natural disaster costs have become a growing, unfunded liability for governments, especially the Australian Government.
- Governments would do better with policies that allow communities and private sector organisations to better understand how much everyday access to essential services might be affected in natural disasters. Examples include the following:
 - Information on hazards and risk exposure has improved significantly in recent years, but there are opportunities to improve its consistency, sharing and communication.
 - Building regulations have a significant influence on the exposure and vulnerability of communities. While they've generally been effective, there's evidence that land-use planning doesn't always incorporate natural disaster risk

assessments. Some local government authorities lack the resources to carry out this type of planning effectively.

Mitigation can work. Grafton, on the Clarence River, was flooded around 20 times between the late 1830s and the late 1960s, after which sound levees were built. Eleven floods that would have inundated residential and commercial areas have been avoided. The four big floods since 2000 would have caused about \$800 million in damage. The cost of building the levees today would be about \$30 million. Their worth is clear, even with an annual maintenance bill of a few hundred thousand dollars. This is a good example of the benefits of a commitment to mitigation.

More than \$1 billion (in 2014 dollars) was spent on flood mitigation in New South Wales between 1960 and 2007. The money paid for levee protection for more than 40 towns, many retention basins, the purchase and removal of properties in flood-ways, house-raising initiatives and other projects. All the projects passed stringent cost-benefit tests before their implementation. And councils were given incentives to disallow new dwellings in flood-prone areas.

Great economic efficiencies flow from disaster mitigation.¹⁰ Mitigation should become policy for the Australian Government and our state governments, and for our treasury departments. It should be a key part of Canberra's microeconomic reform program. It's much more efficient than spending over and over again on relief.

Measure progress in national resilience

It would be very useful to be able to measure community resilience. The Queensland Department of Local Government, Community Recovery and Resilience has taken steps to establish a resilience baseline as part of its 'Get ready' campaign. The idea is to measure people's recognition, recall and actions to define a measure of natural disaster preparedness.

The initiative aims to build the state's resilience by partnering with local councils and communities. It emphasises family and community links.

While the work is still in progress, a number of candidate 'predictors of resilience' have been noted:

- the ability to prepare for and deal with severe weather
- grassroots preparation and support

- a sense of community
- confidence in the ability to recover financially
- adaptability and persistence.

Without some basis for assessing resilience it's not really possible to monitor changes or show that community resilience has improved, but there's no consistent basis for such measurement in Australia.

In conjunction with the states and territories, EMA should take on the role of establishing a national resilience scorecard. Communities could then develop their own scorecards, focusing on the hazards that threaten them.

Measures might include the ability of critical infrastructure to recover rapidly from impacts, social factors that enhance or limit the community's ability to recover, the ability of buildings to withstand disasters, and factors that capture the special needs of individuals and groups.

The government-supported Trusted Information Sharing Network, which provides an environment in which business and government share information on the protection of our critical infrastructure, could assist in developing metrics.

Build resilience from the bottom up

Resilience is a shared responsibility. It requires the sharing of information and expertise in schools, volunteer organisations and the wider community.

Community emergency management planning work in the town of Harrietteville, Victoria, is a good example. The Victorian Emergency Management Commissioner has supported the community in developing a collaborative approach to a community-based emergency management plan. The focus is on harnessing the local knowledge of the community and supporting organisations to determine local priorities under an 'all hazards, all agencies' approach. The stakeholders agree that bushfires, floods and landslides are the main natural hazards for the area. Those hazards are considered as part of the ongoing management of the town and the adjacent national park and forest.

This approach has strengthened the relationships between the community, Victoria's emergency management organisations, local government, businesses and other stakeholders. Harrietteville's emergency management

plan has community strengths and needs at its heart. After considerable bushfire damage in January 2013, the community wanted to become more resilient to the impacts of major disasters. Meetings and workshops mapped priority community assets and values. Modelling and the development of plausible scenarios enhanced participants' understanding of the risks they face and their roles and responsibilities before, during and after an emergency. This enabled the Harrietteville Community Forum to draw on local knowledge, expertise and experience. The forum has attracted external funding and integrated its activities with other community-based projects.

