



Natural Disasters in Australia

Reforming mitigation, relief and recovery arrangements

**A report to the Council of
Australian Governments by a
high level officials' group**

August 2002

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REVIEW OF NATURAL DISASTER RELIEF AND MITIGATION ARRANGEMENTS

Terms of Reference

The Council of Australian Governments (COAG) has agreed to undertake a review of Australia's approach to natural disaster relief, recovery and mitigation against disasters. The objective of the review is to determine whether current arrangements provide an effective framework to meet the needs of those affected by natural disasters. This would have a premise that any arrangements should facilitate maximum involvement of state, territory and local government in contributing to disaster relief and mitigation and continued Commonwealth cost-sharing arrangements.

The COAG also wishes to assess the scope and relevance of programmes and arrangements aimed at mitigating against potential natural disasters.

The Terms of Reference for the review are:

1. Identify the objectives of current Commonwealth, state and territory, and local government disaster relief arrangements.
2. Review current disaster mitigation programmes and arrangements, with a view to assessing their appropriateness, effectiveness and scope. The review should include an assessment of the role local government can play in minimising adverse outcomes. The review should also consider the appropriate location for policy responsibility for disaster mitigation within the Commonwealth, states and territories.
3. Review current arrangements for providing disaster relief, with a view to assessing their appropriateness and effectiveness in meeting national objectives (and include identifying any gaps in disaster relief arrangements). This would include, but not be limited to, an assessment of:
 - the Natural Disaster Relief Arrangements;
 - Exceptional Circumstances relief for farmers (currently under review by ARMCANZ – now the Primary Industries Ministerial Council);
 - disaster-related payments made under the *Social Security Act 1991*;
 - other payments or arrangements; and
 - the related issue of access to insurance coverage against natural disasters.

The review should consider whether the allocation of roles and responsibilities among stakeholders is appropriate.

4. Review current Commonwealth, state and territory, and local government policy-making machinery in relation to disaster relief, mitigation, contingency planning and emergency management, including the process by which the Commonwealth, states and territories respond in the first instance to a disaster.
5. Where appropriate, options for improving upon existing arrangements should be developed.

INTRODUCTION

In December 2003, COAG gave in-principle approval to the recommendations of the report, *Natural Disasters in Australia: Reforming mitigation, relief and recovery*. The report was developed by a high level group of senior officials, representing Commonwealth, State and Territory Governments and the Australian Local Government Association established to undertake a review of the way Australia manages natural disasters.

In releasing the report, the Acting Prime Minister, the Hon John Anderson MP, noted that work on the reforms may result in the identification of alternative approaches to some of the reform commitments and recommendations. It was also recognised that work should commence on the reforms as soon as possible.

COAG agreed that the Australasian Police Ministers' Council will have overall responsibility for the implementation of the recommendations. The Council will be supported by the Australian Emergency Management Committee. The Local Government and Planning Ministers' Council and its standing committees will play a major role in the implementation of land use planning reforms which address natural hazards.

This report is also available on the website of the Department of Transport and Regional Services at <http://www.dotars.gov.au>.

A Summary Report has also been produced. It contains information on the scope and processes of the review, the Executive Summary from the full report and 66 recommendations to COAG.

To obtain more copies of the Report or the Summary, phone freecall 1800 026 222 or write to
The Commonwealth Regional Information Service
Department of Transport and Regional Services
GPO Box 594
Canberra ACT 2601

ACKNOWLEDGMENTS

The High Level Group would like to express thanks to the many people and organisations who assisted in the course the Review.

A range of organisations contributed submissions to the Review, providing valuable perspectives and insights. A number of experts gave their time to attend specialist meetings on science, research and information, and relief, recovery and insurance.

Emergency Management Australia generously provided considerable expertise to the work of the Review and made contributions to this report, such as the Good Practice Guide at Annex 10 and the provision of data from EMA Track.

Thanks are also due to the staff of Risk Frontiers at Macquarie University for their generosity in providing information on numbers and locations of fatalities from natural disasters in Australia.

The High Level Group wishes to acknowledge the support provided by the Review Secretariat, whose members were drawn from the Commonwealth Department of Transport and Regional Services and the Queensland Department of Emergency Services.

EXECUTIVE SUMMARY

The Challenge of Natural Disasters

Natural disasters such as floods, bush-fires and tropical cyclones occur regularly across the Australian continent. They cause more than \$1.14 billion damage each year to homes, businesses and the nation's infrastructure, along with serious disruption to communities. Scientific research indicates that more extreme weather events, and large-scale single events with more severe cyclones, storms and floods, are expected in the future.

The Council of Australian Governments commissioned a review of Australia's approach in dealing with natural disasters – mitigation to guard against disasters, response during a disaster event, and post-disaster relief and recovery. The review was carried out by a High Level Group of officials representing Commonwealth, State, and Territory Governments and the Australian Local Government Association.

The review identified the strengths and weaknesses of our current arrangements for managing natural disasters.

A New Approach

The High Level Group concluded that current arrangements could be improved to ensure that Australia has a world-class national framework for natural disaster management – thus achieving safer, more sustainable communities, and reduced risk, damage and losses. Ten desirable attributes of a new national framework have been identified as the foundation for a new approach.

Central to the new approach is a systematic and widespread national process of disaster risk assessments and, most importantly, a fundamental shift in focus towards cost-effective, evidence-based disaster mitigation. This represents an historic move beyond disaster response and reaction, towards anticipation and mitigation.

Twelve Reform Commitments

The High Level Group recommends that all levels of government agree to a comprehensive five-year package of twelve reform commitments to reform the way Australia manages natural disasters and achieve safer, more sustainable communities and regions in economic, social and environmental terms:

1. develop and implement a five-year national programme of systematic and rigorous disaster risk assessments.
2. establish a nationally consistent system of data collection, research and analysis to ensure a sound knowledge base on natural disasters and disaster mitigation.
3. develop, for each level of government, a natural disaster mitigation strategy to be implemented by the Commonwealth and each State and Territory commencing in year 2, and by Local Governments commencing in year 3.
4. take action to ensure more effective statutory State, Territory and local government land use planning, development and building control regimes that systematically identify natural hazards and include measures to reduce the risk of damage from these natural hazards.

5. support cost-effective natural disaster mitigation measures through a *Disaster Mitigation Australia Package*, consisting of a new Disaster Mitigation Programme and continuation of the Regional Flood Mitigation Programme, to address the risks identified in (1) above.
6. reduce the problem of public infrastructure repeatedly damaged by natural disasters through cost-effective mitigation measures to make infrastructure more resilient, where feasible, by pro-active measures under the Disaster Mitigation Australia Package, and post-disaster measures under the Commonwealth Natural Disaster Relief Arrangements.
7. develop jointly improved national practices in community awareness, education, and warnings which can be tailored to suit State, Territory and local circumstances.
8. enhance the Commonwealth Natural Disaster Relief Arrangements to better support community recovery from natural disasters and agree to ten complementary model State and Territory arrangements providing more equitable natural disaster relief and recovery assistance nation-wide.
9. endorse a set of national cost-sharing principles for natural disaster management that includes a focus on the responsibilities of individuals, businesses and insurers, as well as those of governments.
10. support emergency management volunteers in tangible ways and remove obstacles to their involvement in community safety by addressing key priorities, namely legal protection, financial incentives, recognition and training needs.
11. establish new national machinery consisting of a Ministerial Council or Ministerial Implementation Forum, and a National Emergency Management High Level Group, to ensure effective collaboration and coordination of Commonwealth, State, Territory and Local Government action in implementing the reform commitments.
12. endorse a statement of contemporary roles and responsibilities of each level of government in natural disaster management.

Recommended Disaster Mitigation Australia Package

The High Level Group recommends establishing a Disaster Mitigation Australia Package to support cost-effective mitigation measures. The Package would significantly expand the range of mitigation action nationally, and the pace of that action.

The Disaster Mitigation Australia Package, which would operate for five years, would consist of investment in:

- a new Disaster Mitigation Programme of up to \$75 million per annum nationally to fund reform commitments relating to nationally consistent data and research, disaster risk assessments, disaster mitigation strategies, disaster mitigation measures, resilient infrastructure, and community awareness and warnings, and
- continuation of the current Regional Flood Mitigation Programme at \$28.8 million nationally per annum adjusted annually for inflation.

The Disaster Mitigation Programme would be the first initiative of its kind in Australia. All three levels of government would participate in the Disaster Mitigation Australia Package, with many of the initiatives delivered at Local Government level. Measures to address any of the natural hazards covered by the new definition of 'natural disaster' adopted by the High Level Group, including bush-fires, cyclones, storms, floods, earthquakes and landslides, could be funded under the new Disaster Mitigation Programme.

Under the reforms, infrastructure repeatedly damaged by natural disasters could be rebuilt to a more resilient standard than is presently allowed, with long-term savings to each level of government. This could occur pro-actively through the Disaster Mitigation Programme or, in a post-disaster situation, through new flexibility proposed under the Natural Disaster Relief Arrangements (NDRA) to rebuild damaged infrastructure to a more resilient standard.

The High Level Group recommends that all three levels of government jointly fund the Disaster Mitigation Australia Package. Remote Indigenous communities, unincorporated remote communities and Local Governments with lower capacity to contribute funds would be encouraged to take part in the disaster mitigation and flood programmes on favourable terms. Additional investment in natural disaster mitigation by all three levels of government is conservatively estimated to result in a rate of return of 15 per cent on that investment.

A wide range of other measures to advance natural disaster mitigation is recommended by the High level Group.

Reforming Natural Disaster Relief and Recovery

The High Level Group found that Australia's natural disaster relief measures providing immediate and urgent assistance to individuals and families, and rebuilding damaged infrastructure, is sound and effective. However, the current arrangements do not deal as well in helping communities as a whole recover from the effects of severe disasters.

In the past, governments have set up one-off or ad hoc relief and recovery schemes, recognising the severity, potential consequences, and long-term effects of severe disasters and the need to assist communities in a holistic way with their recovery - social, economic, physical and emotional.

The approach to disaster relief and recovery proposed by the High Level Group aims to:

- build community resilience by constraining and, over time, reducing damage and costs to the community and all levels of government though cost-effective mitigation recognising of course that major unforeseeable disaster events will continue to occur
- reduce the incidence of ad hoc and disparate relief measures by introducing a more disciplined, holistic and systematic needs-based approach to relief and recovery assistance to communities
- introduce new flexibility to enable damaged public infrastructure to be rebuilt to a more resilient standard where that is feasible and cost-effective
- ensure equitable assistance and support to individuals and communities affected by comparable natural disasters across Australia
- better integrate the relief and recovery arrangements of all levels of government, and
- address the special needs of remote Indigenous communities.

Special Community Recovery Modules

To reinforce the importance of community recovery, the HLG considers disaster recovery should be put on a more systematic footing through a modular set of measures that governments can trigger as and when the circumstances require.

The High Level Group recommends a set of four Special Community Recovery Modules that would become part of the Commonwealth's Natural Disaster Relief Arrangements (NDRA) and could be triggered and funded by the Commonwealth and the affected State or Territory by agreement when circumstances warrant additional recovery assistance. The modules would deal with a variety of needs of farmers and small businesses, individuals, and communities and community organisations. For example, the small business module is based on the special assistance put in place after the 1998 Katherine (NT) floods to assist the business community to reestablish.

The advantages of having an established set of optional additional community recovery measures are that they would:

- reduce the incidence of ad hoc measures devised for particular disasters
- mean that relief and recovery measures don't have to be invented or re-invented on a one-off basis
- provide governments with a set of measures 'on the shelf' which can quickly and seamlessly be applied when the need arises

- enable relief and recovery agencies to learn, adapt and refine the measures, criteria and delivery practices into a more seamless process of assisting communities with their needs
- retain the flexibility governments need to ensure that they are addressing the real needs of disaster-affected communities, and
- introduce a greater degree of equity in the assistance and support available to different communities in similar circumstances.

Model Arrangements for State and Territory Relief and Recovery

The review also examined the relief and recovery arrangements in each State and Territory and identified significant anomalies in assistance available across Australia. To address the discrepancies, the High Level Group recommends nine model arrangements for State and Territory natural disaster relief and recovery.

Enhancement of NDRA

Further enhancements of the current NDRA are proposed, along with a financial incentive for Local Governments that are implementing disaster mitigation strategies, and encouragement for charitable disaster appeal funds to be pooled or delivered in ways that complement government assistance.

National Cost-Sharing Principles

The High Level Group recommends national cost-sharing principles for natural disaster management that make clear the respective responsibilities of each level of government in mitigation, disaster preparedness and response, relief and recovery, and research.

The financial implications for governments of the reform package are identified, including the proposals for additional expenditure and the estimated longer-term savings from cost-effective mitigation, and from disaster resilient infrastructure.

New National Decision-Making Machinery

Currently, Australia lacks any machinery, at a national level, for Commonwealth, State and Territory Ministers to oversee emergency management and natural disaster matters. It is one of the few areas of public policy for which there is no responsible Ministerial Council.

The High Level Group considers the involvement of Ministers at a national level to be vitally important for three reasons, to:

- ensure vigorous follow-through of the recommended five-year reform package
- provide a clear channel of advice to Ministers and Cabinets, and
- ensure a national focus on emergency and natural disaster management.

The High Level Group recommends the establishment of:

- a National Emergency Management Ministerial Council or, if COAG prefers not to establish an additional Ministerial Council, a Ministerial Implementation Forum with a five-year lifespan, and
- a new National Emergency Management High Level Group to provide support for the Ministerial Council/Forum and ensure a cross-jurisdictional, whole-of-government effort to drive the implementation of the Natural Disaster Reform Package.

When a Disaster Occurs

States and Territories, which have principal responsibility for natural disaster preparedness and response, each have well established and practised systems and arrangements under multi-agency whole of government approaches. The Commonwealth provides assistance and resources when the State or Territory resources are insufficient and it requests such assistance.

A number of national challenges, including those that have arisen since September 11, 2001, are identified as needing attention.

Mutual Assistance

Most importantly, the High Level Group recommends that an Inter-Governmental Agreement or Memorandum of Understanding be developed between Heads of Government to govern the provision of mutual assistance for natural disaster response operations on the part of all jurisdictions. Consideration of future opportunities for dialogue with Asia Pacific countries on regional cooperation in large-scale disaster response and relief operations is also suggested.

How Should Governments be Preparing for a Catastrophic Natural Disaster?

The Review considered Australia's capacity to deal with a catastrophic disaster with the potential to over-extend the combined capacity of all jurisdictions. The probability of such events is low, but the consequences are extreme. The High Level Group concluded that Australia is currently ill prepared to deal with such a contingency and it is important that action be initiated now.

The High Level Group recommends that essential inter-governmental work on strategies, including planning, be undertaken to improve Australia's capacity to deal with catastrophic natural disasters.

Volunteers

The High Level Group is strongly of the view that volunteers are an indispensable part of the nation's natural disaster and emergency management capability that need to be supported and nurtured in tangible ways. Barriers to volunteer service need to be systematically addressed by each level of government to overcome the decline in the number of volunteers available for natural disasters and emergencies.

The High Level Group recommends that each level of government examine and take action on the measures identified by the National Summit for Emergency Management Volunteers in October 2001 which fall into four key priority areas:

- legal protections for volunteers
- incentives, including financial incentives
- recognition, and
- training.

Special Needs of Remote Indigenous Communities

Many remote Indigenous communities are in disaster-prone areas affected by natural disasters on a regular basis. Cost structures for infrastructure and supplies are often higher, and relief and recovery assistance more difficult and costly to provide. These features magnify existing community disadvantage. Such communities need additional assistance to be able to take advantage of mainstream risk assessment and mitigation programmes, and relief and recovery measures.

The High Level Group has designed the Special Community Recovery Modules and the Disaster Mitigation Australia Package to take into account the special needs of remote Indigenous communities. ATSIC has signified that it would consider a number of strategies to achieve safer and more sustainable remote Indigenous communities.

The High Level Group recommends that the needs of remote Indigenous communities be addressed through:

- improved access to funding for mitigation measures
- recovery assistance through the proposed Special Community Recovery Modules
- flexible access to personal hardship and distress assistance, and
- support through ATSIC and ATSIC Regional Councils in local planning and improved disaster resilience.

Creating the Right Conditions for Reform of Natural Disaster Insurance

Governments are currently taking action to address a range of shortcomings in relation to commercial insurance affecting the Australian community. Issues of availability and affordability also extend to natural disaster insurance.

The limited nature of access in Australia to insurance against natural disasters contrasts with the situation in some comparable countries. The exclusion of riverine flooding (and increasingly cyclones) from household and small business insurance policies creates problems for consumers, governments and the insurance industry. The level of uninsured and underinsured is also a continuing problem.

The recommendations of the High Level Group, and particularly the strong emphasis on national disaster mitigation action, create the right conditions for reform of disaster insurance in Australia. Many of the measures recommended would benefit the insurance industry by reducing risks from natural hazards and making insurance more attractive and affordable.

The High Level Group recommends that, amongst other things, the insurance industry should take active steps to:

- ensure the availability and affordability of all hazards, natural disaster insurance as part of standard insurance policy cover
- work with the new national emergency management machinery to develop a single national definition of natural hazards, including water damage, to be offered by all insurers, and
- agree to a national system of disclosure of insurance company premiums, number of policyholders, exclusions and claims to the Commonwealth's insurance industry regulator so that an accurate picture of the costs of natural disasters and the role of insurance can be developed.

The Reform Package

The High Level Group's natural disaster reform package of recommendations 1 – 66 to the Council of Australian Governments is at Annex 1: High Level Group Recommendations.

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Conduct of the Review

Scope

Processes of the Review



Scope

On 8 June 2001, the Council of Australian Governments (COAG) commissioned a review of the nation's arrangements for dealing with natural disasters.

The Terms of Reference required a review of:

Australia's approach to natural disaster relief, recovery and mitigation against disasters. The objective of the review is to determine whether current arrangements provide an effective framework to meet the needs of those affected by natural disasters. This would have a premise that any arrangements should facilitate maximum involvement of state, territory and local government in contributing to disaster relief and mitigation and continued Commonwealth cost-sharing arrangements.

The scope of the review encompassed all elements of natural disaster management and specifically:

- objectives of the current arrangements
- appropriateness, effectiveness and scope of disaster mitigation programmes and arrangements
- appropriateness and effectiveness of, and any gaps in, disaster relief arrangements
- roles and responsibilities
- policy-making machinery for all elements of natural disaster management, and
- options for improving existing arrangements.

Processes of the Review

A High Level Group (HLG) of senior officials, representing Commonwealth, State and Territory Governments and the Australian Local Government Association (ALGA), was established to undertake the review. The HLG was chaired by the Commonwealth member, Mr Ken Matthews, Secretary of the Department of Transport and Regional Services. Membership of the HLG is listed at Annex 2: High Level Group Members. The work of the HLG was supported by a Review Secretariat from the Department of Transport and Regional Services (DOTARS).

The HLG met on ten occasions to examine the matters specified in the Terms of Reference. The HLG also had the benefit of two meetings with specialists held to examine aspects of the review, and of 24 submissions received from a range of interested stakeholders, including the participating governments, ALGA, academics, scientific and research bodies, government agencies, community groups and industry organisations. A list of the interested parties who made submissions to the Review is at Annex 3: National Submissions to the Review. State and Territory members of the HLG also consulted with departments and agencies within their own jurisdictions and with stakeholder organisations, and provided reports on the submissions received by their jurisdictions. ALGA also made a submission after consulting with its State and Territory member associations.

Assessment of Australia's Current Approach to Natural Disaster Management

Definition of a Natural Disaster

Clarifying Terminology and Usage

An 'All Hazards' Approach

Elements of Disaster Management

Australian Natural Disaster Trends

The Future

The Current Approach

Desirable Attributes of a National Framework for Natural Disaster Management



Definition of a Natural Disaster

The HLG considered the range of events and conditions that should be classed as natural disasters. The HLG sought clarity and specificity in the definition to enable the adoption of a single nationally agreed definition for future policy and programme purposes.

Definition of a Natural Disaster

Recommendation 1

The HLG recommends that 'a natural disaster' be defined as follows:

A natural disaster is a serious disruption to a community or region caused by the impact of a naturally occurring rapid onset event that threatens or causes death, injury or damage to property or the environment and which requires significant and coordinated multi-agency and community response. Such serious disruption can be caused by any one, or a combination, of the following natural hazards: bushfire; earthquake; flood; storm; cyclone; storm surge; landslide; tsunami; meteorite strike; or tornado.

Such natural hazards are difficult to foresee and effectively guard against other than through disaster risk assessment and disaster mitigation. Drought, frost and heatwave are excluded from the definition.

Clarifying Terminology and Usage

Annex 4: Glossary of Key Terms identifies terminology referred to and proposed for consistent national use. Agreed terminology is useful in underpinning policies and programmes of national application. It also assists in ensuring a shared understanding by all levels of government of the objectives, processes and practices in implementing effective natural disaster management.

Key Terms

Recommendation 2

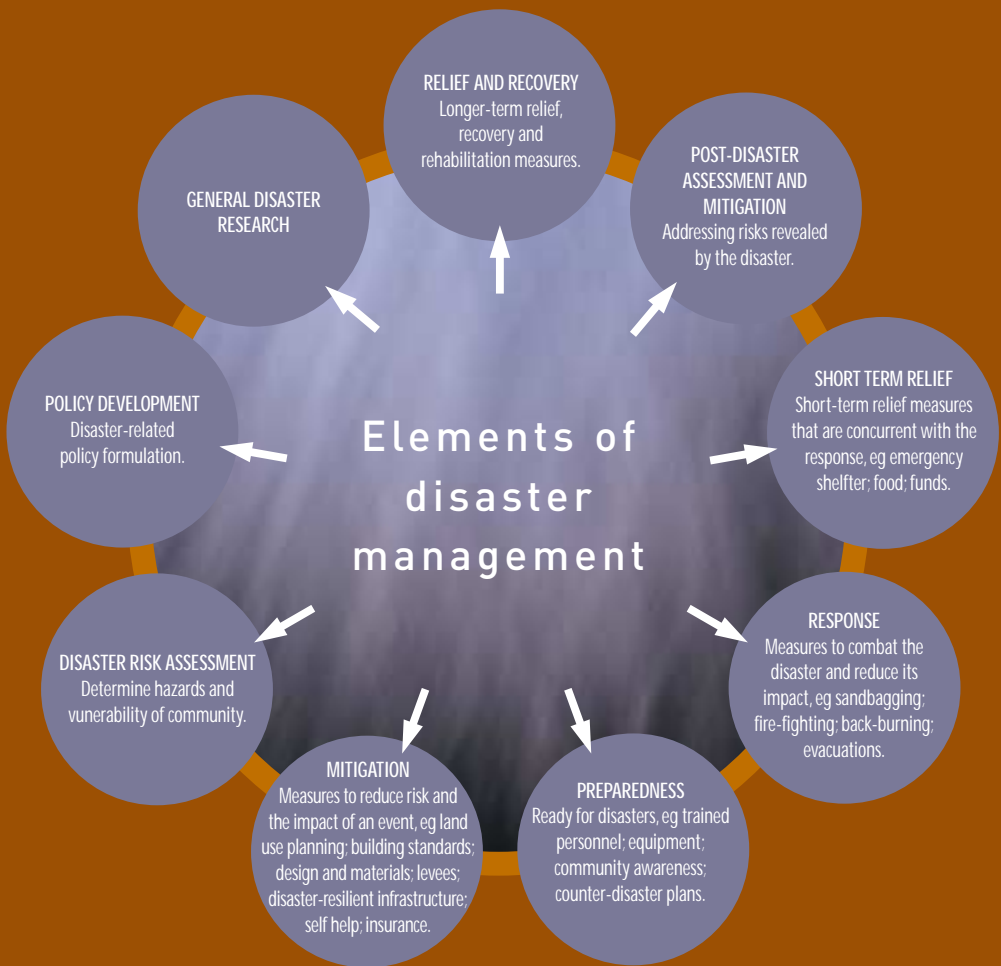
The HLG recommends that the key terms relating to natural disaster management set out in Annex 4 should be adopted for consistent national use.

An 'All Hazards' Approach

Natural disaster management is one aspect of emergency management – the basis on which each State and Territory Government organises its approach to all hazards and risks, whether natural, technological or human-induced. Consequently, State and Territory Governments do not use a separate set of management arrangements for natural disasters. Universally, and consistent with international best practice, governments deal with emergencies, including natural disasters, by addressing the consequences for individuals, communities, affected sectors of industry, infrastructure, and the economy.

By taking an 'all hazards' approach, the arrangements developed for natural disasters will be consistent with future directions taken for other emergencies. In particular, the HLG notes that national reviews are being undertaken in relation to potential terrorist incidents and the potential for a major outbreak of foot and mouth disease. The HLG considers that the approach proposed for dealing with natural disasters is consistent with the national arrangements proposed for such emergencies, and many of the proposals recommended will enhance Australia's capacity to deal with a wide range of emergencies.

Working with Communities on Disaster Management



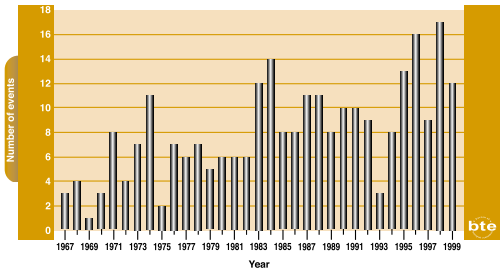
Elements of Disaster Management

The main elements of disaster management are mitigation, preparedness, response, relief and recovery. The activities involved are not sequential, and aspects frequently take place concurrently. For example, immediate response to a disaster situation, and immediate help for the affected community, usually occur at the same time. The key elements are represented in Figure 1.

Australian Natural Disaster Trends

Reliable information on the frequency of disasters in Australia extends only from 1967. Analysis of disasters between that year and 1999 shows that Australia typically encounters approximately eight disasters each year, where the total cost per event is greater than \$10 million. However, since 1980, the average number of disasters of that magnitude has been tending to increase. The worst year was 1998, with 17 recorded events over a \$10 million damage threshold. Figure 2: Number of natural disasters in Australia, 1967–99,¹ shows an upward trend in disaster frequency over the period. While just over 30 years is a relatively short time frame in which to discern trends, the Bureau of Transport and Regional Economics (BTRE) considers the trend statistically significant.

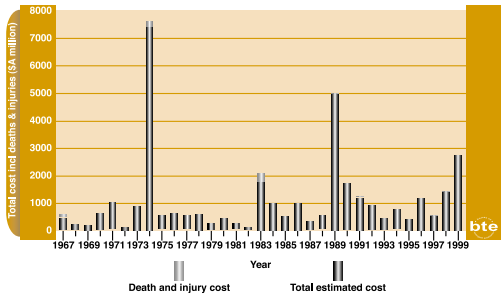
Figure 2: Number of natural disasters in Australia, 1967–99



Source: BTRE analysis of Emergency Management Australia (EMA) Disaster Events Data Tracking System (EMA Track) data.

Figure 3: Total cost of natural disasters, 1967–99 shows the variable annual costs which average more than \$1.14 billion per annum for events costing more than \$10 million each.

Figure 3: Total cost of natural disasters, 1967–99

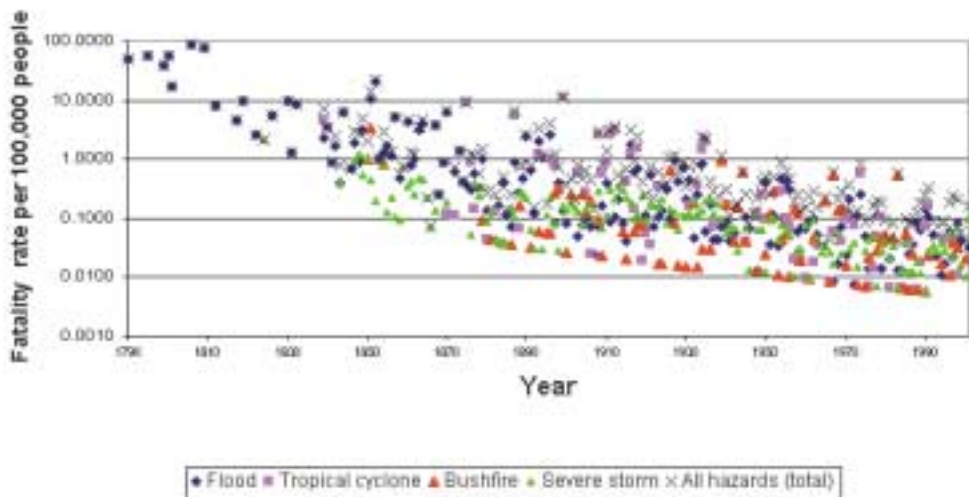


Source: BTRE analysis of EMA Track data.

Deaths per 100,000 population from natural disasters have continued to fall throughout the period of European settlement as demonstrated in Figure 4: Fatalities from natural disasters, 1790–2001. The death rate from all natural hazards combined has fallen from 10 per 100,000 in 1875 to below 1 per 100,000 by 1940.

¹ *Economic Costs of Natural Disasters in Australia*, Report 103, Bureau of Transport Economics, 2001.

Figure 4: Fatalities from natural disasters, 1790–2001



Source: Risk Frontiers, Macquarie University, NSW.

Table 1: Natural disaster events in Australia, 2001 identifies all natural disaster events causing death or injury in Australia in the 12 months from 1 January 2001 to 31 December 2001. Ten of the 31 events in 2001 are estimated to have exceeded \$10 million in direct costs. The large number and variety of events in that period, and their consequences, highlight the need for an effective national framework for dealing with natural disasters.

Across Australia, populations and the built environment continue to develop in hazard-prone areas. Major urban development, particularly in coastal and river valley locations, has continued sometimes without reference to hazard risk assessment and consideration of appropriate mitigation measures, with the result that certain urban developments and essential infrastructure that support significant populations are at risk of damage from natural disasters.

In regional areas too, as a result of inadequate risk assessments and mitigation action, transport infrastructure, such as roads and rail links, is flooded each year, disrupting travel for local populations and tourists, the carriage of commodities for communities and business, and the supply of materials for industry.

Table 1: Natural disaster events in Australia, 2001

Month/Year	Event	Location	Deaths	Injuries (approx.)	People affected (approx.)	Estimated cost (million)
January 2001	Bushfire	Hay, NSW		2	2,000	\$1
	Flash floods	Western Sydney, NSW		10	40,000	\$10
	Severe storm (incl. flash flood)	Sydney and Region, NSW	1	50	23,000	\$40
	Storm (lightning strikes)	Derby and Goldfields, WA	2			
	Severe storm (incl. downburst, tornado, flash floods and hail)	Casino and Region, NSW		30	10,000	\$60
	Severe storms (incl. tornado and hail)	Southern Brisbane and Northern Gold Coast, Qld	1	5	18,000	\$8
	Severe storm (incl. lightning)	Melbourne, Vic		2		
	Flood	Moree, Lismore and North East NSW	1	5	20,000	\$120
February 2001	Bushfire	Tulka, SA		10	350	\$2.5
	Heavy rain (bus accident)	South Gippsland, Vic		19		
March 2001	Gales and floods	Grafton, Kempsey and North East Region, NSW	1	10	20,000	\$300
	Flash floods	Brisbane, Sunshine and Gold Coasts, Qld	2	10		\$60
	Flash flood	Blue Mountains National Park, NSW	1		2	
	Flash flood	Western Suburbs, Melbourne, Vic		1		\$0.25
	Landslide	Fraser Island, Qld		14		
	Severe storm (incl. whirlwind/dust devil)	Kapunda, SA	1	11		
April 2001	Flash floods	Newcastle and Region, NSW		20		\$1
	Floods	Southern, Vic	1	6		\$5
July 2001	Flood	Perth, WA		5	500	<\$10
	Severe storm	Moreton Bay, Qld	4			
	Severe storm	Coastal NSW and Qld	5	3		
September 2001	Severe storm	Tweed Heads Region, NSW		3		
	Severe storm (incl. hail and flash floods)	Yorke Peninsula and Adelaide, SA		15	35,000	\$0.7
	Severe storm (incl. lightning)	Western Sydney		11		
November 2001	Severe storm (incl. tornadoes and hail)	Hunter (incl. Port Stephens), Sydney and Central Western Regions, NSW	3	50	37,000	\$120
	Severe storm	Darwin Region, NT		1		
December 2001	Severe storm (incl. hail and lightning)	Sydney, Hunter and Northern Regions, NSW	2	30	28,000	\$130
	Severe storm	Gold Coast and South West Brisbane, Qld		5	7,000	\$20
	Severe storms	Shepparton, Vic		1		
	Severe storm (water spout)	Off Jervis Bay, NSW		1		
Dec 2001 (continued through to Jan 2002)	Bushfires	North East, Central Coast, Greater Sydney Region, Blue Mountains, Central West and South Coast and Hinterland, NSW, and ACT		50	230,000	\$210
Total	31		25	380	470,850	\$1,098.45

Source: EMATrack data with additional information from the NSW State Emergency Management Committee.

Notes: Information covers natural disasters in Australia (where data is available) which caused deaths, injuries and/or illness.

'Estimated cost' includes only direct costs, namely emergency response costs, insurance losses, uninsured losses, material, production and service income losses, and community costs associated with injuries and deaths caused.

The Future

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) submission to the review points out that in the course of this century, the nature of Australia's disasters, and their areas of impact, may change significantly. The influence of the greenhouse effect on climatic conditions is expected to increase the severity of cyclones, storms, bushfires and floods in certain regions of the country. A recent study by CSIRO on the combined effect of demographic changes and climate change shows that a warmer climate may result in an increased risk of coastal inundation in populated areas. Together with an expected increase in sea levels, this could substantially increase damage from flooding.

CSIRO considers that the greatest risks come from climate variability and extremes, rather than being a direct consequence of mean climate change, the result being more extreme weather events and large-scale singular events.

As well, CSIRO highlights the prospect of shifting hazard zones, including movement of the cyclone belt further south and flooding of rivers and coastal zones previously immune to flooding. These changes could have dramatic effects, as the traditional strategies for dealing with severe events may not be able to cope with the new patterns of impact.

The Current Approach

In the period until the late 1980s Australian disaster management tended to focus on planning and preparations associated with disaster response and rescue. A well established response system can reduce the number of casualties from natural disasters and in some cases, such as bushfire, can limit the consequential damage. However, in the case of floods, coastal inundation, cyclones and storms, response measures are not sufficient to assist the economic and social recovery of communities.

More recently the focus of disaster management has shifted towards disaster risk assessments, community preparedness, disaster mitigation measures and, in some States, recovery management. While this represents progress towards a more sustainable and cost-effective approach, there remain significant opportunities for reform of the current disaster management arrangements.

Strengths and weaknesses of the current approach

Strengths

There are three particular strengths of Australia's current arrangements for managing natural disasters:

- State and Territory operational preparedness and capacity for disaster response which are effective for managing the most common natural disasters
- the strong emergency services career and volunteer sectors which provide a speedy, visible and respected capacity to respond to natural disasters, and
- the complementary Commonwealth, State and Territory natural disaster relief arrangements which are sound and effective in providing basic assistance to affected communities.

Weaknesses

The HLG has identified eight main weaknesses in Australia's current arrangements:

- lack of independent and comprehensive systematic natural disaster risk assessments, and natural disaster data and analysis
- a focus on response and reaction at the expense of prevention, mitigation and recovery of affected communities
- lack of independent and comprehensive post-disaster assessments to identify lessons learnt, and opportunities for improvement

- uneven recognition of the important role Local Governments have to play
- lack of preparation for catastrophic disasters
- limited availability of flood insurance
- a tendency on the part of governments to introduce ad hoc special relief schemes which may lead to confusion, inequities and higher costs, and
- lack of effective inter-governmental, and in some cases intra-governmental, machinery to support a coordinated national approach to disaster management.

An emerging issue is the need to ensure, in relation to critical infrastructure, that public safety considerations are taken into account.

Opportunities

In considering the strengths and weaknesses of existing arrangements, the HLG has concluded that existing arrangements can readily be improved to ensure that Australia has a world-class national framework for natural disaster management.

Annex 5: Summary of High Level Group Responses to the Terms of Reference sets out views and conclusions of the HLG that are not otherwise covered in the body of this report.

In defining its vision for the reformed framework for natural disaster management, the HLG proposes the following national framework objective.

National Framework Objective

Recommendation 3

The HLG recommends the adoption of the following National Framework Objective:

To establish a unified national approach to natural disasters under which governments, households, businesses, volunteer organisations, insurers and others with a part to play operate in concert to:

- create safer, more sustainable communities and regions in social, economic and environmental terms
- reduce risks, damage and losses from natural disasters
- find the right balance among mitigation, preparedness, response, relief and recovery activities, and
- recognise the investment and savings opportunities provided by mitigation.

Desirable Attributes of a National Framework for Natural Disaster Management

The HLG has identified the following desirable attributes of a new framework to drive future action jointly by all levels of government.

1. The framework for dealing with natural disasters should fit within the 'all hazards' approach of Australia's emergency management agencies. This acknowledges the fact that State and Territory arrangements are designed to deal with all hazards and do not deal separately with natural disasters. Specific arrangements proposed for natural disasters could be applied more broadly to other emergencies where governments so chose.²
2. Natural disaster management activities should be driven by an active and coordinated national approach to research and development, data collection and analysis, and systematic, widespread risk assessments. The intention is to shift national management arrangements further towards proactivity, from the more reactive approach of the past.
3. Guided by such research and risk assessments, there should be a stronger focus on anticipation, mitigation, and recovery and resilience in order to achieve safer, more sustainable communities, and a better balance compared with the effort and resources traditionally applied to disaster relief.
4. Sound and effective land use planning, and development and building approval regimes by Local, State and Territory Governments, should take into account disaster risk reduction and mitigation as essential foundations for safer, more sustainable communities.
5. Mitigation measures should be the subject of rational, cost/benefit and social investment decisions, with special provision for remote, Indigenous and other communities that may otherwise be disadvantaged by a strict cost/benefit approach.
6. Disaster management measures should promote household and business self-reliance through risk assessment and mitigation, encourage private sector involvement, and specifically should maximise commercial insurance cover.
7. Volunteers should be supported in tangible ways and obstacles to their involvement removed given that they are a fundamental part of Australia's natural disaster management arrangements.
8. Commonwealth, State, Territory and Local Government financial arrangements should provide incentives for good practice, particularly to encourage disaster mitigation and preparedness activities.
9. Local Governments must have a critically important role in disaster risk reduction and mitigation strategies and measures as they are best placed to determine local risks and needs.
10. All levels of government need to mainstream disaster mitigation across their departments and agencies, and take an 'all-governments/ whole-of-government' approach to mitigation to achieve successful natural disaster management.

² Aspects of the current and proposed arrangements are designed specifically for natural disasters and do not automatically apply to 'all hazards' – for example, NDRA and complementary State and Territory relief measures.



Twelve Recommended Reform Commitments by all Levels of Government

To achieve the proposed National Framework Objective and to embed the above desirable attributes of a better natural disaster management framework, the High Level Group has developed a five-year package of reform commitments which it proposes COAG adopt. These 12 reform commitments recommended for implementation by all levels of government would significantly improve Australia's arrangements for dealing with the threats posed by natural hazards, and with natural disaster events.

Central to the new approach is a systematic and widespread national process of disaster risk assessments and, most importantly, a paradigm shift in focus to cost-effective, evidence based disaster mitigation. This represents an historic move beyond disaster response and reaction, towards anticipation and mitigation.

Key elements of the reform commitments are:

- a Disaster Mitigation Australia Package, a set of two programmes to fund the new risk assessment and mitigation measures and essential supporting arrangements
- enhanced Commonwealth, State and Territory natural disaster relief and recovery arrangements
- new national cost-sharing principles which would be an enduring set of agreed arrangements, and
- new national decision-making machinery to drive the implementation of the reform package.



Twelve Commitments by All Levels of Government to Reform Australia's Natural Disaster Management

Recommendation 4

The HLG recommends that all Australian levels of government commit to, and announce, the following comprehensive five-year reform package.

Heads of Government of the Commonwealth, States and Territories, and the President of the Australian Local Government Association (ALGA) agree to endorse and jointly implement the following commitments to reform the way Australia manages natural disasters and achieve safer, more sustainable communities and regions in economic, social and environmental terms:

1. develop and implement a five-year national programme of systematic and rigorous disaster risk assessments
2. establish a nationally consistent system of data collection, research and analysis to ensure a sound knowledge base on natural disasters and disaster mitigation
3. develop, for each level of government, a natural disaster mitigation strategy to be implemented by the Commonwealth and each State and Territory commencing in year 2, and by Local Governments commencing in year 3³
4. take action to ensure more effective statutory State, Territory and Local Government land use planning, development and building control regimes that systematically identify natural hazards and include measures to reduce the risk of damage from these natural hazards
5. support cost-effective natural disaster mitigation measures through a Disaster Mitigation Australia Package, consisting of a new Disaster Mitigation Programme and continuation of the Regional Flood Mitigation Programme, to address the risks identified in no. 1 above
6. reduce the problem of public infrastructure repeatedly damaged by natural disasters through cost-effective mitigation measures, to make infrastructure more resilient where feasible by proactive measures under the Disaster Mitigation Australia Package, and post-disaster measures under the Commonwealth Natural Disaster Relief Arrangements
7. develop jointly improved national practices in community awareness, education, and warnings which can be tailored to suit State, Territory and local circumstances
8. enhance the Commonwealth Natural Disaster Relief Arrangements to better support community recovery from natural disasters and agree to nine complementary model State and Territory arrangements providing more equitable natural disaster relief and recovery assistance nationwide
9. endorse a set of national cost-sharing principles for natural disaster management that includes a focus on the responsibilities of individuals, businesses and insurers, as well as those of governments
10. support emergency management volunteers in tangible ways and remove obstacles to their involvement in community safety by addressing key priorities, namely legal protection, financial incentives, recognition and training needs
11. establish new national machinery consisting of a Ministerial Council or Ministerial Implementation Forum, and a National Emergency Management High Level Group, to ensure effective collaboration and coordination of Commonwealth, State, Territory and Local Government action to implement the reform commitments, and
12. endorse a statement of contemporary roles and responsibilities of each level of government in natural disaster management.

³ The five-year reform package would commence when it is endorsed by the Council of Australian Governments.

Natural Disaster Management Roles and Responsibilities

**Roles of Individuals,
Businesses and Other Parties**

**Roles and Responsibilities
of Governments**



Roles of Individuals, Businesses and Other Parties

Dealing with natural disasters is not simply a matter for governments. Individuals, families and the community as a whole play a role in determining how well communities are safeguarded from natural disasters and the degree of resilience of communities. The roles and responsibilities of key non-government stakeholders are summarised below.

Families and individuals

Households have principal responsibility for safeguarding their property and assets against risks from natural disasters through risk identification, mitigation measures and adequate property and contents insurance where insurance for the risks they face is available and reasonably affordable.

The collective actions, or inaction, of individuals and families can have a major influence on the severity of a disaster's impact. In significant disasters, disaster management career personnel and volunteers do not, and never will have, the capacity to simply 'solve' the disaster threat for every individual at risk. Nor do governments and charitable agencies have the ability or responsibility to fully offset the financial losses incurred by families and individuals in the course of a natural disaster.

It is the role and responsibility of families and individuals to attain the highest degree of physical and financial self-reliance, before, during and after a disaster. In particular they should:

- be fully aware of the risk of natural hazards to the home and regular activities
- arrange where available for adequate home and contents insurance to cover likely risks in their area
- make plans and preparations for dealing with a disaster situation
- minimise hazard risk factors in and around the home environs, and
- find out what local plans are in place in the event of a disaster.

Communities⁴

Local communities can take a wide range of actions to become more resilient and, in particular, should:

- promote high levels of awareness of natural hazard risks in the community and the collective preparations and actions that should be taken in the event of a disaster
- provide active support for government and community efforts to minimise the possible consequences of disasters, such as natural hazard risk reduction measures, and
- provide a culture of support and recognition for volunteers.

Industry, business, professional and research bodies

The private sector and professional and research organisations have roles to play in natural disaster management, particularly in risk assessment and mitigation.

The insurance industry

The insurance industry is a strong advocate of risk mapping and mitigation, and stands to gain much in reduced commercial loss exposure from increased mitigation. Additionally, insurance firms are major commercial beneficiaries of the disaster response efforts of emergency workers (for example, in minimising bush-fire and storm damage). In turn, insurance cover offered by the industry is an integral part of a disaster-affected community's relief and recovery.

⁴ A group with commonality of association and generally defined by location, shared experience or function. Australian Emergency Manual Series Part 1, Manual 4, Sept 1998.

The insurance industry can play a vitally important role in:

- assisting disaster management agencies with the necessary research and investment for improved hazard identification, risk assessment and mitigation efforts, and
- in all communities, but particularly where mitigation efforts have taken place, providing access to insurance against natural disasters, including flood and cyclone, at affordable premiums commensurate with risk levels.

The planning profession

Land use planning which takes into account natural hazard risks has been identified by the HLG as the single most important mitigation measure in preventing future disaster losses in areas of new development. The professions involved with urban planning and design have important roles and responsibilities. These include:

- actively promoting best practice land use planning for natural disaster mitigation, through industry journals and awards
- vigorously engaging in continuing professional education of their members on the issue
- ensuring that land use planning for natural disaster mitigation is incorporated in all tertiary courses on planning, and
- implementing best practice planning taking into account natural disaster risk reduction measures.

The design, building and construction industries

The resilience of the built environment to natural hazards is a vital factor in promoting human safety, reducing damage costs and allowing business continuity when natural disasters occur. Developers, architects, engineers and the construction industry have vital roles to play in achieving improved disaster resilience.

