



**The GAP & IIER-A
National Resilience Project**

**First Responders and Defence in Australia
Resilience in the Face of Climate Change**

September 2021

**Global Access Partners
Institute for Integrated Economic Research - Australia**

This report is a part of a program of work on national resilience through the lens of the COVID-19 experience. It is one of the products of the National Resilience Project being co-led by the Institute for Integrated Economic Research-Australia and Global Access Partners.

Global Access Partners Pty Ltd, Institute for Integrated Economic Research Australia Ltd, 2021

Title: First Responders and Defence in Australia - Resilience in the Face of Climate Change, September 2021



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Global Access Partners Pty Ltd

ACN 000 731 420

ABN 74 000 731 420

PO Box 978 Strawberry Hills NSW 2010 Australia

+61 2 8303 2420

info@globalaccesspartners.org

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First Responders and Defence in Australia

Resilience in the Face of Climate Change

Executive Summary

The strength of a safety net is directly proportional to the ability of each of its parts to absorb their share of any stress imposed upon the net within its intended limit. The safety net afforded to our community by First Responders (police, ambulance/paramedics, rangers, firefighters, health support) and Defence in times of emergency, is only as strong as the organisations' capacity and capability to absorb the shocks created by situations to which they are directed to respond. While essential elements of our nation's response, First Responders and Defence are a finite resource whose extended involvement masks our nation's resilience¹ and ability to preserve and restore essential basic structures and functions.

Recent and ongoing national emergencies involving First Responders and Defence cement community perceptions and expectations that their involvement is normal and routine. This expectation is present in an environment where market-driven solutions have failed to provide essential services and utility for the community, and where there are unclear roles and responsibilities between, and within, multiple levels of government. This environment is further impacted by mixed or confusing messaging to the public, via a multitude of low credibility channels. Proven points of failure within our nation's systems, identified in the aftermath of the Black Summer Bushfires,² and shortcomings of quarantine and vaccination arrangements for COVID-19 deserve our undivided understanding and action.

The statement by the Chair of the Royal Commission into Natural Disaster Arrangements that "unprecedented is not a reason to be unprepared,"³ is loaded with criticism of the status quo when it comes to disaster preparation, management, and mitigation. Yet it also opens the door on an 'unprecedented' opportunity for Australia to shift from a perpetual cycle of reaction, to one of foresight, planning, cross-sector cooperation, and ultimately genuine preparedness for the disasters (natural and man-made) that lie ahead.

With planning and preparation, the role of First Responders and Defence during periods of disaster, could be re-shaped to contribute more effectively and be fit-for-purpose for the 21st century. A possible mitigation for the challenges faced by regional Australia, the most prone and subject to the extremes of weather and natural disaster, is to design a First Responder capability able to clearly align the services needed to match seasonal variations and significant population location shifts. Such alignment will involve development of fixed, reserve, and mobile capabilities, the resources to train and equip them and nationally legislated protection of their personal wellbeing and employment.

Introduction

First Responders and Defence are perceived by the public as a dependable response and remedial force – perhaps even a ‘silver bullet’ – when disaster strikes. This brief and non-exhaustive report seeks to explore some thoughts surrounding whether the current use of Australia’s First Responders and Defence assists or detracts from our community’s path to better resilience.

It is worth noting the Royal Commission into Natural Disaster Arrangements⁴ observed that in the future:

‘natural disasters are expected to become more complex, more unpredictable, and more difficult to manage. We are likely to see more compounding disasters on a national scale with far-reaching consequences. Compounding disasters may be caused by multiple disasters happening simultaneously, or one after another ... Some have cascading effects – threatening not only lives and homes, but also the nation’s economy, critical infrastructure and essential services, such as our electricity, telecommunications and water supply, and our roads, railways and airports.’

‘Australia needs to be better prepared for these natural disasters.’⁵

The Intergovernmental Panel on Climate Change (IPCC) released their Sixth Assessment Report on 9 August 2021.⁵ The regional summary for Australia identified a number of significant climate change impacts (listed below) that will shape the future operating environment for Australia’s First Responders and Defence.

