A CAPABILITY ROADMAP:
ENHANCING EMERGENCY MANAGEMENT IN AUSTRALIA 2016

afac

Australian Government
Attorney-General's Department

Acknowledgement

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Foreword

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In 2015, AFAC and EMA published the first version of the National Statement of Capability for Fire and Emergency Services. At that time we identified the need for an integrated capability framework to improve effectiveness of fire and emergency services and to better prepare society for catastrophic disasters.

The work presented in this Report extends this foresight by considering a range of national capabilities important to future preparedness.

Developed by senior emergency management personnel from across government, statutory authorities, NGO and private sector organisations, the proposed capabilities – and the actions identified to progress them – are presented here.

We commend this Report, trust that it will inform capability planning at all levels, become pivotal to the work of state / territory and national committees and be supported by key stakeholders.

If they exist in history and they exist in the science of the future, natural disasters are guaranteed to happen

The greatest measure of success is upholding public trust and confidence

Executive Summary

The National Emergency Management Capability Roadmap Project set out to progress the understanding of national emergency management and resilience capabilities necessary to deal with the impacts of catastrophic disasters. This includes what jurisdictions and emergency management organisations could do to address limitations.

Against a background of maintaining public trust and confidence, growing political and community expectations and increasing potential for catastrophic disasters, a broad cross-section of emergency management stakeholders accepted the challenge to co-develop Australia's capability to respond to such events.

Through a facilitated process of 'imagining the unimaginable,' it became apparent that – among all the challenges we faced – the realisation that our nation's capability planning needed further development and enhanced management came to the fore.

Presented here-in is a high-level account of what stakeholders believe to be national capability areas worthy of further discussion, development and prioritisation. In support of these capability developments, a number of key principles have been identified to provide guidance.

To set a course for moving forward, a series of high-level actions have been proposed and an initial scope outlined.

This report, the *Capability Roadmap: Enhancing Emergency Management in Australia 2016* is an opportunity to guide priorities and inform the collective understanding of what needs to be done to enhance our preparedness. It proposes:

- **20 national capabilities;**
- **10 principles; and**
- **9 high-level actions.**

Project Overview

The National Emergency Management Capability Project, a partnership between the Australasian Fire and Emergency Service Authorities Council and the Commonwealth Attorney-General's Department, Emergency Management Australia, set out to:

- develop a method to understand current points of emergency management limitation, and what national capabilities might be required to move past them;

- apply this method and identify national capability areas requiring attention; and

- propose a plan to address identified gaps.

Working with a multi-sector, project sponsor team, and over a series of facilitated workshops, a method has been devised that draws on the expertise of people from across the broad emergency management sector. The method develops our thinking on the impacts of catastrophic disasters and the needs of society, while concurrently working through complexity.

This method was applied at a sector-wide consultation workshop in May 2016, and:

- considered the impact of catastrophic scenarios and what is needed by society;

- identified a number of national capabilities considered necessary to meet those identified needs;

- developed a number of key principles upon which identified capabilities could be progressed; and

- identified an approach and possible future actions.

Building on an existing body of knowledge and evidence, the outputs of this project serve as a mechanism to raise awareness, consolidate views of key decision-makers and provide a strategic basis upon which future activity and investment decisions should be focused.

Method Overview

To progress our understanding of current and future national capability, it was crucial to establish an environment, context and process to safely imagine the unimaginable – to think about what must be accomplished for our national preparedness during inevitable catastrophes.

Attain a high-level understanding of national emergency management, as well as the current interoperability of organisations with emergency management responsibilities was a critical outcome. From this understanding, the project assembled experienced personnel from across the emergency management spectrum to provide insight into areas of exposure and risk (known and unknown), capabilities and collaborative improvement opportunities.

When 'imagining the unimaginable,' multi-dimensional complexities are inherent; particularly the ability for people to think beyond current knowledge and experience. The project engaged experts to facilitate a U-Collaborate** technique; a process where people were systematically guided through realistic, scientifically modelled catastrophes to arrive at conclusions about our national capabilities. These catastrophes included:

- a south-east Australian heatwave and several major fires;
- the Western-Sydney flooding of the Hawkesbury and Nepean rivers;
- an earthquake affecting the Northam and Toodyay areas of Western Australia;
- a five (5) metre tsunami affecting coastal New South Wales at night; and
- a category five (5) cyclone impacting the Cairns region.

Each scenario and the impacts on society's needs are summarised in the following pages.

**The KPMG U-Collaborate process is a design method for advanced problem solving and decision-making for complex challenges. The approach provides a basis upon which further work could occur to consider multiple catastrophes occurring at the same time and is replicable for other hazard scenarios.

Scenario Assessment

Outlined in the following pages is a high-level account of the scenarios used and the discussions had to arrive at the proposed national emergency management capability. Each scenario has been scientifically modelled and was considered a catastrophic event. While each scenario proposes different hazards, the discussions highlighted a high degree of similarity regarding their impacts on society.