- Developers have a social responsibility to ensure that their projects do not compromise the long-term safety of those that will live and work in their developments, or increase natural hazard risks for others in society.
- The architecture and engineering professions have roles in educating their members in natural hazard impacts on structures, through tertiary courses and continuing professional education and promoting best practice and innovation.
- The building and construction industry has a role in promoting natural hazard awareness in the industry and a culture of compliance with building codes and standards.

Infrastructure providers

Owners and providers of critical infrastructure or 'lifelines' that are vital to community functioning, such as telecommunications systems, electricity generation and distribution networks, water and gas pipelines and reticulation networks, sewerage systems, and airports, bridges, tunnels and roads systems, have responsibility for risk identification, mitigation measures and planning to ensure continuity and quality of services, including priorities for the restoration of services.

Businesses and primary producers

The risk of natural disaster is one of the risks that any business enterprise should take into account in business planning. With regard to risk reduction, strategies should include:

- natural disaster risk assessment
- use of any physical or logistical measures to protect or remove assets and stock from the effects of the hazard
- development and implementation of other plans and strategies to reduce risk and mitigate impacts, and
- insurance cover for assets, stock, business interruption and loss of income.

The media

Media organisations, particularly public and private radio and television organisations, have responsibilities in ensuring that timely and appropriate warnings and advice on disasters is broadcast to communities at the request of relevant authorities. They also have a role to play in educating the community about natural disaster issues.

The research community

The research community has a key role in advancing knowledge of natural disasters, their costs and consequences, and cost-effective mitigation measures, so that disaster management decision-makers can take the most effective action in planning, mitigation, preparedness, response and recovery. In particular, the research community should:

- play a leading role in systematic data collection and analysis
- play a leading role in a systematic national programme of disaster risk assessments, and
- develop innovative ideas about better measures to mitigate and respond to natural disasters.

Voluntary organisations

Emergency management volunteers

The value of volunteers in the disaster management field is incalculable. It is clear that effective disaster management – most particularly the response aspect – would not be possible to achieve in Australia if emergency services volunteers were not available. Without them, there would be significantly greater property and environmental damage costs, and likely increases in loss of life and injury. If governments had to pay a workforce to perform the tasks undertaken by volunteers, very significant costs would result, and the opportunity cost of diversion of such moneys from other areas of government expenditure would have a major impact in society.

Emergency management volunteers and volunteer agencies have vital roles in:

- disaster and emergency preparedness, including training
- disaster and emergency response operations
- risk assessment and mitigation measures with communities, and
- post-disaster assessment.

Not-for-profit and community organisations

Not-for-profit and charitable organisations, such as Red Cross, Lifeline, the Salvation Army and many others, also undertake important roles. These include providing meals and refreshments for victims and for paid and volunteer workers engaged in disaster response activities, providing counselling and support to disaster victims, working in evacuation centres, and at times providing victim registration and inquiry services on behalf of government.

Not-for-profit and community organisations play an important role in providing essential support services to disaster operations personnel and disaster victims.

A number of recommendations in Sections 5, 9 and 11 refer to non-government bodies identified above.

Roles and Responsibilities of Governments

Each level of government has a different set of roles and responsibilities in relation to natural disaster management. Commonwealth, State and Territory Governments have established organisational arrangements and lines of reporting to undertake disaster mitigation and effectively prepare for and deal with emergencies, including natural disasters. Local Government involvement is an integral part of these arrangements.

The organisational arrangements for dealing with natural disasters and other emergencies in each jurisdiction as at 1 July 2002 are set out in Annex 6: Disaster Management Arrangements of Governments.

The HLG considers that it is important to clearly define the roles of governments if an improved national system for handling natural disasters is to be achieved.

Australians expect their governments at all levels to do their best to ensure that their communities are as well protected from natural disasters as is reasonably possible, and that where disaster situations occur, communities are well served by effective response, relief and recovery arrangements.

In relation to the role of governments, State and Territory Governments have constitutional responsibility for natural disaster management and have the laws, funding mechanisms and organisational arrangements in place to deal with such disasters.⁵ Local Governments also have significant roles and responsibilities for natural disaster mitigation and management at the local level through arrangements that vary according to State and Territory laws, practices and agreements.

Each level of government, including the Commonwealth and Local Government, has responsibility within its own jurisdiction for natural disaster planning, preparedness and mitigation in relation to land, property and the environment, assets and infrastructure, agencies and programmes.

The Commonwealth Government has important roles in:

- leading and coordinating the development of national strategic policy for disaster management
- undertaking research of national significance, providing a national system of meteorological and geological warnings, and supporting emergency management education, training and awareness
- assisting States, Territories and Local Government to meet their disaster mitigation responsibilities
- supporting them with operational resources and coordination measures for disaster response where their own capacities are stretched, and
- providing safety net financial assistance to States, Territories and Local Government for natural disaster relief and recovery.

As a consequence, an effective national framework for natural disaster management requires a high level of collaboration and coordination within and across all levels of government, and with non-government stakeholders, particularly to achieve the national objective proposed by the HLG (see Recommendation 3).

Endorsement by COAG of a statement of roles and responsibilities of each level of government as proposed in Reform Commitment 12, will provide a firm foundation for future action.

⁵ WA has yet to enact comprehensive emergency management legislation.

Statement of Contemporary Roles and Responsibilities of All Levels of Government in Natural Disaster Management

Recommendation 5

The HLG recommends that all levels of government endorse the following statements.

1 State and Territory Governments

State and Territory Governments have primary responsibility within their own jurisdictions for natural disaster management in the interests of community safety and well-being. This involves responsibility for:

- developing, implementing and ensuring compliance with comprehensive disaster mitigation policies and strategies in all relevant areas of government activity, including land use planning, infrastructure provision, and building standards compliance
- strengthening partnerships with and encouraging and supporting Local Governments, and remote and Indigenous communities, to undertake disaster risk assessments and mitigation measures
- ensuring provision of appropriate disaster awareness and education programmes and warning systems
- ensuring that the community and emergency management agencies are prepared for and able to respond to natural disasters and other emergencies
- maintaining adequate levels of well equipped and trained career and volunteer disaster response personnel
- ensuring appropriate disaster relief and recovery measures are available, and
- ensuring that post-disaster assessment and analysis is undertaken.

2 Local Governments⁶

Where Local Government powers exist, Local Governments also have responsibilities, in partnership with States and Territories, to contribute to the safety and well being of their communities which means they have an important role participating in local natural disaster management.⁷ In most circumstances, the principal roles and responsibilities of Local Governments are:

- ensuring all requisite local disaster planning and preparedness measures are undertaken
- ensuring an adequate local disaster response capability is in place, including local volunteer resources
- undertaking cost-effective measures to mitigate the effects of natural disasters on local communities, including routinely conducting disaster risk assessments
- systematically taking proper account of risk assessments in land use planning to reduce hazard risk
- undertaking public education and awareness, and ensuring appropriate local disaster warnings are provided
- ensuring appropriate local resources and arrangements are in place to provide disaster relief and recovery services to communities
- representing community interests in disaster management to other levels of government and contributing to decision-making processes, and
- participating in post-disaster assessment and analysis.

⁶ A number of States and Territories have areas that are outside local government boundaries.

⁷ In SA, Local Government has had no responsibilities for funding and supporting volunteers since the introduction of the emergency services levy. In NT, Local Governments do not have land use planning powers. In NT and WA, the majority of Indigenous communities have a modified form of local government, with no income from rates. In these communities, significantly greater levels of responsibility for decision making and funding, relating to community safety and welfare, is accorded to the State, Territory and Commonwealth Governments, through various agencies

3 Commonwealth Government

The role of the Commonwealth Government in natural disaster management is to provide national leadership in collaborative action across all levels of government in disaster research, information management and mitigation policy and practice: to reduce the risks and costs of disasters to the nation; to mobilise resources when State and Territory disaster response resources are insufficient; and to provide national support for disaster relief and community recovery.

In particular, the Commonwealth Government has a major role in:

- coordinating national strategic emergency management policy, in collaboration with the State and Territory Governments and Local Government
- undertaking natural disaster research of national significance
- identifying national priorities for natural disaster mitigation, in collaboration with other levels of government
- providing support for disaster risk assessment and mitigation measures, in conjunction with the States, Territories and Local Government
- providing operational support for disaster response to the States and Territories where their individual resources are insufficient
- providing a national disaster relief and recovery framework and resources on a cost-sharing basis with the other levels of government, and
- providing vital information services such as meteorological, hydrological, geophysical and other geo-data services that support warnings and disaster management.

The Commonwealth also has a continuing role in:

- providing national leadership on mitigation strategies and assessment
- providing financial assistance to States, Territories and Local Government for cost-effective, priority disaster risk management
- providing financial assistance to States, Territories and local Government to assist them in meeting their disaster mitigation responsibilities

leading to an overall reduction in damage and costs, thereby benefiting all Australians and all levels of government.



Disaster Mitigation Australia Package

Definition of Disaster
Mitigation

Why Boost Investment in
Disaster Mitigation?

Mainstreaming of Disaster
Mitigation

A Paradigm Shift to
Disaster Mitigation

Recommended Disaster
Mitigation Australia Package

Good Practice Guide



Reform Commitment 5, in Section 3 above, entails establishing a Disaster Mitigation Australia Package to support cost-effective natural disaster mitigation measures. It would significantly expand the range of mitigation action nationally, and the pace of that action. The background to, rationale for, and details of the package are set out below.

Definition of Disaster Mitigation

'Disaster mitigation' means measures taken in advance of, or after, a disaster aimed at decreasing or eliminating its impact on society and the environment.

Why Boost Investment in Disaster Mitigation?

Current arrangements

Table 3: Disaster mitigation arrangements compares the current arrangements for natural disaster mitigation in each jurisdiction. Table 4: State and Territory rezoning provisions compares the planning provisions in each jurisdiction when rezoning to take account of natural hazards.

Currently, the Commonwealth provides financial assistance of \$3 million per annum for disaster risk management studies. The Commonwealth requires Local Governments to undertake such studies as a prerequisite to eligibility for disaster relief assistance under the Natural Disaster Relief Arrangements (NDRA). States, Territories and Local Governments provide matching funds on a project-by-project basis. The only national programme supporting disaster mitigation measures is the Regional Flood Mitigation Programme. Other than for flood mitigation, Commonwealth, State and Territory financial assistance is not available nationally to implement mitigation measures identified by the disaster risk management studies. As a consequence, natural disaster risks that are identified through the disaster risk management studies too often go untreated.

Reducing the cost of disasters

Over time greater investment in disaster mitigation is likely to reduce the economic cost of natural disasters to the nation, which amounts to more than \$1 billion per annum for significant disasters (those costing \$10 million or more per event) alone. Added to this is the \$1 billion per annum in estimated average expenditure by governments (see Annex 8: Government Expenditure Analysis), and the financial and social costs to individuals, communities and businesses, and especially to rural and regional Australia.

Rate of return from mitigation

Additional investment in natural disaster mitigation by all three levels of government is conservatively estimated to provide a rate of return of 15 per cent. In addition, recent analysis shows that over some 67 projects, every dollar invested in flood mitigation saved more than \$2.10. Effective planning and warning systems also reduce disaster damage and costs. In addition, the HLG has identified scope for, over time, reducing financial claims on the Commonwealth under NDRA for State and local infrastructure damaged in natural disasters. Where it is cost-effective to restore such infrastructure to a more resilient standard than currently allowed under NDRA, future damage claims on all levels of government can be reduced.

Making communities more resilient

A stronger national emphasis by all levels of government on practical measures to mitigate the impacts of natural disasters would:

- reduce the loss of life and damage to properties

- enable speedier recovery by communities after disasters, and
- reduce the costs of disasters to the national economy, communities, regions and businesses.

In addition, the disaster mitigation measures proposed are the same as many of the climate change adaptation measures being developed by the COAG High Level Group on Greenhouse. As a result, two important whole-of-government, public policy priorities will be addressed by the proposed boost to disaster mitigation.

Mainstreaming of Disaster Mitigation

While particular departments within all levels of government undertake leadership and coordination roles in disaster mitigation, major improvements cannot be achieved without 'mainstreaming' mitigation into all relevant areas of activity. Mainstreaming means the systematic inclusion of mitigation considerations into a wide range of normal government and private practices to gain incremental and sustained benefits in improved disaster resilience in Australian society.

Matters that need particular attention through mainstreaming include:

- strategic and land use planning, incorporating natural hazard considerations
- requirements for major government and private infrastructure to be designed and constructed to withstand natural hazard impacts
- the incorporation of robust hazard codes into building standards
- mitigation criteria being included in all relevant government funding programmes
- the inclusion of natural hazard considerations into the training of professionals in the design, engineering and urban planning fields, and
- community service obligations relating to natural disaster warnings being required as a matter of course under legislation governing the telecommunications industry.

Major advances in disaster mitigation will result from all levels of government mainstreaming disaster mitigation as a whole-of-government responsibility of all departments and agencies.

A Paradigm Shift to Disaster Mitigation

The HLG considers that a key to an improved national system for disaster management in Australia is a paradigm shift towards increased, cost-effective investment in disaster mitigation by all levels of government.

The HLG also considers it is in the national interest, and the interest of all communities, that each level of government accepts responsibility within its own jurisdiction for natural disaster mitigation in relation to land, property and the environment, assets and infrastructure, agencies and programmes, because of the benefits that can be achieved through mitigation.

State and Territory Governments have the principal role in natural disaster mitigation within their respective jurisdictions. They set the legislative and policy frameworks in key areas such as land use planning and emergency management, and set the policy parameters for investment in infrastructure and for many funding programmes. They have a key role in providing leadership in, and establishing priorities for, disaster mitigation.

Local Government has a vitally important role to play at the community level in assessing risk, determining local investment priorities, and planning and implementing disaster mitigation measures to achieve more sustainable communities, and reduce the loss of life, damage and cost to communities from disasters.

The Commonwealth also has a continuing role in:

- providing national leadership on mitigation strategies and assessment
- providing financial assistance to States, Territories and Local Government for cost-effective, priority disaster risk management
- providing financial assistance to States, Territories and Local Government to assist them in meeting their disaster mitigation responsibilities

leading to an overall reduction in damage and costs, thereby benefiting all Australians and all levels of government. In addition, the Commonwealth is considering means by which it might take into account disaster mitigation provisions of States and Territories.

However, disaster mitigation is by no means the sole province of governments. Governments also need to engage a wide range of other parties, including private, public and community stakeholders, in disaster mitigation. Most parties can benefit directly from investments in mitigation. As a consequence, the community as a whole also stands to gain.

Recommended Disaster Mitigation Australia Package

To give effect to the paradigm shift towards disaster mitigation action across Australia, the HLG proposes a Disaster Mitigation Australia Package (see Reform Commitment 5 above). This five-year package would consist of investment in:

- a new Disaster Mitigation Programme to fund the proposed reform commitments relating to nationally consistent data and research, disaster risk assessments, disaster mitigation strategies, disaster mitigation measures, resilient infrastructure, and community awareness and warnings, and
- continuation of the current Regional Flood Mitigation Programme.

It is proposed that the new joint investment in mitigation by the Commonwealth, States, Territories and Local Government would be conditional on three things:

- the mitigation measures funded will be cost-effective and deliver long-run savings to all levels of government
- there will be no cost-shifting from one level of government to another, and
- the Commonwealth's participation in a new programme will leverage matching additional investment by the States, Territories and Local Government in disaster mitigation.⁸

Disaster Mitigation Programme

The proposed new Disaster Mitigation Programme is the most significant component of the proposed national reform commitments.

It is designed to contribute to safer, sustainable communities better able to withstand the effects of natural disasters through a relatively modest investment in disaster mitigation over a five-year period. Expenditures by governments would be cost-effective: the expectation is that all levels of government would achieve long-run savings from the investments.

In total, up to \$75 million per annum nationally in new funds from all levels of government would be leveraged by the programme for five years. The initiative would involve up to \$25 million per annum for five years in Commonwealth funding to be matched by funding from the States and Territories and from Local Government on a project-by-project basis.

⁸ Due allowance is proposed below for low capacity Local Governments, remote Indigenous communities and remote unincorporated communities.

Current Commonwealth outlays of \$9.6 million per annum on flood mitigation and \$3 million per annum on risk management studies would continue. The proposed new Commonwealth funds of up to \$25 million for mitigation would be additional to the \$3 million currently spent on risk management studies, but the studies programme would be rolled into the proposed Disaster Mitigation Programme to be administered as a single programme.

In total, up to \$84 million per annum nationally, combining existing and new funds is proposed for the Disaster Mitigation Programme.

The financial implications for governments, in both expenditure and savings, of the reform commitments, including the new Disaster Mitigation Programme, are identified in Section 7 below.

What would the disaster mitigation programme fund?

The new national programme would fund a wide range of risk assessment and mitigation measures determined by national priorities identified from time to time, by the Commonwealth in collaboration with States, Territories, and Local Government including:

- natural disaster risk management studies
- disaster mitigation strategies
- disaster resilient infrastructure investments
- mitigation measures for all natural hazards
- disaster warning systems
- community awareness and readiness measures
- more rapid development of standards for buildings and materials
- audits of levees and warning systems
- disaster and mitigation related research of public benefit
- nationally consistent data collection and analysis
- nationally consistent post-disaster evaluations
- Geographic Information Systems (GIS) based hazard and flood data for disaster mitigation purposes, and
- land and building purchase schemes in high-risk areas.

Any of the hazards covered by the definition of natural disaster adopted by the HLG, including bushfires, cyclones, storms, earthquakes and landslides, could be addressed under the programme. The programme would not fund measures that are a part of normal land management responsibility.

The programme should operate on a three-year rolling basis so that each level of government can plan its investments over future years.

Disaster resilient infrastructure investments

In the course of its work the HLG was particularly concerned about the situation involving repeated damage to infrastructure from successive natural disasters such as floods or bushfires. This situation comes about as a consequence of a condition of the Commonwealth NDRA that funding will be provided to restore damaged infrastructure to its 'original' condition only. The result is that essential public infrastructure can be repeatedly damaged by natural disasters and repeatedly claimed under NDRA reimbursement arrangements.

Under the HLG's reform proposals, where it is feasible and cost-effective to upgrade such damaged infrastructure, and other public infrastructure at high risk, the cost of that upgrading would be shared on a 50:50 basis by the Commonwealth and the State or Territory, and where Local Government infrastructure is involved, on a one third basis for each level of government. The Commonwealth and the relevant State, Territory and Local Government would need to agree on a project-by-project basis on eligible infrastructure, and projects would need to meet a strict cost/benefit test. A special allowance is proposed for remote Indigenous communities, remote unincorporated communities and low capacity Local Governments.

Regional Flood Mitigation Programme

The existing Commonwealth Regional Flood Mitigation Programme, in which State, Territory and Local Governments participate and cost-share, is gradually addressing the backlog of flood mitigation needs.

To date, 149 flood mitigation projects, structural and non-structural, have been funded over the three years of the programme, 1999–2002. The benefits of the programme in terms of the future savings stream in damages and losses reduced are well demonstrated by the recent report, *Benefits of Flood Mitigation in Australia* (BTRE Report 106, June 2002). BTRE found significant savings and reduction in damage ranging from \$0.6 million to \$29 million in five Australian flood mitigation case studies covering a wide range of different mitigation measures - land use planning, voluntary property purchase, building controls, levees and road sealing.

The HLG proposes that the programme continue at its current level, adjusted annually for inflation, for the five years of the new reform package, because the benefits of the programme will continue over that period and beyond.

Commonwealth, State and Territory Governments, other than NSW and the ACT, support the current funding formula under which the programme operates. NSW, ACT and the Australian Local Government Association (ALGA) prefer a formula that would see the Commonwealth contribute 40 per cent of project costs, States and Territories 40 per cent, and Local Government 20 per cent.⁹ However, they will accept the national consensus in support of the current cost-sharing formula providing there is allowance for a reduced local funding contribution in agreed exceptional circumstances.

Further recommendations for refinement of the Regional Flood Mitigation Programme are detailed later in this section.

⁹ The current formula provides that the Commonwealth contributes up to one third, States and Territories at least match the Commonwealth's contribution, and Local Government contributes the balance which is usually one third.

Disaster Mitigation Australia Package

Recommendation 6

The HLG recommends that all three levels of government agree to implement a five-year Disaster Mitigation Australia Package consisting of:

- a new national Disaster Mitigation Programme to invest up to \$75 million per annum to put into effect the proposed commitments relating to data and research, disaster risk assessments, disaster mitigation strategies and measures, resilient infrastructure, and community awareness, education and warnings
- continuation of the Regional Flood Mitigation Programme at the current nationwide level of funding of up to \$28.8 million per annum, adjusted to keep pace with inflation, and
- incorporation of the \$9 million per annum currently invested nationally under the Natural Disaster Risk Management Studies Programme into the new Disaster Mitigation Programme.

Recommendation 7

The HLG recommends that, guided by national strategic priorities identified from time to time by the Commonwealth, in collaboration with States, Territories and Local Governments, a wide range of disaster mitigation measures, including disaster resilient infrastructure investments, be eligible for funding under the Disaster Mitigation Programme.

Recommendation 8

The HLG recommends that cost-sharing for each programme under the Disaster Mitigation Australia Package normally be on the basis of a maximum one third Commonwealth, at least matched by States and Territories, with the balance of project funds contributed by Local Governments or other local bodies.

Recommendation 9

The HLG further recommends that the guidelines for the programmes allow for:

- the local contribution to be reduced or waived in agreed exceptional circumstances where remote Indigenous communities or low capacity Local Governments would otherwise be precluded from participating, and
- the cost of upgrading infrastructure to be shared on a 50:50 basis by the Commonwealth and State or Territory, or, where Local Government infrastructure is involved, on a one third basis for each level of government.

Recommendation 10

The State, Territory and ALGA members of the HLG recommend that national natural disaster mitigation programmes be administered by a single Commonwealth department because of the advantages this provides for State, Territory and Local Governments, and the interrelated nature of the programmes.

Other Measures to Advance Disaster Mitigation

The HLG recommends:

Cost effectiveness of investment in disaster mitigation

Recommendation 11

- that jurisdictions jointly and progressively develop processes and systems that capture costs for all areas of disaster management, so that the cost of natural disasters, government expenditures, and the costs and benefits of disaster mitigation are increasingly accurate and understood

Land use planning, development approvals and building standards

Recommendation 12

- that the Local Government and Planning Ministers Council consider the Planning for Safer Communities guidelines at the next feasible meeting of the Ministerial Council with a view to national implementation as soon as possible ¹⁰

Recommendation 13

- that the Local Government and Planning Ministers Council require the introduction, within a time frame of one year, of arrangements to ensure natural hazards, including floodplain and bushfire management objectives, are fully considered in the land use planning legislative frameworks of all levels of government.

Recommendation 14

- that all State and Territory jurisdictions introduce statutory land use planning policies and requirements governing development in areas which are subject to a significant risk of flood, bushfire, cyclone, landslip and storm surge, within a two-year timeframe

Recommendation 15

- that all State and Territory jurisdictions ensure in their legislation that courts and tribunals dealing with planning and development matters must have regard to policies and requirements relating to natural disaster risk reduction and mitigation

Recommendation 16

- that the Australian Building Codes Board assign priority and resources to ensure that the Building Code of Australia includes acceptable levels of building construction and performance for resistance to natural hazards (including high winds, storm, cyclone, flood, storm surge, landslip, bushfire and earthquake) and introduce appropriate Australian Standards and/or guidelines to support such standards of building construction performance

Recommendation 17

- that the Australian Building Codes Board assign priority and resources to develop comprehensive guidelines, supported by education and training, for building in areas susceptible to natural hazards, including high winds, storm, cyclone, flood, storm surge, landslip, bushfire and earthquake

¹⁰ *Planning for Safer Communities*, Emergency Management Australia, June 2002.

Recommendation 18

- that State and Territory regulatory authorities and Local Governments have systems of building control that ensure compliance of new buildings with current disaster resistant building standards

Recommendation 19

that the Commonwealth reaffirms its policy of compliance with the Building Code of Australia, including Appendices adopted by State, Territory and Local Governments to address particular natural disaster risks, and that Commonwealth agencies continue their practice of compliance with those requirements

Recommendation 20

- that EMA and relevant State and Territory agencies facilitate the development and implementation of education programmes on natural hazard considerations in planning and building for relevant professionals and the building industry

Recommendation 21

- that Commonwealth, State and Territory Ministers responsible for planning and building consider sponsoring professional and industry awards for best practice in natural hazard land use planning and building design and construction

Recommendation 22

- that States and Territories review current planning legislation to ensure that there are no barriers or disincentives to Local Government, acting in the public interest, rezoning land with high natural hazard risks to avoid inappropriate development

Building disaster resilient infrastructure

Recommendation 23

- that all levels of government promote the planning and construction of cost-effective disaster resilient infrastructure through the development of mainstreaming strategies

Recommendation 24

- that EMA and relevant State and Territory agencies facilitate the development of tertiary training curricula promoting disaster resilient infrastructure concepts in all relevant academic disciplines and continuing professional education on these concepts for relevant professional groups

Recommendation 25

- that the Commonwealth, State and Territory Ministers responsible for infrastructure development consider sponsoring a new category of award relating to disaster resilient infrastructure in the existing professional and industry awards

Warning systems

Recommendation 26

- that the Minister for Communications, Information Technology and the Arts introduce legislative obligations on all broadcasters – commercial, public and the Australian Broadcasting Corporation – to broadcast natural disaster warnings to the public via radio and television, as and when requested by authorised disaster management agencies and Bureau of Meteorology personnel

Recommendation 27

- that the proposed National Emergency Management HLG facilitate the preparation of guidelines for best practice in the development of local area emergency warning systems to include management, community engagement and technical issues

Recommendation 28

- that post-disaster assessments by relevant agencies routinely review the effectiveness of warning systems, including the degree to which the warnings resulted in intended changes in behaviour, the appropriateness of information provided, the effectiveness of warning delivery methods, and the cost benefit and cost efficiency of the warning system

Recommendation 29

- that States and Territories consult with responsible agencies, including Commonwealth agencies and Local Government, to identify priority areas for the installation and upgrading of flood warning systems and develop a programme to ensure priority flood prone areas have appropriate warning systems in place within five years

Public awareness and readiness

Recommendation 30

- that a central element of the proposed approach to community awareness, education and warnings should be public awareness delivered at the local and community level

Recommendation 31

- that the proposed National Emergency Management HLG work with EMA to determine a mechanism to achieve collaboration and improve practice in community awareness, education and warnings, including through joint funding from jurisdictions

Regional Flood Mitigation Programme

Recommendation 32

- that the Regional Flood Mitigation Programme be continued at least at the current level of Commonwealth funding of \$9.6 million per annum in real terms, matched by States, Territories and Local Government for at least five years, in order to reduce the backlog of existing areas at significant risk of flooding

Recommendation 33

- that the current cost-sharing formula under which the Commonwealth funds up to one third of eligible mitigation measures, matched by States, Territories and the local council or body, is appropriate in all but agreed exceptional circumstances

Recommendation 34

- that, in agreed exceptional cases, where it can be established that the council or community would otherwise be excluded from participating in the programme, there should be scope to reduce or waive the local component. In such cases, the Commonwealth and the State or Territory would share the balance of project costs equally

Recommendation 35

- that, to be eligible for funding assistance under the programme, two preconditions should apply:
 1. based on the principle of 'community right to know' (about risks affecting any given community), State, Territory and Local Governments must ensure that all available information on flood risk in their communities is accessible to the public,¹¹ and
 2. State, Territory and Local Governments must be implementing and themselves complying with land use planning and building controls in a manner that ensures that they are not creating areas of future flood risk.

The programme should continue to support a wide range of mitigation measures, not limited to structural measures, to allow the most cost-effective measure to be selected

Recommendation 36

- that high priority for funding should be given to areas subject to frequent or high risk of flooding to allow the most cost-effective investments and so that the cost of flooding to the community and governments is significantly reduced

Recommendation 37

- that the Regional Flood Mitigation Programme should be further developed into a national three-year rolling programme based on risk assessments and cost/benefit analyses, and indicative planning and budgeting by each level of government. This will provide greater certainty as to funds to be invested, while retaining flexibility to deal with special circumstances.

The programme should be founded on the following principles:

- flood mitigation is an investment in more sustainable communities
- mitigation measures need to be cost-effective, leading to social, economic and environmental benefits
- incentives for sound practice should be encouraged
- the programme needs to be underpinned by more systematic research analysis, and
- the programme will benefit from a longer-term planning timeframe.

Recommendation 38

- that, regardless of whether structural mitigation measures are taken in flood prone areas, residual risk and risk of catastrophic flooding need to be addressed by flood plans, including community awareness and warning systems

Disaster risk assessment and post disaster assessment

Recommendation 39

- that the Australian New Zealand Risk Management Standard 4360, adapted for emergency/disaster management, be adopted for use in all government sponsored programmes

Recommendation 40

- that post-disaster assessments be undertaken routinely after every event of significance and the findings incorporated into improved disaster management processes to deal with future events.

¹¹ Appropriate information on the reliability, currency or limitations of the information, and where necessary, disclaimers, would need to be included.

Good Practice Guide

In the course of the Review, EMA developed a Good Practice Guide (EMA, July 2002) at the invitation of the HLG. Annex 10: Good Practice Guide is intended as an aid to Local Governments and planning, building and other practitioners, and as a stimulus to good natural disaster management.



Reform of Natural Disaster Relief and Recovery Arrangements

Disaster Recovery

Assessment of Current Recovery Arrangements

Proposed Approach to Natural Disaster Relief and Recovery

Community Recovery

Special Community Recovery Modules

Post-Disaster Upgrading of Damaged Public Infrastructure

Model Complementary Arrangements for State and Territory Relief and Recovery

Incentives for Mitigation Action

Model State and Territory Arrangements



Reform Commitment 8, in Section 3 above, entails reforming and enhancing Commonwealth natural disaster relief and recovery arrangements to better support community recovery, and moving towards complementary State and Territory arrangements to provide more equitable assistance nationwide. This section details the background to relief and recovery, and the proposed reforms and enhancements.

Disaster Recovery

Disaster recovery is the coordinated process of supporting disaster-affected communities in the reconstruction of the physical infrastructure and restoration of economic, physical and emotional wellbeing.

Through this process, it is preferable that individuals and communities are supported in the management of their own recovery as they know best what their needs are, and this approach is most likely to build community capacity and sustainability.

Eight principles of disaster recovery, adopted by Australia's disaster recovery coordinators, provide that disaster recovery is most effective when:

- management arrangements recognise that recovery from disaster is a complex, dynamic and protracted process
- agreed plans and management arrangements are well understood by the community and disaster management agencies
- recovery agencies are properly integrated into disaster management arrangements
- community service and reconstruction agencies have input into key decision making
- recovery services are conducted with the active participation of the affected community
- recovery managers are involved from initial briefings onwards
- recovery services are provided in a timely, fair, equitable and flexible manner, and
- recovery personnel are supported by training programmes and exercises.

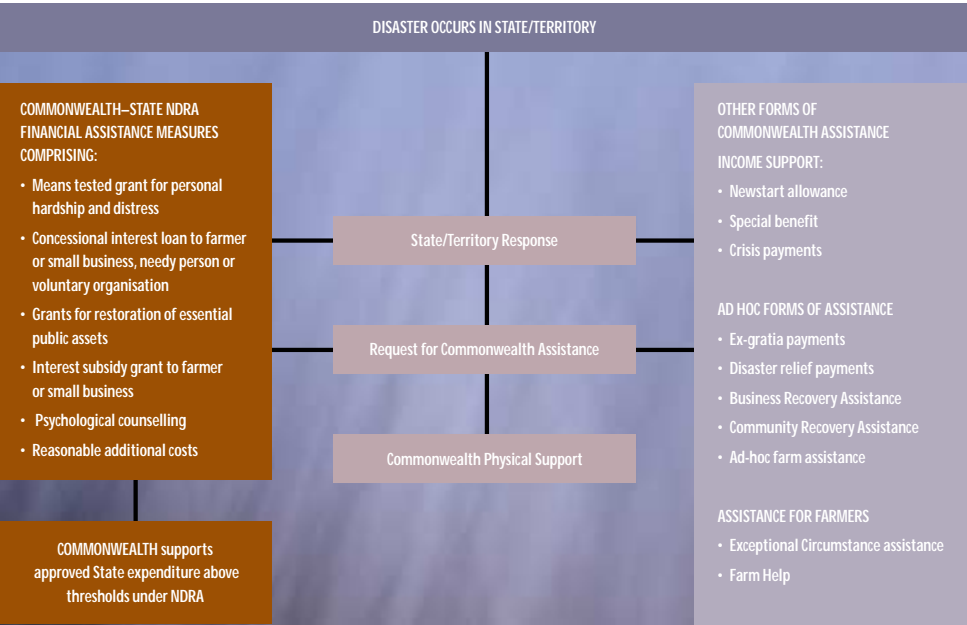
A review of the social impact of disasters in *Impact of a Foot and Mouth Disease Outbreak on Australia*, Productivity Commission Research Report, June 2002 (Chapter 8) highlights the serious and wide ranging individual and social impacts that communities and recovery support agencies need to cope with, and the stages through which communities go, following a natural disaster. The range and severity of disaster impacts on individuals and communities, their social, health and economic functioning, and their long-term wellbeing means that the recovery process can take one to five years.

Table 2: The health effects of selected Australian natural disasters

Outbreak study	Key findings
Abrahams et al. (1976)	A study of the 1974 Brisbane flood found that the number of visits to general practitioners, hospitals and specialists were all significantly increased for flooded persons in the year following the flood. Persistent psychological symptoms, which included irritability, nervous tension and depressed mood, predominated in those seeking medical care.
Chamberlain et al. (1981)	Fourteen months after the 1974 Brisbane flood, 23 per cent of respondents to the survey indicated they had not recovered from the effects of the flood.
McFarlane, AC, Policansky, SK and Irwin, C (1987), and McFarlane, AC, Clayer, JF and Bookless, CL (1997)	A number of studies following the 1983 Ash Wednesday bushfires found lasting and significant morbidity; doubling of psychiatric morbidity in adults and children; and a high rate of continued symptoms 20 months after event. Child responses were closely dependent on parental interpretation of the disaster.
Clayer JR, Bookless-Pratz, C and McFarlane, AC (1985)	Twenty-eight fatalities (in the study area) resulted from the 1983 Ash Wednesday bushfires. Of a range of conditions, the prevalence of mental illness, alcoholism and drug problems increased the most. Survey responses indicated bushfires had a significant effect upon the mental health of approximately 30 per cent of the affected population. Ten per cent of respondents with pre-existing conditions reported an increase in the severity of those conditions.

Source: *Impact of a Foot and Mouth Disease Outbreak on Australia*, Productivity Commission Research Report, June 2002.

Figure 5: Commonwealth–State funding arrangements for relief and recovery from natural disasters



Assessment of Current Recovery Arrangements

Australia's current system of natural disaster relief focuses on providing for the immediate needs of affected individuals and families for food, funds, clothing and shelter, and restoring damaged infrastructure. Measures put in place by governments and non-government organisations provide financial relief and other assistance and support to individuals and families. The arrangements deal well with immediate and essential needs.

Figure 5: Commonwealth–State funding arrangements for relief and recovery from natural disasters sets out both established NDRA measures and a range of ad hoc assistance provided from time to time. Table 5: State and Territory natural disaster relief measures compares relief and recovery arrangements in each jurisdiction.

The current arrangements do not deal as well with recovery of communities as a whole. It is not easy to re-establish resilient, functioning communities after severe disasters. A community development focus, which builds community resilience, is important in supporting the disaster-affected community's involvement in its own recovery. The long-term nature of the disaster recovery process is not sufficiently accommodated by current arrangements. Nor do the current arrangements deal effectively with remote Indigenous communities affected by small or recurring disasters.

Governments now require their disaster recovery officers to deal with a very wide range of disasters and other emergencies and a large number of such events, as governments and communities increasingly expect support to be provided in a variety of circumstances. Examples of disaster recovery officers' involvement in non-natural events include the Port Arthur (Tas) shootings, the Longford (Vic) gas crisis and the Whyalla (SA) aircraft crash. In a number of States and Territories, disaster recovery officials undertake these responsibilities on a part-time basis between other duties. Significant disasters or emergencies seriously stretch the available resources.

Proposed Approach to Natural Disaster Relief and Recovery

Consistent with a community development view and the principles of disaster recovery above, the approach proposed by the HLG is:

- to build community resilience by constraining and, over time, reducing damage and costs to the community and all levels of government through cost-effective mitigation (recommended in Section 5 above), recognising of course that major unforeseeable disaster events will continue to occur
- to reduce the incidence of ad hoc and disparate relief measures by introducing a more disciplined, holistic and systematic needs based approach to relief and recovery assistance to communities
- to introduce new flexibility to enable damaged public infrastructure to be rebuilt to a more resilient standard where that is feasible and cost-effective
- to ensure equitable assistance and support to individuals and communities affected by comparable natural disasters across Australia
- to better integrate the relief and recovery arrangements of all levels of government, and
- to address the special needs of remote Indigenous communities.

Objective of Government Natural Disaster Relief and Recovery Arrangements

Recommendation 41

The HLG recommends that arrangements put in place by governments and other parties for recovery from natural disasters should ensure support for disaster-affected communities in reconstruction of physical infrastructure and restoration of social, economic, physical and emotional wellbeing through effective, coordinated processes.

Community Recovery

Special ad hoc measures to address the particular needs of hard-hit communities have been provided by governments in recent years. Examples include:

- a small business re-establishment grant scheme for the Katherine (NT) business community affected by serious flooding in 1998
- a similar small business and community grant scheme for towns affected by cyclones Elaine and Vance (WA) in 1999
- ex gratia payments for bushfire-affected farmers in Crookwell (NSW) in 1999
- a special support package for farmers and horticulturists affected by severe flooding in northern NSW in 2000 and 2001, and
- a Community Recovery Fund to support the re-establishment of sporting and community facilities and services in the same flood-affected area of NSW.

In setting up such special relief and recovery schemes, governments have been recognising the severity, potential consequences, and long-term effects of such disasters and the need to assist communities in a holistic way with their recovery – social, economic, physical and emotional.

The HLG considers such special measures to be a positive development in that they recognise the needs of communities in the recovery process, that long-term community support is sometimes warranted, and that there is a need to focus on community economic and social wellbeing, and not simply on individual, family and infrastructure needs.

To reinforce this important community recovery emphasis, the HLG considers disaster recovery should be put on a more systematic footing through a modular set of measures that governments can trigger as and when the circumstances require.

The advantages of having an established set of optional, additional community recovery measures are that they would:

- reduce the incidence of ad hoc measures devised for particular disasters
- mean that relief and recovery measures do not have to be invented or reinvented on a one-off basis
- provide governments with a set of measures 'on the shelf' which can quickly and seamlessly be applied when the need arises
- enable relief and recovery agencies to learn, adapt and refine the measures, criteria and delivery practices into a more seamless process of assisting communities with their needs
- retain the flexibility governments need to ensure that they are addressing the real needs of disaster-affected communities, and
- introduce a greater degree of equity in the assistance and support available to different communities in similar circumstances.

Special Community Recovery Modules

The HLG calls these measures 'Special Community Recovery Modules'.

The HLG proposes that the Commonwealth natural disaster relief and recovery arrangements be amended to include a set of Special Community Recovery Modules, any of which could be triggered by agreement between the Commonwealth and the affected State or Territory, to assist seriously affected areas back to sustainable, functioning communities. The set of modules would deal with a variety of needs of farmers and small businesses, individuals, communities and community organisations.

The modules would provide a framework for special assistance to support holistic recovery of regions, communities or sectors severely affected by natural disaster.

Nothing in the proposal for Special Community Recovery Modules would constrain the freedom of action of the governments to respond quickly to emergencies needing unique or additional assistance.



The HLG proposes that any of the Special Community Recovery Modules triggered would be funded on a 50:50 basis by the Commonwealth and the affected State or Territory, where each agrees. This would be determined case-by-case when a serious disaster occurs and particular needs are identified. To be used effectively as the particular disaster requires, the modules should operate independently of the State and Territory thresholds for Commonwealth NDRA assistance. In the past, some ad hoc measures have been funded totally by the Commonwealth. In other cases, the Commonwealth and State or Territory have funded special measures on a 50:50 basis. A consistent 50:50 joint approach to funding these special measures is proposed for the future.

Post-Disaster Upgrading of Damaged Public Infrastructure under NDRA

Current Commonwealth NDRA provides for reimbursement of a proportion of disaster damage costs and expenses above established State and Territory thresholds, including for damaged State, Territory and Local Government infrastructure. However, NDRA provides only for reimbursement of the costs of rebuilding infrastructure to its pre-disaster standard.

This approach can be quite short-sighted, resulting in infrastructure being repeatedly damaged and rebuilt after successive disasters.

The HLG proposes that greater flexibility should be introduced to NDRA to enable such damaged infrastructure to be upgraded to a more resilient standard where that is feasible and cost-effective, and where the Commonwealth and relevant State or Territory and Local Government agree on a case-by-case basis that this should occur. In such cases, where the relevant NDRA threshold is reached, any additional upgrading cost would be shared 50:50 in the case of State or Territory essential public infrastructure, or on a one third each basis in the case of Local Government infrastructure. The local contribution could be reduced or waived by agreement in exceptional circumstances for remote Indigenous communities or low capacity Local Governments.

Model Complementary Arrangements for State and Territory Relief and Recovery

A comparison of existing State and Territory relief and recovery arrangements that complement the Commonwealth NDRA demonstrates significant anomalies and discrepancies in assistance available in similar disaster situations across Australia. In the most extreme example, most States provide assistance where damage exceeds \$200,000. In WA, the threshold level is \$2.1 million. Table 5: State and Territory natural disaster relief measures shows the variations in arrangements applying in each State and Territory.

The HLG proposes that States and Territories agree to a model set of State relief arrangements that will provide more equitable State and Territory assistance for individuals, businesses and primary producers wherever they live. The reforms involve a set of ten model arrangements that represent efficient, effective and equitable national practice in disaster relief and recovery. This will overcome the significant anomalies in State and Territory support arrangements.

Incentive for Mitigation Action

The HLG proposes that, above threshold levels, Local Government would continue to be reimbursed by Commonwealth, State and Territory Governments for disaster damage and costs. However, where disaster mitigation strategies were not in place and being implemented by year 3, there would be a deduction of 10 per cent in disaster relief financial assistance available to the Local Government. This period would be extended in exceptional circumstances beyond the reasonable control of the Local Government concerned.

Modernisation and Enhancement of Natural Disaster Relief and Recovery Arrangements

Recommendation 42

The HLG recommends reform of Commonwealth NDRA to introduce a set of Special Community Recovery Modules which Commonwealth and State or Territory Governments may agree to trigger, which would be funded on a 50:50 basis, to foster an holistic approach to community recovery and resilience.

Recommendation 43

The HLG recommends that the set of four Special Community Recovery Modules that can be triggered individually, or in any combination, to address particular circumstances as follows, be further developed and incorporated into NDRA in a separate section called Special Community Recovery Modules. The four modules are as follows.

Module A Community recovery fund

Where a community is severely affected and needs to restore social networks, functioning and community facilities, a community recovery fund of an agreed amount (a sum to be determined by the circumstances) would be established. The local community, through the Local Government, would determine priorities for action within broad guidelines and criteria agreed between the Commonwealth and the relevant State or Territory Government. Expenditure from the community recovery fund would be aimed at community recovery, community development and community capacity building for the future and would be administered by the State or Territory Government in close collaboration with Local Government, or other community governance bodies.

Module B Ex-gratia payments for individuals and families

Where the severity of the disaster warrants a higher scale of financial assistance to individuals or families than the standard provisions under the personal hardship and distress payment under NDRA, Clause 2.2 (a), there would be provision for ex gratia payments as mutually agreed between the Commonwealth and the State or Territory.

Module C Recovery grants for small business

Where the business sector generally is severely affected and this could result in the community losing essential businesses, grants to small business to cover the cost of clean-up and reinstatement, but not compensation for losses, would be provided within guidelines and criteria agreed between the Commonwealth and the relevant State or Territory Government.

Module D Recovery grants for primary producers¹²

Where the farming sector generally is severely affected and could have production and viability disrupted beyond the current season, grants to farmers, pastoralists, horticulturalists and the like would be provided to cover the cost of clean-up and reinstatement, but not compensation for losses, within guidelines and criteria agreed between the Commonwealth and the relevant State or Territory Government.

Recommendation 44

The HLG recommends that NDRA be amended to introduce flexibility for immediate post-disaster infrastructure upgrading to a more resilient standard where that is feasible and demonstrably cost-effective, and that, above the first threshold applying in each jurisdiction, the Commonwealth, State, Territory and Local Government agree to share any additional cost on a 50:50, or one third each, basis as the case may be.

¹² Module D could be applied in natural disasters as defined in Recommendation 1.

Recommendation 45

The HLG recommends that NDRA be amended to provide a more effective incentive for Local Governments to undertake disaster mitigation, by imposing a deduction of 10 per cent in available disaster relief assistance for any Local Governments not having disaster mitigation strategies in place and being implemented for their area by December 2005. This period would be extended in exceptional circumstances beyond the reasonable control of the Local Government concerned.

Recommendation 46

The HLG recommends that where charitable organisations, other non-government organisations, and Local Governments arrange public appeals for communities affected by disasters they should be encouraged to:

- pool the funds raised for distribution under the Special Community Recovery Modules, or under any national or State appeal that might be launched by the Commonwealth, State or Territory, and/or
- deliver their assistance efforts and resources in ways that complement government programmes.

These measures would achieve greater equity in the provision of assistance, limit double dipping and gaps in eligibility, and reduce the costs of administering appeal funds.