- **Australian land areas have warmed by around 1.4 C between 1910 and 2020** and annual temperature changes have emerged above natural variability in all land regions.
- **Heat extremes have increased**, cold extremes have decreased, and these trends are projected to continue.
- Relative sea levels rose at a rate higher than the global average in recent decades; sandy shorelines have retreated in many locations; **relative sea level rise is projected to continue in the 21st century and beyond**, contributing to increased coastal flooding and shoreline retreat along sandy coasts ...
- Frequency of extreme fire weather days has increased, and the fire season has become longer since 1950 ... **the intensity, frequency and duration of fire weather events are projected to increase throughout Australia ...**
- **Heavy rainfall and river floods are projected to increase**
- **Sand storms and dust storms are projected to increase throughout Australia.**

The challenges presented by each of these scenarios, individually, is difficult enough to imagine. What will be our capacity to respond when they (inevitably) occur concurrently? Is our First Responder capability still fit-for-purpose?

The climate change impacts outlined in the IPCC report provide a context to the discussions in this report. However, it is also worth keeping in mind that there will be other national crises beyond the natural, that will occur requiring First Responder and/or Defence intervention. For example, the next pandemic, regional geopolitical instability, domestic societal unrest – how do we build the resilience necessary to prepare and then mobilise for these future eventualities?

We cannot build our resilience as a nation and society if we do not know where the gaps are because of our ever-increasing use of Defence to undertake tasks above and beyond its remit. The gaps and deficiencies in civil society will not be identified, therefore never rectified, and consequently we will continue to fail to prepare. Added to this imperative, the geostrategic environment is changing and becoming more volatile, traditional alliances are fragmenting, and Australia must ensure that Defence is ready to act when needed to fulfill its national security role. Domestic border patrols, support to police in suburban COVID monitoring, testing and vaccination centre admin support and porter services do not draw effectively on ADF personnel's specialised and higher-level skills and capabilities.

The Royal Commission Chair summed up the turning point we have reached as follows: 'Natural disasters have changed, and it has become clear to us that the nation's disaster management arrangements must also change.'⁶ The journey to a resilient Australia is a complex one, with no part of society, government, business, or sector exempt from playing a part. Yet as challenging and confusing as it may seem, three themes have emerged as part of the National Resilience Project that effectively characterise the elements necessary to undertake the resilience journey. The themes listed below are also appropriate to the First Responders and Defence resilience discussion explored in this report.

- **Shared Awareness / Goals.** With shared awareness we can act rationally and prepare accordingly because we can then define a shared goal - a common aimpoint; without it, we just react to each crisis as it occurs.
- **Teaming / Collaboration and Leadership.** We cannot solve our complex challenges by looking for incremental, stove-piped, quick wins; we need a team approach within our nation and, as importantly, with our neighbours and allies. Leaders at all levels must understand and embrace the demands of leadership and not be intimidated by their responsibility. The skillset necessary for logical and reasoned decision making is neither well served, nor compatible with, the news or election cycle.
- **Preparedness and Mobilisation.** There is no verb for 'resilience'; the verb 'prepare' is the most relevant in this case. There is an opportunity to learn from Defence preparedness concepts and systems and to adapt and implement them across our wider society. As a nation we need to prepare for future disasters / crises and not just wait to react. "Crossing our fingers" and hoping is not a method we can afford to employ. In addition to preparing, we must be able to mobilise the nation to address an emerging threat.