Harrietteville's emergency management plan, and its development, are a model for strengthening resilience at the local community level. Governments should consider similar community-based initiatives in other vulnerable Australian communities.

In disasters, response and recovery organisations often can't get to every place where assistance is needed simultaneously or within the timeframe expected for everyday emergencies. This happens even if state-based emergency responses have been activated in advance of bushfires or cyclones.

As a result, some people believe that government and non-government support isn't provided soon enough or strongly enough. Governments have been quick to pick up the pieces, which has created a culture of dependence rather than resilience.

Research into community actions during the 2009 Black Saturday bushfires in Victoria indicates that people who were inadequately prepared and who took action at the last moment were more likely to have faced limited options in rapidly changing conditions.¹¹

Developing community resilience requires more than the planning and implementation of programs of risk communication. Governments and response agencies should begin with the needs of local people and tailor support packages that are co-created with those communities.

Build a national resource for disaster-related data

The collection and sharing of disaster-related information, in concert with geospatial agencies and experts, makes emergency decision-making in Australia more effective. The ABRDRSC strongly supports that aim (see box).

For example, there should be a COAG partnership agreement that all states will publish a flood risk mapping report, including local council datasets of housing floor heights and other relevant details. This will inform mitigation efforts and contribute to lower insurance premiums.

An additional benefit from accessing data from state governments and local councils is hazard disclosure to communities. In some cases, the creation of the dataset might require federal grants to local government or legislation to oblige councils to disclose such information as address-level flood risk. In addition, agreements on exchanging data with insurance companies are likely to improve decision-making.

Queensland has implemented a systematic approach to publicly available flood mapping and other disaster-related data, which it makes available online through an open access licence as the 'Queensland Globe'.¹² The globe is a mapping and data application implemented inside Google Earth. When used as an interactive online tool, it allows exploration and the rendering of maps, imagery (including up-to-date satellite images) and other spatial data via a public portal.

As an example of the Queensland Government's open data strategy¹³, members of the public can now see which locations have been affected by disasters, along with information on severity and frequency. This work is supported by the Insurance Council of Australia, which has entered into a memorandum of understanding with Queensland to share data.

Other state governments could adopt Queensland's approach to combining government-held geospatial data with data held by insurance companies and other private sector organisations.

A further benefit of more open access to geospatial data, particularly where it can assist in modelling the impacts of disasters on infrastructure systems, is in better decision-making about mitigation and recovery strategies.

Better data collection and sharing will lead to better risk analysis, which leads to better mitigation efforts. This will reduce insurance premiums.

Better access to data is also likely to inform the testing of infrastructure vulnerability by the national Critical Infrastructure Program for Modelling and Analysis.

An open platform for natural disaster resilience decisions

The ABRDRSC was formed in December 2012 by the chief executive officers of the Australian Red Cross, the Insurance Australia Group, the Investa Property Group, Munich Re, Optus and Westpac Group.

A report by the group found that increasing Australians' understanding of their exposure to natural perils is vital to improving community resilience, and that the key is the availability of accurate, relevant and current data and research.¹⁴ It identified significant barriers to that availability.

Crucial natural disaster information is difficult, costly, often incomplete, often out of date, duplicated across sources, or for a single purpose (it doesn't consider the needs of multiple stakeholders).

The report proposed an open platform framework for the consolidation of existing information and the commissioning of additional research to address gaps and disparities in understanding about natural disasters. It recommended the centralisation of key data through a national open-source platform.

It recommended that the Australian Government provide a single point of access for all Australians. This would provide valuable, base-level information and reduce research costs.

The report called for clear delegations of responsibility for hazard and impact data, such as hazard mapping; transparency and accessibility in all data provision; greater involvement of the private sector in data sharing; greater involvement of end users in natural disaster research; and the establishment of a national resilience research agenda, including a national prioritisation framework for funding resilience initiatives and research.