Recommendation 47

The HLG recommends that the Council of Australian Governments (COAG) note that the Commonwealth/State/Territory relief and recovery arrangements, including Special Community Recovery Modules, could be more widely applied in managing the consequences of other severe disasters and emergencies should governments choose to do so.

Enhancement of Commonwealth Natural Disaster Relief and Recovery Arrangements

The HLG further recommends that the Commonwealth modernise and enhance the NDRA, as follows:

Other Amendments to the Natural Disaster Relief Arrangements Determination

Recommendation 48

Title Relief and Recovery

- that NDRA be renamed 'Natural Disaster Relief and Recovery Arrangements' to reflect the widened focus on community recovery.

Clause 1 Extension of assistance to Commonwealth Territories

- that an additional sub-clause be added to make it clear that the NDRA measures extend to the residents of the Non-Self-Governing Territories for which the Commonwealth has responsibility and to set out how assistance measures would be triggered for these Territories.

Clause 2.1 Definition of a natural disaster

- that the definition of eligible disasters in the NDRA be amended to incorporate the definition of natural disaster recommended in section 2 of this report.

Clause 2.1 Arson not to preclude assistance

- that a disaster involving personal intervention, which is intended to include arson, be deleted as a reason for precluding claims for assistance under NDRA as this deprives innocent individuals and communities affected by the disaster from receiving assistance.

Clause 2.2(b) Rebuilding standards

- that the restriction on asset restoration to its pre-disaster standard be qualified to allow the Commonwealth, the State or Territory, and the affected Local Government concerned to agree to restoration or replacement to a more disaster resilient standard where that is cost-effective and a priority. In all cases, restoration and replacement should be according to prevailing building and engineering standards.

Clause 2.2(d)(i) Grant for non-profit bodies

- that a small grant option be introduced as an alternative to a concessional-interest loan, for voluntary non-profit bodies whose assets have been significantly damaged and which are not in a position to borrow or service a loan.

Clause 2.2(d)(ii) Grant for needy persons

- that a small grant option be introduced as an alternative to a concessional-interest loan, for needy persons whose assets have been significantly damaged and who are not in a position to borrow or service a loan.

Clause 2.2(f) Counselling and community capacity building

- that the provision for psychological counselling be broadened to cover other forms of counselling, such as personal or financial counselling, or other community development or capacity building measures adopted to alleviate distress, as this will be more suitable for a wider range of groups and cultures.

Clause 2.5 Restoring public undertakings

- that non-commercial, Local Government owned sewerage services and water supply systems should be deleted from the list of ineligible public undertakings not entitled to be restored with NDRA funding assistance. These are essential services, including from a public health viewpoint.

Clause 3.2 Recognition of relief and recovery assistance

- that the requirement, which has rarely been observed by the States, that a pre-requisite for NDRA assistance is recognition by the States and Territories of the Commonwealth contribution to relief and recovery assistance be enforced, and
- that the Commonwealth, States and Territories commit to jointly announce, where practicable, or acknowledge assistance available under NDRA at the time of disaster declaration or activation of NDRA. This recognises the benefits of close cooperation between governments and acknowledges their respective contributions. The NDRA guidelines preserve scope to discount reimbursement to State and Territory Governments where circumstances warrant.

Clause 3.3(b) and 3.4 Incentive for Local Government mitigation

- that arrangements for Commonwealth, State and Territory Governments to reimburse Local Governments for disaster damage and costs above threshold levels should be continued, and provisions should be introduced to:
 - strengthen the existing prerequisite for natural disaster mitigation strategies by specifying that Local Governments are obliged to develop a strategy for their area and begin implementing cost-effective mitigation measures by year 3.

- provide that after year 3, a deduction of 10 per cent of available disaster financial assistance will apply to any Local Government not meeting the prerequisite, and
- allow for the period for achieving the mitigation prerequisite to be extended in exceptional circumstances that are beyond the reasonable control of the Local Government concerned.

Clause 3.5 Repeal of Disaster Relief Payment

- that the provision for Disaster Relief Payment assistance under the *Social Security Act 1991* (which has been used only once since its introduction in 1991 in the case of the 1997 NSW bushfires) be repealed so that all such payments are made under NDRA (the Disaster Relief Payment is approximately \$750 for a couple with 1 or 2 children and only applies where the Commonwealth Minister declares an event and there is a major loss of life).

Clause 3.6 Restoration of infrastructure

- that the requirement regarding restoration of infrastructure above pre-disaster standard be amended to reflect the change proposed to Clause 2.2 (b) above.

Clause 4.4 (i) Small disaster threshold

- that the small disaster threshold be increased to \$220,000, reflecting the Consumer Price Index adjustment since the last increase, with the States and Territories retaining or assuming responsibility for provision of personal hardship and distress payments below the small disaster threshold.¹³

Clause 5.2 Post-disaster reporting

- that new requirements for reporting the cost of natural disasters on a consistent national basis, and for a post-disaster assessment report for each natural disaster for which an NDRA claim is made, be introduced. These reports should be submitted to the Commonwealth in accordance with guidelines to be issued, with claims for payment, and will enable improved national understanding of the cost of disasters and the effectiveness of preparedness, response, relief, recovery and disaster mitigation measures.

Clause 7.1 Post-disaster information

- that the post-disaster information requirements be amended to allow for guidelines for cost of disaster information, and post-disaster assessment reports.

Model State and Territory Arrangements

The HLG examined, for the first time, the existing State and Territory provisions for natural disaster relief. While there were common features, there were also significant variations and anomalies in assistance available to individuals, families, businesses and farmers. The HLG identified best practices in State and Territory arrangements, and developed a proposed set of model arrangements to complement the Commonwealth NDRA.

¹³ The small disaster threshold, currently \$200,000, is the level below which NDRA assistance is not available. Some States and Territories currently make personal hardship and distress payments available below this threshold.

Nine Model Complementary Arrangements for State and Territory Relief and Recovery

Recommendation 49

The HLG recommends that COAG agree to nine model arrangements for State and Territory natural disaster relief and recovery that represent sound principles and best State and Territory practice, as set out in the HLG report. This would:

- reform assistance towards a more harmonised and best practice approach across all States and Territories in natural disaster relief and recovery, and
- better complement the proposed new Commonwealth Natural Disaster Relief and Recovery Arrangements.

Model Arrangement 1: Personal hardship and distress assistance measures

States and Territories should ensure that access to the full range of personal hardship and distress assistance for individuals and households is available. The amount of personal hardship and distress assistance should be assessed on the basis of need, taking into account the capacity of applicants to meet their own needs. Additionally, assistance on the basis of need should apply to assistance provided for:

- temporary accommodation and living expenses
- repairs to or replacement of essential household items, and
- repairs to dwellings.

That assistance should be available where there has been a significant disaster impact, the cost of which remains below the small disaster threshold.

Model Arrangement 2: Local Government contribution

States and Territories should ensure:

- that there is a broadly consistent and equitable regime under which Local Governments contribute a threshold amount of disaster relief and recovery expenditure before access to NDRA funds is available to them, and
- that expenditure thresholds are modified, as appropriate, to provide an incentive for the practice of mitigation.

Model Arrangement 3: Assistance to small business and farmers

States and Territories should ensure that concessional-interest loans and/or interest subsidies (grants) are available for disaster-affected small business owners and farmers who cannot obtain finance on reasonable terms from normal sources, for enterprises which have reasonable prospects of recovery.

Model Arrangement 4: Assistance to voluntary non-profit organisations

States and Territories should ensure that grants of up to \$5,000 or interest subsidies on loans of up to \$100,000 are available to disaster-affected voluntary non-profit organisations to replace facilities and equipment to regain their operational capacity. Alternatively, concessional-interest loans of up to \$100,000 should be available to organisations which are unable to obtain finance from other sources, and which have a reasonable prospect of repaying the loan. The conditions of a loan should not limit the organisation to restoring assets to the pre-disaster standard, but allow flexibility so that relocation or design features which reduce susceptibility to future disasters may be accommodated.

Model Arrangement 5: Assistance for housing repair/replacement

States and Territories should ensure that a concessional-interest loan of up to \$100,000, subject to a means test and evidence of ability to repay the loan, is available to persons whose dwelling needs substantial repair/replacement as a result of a natural disaster, and whose income is insufficient to obtain funding from normal sources. Alternatively, a means-tested grant for basic dwelling replacement or repair should be available to needy persons who do not have the capacity to repay a concessional-interest loan for that purpose. In both cases, a portion of the funds provided may be used for relocation or redesign of the dwelling to reduce the risk of future hazards.

Model Arrangement 6: Counselling and community capacity building

States and Territories should ensure that (subject to changes in the Commonwealth NDRA Determination) measures are introduced to support personal and financial counselling services, and community development and community capacity building measures, to alleviate distress and promote recovery in disaster-affected communities.

Model Arrangement 7: Emergency works and operations

States and Territories should ensure that measures are available to reimburse authorised organisations for the costs of designated emergency works and operations undertaken in disaster response situations, within the limits of NDRA eligibility provisions.

Model Arrangement 8: Community recovery

Arrangements should ensure that, in appropriate circumstances:

- (a) States and Territories, jointly with the Commonwealth, can contribute to Special Community Recovery Modules, comprising
 - a Community Recovery Fund
 - ex gratia payments for individuals and families
 - recovery grants for small business and
 - recovery grants for primary producers, and
- (b) where charitable and other non-government organisations arrange public appeals for communities affected by disasters, they are encouraged to
 - pool the funds raised for distribution under the Special Community Recovery Modules, or under any national or State/Territory appeal that might be launched by the Commonwealth, State or Territory, and/or
 - deliver their assistance efforts and resources in ways that complement government programmes.

Model Arrangement 9: Insurance cover

States and Territories should ensure that:

- (a) in relation to Model Arrangements 3, 4 and 5, available assistance takes into account the level of insurance that affected individuals, organisations and businesses have, and assistance provided incorporates requirements for insurance cover wherever practicable. Disincentives to insure should be avoided, and
- (b) assistance available under Model Arrangements 1 and 8 should not serve to discourage use of insurance.

Principles

**Financial Implications of
Reform Commitments**



The HLG considered the current funding arrangements for all aspects of natural disaster management and concluded that an enduring set of national cost-sharing principles should be adopted to provide clarity, to expedite decisions, and to guide all parties, including individuals, families and businesses, insurance companies, and all levels of government.

Principles

Reform Commitment 9, in Section 3 above, entails endorsing a set of national cost-sharing principles for natural disaster management.

National Cost-Sharing Principles for Natural Disaster Management

Recommendation 50

The HLG recommends that Heads of Government of the Commonwealth, States and Territories, and the President of ALGA endorse and jointly implement in their intergovernmental relations the following cost-sharing principles:

1 Responsibilities of governments for natural disaster mitigation

(a) Responsibilities for mitigation

All levels of government have a responsibility to invest in natural disaster mitigation of public benefit provided there are demonstrable savings to each level of government and taxpayers in the longer term, and improvements in community safety.

(b) Mitigation cost-sharing

As a general rule, each level of government should contribute one third of the cost of disaster risk assessment and mitigation measures under Commonwealth programmes.¹⁴

In exceptional circumstances, the Commonwealth and State or Territory Governments may agree to reduce or waive the contribution from remote Indigenous communities, remote unincorporated communities and low capacity Local Governments so that they are not precluded from such programmes. In such cases, the Commonwealth and the State or Territory should share the balance of the cost of measures equally.¹⁵

(c) Mitigation measures to avoid repeated infrastructure damage

It is in the interest of the Commonwealth, States and Territories, and Local Government to jointly invest additional resources to make public infrastructure repeatedly damaged by natural disasters more resilient where it can be demonstrated that each level of government will make savings in future rebuilding costs.

(d) Incentive for mitigation

Local Governments should continue to be reimbursed for disaster damage and costs above threshold levels, except that where disaster mitigation strategies are not in place and being implemented by December 2005, there should be a deduction of 10 per cent in disaster relief assistance available to the Local Government. This period without penalty should be extended in exceptional circumstances beyond the reasonable control of the Local Government concerned.

¹⁴ Reference to each jurisdiction contributing one third of the cost of disaster mitigation measures means that the Commonwealth will contribute a maximum of one third funding, with that figure at least matched by the State or Territory, and the balance being contributed by the Local Government or other body (such as a catchment management authority). Where there is no Local Government or Indigenous contribution, the costs should be shared 50:50 by the Commonwealth and State or Territory.

¹⁵ Criteria for low capacity Local Governments should be established and might include factors such as population, rate revenue and expenditure.

2 Responsibilities of governments for planning, preparedness and response

(a) Disaster planning, preparedness and response

States and Territories and, where they have such responsibilities, Local Government should continue to bear the costs of their own disaster planning, preparedness and response operations including, in the case of States and Territories, the cost of facilities, training, career and volunteer emergency service personnel, and combat operations.

The Commonwealth should continue to provide support to States and Territories in training, development of particular capabilities and other financial and in-kind ways.

(b) Commonwealth assistance in responding to severe disasters

When the capacity of the responsible State or Territory to respond to a severe disaster is exceeded appropriate assistance and resources will be provided by the Commonwealth, through EMA.

(c) State, Territory and Local Government mutual assistance

States and Territories will use their best endeavours to assist each other to respond to serious disasters when the resources of the affected jurisdiction are insufficient. Local Governments are also encouraged to assist each other wherever possible in such circumstances.

3 Responsibility of governments for relief and recovery

(a) Safety net assistance for households and businesses

Recognising that it is not always possible to protect communities from natural disasters, or for households and businesses to adequately insure their buildings and contents against natural hazards, governments should provide basic, safety net natural disaster relief assistance. However, this assistance does not compensate for significant losses that uninsured or underinsured households and businesses may suffer. It should be provided in ways that minimise disincentives to insure.

(b) State and Territory responsibilities for relief and recovery

States and Territories should continue to cover the cost of natural disaster relief and recovery measures up to the small disaster threshold and the base threshold of 0.225 per cent of general sector revenue set for jurisdictions annually.¹⁶

(c) Commonwealth responsibilities for relief and recovery

The Commonwealth should continue to provide financial support above the established thresholds for the range of relief and recovery measures that apply under NDRA when significant natural disasters occur so that States, Territories, and Local Governments are not left to bear large, unforeseen costs of relief and recovery, and to ensure that effective assistance is available to families and communities.

¹⁶ The Special Community Recovery Modules are exceptions to principles 3(b) and (c). See 3(e) below.

(d) Equitable relief and recovery assistance

Commonwealth, State and Territory relief and recovery arrangements should, as far as possible, provide for equity of assistance in comparable disaster circumstances, and across all jurisdictions.

(e) Joint Commonwealth–State additional assistance

In the case of severe disasters, where additional assistance in the form of Special Community Recovery Modules is warranted for small business, primary producers, regions or communities, the cost of such additional measures should be shared on a 50:50 basis by the Commonwealth and the State or Territory agreeing to trigger such measures.

4 Responsibility of governments for natural disaster research

The Commonwealth should continue to finance natural disaster research of national importance, together with the costs of national meteorological and geophysical warning systems, and international assistance provided in cases of severe natural disasters. State and Territory Governments should fund research with particular application to their jurisdictions.

Financial Implications of the Reform Commitments

Implementing the reform commitments will have different financial implications for each level of government. Commitments involving government expenditure and those expected to generate longer-term savings to governments and the Australian community are identified below. Annex 8: Government Expenditure Analysis details estimates of current expenditure.

Estimated additional expenditure

Disaster Mitigation Programme

The new Disaster Mitigation Programme would mean new and additional expenditure of up to \$25 million per annum over five years on the part of the Commonwealth Government. The new financial assistance from the Commonwealth is designed to leverage additional matching expenditure on disaster mitigation by the States, Territories and Local Government.

In combination, States and Territories would be committing to contribute \$25 million per annum over the five-year time frame of the reform package. The respective proportions of additional spending from each State and Territory jurisdiction would vary based on its share of natural disaster costs over time. As a result, jurisdictions with a high level of natural disaster costs, and correspondingly greater need for action, would be expected to contribute a higher share of the \$25 million per annum. Smaller, less disaster prone jurisdictions would contribute less. In each case, the contribution by the State or Territory would contribute to funding of mitigation measures in that jurisdiction.

The Commonwealth, State and Territory contributions outlined above would fund a wide range of mitigation measures consistent with national strategic priorities and the priorities of the individual jurisdiction, including disaster resilient infrastructure investments where there is joint Commonwealth–State/Territory Government and, where appropriate, Local Government agreement to fund such improvement projects.

To ensure an effective rolling programme over five years the Commonwealth, States and Territories would need to budget at least three years into the future for their contributions.

Local Governments, or other local bodies, would be expected to contribute towards individual risk assessment and mitigation projects in their area, generally contributing one third of the cost of the project. In exceptional cases of remote Indigenous communities or low capacity Local Governments, there would be provision, by agreement, for the local contribution to be reduced or waived.

Regional Flood Mitigation Programme

The current Regional Flood Mitigation Programme would be continued at the present level of funding, adjusted for inflation, over the five years of the reform package. Commonwealth outlays would therefore continue at \$9.6 million per annum for five years, adjusted for inflation. State and Territory matching contributions would continue broadly at the level of current notional allocations per annum.

Modernisation of Commonwealth National Disaster Relief Arrangements

Infrastructure

The introduction of greater flexibility under NDRA to rebuild damaged infrastructure to a more resilient standard, where the Commonwealth, State or Territory, and Local Government agree, would involve additional outlays. The scope of additional costs would be determined on a project-by-project basis, with each project subject to a cost/benefit test. As a result any additional costs would be able to be contained within bounds determined by each jurisdiction. These costs would be shared 50:50 for State/Territory assets, and one third each for Local Government assets.

Special Community Recovery Modules

Any of the Special Community Recovery Modules providing additional assistance to a disaster-affected community could be triggered if the Commonwealth and State or Territory agree on the need for such additional assistance. In that case, the additional cost would be shared 50:50, regardless of whether the State or Territory threshold for NDRA assistance in that financial year had been reached.

Natural disasters severe enough to warrant additional assistance are not foreseeable and will necessarily be a matter for the judgement of Heads of Government or Ministers at the time. Consequently, any additional outlays will be able to be contained within bounds determined by each jurisdiction. As an indication of possible costs in severe events, the Katherine Floods Business Re-establishment Trust Fund cost the Commonwealth and Territory Governments an additional \$5 million each over and above standing NDRA assistance costs.

Nine model complementary arrangements for States and Territories

Each State and Territory has a set of relief and recovery arrangements to complement the Commonwealth NDRA. The arrangements in each jurisdiction currently vary significantly. The HLG proposal for nine model State and Territory arrangements would have different financial implications for each jurisdiction. Any additional costs would need to be estimated by jurisdictions individually.

Estimated savings for all levels of government

A number of the reform commitments are designed to lead to an overall reduction in damage and costs from natural disasters over time, thereby benefiting all Australians and all levels of government.

Mitigation investments

In particular, additional investment in cost-effective mitigation measures, including more resilient infrastructure, are aimed at creating safer more sustainable communities and reducing natural disaster costs.

Based on a conservative estimate of a 15 per cent rate of return from mitigation, total additional expenditure of \$75 million per annum from the three levels of government over five years has the potential to save up to \$1,575 million over 30 years nationally (or \$869 million in discounted present value terms using a 4 per cent discount rate).¹⁷ The present value of the benefits net of costs (that is, net present value) is estimated as approximately \$521 million.

¹⁷ BTRE advises that a discount rate of 4 per cent is appropriate for public purpose expenditure of this kind with long term benefits to the community. The estimates of potential savings were calculated by BTRE.

It is important to stress that these estimates are based only on tangible benefits including reduced damage to property and infrastructure. Intangible costs avoided (benefits) such as loss of life, ill health and community disruption are not included in these estimates. In the case of the Commonwealth, expenditure of \$25 million per annum over five years has the potential to save up to \$525 million (or \$290 million in discounted present value terms using a 4 per cent discount rate). The net present value of the Commonwealth expenditure is estimated as approximately \$174 million. The estimated savings represent savings to the Australian community as a whole and do not equate to budget benefits.

Taken as a whole, the reform package will strike a balance between investment in mitigation and savings, over time, in the cost of disasters to Australian families and all levels of government where mitigation measures have been put in place.

Relief and recovery

To the extent that the modernised and improved disaster relief and recovery arrangements, particularly the Special Community Recovery Modules, reduce the incidence of ad hoc relief measures and introduce a more disciplined, systematic and nationally consistent, needs based approach, those arrangements need not involve additional outlays.

Savings in NDRA outlays are achievable for all levels of government as the incidence of infrastructure repeatedly damaged and rebuilt is reduced through cost-effective mitigation. A series of case studies from Queensland and New South Wales demonstrates that a relatively modest investment to make 'at risk' infrastructure more resilient generates significant savings in claims under NDRA for the Commonwealth, States and Territories, and for States, Territories and Local Government in capital works expenditures.

Background

National Emergency
Management Ministerial
Body

National Emergency
Management High Level
Group



Background

Currently, Australia lacks any machinery, at a national level, for Commonwealth, State and Territory Ministers to oversee emergency management and natural disaster matters. This has limited the effectiveness of the Australian Emergency Management Committee, the existing body of senior emergency management officials from each jurisdiction.

Reform Commitment 11 (in Section 3) proposes new national decision-making and consultative machinery.

The HLG, and the nation's emergency management agencies, consider the involvement of Ministers at a national level to be vitally important for four reasons:

- to ensure vigorous follow-through of the five-year reform package recommended in this report
- to provide sustained national oversight by Ministers of key policy issues
- to provide a clear channel of advice to Ministers and Cabinets, and
- to ensure a national focus on emergency and natural disaster management.

The new high level national decision-making and strategic policy-setting machinery would drive implementation of the reform package the HLG is recommending, and oversee vital national emergency management arrangements, including natural disaster arrangements. Such high level machinery, to be effective and influential, needs to operate at both senior officials' and Ministerial levels. This kind of machinery is essential to achieving a cross-jurisdictional and whole-of-government approach to emergency management, including natural disaster management.

National Emergency Management Ministerial Body

The HLG therefore proposes the establishment of a National Emergency Management Ministerial Council – or, if COAG prefers not to establish an additional Ministerial Council, a National Emergency Management Ministerial Forum – which would meet on a regular basis but with fewer formalities than a Ministerial Council. The Ministerial body would exist for a fixed term of five years to oversee implementation of the reform commitments. The operation and role of the Ministerial body would be reviewed within five years, at which time governments would consider appropriate future arrangements.

Functions of the new Ministerial body

The new Ministerial body would be the peak national decision-making body on emergency management and be responsible for:

- overseeing the implementation of the Natural Disaster Reform Package proposed by the HLG
- providing national leadership and strategic direction on emergency and natural disaster management, including national policies and priorities, and
- encouraging best practice in disaster management among jurisdictions.

Membership

The HLG proposes that the Ministerial body consist of:

- Commonwealth, State and Territory Ministers with responsibility for emergency management and disaster mitigation matters (to be determined by each jurisdiction), and
- the President of ALGA.

The Ministerial body would be chaired by the Commonwealth.

In the event of an event of national significance or a catastrophic disaster, membership could be elevated to include Heads of Government.

Consultative arrangements

It is recognised that other Ministerial Councils, such as the Local Government and Planning Ministers' Council, also have a stake in facets of natural disaster management so joint or back-to-back meetings or consultations may be appropriate from time to time.

National Emergency Management High Level Group

The HLG considers it important that a new national group of senior officials is established representing Commonwealth, State and Territory Governments and ALGA. The new high level group would replace the Australian Emergency Management Committee, and have broader cross-jurisdictional, whole-of-government membership.

Role of the national High Level Group

The new national High Level Group would provide support for the Ministerial Council or Forum. It would be responsible for driving the natural disaster reform commitments agreed by COAG. It would have the following key functions:

- oversee implementation of the Natural Disaster Reform Package
- provide advice and recommendations to governments on national strategic approaches for whole-of-government natural disaster management in Australia
- provide high level oversight of natural disaster mitigation programmes
- set the strategic framework and priorities for Australian research into natural disaster risks, mitigation measures, post-disaster assessments, and the costs and benefits of various mitigation measures
- support a national, collaborative approach to increasing community awareness of the need for natural disaster risk reduction
- further develop national arrangements for resource sharing (physical and technical) by States, Territories and the Commonwealth in response to serious natural disasters beyond the capacity of a single jurisdiction
- develop national strategies to sustain a viable emergency services volunteer sector into the future
- advise on complementary Commonwealth and State/Territory arrangements to support communities and regions recovering from natural disasters, and
- assess the risk of catastrophic disasters affecting Australia, and establish responses to possible events with the potential to overwhelm the national capacity to respond or to severely damage the economy of Australia.

Membership of the national High Level Group

Membership of the national High Level Group should consist of:

- a senior official of the Commonwealth Attorney General's Department
- a senior official of DOTARS
- the Director-General, EMA

- senior officials from an appropriate State/Territory emergency management agency and a key policy department – membership to be determined by each of the States and Territories, and
- a senior official of ALGA.

Membership of the High Level Group could be augmented, as necessary, by officials from other departments such as health, community services or agriculture as relevant issues or emergencies require. In the event of a catastrophic disaster or emergency of national significance, the membership could also be augmented with representatives of Heads of Governments.

The HLG considers that the new, national high level group should be chaired by the Secretary of an appropriate Commonwealth department which should also provide secretariat support to the group.

The national High Level Group should form advisory committees and consultative processes as necessary, including with peak emergency management organisations, the National Consultative Forum of Volunteers in Emergency Management, professional institutes, and scientific and research bodies.

New National Emergency Management Decision-making Machinery

Recommendation 51

The HLG recommends the establishment of a National Emergency Management Ministerial Council or, if COAG prefers not to establish an additional Ministerial Council (including ALGA), a Ministerial Implementation Forum with a sunset timeframe of five years, to oversee national emergency management arrangements and implementation of the Natural Disaster Reform Package.

Recommendation 52

The HLG recommends the establishment of a new National Emergency Management HLG to provide support for the Ministerial Council/Forum and ensure a cross-jurisdictional, whole-of-government effort to drive the implementation of the Natural Disaster Reform Package. The group should comprise senior officials of emergency management and key policy departments of Commonwealth, State and Territory Governments and ALGA, and be chaired by the Secretary of a Commonwealth department.

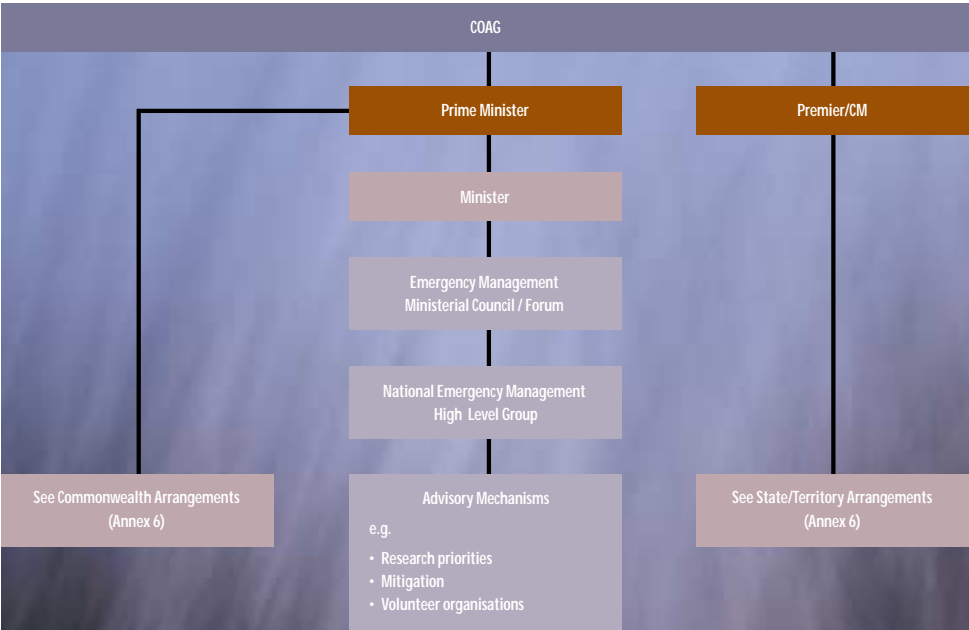
Recommendation 53

The HLG further recommends that the Commonwealth's policy-making machinery be strengthened and enhanced by establishing a Commonwealth interdepartmental disaster management committee to:

- drive the recommended reform commitments across the Commonwealth, and
- develop Commonwealth positions in relation to the work of the new national emergency management machinery recommended in the HLG report.

The proposed machinery is depicted in Figure 6: Proposed National Machinery of Government for Disaster Management.

Figure 6: Proposed National Machinery of Government for Disaster Management





Background

Readiness of States and
Territories

Role of the Commonwealth

National Challenges

Mutual Assistance
Arrangements

Catastrophic Disasters

Volunteers in the Emergency
Management Sector



The HLG examined Australia's preparedness and response capabilities with a view to assessing their overall adequacy, identifying issues and challenges for the future, and determining priorities that will enhance those capabilities to protect the Australian community. In the course of doing so, the HLG also considered Australia's capacity to deal with catastrophic natural disasters and issues affecting volunteers in the emergency management sector.

Background

Preparedness refers to measures, including aspects of planning, training, exercises, community education, information management, communications and warning systems, taken to build and maintain the capacity to respond to, and recover from, natural disasters and other emergencies.

Response capability is the overall capacity of the national emergency management system to take action in anticipation of, during and immediately after an emergency to ensure that its effects are minimised, including the effective and efficient mobilisation and deployment of resources to respond to the disaster and protect the community.

Readiness of States and Territories

States and Territories have principal responsibility for disaster preparedness and response within Australia and are fully responsible for managing any natural disaster within their own jurisdiction.

Annex 6: Disaster Management Arrangements of Governments and Table 6: Disaster management arrangements, set out the particular arrangements in each State and Territory. The arrangements have evolved markedly since the 1970s from their police, fire and civil defence origins focused almost entirely on the capacity to combat disaster events.

The arrangements within each jurisdiction are now well established and practised, and their capabilities have increased and improved considerably over time with the move to integrated whole-of-government, multi-agency systems for response management focused on community safety. Disaster management, including response management, is now universally accepted in Australia as core business of governments, requiring involvement of a wide range of departments and agencies and high-level government policy consideration.

As risk assessment and hazard information improves and disaster mitigation is more widely practiced, States and Territories expect to further update, improve and integrate their preparedness and response capabilities and performance. States and Territories are also encouraging Local Governments to revise their preparedness and response arrangements in light of improved understanding of disaster risks.

Each State and Territory has legislation containing the necessary powers and authority to deal with emergencies, including natural disasters. WA lacks comprehensive emergency management legislation, a matter currently being considered by the State Government.

Role of the Commonwealth

Preparedness

A vital Commonwealth role is response planning and preparedness undertaken by or with EMA, part of the Attorney-General's Department. EMA is the principal agency responsible for emergency management planning and coordination at the Commonwealth level. EMA preparedness activities include training, exercises, community awareness, information and knowledge management, strategic development and coordinating

Commonwealth disaster responses. A series of response plans have been, and are being, developed by EMA. The Commonwealth Government Disaster Response Plan (COMDISPLAN) provides the framework for the provision of Commonwealth assistance in any form of emergency or disaster.

The Commonwealth also plays a significant role nationally in the provision of meteorological and geo-hazard related services – through the Bureau of Meteorology and Geoscience Australia – that are provided in partnership with EMA and State and Territory agencies preparing for and responding to natural disasters.

Critical elements of national preparedness provided by Commonwealth agencies include:

- weather forecasts and warnings
- warning systems for flood and tsunamis
- the National Registration and Inquiry System, a computer based system to identify people affected by disasters
- seismic monitoring for earthquakes and nuclear explosions
- multi-hazard risk assessments for earthquakes and landslides, and
- development of the Australian Disaster Information Network (AusDIN).

The Department of Health and Ageing has a Disaster Medicine Unit that works with health authorities and Defence to develop the capability to deal with health aspects of disasters.

Response

Commonwealth involvement in disaster response occurs only when events are of national significance, or when a State or Territory requests Commonwealth assistance in an event when State or Territory resources are insufficient or exhausted, or specialist resources owned by the Commonwealth are required. The Commonwealth also has responsibility for emergency management in Australia's Non Self-Governing Territories through the respective Territory administrations.

Changes in Commonwealth functions since the 1990s, particularly in the areas of works, construction and hospital services, mean that Commonwealth departments and agencies no longer have the same range of in-house human resources and equipment available to supplement State and Territory disaster response capabilities.

Requests for Commonwealth assistance from the authority in each State or Territory entitled to seek assistance are channelled through the National Emergency Management Coordination Centre in EMA. The Commonwealth Attorney-General authorises Commonwealth assistance from all Commonwealth agencies tasked to provide resources or assistance.

Most requests to EMA for Commonwealth assistance involve tasking the Australian Defence Force (ADF). The ADF has a wide range of resources suited to disaster response. Defence assistance is provided under the policy guidelines for Defence Assistance to the Civil Community.

Australian Search and Rescue, the ADF, and State and Territory police services have varying responsibilities for land, maritime and air search and rescue operations. Urban Search And Rescue (USAR) capability to deal with a major urban structural collapse is being progressively enhanced by the States and Territories, with EMA assisting with the development of a national strategic approach. Protocols are being developed for receiving international USAR assets in Australia, and for deploying USAR assets overseas.

When a disaster occurs, the Department of the Prime Minister and Cabinet may convene the Commonwealth Counter-Disaster Task Force, the peak coordination and information sharing forum of Commonwealth departments and agencies, to deal with specific emergencies and natural disasters, and associated response and relief measures.

National Challenges

New challenges since the terrorist attacks on the United States of America (USA) of 11 September 2001, including risks of chemical, biological and radiological attacks and the need to be prepared for potential major animal or human disease outbreaks, have been and are receiving concentrated attention and planning by Commonwealth, State and Territory emergency management agencies to enhance existing capabilities on a national basis.

Other challenges and issues identified as needing attention are:

- the need to develop a national disaster assessment capability which can speedily provide critical information on the scope of a disaster, the needs of affected communities, and problems associated with mounting a response
- the declining availability of volunteers in the emergency management sector
- the difficulties of providing counter-disaster preparedness and response capabilities in remote Indigenous communities
- the need to improve the inter-operability of emergency management agencies across the nation
- more systematic use of GIS and remote sensing products for more effective mitigation, response and recovery functions and decision making
- resolution of the issue of mandatory reporting by radio and television broadcasters of emergency warnings issued by authorised emergency management authorities as proposed in Recommendation 26 above
- the need to develop improved capacity for real-time, widely understood disaster warnings to communities on an 'all hazards' basis
- the need for a more sophisticated and effective approach to community disaster awareness and education
- enhancing Local Government preparedness and response capabilities
- the need for a national approach to dealing with catastrophic disasters, and
- the need to establish a national coordination framework, and Ministerial and high level official oversight, for disasters of national significance, as proposed in Recommendations 51 and 52 above.

These challenges and issues are addressed throughout this report. They would also be matters for the proposed Ministerial Council/Forum and the High Level Officials' Group to carry forward.

Mutual Assistance Arrangements

National arrangements

State and Territory emergency management agencies have in recent years cooperated in providing human resources and equipment to other jurisdictions to combat severe natural disasters, most recently to fight the Christmas 2001 bushfires in NSW and the ACT. In that series of bushfires some 41,000 volunteer and career firefighters and support personnel were drawn from every State and Territory and New Zealand over a period of three weeks. Such mutual assistance is currently provided under a set of guidelines published by Commonwealth, State and Territory emergency management agencies.

The HLG considers it vitally important that assured mutual assistance arrangements between States and Territories, and between all States and Territories and the Commonwealth, be put on a secure footing through an Australia-wide Inter-Governmental Agreement or Memorandum of Understanding at Heads of Government level.

International possibilities

In a situation where nationwide response capabilities were seriously stretched, Australia would need to look for additional resources and assistance from countries with appropriate capabilities, including within the near region.

Australia's continued participation, through EMA's involvement in international fora associated with humanitarian assistance and relief should be maintained. Such arrangements cover international search and rescue, USAR, exercise activity and many regional emergency management networks. The opportunity for dialogue on regional cooperation might open the way for regional mutual assistance capacity that could be deployed to deal with severe and catastrophic disasters on a regional basis.

Intergovernmental Agreement on Mutual Assistance for Disaster Response

Recommendation 54

The HLG recommends that an intergovernmental agreement or memorandum of understanding between Heads of Government of the Commonwealth, States and Territories be developed to govern the provision of mutual assistance for natural disaster response operations on the part of all jurisdictions.

Recommendation 55

The HLG further recommends that the Commonwealth consider future opportunities for dialogue with Asia Pacific countries on concrete regional cooperation in the area of large-scale disaster response and relief operations.

Catastrophic Disasters

Background

A 'catastrophic disaster' is defined as 'an extreme natural hazard event which impacts on a community, or communities, resulting in widespread, devastating, economic, social and environmental consequences.'

Such disasters would exceed the response and recovery capacity of the affected States or Territories and the national capacity of all jurisdictions combined. They would require the provision of significant resources from other States, the Commonwealth and overseas, for certain capabilities. They give rise to complex situations that need to be managed in a whole-of-government, whole-of-community effort.

The risk of disasters with consequences that far exceed anything yet experienced in Australia cannot be discounted. While the probability of such events is low, the consequences would be extreme.

Examples of catastrophic natural disasters that could impact on Australia include:

- a major earthquake in an Australian urban settlement (for example, Adelaide, Perth or Sydney) with associated building collapse, fire, loss of essential services and mass casualties

- a probable maximum flood or dam burst in a densely populated area (for example, Brisbane, the Hawkesbury–Nepean river catchment in Sydney, or the Gold Coast)
- a severe, extensive tsunami along Australia's Pacific coastline, or
- a severe cyclone and associated storm surge affecting significant cities and regional centres simultaneously (for example, one of comparable magnitude and effect to that of Hurricane Andrew in the USA in 1992).

In the course of this review, the HLG has considered contingency planning for the impact of such extreme, unprecedented catastrophic disasters on the Australian community. The HLG confined itself to considering catastrophic disasters arising from natural hazards and focused primarily on management issues at the level of operational response and recovery capability.

The HLG concluded that Australia is currently ill prepared to deal with such a contingency and action therefore needs to be initiated now.

'A catastrophic natural disaster – how should governments be preparing for an event with the potential to over-extend the combined capacity of all jurisdictions in Australia?'

Characteristics of catastrophic disasters

Catastrophic disasters, by definition, differ from lesser disasters in a number of ways but principally by their size, severity of impact and protracted, long-term recovery period.

More specifically, a catastrophic disaster would have a combination of some or all of the following consequences:

- extensive casualties and loss of life, possibly including key personnel
- severe psychological trauma to individuals and communities
- extensive destruction of facilities possibly including the seat of government, coordination centres, and emergency services depots
- widespread, extensive infrastructure damage and severe disruption to wide range of essential services and lifelines, adversely affecting provision of potable water, power, gas, sewerage, health care, transport (especially roads or bridges), communications, emergency services response and so on, placing communities at serious risk
- extensive destruction and severe damage to large numbers of buildings, homes and other property, including building collapse and fire
- large numbers of displaced people or evacuees who cannot be accommodated locally
- the destruction of, or severe damage to, medical facilities and services during initial impact rendering them incapable of managing mass casualties
- rapid depletion of resources – including food, medical supplies and emergency management tools
- extensive damage to environmental and cultural heritage
- significant local and regional business disruption and failure
- national and international business and trade impacts – for example, loss of productivity or loss of confidence in Australia
- extensive damage to agriculture – including loss of crops or livestock, and
- extreme relief and recovery costs, possibly in billions of dollars.

Existing planning for a catastrophic disaster in Australia

Management of catastrophic disasters has tended to be seen as an extension of arrangements that have been put in place at State, Territory and Commonwealth level to manage other disasters and emergencies. Based on the differences listed above, this may not be a sound approach. The degree to which planning to cope with truly large-scale disasters or catastrophies has been pursued varies between jurisdictions.

Commonwealth disaster plans and arrangements are based primarily on the COMDISPLAN. The capacity of COMDISPLAN in the management of catastrophic disaster has not yet been tested. EMA plans to conduct an exercise to test the national capability, in particular at the Commonwealth level, to manage a catastrophic disaster.

What could be done to improve preparedness to manage a catastrophic natural disaster event?

The HLG considers that it would be prudent to review existing arrangements for their adequacy in managing catastrophic disasters and to enhance the arrangements for managing such events.

Improved contingency planning for dealing with catastrophic natural disasters would also serve to ensure an enhanced capability to manage non-natural events and their consequences, such as the devastation resulting from the 11 September 2001 terrorist attacks in the USA, or a major technological disaster.

Priority strategies for enhanced preparedness

In this regard there are a number of identifiable strategies that can be implemented to achieve an enhanced national capability and action should be taken to put them into effect.

The following priority strategies would enhance the national capability to manage catastrophic disasters:

- a national review of current disaster risk assessment studies to establish a register of those credible high consequence, low probability risks which have the potential to result in catastrophic disaster, and
- measures to enhance Commonwealth and State/Territory arrangements including the following:
 - (a) establishing a formal national, whole-of-government cross-jurisdictional planning framework for management of catastrophic disaster, natural or human-induced
 - (b) conducting scenario based national catastrophic disaster management exercises on a regular basis to test the national response
 - (c) investigating the development of a national, dedicated capability to undertake rapid disaster assessment in support of State capabilities, to scope the extent of catastrophic disaster, post-impact
 - (d) further developing and formalising arrangements for mutual assistance between States and Territories, and with the Commonwealth
 - (e) investigating the development of an enhanced Commonwealth role in providing assistance and in coordinating external support, and
 - (f) establishing a national inventory of specialist resources, including equipment and trained personnel – for example, for urban search and rescue.

Improving Australia's Capacity to Deal with Catastrophic Natural Disasters

Recommendation 56

The HLG recommends that national inter-governmental work on the strategies, including planning, identified by the HLG be undertaken to improve Australia's capacity to deal with catastrophic natural disasters.

Recommendation 57

The HLG recommends that the new national machinery for emergency management proposed in recommendations 51 and 52 above, involving a Ministerial Council/Forum and a HLG, should work with Emergency Management Australia (EMA) and the State and Territory emergency management agencies to undertake the intergovernmental work on catastrophic disasters.

Volunteers in the Emergency Management Sector

Commonwealth, State and Territory emergency management agencies have highlighted the future of the volunteer sector, and particular barriers to participation, as vital issues to be tackled in a concerted way.

The value of volunteers

The Australian Bureau of Statistics estimates that delivery of emergency services to the Australian community depends upon the time, skill, experience and intellectual capital contributions of around a quarter of a million volunteers. Their contribution in terms of time alone is in the order of 21,250,000 hours per annum. It is estimated that another quarter of a million volunteers provide surf-lifesaving and disaster relief and recovery services (for example, through the Red Cross, Salvation Army or Anglicare). Emergency management sector volunteers also subsidise other aspects of service provision by personally funding their own travel, communications and community fund-raising efforts. They perform a multitude of tasks including community awareness raising, training, response and recovery. Many volunteers are frequently exposed to the risk of injury as they operate in disaster situations and therefore must be highly trained, effective and courageous.

The following case studies illustrate the importance of volunteer contribution in just two of a number of incidents that have occurred in NSW in the past 12 months.

Figure 7: The contribution of volunteers

NSW STORM DISASTER

Location – Hunter, Sydney and Central West regions mainly, but damage occurred in 16 of the 18 SES Divisions

Duration – 18 November to 26 November 2001

Event – thunderstorms with some tornado activity, hail and local flooding

Loss of life – 3

Number injured – 50

Loss or damage to property – \$120 million of which \$29 million was insured

Community impact – 60 evacuations; significant damage to public and private infrastructure;
8,000 individual tasks completed

Volunteer effort – 1,500 volunteers from NSW SES supported by 500 volunteers from other support agencies

NSW BUSHFIRE DISASTER

Duration – Christmas Eve 2001 to 16 January 2002

Event – more than 100 fires

Loss of life – nil

Number injured – 50 minor injuries

Loss of property – 170 homes and other buildings (some 18 businesses) destroyed

Community impact – Over 10,800 people used evacuation centres, 700 evacuated from aged care facilities; over 1,000 affected families eligible for assistance

Volunteer effort – At the peak of the fires, 10,000 firefighters, mostly volunteers, fought on the frontline every day. Included in this figure were personnel and equipment from all States and Territories and New Zealand. Other volunteer effort included SES personnel (2,400), Red Cross and other support personnel. In total 41,000 people were involved in the bushfire response operations.

With volunteer effort underpinning Australia's emergency management effort, it is in the interests of all levels of government to provide recognition, protection, incentives, and funding for volunteers and volunteer organisations. The contribution of employers of volunteers is also crucial in enabling volunteers to provide services and to participate in training. The sector is under pressure as volunteer organisations struggle to maintain their volunteer base in an increasingly challenging environment.

Four key priorities for reform

In examining the obstacles to volunteer satisfaction and volunteer retention, the National Summit for Emergency Management Volunteers held in October 2001 identified the following four key priority areas for reform.

1 Legal protections for volunteers

There are variations between jurisdictions in the areas of public and personal liability, compensation for injury and/or property damage, the status of volunteers as workers, employment protection for volunteers, and protection while operating interstate. A review of legal protections in each jurisdiction is warranted, with follow-up reform where appropriate. Table 7: Legal protection for emergency management volunteers compares the current legal protections provided in each jurisdiction.

2 Incentives including financial incentives

Emergency sector organisations, particularly non-government emergency sector organisations and their volunteer workforce, carry a significant financial burden in undertaking their work. Increasingly sophisticated and expensive technologies, increasing insurance costs, escalating training needs and more onerous occupational health and safety standards all add to the operational costs of such organisations. The relevant jurisdictions need to examine financial incentives such as rate rebates, insurance assistance, and 'charitable' status for all volunteers to assist these organisations sustain continued high performance.