Our national response to the COVID-19 pandemic has highlighted significant deficiencies in all three key areas. A fuller discussion of these resilience issues in the Australian context can be found here: <https://www.jbcs.co/iieraaustralia-projects>

First Responders

The circumstance and urgency which generally surrounds the deployment of First Responders are relatively and easily defined and understood. As trained and prepared Responders, the personnel within these organisations remain firmly within the jurisdiction of State Government resources and control. This arrangement has been diligently reviewed by the Royal Commission into Natural Disaster Arrangements following the Black Summer Bushfires of 2019/20. The general intent of First Responders and their command-and-control functions within State Government, in the main, makes sense. Although repeatedly identified in disaster reviews, Inquiries and Royal Commissions, there is room for improvement in the alignment of processes, acronyms, equipment and support systems across State borders and regional boundaries. It is worth pointing out the following selected recommendations from the most recent Royal Commission.

The 2020 Royal Commission into National Natural Disaster Arrangements made 80 recommendations in the final report which was tabled in Parliament on 30 October 2020. Many of these 80 recommendations related to governance, planning, coordination, policy, and information sharing. For example:

Recommendation 3.2 Establishment of an authoritative disaster advisory body

Australian, state and territory governments should establish an authoritative advisory body to consolidate advice on strategic policy and relevant operational

Recommendation 3.4 Integrating disaster management of the Australian Government

Australian Government agencies should work together across all phases of disaster management.

Recommendation 4.2 Common information platforms and shared technologies

Australian, state and territory governments should create common information platforms and share technologies to enable collaboration in the production, analysis, access, and exchange of information, data and knowledge about climate and disaster risks.

Recommendation 13.3 The Australian Warning System

State and territory governments should urgently deliver and implement the all-hazard Australian Warning System.

These recommendations, and the many others made by the Royal Commission, support the three national resilience themes / characteristics identified by the National Resilience Project. Specifically, that resilience is underpinned by:

- Shared Awareness / Goals.
- Teaming / Collaboration and Leadership.
- Preparedness and Mobilisation.

Much is expected of our First Responders. The community largely assumes that they are appropriately resourced and equipped to tackle all arisings. Much like the metaphorical safety net, within the design limits of the First Responder units, they are mostly adequate during predictable, 'normal' times. However, as was experienced during the Black Summer bushfires, this capability could never be equipped to respond to extreme situations. The best that can be achieved is an assessment through testing of futuristic scenarios and adequately resourcing the adaptive pathways needed to mitigate them.

Essential data which underpins the investment in infrastructure and services is derived from the Census. The role of Census data in determining numbers, funding, and location of First Response capabilities is significant.

In regional Australia, particularly in coastal areas, the mid-August data collection is unable to capture the significant increase of people in summer holiday seasons by many orders of magnitude, and their demand on services. These population shifts lead to significantly increased demands on power systems, hospitals, doctors' services, medications, telecommunications, and, critically, a need for increased First Responder capacity. Another example of a gap in census data is in the case of regional areas with a Defence Base. Defence Base out of hours support needs for fire, ambulance and medical services are usually met by civilian first responders. It is most unlikely that this additional load on civilian services has been captured in Census data thus masking the real funding and support requirements for local civilian first responders.

Many of the disasters our nation reacts and responds to are of our own making. Australians have built vulnerable communities, particularly in an engineering and planning sense. For example, coastal erosion from regular storm events on the NSW Central Coast now sees houses destroyed because of ill-conceived exposure to hazard in pursuit of lifestyle. The myth of human control of nature has embedded some deep assumptions that may prevent resilient approaches.

It is worth stating that one size does not fit all – what works in a high primary dwelling concentration of population does not provide adequately for a widely dispersed population subject to significant seasonal variations: alpine regions in winter versus summer, coastal regions in summer versus winter.

A possible mitigation for the vulnerabilities faced by regional Australia, the most prone and subject to the extremes of weather and natural disaster, is to design a First Responder capability able to clearly align the services needed to match seasonal variations and significant population location shifts. Such alignment will involve development of fixed, reserve, and mobile capabilities, the resources to train and equip them and nationally legislated protection of their personal wellbeing and employment.