The report found that providing wider access to accurate natural-disaster data and research could increase government savings by between \$500 million and \$2.4 billion over the period to 2050, and that data and research that facilitates targeted and prioritised investment has the potential to deliver total savings to government of between \$12.7 billion and \$14.6 billion over that period.

An additional benefit of readily available data is that it enables more accuracy in planning for catastrophic events, particularly by enabling scenario planning and capability assessment. Scenario planning requires an understanding of the consequences (the extent and type of damage) following disasters.

Prepare for the big one

Some of the key findings of the 2005 *Review of Australia's Ability to Respond to and Recover from Catastrophic Disasters*¹⁵ were about efforts to improve our capacity to deal with catastrophic disasters and strengthen national collaboration.

The states have the constitutional responsibility for emergency management, but that can be unsatisfactory in a large disaster. The public expects that the Australian Government has a moral, financial and political responsibility to come in. By and large, the government obliges, but there's a need to empower the Federal Government to respond to catastrophic disasters.¹⁶

Threat-based assessments are standard practice for disaster management in Australia, but an important gap exists in capability assessment matched to events of variable scale. In a way, focusing on threat and risk assessment alone can reduce agility by limiting our thinking about unexpected and large-scale disaster effects over wide geographical scales.

While organisations might plan for emergencies, they might not plan effectively for coping with the catastrophic impacts of disruptions to critical infrastructure (water, electricity and communications) or food production and transport networks. Dealing with and recovering from such impacts requires many official response groups, interjurisdictional cooperation and supportive communities.

It follows that planning for such events requires the input of those who would be both affected by and involved in response and recovery. It also requires scenario-based simulations that allow realistic analyses of capability development and deployment options.

While there's an analogue to these activities in military war-gaming, similar efforts in civilian-based settings are currently very limited: the management of low-likelihood – high-consequence events isn't well rehearsed.

Business continuity plans and emergency management arrangements are often based on moderate types of disruption. They may be unreliable if they're too dependent on probabilities and estimates of occurrence. A more effective way is to project types and scales of damage that are plausible and related to experience. By simulating the array of cascading impacts usually caused by significant disasters, sector or industry-wide planning and exercising can inform the rapid scaling of access to resources and the mobility of those resources.

There's also a need to factor in reconstruction: resilience and reconstruction are intrinsically linked. There are positive lessons to be learned from the Queensland Reconstruction Authority model and the many initiatives that the authority has put in place during the delivery of its \$14 billion program, which is historically Australia's largest reconstruction effort.

The authority's work is recognised internationally by the World Bank as providing world's best practice in this sector. Its methods have allowed much more accurate assessments of damage, allowing data to be available to identify systemic weak points and scope for network infrastructure improvements. The authority has been leading the push to better acknowledge current engineering standards as an important factor in reducing vulnerability in recovery and reconstruction efforts.

In planning for more catastrophic scenarios—including man-made disasters such as a terrorist attack on our soil—we also need to pay much more attention to mounting an effective medical response. We pay too little attention to the problems of 'medical surge', avoiding emergency department overcrowding, and conducting rigorous no-notice disaster drills in hospitals to test our ability to handle a large number of casualties.

We need to set national minimum standards for dealing with mass casualty disasters. Our hospitals would then know what they're reasonably expected to be able to cope with and could plan and resource appropriately. Setting standards would make clear the gap between what we're spending and what we need to spend.

Generate capacity through professionalising the emergency services

In Australia, there's an inaccurate perception that emergency management is more an occupation than a profession. This is based on a historical perception that emergency management personnel merely respond to emergencies, rather than performing their many roles in planning, reducing consequences and engaging in community recovery. While the responder role is well recognised, the preventive role and its complexity have grown quickly in all jurisdictions. We need to invest in the next generation of emergency management leaders.

There are significant challenges in training effective emergency and disaster managers and operators and sustaining their numbers. Threat and hazard assessment, vulnerability reduction and consequence management within human and sociotechnical systems can no longer be left to variable interpretations within agencies and across disciplines.