IMPACTS

- The scale of all scenarios will shock society, be unexpected and have long-term impacts.

- The number of people (deaths, injuries, displaced) isolated and in need of care and assistance will be substantial. Mental and physical wellbeing will be affected.

- Local disaster and emergency response capacity will not be enough.

- There will be significant structural / building collapses.

- Information management and communications will be seriously disrupted.

- Infrastructure and services will be affected and rendered un-serviceable or unreliable.

- Supply chains will be broken.

- Formal and informal systems may fail.

- Crisis leadership at local, state and national levels will be significantly tested in situations well beyond normal.

NEEDS

- Emergency response – hazard management, search and rescue, evacuation, mass care and safety and security

- Emergency medical response – immediate and local, triage and surge capacity

- Humanitarian and animal aid – food, water, shelter, sanitation and hygiene

- Leadership – reassurance, information, critical messaging and decision-making

- Information – emergency, damage, safety, protection, return home, loved-ones and community connection

- Infrastructure inspection and restoration – critical and immediate, utilities, buildings and shelter

- Coordination of international support – emergency and humanitarian resources and capabilities

- Mortality management – recover, identify and care for large numbers of deceased

Note: These are initial considerations - any application of this assessment to a community would need further consideration.

Scenario: Cyclone

Cyclone Clive

Category 4 – Cyclone Clive has impacted Cairns, causing unprecedented damage. Storm surges and high winds have battered the region which has also been affected by flooding of the Barron River. In total, 1,709 fatalities are recorded, and 35,859 people are displaced between Palm Cove and Gordonvale. Cairns airport has been closed for 48 hours prior to Cyclone Clive making landfall due to high winds and poor visibility. Rainfall has caused significant disruption across the road network. Swelling of the Barron River has left the estuary impassable for 24 hours prior to landfall.

IMPACTS

Primary impacts could place stress on all aspects of society, including:

- the need for information;
- an increase in community vulnerability;
- formal and informal system failure;
- the extent of psychological stress; and
- the provision of immediate safety and shelter needs.

Medium to longer term impacts could include:

- environmental and heritage damage;
- economic shocks including major tourism downturn;
- social issues including mental health and family violence;
- business failure; and
- agribusiness losses.

Note: These are initial considerations - any application of this scenario to a community would need further consideration.

NEEDS

Safety
- Protecting the living
- Safety and security
- Family security and wellbeing
- Social cohesion
- Pastoral care (secular / faith)

Protection
- Further impact
- Persons trapped and isolated
- Deceased recovery
- Health care
- Vulnerable people / special needs
- Community assets and utilities
- Community access

Information
- In and out
- Is it safe/ need advice?
- What's happened?
- Reassurance

Fundamental
- Water
- Food
- Shelter: personal / family / pets / animals
- Sanitation
- Clothing

Leadership
- Immediate community needs
- Who's in charge?
- What's happening?
- What's the plan?
- Who's helping?

Scenario: Earthquake

2020 Perth Earthquake

A magnitude 7.15 earthquake has struck approximately 100km west of Perth. At 11.22pm on 22 April 2020 and without warning, a magnitude 7.15 earthquake shakes the towns of York, Northam and Toodyay in Western Australia's Wheat Belt. In 70 seconds of shaking the towns of York and Northam are devastated with widespread damage reported across Toodyay, Wundowie, Meckering and some suburbs of Perth. A 60 km long rupture causes rapid vertical displacement of up to 3.5 metres in some areas. Death and injury is substantial with 1,000 missing, 3,000 initially trapped and 36,000 injured. Critical infrastructure is destroyed or compromised, including 29 bridges crucial to supply chain. Around 70,000 people require specific assistance, including shelter, medical and emergency rescue. 25,700 require emergency accommodation as 6-8,000 homes are uninhabitable.

IMPACTS

- Communities isolated and will be displaced
- Local health services overwhelmed by presentations
- Inability to transport
- Mortuaries overwhelmed
- Emergency services loss of facilities and resources
- Critical infrastructure damage, disruptions
- Supply chain affected
- Overwhelming demand on governments services at all levels

Unique stresses:
- No forewarning or expectation
- Psychological impact exacerbated by aftershocks
- 3,000 trapped, national and international response
- Level of fatalities
- Mental health
- Public health
- Storage
- Complete isolation
- Supply chain disrupted
- Loss of shelter
- Huge international interest

NEEDS

Response
- Rescue, firefighting, hazmat
- Evacuation
- Policing and property protection
- Information
- Physical communications
- Food, water, sanitation
- Mortuary, collection, storage, identification, burial, repatriation
- Vulnerable person care
- Building infrastructure inspection and triage
- Medical and health
    - Injury management
    - Triage
    - Counselling
    - Pastoral (secular/faith)

Relief and Recovery
- Evacuation and mass care
- Clean up and demolition
- Relocation and care of pets / livestock
- Damage assessment and insurance
- Utility and infrastructure restoration
- Long term accommodation
- Investigation and event analysis
- Education and recreation
- Employment and re-skilling
- Respected leadership
- International effects / relations

Note: These are initial considerations - any application of this scenario to a community would need further consideration.