3 Recognition

Recognition is an important driver of emergency sector volunteer effort. All jurisdictions need to acknowledge the value of the contribution of volunteers and employers of volunteers to the achievement of safer communities. Government investment in community building increases volunteer effort and community involvement in emergency sector activities. Stronger and more sustainable communities are the result.

4 Training

The training of volunteers is critical for their effective and safe participation in emergency management activities. There is a need to explore ways to streamline and coordinate training provision and to ensure that flexibility, recognition, and the capacity to transfer qualifications underpin training systems.

The volunteers' summit recommended that jurisdictions take action on these issues in order to ensure the continuation of a viable and effective volunteer sector.

Tangible Support for Volunteers in the Emergency Management Sector

Recommendation 58

The HLG recommends that each level of government examine and take action on the following recommendations from the Volunteers Summit:

- (a) that all jurisdictions
 - agree to approach their respective occupational health and safety organisations in order to develop standards and codes of practice for volunteer organisations, and
 - conduct an audit of legal risks faced by emergency sector volunteers, share the results, and develop responses
- (b) that the Commonwealth Government
 - considers providing support for employers of emergency services volunteers
 - recognises emergency management volunteers as trainees
 - examines the administrative processes associated with the implementation of the National Training Reform Agenda¹⁸ with a view to simplifying them
- (c) that State and Territory Governments
 - review and compare the legal protections provided in their legislation to determine whether it offers adequate cover for both volunteers and their organisations
 - consider providing assistance with the provision of public liability insurance for emergency management volunteer organisations
 - recognise emergency management volunteers as trainees
 - provide funding to emergency sector volunteer organisations to enable them to implement the National Training Reform Agenda
 - explore the provision of concessions to emergency sector volunteers
- (d) that Local Governments
 - examine the provision of concessions such as rate rebates to emergency services sector volunteers.

The HLG is strongly of the view that volunteers are an indispensable part of the nation's natural disaster and emergency management capability that need to be supported and nurtured in tangible ways. Barriers to volunteer service need to be systematically addressed by each level of government to overcome the decline in the number of volunteers available for natural disasters and emergencies.

¹⁸ The National Training Reform Agenda involves training in accordance with national competency standards including those relating to public safety.

Special Needs of Remote Indigenous Communities

Background

Issues

Outcomes Sought

Commitments and Initiatives



In the course of the Review, the HLG considered a paper *Improving Emergency Management Outcomes for Remote Indigenous Communities*.¹⁹ This paper examined in detail the issues associated with, and the barriers to, Indigenous access to existing disaster mitigation programmes and relief and recovery measures. The paper proposed approaches and initiatives to overcome these barriers.

Background

Indigenous Australians, particularly those living in remote areas, face injury, loss and damage from the effects of natural disasters each year. The HLG, in Section 6 above, affirms the need for effective relief and recovery measures to assist disaster-affected communities. It also recognises the need to adopt a broader approach to disaster risk management to focus resources and effort on building community resilience and supporting community recovery. In taking this approach the HLG acknowledges that existing recovery and mitigation measures are not readily accessible by remote and vulnerable Indigenous communities, as they do not adequately cater for the special needs of such communities. Consequently, the capacity of these communities to prepare for, deal with and mitigate the effects of any future disasters is severely limited.

Most Indigenous communities have little or no financial capacity for mitigation and face considerable disadvantage in the key areas of health, education, employment and housing. Communities have tended to accord much lower priority to disaster risk management activities in the presence of more pressing community concerns.

Issues

Remote Indigenous communities, particularly those in Northern Australia, are located in disaster prone areas and are often vulnerable to dislocation and damage on a regular basis. The vulnerability of some remote communities is, in part, due to previous homelands policy under which communities were established without adequate planning. There are higher cost structures and additional demands associated with the delivery of relief and recovery assistance to remote communities. The entrenched level of socioeconomic disadvantage experienced by these communities also means they typically require more assistance than other less remote communities in achieving similar community recovery outcomes.

In addressing the risks faced by these communities, it is important to recognise that there are a number of characteristics shared by vulnerable and remote Indigenous communities that pose added challenges for the achievement of disaster risk management objectives.

These typically include:

- geographic isolation and limited accessibility during periods of the year
- community infrastructure and services that are well below national standards, and high repair and maintenance cost for infrastructure due to remoteness
- low economic base and absence of capacity to raise funds
- unique cultural and communication issues, and
- issues involving boundary responsibilities for some remote communities, situated outside Local Government areas.

Improved risk reduction for remote Indigenous communities cannot be attained without the will and involvement of the communities and strategies that take into account the needs and diversity of these communities. This requires long-term commitment to the inclusion of Indigenous communities in mainstream planning and service delivery from all levels of government and agencies, including the Aboriginal and Torres Strait Islander Commission (ATSIC). This should be characterised by a multi-jurisdictional and cross-functional approach that builds partnership arrangements with Indigenous communities.

¹⁹ The paper is available on the COAG Natural Disaster Review web site at www.dotars.gov.au.

To reinforce these processes, disaster awareness, mitigation and community preparedness need to be integrated into existing community capacity building programmes to strengthen existing capacities to contribute to safer and sustainable communities. From a planning and resource perspective, priorities will need to be identified and local and regional service delivery programmes and networks utilised.

Outcomes Sought

In seeking to enable remote and vulnerable Indigenous communities to become more resilient and less vulnerable in the face of disasters, the HLG agreed on the following broad approach:

- Disaster relief measures for Indigenous communities should enable flexible and equitable access to relief payments. Measures should also encompass community recovery.
- Community recovery should include disaster preparedness and planning, but also capacity building to achieve capable and resilient communities.
- Effective delivery of disaster management outcomes with Indigenous communities should involve cross-jurisdictional and cross-agency cooperation and coordination and the participation of Indigenous communities in these processes, particularly in the formulation and application of solutions.
- Indigenous communities need special assistance to develop and implement risk management and mitigation strategies.
- Indigenous communities need improved access to mitigation funding. The one-third contribution generally required of a Local Government or community council presents a major barrier to many Indigenous communities with no rate revenue or capacity to raise funds.
- Indigenous communities need access to assistance for restoration of community assets to a more hazard resilient standard. Currently, under NDRA, funding assistance is provided for repair only to the pre-disaster standard.
- There is a need for more effective disaster risk management education and training. This education and training should be culturally appropriate and linked to community capacity building. Jointly with States and Territories, ATSIC has a key role to support community capacity building for improved management and administration. With the inclusion of appropriate risk management input through mainstream agencies, the capacity to achieve safer and more sustainable communities would be strengthened.
- ATSIC has a key role to play in facilitating consultation and coordination frameworks between Regional Councils and the relevant State/Territory agencies and, where appropriate, Local Governments, responsible for the delivery of mainstream services.

Commitments and Initiatives

The following initiatives detailed in the five-year package of reform commitments recommended by the HLG (see Sections 3, 5 and 6 of this report) have the greatest potential to achieve significantly improved outcomes for remote Indigenous communities.

Special Community Recovery Modules

The development of sustainable and disaster resilient communities is emphasised throughout the Review. The Community Recovery Fund, which forms part of the series of Community Recovery Modules, will allow focus to be given to the special needs of Indigenous communities devastated by natural disasters. The process of post-disaster community recovery can be structured to build resilience and capacity through maximising local community involvement in the assessment and implementation of projects.

Under the recommended changes to the NDRA, a more holistic approach to community recovery allows, within broad guidelines, local communities to determine priorities for action. The expansion of psychological counselling provisions into a broader category of counselling support, community development and capacity building measures will further reinforce this focus.

Disaster Mitigation Australia Package

The proposed Disaster Mitigation Australia Package envisages investment in a wide range of disaster mitigation measures including investment in disaster resilient infrastructure. The package also proposes measures to remove the barriers faced by many Indigenous communities in accessing funding for risk assessment and mitigation measures. A feature of the package proposes the one-third local funding contribution be reduced or waived by agreement in exceptional circumstances when remote Indigenous communities or other needy communities would otherwise be precluded from participating.

Although mitigation measures would ordinarily be subject to cost/benefit investment decisions and priorities, this principle would be applied flexibly so as not to disadvantage remote Indigenous communities.

The Role of the Aboriginal and Torres Strait Islander Commission

The HLG and ATSIC recognise that Indigenous communities need assistance and the capacity to achieve safer and more sustainable communities.

In the course of defining its role in natural disaster management, ATSIC will consider the following:

- developing policy positions on natural disaster management and safer communities
- supporting the States and Territories in meeting their responsibilities in disaster risk reduction and management
- supporting State and Territory processes to achieve better land use planning and human settlement outcomes
- improving coordination between ATSIC, ATSIC Regional Councils and States and Territories
- development of partnerships and collaborative arrangements which maximise opportunities for pooling of funds for the achievement of well planned and safer new and existing communities
- identification of opportunities to incorporate natural disaster risk management into existing programmes, and
- providing advice and expertise in the development of culturally appropriate natural disaster information and resources.

Improving the Disaster Resilience of Remote Indigenous Communities

The HLG recommends that the special needs of remote and vulnerable Indigenous communities be addressed as follows:

Recommendation 59

- that more flexible funding arrangements, and an outreach strategy, be adopted by all levels of government to ensure that remote Indigenous communities have improved access to funding for mitigation measures. Flexible funding will be achieved by the proposal in Recommendation 9 that the local contribution for mitigation measures be reduced or waived by agreement in certain circumstances so that barriers to participation are removed.

Recommendation 60

- that in appropriate disaster circumstances, recovery assistance through the Special Community Recovery Modules proposed in Recommendations 43 and 44 be used to support remote Indigenous communities.

Recommendation 61

- that personal hardship and distress assistance, administered in a flexible way, be available from State and Territory Governments for disasters below the small disaster threshold as proposed in Recommendation 49 (Model Arrangement 1).

Recommendation 62

- that the Aboriginal and Torres Strait Islander Commission (ATSIC) and ATSIC Regional Councils support the inclusion of Indigenous communities in mainstream State, Territory and local planning processes and activities.

Recommendation 63

- that ATSIC agree to become a full partner with States and Territories in achieving the Review's five-year natural disaster reform commitments that can improve the disaster resilience of remote Indigenous communities.



Role of Insurance

Current Disaster Insurance

Why is this a Problem?

Creating the Right Conditions
for Reform



Commonwealth, State and Territory Governments are currently taking action to address a range of serious shortcomings in the commercial insurance field affecting the Australian community. These include issues of the availability and affordability of medical and professional indemnity insurance, insurance for small business, and public liability insurance for community and volunteer organisations. The same issues of availability and affordability of natural disaster insurance for households and small businesses are long-standing problems in Australia and need to be seen in this broader context and not in isolation.

The Terms of Reference of the review asked the HLG to report on the 'issue of access to insurance coverage against natural disasters'. In examining this matter, the HLG considered the role of commercial insurance, current legislation and the nature of available insurance, problems with the current arrangements, desirable outcomes, and means of achieving reform.

The HLG necessarily focused largely on the immediate problem of flood insurance, but recognises that resolving the problems in this field is complex and requires ongoing work by the insurance industry and governments in the broader context of the nature and future of insurance arrangements referred to above.

The Insurance Council of Australia (ICA) pointed out in its submission to the Review, that the problems relating to public liability insurance have had priority in 2002 and have meant that the ICA's member companies have not been able to focus closely on the issues of disaster and flood insurance of concern to this Review. Nevertheless, the ICA correctly describes the flood insurance issue as 'an intractable problem for Australia and Australian communities' and recognises it as a continuing issue for the industry.²⁰

Role of Insurance

Insurance against natural disasters or hazards is a means of spreading the costs of losses and damage on a wide basis across the community, insurers and reinsurers. Insurance does not reduce the risks or mitigate damage that might occur. So insurance is about pooling risk, to create a pool of funds so that those affected by an event such as a natural disaster can draw on the pool to rebuild assets such as buildings and replace their contents.

Therefore, insurance has an important role to play in natural disaster management and recovery processes. It provides individuals with a means to protect the value of their property and assets. It is an important mechanism to assist individuals, communities and businesses in their recovery following damage and losses from a natural disaster. It also means that there is less call on taxpayers, through their governments, for publicly funded natural disaster relief and recovery assistance to help affected families and businesses after a disaster.

For these reasons, making sure insurance is both an affordable and effective tool for households and businesses and competitive and profitable for insurers is likely to be widely accepted as a shared goal in Australia.

Current Disaster Insurance

Currently there is a lack of comprehensive 'all hazard' insurance available in Australia. Most notably, flood insurance against riverine flooding is not generally available, and in recent years cyclone insurance has been withdrawn from parts of Northern Australia.

Standard insurance cover for households and businesses is defined in Commonwealth Government legislation. Section 35 of the *Insurance Contracts Act 1984* provides that 'standard cover (that is, minimum levels of cover for prescribed events) will be deemed to be included in certain classes of insurance policy, including home buildings insurance and home contents insurance'. Regulation 14(a)(xi) provides that standard cover in respect of home contents insurance includes loss that is 'caused by or results from ... storm, tempest, flood, the action of the sea, high water, tsunami, erosion, or landslide or subsidence'.

While the legislation contemplates that hazards including flood will be insured under standard cover, the Act allows insurers to derogate from that standard cover, and limit what is actually covered. The Act provides that:

- *if an insurer seeks to limit or exclude its liability in respect of standard cover, which includes flood, then the insurer must prove that:*
- *it clearly informed the consumer of the limitation or exclusion ...; or*
- *the consumer knew of the limitation or exclusion; or*
- *a reasonable consumer in the circumstances could be expected to have known of the limitation or exclusion.*

²⁰ Article by Alan Mason, Chief Executive Officer of ICA in Ingle Smith, David and Handmer, John (eds), *Residential Flood Insurance*, Water Research Foundation of Australia, 2002.

The Australian Securities and Investments Commission (ASIC) reviewed the problems associated with exclusions and with definitions of flooding in its June 2000 Report and worked with ICA member companies in an attempt to improve disclosure, insurance sales processes and claims handling.²¹ Problems remain in these areas. There is no nationally accepted definition of 'flooding' for insurance purposes, or of 'water damage', which could become the all-encompassing definition of damage covered. Risks covered vary, company by company. Lack of clarity for consumers continues.

More importantly, the fundamental issue of lack of availability of inclusive, affordable insurance against flooding (and cyclones) remains. In fact, most insurers in Australia exclude riverine flood insurance from household, contents and small business policies.²² (Policies written for large business enterprises generally provide 'all hazards' cover.) Because of the potentially devastating effects of floods, the effects on households, small businesses and communities can be quite serious.

Insurance industry commentators point out that the position in Australia is for historical reasons quite unlike the situation in many comparable countries, even though the proportion of properties in Australia at risk from flooding is not exceptional. Flood cover is available either through normal private insurance companies or through government supported schemes in a number of comparable countries. Information provided by the ICA on arrangements elsewhere is set out in Annex 9: Overseas Arrangements for Flood Insurance.

Why is this a Problem?

The exclusion of riverine flooding from household and small business insurance policies is a problem for consumers, governments and the insurance industry. It demonstrates the limitations of the current market solution where insurance cover and exclusions are entirely a matter for individual insurance companies. It also means that effective competition in insurance for flooding has declined as exclusions have grown.

The exclusion affects consumers in a variety of ways. It is a problem for most consumers who assume they are covered or do not understand the fine print of their policies. For those who are affected by water damage, whether from a storm, urban drainage overflow, flash flooding or riverine flooding, it gives rise to disputes about what is, and what is not, covered. Consumers who know they face a flood risk are unlikely to be able to obtain insurance at all, or at an affordable premium.

It is a recurring problem for insurers and the insurance industry generally, mindful of the adverse publicity the exclusion attracts after each successive flood event. The industry is perceived as willing to accept premiums, but not accepting its responsibilities when called upon to cover damage. Strong community concerns tarnish the image of the insurance industry and present it with a marketing and public relations problem.

It is also a problem for governments faced with community dissatisfaction at the lack of comprehensive home and contents and small business insurance cover, and calls for reform of the current situation. It also increases demand for Commonwealth, State and Territory NDRA support for those affected by flooding and other natural disasters, instead of insurance payouts.²³ Insurance company 'cherry picking' exacerbates this as companies avoid high or uncertain risks and force governments to act, in effect, through disaster relief and recovery programmes as insurers of last resort for these risks.

The number of uninsured and underinsured Australians is also a continuing problem.

The flood insurance problem for the whole community results primarily from potential claims in areas at very high risk of frequent flooding where the risk is greater than 1:20, which is estimated to include between 15,600 and 23,400 buildings across Australia.²⁴

²¹ 'Consumer understanding of flood insurance', ASIC, June 2000.

²² Australian Pensioners Insurance Agency and the Territory Insurance Office (NT) are notable exceptions, including riverine flood cover in their policies. Territory Insurance Office policies also cover cyclones.

²³ The ICA submission estimates that of the \$10.4 billion annual average economic cost of floods from 1967–99, the cost to insurers was \$1.5 billion.

²⁴ Smith, D I, 'National and State Residential Flood Damages for Australia' prepared for ICA, 1996.

In its submission to the Review, the ICA concluded that:

ICAs member companies are acutely aware of the ongoing potential for damage not only to the industry generally, but to individual (company) reputations and that, given the right conditions, competitive advantages would come from providing flood cover in their policies.

Creating the Right Conditions for Reform

What governments can do

In the light of community concerns, the Commonwealth Government announced in May 2001 that it would work 'to put in place a national approach to flood insurance'²⁵

The HLG is proposing a number of national initiatives that will help to create the right conditions for commercial insurance to become a more effective tool in assisting households and small business to protect their properties and other assets through affordable insurance.

The HLG identifies as a desirable attribute of the new national framework for natural disaster management, that:

disaster management measures should promote household and business self-reliance through risk assessment and mitigation, encourage private sector involvement, and specifically should maximise commercial insurance cover.

The ICA strongly supports 'a more coordinated approach led by the Commonwealth' in relation to disaster mitigation. The ICA submission proposed, among other things, the following measures to create the right conditions for an industry based, market forces approach to resolve the flood insurance problem:

- access to floodplain information
- further funding for flood mitigation
- increased funding for natural disaster risk management studies
- more effective land use planning and development controls, particularly in relation to flood prone land, and
- special arrangements for flood insurance in areas where the risk of flood is greater than 1:20 (high-risk areas liable to frequent flooding).²⁶

HLG proposals address a number of these matters.

Recommendation 4, setting out 12 reform commitments by all levels of government, includes:

- a five-year national system of rigorous disaster risk assessments
- improved data collection, research and analysis
- Commonwealth, State and Territory natural disaster mitigation strategies
- action to ensure more effective statutory land use planning, development and building control regimes taking account of natural hazards
- a five-year Disaster Mitigation Australia Package, consisting of a new Disaster Mitigation Programme and continuation of the Regional Flood Mitigation Programme, and
- a national strategy of community awareness, education and warnings.

²⁵ Policy statement by the Hon Joe Hockey, then Minister for Financial Services and Regulation, 14 May 2001.

²⁶ Flood maps are not a panacea in assessing risk. Data on which they are based quickly become dated: they do not contain floor level information vital to assessing risk for individual properties; and they do not take account of flood velocity, depth or warning time.

The five-year Disaster Mitigation Australia Package, if supported by all levels of government, would inject significant new resources into natural disaster mitigation measures in Australia in ways that will reduce risks, damage and losses to the community and to insurance companies. Under the package, up to \$75 million per annum in new funds nationally would be invested in mitigation and related measures (see Recommendations 6, 7, 8 and 9).

Further measures to advance disaster mitigation, which would also benefit insurers, are in Recommendations 11 to 40. Most particularly, Recommendation 35 sets out two preconditions for eligibility for funds for flood mitigation, proposing that:

- based on the principle of 'community right to know', State Territory and Local Governments must ensure that available information on flood risk in their communities is accessible to the public, and
- State, Territory and Local Governments must be implementing and themselves complying with land use planning and building controls in a manner that ensures they are not creating areas of future flood risk.

Recommendation 36 accords high priority for mitigation to areas at frequent or high risk of flooding.

In relation to natural disaster relief and recovery, the HLG has been keen to ensure that its proposals do not act as a disincentive to commercial insurance. To that end the HLG has proposed, in Recommendation 49, Model Arrangement 10, that relief and recovery assistance measures take into account insurance cover and not discourage the use of insurance.

Government can also ensure that taxation, stamp duty and emergency services levies are not at levels that become a disincentive to affordable insurance.

The HLG proposed initiatives will, over time, help to reduce exposure of the insurance industry to natural disaster losses, and make insurance more attractive and affordable.

Finally, the HLG has identified what it sees as the desired role and responsibility of the insurance industry as follows.

Insurers have a responsibility to offer effective cover for natural disasters encompassing all hazards for households and businesses at fair and competitive premiums.

The HLG considers that normal household insurance should include coverage for all forms of 'water damage' and other natural disasters, so avoiding definitional problems, 'cherry-picking', complexity, and disputes. Premiums would not need to reflect flood risk, except in areas at high risk of frequent flooding, where a loading or excess could be applied as is the case for areas of high household property crime.

What the insurance industry can do

The HLG's recommendations will significantly benefit the insurance industry such that the industry should now play its part by offering 'all hazards' insurance cover and supporting disaster mitigation.

The HLG has identified actions the insurance industry should be vigorously pursuing to help to advance risk assessment, disaster mitigation and the widespread take-up of household and small business insurance.

Reforming Natural Disaster Insurance in Australia

The HLG recommends:

Recommendation 64

- that COAG notes that the proposed Disaster Mitigation Australia Package and the further measures proposed to advance disaster mitigation meet the call from the insurance industry to improve disaster risk assessment and mitigation and will benefit the insurance industry.

Recommendation 65

- that COAG endorse the following statement of the desired role of the insurance industry:

Insurers have a responsibility to offer effective cover for natural disasters encompassing all hazards for households and businesses at fair and competitive premiums.

Recommendation 66

- that COAG endorse the following specific actions it expects of the insurance industry in order to achieve an improved national approach to flood and other natural disaster insurance.
- that the insurance industry should take active steps to:
 - ensure the availability and affordability of all natural hazard/natural disaster insurance as part of standard insurance policy cover
 - work with the new national emergency management machinery proposed in Recommendations 51 and 52 to develop a single national definition of natural hazards, including water damage, to be offered by all insurers
 - agree to a national system of disclosure of insurance company premiums, numbers of policy holders, exclusions and claims to the Commonwealth's insurance industry regulator so that an accurate picture of the costs of natural disasters and the role of insurance can be developed
 - in communities where mitigation action has taken place, provide access to all hazards insurance against natural disasters, including riverine flooding and cyclones, at fair premiums
 - avail themselves of the proposed new access to State, Territory and Local Government information on flood risk, and accept that insurers' special needs for data on risk are a matter for insurers to address individually or collectively
 - contribute financially to:
 - a nationally consistent system of data collection, research and analysis on natural disasters and post-disaster assessments, and
 - the planning and delivery of community safety and awareness programmes
 - work with floodplain management agencies to identify areas where the risk of flooding is greater than 1:20 and concerted mitigation action is needed
 - strenuously promote the importance of household insurance, and the link between safer dwellings and lower premiums, and
 - work closely with disaster management agencies on research and investment for improved hazard identification, risk assessment and mitigation action.

High Level Group Recommendations

Definition of a Natural Disaster

Recommendation 1

The HLG recommends that 'a natural disaster' be defined as follows:

A natural disaster is a serious disruption to a community or region caused by the impact of a naturally occurring rapid onset event that threatens or causes death, injury or damage to property or the environment and which requires significant and coordinated multi-agency and community response. Such serious disruption can be caused by any one, or a combination, of the following natural hazards: bushfire; earthquake; flood; storm; cyclone; storm surge; landslide; tsunami; meteorite strike; or tornado.

Key Terms

Recommendation 2

The HLG recommends that the key terms relating to natural disaster management set out in Annex 4 should be adopted for consistent national use.

National Framework Objective

Recommendation 3

The HLG recommends the adoption of the following National Framework Objective:

To establish a unified national approach to natural disasters under which governments, households, businesses, volunteer organisations, insurers and others with a part to play operate in concert to:

- create safer, more sustainable communities and regions in social, economic and environmental terms
- reduce risks, damage and losses from natural disasters
- find the right balance among mitigation, preparedness, response, relief and recovery activities, and
- recognise the investment and savings opportunities provided by mitigation.

Twelve Commitments by All Levels of Government to Reform Australia's Natural Disaster Management

Recommendation 4

The HLG recommends that all Australian levels of government commit to, and announce, the following comprehensive five-year reform package.

Heads of Government of the Commonwealth, States and Territories, and the President of the Australian Local Government Association (ALGA) agree to endorse and jointly implement the following commitments to reform

the way Australia manages natural disasters and achieve safer, more sustainable communities and regions in economic, social and environmental terms:

1. develop and implement a five-year national programme of systematic and rigorous disaster risk assessments
2. establish a nationally consistent system of data collection, research and analysis to ensure a sound knowledge base on natural disasters and disaster mitigation
3. develop, for each level of government, a natural disaster mitigation strategy to be implemented by the Commonwealth and each State and Territory commencing in year 2, and by Local Governments commencing in year 3²⁷
4. take action to ensure more effective statutory State, Territory and Local Government land use planning, development and building control regimes that systematically identify natural hazards and include measures to reduce the risk of damage from these natural hazards
5. support cost-effective natural disaster mitigation measures through a Disaster Mitigation Australia Package, consisting of a new Disaster Mitigation Programme and continuation of the Regional Flood Mitigation Programme, to address the risks identified in no. 1 above
6. reduce the problem of public infrastructure repeatedly damaged by natural disasters through cost-effective mitigation measures, to make infrastructure more resilient where feasible by proactive measures under the Disaster Mitigation Australia Package, and post-disaster measures under the Commonwealth Natural Disaster Relief Arrangements
7. develop jointly improved national practices in community awareness, education, and warnings which can be tailored to suit State, Territory and local circumstances
8. enhance the Commonwealth Natural Disaster Relief Arrangements to better support community recovery from natural disasters and agree to nine complementary model State and Territory arrangements providing more equitable natural disaster relief and recovery assistance nationwide
9. endorse a set of national cost-sharing principles for natural disaster management that includes a focus on the responsibilities of individuals, businesses and insurers, as well as those of governments
10. support emergency management volunteers in tangible ways and remove obstacles to their involvement in community safety by addressing key priorities, namely legal protection, financial incentives, recognition and training needs
11. establish new national machinery consisting of a Ministerial Council or Ministerial Implementation Forum, and a National Emergency Management High Level Group, to ensure effective collaboration and coordination of Commonwealth, State, Territory and Local Government action to implement the reform commitments, and
12. endorse a statement of contemporary roles and responsibilities of each level of government in natural disaster management.

²⁷ The five-year reform package would commence when it is endorsed by the Council of Australian Governments.

Statement of Contemporary Roles and Responsibilities of All Levels of Government in Natural Disaster Management

Recommendation 5

The HLG recommends that all levels of government endorse the following statements.

1 State and Territory Governments

State and Territory Governments have primary responsibility within their own jurisdictions for natural disaster management in the interests of community safety and well-being. This involves responsibility for:

- developing, implementing and ensuring compliance with comprehensive disaster mitigation policies and strategies in all relevant areas of government activity, including land use planning, infrastructure provision, and building standards compliance
- strengthening partnerships with and encouraging and supporting Local Governments, and remote and Indigenous communities, to undertake disaster risk assessments and mitigation measures
- ensuring provision of appropriate disaster awareness and education programmes and warning systems
- ensuring that the community and emergency management agencies are prepared for and able to respond to natural disasters and other emergencies
- maintaining adequate levels of well equipped and trained career and volunteer disaster response personnel
- ensuring appropriate disaster relief and recovery measures are available, and
- ensuring that post-disaster assessment and analysis is undertaken.

2 Local Governments²⁸

Where Local Government powers exist, Local Governments also have responsibilities, in partnership with States and Territories, to contribute to the safety and well being of their communities which means they have an important role participating in local natural disaster management.²⁹ In most circumstances, the principal roles and responsibilities of Local Governments are:

- ensuring all requisite local disaster planning and preparedness measures are undertaken
- ensuring an adequate local disaster response capability is in place, including local volunteer resources
- undertaking cost-effective measures to mitigate the effects of natural disasters on local communities, including routinely conducting disaster risk assessments
- systematically taking proper account of risk assessments in land use planning to reduce hazard risk
- undertaking public education and awareness, and ensuring appropriate local disaster warnings are provided
- ensuring appropriate local resources and arrangements are in place to provide disaster relief and recovery services to communities
- representing community interests in disaster management to other levels of government and contributing to decision-making processes, and
- participating in post-disaster assessment and analysis.

²⁸ A number of States and Territories have areas that are outside local government boundaries.

²⁹ In SA, Local Government has had no responsibilities for funding and supporting volunteers since the introduction of the emergency services levy. In NT, Local Governments do not have land use planning powers. In NT and WA, the majority of Indigenous communities have a modified form of local government, with no income from rates. In these communities, significantly greater levels of responsibility for decision making and funding, relating to community safety and welfare, is accorded to the State, Territory and Commonwealth Governments, through various agencies.

3 Commonwealth Government

The role of the Commonwealth Government in natural disaster management is to provide national leadership in collaborative action across all levels of government in disaster research, information management and mitigation policy and practice; to reduce the risks and costs of disasters to the nation; to mobilise resources when State and Territory disaster response resources are insufficient; and to provide national support for disaster relief and community recovery.

In particular, the Commonwealth Government has a major role in:

- coordinating national strategic emergency management policy, in collaboration with the State and Territory Governments and Local Government
- undertaking natural disaster research of national significance
- identifying national priorities for natural disaster mitigation, in collaboration with other levels of government
- providing support for disaster risk assessment and mitigation measures, in conjunction with the States, Territories and Local Government
- providing operational support for disaster response to the States and Territories where their individual resources are insufficient
- providing a national disaster relief and recovery framework and resources on a cost-sharing basis with the other levels of government, and
- providing vital information services such as meteorological, hydrological, geophysical and other geo-data services that support warnings and disaster management.

The Commonwealth also has a continuing role in:

- providing national leadership on mitigation strategies and assessment
- providing financial assistance to States, Territories and Local Government for cost-effective, priority disaster risk management
- providing financial assistance to States, Territories and local Government to assist them in meeting their disaster mitigation responsibilities

leading to an overall reduction in damage and costs, thereby benefiting all Australians and all levels of government.

Disaster Mitigation Australia Package

Recommendation 6

The HLG recommends that all three levels of government agree to implement a five-year Disaster Mitigation Australia Package consisting of:

- a new national Disaster Mitigation Programme to invest up to \$75 million per annum to put into effect the proposed commitments relating to data and research, disaster risk assessments, disaster mitigation strategies and measures, resilient infrastructure, and community awareness, education and warnings
- continuation of the Regional Flood Mitigation Programme at the current nationwide level of funding of \$28.8 million per annum, adjusted to keep pace with inflation, and
- incorporation of the \$9 million per annum currently invested nationally under the Natural Disaster Risk Management Studies Programme into the new Disaster Mitigation Programme.

Recommendation 7

The HLG recommends that, guided by national strategic priorities identified from time to time by the Commonwealth, in collaboration with States, Territories and Local Governments, a wide range of disaster mitigation measures, including disaster resilient infrastructure investments, be eligible for funding under the Disaster Mitigation Programme.

Recommendation 8

The HLG recommends that cost-sharing for each programme under the Disaster Mitigation Australia Package normally be on the basis of a maximum one third Commonwealth, at least matched by States and Territories, with the balance of project funds contributed by Local Governments or other local bodies.

Recommendation 9

The HLG further recommends that the guidelines for the programmes allow for:

- the local contribution to be reduced or waived in agreed exceptional circumstances where remote Indigenous communities or low capacity Local Governments would otherwise be precluded from participating, and
- the cost of upgrading infrastructure to be shared on a 50:50 basis by the Commonwealth and State or Territory, or, where Local Government infrastructure is involved, on a one third basis for each level of government.

Recommendation 10

The State, Territory and ALGA members of the HLG recommend that national natural disaster mitigation programmes be administered by a single Commonwealth department because of the advantages this provides for State, Territory and Local Governments, and the interrelated nature of the programmes.

Other Measures to Advance Disaster Mitigation

The HLG recommends:

Cost effectiveness of investment in disaster mitigation

Recommendation 11

- that jurisdictions jointly and progressively develop processes and systems that capture costs for all areas of disaster management, so that the cost of natural disasters, government expenditures, and the costs and benefits of disaster mitigation are increasingly accurate and understood.

Land use planning, development approvals and building standards

Recommendation 12

- that the Local Government and Planning Ministers Council consider the Planning for Safer Communities guidelines at the next feasible meeting of the Ministerial Council with a view to national implementation as soon as possible.³⁰

Recommendation 13

- that the Local Government and Planning Ministers Council require the introduction, within a time frame of one year, of arrangements to ensure natural hazards, including floodplain and bushfire management objectives, are fully considered in the land use planning legislative frameworks of all levels of government.

³⁰ *Planning for Safer Communities*, Emergency Management Australia, June 2002.

Recommendation 14

- that all State and Territory jurisdictions introduce statutory land use planning policies and requirements governing development in areas which are subject to a significant risk of flood, bushfire, cyclone, landslip and storm surge, within a two-year timeframe within a two-year timeframe.

Recommendation 15

- that all State and Territory jurisdictions ensure in their legislation that courts and tribunals dealing with planning and development matters must have regard to policies and requirements relating to natural disaster risk reduction and mitigation.

Recommendation 16

- that the Australian Building Codes Board assign priority and resources to ensure that the Building Code of Australia includes acceptable levels of building construction and performance for resistance to natural hazards (including high winds, storm, cyclone, flood, storm surge, landslip, bushfire and earthquake) and introduce appropriate Australian Standards and/or guidelines to support such standards of building construction performance.

Recommendation 17

- that the Australian Building Codes Board assign priority and resources to develop comprehensive guidelines, supported by education and training, for building in areas susceptible to natural hazards, including high winds, storm, cyclone, flood, storm surge, landslip, bushfire and earthquake.

Recommendation 18

- that State and Territory regulatory authorities and Local Governments have systems of building control that ensure compliance of new buildings with current disaster resistant building standards.

Recommendation 19

- that the Commonwealth reaffirms its policy of compliance with the Building Code of Australia, including annexes adopted by State, Territory and Local Governments to address particular natural disaster risks, and that Commonwealth agencies continue their practice of compliance with those requirements.

Recommendation 20

- that Emergency Management Australia (EMA) and relevant State and Territory agencies facilitate the development and implementation of education programmes on natural hazard considerations in planning and building for relevant professionals and the building industry.

Recommendation 21

- that Commonwealth, State and Territory Ministers responsible for planning and building consider sponsoring professional and industry awards for best practice in natural hazard land use planning and building design and construction.

Recommendation 22

- that States and Territories review current planning legislation to ensure that there are no barriers or disincentives to Local Government, acting in the public interest, rezoning land with high natural hazard risks to avoid inappropriate development.

Building disaster resilient infrastructure

Recommendation 23

- that all levels of government promote the planning and construction of cost-effective disaster resilient infrastructure through the development of mainstreaming strategies.

Recommendation 24

- that EMA and relevant State and Territory agencies facilitate the development of tertiary training curricula promoting disaster resilient infrastructure concepts in all relevant academic disciplines and continuing professional education on these concepts for relevant professional groups.

Recommendation 25

- that the Commonwealth, State and Territory Ministers responsible for infrastructure development consider sponsoring a new category of award relating to disaster resilient infrastructure in the existing professional and industry awards.

Warning systems

Recommendation 26

- that the Minister for Communications, Information Technology and the Arts introduce legislative obligations on all broadcasters – commercial, public and the Australian Broadcasting Corporation – to broadcast natural disaster warnings to the public via radio and television, as and when requested by authorised disaster management agencies and Bureau of Meteorology personnel.

Recommendation 27

- that the proposed National Emergency Management HLG facilitate the preparation of guidelines for best practice in the development of local area emergency warning systems to include management, community engagement and technical issues.

Recommendation 28

- that post-disaster assessments by relevant agencies routinely review the effectiveness of warning systems, including the degree to which the warnings resulted in intended changes in behaviour, the appropriateness of information provided, the effectiveness of warning delivery methods, and the cost benefit and cost efficiency of the warning system.

Recommendation 29

- that States and Territories consult with responsible agencies, including Commonwealth agencies and Local Government, to identify priority areas for the installation and upgrading of flood warning systems and develop a programme to ensure priority flood prone areas have appropriate warning systems in place within five years.

Public awareness and readiness

Recommendation 30

- that a central element of the proposed approach to community awareness, education and warnings should be public awareness delivered at the local and community level.

Recommendation 31

- that the proposed National Emergency Management HLG work with EMA to determine a mechanism to achieve collaboration and improve practice in community awareness, education and warnings, including through joint funding from jurisdictions.

Regional Flood Mitigation Programme

Recommendation 32

- that the Regional Flood Mitigation Programme be continued at least at the current level of Commonwealth funding of \$9.6 million per annum in real terms, matched by States, Territories and Local Government for at least five years, in order to reduce the backlog of existing areas at significant risk of flooding.

Recommendation 33

- that the current cost-sharing formula under which the Commonwealth funds up to one third of eligible mitigation measures, matched by States, Territories and the local council or body, is appropriate in all but agreed exceptional circumstances.

Recommendation 34

- that, in agreed exceptional cases, where it can be established that the council or community would otherwise be excluded from participating in the programme, there should be scope to reduce or waive the local component. In such cases, the Commonwealth and the State or Territory would share the balance of project costs equally

Recommendation 35

- that, to be eligible for funding assistance under the programme, two preconditions should apply:
 1. based on the principle of 'community right to know' (about risks affecting any given community), State, Territory and Local Governments must ensure that all available information on flood risk in their communities is accessible to the public,³¹ and
 2. State, Territory and Local Governments must be implementing and themselves complying with land use planning and building controls in a manner that ensures that they are not creating areas of future flood risk.

The programme should continue to support a wide range of mitigation measures, not limited to structural measures, to allow the most cost-effective measure to be selected.

Recommendation 36

- that high priority for funding should be given to areas subject to frequent or high risk of flooding to allow the most cost-effective investments and so that the cost of flooding to the community and governments is significantly reduced.

Recommendation 37

- that the Regional Flood Mitigation Programme should be further developed into a national three-year rolling programme based on risk assessments and cost/benefit analyses, and indicative planning and budgeting by each level of government. This will provide greater certainty as to funds to be invested, while retaining flexibility to deal with special circumstances.

³¹ Appropriate information on the reliability, currency or limitations of the information, and where necessary, disclaimers, would need to be included.

The programme should be founded on the following principles:

- flood mitigation is an investment in more sustainable communities
- mitigation measures need to be cost-effective, leading to social, economic and environmental benefits
- incentives for sound practice should be encouraged
- the programme needs to be underpinned by more systematic research analysis, and
- the programme will benefit from a longer-term planning timeframe.

Recommendation 38

- that, regardless of whether structural mitigation measures are taken in flood prone areas, residual risk and risk of catastrophic flooding need to be addressed by flood plans, including community awareness and warning systems.

Disaster risk assessment and post disaster assessment

Recommendation 39

- that the Australian New Zealand Risk Management Standard 4360, adapted for emergency/disaster management, be adopted for use in all government sponsored programmes.

Recommendation 40

- that post-disaster assessments be undertaken routinely after every event of significance and the findings incorporated into improved disaster management processes to deal with future events.

Objective of Government Natural Disaster Relief and Recovery Arrangements

Recommendation 41

The HLG recommends that arrangements put in place by governments and other parties for recovery from natural disasters should ensure support for disaster-affected communities in reconstruction of physical infrastructure and restoration of social, economic, physical and emotional wellbeing through effective, coordinated processes.

Modernisation and Enhancement of Natural Disaster Relief and Recovery Arrangements

Recommendation 42

The HLG recommends reform of Commonwealth Natural Disaster Relief Arrangements (NDRA) to introduce a set of Special Community Recovery Modules which Commonwealth and State or Territory Governments may agree to trigger, which would be funded on a 50:50 basis, to foster an holistic approach to community recovery and resilience.

Recommendation 43

The HLG recommends that the set of four Special Community Recovery Modules that can be triggered individually, or in any combination, to address particular circumstances as follows, be further developed and incorporated into NDRA in a separate section called Special Community Recovery Modules. The four modules are as follows.

Module A Community recovery fund

Where a community is severely affected and needs to restore social networks, functioning and community facilities, a community recovery fund of an agreed amount (a sum to be determined by the circumstances) would be established. The local community, through the Local Government, would determine priorities for action within broad guidelines and criteria agreed between the Commonwealth and the relevant State or Territory Government. Expenditure from the community recovery fund would be aimed at community recovery, community development and community capacity building for the future and would be administered by the State or Territory Government in close collaboration with Local Government, or other community governance bodies.

Module B Ex-gratia payments for individuals and families

Where the severity of the disaster warrants a higher scale of financial assistance to individuals or families than the standard provisions under the personal hardship and distress payment under NDRA, Clause 2.2 (a), there would be provision for ex gratia payments as mutually agreed between the Commonwealth and the State or Territory.

Module C Recovery grants for small business

Where the business sector generally was severely affected and this could result in the community losing essential businesses, grants to small business to cover the cost of clean-up and reinstatement, but not compensation for losses, would be provided within guidelines and criteria agreed between the Commonwealth and the relevant State or Territory Government.

Module D Recovery grants for primary producers³²

Where the farming sector generally is severely affected and could have production and viability disrupted beyond the current season, grants to farmers, pastoralists, horticulturalists and the like would be provided to cover the cost of clean-up and reinstatement, but not compensation for losses, within guidelines and criteria agreed between the Commonwealth and the relevant State or Territory Government.

Recommendation 44

The HLG recommends that NDRA be amended to introduce flexibility for immediate post-disaster infrastructure upgrading to a more resilient standard where that is feasible and demonstrably cost-effective, and that, above the first threshold applying in each jurisdiction, the Commonwealth, State, Territory and Local Government agree to share any additional cost on a 50:50, or one third each, basis as the case may be.

Recommendation 45

The HLG recommends that NDRA be amended to provide a more effective incentive for Local Governments to undertake disaster mitigation, by imposing a deduction of 10 per cent in available disaster relief assistance for any Local Governments not having disaster mitigation strategies in place and being implemented for their area by December 2005. This period would be extended in exceptional circumstances beyond the reasonable control of the Local Government concerned.

Recommendation 46

The HLG recommends that where charitable organisations, other non-government organisations, and Local Governments arrange public appeals for communities affected by disasters they should be encouraged to:

- pool the funds raised for distribution under the Special Community Recovery Modules, or under any national or State appeal that might be launched by the Commonwealth, State or Territory, and/or
- deliver their assistance efforts and resources in ways that complement government programmes.

³² Module D could be applied in natural disasters as defined in Recommendation 1.

These measures would achieve greater equity in the provision of assistance, limit double dipping and gaps in eligibility, and reduce the costs of administering appeal funds.

Recommendation 47

The HLG recommends that the Council of Australian Governments (COAG) note that the Commonwealth/State/Territory relief and recovery arrangements, including Special Community Recovery Modules, could be more widely applied in managing the consequences of other severe disasters and emergencies should governments choose to do so.

Enhancement of Commonwealth Natural Disaster Relief and Recovery Arrangements

The HLG further recommends that the Commonwealth modernise and enhance the NDRA, by recommending:

Other amendments to the Natural Disaster Relief Arrangements Determination

Recommendation 48

Title Relief and Recovery

- that NDRA be renamed 'Natural Disaster Relief and Recovery Arrangements' to reflect the widened focus on community recovery.

Clause 1 Extension of assistance to Commonwealth Territories

- that an additional sub-clause be added to make it clear that the NDRA measures extend to the residents of the Non Self-Governing Territories for which the Commonwealth has responsibility and to set out how assistance measures would be triggered for these Territories.

Clause 2.1 Definition of a natural disaster

- that the definition of eligible disasters in the NDRA be amended to incorporate the definition of natural disaster recommended in Section 2 of this report.

Clause 2.1 Arson not to preclude assistance

- that a disaster involving personal intervention, which is intended to include arson, be deleted as a reason for precluding claims for assistance under NDRA as this deprives innocent individuals and communities affected by the disaster from receiving assistance.

Clause 2.2(b) Rebuilding standards

- that the restriction on asset restoration to its pre-disaster standard be qualified to allow the Commonwealth, the State or Territory, and the affected Local Government concerned to agree to restoration or replacement to a more disaster resilient standard where that is cost-effective and a priority. In all cases, restoration and replacement should be according to prevailing building and engineering standards.

Clause 2.2(d)(i) Grant for non-profit bodies

- that a small grant option be introduced as an alternative to a concessional-interest loan, for voluntary non-profit bodies whose assets have been significantly damaged and which are not in a position to borrow or service a loan.

Clause 2.2(d)(iii) Grant for needy persons

- that a small grant option be introduced as an alternative to a concessional-interest loan, for needy persons whose assets have been significantly damaged and who are not in a position to borrow or service a loan.

Clause 2.2(f) Counselling and community capacity building

- that the provision for psychological counselling be broadened to cover other forms of counselling, such as personal or financial counselling, or other community development or capacity building measures adopted to alleviate distress, as this will be more suitable for a wider range of groups and cultures.

Clause 2.5 Restoring public undertakings

- that non-commercial, Local Government owned sewerage services and water supply systems should be deleted from the list of ineligible public undertakings not entitled to be restored with NDRA funding assistance. These are essential services, including from a public health viewpoint.