While a number of tertiary-based courses in emergency management are available, they're often focused on specific aspects of the field; few are dedicated to incorporating or extending operational expertise. Through the Bushfire CRC and its successor, the Bushfire and Natural Hazards CRC, the disaster management sector has continued to benefit from new knowledge, much of which results from collaboration with the sector.

The Australasian Fire and Emergency Service Authorities Council (which doesn't include all industries with emergency management personnel) is active in promoting education and the professional standing of member groups. However, there's an opportunity to include a fuller suite of skills for emergency professionals nationally.

The role of the Australian Emergency Management Institute (AEMI) in providing undergraduate qualifications has long been recognised. However, only very recently has tertiary-level training designed specifically for existing public-sector emergency managers been considered.

After the recent decision to close the AEMI's Mount Macedon training facility, we need to avoid having seven separate emergency management approaches: we need a common national professional backbone. EMA, which is picking up the AEMI's functions, will need to ensure that Australia

has common national approaches for comprehensive emergency management to work effectively as a nation in disaster situations.

There would be considerable benefit in developing a national curriculum and establishing a national dialogue aimed at professionalising emergency management. In this way, our governments and communities could have some assurance the required investment in the next generation of emergency management leaders is being made.

Invest in the national school curriculum

School-aged children trained in first aid learn a valuable lesson in responsibility: they acquire the potential to be effective first responders and to save another person's life.

The actions of bystanders can be decisive in reducing fatalities and preventing serious injury—and survival rates can be compromised by bystanders' inaction. In medical emergencies, when an ambulance might take 10 minutes to arrive, the outcomes often depend on actions taken in the first few minutes.

As an important enhancement to community resilience, knowledge of first aid at the community level needs to increase. Increasing the percentage of the population trained in basic first aid will achieve significant reductions in morbidity and mortality.

Most Australians aren't inclined to invest time and money in first aid training. As a result, fewer than 5% of Australian households are estimated to include a member with the first-aid know-how to act in a medical emergency. This figure is well below the international benchmark of 20%, which research suggests correlates with a large reduction in loss of life.¹⁷

To boost the number of Australians with lifesaving skills and to enhance community resilience, first aid training should become the norm in our society.

A national campaign to introduce first aid training in Australian primary schools could achieve this. It would establish a culture of first aid learning from an early age. Over time, it would increase the number of Australians trained and motivated to assist in medical emergencies, making our communities more resilient.

First aid training efforts in primary schools are already underway, but government support is needed to introduce such initiatives nationally. St John Ambulance Australia currently provides first aid training to around 200,000 primary school students per year through its state-based First Aid in Schools Program. The program has been hugely successful, particularly in Western Australia and Victoria, where take-up has been especially high.

The program is funded by St John Ambulance state offices and delivered free of charge to local primary schools to ensure that students receive first aid training at least three or four times in their foundation to lower secondary years. They get an early introduction to first aid principles and skills, and over the course of the program develop the knowledge and confidence to respond to medical emergencies.

Financial support from government could help to turn this lifesaving initiative into a sustainable national program in all Australian primary schools.

Based on the number of full-time students in Australia and current first aid teaching capacity, we should aim to train 1 million students annually. The program currently costs about \$15 per student per year; for a million students, the total cost would be around \$15 million a year.

By introducing first aid training into the national primary school curriculum and providing sustainable funding for the program, the government can help to boost Australia's national first aid capacity and enhance community resilience.

Improve resilience through volunteers

The contribution of volunteers to reducing losses from disasters is well recognised, but the spring may be drying up: the practice of people being volunteers for decades has mostly disappeared.

Volunteers are central to effective emergency response in Australia, but their numbers are declining and their average age is increasing (the average age of Victorian CFA members is now 48).

At the same time, the number of young people not in education, employment or training is increasing, as is the number of older (50+) workers who are unemployed and less likely to find new employment.