Scenario: Flood

Western Sydney Floods

Significant rainfall has led to flooding in the Hawkesbury and Nepean, inundating large parts of western and north-western Sydney. Significant rainfall over March and April has led to minor swelling of the Hawkesbury, Grose and Nepean rivers. The surrounding areas have seen above average rain for 4 months and a major storm – driven by a large east coast low pressure system – is set to hit the region within the next two days. Warragamba Dam has topped 90% load with planned spills occurring daily to minimise pressure on its main wall. Some communities around Broken Bay and Windsor have seen limited over-road flooding during the past several weeks. In all cases, there remains alternative access roads and water has subsided within four hours.

IMPACTS

Who and what:
- Non-evacuators – immediate impact
- CALD community
- Critical infrastructure
- Health infrastructure
- Emergency services
- Private housing
- Supply chain infrastructure
- Water and sanitation

Unique Stressors:
- 180,000 people displaced growing to 4.5 million in the Sydney basin
- Mental and physical wellbeing
- Law and order
- Political leadership
- Emergency communications
- Socio-economic impact

NEEDS

Community needs:
- Understand exposure
- Access safe secure shelter
- Coordinated evacuation
- Food, water sanitation and health
- Rapid reconnection services

Injury management / triage
- Chronic health needs
- Medication
- Food, water and sanitation
- Vulnerable communities

Safety:
- Save lives – rescue, evacuation
- Information and communications
- Protection – people, assets

Humanitarian aid:
- Food – supply chain, prioritisation, food safety and cost
- Water – safe ongoing supply, immediate and long-term
- Shelter – mass care shelter
- Housing – immediate alternative
- Sanitation – disease response

Communication:
- Critical messaging
- Regular information
- Plain language
- Clear advice, instructions

Note: These are initial considerations - any application of this scenario to a community would need further consideration.

Scenario: Heatwave and Fire

Australia Day Fires

Extended hot weather has swept through south-eastern Australia, including two four-day episodes of exceptional temperatures. Forests and grasslands are the driest they have been since the Black Saturday bushfires, when six significant fires break out around Victoria and South Australia. A prolonged hot weather spell starting on New Years Day 2021, including 13 days over 33ºC in the preceding 25 days (and a minimum overnight temperature of 21ºC) has dried much of south-eastern Australia. Fire danger conditions have been at 'catastrophic – code red' for ten days. This follows three years of well below average rainfall across south-eastern Australia. Fire operations have been underway for over three weeks, with a major fire front in South Australia's hills district and an out-of-control blaze in Victoria's north-east. There are currently nine fires at 'watch and act' (seven in Victoria and two in South Australia).

IMPACTS

- Situation no longer normal
- Health and safety of emergency workers and public impacted
- Simultaneous disasters in other states
- Conditions continuing beyond fire impact
- Infrastructure and services demands beyond local capability
- Surge capacity exhausted – whole state and bordering states
- Known and emergency vulnerable people
- Increasing emergency impactees

NEEDS

- Leadership – sustained at all levels
- Welfare support to growing numbers of vulnerable people
- Information – accurate and often
- Visible action
- Expectations management – not normal situation
- Community connectedness and cohesion
- Local critical infrastructure restoration
- Health system capacity to keep going and meet surge
- Decision-makers – government, industry and community

Note: These are initial considerations - any application of this scenario to a community would need further consideration.

Scenario: Tsunami

Gerri's Wave, 2021 (Wollongong)

Approximately 38km east of Gerringong a small earthquake has triggered tsunamis along the NSW coast. On the morning of Sunday, 3 January 2021 at 00:03hrs, a magnitude 3.9 earthquake 38km due east of Gerringong shakes the surrounding areas. Following a brief assessment of the incident, Geoscience Australia reason that there is no cause for immediate concern and that further analysis can wait until morning. Staff return to bed. As high tide looms in the dark of the night, residents and holiday makers sleep through the torrential rain and wind associated with an east coast low, slowly moving south. Minutes later, a section of the continental shelf edge slides off the continental margin underwater. At 00:21hrs a 6 metre high wave hits the shores of Wollongong – spilling water up to 1.2km inland as it continues up the coast as far as Newcastle. The flow of water pushes inland over a period of 15 minutes, before slowly draining out to sea again.

IMPACTS

- Wollongong population to Botany Bay Shoal Haven
- All associated infrastructure
- Major services
  - Communications
  - Power
  - Water
  - Sewer
- Displacements
- Significant building collapses
- Limited local response capability
- No communications in either direction
- Scale – big and horrible
- Supply chain broken

Note: These are initial considerations - any application of this scenario to a community would need further consideration.