Clause 3.2 Recognition of relief and recovery assistance

- that the requirement, which has rarely been observed by the States, that a pre-requisite for NDRA assistance is recognition by the States and Territories of the Commonwealth contribution to relief and recovery assistance be enforced, and
- that the Commonwealth, States and Territories commit to jointly announce, where practicable, or acknowledge assistance available under NDRA at the time of disaster declaration or activation of NDRA. This recognises the benefits of close cooperation between governments and acknowledges their respective contributions. The NDRA guidelines preserve scope to discount reimbursement to State and Territory Governments where circumstances warrant.

Clause 3.3(b) and 3.4 Incentive for local government mitigation

- that arrangements for Commonwealth, State and Territory Governments to reimburse Local Governments for disaster damage and costs above threshold levels should be continued, and provisions should be introduced to:
- strengthen the existing prerequisite for natural disaster mitigation strategies by specifying that Local Governments are obliged to develop a strategy for their area and begin implementing cost-effective mitigation measures by year 3.
- provide that after year 3, a deduction of 10 per cent of available disaster financial assistance will apply to any Local Government not meeting the prerequisite, and
- allow for the period for achieving the mitigation prerequisite to be extended in exceptional circumstances that are beyond the reasonable control of the Local Government concerned.

Clause 3.5 Repeal of disaster relief payment

- that the provision for disaster relief payment assistance under the Social Security Act 1991 (which has been used only once since its introduction in 1991 in the case of the 1997 NSW bushfires) be repealed so that all such payments are made under NDRA (the Disaster Relief Payment is approximately \$750 for a couple with one or two children and only applies where the Commonwealth Minister declares an event and there is a major loss of life).

Clause 3.6 Restoration of infrastructure

- that the requirement regarding restoration of infrastructure above pre-disaster standard be amended to reflect the change proposed to Clause 2.2 (b) above.

Clause 4.4 (i) Small disaster threshold

- that the small disaster threshold be increased to \$220,000, reflecting the Consumer Price Index adjustment since the last increase, with the States and Territories retaining or assuming responsibility for provision of personal hardship and distress payments below the small disaster threshold.³³

Clause 5.2 Post-disaster reporting

- that new requirements for reporting the cost of natural disasters on a consistent national basis, and for a post-disaster assessment report for each natural disaster for which an NDRA claim is made, be introduced. These reports should be submitted to the Commonwealth in accordance with guidelines to be issued, with claims for payment, and will enable improved national understanding of the cost of disasters and the effectiveness of preparedness, response, relief, recovery and disaster mitigation measures.

Clause 7.1 Post-disaster information

- that the post-disaster information requirements be amended to allow for guidelines for cost of disaster information, and post-disaster assessment reports.

Nine Model Complementary Arrangements for State and Territory Relief and Recovery**Recommendation 49**

The HLG recommends that COAG agree to nine model arrangements for State and Territory natural disaster relief and recovery that represent sound principles and best State and Territory practice, as set out in the HLG report. This would:

- reform assistance towards a more harmonised and best practice approach across all States and Territories in natural disaster relief and recovery, and
- better complement the proposed new Commonwealth Natural Disaster Relief and Recovery Arrangements.

Model Arrangement 1: Personal hardship and distress assistance measures

States and Territories should ensure that access to the full range of personal hardship and distress assistance for individuals and households is available. The amount of personal hardship and distress assistance should be assessed on the basis of need, taking into account the capacity of applicants to meet their own needs. Additionally, assistance on the basis of need should apply to assistance provided for:

- temporary accommodation and living expenses
- repairs to or replacement of essential household items, and
- repairs to dwellings.

That assistance should be available where there has been a significant disaster impact, the cost of which remains below the small disaster threshold.

³³ The small disaster threshold, currently \$200,000, is the level below which NDRA assistance is not available. Some States and Territories currently make personal hardship and distress payments available below this threshold.

Model Arrangement 2: Local Government contribution

States and Territories should ensure:

- that there is a broadly consistent and equitable regime under which Local Governments contribute a threshold amount of disaster relief and recovery expenditure before access to NDRA funds is available to them, and
- that expenditure thresholds are modified, as appropriate, to provide an incentive for the practice of mitigation.

Model Arrangement 3: Assistance to small business and farmers

States and Territories should ensure that concessional-interest loans and/or interest subsidies (grants) are available for disaster-affected small business owners and farmers who cannot obtain finance on reasonable terms from normal sources, for enterprises which have reasonable prospects of recovery.

Model Arrangement 4: Assistance to voluntary non-profit organisations

States and Territories should ensure that grants of up to \$5,000 or interest subsidies on loans of up to \$100,000 are available to disaster-affected voluntary non-profit organisations to replace facilities and equipment to regain their operational capacity. Alternatively, concessional-interest loans of up to \$100,000 should be available to organisations which are unable to obtain finance from other sources, and which have a reasonable prospect of repaying the loan. The conditions of a loan should not limit the organisation to restoring assets to the pre-disaster standard, but allow flexibility so that relocation or design features which reduce susceptibility to future disasters may be accommodated.

Model Arrangement 5: Assistance for housing repair/replacement

States and Territories should ensure that a concessional-interest loan of up to \$100,000, subject to a means test and evidence of ability to repay the loan, is available to persons whose dwelling needs substantial repair/replacement as a result of a natural disaster, and whose income is insufficient to obtain funding from normal sources. Alternatively, a means-tested grant for basic dwelling replacement or repair should be available to needy persons who do not have the capacity to repay a concessional-interest loan for that purpose. In both cases, a portion of the funds provided may be used for relocation or redesign of the dwelling to reduce the risk of future hazards.

Model Arrangement 6: Counselling and community capacity building

States and Territories should ensure that (subject to changes in the Commonwealth NDRA Determination) measures are introduced to support personal and financial counselling services, and community development and community capacity building measures, to alleviate distress and promote recovery in disaster-affected communities.

Model Arrangement 7: Emergency works and operations

States and Territories should ensure that measures are available to reimburse authorised organisations for the costs of designated emergency works and operations undertaken in disaster response situations, within the limits of NDRA eligibility provisions.

Model Arrangement 8: Community recovery

Arrangements should ensure that, in appropriate circumstances:

- (a) States and Territories, jointly with the Commonwealth, can contribute to Special Community Recovery Modules, comprising

- a Community Recovery Fund
- ex gratia payments for individuals and families
- recovery grants for small business and
- recovery grants for primary producers, and
- (b) where charitable and other non-government organisations arrange public appeals for communities affected by disasters, they are encouraged to
- pool the funds raised for distribution under the Special Community Recovery Modules, or under any national or State/Territory appeal that might be launched by the Commonwealth, State or Territory, and/or
- deliver their assistance efforts and resources in ways that complement government programmes.

Model Arrangement 9: Insurance cover

States and Territories should ensure that:

- (a) in relation to Model Arrangements 3, 4 and 5, available assistance takes into account the level of insurance that affected individuals, organisations and businesses have, and assistance provided incorporates requirements for insurance cover wherever practicable. Disincentives to insure should be avoided, and
- (b) assistance available under Model Arrangements 1 and 8 should not serve to discourage use of insurance.

National Cost-Sharing Principles for Natural Disaster Management

Recommendation 50

The HLG recommends that Heads of Government of the Commonwealth, States and Territories, and the President of ALGA endorse and jointly implement in their intergovernmental relations the following cost-sharing principles:

1 Responsibilities of governments for natural disaster mitigation

(a) Responsibilities for mitigation

All levels of government have a responsibility to invest in natural disaster mitigation of public benefit provided there are demonstrable savings to each level of government and taxpayers in the longer term, and improvements in community safety.

(b) Mitigation cost-sharing

As a general rule, each level of government should contribute one third of the cost of disaster risk assessment and mitigation measures under Commonwealth programmes.³⁴

In exceptional circumstances, the Commonwealth and State or Territory Governments may agree to reduce or waive the contribution from remote Indigenous communities, remote unincorporated communities and low capacity Local Governments so that they are not precluded from such programmes. In such cases, the Commonwealth and the State or Territory should share the balance of the cost of measures equally.³⁵

³⁴ Reference to each jurisdiction contributing one third of the cost of disaster mitigation measures means that the Commonwealth will contribute a maximum of one third funding, with that figure at least matched by the State or Territory, and the balance being contributed by the Local Government or other body (such as a catchment management authority). Where there is no Local Government or Indigenous contribution, the costs should be shared 50:50 by the Commonwealth and State or Territory.

³⁵ Criteria for low capacity Local Governments should be established and might include factors such as population, rate revenue and expenditure.

(c) Mitigation measures to avoid repeated infrastructure damage

It is in the interest of the Commonwealth, States and Territories, and Local Government to jointly invest additional resources to make public infrastructure repeatedly damaged by natural disasters more resilient where it can be demonstrated that each level of government will make savings in future rebuilding costs.

(d) Incentive for mitigation

Local Governments should continue to be reimbursed for disaster damage and costs above threshold levels, except that where disaster mitigation strategies are not in place and being implemented by December 2005, there should be a deduction of 10 per cent in disaster relief assistance available to the Local Government. This period without penalty should be extended in exceptional circumstances beyond the reasonable control of the Local Government concerned.

2 Responsibilities of governments for planning, preparedness and response

(a) Disaster planning, preparedness and response

States and Territories and, where they have such responsibilities, Local Government should continue to bear the costs of their own disaster planning, preparedness and response operations including, in the case of States and Territories, the cost of facilities, training, career and volunteer emergency service personnel, and combat operations.

The Commonwealth should continue to provide support to States and Territories in training, development of particular capabilities and other financial and in-kind ways.

(b) Commonwealth assistance in responding to severe disasters

When the capacity of the responsible State or Territory to respond to a severe disaster is exceeded appropriate assistance and resources will be provided by the Commonwealth, through EMA.

(c) State, Territory and Local Government mutual assistance

States and Territories will use their best endeavours to assist each other to respond to serious disasters when the resources of the affected jurisdiction are insufficient. Local Governments are also encouraged to assist each other wherever possible in such circumstances.

3 Responsibility of governments for relief and recovery

(a) Safety net assistance for households and businesses

Recognising that it is not always possible to protect communities from natural disasters, or for households and businesses to adequately insure their buildings and contents against natural hazards, governments should provide basic, safety net natural disaster relief assistance. However, that assistance does not compensate for significant losses that uninsured or underinsured households and businesses may suffer. It should be provided in ways that minimise disincentives to insure.

(b) State and Territory responsibilities for relief and recovery

States and Territories should continue to cover the cost of natural disaster relief and recovery measures up to the small disaster threshold and the base threshold of 0.225 per cent of general sector revenue set for jurisdictions annually.³⁶

³⁶ The Special Community Recovery Modules are exceptions to principles 3(b) and (c). See 3(e) below.

(c) Commonwealth responsibilities for relief and recovery

The Commonwealth should continue to provide financial support above the established thresholds for the range of relief and recovery measures that apply under NDRA when significant natural disasters occur so that States, Territories, and Local Governments are not left to bear large, unforeseen costs of relief and recovery, and to ensure that effective assistance is available to families and communities.

(d) Equitable relief and recovery assistance

Commonwealth, State and Territory relief and recovery arrangements should, as far as possible, provide for equity of assistance in comparable disaster circumstances, and across all jurisdictions.

(e) Joint Commonwealth–State additional assistance

In the case of severe disasters, where additional assistance in the form of Special Community Recovery Modules is warranted for small business, primary producers, regions or communities, the cost of such additional measures should be shared on a 50:50 basis by the Commonwealth and the State or Territory agreeing to trigger such measures.

4 Responsibility of governments for natural disaster research

The Commonwealth should continue to finance natural disaster research of national importance, together with the costs of national meteorological and geophysical warning systems, and international assistance provided in cases of severe natural disasters. State and Territory Governments should fund research with particular application to their jurisdictions.

New National Emergency Management Decision-making Machinery

Recommendation 51

The HLG recommends the establishment of a National Emergency Management Ministerial Council or, if COAG prefers not to establish an additional Ministerial Council (including ALGA), a Ministerial Implementation Forum with a sunset timeframe of five years, to oversee national emergency management arrangements and implementation of the Natural Disaster Reform Package.

Recommendation 52

The HLG recommends the establishment of a new National Emergency Management High Level Group to provide support for the Ministerial Council/Forum and ensure a cross-jurisdictional, whole-of-government effort to drive the implementation of the Natural Disaster Reform Package. The group should comprise senior officials of emergency management and key policy departments of Commonwealth, State and Territory Governments and ALGA, and be chaired by the Secretary of a Commonwealth department.

Recommendation 53

The HLG further recommends that the Commonwealth's policy-making machinery be strengthened and enhanced by establishing a Commonwealth interdepartmental disaster management committee to:

- drive the recommended reform commitments across the Commonwealth, and
- develop Commonwealth positions in relation to the work of the new national emergency management machinery recommended in the HLG report.

Intergovernmental Agreement on Mutual Assistance for Disaster Response

Recommendation 54

The HLG recommends that an intergovernmental agreement or memorandum of understanding between Heads of Government of the Commonwealth, States and Territories be developed to govern the provision of mutual assistance for natural disaster response operations on the part of all jurisdictions.

Recommendation 55

The HLG further recommends that the Commonwealth consider future opportunities for dialogue with Asia Pacific countries on concrete regional cooperation in the area of large-scale disaster response and relief operations.

Improving Australia's Capacity to Deal with Catastrophic Natural Disasters

Recommendation 56

The HLG recommends that national intergovernmental work on the strategies, including planning, identified by the HLG be undertaken to improve Australia's capacity to deal with catastrophic natural disasters.

Recommendation 57

The HLG recommends that the new national machinery for emergency management proposed in recommendations 51 and 52 above, involving a Ministerial Council/Forum and a HLG, should work with Emergency Management Australia (EMA) and the State and Territory emergency management agencies to undertake the intergovernmental work on catastrophic disasters.

Tangible Support for Volunteers in the Emergency Management Sector

Recommendation 58

The HLG recommends that each level of government examine and take action on the following recommendations from the Volunteers Summit:

- (a) that all jurisdictions
 - agree to approach their respective occupational health and safety organisations in order to develop standards and codes of practice for volunteer organisations, and
 - conduct an audit of legal risks faced by emergency sector volunteers, share the results, and develop responses
- (b) that the Commonwealth Government
 - considers providing support for employers of emergency services volunteers
 - recognises emergency management volunteers as trainees
 - examines the administrative processes associated with the implementation of the National Training Reform Agenda³⁷ with a view to simplifying them
- (c) that State and Territory Governments
 - review and compare the legal protections provided in their legislation to determine whether it offers adequate cover for both volunteers and their organisations
 - consider providing assistance with the provision of public liability insurance for emergency management volunteer organisations

³⁷ The National Training Reform Agenda involves training in accordance with national competency standards including those relating to public safety.

- recognise emergency management volunteers as trainees
 - provide funding to emergency sector volunteer organisations to enable them to implement the National Training Reform Agenda
 - explore the provision of concessions to emergency sector volunteers
- (d) that Local Governments
- examine the provision of concessions such as rate rebates to emergency services sector volunteers.

Improving the Disaster Resilience of Remote Indigenous Communities

The HLG recommends that the special needs of remote and vulnerable Indigenous communities be addressed by the following:

Recommendation 59

- that more flexible funding arrangements, and an outreach strategy, be adopted by all levels of government to ensure that remote Indigenous communities have improved access to funding for mitigation measures. Flexible funding will be achieved through the Recommendation 9 undertaking that the local contribution for mitigation measures be reduced or waived by agreement in certain circumstances so that barriers to participation are removed.

Recommendation 60

- that in appropriate disaster circumstances, recovery assistance through the Special Community Recovery Modules proposed in Recommendations 42 and 43 be used to support remote Indigenous communities.

Recommendation 61

- that personal hardship and distress assistance, administered in a flexible way, be available from State and Territory Governments for disasters below the small disaster threshold as proposed in Recommendation 49 (Model Arrangement 1).

Recommendation 62

- that the Aboriginal and Torres Strait Islander Commission (ATSIC) and ATSIC Regional Councils support the inclusion of Indigenous communities in mainstream State, Territory and local planning processes and activities.

Recommendation 63

- that ATSIC agree to become a full partner with States and Territories in achieving the Review's five-year natural disaster reform commitments that can improve the disaster resilience of remote Indigenous communities.

Reforming Natural Disaster Insurance in Australia

The HLG recommends:

Recommendation 64

- that COAG notes that the proposed Disaster Mitigation Australia Package and the further measures proposed to advance disaster mitigation meet the call from the insurance industry to improve disaster risk assessment and mitigation and will benefit the insurance industry.

Recommendation 65

- that COAG endorse the following statement of the desired role of the insurance industry Insurers have a responsibility to offer effective cover for natural disasters encompassing all hazards for households and businesses at fair and competitive premiums.

Recommendation 66

- that COAG endorse the following specific actions it expects of the insurance industry in order to achieve an improved national approach to flood and other natural disaster insurance.
- that the insurance industry should take active steps to:
 - ensure the availability and affordability of all natural hazard/natural disaster insurance as part of standard insurance policy cover
 - work with the new national emergency management machinery proposed in Recommendations 51 and 52 to develop a single national definition of natural hazards, including water damage, to be offered by all insurers
 - agree to a national system of disclosure of insurance company premiums, numbers of policy holders, exclusions and claims to the Commonwealth's insurance industry regulator so that an accurate picture of the costs of natural disasters and the role of insurance can be developed
 - in communities where mitigation action has taken place, provide access to all hazards insurance against natural disasters, including riverine flooding and cyclones, at fair premiums
 - avail themselves of the proposed new access to State, Territory and Local Government information on flood risk, and accept that insurers' special needs for data on risk are a matter for insurers to address individually or collectively
 - contribute financially to:
 - a nationally consistent system of data collection, research and analysis on natural disasters and post-disaster assessments, and
 - the planning and delivery of community safety and awareness programmes
 - work with floodplain management agencies to identify areas where the risk of flooding is greater than 1:20 and concerted mitigation action is needed
 - strenuously promote the importance of household insurance, and the link between safer dwellings and lower premiums, and
 - work closely with disaster management agencies on research and investment for improved hazard identification, risk assessment and mitigation action.

ANNEX 2

High Level Group Members

Members of the High Level Group

Commonwealth	Western Australia	Australian Capital Territory
Mr Ken Matthews (Chair) <i>Department of Transport and Regional Services</i>	Mr Bob Mitchell <i>Fire and Emergency Services Authority</i>	Mr Mike Castle <i>Department of Justice and Community Safety</i>
New South Wales	South Australia	Northern Territory
Major General BW (Hori) Howard <i>State Emergency Management Committee</i>	Mr Barry Apsey <i>Emergency Services Administrative Unit</i>	Mr Darryl Pepper <i>Northern Territory Fire and Emergency Services</i>
Mr Phil Bickerstaff <i>Treasury</i>	Ms Suzanne Carman <i>Department of the Premier and Cabinet</i>	Ms Alix Gallo <i>Treasury</i>
Victoria	Queensland	Local Government
Mr Bruce Esplin <i>Department of Justice</i>	Mr Michael Kinnane <i>Department of Emergency Services</i>	Mr Greg Hoffman <i>Australian Local Government Association</i>
Tasmania		
Mr Andrew Lea <i>State Emergency Service</i>	Ms Lisa Hutton <i>Department of Premier and Cabinet</i>	
Also Assisting		
Mr David Templeman <i>Emergency Management Australia</i>	Mr Jack Noye Ms Fiona McKersie <i>Department of Emergency Services, Qld</i>	Mr Barry Hamilton Mr Eamonn Lennon Ms Jo Harrison-Ward <i>Fire and Emergency Services Authority, WA</i>
Mr John Pritchard <i>Australian Local Government Association</i>	Mr Paul Gabriel <i>Department of Justice, Vic</i>	Mr Iain Rae <i>Fire and Emergency Services, NT</i>
Mr Stuart Sargent <i>Department of the Prime Minister and Cabinet</i>		Mr Herman Mouthaan <i>Dept of Land Planning and Environment, NT</i>

ANNEX 3

National Submissions to the Review

No.	Organisation
1	Australian Disaster Medicine Group
2	Charles Sturt University
3	Aon Re Australia Reinsurance Brokers
4	Emergency Management Australia
5	Country Fire Services (SA)
6	Territory Insurance Office (NT)
7	Australasian Automobile Association
8	State/Territory Disaster Recovery Coordinators
9	Australasian Fire Authorities Council
10	The Australian Journal of Emergency Management
11	NSW Farmers' Association
12	NSW Rural Fire Service
13	CSIRO
14	ATSIC
15	University of Melbourne and Department of Human Services (Vic)
16	Bureau of Meteorology
17	Master Builders Australia
18	Ken Granger
19	NSW Farmers Association
20	Floodplain Management Authorities of NSW
21	Insurance Council of Australia
22	NSW Department of Land and Water Conservation
23	Australian Local Government Association
24	Australian Geological Survey Organisation (now Geoscience Australia)

100 year flood	The flood having a 1 per cent chance of occurring in any one year.
Catastrophic Disaster	An extreme natural hazard event which impacts on a community, or communities resulting in widespread, devastating, economic, social and environmental consequences.
Cost/Benefit Ratio	A ratio of social benefits to social costs. It is a tool used to rank alternative projects. A benefit to cost ratio of greater than or equal to one is necessary for a project to be considered socially beneficial.
Emergency	An event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response.
Hazard	A source of potential harm or a situation with a potential to cause loss.
Mitigation	Measures taken in advance of, or after, a disaster aimed at decreasing or eliminating its impact on society and environment.
Natural Disaster	A natural disaster is a serious disruption to a community or region caused by the impact of a naturally occurring rapid onset event that threatens or causes death, injury or damage to property or the environment and which requires significant and coordinated multi-agency and community response. Such serious disruption can be caused by any one, or a combination, of the following natural hazards: bushfire; earthquake; flood; storm; cyclone; storm surge; landslide; tsunami; meteorite strike; or tornado.
Preparedness	Arrangements that ensure that, should an emergency occur, all those resources and services which are needed to cope with the effects can be efficiently mobilised and deployed.
Prevention	Regulatory and physical measures to ensure that emergencies are prevented, or their effects mitigated.
Probable Maximum Flood	The flood resulting from the probable maximum precipitation, and where applicable, snow melt, coupled with the worst flood-producing catchment conditions that can be realistically expected in the prevailing meteorological conditions.
Public Awareness	The process of informing the community as to the nature of the hazard and actions needed to save lives and property prior to and in the event of disaster.
Recovery	The coordinated process of supporting emergency-affected communities in the reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical wellbeing.

Relief	The provision of immediate shelter, life support and human needs of persons affected by, or responding to, an emergency. It includes the establishment, management and provision of services to emergency relief or recovery centres.
Response	Actions taken in anticipation of, during, and immediately after an emergency to ensure that its effects are minimised.
Risk	A concept used to describe the likelihood of harmful consequences arising from the interaction of hazards, communities and the environment.
Risk Assessment	The process used to determine risk management priorities by evaluating and comparing the level of risk against predetermined standards, target risk levels or other criteria.
Risk Management	The systematic application of management policies, procedures and practices to the tasks of identifying, analysing, evaluating, treating and monitoring risk.
Vulnerability	The degree of susceptibility and resilience of the community and environment to hazards.

Summary of High Level Group Responses to the Terms of Reference

Term of Reference 1: Objectives

Term of Reference 1 asked the Review to 'identify the objectives of current Commonwealth, State and Territory, and Local Government disaster relief arrangements'.

In relation to natural disaster management as a whole, the HLG framed a national objective it considers should drive action jointly by all levels of government. The objective is set out in Recommendation 3.

The HLG also proposes a national objective of natural disaster relief and recovery arrangements in Recommendation 41. These two national objectives, together with the definition of natural disaster, will help ensure a shared understanding by all levels of government in implementing effective natural disaster management.

Term of Reference 2: Disaster Mitigation Programmes and Arrangements

Term of Reference 2 required the HLG to:

'review current disaster mitigation programmes and arrangements, with a view to assessing their appropriateness, effectiveness and scope. The review should include an assessment of the role local government can play in minimising adverse outcomes. The review should also consider the appropriate location for policy responsibility for disaster mitigation within the Commonwealth, states and territories.'

These matters are dealt with in detail in Section 5. The main national programmes administered by the Commonwealth Government are:

- research, including Cities Project (Geoscience Australia)
- Natural Disaster Risk Management Studies Programme (DOTARS)
- Regional Flood Mitigation Programme (DOTARS), and
- capacity building programmes, including Australian Safer Community Awards and EMA Projects Programme (EMA).

Some States and Territories also operate disaster mitigation programmes or provide grants for mitigation initiatives, including by Local Governments.

The HLG considers the collaborative arrangements between governments that underpin the flood and risk programmes are an effective approach to mitigation. Local Government plays a critical role in determining local community flood mitigation priorities. States and Territories set priorities in the broader context of the needs of the jurisdiction and contribute the technical and policy expertise required. The Commonwealth sets the broad strategic framework and guidelines for risk assessment and mitigation. The flood mitigation and risk management programmes have been administered together by DOTARS since November 2001. States, Territories and Local Government support such programmes being administered by a single Commonwealth agency.

The Regional Flood Mitigation Programme is achieving effective results in terms of reducing the damage and costs to the community and all levels of government from flooding. Over the 67 projects funded to date, the programme is delivering average savings of \$2.10 for every dollar invested.

The HLG considers that the most significant weakness in Australia's natural disaster management efforts is in the area of disaster risk assessment and disaster mitigation. Commitments in this area are centrepieces of the Disaster Mitigation Australia Package proposed in Recommendations 6 to 10 of this report.

The HLG concluded that, in relation to current disaster mitigation programmes:

- the Regional Flood Mitigation Programme is shown to be achieving significant savings in disaster damages and costs from flooding
- the Regional Flood Mitigation Programme and the Natural Disaster Risk Management Programme are based on effective arrangements in terms of funding contributions and collaborative Commonwealth, State/Territory and Local Government arrangements
- each programme focuses on delivery of mitigation projects largely at Local Government level which is appropriate and should continue
- the most significant weakness in Australia's natural disaster management arrangements is in the area of disaster risk assessment and follow-up disaster mitigation
- the scope of natural disaster mitigation measures should be significantly expanded to include all natural hazards to achieve the objectives proposed in Section 2 above
- natural disaster risk assessment is an essential prerequisite to effective mitigation
- Commonwealth policy and programme responsibility for the Regional Flood Mitigation and Risk Assessment Programmes should continue to be administered together by a single Commonwealth agency, as should any new natural disaster mitigation programme initiatives
- States and Territories each have unique policy and programme arrangements for disaster mitigation (see Table 3) and should continue to determine their own arrangements, and
- States and Territories should, where appropriate, establish a State Disaster Mitigation Committee to coordinate and provide strategic direction and drive mitigation across their departments and agencies, or, alternatively expand the responsibilities of their peak emergency management committees to include this role.

Term of Reference 3: Arrangements for Providing Disaster Relief

The HLG was also asked to:

“Review current arrangements for providing disaster relief, with a view to assessing their appropriateness and effectiveness in meeting national objectives (and include identifying any gaps in disaster relief arrangements). This would include, but not be limited to, an assessment of:

- the Natural Disaster Relief Arrangements
- Exceptional Circumstances relief for farmers (currently under review by ARMCANZ – now the Primary Industries Ministerial Council)
- disaster-related payments made under the *Social Security Act 1991*

- other payments or arrangements, and
- the related issue of access to insurance coverage against natural disasters.

The review should consider whether the allocation of roles and responsibilities among stakeholders is appropriate."

As discussed in Section 6, the HLG considers that Australia's arrangements for providing disaster relief are generally sound and effective, particularly in providing immediate assistance and support to people in need affected by natural disasters and in rebuilding damaged infrastructure. Weaknesses in the Commonwealth NDRA are identified and addressed through reforms proposed in Recommendations 41 to 48. The complementary Commonwealth and State/Territory disaster relief arrangements work well and the Commonwealth's provision of financial assistance to States and Territories above set thresholds of disaster-related expenses is an effective means of insulating them, and Local Governments, from large, unforeseen costs.

The HLG concluded that assistance for primary producers affected by drought and frost is best provided under the separate and specialised Exceptional Circumstances Arrangements. As a consequence, such events or conditions are excluded from the scope of natural disaster arrangements.

Disaster-related payments, such as Newstart-equivalent payments, under the *Social Security Act 1991* are an effective means of providing income support to people whose income is severely affected by a natural disaster, and such payments can be provided in circumstances the Commonwealth considers appropriate. However, the HLG considers that the provision in the Act for a Disaster Relief Payment of approximately \$750 per family is unwarranted and largely ineffective having been used in only one disaster situation. The criteria for triggering that payment are particularly onerous and the benefits to individuals and families, beyond the benefits of Newstart-equivalent payments, are insignificant.

The HLG considers that the Commonwealth's NDRA, and the reforms the HLG recommends to those arrangements, will result in more effective relief and recovery assistance to needy individuals, businesses and communities. In those circumstances, the provision in the Social Security Act for a Disaster Relief Payment could be repealed, and Commonwealth measures consolidated within the NDRA.

The issue of insurance coverage for natural disasters is dealt with separately in Section 11 of the report.

Section 6 of the report deals with roles and responsibilities in relation to disaster relief.

The HLG concluded that:

- overall, the Commonwealth, and complementary State and Territory, natural disaster relief arrangements are sound and effective in providing immediate safety-net support and assistance for people affected by natural disasters, and Commonwealth financial support for States and Territories faced with large unforeseen expenses above threshold levels
- the system of natural disaster relief assistance is not suitable for drought and similar events affecting primary producers which are best risk managed and then dealt with, in severe cases, under the separate Exceptional Circumstances Arrangements which provide a system of income support for primary producers needing such assistance (note that unlike Exceptional Circumstances Arrangements, NDRA does not include provision of income support)
- disaster-related income support payments that may be provided under the Social Security Act are an effective measure when the circumstances warrant their payment, but the Disaster Relief Payment should be repealed because it is of limited application and benefit, and
- the need for other ad hoc payments and arrangements adopted from time to time should be significantly reduced by a new set of Special Community Recovery Modules recommended by the HLG in the reform commitments in Section 3 and in Recommendations 42 and 43 above.

Term of Reference 4: Policy-Making Machinery for Natural Disasters

The HLG was asked to:

“review current Commonwealth, state and territory, and local government policy-making machinery in relation to disaster relief, mitigation, contingency planning and emergency management, including the process by which the Commonwealth, states and territories respond in the first instance to a disaster.”

The HLG considers that the policy-making machinery within States and Territories is generally sound and effective, as is the related decision-making machinery. That machinery is fully effective in having jurisdictions well prepared for regular natural disasters and in responding effectively to disasters that are within the capacity of the individual jurisdiction.

While current machinery is effective, the HLG draws attention to recent innovations in the form of a Major Incidents Committee of Cabinet (and supporting arrangements of officials) and a State Disaster Mitigation Committee of officials. The HLG considers these useful models that States and Territories might consider for their jurisdictions. The mechanism of a mitigation committee would help to ensure that disaster mitigation becomes a mainstream matter of action by a wide range of departments and agencies within each State and Territory, and within Local Governments, a matter the HLG considers vitally important.

Separately, in Section 9, the HLG deals with the special challenges of dealing with rare, catastrophic disasters that are beyond the combined response capacities of all jurisdictions working together.

The HLG considers that the National and Commonwealth policy-making arrangements need to be improved to achieve a more strategic focus, more effective policy and decision making, greater influence within and across governments where that improves disaster management, and better coordination of effort. Recommendations 51 to 53 set out proposals for improved high level national machinery, including consultative processes with stakeholder organisations.

The HLG concluded that:

- the policy-making arrangements and disaster response capacities of States and Territories to deal with natural disasters are sound and effective, and consistent with world best practice
- States and Territories should, where appropriate, consider establishing a high level group which would meet quickly when a natural disaster occurred to make whole-of-government policy decisions
- innovations such as a peak Committee of Cabinet to deal with major emergencies, and State disaster mitigation committee to drive mitigation, are models States and Territories might consider for their own jurisdictions
- all levels of government should put in place a mechanism to ensure that disaster mitigation becomes a coordinated mainstream activity across a wide range of departments and agencies, and
- machinery for national and Commonwealth strategic policy-making and coordination needs to be improved to strengthen Australia's performance, particularly in disaster mitigation, relief and recovery arrangements. In the case of the Commonwealth, this would effectively implement recommendation 1 of the Australian National Audit Office, Report 41.

Term of Reference 5: Options for Improving Existing Arrangements

The Terms of Reference provide that ‘where appropriate, options for improving upon existing arrangements should be developed’.

To improve on existing arrangements, the HLG has outlined a suite of measures in the Natural Disaster Reform Package, the 12 Reform Commitments it has recommended in Section 3, and in each of the sections of the report dealing with elements of natural disaster management.

Disaster Management Arrangements of Governments

Figures

1. Commonwealth natural disaster management arrangements
2. New South Wales emergency management arrangements
3. Victoria emergency management arrangements
4. Queensland disaster management system
5. South Australian emergency management arrangements
6. Western Australian emergency management organisation structure
7. Tasmanian emergency management structure
8. Northern Territory disaster management arrangements
9. Australian Capital Territory emergency management arrangements
- Appendix: Acronyms and abbreviations in figures above

Figure 1:
Commonwealth natural disaster management arrangements

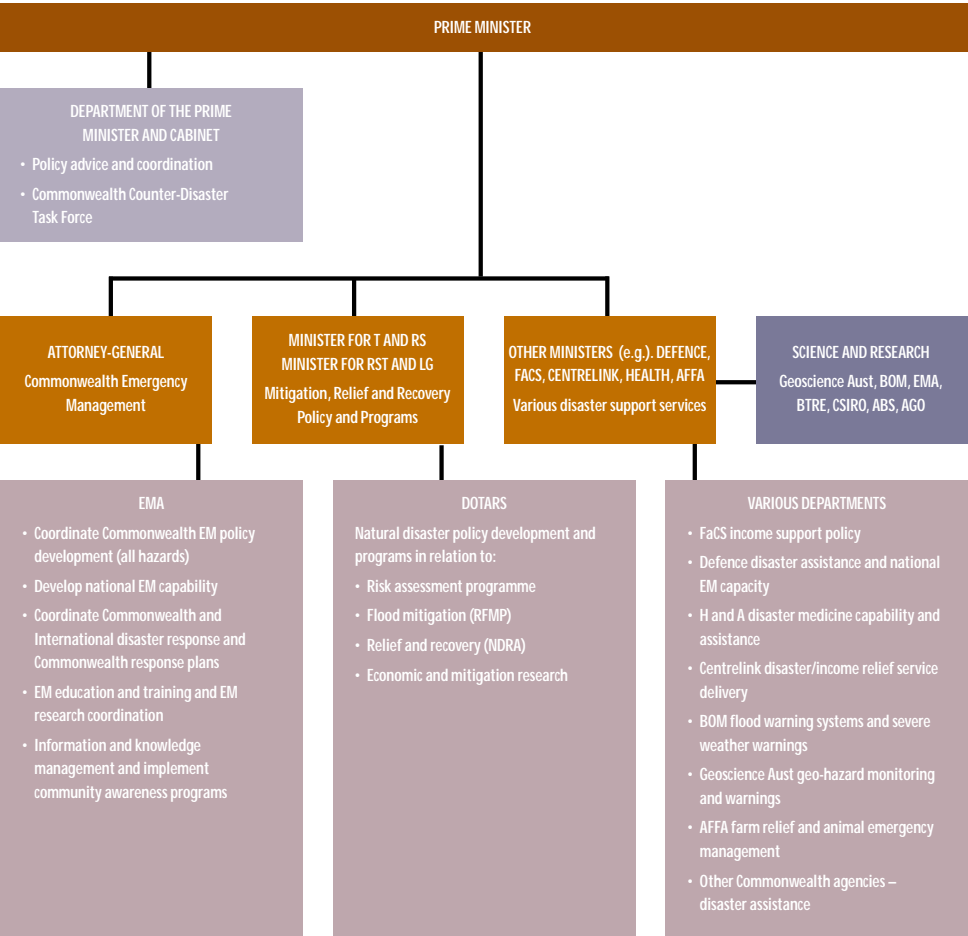


Figure 2:
New South Wales emergency management arrangements

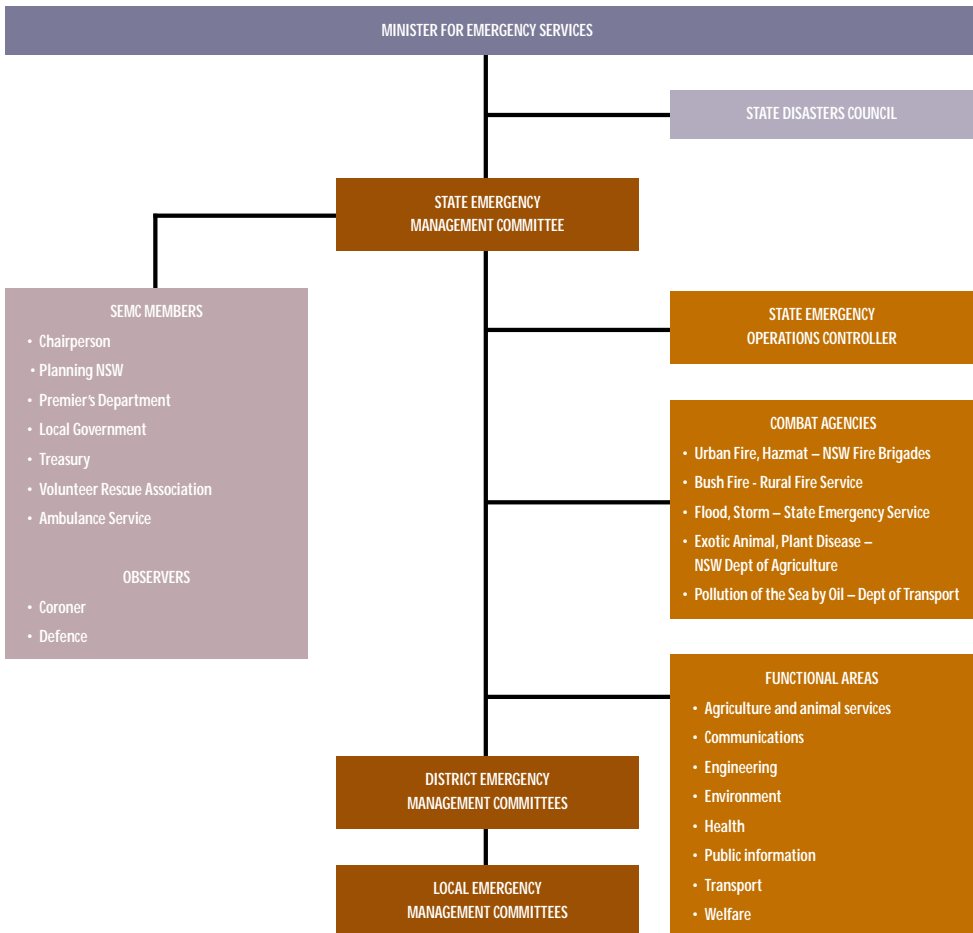


Figure 3:
Victoria emergency management arrangements

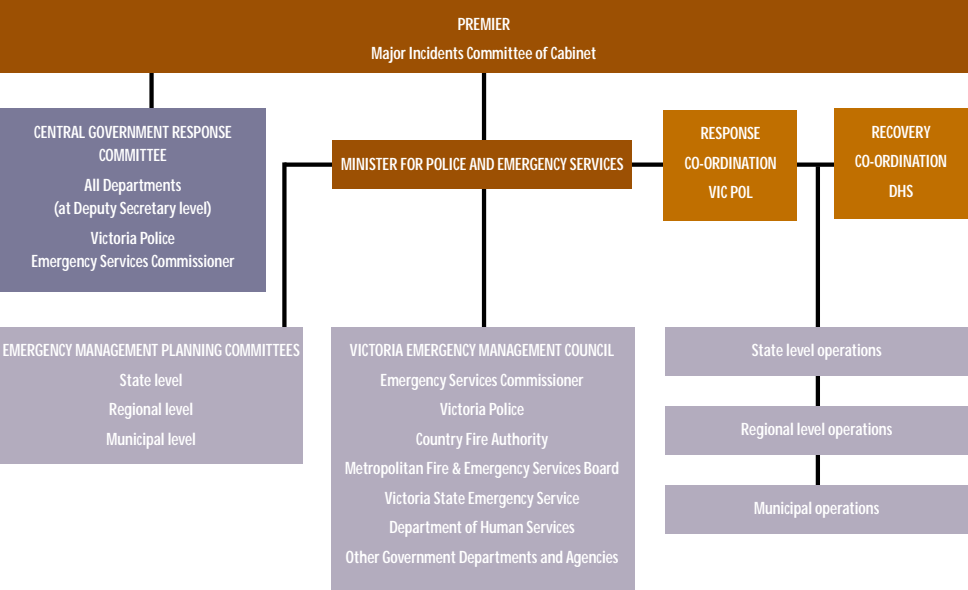


Figure 4:
Queensland disaster management system

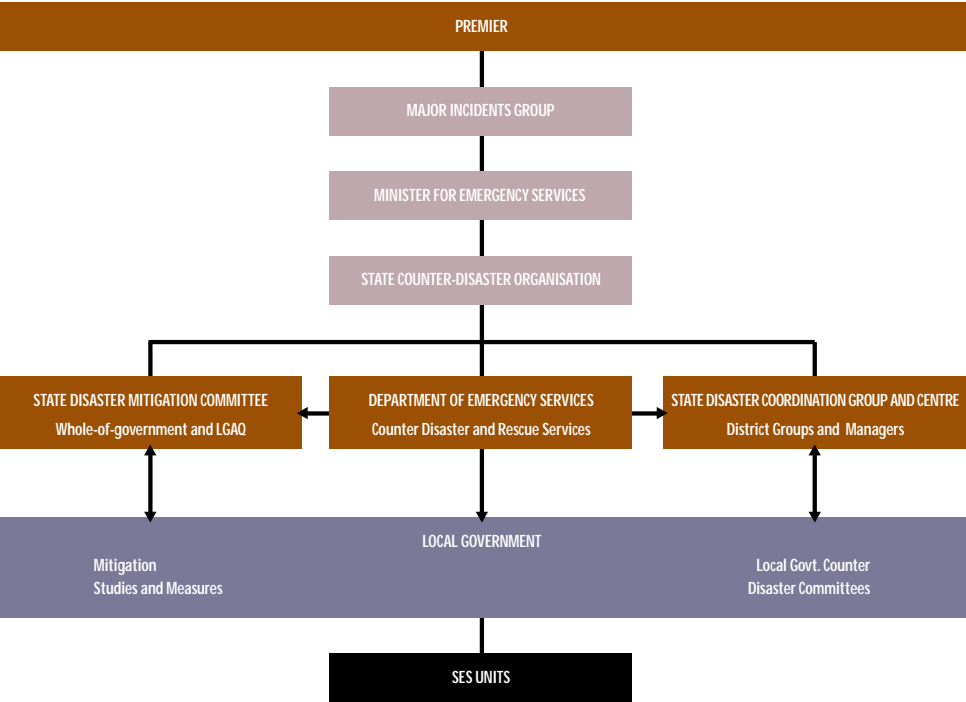


Figure 5:
South Australian emergency management arrangements

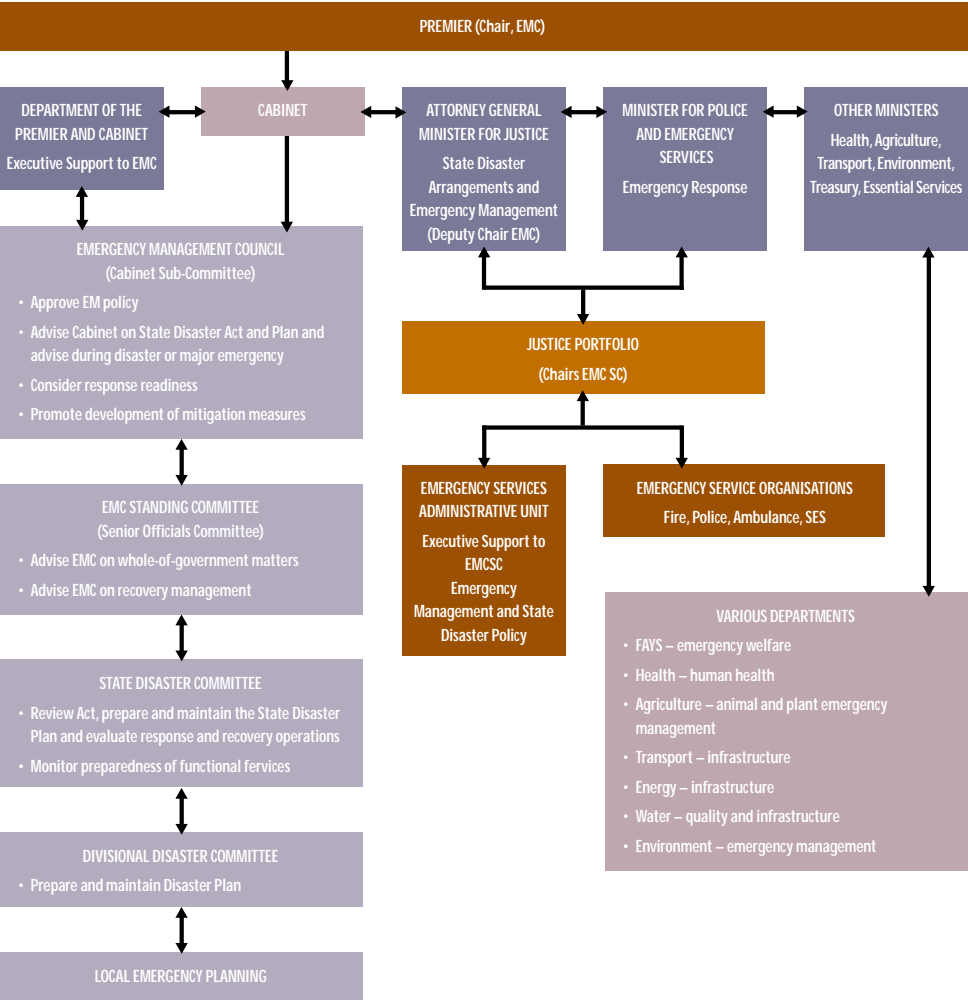


Figure 6:

Western Australian emergency management organisation structure

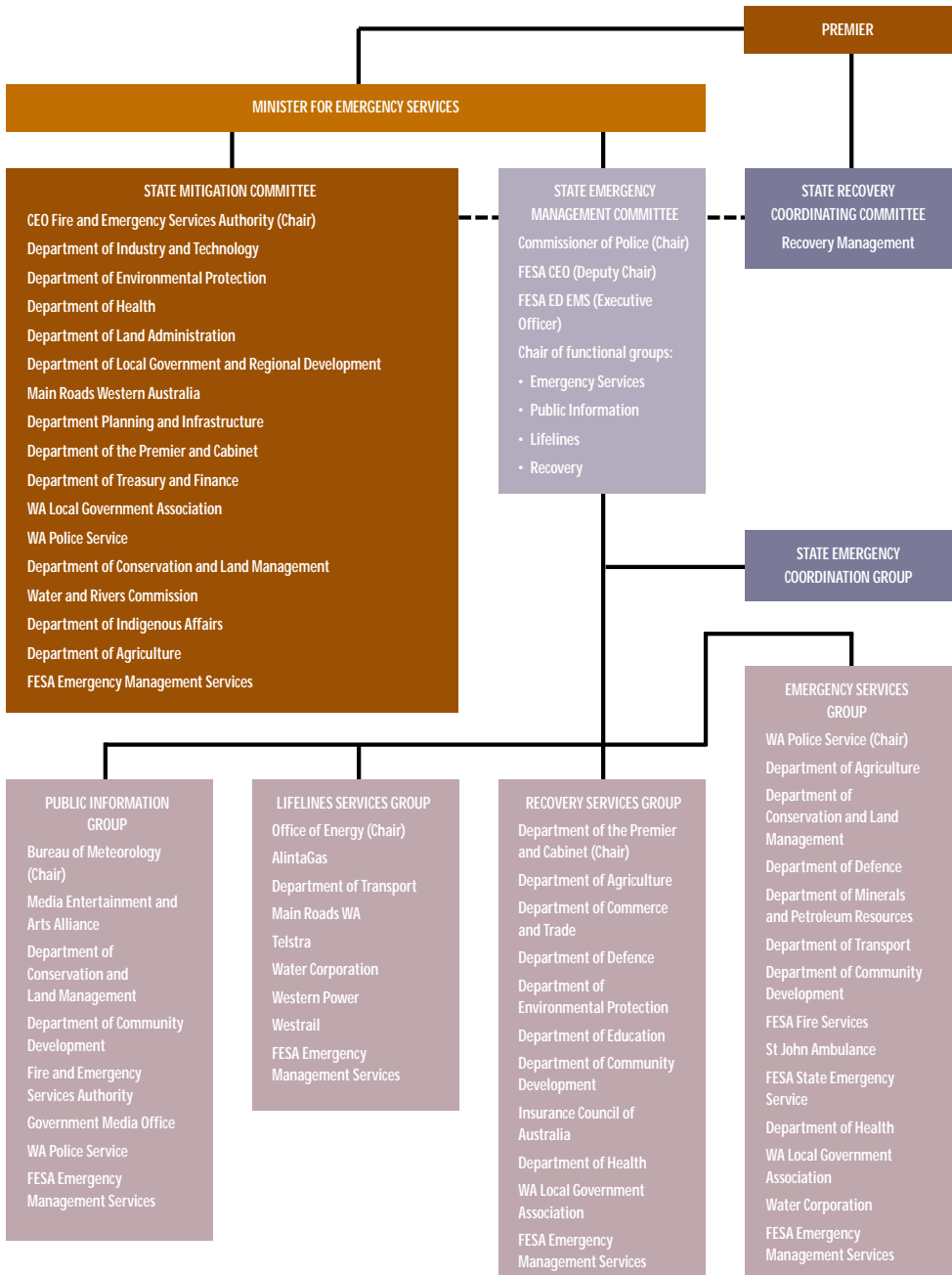


Figure 7:
Tasmanian emergency management structure

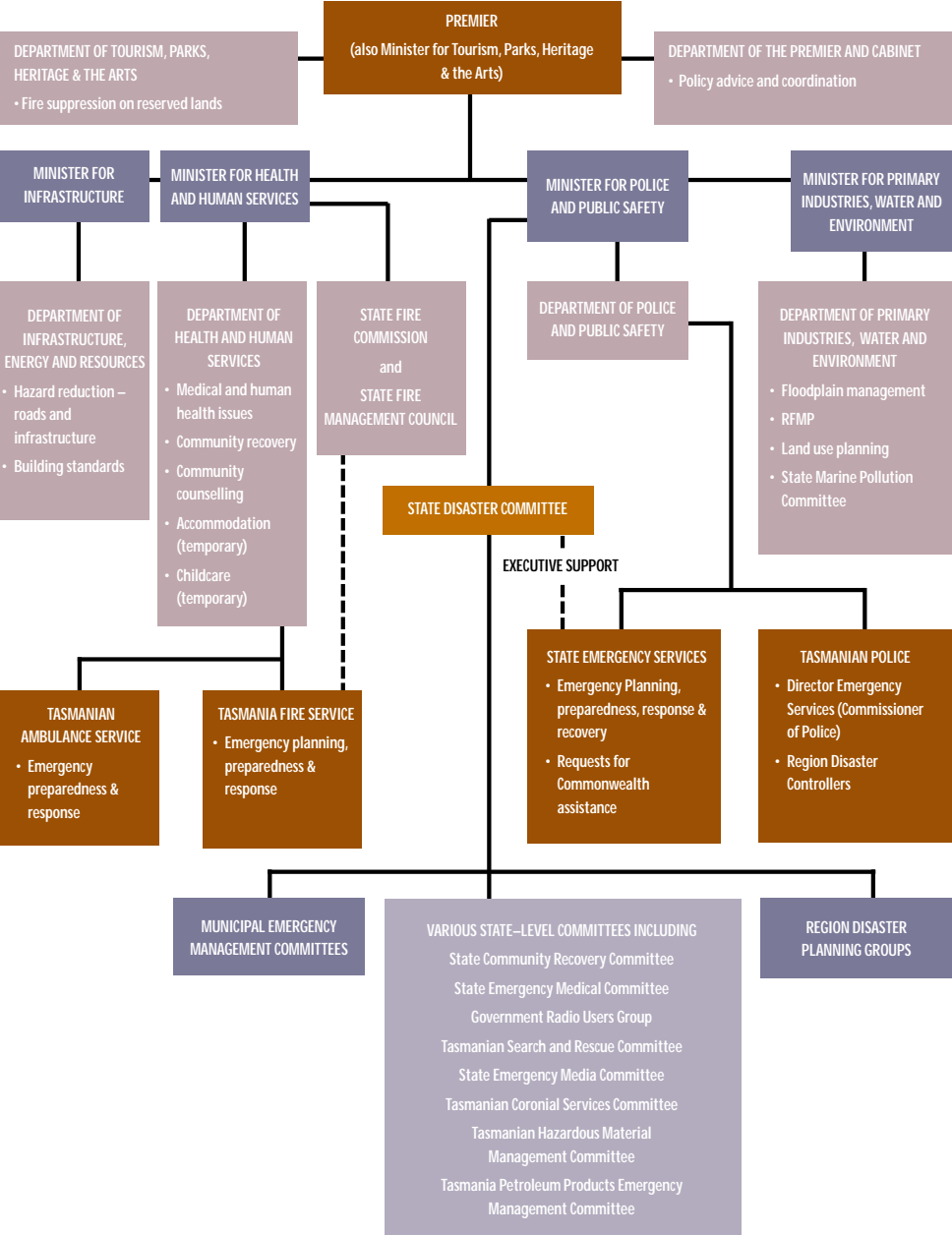


Figure 8:
Northern Territory disaster management arrangements

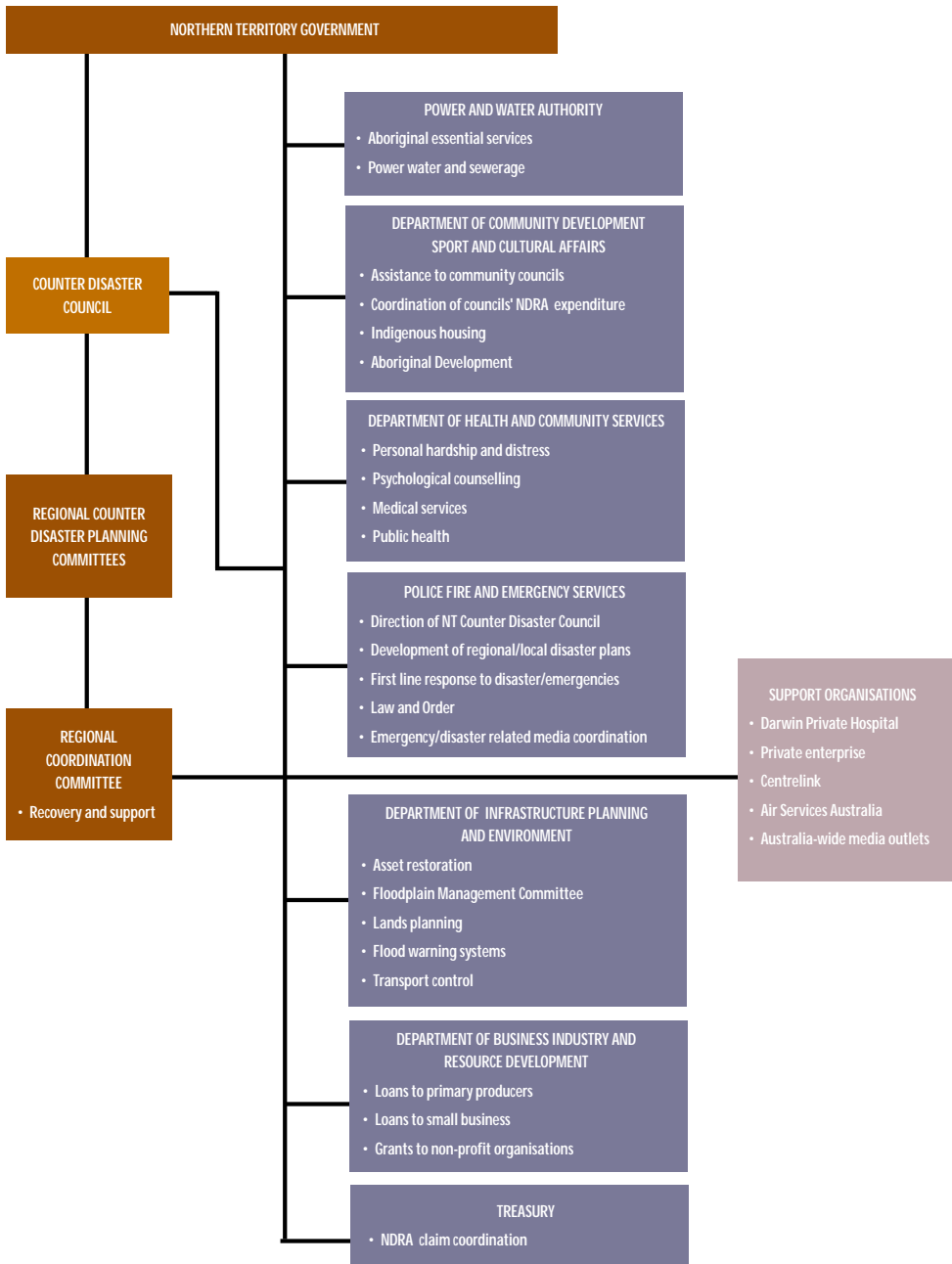
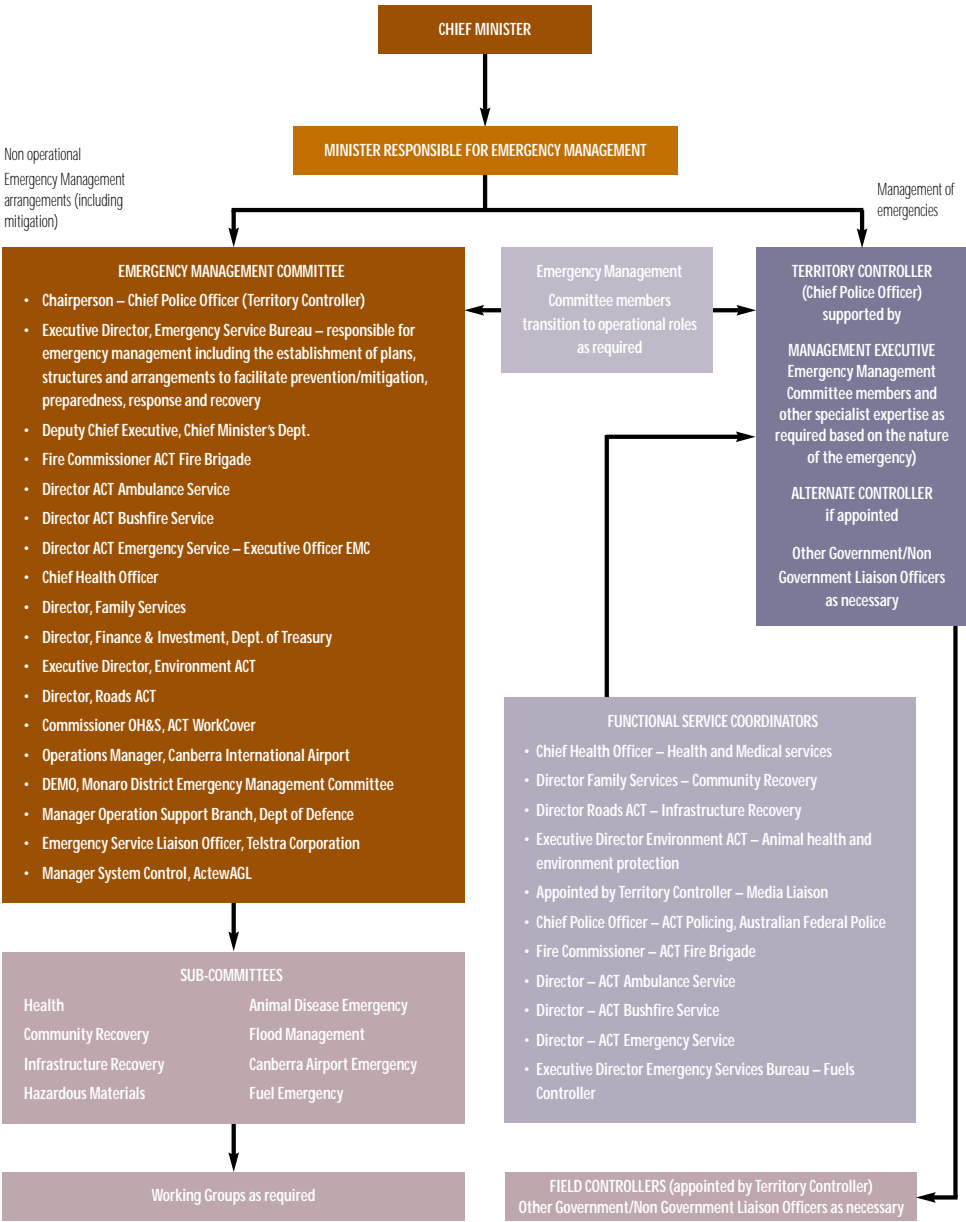


Figure 9:
Australian Capital Territory emergency management arrangements



Appendix: Acronyms and abbreviations in figures above

The following acronyms and abbreviations are used in Figure 1: Commonwealth natural disaster management arrangements:

ABS	Australian Bureau of Statistics
AFFA	Agriculture Fisheries Forestry Australia
AGO	Australian Greenhouse Office
BOM	Bureau of Meteorology
BTRE	Bureau of Transport and Regional Economics
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DOTARS	Department of Transport and Regional Services
EMA	Emergency Management Australia
EM	Emergency Management
FaCS	Department of Family and Community Services
H&A	Department of Health and Ageing
Minister for RST&LG	Minister for Regional Services, Territories and Local Government
Minister for T&RS	Minister for Transport and Regional Services
NDRA	Natural Disaster Relief Arrangements
PM&C	Department of the Prime Minister and Cabinet
RFMP	Regional Flood Mitigation Programme

Background to Disaster Mitigation Recommendations (Recommendations 11–40)

In the course of the Review, the High Level Group considered a number of papers on specific aspects of disaster mitigation. Key issues from the papers, which are not dealt with elsewhere in the Report and which formed the background to Recommendations 11–40, are outlined below.

Natural Disaster Costs, Expenditures and Mitigation Benefits

Cost effectiveness of investment in disaster mitigation

Overseas, particularly in the United States of America (USA), the case establishing the cost effectiveness of mitigation measures in natural disaster management has long been accepted. The USA government, through the Federal Emergency Management Agency, supports a major mitigation programme, encompassing community disaster risk assessment (Project Impact), the relocation of urban settlement from flood prone land, and major structural works. Moreover, under the disaster assistance legislation (the Stafford Act), 20 per cent of reinstatement costs of all disaster-damaged infrastructure must be directed towards improved disaster resilience and mitigation measures.

In Australia, there has been an historical dearth of detailed information on which the cost- effectiveness of mitigation measures can be assessed. However, in recent years, the combined work of Commonwealth and State agencies has achieved advances in this area, so that some baseline information on disaster costs, expenditures, and the benefits of mitigation is available.

Disaster costs

Research by the Bureau of Transport and Regional Economics (BTRE) has shown that the total economic cost of natural disasters to Australia averages more than \$1.14 billion every year (*Economic Costs of Natural Disasters in Australia*, Report 103, 2001). This estimate does not include the financial impact on regional economies and businesses, the social, emotional and intangible costs of disasters, or the costs of individual disasters costing less than \$10 million. The average annual cost of floods is \$315 million, severe storms \$284 million, cyclones \$266 million, and bushfires \$77 million per annum.

A recent Queensland study³⁸ just released has developed a methodology to identify indirect and intangible costs of disasters, including social and economic costs, and has focused on the regional economic impact of disasters to gain a more accurate picture of the cost of disasters to society.

³⁸ Handmer, J and Percovich, *Economic and Social Costs of the North Queensland January 1998 Floods* and companion *Disaster Loss Assessment Guidelines*, June 2002.

Disaster expenditure by governments

In addition to the economic cost of disasters to the nation, recent figures compiled by BTRE for this Review show that Commonwealth, State and Territory Governments spent approximately \$1 billion on natural disaster management in 2000–01. This is a conservative estimate of government outlays on natural disasters. Expenditure was primarily on disaster preparedness and response (46 per cent) and relief and recovery assistance (42 per cent). Expenditure on mitigation was 10 per cent of outlays. Annex 8: Government Expenditure Analysis³⁹ sets out for the first time these national estimates of expenditure by all levels of government on natural disasters. Table 8 details the sources of funding of emergency services in each jurisdiction.

Cost-effectiveness of disaster mitigation

Finally, the latest BTRE research report, *Benefits of Flood Mitigation in Australia* (Report 106, 2002) demonstrates substantial cost savings to communities and governments from five case studies of flood mitigation measures in three States and Territories. Notably, the benefits are evident from a wide variety of mitigation measures, dispelling the view that savings come primarily from structural mitigation measures such as levees. Significant savings and reduced damage in the individual studies range from \$0.6 million to \$29 million.

Mitigation Measures

Land use planning, development approvals and building standards

Natural disasters occur when human populations, assets and activities are affected by hazards such as flood, cyclone, storm surge, earthquake and landslides. The Australian continent is prone to a wide range of natural hazards. Inevitably, over the past two centuries, human settlement has taken place in areas exposed to varying degrees of natural hazard. As the extent and density of Australia's population increases, so too does the potential for natural disasters.

Reducing natural hazard risk in established areas is difficult and costly. It is significantly more cost-effective that proactive mitigation measures such as land use planning, development approval processes and building standards are used to provide the first level of risk control to minimise hazard exposure and reduce the magnitude of future risk.

If future natural hazard risk is to be minimised, it will be essential that each State and Territory significantly improve its current land use planning requirements to take substantial account of natural hazards such as flood, storm surge and landslip. These requirements will determine the general standard of land use planning by Local Governments, which, at the coalface of development issues, are critical players in improving future land use planning practices for natural hazard minimisation.

Additionally, the incorporation of explicit provisions relating to natural hazards in land use planning requirements will assist with current problems experienced when Local Governments reject development proposals on hazard prone land and are required to defend developers' appeals against their decisions in various land and environment courts. With no State legislative backing, the likelihood of a Local Government successfully defending its position in court is reduced. Courts and tribunals dealing with planning and development matters must be able to refer to planning legislation which contains clear provisions regarding natural hazard mitigation considerations, upon which they can base their decisions. It is important also that legislation does not provide disincentive to Local Governments seeking to restrict development on hazard prone land, in the interests of safer communities, through onerous compensation provisions.

³⁹ The full report is available online at www.btre.gov.au.

The Local Government and Planning Ministers Council has a key role to play in ensuring that disaster mitigation through effective land use planning, (underpinned by floodplain management policies), becomes an established practice throughout Australia, by ensuring that land use planning legislative regimes requiring attention to natural hazard impact are in place. The *Planning for Safer Communities* document, developed under the auspices of the National Mitigation Working Party by Emergency Management Australia, with assistance from the Royal Australian Planning Institute, provides guidelines for land use planning for natural hazards, which could be useful guidance to the Ministers Council on this issue.

Building standards, both in their own right, and used in conjunction with land use planning measures, are vital to minimising the impacts of a range of natural hazards. The design, construction standards and materials used in buildings can positively affect their ability to withstand natural hazard impacts, thus reducing damage costs and threat of injury or death to the occupiers of buildings. Consequently, the development and adoption of hazard codes into building standards is another key measure for minimisation of future risks.

There is clear evidence as to the effectiveness and cost efficiency of such measures. For example, following the devastation of Darwin in cyclone Tracey in 1974, a major research effort in wind engineering resulted in fundamental changes to building codes, building practice and building control in Australia. The economic benefits of incorporation of the wind code into new buildings across Australia over the past 26 years are difficult to quantify, but the insurance and reinsurance industry recognises them as extremely significant. Likewise, building standards pertaining to fire have had significant positive effects.

While measures relating to the wind and fire codes have been universally accepted and adopted in Australia, progress on other issues relating to building standards has not been sufficiently advanced or applied. For example, there are significant limitations to the Australian Earthquake Code, and there are no established building standards at all for housing in flood prone areas. There is a need for significant research and development in these areas. Both the insurance industry and the CSIRO have identified inappropriate design and materials as major preventable sources of damage and cost in flood impact.

Representatives from both bodies have also raised concerns regarding the current inadequate standards of building construction for hazard impact being even further compromised by perceived lower levels of compliance with building standards in some States in recent years.

Overall, the disaster mitigation benefits of importing natural hazard impact considerations in land use planning, development approval and building standards should be promoted more widely to the public, professional and industry bodies.

Building disaster resilient infrastructure

A primary area of disaster costs to governments at all levels is derived from the reinstatement of the built environment – roads, bridges, and other community assets, including public and government buildings which form part of the basic infrastructure of society. Other key elements of infrastructure are owned by the private sector or by combinations of government and the private sector. Such infrastructure frequently includes the 'engineering lifelines' of telecommunications, electricity generation and distribution networks, water and gas pipelines and reticulation networks and sewerage systems, as well as key bridges, tunnels and freeway systems.

Irrespective of ownership, when key elements of infrastructure are damaged by natural disasters, significant restoration costs result and losses are suffered by all who were dependent upon the infrastructure for service and amenity.

Building more robust, disaster resilient public infrastructure would promote significant long-term beneficial effects, through reducing the costs of infrastructure reinstatement and maximising the capacity for business and social continuity during and following disaster situations.

To achieve fundamental improvements, provision of disaster resilient infrastructure will need to become a 'mainstream' consideration of decision-makers, and committed and sustained leadership from the Commonwealth, State and Territory Governments and the support of Local Governments will be critical success factors. Infrastructure resilience strategies will need to encompass all providers of infrastructure, be it Commonwealth, State and Territory Governments, Local Governments, the private sector, or various combinations of these players.

Strategies for 'mainstreaming' mitigation include:

Local Governments

- incorporating into Council corporate, strategic, operational or management plans, policies relating to disaster mitigation and resilient infrastructure.

State and Territory Governments

- Cabinet endorsement of State and Territory Infrastructure Plans which clearly articulate a policy of achieving disaster resilient infrastructure and advocate the practice of disaster risk assessment and benefit cost analysis which incorporate disaster costs.
- the adoption of Infrastructure Project Management Guidelines incorporating disaster resilience criteria for the construction of all government infrastructure.

Commonwealth Government

- the development of Commonwealth Funding Guidelines for Major Infrastructure Provision requiring disaster resilience features in all significant infrastructure projects substantially funded by the Commonwealth Government.

Private sector infrastructure

- government requirements for impact statements for major private sector projects, (such as industrial estates, pipelines, power plants or transport infrastructure) which include disaster resilience/impact considerations in their terms of reference, and direction that such considerations be evidenced by a disaster risk assessment and cost benefit analysis incorporating disaster costs.
- requiring joint government–private sector infrastructure projects to comply with the same impact statement procedures as above.
- attaching disaster resilience conditions to government financial and tax relief incentives to business and industry.

Re-engineering current funding programmes to achieve disaster resilient infrastructure

- changing Natural Disaster Relief Arrangements terms and conditions, and consequential funding arrangements, to foster restoration of disaster damaged infrastructure to more disaster resilient levels.
- adjusting Commonwealth funding programmes for road improvements (for example, the Roads to Recovery Programme and the Black Spot Programme), to include conditions relating to disaster resilience.
- adjusting State and Territory funding programmes for Local Governments (for roads, bridges, and other community infrastructure), to include criteria for disaster resilience.
- modifying the conditions for Treasury loans (or similar) to Local Governments for provision of infrastructure to include conditions relating to disaster resilience.

Engaging the commitment of professionals integrally involved in the planning, design and construction of infrastructure will also be vital to the success of improving the resilience of infrastructure to natural hazards. Urban planners, architects, surveyors and engineers and the university faculties which train the next generation of professionals in these disciplines, will need to be effectively persuaded as to the necessity of integrating disaster resilience characteristics as fundamental design and construction features in all infrastructure.

Warning systems

The overall goal of warning systems is to provide information which persuades and enables people and organisations to take action that increases the safety of themselves and their property, and thereby reduce the deaths, injury and damage caused by the hazard concerned.

The attainment of this goal is dependent on many factors. Post-hazard analysis of the performance of warning systems often shows substantial failure of various factors, including the performance of the technological components to detect and predict the hazard, the systems for disseminating information to affected areas, and the effectiveness of the response of the communities and agencies in those areas. This serves to underscore the reality that effective warning systems rely on the close cooperation and coordination of a range of agencies, organisations and the community throughout all stages of development.

A key issue regarding the dissemination of warnings in Australia is that radio and television broadcasting is becoming increasingly networked (or centralised). This makes it difficult to place local warnings on radio and television, and increases reliance on other warning strategies, many of which are not equal to the task of information dissemination over large, often remote areas. Disaster management authorities regard the lack of legislative requirements for broadcasters to disseminate natural disaster warnings to the public via radio and television as an increasingly critical issue, requiring urgent attention. Dependence on uncertain degrees of cooperation by broadcasters to provide warnings of impending disaster to the public is poor risk management when lives and property are seriously threatened.

There has been considerable investment in flood warning systems throughout Australia, but the Bureau of Meteorology advises that there is an ongoing need for systematic improvements, with some warning systems remaining quite rudimentary, and insufficient for the needs of the locations they serve.

At a national level, considerable research is needed on technical issues, the improvement of which could provide better warning systems for a variety of hazards. As well, a better understanding of management of warnings and community engagement is required, particularly in relation to the development of local area warning delivery methods. Research and guidance on these issues needs to be disseminated to all relevant authorities engaged in the provision of warning systems.

Routine post-disaster assessments of the effectiveness of warning systems, including:

- the degree to which the warnings resulted in intended community behaviour
- the appropriateness of the information provided
- the effectiveness of warning delivery methods, and
- the cost benefit and cost efficiency of the warning system

would make an important contribution to improving current warning systems, both locally, and nationally.

Public awareness and readiness

Public awareness of natural hazard issues is arguably the least practised and most poorly funded mitigation measure in Australia. With very few exceptions, it is undertaken as a limited auxiliary activity to other disaster management initiatives, rather than as a sustained strategic measure to raise public consciousness and understanding of hazard risks, impacts and minimisation.

Genuine efforts in public awareness are certainly made from time to time. However public awareness programmes are generally limited by the following deficiencies:

- low levels of resources
- lack of professional design and delivery
- limited audiences being targeted
- few programmes being subject to evaluation to assess success or otherwise, and
- efforts being sporadic rather than sustained.

The basic purpose of public awareness and education is to impart the knowledge of the nature of disasters and what to do to increase personal safety before and during their occurrence. From another perspective, public awareness and education should also be recognised as an essential change management tool to gain public acceptance of and support for the range of government initiatives recommended for improved mitigation, and to effect behavioural shifts at community and individual level in support of mitigation.

If major changes in disaster mitigation are to be implemented in Australia, they will need to be underpinned by a comprehensive and sustained public awareness strategy. The strategy should encompass both nationwide collaborative action by all jurisdictions to improve practice in community awareness, education and warnings, and a particular focus on applications at the local and community level.

Flood mitigation

Flood risk can be categorised into three types: existing risk, future risk and residual risk, which continues even after mitigation measures are put in place.

The average annual cost of floods in Australia (costing more than \$10 million each) has been approximately \$315 million per annum since 1967, and constitutes 29 per cent of national disaster costs.

Flooding is one of the natural hazards most able to be addressed by mitigation measures, because it is relatively foreseeable. Areas at risk can be identified using historical records, modern data and predictive tools, and floodplain management strategies developed to reduce the risk to communities.

A wide range of flood mitigation measures is used. These include voluntary government acquisition of properties at repeated or high risk, land use planning and zoning to prevent further development in areas at risk, flood warning systems that enable evacuation of at risk communities, and physical protective measures such as detention basins and levees. Australian case studies on the costs and benefits of flood mitigation, published by BTRE Report 106, demonstrate the cost effectiveness of such mitigation measures.

Under the Regional Flood Mitigation Programme, established by the Federal Government in 1999–2000, flood mitigation is jointly funded by the Commonwealth, State and Territory and Local Governments, usually on the basis of one third funding from each level of government. There is continuing high demand for the programme.

Moving to a three-year rolling programme with indicative planning and budgets will improve the effectiveness and operation of the programme as will a range of other improvements suggested in submissions to the High Level Group, which are dealt with in the Recommendations.

Disaster risk assessment and post-disaster assessment

In the past several years, the concept and practice of disaster risk assessment and management has been widely accepted in Australia by all levels of government. The efforts of Emergency Management Australia, and State and Territory agencies have resulted in the successful adaptation of the *Australian and New Zealand Risk Management Standard 4360* into the disaster management field. The Natural Disaster Risk Management Studies Programme

has been influential in greatly increasing the number of disaster risk assessments nationwide, and the development of mitigation options based on these assessments.

There is significant value in having a well developed and practical methodology for risk assessment used across Australia, for purposes of thoroughness, reliability, and comparability. However, not all disaster risk assessments undertaken use the *Australian and New Zealand Risk Management Standard 4360* methodology. This could potentially cause difficulties and anomalies in a competitive environment for research and programme funds. As well, inconsistent results from disaster assessments using unproven risk assessment methodologies could threaten the credibility of disaster management generally.

Post-disaster assessments are logical good practice. Analysis of the results can lead to confirmation of good practice or identification of areas of process, policy or training relating to response, relief and recovery that need to be addressed for future disaster events. As well, post-disaster assessments can provide particular lessons relating to disaster mitigation to improve community safety for the future. It is equally important that processes are in place to ensure that post-disaster assessment recommendations are acted upon.

Research

Greater investment in research also has significant potential for high ratios of benefit to cost. Research into wind codes for building construction following Cyclone Tracey in 1974 demonstrates undisputed and continuing savings in damage costs (see Annex 3). For the future, greater research into hazard resilient building standards (together with improved building compliance) could lead to reduced losses resulting from storms such as those which caused many hundreds of thousands of dollars damage to new houses at Port Stephens, NSW in 2001. Similar benefits are achievable from increased research into building resilience under flood, storm surge and earthquake impacts. Research into building design, standards and materials could also reduce vulnerability to bushfires such as those that have devastated parts of New South Wales in 2001 and 2002.

Similarly, research such as that recently released by CSIRO on risk indicators for bushfire will cause a major reassessment of land use and risk management across Australia. Regrettably, the new research follows an interval of 40 years where bushfire risk indicators remained unchanged, and it is inevitable that many land use and fire management decisions have been based on information that has led to serious underestimation of risk. In a rapidly changing environment, such long intervals between major research work can result in losses exponentially larger than the cost of a consistent investment in research that supports continuous improvements in the ways human settlement and activity intersect with natural hazards.

Data collection and analysis

A key to sustained investment in disaster mitigation, is the development of data collections by relevant agencies across all levels of government. Current efforts to assemble information indicating disaster costs and undertake research to support mitigation investment have encountered significant information gaps. Any long-term, significant investment by governments must necessarily be supported by current, comprehensive and authoritative information. Costing methodologies for expenditure on natural disaster management need to be further developed and progressively extended as a priority.

The HLG has proposed in Reform Commitment 2 that COAG agree to 'establish a national system of data collection, research and analysis to ensure a sound knowledge base on natural disasters and mitigation'. Such a national system should encompass data, research and analysis on the costs of disasters, government expenditures, risk assessment and mitigation measures, and post-disaster information. Recommendations 4.1, 4.2, 6 (bullet point 1), 11, 40, 50 (part 4) and 66 (bullet point 2, sub point 6) deal with related areas of research, data collection and analysis.

Government Expenditure Analysis

This annex is an extract from a more comprehensive paper on natural disaster related government expenditure completed by the Bureau of Transport and Regional Economics (BTRE) for the COAG Review. The full paper includes recent and historical expenditure, background information, a discussion of data gaps and limitations and a number of attachments containing detailed expenditure data.⁴⁰

Key Findings: 1999–2000 and 2000–2001

Natural disaster related expenditure for the last two financial years (1999–2000 and 2000–2001) are the focus of this report. It is for these most recent years that data are most reliable. Historical expenditure since 1990–1991 is provided in a later section of the full report. Though useful, these data are somewhat less reliable.

The estimates presented in this report are based on the best currently available information. Data gaps and other limitations of the analysis are discussed in Section 2 of the full report. Given the limitations of existing records, it is reasonable to view the estimates provided in this report as significant under estimates of actual government expenditure on natural disasters. Most agencies believe this to be the case.

Combined government expenditure

Table 1 provides a breakdown of Commonwealth and State and Territory natural disaster expenditure for 1999–2000 and 2000–2001.

In 2000–2001 combined Commonwealth and State and Territory Government expenditure on natural disasters was approximately \$1 billion or \$52 per person. In 1999–2000 the figure was around \$814 million or \$42 per person. Over the period 1967 to 1999 natural disasters (with a total cost per event over \$10 million) cost the Australian community an average of \$1.14 billion each year in 1999 prices.⁴¹

Figures 1 and 2 show the split between the four expenditure categories identified—preparedness and response, relief and recovery, mitigation and other related expenditure. Almost half of total government expenditure for the last two years has been on preparedness and response. Relief and recovery expenditure has been the next largest category with 38 per cent in 1999–2000 and 42 per cent in 2000–2001. Mitigation and other related expenditure were relatively smaller contributors.

⁴⁰ Available at www.dotars.gov.au

⁴¹ BTE, *Economic Costs of Natural Disasters in Australia* Report 103, Canberra, 2001, p. xvi.

Table 1:

Commonwealth, State and Territory natural disaster expenditure for 1999–2000 and 2000–2001 (\$million)

Expenditure Category	1999–2000			2000–2001		
	State/ Territory	Cwlth	Total Govt Expenditure	State/ Territory	Cwlth	Total Govt Expenditure
Preparedness and response	383	13	397	441	13	454
Relief/recovery	183	123	306	167	263	430
Mitigation	51	41	92	60	47	106
Other related expenditure	8	12	20	10	14	23
Total expenditure	625	189	814	677	337	1 014

Note: Figures may not add to totals due to rounding. See notes (a) to (j) in attachment 1 of the full report and notes on individual State – Territory tables in attachment 2 of the full report.

Figure 1:

Total government natural disaster expenditure by category 1999–2000

Note: See notes (a) to (j) in attachment 1 of the full report and notes on individual State and Territory tables in the full report.

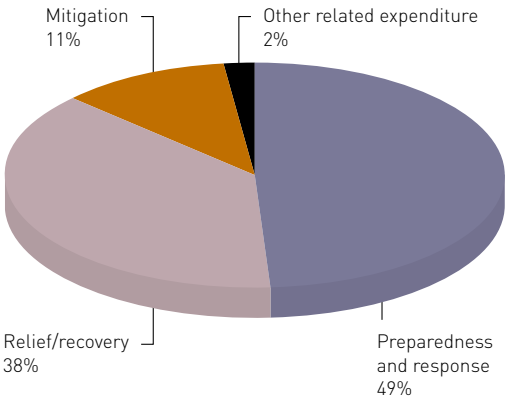
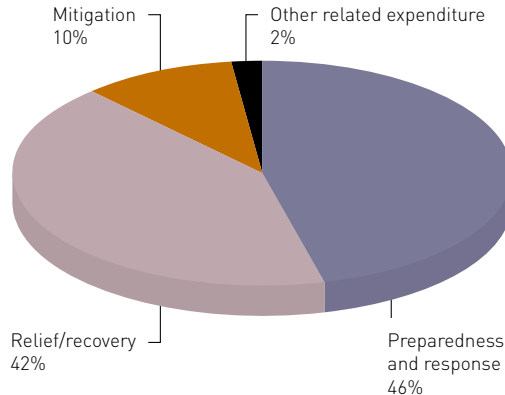


Figure 2:**Total government natural disaster expenditure by category 2000–2001**

Note: See notes (a) to (j) in attachment 1 of the full report and notes on individual State and Territory tables in the full report.

**Commonwealth Government expenditure**

The detailed Commonwealth expenditure data, consolidated to include all agencies, are in attachment 1 of the full report. Summary tables and charts are set out below.

Total Commonwealth natural disaster related expenditure in 1999–2000 was approximately \$189 million or \$10 per person, which increased to \$337 million or \$17 per person in 2000–2001 with the introduction of a range of relief and recovery assistance packages (Table 1).

The relief and recovery category dominates Commonwealth expenditure in both years (65 per cent in 1999–2000 and 78 per cent in 2000–2001), reflecting the size of NDRA⁴² payments (see Figures 3 and 4). Mitigation is the next largest category (22 per cent in 1999–2000 and 14 per cent in 2000–2001), followed by preparedness and response (7 per cent in 1999–2000 and 4 per cent in 2000–2001). A number of substantial relief and recovery programmes (such as the Flood Assistance Package) were not in operation until the 2000–2001 financial year.

Figure 5 shows that the Department of Finance and Administration (DoFA), which administers the NDRA, dominated expenditure compared to other Commonwealth agencies in 1999–2000 (with approximately 65 per cent of the total). However, in 2000–2001 the introduction of the Flood Assistance Package meant that AFFA⁴³ accounted for approximately 46 per cent of total Commonwealth expenditure, followed by DoFA with 32 per cent (Figure 6).

Recent machinery of government changes mean that from 2001–2002, the DoFA expenditure (NDRA and NDRMSP⁴⁴) has been moved to the Department of Transport and Regional Services (DOTARS).

The Bureau of Meteorology (BoM) is the other major agency for natural disaster expenditure with around 20 per cent of the total in 1999–2000 and 11 per cent in 2000–2001.

⁴² Natural Disaster Relief Arrangements (NDRA).

⁴³ Department of Agriculture, Fisheries And Forestry – Australia (AFFA).

⁴⁴ Natural Disaster Risk Management Studies Programme (NDRMSP).

Figure 3:

Total Commonwealth expenditure by category 1999–2000

Note: See notes (a) to (j) in attachment 1 of the full report.

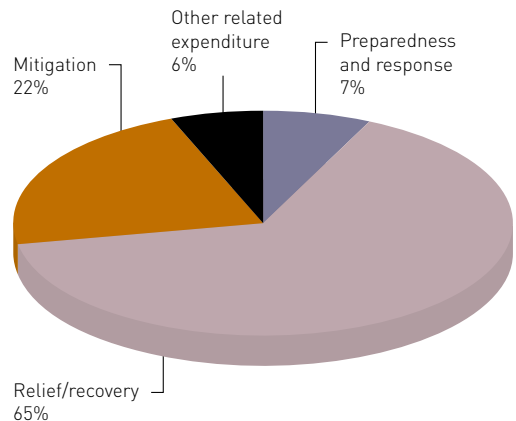


Figure 4:

Total Commonwealth expenditure by category 2000–2002

Note: See notes (a) to (j) in attachment 1 of the full report.

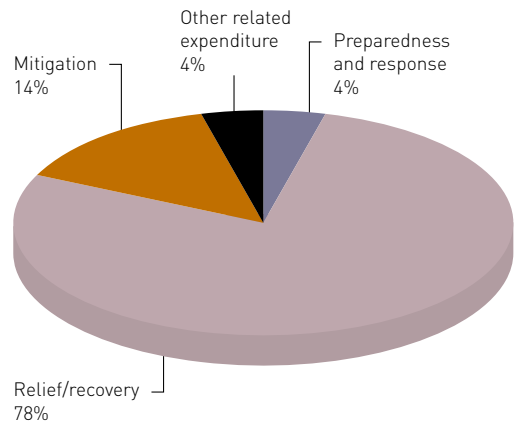


Figure 5:
Commonwealth expenditure by agency 1999–2000

Notes: From 2002 the Australian Geological Survey Organisation (AGSO) is known as Geoscience Australia. EMA = Emergency Management Australia. FACS = Department of Family and Community Services. CSIRO = Commonwealth Scientific & Industrial Research Organisation. DHAC = Department of Health & Aged Care.

See notes (a) to (j) in attachment 1 of the full report.

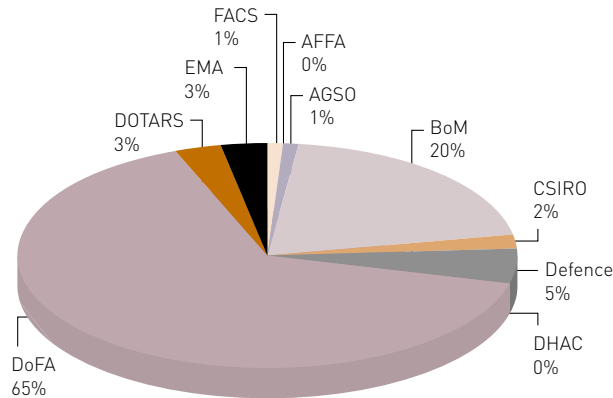
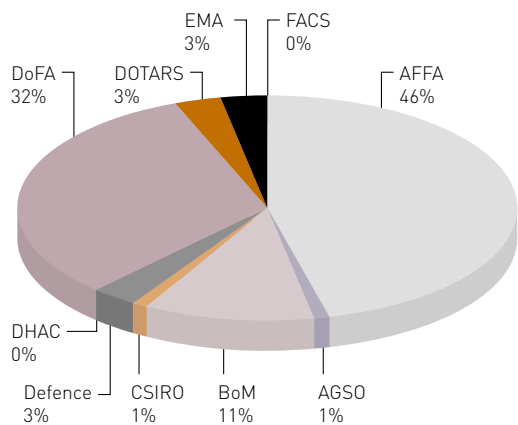


Figure 6:
Commonwealth expenditure by agency 2000–2001

Notes: From 2002 the Australian Geological Survey Organisation (AGSO) is known as Geoscience Australia. EMA = Emergency Management Australia. FACS = Department of Family and Community Services. CSIRO = Commonwealth Scientific & Industrial Research Organisation. DHAC = Department of Health & Aged Care.

See notes (a) to (j) in attachment 1 of the full report.



State and Territory Government expenditure

The detailed data for total State/Territory expenditure and each State or Territory are in attachment 2 of the full report. Summary tables and charts for 1999–2000 and 2000–2001 are set out below.

Total State/Territory natural disaster related expenditure in 1999–2000 was approximately \$625 million or \$33 per person, which increased to \$677 million or \$35 per person in 2000–2001 (see Tables 1 and 3).

Figures 7 and 8 give total State/Territory expenditure by category for 1999–2000 and 2000–2001. The preparedness and response category dominates total State/Territory expenditure with more than 60 per cent of the total in both years. Relief and recovery was the next largest expenditure category with more than one quarter of the total, followed by mitigation and other related expenditure.

Table 2 provides expenditure data by State/Territory by category in 2000–2001. Figure 9 presents the same information graphically. Comparisons between jurisdictions are difficult for reasons discussed in Section 2 of the full report. However, there are some points of interest.