While this supply–demand imbalance is well recognised, there’s no consensus about how to deal with it. Many people who are willing to volunteer are reluctant to take the first step or are unsure about how to do so.

State emergency service cadets programs are one means to engage both younger and older community members in effective community-centred activities. Another option is to create an emergency management volunteer program (EMVP). This would be a one-year program during which participants work in a volunteer organisation, gaining and practising skills applicable in emergencies, including in organisations active in the welfare and recovery side of emergency management.

The EMVP would give people an avenue to volunteer, but without demanding a long-term full-time commitment from them. Like the ADF’s Gap Year program, but tailored for the emergency management sector, the program would pair individuals with volunteer organisations based on their interests and suitability. It would introduce a common national approach to the training of volunteers, which would enable them to be used cross-jurisdictionally.

While it would be desirable for volunteers to sample several organisations, that’s not really practical. They wouldn’t get a ‘feel’ for any of them in a short stint, and the resource implications for the organisations would be challenging. They should select one.

An EMVP could also assist in retraining long-term unemployed people of various ages. Participants might receive benefits at a higher rate than the Newstart allowance. Some conditions of eligibility would be mandatory, such as not being in education, employment or training for six months before an application and being a recipient of Newstart support. It might also be viable to extend EMVP opportunities, with appropriate streams of activity, to people on disability pensions.

Further suitability criteria would be relevant, such as trainability, fitness/health, working with children checks, and agreeing to a minimum number of years of service with volunteer organisations following completion of the program. The costs of a pilot EMVP would not be significant (see box).

Emergency management volunteer program costings

A rough cost estimate for the EMVP can be calculated from the ADF’s Gap Year program. That program is costed at \$18.3 million in 2014–15 for 250–300 successful applicants, and at \$191.8 million across the forward estimates (four years), growing to an average of 1,000 places per year.¹⁸ Each position receives an annual salary of more than \$45,000.¹⁹

Three hundred participants each receiving \$45,000 amounts to \$13.5 million, leaving \$4.8 million from the allocated funds for 2014–15. One thousand successful applicants receiving \$45,000 over four years equals \$180 million, which leaves \$11.8 million from the allocated funds for the forward estimates period.

These calculations suggest that, aside from the salaries paid to participants, the cost of running the ADF’s Gap Year program is around \$4 million per year (about \$5 million for the first year and \$3 million per year for subsequent years).

Given the resources required to train military cadets, EMVP expenses should not be more than the running costs of the ADF’s Gap Year program.

More accurate costing of an EMVP depends on the number of positions offered. A pilot program offered to 1,000 participants could be run for \$4 million for the first year. That would cover a Newstart supplement as an incentive for individuals to take up the program.

An additional supplement of \$80 extra per fortnight (approximately 15% of the first four Newstart categories) would equate to around \$2 million for 1,000 participants in a pilot year. This amount would leave a remainder of about \$2 million to offer in grants to organisations to train and resource EMVP participants (about \$2,000 per participant). This should cover all expenses incurred by organisations that take on EMVP participants, giving the organisations an incentive to support the program.

While there's some possibility of the EVMP creating a rift between volunteers who don't get paid and those who do, this can be managed by making it clear that the program is designed as a long-term training investment in human capital.

Accelerate progress through business

The Community Business Partnership (CBP) will be re-established in 2014–15 to promote a culture of giving and volunteering in Australia.²⁰ The partnership will bring together government, community and business leaders to advise the Australian Government on practical strategies to foster a culture of philanthropic giving and volunteering in Australia.

The Australian Government has provided \$5.98 million over four years for the partnership, with the Prime Minister as chair and the Minister for Social Services as deputy chair.

There should be a role for the CBP in building an effective network of emergency services and industry. The emergency services can't do everything, and business owners understand their own risks and vulnerabilities better than anyone else.

The role of the CBP should include more effectively incorporating businesses into emergency management planning, such as by establishing business liaison positions in our emergency management agencies, including EMA.