NEEDS

Up to 72hrs:
- Water – drinking / sanitation
- Impact / damage assessments
- Communications – public, national, community and message consistency
- Rescue management
- Open transport routes
- Accommodation – residents, responders
- Mortality management – cultural, community
- Food supplies
- Command and control
- Welfare – evaluation, planning and provision
- Government involvement – local, state, national and international

Medium-term:
- Emergency team support
- National / international support
- Rescue and retrieval
- Identification
- Transport
- Clean up
- Infrastructure – temporary, immediate and long-term

Long-term:
- Ongoing clean up
- Infrastructure
- Services
- Workforce management
- Support systems – welfare, medical, social, cultural and insurance

National Capabilities

The 20 National Capabilities outlined below are proposed for consideration and further development. These capabilities provide a foundation to progress collective understanding of what is needed for our nation to be better prepared. When matched to capabilities as developed by other nations, the proposed capabilities are well aligned.

MASS CARE

The ability to meet essential needs and provide care to high volumes of affected citizens, both in and away from impacted areas. This includes – but is not limited to – health, psychological, aged, pharmaceutical and disability care.

EVACUATION AND SUPPORT

The ability to move and support high volumes of displaced or at-risk persons, through facilitation of mass movement and / or evacuation. Provision of essential needs include:

- food, water, shelter, sanitation, clothing;
- facilitation of mass care;
- re-establishment of community links (such as through community meetings, or through technological means);
- empowerment for reinstatement of livelihoods to 'business-as-unusual'; and
- enablement of self-care where possible.

CIVIL DISASTER EXPANSION

The ability to rapidly achieve scale and capability expansion through the use of measures and systems designed to meet mass community needs. This includes accessing non-government resources, international assistance, non-conventional assistance (such as spontaneous volunteers) and the application of third-party providers' assistance (for example insurance assessment, reconstruction assistance, and the use of privately owned transport for logistical support).

PLANNING FOR CATASTROPHIC EVENTS

The ability to systematically plan for and implement scalable strategic, operational and tactical level approaches to dealing with catastrophic disasters.

CRISIS LEADERSHIP AND MANAGEMENT

The ability to lead and manage a response or recovery to a crisis or emergency, including the activation of political leadership, command and control systems, incident management systems and operational tasking processes not practiced in routine emergency management.

SEARCH AND RESCUE

The ability to locate and extricate large numbers of missing or trapped persons, with the intent of protecting survivors from further harm and preventing further loss of life in the least time possible.

SECURITY AND POLICING

The ability to ensure citizens, responders and assets are both safe and secure within disaster areas, and related places (such as staging areas and temporary accommodation for displaced persons). This includes the protection of assets, permanent infrastructure and temporary infrastructure.

ANIMAL CARE

The ability to deliver large scale appropriate, humane care for animals affected by, or related to, a disaster – including:

- veterinary care and / or euthanasia;
- relocation;
- shelter; and
- sustainment (food, water and medications).

INNOVATION

The ability to enable new and innovative solutions, without risk of bypassing due process for evaluation, procurement and standardisation. This includes innovations in response and recovery, as well as in enterprise born from the crisis, emergency or disaster impact.

SITUATIONAL INTELLIGENCE

The ability to combine situational awareness inputs from all sources with predictive analysis of consequence, risk, capability and capacity. Raw information must be translatable into intelligence products accessible and appropriate for the needs of stakeholders and decision makers at all levels. This includes the mechanisms for timely information broadcast and transfer (such as operational communications and public information broadcast systems), and systems of data interpretation (including geospatial information systems and electronic common operating picture applications).

BUILT ENVIRONMENT RESPONSE

The ability to mitigate and recover from the impacts of any disaster to the man-made environment, including buildings and critical infrastructure. Key activities include:

- waste removal;
- engineering triage and assessments;
- demolitions;
- hazardous materials response; and
- damage and impact assessment.

LOGISTICS AND SUPPLY CHAIN MANAGEMENT

The ability to establish, sustain and adapt an appropriate supply chain to support response, recovery, evacuation and other efforts during catastrophic events is critical. This includes the delivery of essential services (food, water, sanitation, banking/money), materials and equipment, as well as the establishment of emergency power, telecommunications and fuel support.

THRESHOLD TESTING

The ability to test the bandwidth and capacity of systems, processes and resources to a point of limitation or breakage without causing damage requiring re-investment to correct. This includes preparing responders for 'stretch' events or a loss of key resources.

PUBLIC INFORMATION, ENGAGEMENT AND WARNINGS

The ability to exchange information with all community elements within the Australasian borders through seamless links at critical times is essential. This engagement is two-way, and leverages natural societal linkages – including connections through businesses, cultures, geography, media, education and technology.

FATALITY MANAGEMENT

The ability must exist to recover, identify, examine, store and permanently inter large numbers of deceased individuals.

HAZARD RESPONSE

The ability to respond appropriately to the hazard and its consequences in a timely manner. This includes most response activities, such as firefighting, hazardous materials, pre-hospital medical care / transport and flood protection. It also encompasses efforts to delay, prevent, mitigate or secure threats and / or hazards.