The National Disaster Risk Reduction Framework states that, 'Australians depend on reliable and affordable food, water, energy, telecommunications, transport networks (including road, rail, aviation and maritime), and financial services. These functions also depend on each

other. The networks that ensure the sustained delivery of food, water and energy involve complex interactions between infrastructure, people, the environment, money, and technology. The vulnerability of failure in any of these elements is the realisation of wide-ranging consequences across communities, businesses, governments and economies.⁷

These interconnections and interdependencies will not spontaneously form into a cohesive system to deliver a resilient Australia. Therefore, a 'resilience by design' approach is proposed which requires sound and ongoing implementation of strategic concepts to allow resilience to be built 'bottom up' but framed 'top down'. This implies a collaborative method which requires deep community engagement and listening to create common goals and mutually supporting actions. Resilience is enabled by networks and external services beyond the control of one individual, community, or government.

First Responders – Volunteerism – Civil Defence

Australians have proven time and time again that when disaster strikes, they can band together for the common good. Now is the time to consider banding together to prepare for disasters, thereby improving resilience, and mitigating the enormous strain on our nation's First Responders.

Pop-up volunteerism versus structured First Responder back-ups

Australia has a proud history of volunteerism to support local communities, both on a day-to-day basis and at times of crisis e.g. Surf Life Saving, state emergency services, rural fire brigades, Meals on Wheels, animal rescue services. But this reliance on the good-will of the population cannot succeed when crises are concurrent, and many of the population are all suffering the crisis-consequences at the same time.

According to a study by Swinburne University of Technology and the Red Cross into the 2019-2020 Australian bushfire crisis:

'Australians engaged in an astounding level of charitable giving and volunteering in order to help communities and wildlife affected by the devastating bushfires. Humanitarian and emergency service organisations featured prominently in media reports of the humanitarian response to the bushfire crisis. However, the response to the bushfire crisis went well beyond these widely reported actions and events.'

'... it was apparent that many Australians organised their own hyper-local, agile humanitarian responses to the crisis using the knowledge, skills and resources they had to hand ... community-led responses were flexible, agile and practical and reflected a range of interlocking humanitarian actions that provided practical, on-the-ground support to address immediate needs ...'⁸

As commendable as these hyper-local response actions are, they do not build resilience, and are certainly not sustainable. Unfortunately, local humanitarian responses such the study found, tend to be lauded by the media and politicians as examples of the resilience of Australians, whereas in practice, they reflect a convenient and available resource able to workaround a systemic failure of national resilience planning.

Australians, Australian communities, and Australian governments need to undertake formal crisis preparation, within a national resilience framework, as a matter of urgency.

Such organised mobilisation of people to tackle natural disasters has existed in some form or other for many years and is not new. In Australia we have enjoyed the services of both professional (e.g. State owned fire and emergency services) and volunteer First Responders. In the past Australian States have also at varying times established and disbanded augmentations to First Response capabilities such as Victoria's Civil Defence.⁸

Similar roles have been seen abroad such as the inter world war years' US Conservation Corps. Most recently, President Biden has proposed the formation of a Climate Corps with an approximate budget of \$10 billion. The Executive Order directed that the initiative should 'aim to conserve and restore public lands and waters, bolster community resilience, increase reforestation, increase carbon sequestration in the agricultural sector, protect biodiversity, improve access to recreation, and address the changing climate'.⁹ As at August 2021 the proposal and funding allocation are still being debated in the US Congress.

In Norway, a Civil Defence Force is a permanently established entity existing to act as a reinforcement for the emergency and rescue departments in the event of major accidents and special incidents. According to the Government website, the Civil Defence Force :

'has an operative force of approximately 8 000 persons with the duty to serve on assignments connected to major or special incidents. Each year the Civil Defence is called out to participate in around 300 assignments including efforts connected to fires, natural catastrophes, oil protection, searches, evacuation, material supply and suchlike.'¹⁰

Defence

Mark Twain opined that 'it's not what we know that gets us into trouble, it's what we know that just ain't (*sic*) so'. In recent times Defence has responded to many Federal and State government requests for assistance. Some of the assistance is not new and has included deployment of Defence assets for bushfire support and flood relief. However, the COVID-19 pandemic has broadened the requests for assistance to include interstate border patrols and suburban community compliance. On the one hand the presence of a Defence uniform reportedly bolsters community comfort and confidence (albeit with some reservations amongst some quarters of the community); on the other hand, Defence involvement masks the reality of inadequate civil community capacity and capability.