To enhance the recovery of infrastructure, we need to ensure that the correct skills are applied to reconstruction, particularly complex project management skills. Cross-skilling between government and industry could increase the agility and effectiveness of recovery efforts.

The CBP could also improve the efficiency of decision-making about funding for the replacement or repair of damaged state assets, particularly because disasters affect states differently.

Develop coordinated policies on infrastructure protection

The resilience of critical infrastructure to disasters is a critical challenge for all Australian jurisdictions. Free trade agreements and changes to foreign investment guidelines,

along with the massive sell-off of state assets now underway, are likely to lead to greater private ownership of infrastructure.

With higher rates of private ownership of infrastructure, one important question is 'Who manages resilience?' The potential negative consequences of asset sales need to be thought through in the public interest. The Constitution makes the states responsible for emergency management, but the proportion of infrastructure assets that's owned by states is diminishing.

We need effective and comprehensive public–private coordination for mixed ownership arrangements. For example, the privatisation of maintenance systems means that state governments will need to examine the implications for emergency management planning.

Potential purchasers of state assets should be required to establish sustained and benchmarked arrangements to maintain the functional resilience of those assets.

Buyers would need to understand that they're taking on service-provision responsibilities. Business or commercial continuity doesn't always align with service-provision continuity, and the provision of guaranteed continuity may need to be contractually enforced.

One important aspect of continuity arrangements is the extra redundancy that's factored into normal operations. This is often deemed to be a commercial cost, which private firms might seek to reduce, but such redundancies are critical for emergency management.

Current examples of more direct engagement with private-sector infrastructure operators can be found in Victoria and Queensland (see box).

Victorian and Queensland engagement efforts demonstrate collaborative practice between private-sector groups with an interest in and influence on the continuity of critical infrastructure systems. Great benefit to the national coordination of infrastructure resilience is likely if this strategic intent is emulated in other jurisdictions.

Engaging infrastructure operators

The *Critical Infrastructure Resilience Interim Strategy* is central to recent changes in Victoria's emergency management arrangements.²¹

The Victorian Government has identified eight infrastructure sectors as part of the strategy: banking and finance; communications; energy; food supply; government; health; transport; and water.

A 'sector resilience network' is being established for each category to gauge and improve the resilience of each sector's critical infrastructure assets and operations through joint planning, information sharing and reporting to government.

Owners and operators of infrastructure in each sector resilience network must develop, and annually submit to government, a statement of assurance that processes and plans are in place to manage the risk exposures identified by the owner or accountable officer.

The recently released *Queensland Strategy for Disaster Resilience* establishes the expectation that businesses and key industries recognise that disaster resilience is a central factor in minimising the impacts of disasters on communities and the Queensland economy.²²

The strategy provides a range of directives and outcomes expected of government oversight of resilient functionality at a number of levels.

Queensland's Betterment program is also a useful model: it aims to rebuild infrastructure damaged by disasters to better than the pre-disaster standard in order to withstand future disasters.

The potential return on investment is high: less community suffering and reduced costs of recovery for governments in the future. Under the Betterment program, infrastructure has been rebuilt and has withstood several cyclones in the 2014 season.

Putting the pieces together

With more frequent natural disasters of greater magnitude, Australian communities need to become more resilient. The large amounts of money the Australian Government spends in responding to disasters are one indicator of the urgency of the need to increase the nation's resilience to such events.

Community resilience begins in households and extends to communities, regions and states. By aligning teaching opportunities in schools (fire education, first aid and general safety) with training and re-employment programs that incorporate skills enhancement and sustained volunteering, Australia will join together and acquire additional enduring capability in disaster readiness.

We need to ensure that lessons from disasters that have been identified, but in some cases forgotten, are implemented in better policies and practices among all groups and organisations with a stake in making the country resilient to the consequences of disasters.

We need a new and continuous conversation about resilience that can be translated into long-term thinking to increase the nation's ability to prepare for and recover from disasters.