INFRASTRUCTURE RESTORATION

The ability to restore and stabilise critical infrastructure, utilities and services includes:

- maintaining business-as-usual activities in non-affected areas;
- enabling effective response and recovery efforts; and
- restoring business-as-usual services to affected areas.

This includes utilities (such as electricity, water, sanitation), services (such as telecommunication, public transport) and other infrastructure (such as roads, ports, rail networks).

RESEARCH AND LEARNING

The ability to analyse key events, scientific information and required skills. This includes the transfer of information to others for the purpose of improving emergency management mitigation, preparedness, response and recovery activities underway, and into the future.

RESPONDER PROTECTION AND SUSTAINMENT

The ability to maintain the ongoing health, safety and logistical sustainment of responders working to mitigate or recovery from the impacts of a disaster.

GOVERNANCE, AUTHORITY AND SUBSIDIARITY

The ability to streamline decision making processes and ensure that key decisions reach the ultimate authority as directly as possible – through appropriately governed pathways – without interfering with the ability of local groups to take independent action as and where required.

Capability Development Principles

The following principles have been identified as important to the further development of National Capabilities.

- COMMUNITY AND PEOPLE-CENTRIC
- BORDERLESS
- SUSTAINABLE
- PLANNED
- AGILE AND SCALABLE

- MULTI-HAZARD
- INNOVATIVE
- AFFORDABLE
- PARTNERSHIP DRIVEN
- GLOBALLY LINKED, LOCALLY ENABLED

Summary of Proposed Actions

With a focus on the 20 national capabilities identified earlier, the following actions are proposed for further consideration, planning and assignment of responsibility.

1. NATIONAL CAPABILITIES AND PLANNING FRAMEWORK

Develop and agree on, with support of the Australia and New Zealand Emergency Management Committee (ANZEMC), National Capabilities and an associated Planning Framework for the management of catastrophic natural disasters as shaped and influenced by the National Capabilities identified from this project.

2. REVIEW EXISTING NATIONAL AND JURISDICTIONAL PLANS

In the context of the National Capabilities and Planning Framework, review existing national and jurisdictional plans and, where appropriate, identify improvements in planning and enhance scalability of existing plans. Ensure adequate consideration is given to the 'maximum probable' hazard events relevant to the communities that the plans seek to support.

3. INFORMATION AND INTELLIGENCE SYSTEMS DEVELOPMENT

Promote a culture of innovation and creativity that supports mutually beneficial and accessible information and intelligence systems. Develop and prioritise government funding allocated to capability development towards these objectives.

4. CRISIS LEADERSHIP DEVELOPMENT

Develop a Crisis Leadership Development Program that addresses key leadership challenges such as: improving adaptive, creative and innovative thinking in leadership, exploring the ethics of leadership during crisis, encouraging greater integration of operational and non operational leaders and exploring the concept of leadership communication and the development of crisis narrative.

5. LEARNING FRAMEWORK FOR CATASTROPHES

Review National Learning Frameworks to ensure their adaptability to catastrophic disasters, and expand case studies and lessons identified from catastrophic disasters.

6. EXERCISE AND STRESS TEST PLANS AND SYSTEMS

Develop methods to stress test the key elements of the National Capabilities and Planning Framework and associated National Capabilities.

7. RAPID CAPACITY EXPANSION

Review existing capabilities in the context of rapid expansion, involving interstate and international assistance and, where appropriate, develop third party pre-qualification arrangements, amend legislation and regulation of policy to remove potential barriers.

8. SUPPLY CHAIN PARTNERSHIPS

Improve engagement between states and territories with supply chain partners and emergency management agencies to better understand their critical supply chains and associated risks, vulnerabilities and opportunities.

9. NATIONAL COMMUNICATIONS AND WARNINGS CAPABILITY

Where appropriate, strengthen the relevant strategy, policy, governance, improvement and funding regimes to ensure the ongoing effectiveness and accessibility of communications and warnings capabilities.

1. National Capabilities and Planning Framework

OBSERVATION

The scale of catastrophic events has the capacity to shock the nation and its emergency management systems. Preparing for the inevitability of shock requires:

a) the identification and agreement on priority national capabilities; and
b) preparedness planning and system testing.

The outcomes of this project revealed that an appropriate and nationally agreed upon framework is necessary to ensure a consistent and aligned national effort.

The framework should leverage from and align with a range of NEMP funded projects and previous work undertaken on capability planning.

A fundamental enabler, the Commonwealth, State and Territory governments consideration of an all-of-government, cross-jurisdictional legislative, national capability and planning framework for the management of catastrophic disasters was identified.

It was felt this framework should include strategies to address standing civil response capability at a national level.

The importance of regular validation of cross-jurisdictional co-ordination arrangements through exercising and other assessment means was reinforced.

ACTION:
Develop and agree, with support of the Australia and New Zealand Emergency Management (ANZEMC), National Capabilities and an associated Planning Framework for the management of catastrophic natural disasters, shaped and influenced by the National Capabilities identified from this project.