- The estimates are intuitively sensible in that NSW, Qld and Vic had the largest expenditures on natural disasters in 2000–2001.
- The largest component of all jurisdictions' expenditure (with the exception of the NT) in 2000–2001 was preparedness and response. The largest component of NT expenditure was relief and recovery. Relief and recovery expenditure was also substantial for NSW and Qld.

The estimates for 1999–2000 show a similar pattern.

Table 3 shows per capita expenditure by State and Territory for the last two years.

Figure 7:
Total State and Territory expenditure by category 1999–2000

Note: See notes on individual State/Territory tables of the full report.

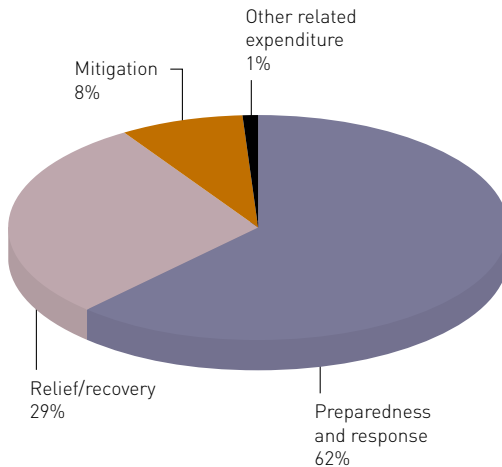
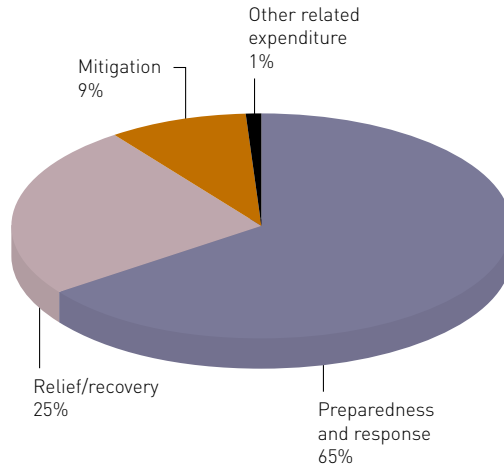


Figure 8:**Total State and Territory expenditure by category 2000–2001**

Note: See notes on individual State/Territory tables of the full report

**Table 2:****Natural disaster expenditure by State and Territory 2000–2001**

State and Territory	Preparedness and response	Relief/recovery	Mitigation	Other related expenditure	Total
(\$million)					
NSW	133	66	14	2	215
QLD	81	69	10	na	160
VIC	99	4	6	2	112
SA	37	2	9	3	51
TAS	45	0	2	na	47
NT	14	20	3	3	39
WA	17	6	4	0	27
ACT	14	0	11	na	25
Total	441	167	60	10	677

Notes: na = not available. Figures may not add to totals due to rounding.

Important: See notes on individual State/Territory tables of the full report.

Table 3:

Per capita expenditure by State and Territory 1999–2000 and 2000–2001

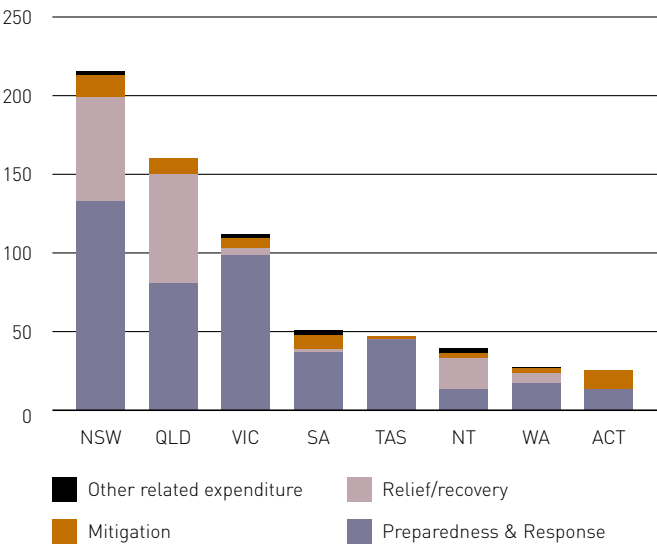
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
	(\$)								
1999–2000	71	30	120	40	30	91	22	25	33
2000–2001	80	33	199	44	34	100	23	14	35

Source: BTRE analysis of Australian Bureau of Statistics 2001, Australian Demographic Statistics (3101.0), March Quarter 2001, Table 4: Estimated Resident Population, States and Territories, p. 15.

Figure 9:

Expenditure by State and Territory by category 2000–2001

Note: See notes on individual State and Territory tables of the full report.



Local Government expenditure

Local Government expenditure on natural disasters has not been captured in the BTRE analysis. Natural disaster-related expenditure by Local Government is likely to be significant for many jurisdictions. The Australian Local Government Association (ALGA) recently conducted a survey of Local Government expenditure on natural disasters (attachment 3 of the full report). Using these survey results, ALGA provides estimates of total Local Government natural disaster-related expenditure by State/Territory for the last three years. ALGA estimates that in 2000–2001 Local Governments across Australia spent approximately \$222 million on natural disasters. On average over the last three years, ALGA found that mitigation (43 per cent) was the largest component of Local Government expenditure followed by preparedness and response (34 per cent) and relief and recovery (20 per cent).

Overseas Arrangements for Flood Insurance

The availability of flood cover in other countries varies considerably. Below is a brief summary of arrangements in comparable countries, provided by the Insurance Council of Australia.

Canada

Risk carriers	Private insurance companies
Domestic/ commercial risks	Not covered in traditional policy Optional cover is available with deductibles (excess) of 2 – 5 per cent of sum insured
Penetration	Low
Industrial risks	Cover has to be purchased separately, with deductibles of 2 – 5 per cent of sum insured
Penetration	High
Comment	Coverage too expensive for average consumer Some forms of cover with restrictive conditions are offered

France

Risk carriers	Private insurance companies backed by catastrophe reinsurance provided by a State insurance scheme
Domestic/ commercial risks	Flood cover is included by statute in property policies on payment of a percentage premium surcharge Deductible of US\$250
Penetration	Practically 100 per cent
Industrial risks	As with domestic/commercial risks Deductible of 10 per cent of the loss or at least US\$750
Penetration	Practically 100 per cent
Comment	Provides universal cover, but a certain level of insecurity because the decision as to whether an event is a catastrophe, and therefore insured or not, lies with the government No incentive for policyholders to manage risk

Germany

Risk carriers	Private insurance companies
Domestic/ commercial risks	Extended natural perils insurance in personal lines supplements fire and storm insurance with cover against perils such as earthquake, flood and landslide Storm surge is excluded Premiums and deductibles are graded by risk zone – low, medium, high
Penetration	Less than 10 per cent for buildings while packages for flood cover are becoming more widespread for contents
Industrial risks	Flood cover available in the form of extended cover for property insurance and business interruption Storm surge is excluded
Penetration	Less than 10 per cent
Comment	To date there is no reliable basis on which to calculate premiums

New Zealand

Risk carriers	Private insurance companies
Domestic/ commercial risks	Automatically included in property cover
Penetration	High
Industrial risks	Automatically included in property cover
Penetration	High
Comment	Potential losses from flooding nowhere near as high as Australia In flood-prone areas, individual insurers have withheld cover or imposed high deductibles until the risk has been mitigated or removed

United Kingdom

Risk carriers	Private insurers
Domestic/ commercial risks	Cover is generally included in home and contents policies Premium rates are often high for storm/flood Rates are broken down to individual postcodes and maps of postcodes (which cover much smaller areas than in Australia)
Penetration	95 per cent
Industrial risks	Cover is available
Penetration	100 per cent
Comment	Flood insurance market is saturated with a clear trend towards risk-reflecting premiums and better differentiation of premium rates High quality maps available through United Kingdom Environment Agency, including on website accessible by individual property owners However, following several years of high claims, concern is growing among insurers at slow progress on mitigation in some areas

United States

Risk carrier	National Flood Insurance Program (NFIP) administered by the Federal Emergency Management Agency (FEMA) Additional cover is available from private insurance companies
Domestic/ commercial risks:	NFIP insures the vast majority of buildings and contents in eligible flood prone communities Minimum deductibles (excess) of US\$500 for buildings and contents Maximum cover for homes/contents US\$250,000–100,000
Penetration	38 million properties under NFIP
Industrial risks	NFIP insures the vast majority of buildings and contents in eligible flood prone communities Minimum deductibles (excess) US\$500 for buildings and contents Maximum cover for non-residential buildings/contents US\$500,000–500,000
Penetration	In flood prone areas, penetration is high but cover is often limited
Comment	Poor risks are heavily subsidised The NFIP is in debt to FEMA for US\$800 million

EMERGENCY RISK MANAGEMENT

Other guides to good practice
Tasmanian emergency risk management project
Emergency risk management processes flow chart
Serpentine–Jarrahdale

WILDFIRE

Risk from wildfire
Community Fireguard
Bushfire Blitz
Planning for Bush Fire Protection

CYCLONE

Risk from cyclone
Cyclone Structural Testing Station

LANDSLIDE

Risk from landslide
Managing Landslip
Land Instability Assessment Schedule

FLOOD

Risk from Flood
Flood proofing–house raising
Detention basin
Levee gates

EARTHQUAKE

Risk from earthquake
Newcastle Earthquake Modelling and Risk Assessment
Australian Standard

SEVERE STORM

Risk from severe storm
Storm Safe

WARNING SYSTEMS

Warning systems
Ferry Creek fire alert siren
Severe weather warning systems
Warrego River flood warning

LAND USE PLANNING

Land Use Planning
Katherine East
Gold Coast

Emergency Risk Management

Emergency risk management (or ERM) is a risk reduction process for communities. ERM provides a framework for communities to work towards the agreement and implementation of measures which will contribute to the wellbeing of the community and the environment. The ERM process includes working through several stages: context definition; risk identification; risk analysis; risk evaluation; risk treatment; monitoring and reviewing; and communicating and consulting. The philosophy and methods of emergency risk management are a blend of traditional emergency management and the risk management approaches outlined in AS/NZS 4360:1999 Risk Management.⁴⁵

Other guides to good practice

The compendium of natural hazard mitigation good practice presented here is necessarily limited to a few specific practical examples, however, there is a wide range of other material in Australia that promotes and articulates good practice in hazard mitigation.

EMA's Australian Emergency Manual series comprises 32 guides to best practice covering a wide range of activity. Those manuals relevant to natural hazard mitigation include a suite of four Guides on flooding titled *Managing the Floodplain*, *Flood Preparedness*, *Flood Warning*, and *Flood Response* respectively, and *Reducing the Community Impact of Landslides*. Other relevant manuals dealing with specific issues include *Safe and Healthy Mass Gatherings* and *Community and Personal Support Services*.

Floodplain Management in Australia, published by CSIRO for Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) aims to provide a set of best practice principles and guidelines for the management of risks associated with flooding across the floodplains of Australia. Similarly, the New South Wales Government's *Floodplain Management Manual* is another example of a guide to natural hazard mitigation good practice. The *Manual* provides comprehensive guidance on managing the consequences of flooding for both urban development and agricultural production. It addresses flood risk in full recognition that management decisions taken in respect of the human occupation of the floodplain need to satisfy the social and economic needs of the community. The *Manual* also recognises that decisions need to be compatible with the maintenance or enhancement of natural ecosystems that the floodplain sustains.

There are a number of Australian Emergency Risk Management good practice guides. EMA, Queensland, New South Wales and Victoria have all published Emergency Risk Management guides. These guides provide a framework for the process and implementation of the practical examples discussed in more detail in this ANNEX.

In addition, there are a number of guides to good practice that are similar in nature to the examples listed in this ANNEX. For example, the NSW Rural Fire Service's *Planning for Bushfire Protection* – similar to the Western Australian example presented in this ANNEX – outlines the bushfire planning matters which need to be considered at various stages of the planning process. The document also identifies strategies to be adopted by residents in preparing for bushfire attack and their responsibility in maintaining bushfire protection measures.

A good place to begin a search for other guides to good mitigation practice is the EMA Library on (03) 5421 5244 or email on ema.library@ema.gov.au. More information about the Library is available on EMA website, www.ema.gov.au.

⁴⁵ EMA, Emergency Risk Management Applications Guide, 2000

good practice example

Tasmanian Emergency Risk Management Project⁴⁶

Tasmanian State Emergency Service

In a statewide application of the ERM process, the Tasmanian State Emergency Service (TSES) is producing a risk assessment and risk treatment/mitigation study for the three regions of Tasmania. The objectives of this significant project are to:

- conduct an assessment of major risks (risks to public safety that may cause emergencies/disasters and that require multi-organisational or whole-of-community attention) within Tasmania at the regional level
- gain a whole of community commitment to the project
- allocate risk treatment strategies to appropriate organisations
- promote risk management as a process of community development and organisational management, and
- monitor implementation of the risk treatment strategies.

The risk assessments will consider the major risk to the community of Tasmania posed by sudden or relatively sudden natural disasters arising from hazards including flooding, wildfires, severe storms, and earthquakes.

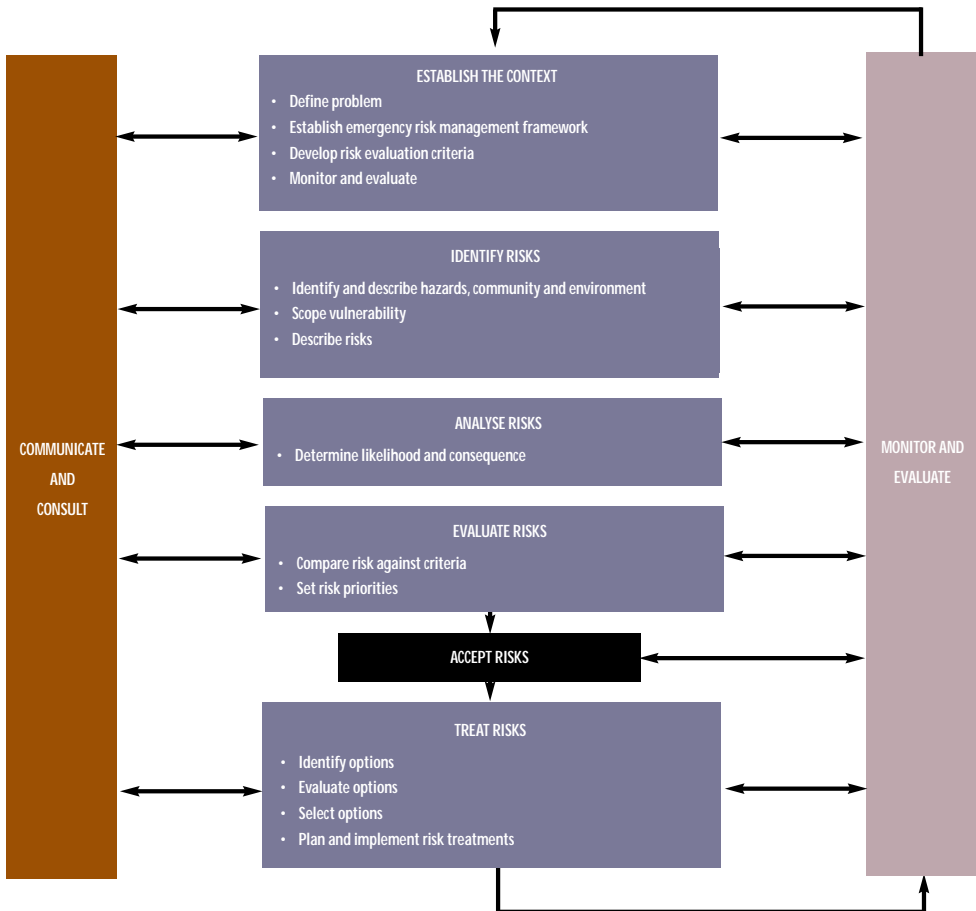
Continuing communication and consultation has been essential to ensure meaningful participation and collaboration from stakeholders such as Commonwealth, State and Local Governments, statutory organisations, philanthropic organisations, and industry and community groups.

Further Information

State Emergency Service
47 Liverpool St
HOBART TAS 7000
Telephone: (03) 6230 2700

⁴⁶ Tasmania State Emergency Service, various reports, newsletters on internet: specifically <http://www.ses.tas.gov.au/Projects.html>

Emergency Risk Management Process Flow Chart



good practice example

'What's at Risk?' ⁴⁷

Shire of Serpentine–Jarrahdale, Western Australia

Using the philosophy that ERM is not just about fires and floods but is about whatever the community perceives to be a risk or threat to its safety, wellbeing, amenity, income and lifestyle, the Shire of Serpentine–Jarrahdale in Western Australia has undergone a rigorous community based ERM process.

Between late 1999 and 2001, the Shire managed a thorough process which met the objectives of:

- providing the community with information about a safer community
- examining the risks faced by the community
- documenting a strategy to reduce each risk, and
- establishing a risk register.

The Shire adopted the philosophy that communities that were better prepared and had taken more preventative measures would require less response and recovery.

The risk register provides local emergency management organisations generally, and incident controllers specifically, with detailed information and agreed strategies for combating and treating risk.

A feature of the Serpentine–Jarrahdale experience was the thorough documentation of the project to ensure that the community had an ongoing record of processes, decisions made and agreements reached. The ERM documentation serves as an ongoing resource that informs considerations and decision making on reducing risk from hazards.

Further Information

Shire of Serpentine–Jarrahdale
Telephone: (07) 3864 3289

⁴⁷ Shire of Serpentine–Jarrahdale, 'What's at Risk?' The Case Study of our Communities Emergency Risk Management Project.

Risk from Wildfire

Every summer, Australia has large numbers of wildfires, usually started either by lightning or by people. Thankfully, few fires earn the title of 'disasters', but repeated disastrous fires near each capital city in Tas, SA, Vic and NSW have occurred, in which many people have lost their lives, or their homes or other property. The worst of these were:

- Victoria (Black Friday), 1939 – 71 dead
- southern Tasmania including Hobart (Black Tuesday), 1967 – 62 dead
- New South Wales Blue Mountains and Illawarra, 1968 – 14 dead
- southern Victoria, 1969 – 23 dead, and
- South Australia and Victoria (Ash Wednesday), 1982 – 76 dead.⁴⁸

In some communities, Local Government authorities have specific regulations controlling home siting, design and building materials in fire prone areas.⁴⁹ Other mitigation measures for fire typically, but not exclusively, include the following:

- land use management to limit development in high bushfire risk areas
- siting of structures (away from the top of slopes/ridges)
- building codes for fire hazards
- fire resistant building materials
- planting of fire-resistant vegetation
- bushfire breaks
- controlled (or prescribed) burning
- removal of bushfire 'fuel' (rubbish, branches, leaf litter) from around house and gutters
- secure storage of flammable materials (wood, paint and fuel)
- fire weather warning systems
- community awareness of bushfire risk
- sufficient water supply and hoses
- protective clothing, and
- fire evacuation plan.⁵⁰

⁴⁸ EMA, Hazards, Disasters and Survival, 1997, p.5.

⁴⁹ EMA, Hazards, Disasters and Survival, 1997, p. 5.

⁵⁰ http://www.ema.gov.au/3managmentcomminfo/specific_measures.html

good practice example

Community Fireguard⁵¹

Country Fire Authority, Victoria

During a major bushfire many people may have to face a fire without the support of Country Fire Authority (CFA). High demands on firefighting vehicles in such situations means CFA cannot provide every person and home with individual protection. CFA's Community Fireguard program encourages people to help themselves. CFA's Community Fireguard program is about small groups of residents who – with the help of a CFA facilitator – work together to deal with the bushfire threat.

Community Fireguard groups may comprise a few neighbours living in high fire risk areas. They may also be formed by existing groups such as Landcare or conservation groups which are interested in reducing the fire threat. With support from CFA, such groups work together to develop simple, inexpensive and effective fire safety strategies.

Community Fireguard groups learn about fire behaviour and how fires destroy lives and homes. With this understanding, groups develop the best strategies for their local community – strategies which work because they have community ownership and support. Groups make decisions about the best way to protect themselves in a way that fits their lifestyle, environment, physical capabilities, finances and experience. Each Community Fireguard group focuses on its own special needs, and draws on the support of Community Fireguard facilitators whenever needed.

The Henley Ridge Community Fireguard Group, located near Milawa in North East Victoria, was concerned by the lack of water access and storage in their high risk area. Local residents and the Fireguard group members heard about a 'Fire Access Road Subsidy Scheme'; to develop, maintain or improve fire access tracks, roads, crossings, as well as improve water storage and access to water for fire fighting purposes.

The group then went about informing their local council, with supporting documentation coming from the local brigade. After a bit of paperwork, the group procured a 20,000 gallon water storage tank which doubled the local estate's water storage. Ten thousand gallons of this supply were dedicated to fire fighting purposes. Its water pressure of 800 litres/minute now allows fire tankers to fill in five minutes. Since this project other local groups have had success pursuing similar fire safety issues.

Further Information

Email: cfg@cfa.vic.gov.au
or contact the Community Fireguard Facilitator at a regional CFA office

⁵¹ <http://www.cfa.vic.gov.au/cfgindex.html>

good practice example

Bushfire Blitz⁵²

Country Fire Authority, Victoria

Using the philosophy that living with risk of bushfire is part of the Australian summer ethos the CFA has developed an intensive information and education program to raise community awareness, stimulate local bushfire planning, and strengthen the bond between local CFA Brigades and the community.

Delivered in 1500 street corner meetings across the state by over 50 trained presenters and hosted by local Brigades, Bushfire Blitz is an annual eight-week campaign designed specifically to engage local communities at the beginning of the fire season. Bushfire Blitz meetings are held on weekends and early evenings, are about an hour long, include a street walk, and are deliberately relaxed and informal.

The purpose of the campaign is to improve the self-reliance and capability of the community in the event of a bushfire, to change community expectations regarding emergency service delivery, and to generate an informed and active planning process amongst residents.

The key messages of the campaign are that there will not be a fire truck at every home in the event of a large fire and that the Fire Brigade will be concentrating on the war not the small battles.

The Bushfire Blitz campaign is one of a number of mechanisms to get information to communities to help develop survival strategies.

Further Information

Neil Bibby
Country Fire Authority
n.bibby@cfa.vic.gov.au
www.cfa.vic.gov.au

⁵² <http://www.firewise.org/nfpa00/nbibby/main4.html>

good practice example

Planning for Bush Fire Protection

**Western Australian Planning Commission
Fire and Emergency Services Authority**

Planning for Bush Fire Protection forms the foundation for fire risk management planning within Western Australia at a community and land development level. It provides performance criteria and acceptable solutions to minimise the impact of fire on communities.

The primary focus of Planning for Bush Fire Protection is on new subdivisions and related development in rural and in urban-rural communities and town sites – particularly where these may be exposed to risks of bushfires.

Planning for Bush Fire Protection is intended for use by personnel who plan, regulate or provide advice as part of the land development process, as well as by communities, local government, and fire and emergency services personnel involved in fire risk management.

The document addresses a number of important fire risk management and planning issues including:

- statutory planning process as it relates to fire protection
- bush fire hazard assessment
- definition of bush fire prone areas
- fire protection requirements for subdivision and development, and
- strategies available to limit vulnerability to fire.

Further Information

Western Australian Planning Commission
Telephone: (08) 9264 7777

Risk from Cyclone

In Australia, over the period 1967 to 1999 the total cost of tropical cyclones accounts for about \$8.8 billion, averaging \$266 million per year. From 1967 to 1999, 46 cyclones causing more than \$10 million damages have been recorded in Australia, with an average of 1.4 cyclones per annum. In Queensland, Western Australia and the Northern Territory, tropical cyclones are ranked in the top two most frequent hazard types. Australia's cyclone season is usually November to April.⁵³

Mitigation measures for cyclone and storm surge typically, but not exclusively, include:

- land use management to provide protection from wind and storm surge
- cyclone modelling and risk assessment
- engineering of structures to withstand wind and water forces
- complying with wind load requirements in building codes
- securing of material which would otherwise blow away and cause damage
- trimming of tree branches and cleaning of gutters
- provision of safety shelters
- provision of protection for boats, building contents and other possessions at risk
- severe weather warning systems, and
- evacuation planning.⁵⁴

⁵³ Geoscience Australia CD contribution to GP Guide – Xun Guo Lin

⁵⁴ http://www.ema.gov.au/3managmentcomminfo/specific_measures.html

good practice example

Cyclone Structural Testing Station⁵⁵

James Cook University

The Cyclone Structural Testing Station researches the effects of wind forces on low-rise buildings, particularly domestic buildings, whether it be the overall construction, or the components inherent in them. The reason for concentrating on low-rise buildings is that people are normally in their houses during severe wind effects. Thus, houses must be strong enough to protect the occupants. Very few domestic buildings have the same engineering input or supervision to ensure the structural safety that multi-storey commercial buildings have.

The Station's research findings are incorporated into building regulations and trade manuals.

The Station provides a service to the building industry as an authority for testing the effects of wind forces on buildings and building components. Where standard test methods are not available the Station has developed its own techniques to accurately simulate the effects of wind pressures on structural elements. It has established itself as the leading independent testing authority in Australia for wind effects on buildings and components. Because of its high professional standards and integrity the Station has earned a position of confidence and trust within the research and development sections of many manufacturing companies.

Some of the tests that are frequently carried out include:

- cyclone wind risk assessment of communities
- static and cyclic racking and uplift on full scale buildings, bracing walls and ceiling diaphragms
- determination of terrain categories
- cyclic or static loading of roof cladding (sheeting or tiles), joints and wall cladding
- water permeability of, and cyclic or static uplift on, and flexure of, walls
- lateral loading of walls and fences
- wind-borne debris impact on windows and screens
- pressure loading of glass, and
- withdrawal strength of fasteners.

Truss hold down joint

image courtesy of James Cook University



Further Information

Cyclone Structural Testing Station
James Cook University
TOWNSVILLE QLD 4811
Telephone: (07) 4781 4340
Website: <http://www.eng.jcu.edu.au/csts>

⁵⁵ http://www.eng.jcu.edu.au/csts/pdt_tst.htm#

Risk from Landslide

Landslide in Australia, for the most part, is not seen as a major threat to our urban communities. However, this general belief is far from the reality of the situation. In Australia, there have been 37 recorded fatal landslides since 1842, which have been responsible for the deaths of 83 people. It is almost certain that these statistics are incomplete and that the number of fatalities is much higher.⁵⁶

Mitigation measures for landslide typically, but not exclusively, include the following:

- professional advice when considering initial use of landslide prone land
- landslide modelling and risk assessment
- site specific geotechnical assessment
- limiting changes to natural landscape
- control of surface and sub-surface water and where possible drainage offsite
- retaining and increasing vegetation
- construction of all building footings in accordance with the Building Code of Australia and engineering advice, and
- approved engineer-designed cuts, fill and retaining walls.⁵⁷

⁵⁶ Geoscience Australia CD contribution to GP [*exp] Guide [*date] – Matt Hayne

⁵⁷ Shire of Yarra Ranges, New Guidelines for Managing Landslip –sourced from Internet-
<http://www.yarraranges.vic.gov.au/upload/Landslip%20brochure%2Epdf>

good practice example

Managing Landslip⁵⁸

Shire of Yarra Ranges

Landslip is a fact of life for the Shire of Yarra Ranges. The types of landslips that occur in the Shire include falling boulders, debris flows, slow long-term earth movements, small landslips up to the size of a residential block and large landslips involving entire hillsides. Some landslips move relatively frequently whereas others have not moved for hundreds perhaps, thousands of years.

Poor hillside and land development practices such as excessive cutting and filling, uncontrolled water run-off or uncontrolled removal of vegetation is known to increase landslip potential. Development is known to induce landslips even when there is no evidence of such failures in the past.

In the interests of community safety and environmental protection, the Council commissioned a Shire-wide study of landslip risk and has applied new development controls to manage the risk of landslip. Planning controls ensure new development takes potential landslip risk into account and require property owners to adopt improved hillside development practices.

Key development controls for sites with potential landslip risk range from seeking professional advice before starting construction work to providing approved engineer designed cuts, fills and retaining walls.

Further Information

Shire of Yarra Ranges
Telephone: 1300 368 333

⁵⁸ Copied from
<http://www.yarraranges.vic.gov.au/upload/Fact%20Sheet%20Landslip%20Epdf>
<http://www.yarraranges.vic.gov.au/upload/Landslip%20brochure%20Epdf>

good practice example

Land Instability Assessment Schedule⁵⁹

Hobart City Council

In recognition of the increasing pressure to develop steep land in its municipal area, Hobart City Council in conjunction with Mineral Resources Tasmania developed a draft Land Instability Assessment Schedule to apply to the assessment of development sites with potential for land instability. The schedule has since been embraced by other councils in the preparation of draft planning schemes.

The schedule's objective is: 'To ensure that land is capable of supporting any proposed development and that any proposed development will not cause or accelerate land instability on a particular site or adjacent land'.

In order to meet this objective, a land instability investigation report is required to be submitted with a development application when the slope of the development site exceeds the threshold slope angle stipulated for the relevant geology type. Threshold angles are stipulated for all geology types found within the planning area.

Where the land instability risk has determined that the site is capable of supporting the proposed development and will not cause instability on any other land, any recommendations for mitigation and management measures are to be transposed into conditions for planning approval provided the application is ultimately approved.

The Land Instability Assessment Schedule has the following benefits with respect to risk reduction and land use planning:

- benefits of a performance based development assessment approach
- enables development on land not exceeding the threshold slope angle to be more rapidly approved, and
- development assessments that consider multi-hazard risk, for example, geotechnical assessment may be required to address one or more of the following risks:
 - potential for landslide
 - erosion
 - foundation movement
 - waterlogging/flooding
 - river bank collapse, and
 - impact of vegetation removal.

Clear and precise assessment requirements, such as the requirement for land instability investigations depending on the threshold slope angle for different geology types.

Further Information

Hobart City Council
Telephone: (03) 6238 2711

⁵⁹ Hobart City Council. (2001). Draft Schedule Land Instability Assessment.

Risk from Flood

Flooding is one of the more frequent natural hazards that threaten the lives and economic wellbeing of Australians. A flood is caused when water inundates land which is normally dry. While the pattern of flooding varies, there are few areas of the country where the community is not at some risk. Floods cost Australia \$400 million per year on average. There are effective ways that authorities and individuals can reduce the damaging impact of floods. Such mitigation measures include: limiting or banning floodplain development; use of dams; diversions and levees; building relocation; raising or flood-proofing; provision of warning services; and practical community preparedness information.⁶⁰

Mitigation for flood typically, but not exclusively, includes the following.

- structural works measures such as flood control dams, retarding basins, levees, bypass floodways, and channel improvements
- property modification measures such as voluntary purchase, house raising, flood proofing buildings, and ensuring flood access provisions
- flood mapping
- flood modelling and risk assessment
- land use management limiting floodplain use to non-vulnerable elements
- engineering of structures in floodplain to withstand flood forces
- relocation of structures out of the floodplain
- flood resistant building materials
- building design such as elevated floor levels
- storage and sleeping areas elevated above flood levels
- flood warning systems
- community awareness programs, and
- flood evacuation preparedness including boats and rescue equipment.⁶¹

⁶⁰ Geoscience Australia CD contribution to GP Guide [*date] Miriam Middlemann

⁶¹ http://www.ema.gov.au/3managementcomminfo/specific_measures.html

good practice example

Flood proofing – house raising⁶²

Fairfield City Council

Flooding problems have occurred in a number of locations throughout Fairfield City Council area in particular along lower Prospect Creek and its tributaries, between the Georges River and the Cabramatta–Granville railway line. The catchment is highly urbanised and one of the larger urban catchments in Australia.

Wide ranges of floodplain management measures have been investigated by Council and it was found that in some areas, structural flood mitigation works are not practicable. Detailed investigations were therefore undertaken into the costs, benefits, and social acceptability of alternative measures such as house raising, voluntary purchase and improved flood warning systems.

With funding assistance from the NSW State Government, Council has embarked on a program of raising over 400 houses.

Further Information

Fairfield City Council
Telephone: (02) 9725 0222

⁶² <http://www.fairfieldcity.nsw.gov.au/default.asp?iSubCatID=567&NavCatID=157>

good practice example

Detention basin⁶³

Edmonton, Queensland

In 1991 a flood event of around a 10 year Average Recurrence Interval (ARI) affected some 95–100 residences of the town of Edmonton, Queensland. This event also flooded sections of the Bruce Highway and the main north–south railway line and affected a number of local businesses. The catchment for McKinnon's Creek is quite steep and, as such, the creek level rises quickly to its peak. In response the Cairns City Council developed a strategy for mitigation that included the construction of a detention basin to provide protection to the older sections of Edmonton from a 1 in 50 year ARI event by reducing peak flood levels.

The basin structure includes a side spillway embankment, a low flow outlet, and an inlet structure. Erosion protection works exist downstream of the outlet.

Environmental protection and enhancement of the stream and adjacent riparian vegetation was considered during all stages of the project. The project retained as much of the original creek and bank system as possible and allows most flows to pass through unimpeded. The basin and spillway have been revegetated with native grass species known for their resilience in the harsh, variable conditions experienced at the site. The basin can now be used by local residents as a recreation area. During the construction phase a series of best practice erosion controls methods were employed.

These works will provide comfort and security to residents previously affected by flooding. They will benefit some 95–100 residences and provide greater immunity to the Bruce Highway and the main north–south railway line. Disruptions to a number of local businesses will also be significantly reduced.

Further Information

<http://www.dotars.gov.au/regional/rfmp>

or

Russell Cuere

Queensland Department of Natural Resources

Telephone: (07) 3224 2719

⁶³ http://www.dotars.gov.au/regional/rfmp/newsletter_20_apr/qld.htm,

good practice example

Levee gates⁶⁴

Launceston, Tasmania

Steel sliding gates have been implemented at two railway openings in the Launceston levee. The gates are expected to hasten closure of the levee in the event of a flood and significantly reduce levee closure time and therefore delays to trains.

The installation of these gates has reduced the risk of floodwaters entering the city through the levee openings at the railway crossing points. In adverse circumstances, Launceston's emergency personnel may have as little as three hours to close the gates. This was a problem because the old sand bag closures took four hours to erect. The new gates can be closed in less than one hour from mobilisation.

The project cost \$100,000 and was funded by the Federal Government's Regional Flood Mitigation Program.

The Tasmanian Government gave strong support for the project from the outset and contributed two thirds of the cost. The Launceston City Council is contributing by providing ongoing maintenance for the project.

In the past flooding has inundated Launceston, devastating Invermay and requiring evacuation of local residents. The gates will protect lives and homes, community infrastructure, businesses and employment that are often disrupted by major flood events in Launceston.

Further Information

Launceston City Council
Telephone: (03) 6323 3241

⁶⁴ http://www.dotars.gov.au/regional/rfmp/newsletter_20_apr/launceston.htm

Risk from Earthquake

Earthquakes pose a significant risk to Australian communities. In 1989 a magnitude 5.6 earthquake struck the Newcastle region causing 13 deaths and over \$860 million of insured damage. This event demonstrated that moderate sized earthquakes, which regularly occur within Australia, could be responsible for significant damage and loss of life. The severity of the damage and the associated loss of life also highlighted the need to adequately assess the risk associated with earthquakes in the region.⁶⁵

Mitigation measures for earthquake typically, but not exclusively, include the following:

- seismic zonation
- earthquake modelling and risk assessment
- land use management to reduce development on geological areas known to amplify ground shaking
- engineering of structures to withstand ground shaking forces
- seismic building codes, enforcement of compliance and encouragement of higher standards of construction
- high standards of design for important buildings
- structural retrofitting
- earthquake insurance
- securing dangerous goods and sources of ignition
- community awareness programmes
- earthquake drills, and
- survival kits.⁶⁶

⁶⁵Geoscience Australia CD contribution to GP Guide [*date] – Trevor Dhu

⁶⁶ http://www.ema.gov.au/3managementcomminfo/specific_measures.html

Good practice example

Newcastle Earthquake Modelling and Risk Assessment

Geoscience Australia

Damage and loss of life from an earthquake is strongly related to the intensity of the ground shaking caused by that earthquake. This intensity of ground shaking is a function of the size of the earthquake, the distance to the earthquake and the local geology. By studying the historical occurrence of earthquakes, as well as detailed mapping and modelling of local geological conditions, it is possible to determine the earthquake hazard in a region. Earthquake hazard is described in terms of the chance or probability of a certain level of ground shaking occurring.

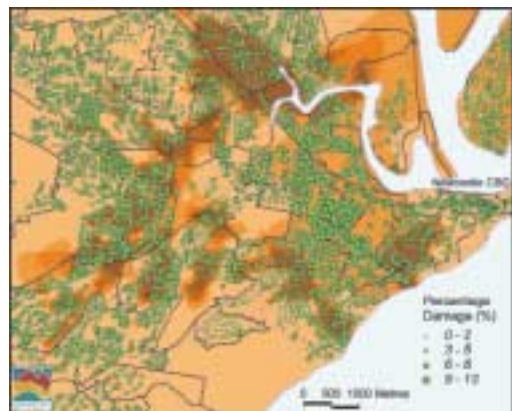
Calculating the risk posed by this hazard requires an assessment of how many elements (buildings, roads and bridges etc) are at risk in the region and how these elements will react to ground shaking caused by earthquakes. Geoscience Australia assessed this by conducting a detailed survey of the Newcastle region and made a detailed risk assessment using standard risk analysis techniques. By understanding both the earthquake hazard and the reaction of buildings to specific levels of ground shaking, it is possible to estimate the damage caused by any earthquake. Earthquake risk can then be calculated by simulating earthquakes and estimating the amount of damage that is likely to occur.

The results of this modelling are available in hardcopy form, as well as digital copies of all the spatial data. Whilst the report provides an important summary of the main results, the provision of digital datasets allows users to undertake their own analyses.

The data is used for a variety of mitigation measures include the evaluation of mitigation strategies, aiding in local land use planning as well as motivating and aiding local government initiatives on structural retrofitting. In addition to this, the results of this work have been used in the broader community for the assessment and improvement of national building codes.

Map of the estimated damage caused by simulating a magnitude 5.5 earthquake at the same location as the 1989 Newcastle earthquake.

Image courtesy of Geoscience Australia



Further Information

Trevor Dhu
Geoscience Australia
Telephone: (02) 6249 9111

good practice example

Australian Standard AS 1170.4–1993

Minimum design loads on structures – Earthquake loads Australian Standards

Australian Standard AS 1170.4–1993 sets out data and procedures for determining minimum earthquake load on structures and components and also minimum detailing requirements for structures. This standard is intended to apply to structures, particularly buildings, non-building structures, fixings and non-structural components including building services and architectural elements. Special structures including nuclear reactors, dams, transmission towers, bridges, piers and wharves may require special considerations, and are not covered by this standard.

The purpose of designing structures for earthquake loads is to:

- minimise the risk of loss of life from structure collapse or damage in the event of an earthquake
- improve the expected performance of structures
- improve the capability of structures that are essential to post-earthquake recovery to function during and after an earthquake, and
- minimise the risk of damage to hazardous facilities.

The design of structures to this standard does not necessarily prevent structural and non-structural damage in the event of an earthquake. The provisions provide the minimum criteria considered to be prudent for the protection of life by minimizing the likelihood of collapse of the structures.

Further Information

Standards Australia
<http://www.standards.com.au>

Risk from Severe Storm

Severe storms are localised events, usually affecting smaller areas than tropical cyclones and floods, so their devastating impact is often under-estimated. These storms, which impact more frequently than any other natural hazard, occur all over Australia. Each year, on average, severe storms are responsible for more damage (as measured by insurance costs) than tropical cyclones, earthquakes, floods or bushfires. Unfortunately, storms also kill people: between 5 and 10 deaths are caused by lightning strikes each year, and tornadoes have caused at least 41 deaths in Australia.⁶⁷

Mitigation measures for severe storm typically, but not exclusively, include:

- siting of buildings in the lee of hills
- engineering of structures to withstand wind forces
- complying with wind load requirements in building codes
- securing of material which would otherwise blow away and cause damage
- trimming of tree branches and cleaning of gutters
- storm water drainage systems
- planting of windbreaks
- provision of shelters for people and property including vehicles
- severe weather warning systems, and
- evacuation planning.⁶⁸

⁶⁷ EMA Disaster Awareness Program brochure (04/2000) Severe Storms, Facts Warnings and protection

⁶⁸ http://www.ema.gov.au/3managementcomminfo/specific_measures.html

good practice example

Storm Safe⁶⁹

Fire and Emergency Services Authority, Western Australia

Storm Safe was introduced by FESA in 2000, as a program concentrated in the South West region of the State. It targets those areas prone to severe storms, predominantly located in the Southern regions of Western Australia.

The main aim of the program is to encourage residents to take action to minimise the damage that storms cause to homes by having well informed communities who can prepare their homes for the storm season.

Past experience has shown that, during storm emergencies, FESA volunteers may not be in a position to protect every home and family. People need to take responsibility for their own safety. Where communities are prepared for winter storms, people and homes will be protected against minor damage such as flooding, leaving FESA volunteers able to protect those properties that have severe damage as a result of the storm.

Communities need to have the capacity to prepare for, respond to, and recover from severe storms. The Storm Safe Program helps communities to develop an understanding about how to prepare their homes and gain knowledge about appropriate behaviour during and after a severe storm. Storm Safe encourages communities to undertake preparation and mitigation measures for their homes and families.

Further Information

Fire and Emergency Services Authority
Telephone: (08) 9323 9300

⁶⁹ FESA, Community Safety Programme.

Warning Systems

The overall goal of early warning is to provide information which enables and persuades people and organisations to take action that increases the safety of themselves and their property, and thereby reduces the deaths, injury and damage caused by the hazard concerned.

It is important to recognise that early warning systems are not created in isolation by a single agency, but require acceptance by all involved that, if the goal of early warning is to be reached with a satisfactory level of effectiveness and efficiency, there must be close cooperation and coordination amongst a number of agencies and organisations throughout all stages in the development and operation of the system.⁷⁰

Warning systems take many forms and can be as simple as flood height warning indicators or fire danger level boards on roads. Alternatively, a warning system can comprise a multi-agency, multi-disciplinary approach to severe weather warnings.

⁷⁰ From Keynote lecture to International IDNDR Conference on Early Warning Systems for the Reduction of Natural Disasters, Potsdam September 1998, by John Zillman, Director BoM.

good practice example

Ferny Creek Fire Alert Siren⁷¹

Ferny Creek Community
Shire of Yarra Ranges
Victoria Police
Country Fire Authority

Office of the Emergency Services Commissioner

The fatal 1997 bushfires in the Ferny Creek area of the Dandenong Ranges prompted a small group of residents to express concern that they had inadequate means of knowing when to seek further information regarding fire danger. The residents lobbied all levels of government and the Country Fire Authority (CFA) for the installation of a CFA-type siren which could be audible within the identified Ferny Creek area. The Shire of Yarra Ranges supported the resident's request and approached the CFA for an upgraded siren. The CFA met with community groups and the Shire in an effort to explain its position that sirens are not used as warning signals as they are intended as call-out signals to volunteers and that a non-specific signal, such as a siren without accompanying information could lead residents into greater danger rather than out of danger, but this process was reported as unsuccessful.

A working group with wide representation was set up to examine options for an early warning system which might address residents' concerns. The aims of the working group included developing a number of fire alert systems options to put to the community, set up and implementation of a fire alert system in the 2000–01 fire season, and developing and undertaking a community education campaign for the Ferny Creek residents on bushfire preparedness and survival. An extensive community consultation process was established, involving a public meeting, resident doorknock, and the development of a resident information newsletter on the progress of the project.

Early on, the working group decided the development of a fire alert system was a more appropriate description of the project rather than an early warning system. An alert system was identified as a key component of bushfire preparedness. Between January and April 2000, three sirens were installed and tested. In the following fire season, the sirens were triggered on five occasions.

Conflicting views about the value of the proposed fire alert siren expressed during the process and in a subsequent evaluation seemed to relate to different priorities between community residents and emergency service organisations. The Ferny Creek trial demonstrates that the complex process of engaging the community to reduce risk through information and awareness campaigns requires social trust and building of genuine partnerships.

Ferny Creek Siren

(Image courtesy of John Irving)



Further Information

Robyn Betts
Office of the Emergency Services Commissioner
55 St Andrews Place
Melbourne VIC 3001
Telephone: (03) 9651 5244

⁷¹ OESC, Robyn Betts, Living with Risk – A summary report of the Ferny Creek fire alert siren trial - evaluation report, 2001

good practice example

Severe Weather Warning Systems⁷²

Bureau of Meteorology

Severe Weather Warning Services assist the community in preparing for and responding to tropical cyclones, severe storms, bushfires and gales over land. These services are provided through the Bureau's State based Regional Forecasting Centres (RFCs), with national coordination by the Head Office Services Policy Branch and very close links with State and Commonwealth emergency services and disaster preparedness organisations.

The Bureau provides several thousand products in a variety of formats using several delivery media. These include alerts of dangerous weather up to two days ahead, usually in text form. The alerts include wind and storm warnings, fire weather warnings and flood warnings. Warnings are also disseminated by fax, recorded voice on the Bureau Telephone Weather Services Directory and the Telstra Dial-It (1196) Weather Services Directory.

Further Information

The Bureau of Meteorology Office in your State or Territory
www.bom.gov.au

⁷² From Keynote lecture to International IDNDR Conference on Early Warning Systems for the Reduction of Natural Disasters, Potsdam September 1998, by John Zillman, Director BoM.

good practice example

Warrego River flood warning⁷³

Bureau of Meteorology (QLD)

The Bureau of Meteorology issues Flood Warnings and River Height Bulletins for the Warrego River regularly during floods. They are sent to radio stations for broadcast, and to Local Councils, emergency services and a large number of other agencies involved in managing flood response activities. Flood Warnings and River Height Bulletins are made available via radio, the internet and by fax.