Unless we do so, the cost of disasters will continue to rise, as will losses in the social and environmental systems that our communities rely on.

Notes

- 1 Australian Business Roundtable for Disaster Resilience and Safer Communities (ABRDRSC), *Building our nation's resilience to natural disasters*, 2013, www.deloitte.com/assets/Dcom-Australia/Local%20Assets/Documents/Services/Corporate%20Finance/Access%20Economics/Deloitte_Natural_disasters_June2013.pdf.
- 2 ABRDRSC, *Building an open platform for natural disaster resilience decisions*, 2014, www.deloitteaccessseconomics.com.au/uploads/File/Building%20an%20Open%20Platform%20for%20Natural%20Disaster%20Resilience%20Decisions_WEB%20100714.pdf; ABRDRSC, *Building our nation's resilience to natural disasters*.
- 3 N Goode et al., *Review of recent Australian disaster inquiries*, Monash University Accident Research Centre, 2011, www.em.gov.au/AboutAGD/Authorityandaccountability/Committeesandcouncils/Documents/Review%20of%20Recent%20Australian%20Disaster%20Inquiries%20-%20final%20report.PDF.
- 4 Council of Australian Governments, *National Strategy for Disaster Resilience*, 2011, www.em.gov.au/Documents/1National%20Strategy%20for%20Disaster%20Resilience%20-%20pdf.PDF.
- 5 K Pollock, 'Review of persistent lessons identified relating to interoperability from emergencies and major incidents since 1986', *Emergency Planning College Occasional Papers New Series No. 6: A report commissioned by the Cabinet Office Civil Contingencies Secretariat*, 2013.
- 6 AK Donahue, RV Tuohy, 'Lessons we don't learn: a study of the lessons of disasters, why we repeat them, and how we can learn them', *Homeland Security Affairs*, II(2), July 2006, <http://www.hsaj.org>.
- 7 The four subcommittees are for capability development (strategic nationwide and whole-of-government emergency management capability development); recovery (holistic disaster recovery policy and planning); community engagement (strategic nationwide whole-of-government emergency management community engagement); and risk assessment measurement and mitigation (national approaches to risk assessment, measurement and mitigation). Australian Government, *Productivity Commission report on government services*, 2014, vol. D, www.pc.gov.au/__data/assets/pdf_file/0014/132332/rogs-2014-volued-emergency-management.pdf.
- 8 The Queensland Fire and Emergency Service now incorporates the State Emergency Service, Rural Fire Division, State Emergency Coordination Centre, fire response, including road accident rescue, HAZMAT and urban search and rescue, as well as capability development.
- 9 Productivity Commission, *Natural disaster funding—draft report, September 2014*, <http://www.pc.gov.au/projects/inquiry/disaster-funding/draft>. The final report is due in December 2014.
- 10 Urbis Pty Ltd, *Economic benefits of flood mitigation investments*, October 2014.
- 11 J Whittaker, K Haynes, J Handmer, J McLennan, 'Community safety during the 2009 Australian "Black Saturday" bushfires: an analysis of household preparedness and response', *International Journal of Wildland Fire*, 2013, 22, 841–849.
- 12 www.dnrm.qld.gov.au/mapping-data/queensland-globe.
- 13 www.dnrm.qld.gov.au/our-department/natural-resources-and-mines-data.
- 14 ABRDRSC, *Building an open platform for natural disaster resilience decisions*.
- 15 Australian Emergency Management Committee, *Review of Australia's ability to respond to and recover from catastrophic disasters*, October 2005, www.ag.gov.au/RightsAndProtections/FOI/Documents/Review%20of%20Australia's%20Ability%20to%20Respond%20to%20and%20Recover%20from%20Catastrophic%20Disasters%20-%20Report%20October%202005.pdf.
- 16 M Eburn, 'Responding to Catastrophic Natural Disasters and the Need for Commonwealth Legislation', *Canberra Law Review*, 2011, 10(3):81-102.
- 17 St John Ambulance Australia, submission on Health and Physical Education Curriculum, June 2012, p. 2.
- 18 Commonwealth of Australia, 2014–15 Budget Papers, May 2014, www.budget.gov.au/2014-15/content/bp2/html/bp2_expense-08.htm; 'Predictions reinstated ADF gap year program will prove popular', *ABC News*, 29 April 2014, www.abc.net.au/news/2014-04-29/defence-gap-year/5417348.