2. Review Existing National and Jurisdictional Plans

OBSERVATION

Current Australasian plans address the application of known resources and capabilities to conceivable events. However, it was identified that many essential resources and capabilities required for the management of scenarios presented were not government owned, controlled or pre-qualified.

While consistent across most capability areas, this was best demonstrated by limitations of government owned resources and preparations for a number of capabilities:

- Fatality management
- Built environment response
- Civil disaster expansion
- Mass care
- Evacuation and support

A high-level assessment of the scalability of Australasian capabilities was identified and should include consideration of governance and resourcing, as well as mechanisms for engagement with expansion enablers, for example private service and resource providers, non-government organisations, non-conventional resources (such as spontaneous volunteers) and faith based organisations.

Further, pre-qualification for essential partners is necessary to provide a foundation for rapid deployment whilst managing health and safety risks. Existing professional registration bodies and schemes, and major partners in essential areas, may be able to assist.

ACTION:
In the context of the National Capabilities and Planning Framework, review existing national and jurisdictional plans and, where appropriate, identify improvements in planning, develop new plans and enhance scalability of existing plans. Ensure adequate consideration is given to the 'maximum probable' hazard events relevant to the communities that the plans seek to support.

3. Information and Intelligence Systems Development

OBSERVATION

Demand for the instantaneous sharing of information and situational intelligence during catastrophic disasters will be acute while, at the same time, seriously impacted by infrastructure disruptions.

The availability of supplementary or alternative sources of information and intelligence management will be essential to managing catastrophes and providing crucial public and political reassurance.

Planning for such an eventuality is important, as will be the establishment of mechanisms, standards and policies that allow the easy movement of information between public and private organisations, technology platforms and the public.

Significant progress is being made on common operating picture and situational awareness systems used across Australia however there is still more to do.

A commitment from industry bodies, governments and major stakeholders to the development and implementation of minimum data standards for information and situational awareness systems is needed. Further, establishing governance arrangements for the maintenance of these standards would strengthen sustainability of the capability.

Reaching agreement on inter-agency and inter-departmental sharing of information would support planning, real-time operational management, research and predictive services and the sharing and aggregation of:

- geospatial and satellite imaging information;
- meteorological information;
- predictive impact data (such as population, infrastructure and business statistics);
- geological data;
- agency resource and task data;
- other intelligence, including open source (such as social media) and human intelligence (such as field reports) analysis; and
- video and audio feeds (such as for main roads and traffic information).

ACTION:

Promote a culture of innovation and creativity that supports mutually beneficial and accessible information and intelligence systems. Prioritise government funding allocated to capability development towards these objectives.

4. Crisis Leadership Development

OBSERVATION

Catastrophic events result in substantial numbers of people isolated and in need of care and assistance. There will be shock and psychological and physical impacts.

In the midst of catastrophes, there are broad expectations that political and emergency management leaders will take charge and participate in the management of emergency response and recovery activities. These leaders are looked to for reassurance, comfort, understanding and direction.

Leadership during times of crisis, uncertainty and in the absence of information and situational awareness, will be significantly tested, well beyond what is considered 'normal'.

Developing and enhancing national crisis and catastrophe leadership capability at all political and emergency management levels is seen as pivotal. This may include:

- decision-making during a crisis;
- critical communications and messaging;
- community engagement and communication;
- emergent risk and stakeholder management;
- policy impacts and consequences; and
- establish a mentoring and advisory program.

ACTION:

Develop a Crisis Leadership Development Program that addresses key leadership challenges such as: improving adaptive, creative and innovative thinking in leadership; exploring the ethics of leadership during crisis; encouraging greater integration of operational and non operational leaders; exploring the concept of leadership communication and the development of crisis narrative.

5. Learning Framework for Catastrophes

OBSERVATION

A learning framework for catastrophic disasters is not readily available to inform the development of crisis leadership.

Additionally, access to the experiences of others and their identified lessons is limited in Australia. In-field research and post incident lessons sharing is informal across the sector.

Research management and utilisation, along with data collection, is under-resourced in some cases, reducing the scientific efforts to measure both hazard impacts and the impacts of actions taken by government and emergency management organisations. On occasion, communities have been overwhelmed with the number of researchers attempting to gather evidence to better understand impacts.

Linked to crisis leadership development, access to resources and information will enhance the learning experience.

Key capabilities required of crisis leadership at the catastrophic event scale should be considered, and learning frameworks would need to be adapted accordingly.

Contributions to knowledge sharing should be reinvigorated and universal access to this information improved. Knowledge sharing, protocols and standards should be created for information collection and effective lessons management. Reciprocal knowledge sharing arrangements with other nations would assist with exposure to catastrophes not yet experienced in Australia.

A protocol to manage participation of researchers and agencies in reviews of major disasters and events would help manage any unintended impact on effected communities.

ACTION:
Review National Learning Frameworks to ensure their adaptability to catastrophic disasters, and expand case studies and lessons identified outcomes from catastrophic disasters.