Well trained, disciplined and competent Defence members perform any tasks they may be directed to undertake with minimal preparation and briefing required. This flexibility is fundamental because Defence is prepared and ready for deployment into harm's way to deliver the necessary capabilities to defend, promote and project national policy. The skills involved in providing their *raison d'être* are costly to grow and sustain and completely inconsistent with the applications for which they are being activated in support of the civil community. While satisfying the political urgency of action visible to the community, the Defence's employment in this way is a concerning amplification of significant shortcomings in Australia's civil capacity, capability, and most of all, our resilience.

The challenges, risks, and appeal, of using Defence to respond to, and manage, national crises was explored in some detail by Professor John Blaxland of the Australian National University's Strategic and Defence Studies Centre, in an article in *The Conversation*, 7 June 2021.¹¹ Relevant, and persuasive, extracts follow:

'... I have broad concerns about Australia's growing tendency to call in the defence force to deal with crises outside its usual remit. These are crises that could or should be dealt with by well-resourced civilian government agencies and institutions ... It risks stretching even thinner the already constrained capacity of our relatively small army. It also speaks to a failure to set up Australian society to respond robustly for the likely challenges of the future.'

'In recent years, we have expected the defence force to respond to crisis after crisis, rather than properly resourcing civilian-led government or community agencies to perform these tasks ... One idea would be to establish a scheme for national and community service, incentivising young Australians to volunteer in local, state and federal agency crisis responses.'

The proposed US Climate Corps, and similar civil 'defence' / support organisations in other nations, can provide a template for Australia to better prepare for, respond to, and build resilience to the looming national and international, natural and made-made crises.

Once again, and paradoxically, on the one hand we see Defence and First Responders as being complementary, compatible and, in some instances, even interchangeable. But is this the case? Could we expect those trained to fight fires, or manage civil emergencies turn their hand with minimal, if any training, to operate even a small number of Defence systems or capabilities in extremis? Clearly not. However, our community, grateful for the presence of the Defence Force during emergencies, has no concerns nor faces any dilemma in making a broad leap to employing Defence personnel in civil first response roles for which they are not trained or equipped. Given the Defence's significant current operational commitment of training, readiness, reconstitution and deployment, the present aid to the civil community will soon reveal challenges of retention of qualified and trained personnel, acquisition, and development of core professional skills in junior personnel, and the atrophy of skills in the trained force whether due to lack of exercising or extended use in non-core tasks.

Whilst Humanitarian and Disaster Relief (HADR) is an identified Defence Aid to the Civil Community role, it is not a core role – and more importantly, it is not always a cost-effective use of a highly costly asset. The training and sustainment of Defence personnel and assets is an expensive enterprise. The Defence budget is finite. Australia's current strategic environment demands that the Defence force be trained, and operationally ready, to respond when and where the Government needs them. The loss of skills, readiness, caused by an unending commitment to support for any-and-all civil crises, has the potential to undermine our national security.

It is not the intention of this report to declare Defence a 'no-go' area for aid to the civil community. Quite the converse is true. This report proposes that there are more constructive ways to employ Defence to benefit not only the civil community. For example, Defence could advise/assist the training of a civilian cadre of personnel to be despatched in support of a HADR operation – Defence providing the transport and logistics, the civilian staff remaining on the ground to deliver the support. Continuing, but targeted support, to the civil community could also benefit Defence in developing crucial skillsets in environments difficult to simulate or emulate in a military only domain. Let's explore the art of the possible ...

Lessons from Defence

Defence may offer some lessons on future thinking and resilience, as the primary role of Defence is preparedness. Preparedness refers to a set of actions that are taken as precautionary measures in the face of potential disasters, which can include both physical preparations and training for emergency action.