- 19 Assistant Minister for Defence Stuart Robert, *ADF Gap Year program for 2015*, 28 April 2014, www.minister.defence.gov.au/2014/04/28/assistant-minister-for-defence-adf-gap-year-program-for-2015/.
- 20 www.dss.gov.au/our-responsibilities/communities-and-vulnerable-people/programs-services/community-business-partnership.
- 21 www.dpc.vic.gov.au/images/documents/dpc_resources/DPC_Critical_Infrastructure_Resilience_Strategy.pdf.
- 22 <http://dsdip.qld.gov.au/resources/plan/local-government/queensland-strategy-or-disaster-resilience.pdf>.

Acronyms and abbreviations

ABRDRS	Australian Business Roundtable for Disaster Resilience and Safer Communities
AEMI	Australian Emergency Management Institute
ANZEMC	Australia – New Zealand Emergency Management Committee
CBP	Community Business Partnership
COAG	Council of Australian Governments
EMA	Emergency Management Australia
EMVP	emergency management volunteer program
UAV	unmanned aerial vehicle

About the authors

Dr Paul Barnes is Deputy Director of QUT's Centre for Emergency & Disaster Management and he leads the Centre's Infrastructure Program.

Dr Anthony Bergin is ASPI's Deputy Director.

Mr Daniel Nichola is an analyst at ASPI.

Important disclaimer

This publication is designed to provide accurate and authoritative information in relation to the subject matter covered. It is provided with the understanding that the publisher is not engaged in rendering any form of professional or other advice or services. No person should rely on the contents of this publication without first obtaining advice from a qualified professional person.

About Special Reports

Generally written by ASPI experts, Special Reports are intended to deepen understanding on critical questions facing key strategic decision-makers and, where appropriate, provide policy recommendations. In some instances, material of a more technical nature may appear in this series, where it adds to the understanding of the issue at hand. Special Reports reflect the personal views of the author(s), and do not in any way express or reflect the views of the Australian Government or represent the formal position of ASPI on any particular issue.

ASPI

Tel +61 2 6270 5100

Fax + 61 2 6273 9566

Email enquiries@aspi.org.au

Web www.aspi.org.au

Blog www.aspistrategist.org.au

© The Australian Strategic Policy Institute Limited 2014

This publication is subject to copyright. Except as permitted under the *Copyright Act 1968*, no part of it may in any form or by any means (electronic, mechanical, microcopying, photocopying, recording or otherwise) be reproduced, stored in a retrieval system or transmitted without prior written permission. Enquiries should be addressed to the publishers.

Notwithstanding the above, Educational Institutions (including Schools, Independent Colleges, Universities, and TAFEs) are granted permission to make copies of copyrighted works strictly for educational purposes without explicit permission from ASPI and free of charge

RRP \$5.00

ISSN 2200-6648

WHAT'S YOUR STRATEGY?



Stay informed via the field's leading think tank, the Australian Strategic Policy Institute.

PUBLICATIONS



Recent indepth reports include an analysis of Chinese perspectives on Australia; and an understanding of the special operations capability and what it offers in both peace and wartime.

BLOG

ASPI's blog, **The Strategist**, delivers fresh ideas on Australia's defence and strategic policy choices as well as encouraging discussion and debate among interested stakeholders in the online strategy community. Visit and subscribe to an email digest at www.aspistrategist.org.au. You can follow on Twitter (@ASPI_org) and like us on Facebook (www.facebook.com/ASPI.org).



To find out more about ASPI and membership go to www.aspi.org.au or contact us on 02 6270 5100 and enquiries@aspi.org.au.