6. Exercise and Stress Test Plans and Systems

OBSERVATION

In the event of catastrophic events, a range of systemic failures are expected, including:

- emergency management systems and capacity;
- information management;
- supply chains; and
- critical infrastructure.

Extant testing regimes are not calibrated to the catastrophe level, and have not fully extended into the areas of capability identified in this project.

Linked to the development of National Capabilities and Planning Framework action, testing plans and the system upon which they rely will enhance the readiness and preparedness of leaders to deal with the inevitable event.

A nationally consistent and agreed upon testing method to exercise, audit and report on preparedness and performance was seen as important and necessary.

Such testing to commence at the state / territory level in the first instance and be guided by the National Capabilities as identified in this report.

ACTION:
Develop methods to stress test the key elements of the National Capabilities and Planning Framework and associated National Capabilities.

7. Rapid Capacity Expansion

OBSERVATION

The number of people isolated and in need of care and assistance will be substantial. Local disaster and emergency response capacity will not be enough to meet needs.

The needs of society will be extensive and beyond any normal emergency management operations. Access to and use of private and professional resources will be necessary. Rapid capacity expansion will be essential and extensive.

Given the nature of hazards and the conditions that develop in catastrophic events, identifying who can help, their capacity and capability limits, barriers to participation and pre-qualification requirements must be negotiated, pre-planned and formally recognised as a component of national capability.

Engagement and development arrangements along with relationships and pre-qualification arrangements with other critical sectors is essential.

Third-party capability, capacity and co-ordination should be included in exercising and stress testing systems.

Rapid capacity expansion areas may include:
- human transport;
- livestock and animal transport;
- provisioning (responder, victim and evacuee);
- waste removal and cartage;
- supply chain establishment, and sustainment;
- temporary accommodation and facility construction;
- engineering assessment;
- reconstruction and construction;
- telecommunications restoration and expansion; and
- utility and essential service restoration and recovery

ACTION:
Review existing capabilities in the context of rapid expansion involving interstate and international assistance and, where appropriate, develop third party pre-qualification arrangements, amend legislation and regulate policy to remove potential barriers.

8. Supply Chain Partnerships

OBSERVATION

Supporting the needs of people affected by catastrophic events requires the rapid re-establishment of broken supply chains.

Logistics management and maintaining the supply of essential needs for emergency workers, as well as isolated and displaced members of society, will need to be negotiated, pre-planned and tested.

Well beyond normal operations of emergency management organisations, support from specialists and professionals will be critical after a catastrophic event.

Early identification and planning for baseline per-capita requirements in a range of conditions will be important. Arrangements and lessons from other industries and sectors (such as Defense) could be used as a guide.

Engagement between the emergency management sector and suppliers identified as critical to the disaster management supply chain should be further developed.

An evaluation of estimated per-capita requirements undertaken in conjunction with relevant scientific, subject matter, medical and industry experts is needed. Understanding baseline logistical requirements and planning assumptions will enable emergency managers to project supply and transport requirements for evacuees in the event of mass displacement or a large scale relocation effort.

ACTION:
Improve engagement between states and territories with supply chain partners and emergency management agencies to better understand their critical supply chains and associated risks, vulnerabilities and opportunities.

9. National Communications and Warnings Capability

OBSERVATION

Australia has and continues to invest heavily in improvements to national communications and warnings capability. A number of national projects are currently under way.

The scale and impact of the scenarios used in this project indicate that death and injury, destruction, displacement and disruption to all parts of society would be immense.

Well constructed and relevant warnings and communications will be an essential preparation, mitigation and reassurance tool.

The scenarios considered also revealed the potential for disruption to local capability to issue warnings. Alternative methods of providing national communications and warnings would be necessary.

Communications and public information stakeholders across all government departments and agencies need to assess their capability. This assessment must consider capability building in crisis communications and warnings during catastrophes.

The development of a national capability for co-ordination of hazard, warning and informational communications was identified as important, with access to broadcast communications channels for all hazards and all communities – including broadcast media, social media, state-based alert systems and telecommunications-based warnings systems.

ACTION:
Where appropriate, strengthen the relevant strategy, policy, governance, improvement and funding regimes to ensure the ongoing effectiveness and accessibility of communications and warnings capabilities.