Preparedness is a concept/process in military planning and operations that comes from an understanding of the evidence in order to support good decision making to mitigate risk. Trade-offs at all levels need to be assessed, communicated, and adjusted as circumstances change. The price of resilience is a willingness to bear the cost of preparedness, and this relies on evidence of the costs (and who incurs them) and the benefits that preparedness generates (and who the beneficiaries are).

The system of the Defence Reserve Forces could also be explored as a model for the development of a civilian defence corps. For example, there are well established training regimes, graduated call-out procedures, compensation for participants as well as employers, all within an established legislative and regulatory framework. Such a model should not be construed as undermining or diminishing the volunteerism that is part of the Australian psyche, but rather a means of building a capability to improve our national resilience.

Intelligent use of Defence Assets

During the Black Summer bushfires, the worst of nature brought out the best in humanity and many examples of people overcoming and adapting to survive. One notable example was the community's total dependence on digital technology such as mobile phones, social media and information apps which proved very convincingly to be a single point of failure as access to the mobile data and phone networks were denied as towers succumbed to the devastation of fire, wind and in some cases flood. The similarities between that which nature imposed upon the community and a cyber-attack denying the community access to digital networks should not be allowed to pass without providing some valuable training and adaptation of Australian owned systems capable of mitigating these very offensive effects.

Defence operates many sophisticated systems able to be utilised to supplant localised damaged or destroyed civilian networks. Doing so while treating the activity as having to be executed in a potentially contested electronic warfare environment where there will no doubt be some interest in listening/observing by third parties would provide an exclusive and unique training opportunity not easily duplicated in an exercise scenario. The potential for disagreement is high about the training or operational value of such an activity for Defence.

However, it is hoped that the value of this exercising of operational and military skills over the current Defence assistance which is little more than manual labour is beyond contradiction.

A parallel example to the smart use of capability and adapting it to meet urgent need has been an accepted given for many years. To the general community, and regrettably many in the Defence Force, a helicopter is a helicopter is a helicopter. But is this so? During the Black Summer bushfires, very capable and costly MH-60R Maritime Combat helicopters utilised their sensors and systems to great advantage to save life and avert imminent disaster and threats to human safety. Although a long way from the sea and their ships, they were afforded the opportunity to think laterally and apply their skills in ways not necessarily intended for their warfare domain but extremely useful and competent in an emergency.

Conclusions

As stated at the beginning of this report, we consider that there are three fundamental characteristics necessary for building, and sustaining, a resilient society. These are firstly shared awareness and goals, secondly teaming and leadership, and thirdly preparedness and mobilisation. Australia today has significant shortfalls in all three areas.

Given the scale of current and predicted climate change impacts, expecting better outcomes from existing organisational and political systems is foolhardy. It is unreasonable to expect First Responders and Defence, called upon *in extremis*, to overcome the growing risks and vulnerabilities created by the current, fragmented, and reactive disaster response system. A nationally coordinated and, where appropriate, standardised and interoperable disaster preparedness and mobilisation system needs to be built.

Improved national resilience could be achieved by addressing and mitigating the increasing risks posed by climate change, rather than seeking to address each threat reactively. The current challenge of concurrent emergencies attributable to both COVID-19 and climate change highlights the need to adapt and prepare.

Recommendations

Australians cannot respond to the many global factors in play today, and prepare for the future, until we better understand our own vulnerabilities and the threats that we may have to face. In July 2021, our National Resilience Project published the report: *A National Resilience Framework for Australia*¹². The proposed resilience actions¹³ in the report are applicable to the reshape of the First Responder system. The following specific recommendations from that report are pertinent:

- **Establish a National Resilience Team.** A National Resilience Team comprising Federal, State/ Territory, Business, and community representatives to advise and guide an integrated approach to improving our national resilience. This would not be an executive / delivery entity but rather an advisory body with the authority to range across Federal and State/Territory Government agencies and to engage with the business and public communities to identify, assess and propose actions that would help integrate across the multitude of resilience related activities underway in the nation.