Impact of Proposed Actions
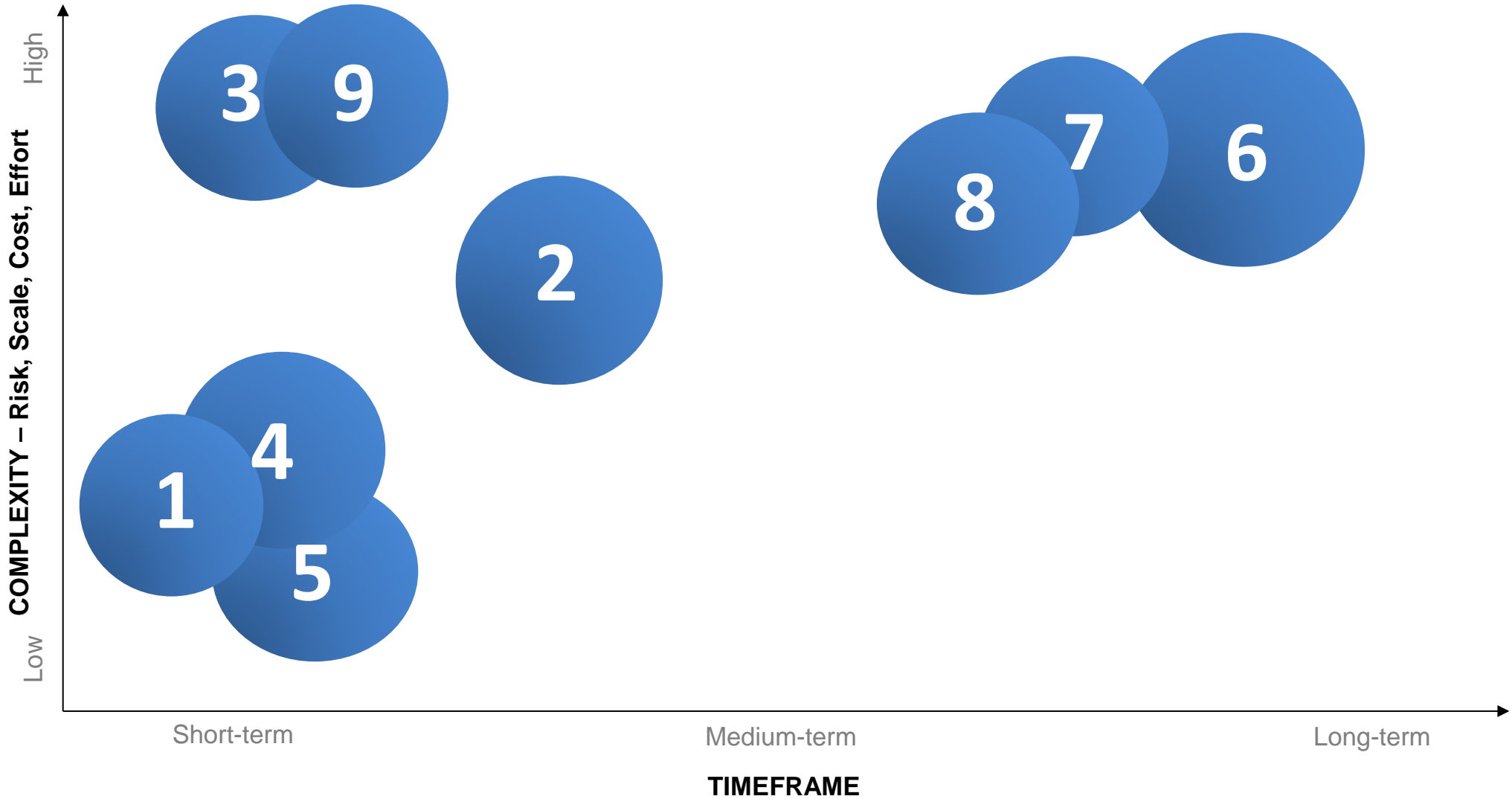
Conclusion

Presented here is a high-level account of over 40 senior emergency management personnel from Australia and New Zealand. This report distills their views on what catastrophic disaster impacts have on society, and on the areas of national capability considered critical to be better prepared to meet identified needs.

20 National Capabilities are proposed, along with 10 principles to guide their future development. Nine high-level actions have been identified to move forward.

The *Capability Roadmap: Building Emergency Management in Australia* has been supported by the federal Attorney-General's Department National Emergency Management Project (NEMP) program. This work has been undertaken to inform capability development at all levels, and become pivotal to the work of state / territory and national committees and supported by key stakeholders.

Workshop 10/11 May 2016 – KPMG Offices, Collins Street, Melbourne

Glossary

National Strategy for Disaster Resilience

Disaster
A serious disruption to community life which threatens or causes death or injury in that community and / or damage to property which is beyond the day-to-day capacity of the prescribed statutory authorities and which requires special mobilisation and organisation of resources other than those normally available to those authorities.

Emergency management
A range of measures to manage risks to communities and the environment; the organisation and management of resources for dealing with all aspects of emergencies. Emergency management involves the plans, structures and arrangements which are established to bring together the normal endeavours of government, voluntary and private agencies in a comprehensive and coordinated way to deal with the whole spectrum of emergency needs including prevention, response and recovery.

2005 Review of Australia's Ability to Respond to and Recover from Catastrophic Disasters

Catastrophic disaster
An extreme hazard event which impacts on a community, or communities, resulting in widespread, devastating, economic, social, and environmental consequences and which exceeds the capability of existing state / territory emergency / disaster management arrangements.

National capability:
The level of capability of the affected jurisdiction plus the level of capability that can or will be applied from other assisting jurisdictions, including the Australian Government. This capability is assessed on a per jurisdiction basis.

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