- The task would be to bridge the silos of agencies responsible for infrastructure planning, energy, social cohesion, housing, health care, education, economic development, social welfare, disaster management and environmental protection.
- The goal would be to support communities, metropolitan and regional areas, and the nation to better anticipate, withstand, respond to, recover from, and adapt to the inevitable disruptions will face in forthcoming decades.
- **Develop Shared Awareness and Shared Goals.** A National Resilience and Risk Management Strategy should be developed, supported by a national strategic level threat and vulnerability register.
- **Prepare and Mobilise.** As a nation we need to prepare for future disasters / crises and not just wait to react. “Crossing our fingers” and hoping is not a method we can afford to employ. A possible mitigation for the challenges faced by regional Australia, the most prone and subject to the extremes of weather and natural disaster, is to design a First Responder capability able to clearly align the services needed to match seasonal variations and significant population location shifts. Such alignment will involve development of fixed, reserve, and mobile capabilities, the resources to train and equip them and nationally legislated protection of their personal wellbeing and employment.

Additional specific suggestions for Federal, State and Territory Governments are that they:

- undertake an analysis of recent Defence support to the civil community (*bushfires, floods, drought, pandemic*) to determine what gaps in civilian capability were being filled with a view to better understanding current points of vulnerability.
- examine international models of civil defence for adaptation / adoption in Australia.
- leverage existing local area / regional council assessments, mitigations and resilience strategies regarding climate change to apply more broadly across Australia.

Report Contributors

This component of the National Resilience Project was led by Commodore Vince Di Pietro AM CSC RAN (Retd); he is also the lead author of this report. Contributing authors include Anne Borzycki and Air Vice-Marshal John Blackburn AO (Retd).

A total of forty individuals with community resilience, first responder and /or Defence experience participated in the workshops and interviews conducted for this report.

Endnotes

- ¹ 'Resilience' is defined by the United Nations Office for Disaster Risk Reduction (UNDRR) as the ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.
- ² Royal Commission into Natural Disasters Arrangements and NSW Independent Inquiry in the Black Summer Bushfires
- ³ ACM Binskin AC, Chair, *Royal Commission into Australia's Natural Disaster Arrangements*, Commonwealth of Australia, 28 October 2020, p.7
- ⁴ Royal Commission Report, *ibid*, p. 22.
- ⁵ Intergovernmental Panel on Climate Change, Sixth Assessment Report, *Regional Fact Sheet – Australasia*, 9 August 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Australasia.pdf
- ⁶ Loc. cit
- ⁷ Commonwealth of Australia, National Disaster Risk Framework, p. 5,
- ⁸ Wilson, S., Sivasubramaniam, D., Farmer, J., Aryani, A., De Cotta, T., Kamstra, P., Adler V., Knox, J. (2020). *Everyday humanitarianism during the 2019/2020 Australian bushfire crisis*, Swinburne Social Innovation Research Institute and Australian Red Cross, Melbourne
- ⁹ Congressional Research Service, *Biden Administration Proposes New Civilian Climate Corps*, 3 May 2021, <https://crsreports.congress.gov/product/pdf/IN/IN11654>
- ¹⁰ Directorate of Civil Emergency and Planning, About Norwegian Civil Defence, <https://www.sivilforsvaret.no/dette-er-sivilforsvaret/about-norwegian-civil-defence/>
- ¹¹ The Conversation, *Calling in the army for the vaccine rollout and every other emergency shows how ill-prepared we are*, Professor John Blaxland, 7 June 2021, <https://theconversation.com/calling-in-the-army-for-the-vaccine-rollout-and-every-other-emergency-shows-how-ill-prepared-we-are-162247>
- ¹² *A National Resilience Framework for Australia*, Global Access Partners and the Institute for Integrated Economic Research – Australia, July 2021
- ¹³ *Ibid.*, p.24