Radio: Radio stations, particularly the local ABC, and local commercial stations, broadcast Flood Warnings and River Height Bulletins soon after issue.

Internet: Flood Warnings, River Height Bulletins and other weather related data is available on the Bureau's Web page at <http://www.bom.gov.au>. The Queensland Flood Warning Centre is at <http://www.bom.gov.au/hydro/flood/qld>.

Weather by Fax: Flood Warnings and River Height Bulletins are also available through a facsimile information retrieval system, along with a wide range of other weather related and climate information. Cost is about 66 cents per minute (including GST). Details about Weather by Fax can be found at <http://www.bom.gov.au/other/weatbfax.shtml>

Main Directory (FreePoll) Fax No. 1800 630 100

Flood Warnings Fax No. 1902 935 065

River Height Bulletins Fax No. 1902 935 060

Further Information

The Bureau of Meteorology
Queensland Regional Office
Telephone: (07) 3239 8700

⁷³ <http://www.bom.gov.au/hydro/flood/qld/brochures/warrego/warrego.shtml>

Land Use Planning

Land use planning can play a key part in reducing community exposure to risk. Responsible management of the environment and its resources, and flexible and responsive development can prevent or mitigate negative impacts. Effective risk reduction goes far beyond attempts to modify natural hazards – it requires careful community planning, education and considered environmental and resource management strategies. Land use planning requires the balancing of many competing interests: private sector needs, public policy requirements, equity, long-term economic development, environmental conservation, amenity, and community safety and wellbeing.

The implementation of land use policies at the local level is most effective when there is cooperation between governments and industry, and collaboration between the community and the private sector.

good practice example

Katherine East Development

Northern Territory Government

In recognition of the flood risk in Katherine, the Northern Territory Government decided around 1980 that future development in Katherine would occur on higher land at East Katherine, about two kilometres east of the CBD. Also in 1980, the Northern Territory Government approved a floodplain management policy that required floor levels of housing in flood-liaible land to be a minimum of 350 millimetres above the level of the flood used to define land liable to flooding.

The flood of 1998 was the first substantial flood since 1957 to extensively flood inhabited parts of Katherine. During the 1998 flood, almost all residential, commercial and industrial properties in the town area were flooded. Properties in East Katherine escaped inundation. Road access to Katherine, including East Katherine, was cut off. There was substantial damage to the CBD and subsequently several businesses failed. The freedom from inundation of houses in East Katherine provided an opportunity to investigate the benefits of land use planning as a flood mitigation measure. The use of land use planning to reduce the exposure to flooding in Katherine provides a useful example of the effectiveness of planning as a flood mitigation measure.

The costs of developing East Katherine compared with alternative sites were not large. The Stuart Highway adjoins the East Katherine area so that road access costs are minimal. The major costs were additional electricity and water supply costs, which are not large. The benefits are estimated to be substantial.

Further Information

Department of Infrastructure, Planning and Environment
Telephone: (08) 8999 8911

good practice example

Bushfire Management Strategy⁷⁴

Gold Coast City Council

The Gold Coast City Bushfire Management Strategy Taskforce together with Consultants, Ecograph, developed the Gold Coast City Bushfire Management Strategy, April 1998. The strategy recommends actions that affect Council administration, the operation of all fire management agencies within the City, and the community. It promotes the development of a planning strategy to assist in land use and land management decision making for bushland areas within the City.

The Guidelines for meeting Development Requirements in Potential Bushfire Hazard Areas has been developed from the strategy and assists development proponents to meet Council development requirements where they propose to undertake development in potential bush fire hazard areas (PBHAs). The guidelines are applicable until the review of the Gold Coast Planning Scheme is completed.

When planning approval for a proposed development is sought in a potential bush fire hazard area of the City (as identified on a Gold Coast Potential Bushfire Hazard Map), the development proposal is assessed against the Guidelines for meeting Development Requirements in Potential Bushfire Hazard Areas. On the Gold Coast Potential Bushfire Hazard Map, land is identified as having a high, medium or low potential bushfire hazard rating.

The outcomes sought for development in each of the areas is as follows:

- High – wherever possible, development in these areas should be avoided or, if approved, subject to conditions which aim to mitigate potential bushfire hazard.
- Medium – development in these areas is likely to be subject to a number of requirements aimed at mitigating potential bushfire hazard and protecting the safety of residents.
- Low – these areas do not warrant special planning controls. Rather the focus is on ensuring community awareness and providing advice to residents. The strategy seeks to ensure that appropriate protection is available through appropriate fire fighting infrastructure.

The requirements apply whenever development is proposed on sites, which are either wholly, or partly within areas identified as having a potential bushfire hazard. The table below summarises the requirements.

The Bushfire Management Strategy and the development guidelines have the following benefits with respect to risk reduction and land use planning:

- performance based development assessment approach
- opportunities for a site-specific analysis to assess the potential bushfire hazard particular to the site
- integration of risk reduction and sustainable development in the development guidelines
- mapping of hazard exposure

⁷⁴ Gold Coast City Council. Bushfire Management Strategy, (1998)

Gold Coast City Council. Guidelines for Meeting Development Requirements in Potential Bushfire Hazard Areas, (1999)

- clear and precise strategic objectives. for example, in high PBHAs: 'development in these areas should be avoided, or if approved, subject to conditions' and 'the street and road layout of developments must be designed so as to mitigate any potential bushfire hazard'
- recognition of risk reduction practices, for example, hazard reduction burning, that reflect natural regimes and maintain the risk reduction capacity of the natural environment, and
- emphasis on risk reduction rather than protecting property in risk areas. For example, High PBHAs are areas where development is not allowed and buildings in High and Medium PBHAs should be designed and constructed to reduce fire risk.

Further Information

Gold Coast City Council
Telephone: 1300 130 854

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Table 3: Disaster mitigation arrangements

	COMMONWEALTH	NSW	VIC	QLD
Relevant Legislation	<p><i>Meteorology Act 1955</i></p>	<ul style="list-style-type: none"> • <i>State Emergency and Rescue Management Act 1989</i> • <i>Local Government Act 1993</i> • <i>Environmental Planning and Assessment Act 1979</i> • <i>Protection of the Environment Operations Act 1997</i> • <i>Water Management Act 2000</i> • <i>Coastal Protection Act 1979</i> • <i>NSW Dams Safety Act 1978</i> • <i>Rivers and Foreshore Act 1948</i> • <i>Hunter Flood Mitigation Act 1956</i> • <i>National Parks and Wildlife Act 1974</i> • <i>Rural Fires Act 1997</i> 	<ul style="list-style-type: none"> • <i>Emergency Management Act 1986</i> • <i>Country Fire Authority Act 1958</i> • <i>Metropolitan Fire Brigades Act 1958</i> • <i>Forests Act 1958</i> • <i>National Parks Act 1987</i> • <i>Planning and Environment Act 1987</i> • <i>Water Act 1989</i> • <i>Building Act 1993</i> 	<p>There is no Act specifically governing mitigation requirements in Qld. However, the following Acts deliver some mitigation outcomes.</p> <ul style="list-style-type: none"> • <i>State Counter Disaster Organisation Act 1975 (SCDO Act)</i> • <i>Building Act</i> • <i>Fire and Rescue Service Act</i> • <i>Integrated Planning Act 1997</i>
Functions and activities covered under legislation	<p>The Bureau of Meteorology is responsible for the issue of warnings of gales, storms and other weather conditions likely to endanger life or property, including weather conditions likely to give rise to floods or bushfires</p>	<p>Generally these statutes empower the various authorities to undertake mitigation activities in the execution of their primary functions</p>	<p>Generally these statutes empower the various authorities to undertake mitigation activities in the execution of their primary functions</p>	<p>SCDO Act – State Disaster Mitigation Committee established under its auspices Fire and Rescue Service Act – mitigation of fire hazards Building Act – floor heights for dwelling above the 100 yr flood level Integrated Planning Act – State Planning Policy for natural disaster mitigation being developed under the Act</p>
Major portfolio responsible	<p>No portfolio with lead responsibility.</p>	<p>Minister for Emergency Services. No portfolio with lead responsibility.</p>	<p>No portfolio with lead department role.</p>	<p>Department of Emergency Services</p>

WA	SA	TAS	ACT	NT
<p>There is no Act specifically governing mitigation requirements in WA. However, there are a number of Acts which are relevant to prevention and mitigation:</p> <ul style="list-style-type: none"> • <i>Bush Fires Act 1954</i> • <i>Fire Brigades Act 1942</i> • <i>Fire and Emergency Services Authority Act 1998</i> • <i>Local Government (miscellaneous provisions) Act 1960</i> • <i>Local Government Act 1995</i> • <i>Western Australian Planning Commission Act 1985</i> • <i>Conservation and Land Management Act 1984</i> 	<p>No Act specifically deals with disaster mitigation. However, the following Acts deliver specific mitigation outcomes:</p> <ul style="list-style-type: none"> • <i>Country Fires Act 1989</i> • <i>Water Resources Act 1997</i> • <i>Development Act 1993</i> • <i>Local Government Act 1999</i> • <i>Animal and Plant Control Act 1986</i> • <i>National Parks and Wildlife Act</i> 	<ul style="list-style-type: none"> • <i>Emergency Services Act 1976</i> • <i>Fire Services Act 1976</i> 	<ul style="list-style-type: none"> • <i>Emergency Management Act 1999</i> 	<p>Not specifically referred to in legislation, but three Acts are relevant:</p> <ul style="list-style-type: none"> • <i>Planning Act</i> • <i>The Water Act</i> • <i>Building Act</i>
<p>The <i>Bush Fires Act 1954</i>; <i>Fire Brigades Act 1942</i>; <i>Fire and Emergency Services Authority Act 1998</i> specify activities to prevent/mitigate the effects of particular hazards.</p> <p>The <i>Local Government (miscellaneous provisions) Act 1960</i> requires building plans to be approved by FESA.</p> <p>The <i>Local Government Act 1995</i> – regulations for cyclone preparedness.</p> <p>The <i>Western Australian Planning Commission Act 1985</i> – land use planning through policy and regulations.</p> <p><i>Conservation and Land Management Act 1984</i> – requires the establishment of land management plans.</p>	<p>All Acts, with the exception of the <i>Local Government Act</i>, specify activities to prevent/mitigate the effects of particular hazards (bushfire, flood, earthquake, storm and animal and pest plant disease).</p> <p>The <i>Local Government Act</i> takes an ‘all hazards’ approach</p>	<p>Under the <i>Emergency Services Act 1976</i>, many of the SES’s statutory functions have a mitigation aspect.</p> <p>The <i>Fire Service Act 1976</i> provides powers to assist and require the mitigation of fire hazards.</p>	<p>Emergency Management preparedness, including responsibility for emergency management, Emergency Management Committee and ACT Emergency Plan.</p>	<p>The <i>Planning Act</i> enables the control of development within declared Planning Areas. The <i>Building Act</i> sets construction standards for buildings in flood and cyclone prone areas and specifies minimum floor levels.</p> <p>The <i>Water Act</i> controls activities that may affect flow characteristics in watercourses.</p>
<p>Fire and Emergency Services Authority</p>	<p>The Department of Justice has leadership of State coordinating bodies, but action is spread across portfolios based on nature of hazards.</p>	<p>The Department of Police and Public Safety through the SES and Tasmania Police.</p>	<p>Department of Justice and Community Safety</p>	<p>The Department of Lands, Planning and Environment.</p> <p>Administers the relevant Acts and chairs the Floodplain Management Committee.</p>

Table 3: Disaster mitigation arrangements (continued)

	COMMONWEALTH	NSW	VIC	QLD
Major coordination body and other disaster mitigation committees	No current coordination committees.	<p>Major Body:</p> <ul style="list-style-type: none"> The State Emergency Management Committee <p>Other Committees:</p> <ul style="list-style-type: none"> With the introduction of Emergency Risk Management, mitigation functions are carried out by the State, District and Local Emergency Management Committees Floodplain Management Committees Bushfire Management Committees 	<p>Major Body:</p> <ul style="list-style-type: none"> The Victorian Emergency Management Council (a State Emergencies Management Committee will be formed shortly) <p>Other Committees:</p> <ul style="list-style-type: none"> State Flood Policy Committee Municipal Fire Prevention Committees Municipal Emergency Management Planning Committees 	<p>Major Body:</p> <ul style="list-style-type: none"> State Disaster Mitigation Committee <p>Other Committees:</p> <ul style="list-style-type: none"> Earthquake Coordination Committee Flood Coordination Committee Tropical Cyclone Coordination Committee

Is the need for disaster mitigation reflected in State planning and development policies?

- Flood Prone Land Policy
- Bushfire mitigation arrangements in the Rural Fires Act
- Dam safety arrangements in the Dam Safety Act
- NSW Coastal Policy, 1997

Strategies for protection related to flood, bushfire and hazardous industry are built into Victoria's planning system, which consists of the empowering of legislation, the Victoria Planning Provisions and municipal planning schemes. Planning schemes contribute through:

- zones
- overlays to identify hazard areas
- degree of hazard is considered as a general decision guideline in planning
- referral of planning applications to authorities expert in mitigation
- the incorporation of other documents for emergency planning in planning schemes

A State Planning Policy on Land Use Planning for Natural Disaster Mitigation and Development Assessment under the *Integrated Planning Act 1997* is under development. Will consider hazards such as cyclone, severe storms, flooding, landslides, bushfires and earthquake. Storm surge addressed in the *State Coastal Management Plan*. Mitigation criteria applied to capital works programmes directed at local government. A *State Infrastructure Plan*, incorporating natural hazard considerations, is under development.

WA	SA	TAS	ACT	NT
<p>Major Body:</p> <ul style="list-style-type: none"> State Mitigation Committee – approved by Cabinet 20 August 2001 <p>Other Committees:</p> <ul style="list-style-type: none"> State Emergency Management Committee WA Floodplain Management Council 	<p>Major Body:</p> <ul style="list-style-type: none"> Emergency Management Council (EMC) <p>Other Committees:</p> <ul style="list-style-type: none"> Emergency Management Council Standing Committee SA Floodplain Management Committee SA Flood Warning Consultative Committee SA Bushfire Prevention Advisory Committee Regional Bushfire Prevention Committees District Bushfire Prevention Committees <p>Local Community Emergency Risk Management Committees being established, to address mitigation measures arising from risk assessments in Community Emergency Risk Management (CERM) project.</p>	<p>Major Body:</p> <ul style="list-style-type: none"> State Emergency Service <p>No specific committees. State Disaster Committee attends to all aspects of emergency management, including mitigation.</p>	<p>Major Body:</p> <ul style="list-style-type: none"> Emergency Management Committee (no specific mitigation committee). 	<p>Major Body:</p> <ul style="list-style-type: none"> NT Floodplain Management Committee (for floods). This committee was established by virtue of NT's Floodplain Management Policy. However, given its membership, it also tends to consider issues associated with other natural disaster events. <p>Other Committees:</p> <ul style="list-style-type: none"> The Flood Warning Group
<p>The newly established State Mitigation Committee will set priorities for mitigation and integrate these within the land planning context. Through the membership of the committee, effective partnerships will be developed with all relevant stakeholders aimed at implementing effective mitigation strategies on a statewide basis.</p>	<p>The <i>Development Act</i> allows the consideration by planning authorities of floods, earthquakes, wind and particularly bushfires. Planning SA has advised that disaster mitigation will be considered in the upcoming review.</p>	<p>Tasmanian Emergency Management Policy No. 3 formalises the whole of government management of risks using mitigation as a key aspect.</p> <p>The State Coastal Policy provides for the identification of high-risk areas and management strategies, including development restrictions.</p> <p>The <i>Land User Planning and Approvals Act 1993</i> allows planning directives which could be used to address issues relating to natural hazards. Guidelines in preparation on development in bushfire prone areas.</p>	<p>The <i>ACT Land (Planning and Environment) Act 1991</i> provides the overall framework for planning and control of development in the ACT (apart from areas administered directly under federal legislation).</p>	<ul style="list-style-type: none"> NT Floodplain and Storm Surge Zone Management Policy Land Use Controls in Floodplain and in Storm Surge Zones

Table 3: Disaster mitigation arrangements (continued)

	COMMONWEALTH	NSW	VIC	QLD
Other programmes and measures in place for disaster mitigation	<ul style="list-style-type: none"> • Regional Flood Mitigation Programme (149 projects approved over 3 years) • Other ad hoc recovery programmes which have had an element of mitigation assistance, for example, Flood Recovery Fund • Natural Disaster Risk Management Studies Programme • Emergency Management Australia – risk management education and research (with RMIT) • Bureau of Meteorology – warning systems and associated public education • Geoscience Australia – Cities Project • Australian Building Codes Board – development of building standards 	<ul style="list-style-type: none"> • Flood mitigation, including participation in Regional Flood Mitigation Programme • Natural Disaster Risk Management Studies Programme • Dam safety activities under the Dam Safety Act 1978 • Coastal protection and rehabilitation under the 1997 Coastal Policy • Bushfire mitigation (fuel reduction) • Building Codes • Warning systems • Community awareness 	<ul style="list-style-type: none"> • Natural Disaster Risk Management Studies Programme • Flood mitigation, including participation in Regional Flood Mitigation Programme • Bushfire mitigation • Warning systems • Community awareness • Building codes 	<ul style="list-style-type: none"> • Natural Disaster Risk Management Studies Programme • Flood mitigation, including Regional Flood Mitigation Programme • Economic Cost of Disasters in Regional Qld project • Disaster Risk Management publications for local government • Incentive programme for low rate base local governments to develop disaster mitigation plans • Public education and awareness • Development of State Planning Policy on Land Use Planning for Natural Disaster Mitigation • Building code restrictions • Development of Coastal Management Plan (storm surge) • Coastal Community Vulnerability to Cyclones project • Warning systems • Continuing Professional Education (with RAPI) • Bushfire mitigation

WA	SA	TAS	ACT	NT
<ul style="list-style-type: none"> • Natural Disaster Risk Management Studies Programme • Flood mitigation, including participation in Regional Flood Mitigation Programme • Building standards 	<ul style="list-style-type: none"> • Public Building Earthquake Resilience Retro Fitting Programme for government buildings • Natural Disaster Risk Management Studies Programme • Flood mitigation, including participation in Regional Flood Mitigation Programme • District and Regional Bushfire Prevention Planning and Community Fireguard Programme • Building Standards • Emergency Management Australia Projects Programme: <ul style="list-style-type: none"> — Community and State Emergency Risk Management (CERM and SERM) — Redevelopment of State Disaster web site 	<ul style="list-style-type: none"> • Bushfire mitigation • Natural Disaster Risk Management Studies Programme • Flood mitigation, including participation in Regional Flood Mitigation Programme • Building standards 	<ul style="list-style-type: none"> • Multi-hazard risk assessment – new initiative • Natural Disaster Risk Management Studies Programme • ACT Floodplain Mapping project (under NDRMSP) currently underway • Bushfire hazard potential project (under NDRMSP) • Community awareness • Bushfire mitigation • ACT Earthquake Micro-zonation and Infrastructure Risk Assessment Project • Building design and codes 	<ul style="list-style-type: none"> • Flood mitigation, including participation in Regional Flood Mitigation Programme • Natural Disaster Risk Management Studies Programme • Infrastructure Development Standards • Storm surge modelling • Flood warnings

Table 4: State and Territory rezoning provisions

	NSW	VIC	QLD	WA
Relevant legislation	<i>Environmental Planning and Assessment Act 1979 (EPA Act)</i> <i>Land Acquisition (Just Terms Compensation) Act 1991</i>	<i>Planning and Environment Act 1987</i> <i>Land Acquisition and Compensation Act</i>	<i>The Integrated Planning Act 1997 (IPA)</i>	<i>Town Planning and Development Act 1928</i> <i>(Planning Appeals Amendment Bill presently before Parliament)</i>
Availability of compensation provisions for 'down zoning'	<p>Compensation only available if a public authority compulsorily acquires land.</p> <p>If land is rezoned exclusively for a public purpose, the relevant public authority must acquire land if requested by the owner to do so.</p>	<p>No compensation available for down zoning per se. The planning system provides for a number of 'overlays' including such for fire and flood, which allow responsible authorities to require special conditions when dealing with development proposals. Compensation issues only arise if land is rezoned for public purposes or if development is refused on the grounds that the land is required for a public purpose.</p>	<p>Compensation available (but note important exceptions in next section) where a planning scheme is amended in a way that reduces the value of the land concerned (sections 5.4.6 and 5.4.2 IPA) provided the proponent:</p> <ul style="list-style-type: none"> • demonstrates a genuine intent to undertake the development that the change in the scheme seeks to prevent; and • initiates action within two years of scheme amendment. 	<p>Compensation for injurious affection available in certain circumstances.</p>
Limitations /conditions of compensation for down zoning	<p>The issue of whether land is zoned exclusively for a public purpose is a question of fact. Most owners of flood prone land can use their land for private use, albeit for purposes which reflect the nature of the land.</p>		<p>Proponent must make a development application that applies for a proposed development to be assessed under a superseded planning scheme, ('SPS'). If local government refuses assessment under SPS, owner can claim (within six months) compensation for difference in value of development rights under current IPA scheme and SPS. Exceptions:</p> <ul style="list-style-type: none"> • Compensation not payable (section 5.44 of IPA) where proposed development under the SPS would have led to significant risk to persons or property from 'natural processes' (including flooding, land slippage or erosion)...and that risk could not be reduced by conditions attached to a development approval. • The proposed development under SPS would have caused serious environmental harm as defined in <i>The Environmental Protection Act 1994</i>. • The change to the scheme has the same effect as another statutory instrument, which does not provide for compensation. • The change to the scheme affects the physical characteristics of the development but overall yields remain substantially the same. 	<p>'Injurious affection' defined narrowly. Compensation available only where a scheme:</p> <ul style="list-style-type: none"> • prohibits development for any purpose other than a public purpose; or • prohibits the continuation of non-conforming uses of the land, which would otherwise be lawful, if rezoning had not occurred. <p>This means there is no compensation if use of land allowed under previous zoning had not commenced before down zoning.</p> <p>No compensation for down zoning where rezoning merely results in the requirement for an authority to have regard to additional considerations as a result of potential natural disasters. However, if a development has commenced in the hazard prone area, any subsequent down zoning could lead to substantial compensation payments.</p>

SA	TAS	ACT	NT
<i>The Development Act 1993</i>	<i>Land Use Planning and Approvals Act 1993</i>	<i>Australian Capital Territory (Planning and Land Management) Act 1998</i> – a Commonwealth act which gives the Commonwealth direct planning control over land used for Commonwealth government purposes and sets broad policy for the balance of the ACT <i>Land (Planning and Environment) Act 1991</i> (the Land Act) (Territory legislation) <i>Lands Acquisition Act 1994</i> (Territory legislation).	<i>The Planning Act 1999</i> <i>The Land Acquisition Act</i>
No provisions providing for compensation when development rights are lost as a result of rezoning.	<p>Down zoning not practised as such. If land is hazard prone, mitigation conditions can be required, though zoning unaffected. No provisions for compensation.</p> <p>Compensation available under s 66 of Act, for financial loss suffered as the 'natural, direct and reasonable consequence' of land being 'set aside for a public purpose' under a planning scheme or special planning order.</p>	<p>Note: All land is ultimately vested in the Commonwealth and all private tenure is by way of long term lease.</p> <p>The permitted land use for a parcel in the ACT is expressed in the Crown lease. The lease may permit a choice, or range, of uses.</p> <p>Legislation contains no provision for payment of compensation consequent upon the introduction of land use controls per se.</p>	<p>No provisions for compensation for down zoning. Zoning is a policy decision of the Territory Government, through the Northern Territory Planning Scheme.</p> <p>Compensation only arises if the Government is acquiring an interest in the land, (for public purposes) and then compensation is payable under the Land Acquisition Act.</p>
		<p>If a lease is terminated (for breach) or surrendered, or if it expires, section 173 of the Land Act provides for compensation for the (approved) improvements only. Some leases (usually rural) provide for resumption without compensation for improvements, or on limited terms.</p> <p>Section 12 of the Land Act protects the validity of permitted (not only actual) land uses pursuant to an estate at the time the Territory Plan (or a variation) is made. It may not be possible to refuse a further lease merely on the ground of inconsistency of the permitted uses with the Plan. There may be a review of this provision to better define the circumstances in which permitted, but not actual, uses are protected. The status of the current provision has not been judicially tested.</p> <p>The Lands Acquisition Act provides for compulsory or voluntary acquisition of a lease at any time. Compensation, for the market value of the lease, applies. Under the Act, land must be required for a public purpose. If acquisition is voluntary, compensation may be negotiated. Purpose for which rural land may be acquired might be expressed more narrowly than 'public purpose'.</p>	

Table 4: State and Territory rezoning provisions (continued)

	NSW	VIC	QLD	WA
Additional comments	<p>Owner can challenge validity of a plan in the Land and Environment Court, within 3 months of 'rezoning' plan being gazetted</p> <p>The relationship between the EPA Act and the Just Terms Compensation legislation is problematic. Planning NSW is about to start a review of this relationship.</p>	<p>A person whose interests are adversely affected by a proposed planning scheme amendment may object to Council, and if objection is rejected, Council is required to refer the disputed decision to a review panel, independent of Council, selected by the Minister.</p> <p>Recommendations made by the review panel do not bind the Council or the Minister.</p> <p>There is a general right of appeal on the merits in respect of a refusal of a development approval. However, if development expressly prohibited in planning scheme, no valid application for development approval may be made.</p> <p>Uncertainty as to the position where the reason for down zoning is specifically acknowledged as being the identified natural hazard. There may be an argument that the planning authority is acting to remove development for a public purpose, ie, public safety and that could raise the 'public purpose' compensation provisions. This has not been tested in the courts to date.</p>	<p>Applicant can appeal to Planning and Environment Court, but success unlikely where significant risk from natural processes established.</p>	<p>The State legislation is the oldest in the country and is likely to be reformed in the short to medium term. Planning appeals can be taken either to the Town Planning Appeal Tribunal or alternatively to the Minister, whose discretion is very broad.</p>

SA	TAS	ACT	NT
<p>Environment, Resources and Development Committee of Parliament are able to review a Plan Amendment Report (the instrument for rezoning) and can recommend disallowance or amendment of re- zoning if considered justified. Either House of Parliament can disallow the Planning Amendment Report . (Though this is apparently a rare event, so also are attempts to downzone.)</p> <p>There is a general right of appeal on the merits in respect of refusal of a development approval to the Environmental Resources and Development Court, which has the same status as a District Court.</p>	<p>Tasmania retains the concept of developer-initiated rezoning applications for what would otherwise be a prohibited use. The legislation makes provision for a developer to make a combined application for amendment of the scheme and for development approval for what would otherwise have been a prohibited use. Such applications must be considered on their merits, but there is no right of merits appeal in respect of the scheme amendment aspect of the application. (If planning scheme amendment is not approved , development approval application can not be considered.)</p>	<p>There is no provision for appeal against any decision by either the Commonwealth or the Territory governments to introduce provisions to restrict development into the National Capital Plan (under the Australian Capital territory (Planning and Land Management) Act or the Territory Plan under the Land Act.</p> <p>At the individual development application level, there is a simple prohibition in the legislation on issuing any approval which is inconsistent with the Territory Plan. An appeal to the ACT Administrative Appeals Tribunal on the merits of a decision is possible.</p>	<p>There is no right of appeal against the making of NT Planning Scheme provisions prohibiting or restricting development. However, there is a right of appeal to the Land and Mining Tribunal on the merits in respect of the refusal by the Development Consent Authority of a development permit.</p> <p>It is possible, under the Act, for an individual landowner to apply to the Minister for amendment of the planning scheme and a subsequent development application consistent with the amended scheme.</p>

Table 5: State and Territory natural disaster relief measures

	NDRA	NSW	VIC	QLD	WA
First Threshold		\$70,755,750	\$48,717,000	\$39,163,500	\$21,145,500
Small disaster threshold		\$200,000	\$200,000	\$200,000	\$2.1m – Declared Natural Disaster (10 per cent of above)
2.2(a) Personal hardship and distress (cont) (above small disaster threshold, 50:50 Cwth/State cost sharing)	Individuals and Household Assistance <ul style="list-style-type: none">• Immediate Assistance (no means test). To meet urgent needs of displaced persons.• Essential Household Contents (means tested). Grants for replacement or repair of essential household items• Structural Damage grants (means tested) to bring principal place of residence to safe and habitable condition.	Individuals and Household Assistance <ul style="list-style-type: none">• Emergency Grant of up to \$360 per adult and \$180 per child to a maximum of \$900 per household.• Temporary Living Expense Grant (means tested) of up to a maximum of \$180 per adult and \$90 per child for up to 26 weeks, up to a maximum of \$7,300.• Re-establishment Grant (means tested) of up to \$7,300 for the replacement of essential household items and up to \$7,300 for structural repairs to a principal place of residence.	Individuals and Household Assistance (Income and assets tests apply). <ul style="list-style-type: none">• Emergent assistance payments of up to \$100 per person (\$500 maximum) in immediate disaster aftermath.• Essential Household Contents Grants for assistance with loss or damage to food, essential clothing and household effects. Limits: Individual – \$1,400, Couples/families – \$4,000.• Repairs to Dwellings Assistance for owner-occupiers (including caravans) to extent necessary to return dwelling to habitable condition. Limits: Individual – \$8,300 Couples/families – \$11,100.	Individuals and Household Assistance Local Relief Committees also assist and usually have authority to provide 'on the spot' assistance. Grants for urgent repairs to make owner-occupied houses habitable and secure; emergency food, clothing and accommodation; repair and replacement of essential items of personal effects. Tenants of rented homes as well as owner occupiers eligible for assistance for the loss of their own furniture and effects (those effects essential for daily living only).	
2.2(b) Restoration or replacement of an essential public asset	Restoration of Public Assets. Grants available to help Councils to permanently restore roads and bridges to pre-disaster standards. Grants provide 75 per cent of first \$100,000 expenditure and 100 per cent beyond that level. Grants also available to meet 75 per cent of the permanent restoration of other essential Council assets up to \$100,000 and full cost recovery beyond that level. Grants also provided to those parties (eg trustees) who manage public assets such as Crown Land, parks and reserves, if they do not have the financial capacity to meet restoration costs from their own resources.	Restoration of Public Assets. Available for the restoration of municipal and other public assets. First \$10,000 of expenditure met by municipality. Government pays 75 per cent of costs between \$10,000 and \$110,000 and 100 per cent of costs beyond this. Note: See entry under Non-NDRA Relief Arrangements below. Effectively means an expenditure threshold of zero for councils which have expended \$10,000 or more on restoration of public assets. Only where councils have expended less than \$10,000 are they not fully reimbursed through a combination of NDRA and VGC payments. River Improvement Works. Full reimbursement of costs, subject to conditions, to Catchment Management Authorities for repair of natural riverbanks.	Restoration of Public Assets. Available to Government departments, also Local Governments and River Improvement Trusts, when expenditure exceeds rate based 'trigger' point. Larger Local Govts 1 per cent rate revenue, smaller Local Govts 0.25 per cent of NDRA first threshold expenditure. For Local Govts with rate base > \$3M, maximum trigger of \$50,000 if ANZ4360 risk assessment/mitigation plan. Otherwise, \$98,000. Grants for restoration of essential public assets – roads, bridges, public buildings etc – to pre-disaster level. As per NDRA determination, Govt and Local Govt Trading Undertakings ineligible (ports, aerodromes, certain water supply, sewerage etc). Queensland Rail is eligible. Administered by Department of Local Govt and Planning.	Restoration of Public Assets. Local Authorities, State Govt, departments and State Instrumentalities, including State railway and public authorities operating outside the normal market mechanism eligible. Damaged assets deriving from bushfires on Crown land, or land owned by a local authority or State instrumentality not eligible. Local Authorities to meet 25 per cent of the cost of the approved restoration or replacement work (Estimates to Treasury for approval).	

SA	TAS	ACT	NT
\$17,831,250	\$5,539,500	\$4,173,750	\$4,455,000
\$200,000	\$200,000	\$200,000	\$200,000
<p>Individual and Household Assistance</p> <ul style="list-style-type: none"> Emergency Grant of up to \$280 for each adult and \$140 for each child, with a maximum of \$700 for each family, to meet immediate needs. Temporary Living Expenses Grant of up to \$140 per week for each adult and \$70 per week for each child, with a maximum of \$560 per week for each family. Grant to assist with accommodation costs and other temporary living expenses up to a maximum of \$5,600. Re-establishment Grants (Structure/ Dwelling/Essential Household and Personal Items) of up to \$5,600 for damage to house structure and up to \$5,600 for loss of essential personal or household items. 	<p>Individuals and Household Assistance</p> <p>Assistance for the relief of immediate distress and hardship of persons directly affected by an event e.g. essential and appropriate shelter, clothing, food, transport and/or personal items. Quantum depends upon the needs of the individual or family.</p> <p>Up to \$200 per adult (over 18 years)</p> <p>Up to \$100 per child</p> <p>Up to a maximum of \$750 per family.</p>	<p>Individual and Household Assistance</p> <ul style="list-style-type: none"> Emergency Assistance (not means tested) available in immediate disaster aftermath, ie within 48 hours of impact for food, clothing etc. Temporary Living Expenses (means tested) cost assistance available where permanent place of residence rendered uninhabitable or inaccessible and there is expected delay beyond 48 hours. Essential Household Contents (means tested) for replacement or repairs of essential household contents such as clothing, bedding, furniture etc. Structural Grants (means tested) for restoration of affected persons' residences to a safe and habitable condition. 	<p>Individual and Household Assistance</p> <ul style="list-style-type: none"> Immediate Relief Payments (not means tested). Limits: Adults \$325, Child \$162. Maximum assistance per family \$817. Temporary Accommodation Allowance. Limits: Adult \$178, Child \$89, Family \$618. Re-establishment Payments. Maximum limits: Essential repairs – \$9,013 Household and personal items – \$4,810 (Centrelink guidelines used for means testing eligibility for TAA and R-E payments above).
<p>Restoration of Public Assets. Local Authorities, State Govt, departments and Instrumentalities, including State railway and public authorities operating outside the normal market mechanism eligible. Damaged assets deriving from bushfires on Crown land, or land owned by a local authority or State instrumentality not eligible. Cost estimates to Treasury and Finance for review in line with agreed funding formula and for final approval by the Treasurer.</p>	<p>Restoration of Public Assets. Dealt with case by case but assistance to Local Govt to restore essential public infrastructure damaged by floods has been provided on a dollar for dollar basis up to a ceiling determined by the Premier. Assistance has been provided on the basis that the cost of restoration was more than the local community could reasonably be expected to bear. Reinstatement of public assets in State hands considered case by case with funding coming from normal capital budget.</p>	<p>Nil</p>	<p>Restoration of Public Assets. Available to Local Govt bodies or non-profit organisations. In the NT context, the latter (as distinct from non-profit associations) includes Community Government Councils and Association Councils. Grants provide for structural restoration of public buildings, fittings, equipment and essential supplies: roads repair; restoration of essential government assets; restoration of streams and levee banks; restoration of recreational facilities and equipment and welfare housing. The maximum reimbursement for non-profit organisations is \$5,000. Aboriginal Essential Services, including power, water and sewerage facilities are eligible for NDRA.</p>

Table 5: State and Territory natural disaster relief measures (continued)

NDRA	NSW	VIC	QLD	WA
<p>2.2(c) Concessional interest loan to a farmer or small business</p>	<p>Concessional Loans to Primary Producers. Loans up to \$130,000 available, for those in urgent need, to meet carry-on requirements and replacement of livestock and plant, subject to certain eligibility criteria. Term of ten years, which is preceded by an interest and repayment free period of two years. Fixed interest of 3 per cent following the interest free period. Security is required.</p> <p>Concessional Loans to Small Business. Loans up to \$130,000 to small businesses affected by disasters, subject to eligibility criteria. Finance through normal channels must be unavailable. Term of 10 years, which is preceded by an interest and repayment free period of 2 years. Fixed interest of 3 per cent following the interest free period. Security is required.</p>	<p>Concessional Loans to Primary Producers for carry on, restocking, restoration etc. to full-time bona fide primary producers who, after insurance recovery, are unable to obtain assistance requirements through normal commercial channels on suitable terms, but have prospects of recovery.</p> <p>Concessional Loans to Small Business. For small businesses which are in need of special assistance following natural disasters, which cannot obtain finance on suitable terms from normal sources, including insurance, and which have reasonable prospects of recovery. Generally it is expected that the State would share the funding with normal sources of institutional finance.</p>	<p>Concessional Loans to Primary Producers administered by Queensland Rural Adjustment Authority. Loan conditions: 4 per cent pa, up to seven years. For primary producers unable to access commercial finance, for carry on needs, stock replacement, restoration of fixed/landed assets. Upper limits: Carry on – up to \$100,000. Restocking – up to \$100,000 (cumulative total – \$150,000)</p> <p>Concessional Loans to Small Business. For small business operators who are unable to provide for their own recovery or use commercial finance, to re-establish operations after physical loss. Loan conditions: 4 per cent pa, for up to 7 years. Upper limits: For both carry on and re-establishment – \$100,000, with cumulative total limit of \$100,000 per recipient. If these measures inadequate, additional NDRA assistance measures assessed.</p>	<p>Concessional Loans to Primary Producers. Loans not currently available. However, alternative measure is provided through Interest Subsidy on Loans – see 2.2(e).</p>
<p>2.2(d) Concessional-interest loan to a needy person or voluntary non-profit body</p>	<p>Concessional Loan to Churches, Voluntary Organisations etc. A special scheme is available to assist sporting clubs to meet the costs of restoration of essential club facilities that have been damaged or destroyed, if those clubs do not have the financial capacity to meet such costs from their own resources, but do have the capacity to repay any loan that may be granted. Maximum assistance available is \$12,000, including a grant component of up to \$2,000 in the form of a repayable advance, with 3 per cent interest pa, to those clubs which are unable to obtain assistance through other channels, eg commercial loan.</p> <p>Churches and Voluntary Non-profit Organisations are also able to access loan assistance (as a repayable advance) for the restoration of essential facilities that have been damaged or destroyed, provided they are not able to meet restoration costs from their own resources and are unable to obtain assistance through normal channels.</p>	<p>Concessional Loan to Churches, Voluntary Organisations etc. For non-profit organisations which have no reasonable access to commercial sources of finance. Loans made to bridge gap between re-establishment costs and insurance recovery.</p> <p>Concessional Housing Loans may be made available to people whose principal residence has been damaged or destroyed by natural disaster and who wish to rebuild or buy another house in Victoria. Loans are granted taking into account the gap between the resources available to the individual (including insurance) and the cost of rebuilding or relocating.</p>	<p>Concessional Loan to Churches, Voluntary Organisations etc. <i>Associations Natural Disaster Relief Scheme</i> administered by Department of Families. To Sporting and other Non-profit Organisations to restore assets to pre-disaster standard. Loan conditions: 4 per cent over 7 years. Upper limits: Loan/grant in ratio of 5:1 up to \$100,000. Loan: \$5,000 grant.</p> <p>Concessional Loans to Needy Persons for Home Rebuilding or Substitute Purchase. Applicant must own and occupy dwelling, income insufficient to repair/replace without undue hardship, unable to obtain funds from normal lenders must provide first mortgage security. Limits: maximum loan \$100,000. Loan limit abated by income considerations. Concessional interest rate under normal Department of Housing conditions. Repayment over 7–10 years.</p>	<p>Concessional Loan to Churches, Voluntary Organisations etc. Loans not currently available. However, alternative measure is provided through Interest Subsidy on Loans – see 2.2(e).</p>

SA	TAS	ACT	NT
Nil	Concessional Loans to Primary Producers. Level of assistance determined on the recommendation of the State Disaster Committee. No standing programme of concessional loans.	Nil	<p>Concessional Loans to Primary Producers. Administered by Department of Primary Industry and Fisheries. For repair and replacement of damaged plant and equipment, building repair, restocking. Applicants must be sole owners, partnerships or private companies. Maximum loan \$100,000. Term 3-7 years. Interest no lower than 4 per cent. Must be security and insurance. Other financial options must be exhausted, insurance recoveries taken into account. Must have prospect of viability. Assistance not generally available where damage is result of storm and tempest and adequate insurance for such could be effected at reasonable rates to cover the risk.</p> <p>Concessional Loans to Small Business. Same conditions and as for primary producers. Replacement of lost stock provisions limited to one month's supply.</p>
<p>Concessional Loan to Churches, Voluntary Organisations etc.</p> <p>For non-profit organisations which have no reasonable access to commercial sources of finance. Administered by Treasury and Finance.</p> <p>Concessional Loans to Needy Persons for Home Rebuilding or Substitute Purchase. Applicant must own and occupy dwelling, income insufficient to repair/replace without undue hardship, unable to obtain funds from normal lenders; must provide first mortgage security. Loan limit abated by income considerations. Concessional interest rate under normal Treasury and Finance conditions.</p>	<p>Concessional Loan to Churches, Voluntary Organisations etc.</p> <p>Level of assistance determined on the recommendation of the State Disaster Committee. No standing programme of concessional loans.</p>	<p>Concessional Loan to Churches, Voluntary Organisations etc.</p> <p>Not normal practice. Loans or ex gratia payments considered only in exceptional circumstances.</p>	<p>Concessional Loan to Churches, Voluntary Organisations etc.</p> <p><i>Associations Natural Disaster Relief Scheme</i> administered by Territory Health Services. (Grants to sporting bodies by most relevant Govt departments). Maximum grant \$5,000 to incorporated non-profit organisations providing services which are health, family and/or community in nature: and sporting bodies (not racing cars or coursing activities) to replace or repair facilities to pre-disaster standards. Only uninsured loss or damage qualifies, and applicants must be unable to effect repairs from own resources or alternate sources. Lost revenue from/ replacement of food and liquor ineligible.</p> <p>Concessional Housing Loans to Needy Persons. Homeowners usually expected to be covered by insurance. In disaster events, specific guidelines for concessional loans may be developed by Territory Housing in conjunction with NT Treasury and NT Treasury Corporation.</p>

Table 5: State and Territory natural disaster relief measures (continued)

NDRA	NSW	VIC	QLD	WA
2.2(e) Provision of interest subsidies (grants) to farmer or small business				<p>Interest subsidy on loans by Authorised Deposit Taking Institutions (ADTIs) to Primary Producers, Small Business and Community Groups. Interest subsidy on loans provided through ADTIs to assist individuals, organisations and groups to repair damage or replace damaged assets, and/or for carry on costs related to the disaster. Interest subsidy – currently 4 per cent (paid to lending institution).</p> <p>Maximum loan – \$150,000 Maximum term – 10 years.</p> <p>General conditions:</p> <ul style="list-style-type: none">• It must be confirmed that the damage or loss was caused by the declared disaster• The small business, primary producer, church, sporting association or voluntary non-profit organisation must be local to the area of the disaster, and• The applicants must meet the loan eligibility requirements of the lending institution. <p>In addition, small businesses and primary producers are required to demonstrate that they are unable to finance the repairs or replacements through their own resources.</p>
2.2(f) Psychological counselling	Available through Department of Community Services	Available through Department of Human Services	Available through Department of Families	Available through Department for Community Development

SA	TAS	ACT	NT
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Available through Department of Family and Youth Services

Available through State Department of Health and Human Services

No specific Territory arrangements

Available through Department of Health and Community Services

Table 5: State and Territory natural disaster relief measures (continued)

NDRA	NSW	VIC	QLD	WA
<p>2.2(g) Other acts of relief and restoration</p>	<p>Emergency Works and Operations. Grants available to Councils to meet the additional cost of emergency work to restore essential services including the provision of emergency levee banks which are in excess of normal operations.</p> <p>Freight Subsidies to Primary Producers. Road and rail freight subsidies of up to 50 per cent on the carriage of livestock and fodder. Upper limit of \$15,000 pa.</p>	<p>Emergency Works and Operations (known as Grants for Emergency Protection Works). The Department of Treasury and Finance will meet the full cost of emergency works undertaken by councils to protect community assets and to restore essential public services. These include works authorised by the control agency or authorised and certified by the Municipal Engineer or CEO, such as reinstatement of council buildings, clearing roadways or public places and removing hazards to public health or safety. Includes temporary bridge provision.</p> <p>Freight Subsidies to Primary Producers. Subsidies available for 50 per cent of the cost of cartage by road or rail of fodder, or livestock to agistment. Depending on severity of disaster, distance limits may be imposed and the farmer asked to meet the full cost of an appropriate part of the distance.</p> <p>Note: The Victorian Govt has not activated the scheme in recent years, for consistency with the risk management approach farmers are encouraged to adopt in respect of drought management.</p>	<p>Emergency Works and Operations (known as Counter-Disaster Operations) to relieve personal hardship and distress and allows for expenditure by State Government departments, reimbursable under NDRA. This comprises operations such as:</p> <ul style="list-style-type: none"> • The net cost of emergency food/essential supply drops to stranded individuals and communities; • Transportation costs for manpower, equipment and materials, including charter/hire costs of aircraft/vehicles/ vessels; • Non-capital expenses such as vehicle and helicopter operating costs, food, fuel, repairs etc as a direct result of relief operations – overtime, travel expenses, temporary employment costs; • Activation, coordination and NDRA administration costs (excluding pre-disaster salary and committed costs); • Emergent expenditure to ensure safety of life, health and property. Includes construction of earthworks, temporary levees/ sandbagging, machinery, specialist skills costs, evacuations salary and committed costs; • Emergent expenditure to ensure safety of life, health and property. Includes construction of earthworks, temporary levees/ sandbagging, machinery, specialist skills costs, evacuations and shelters, emergent health matters. Administered by Department of Emergency Services. <p>Freight Subsidies to Primary Producers. To meet specific needs/ deficiencies during or after a disaster. Concessions of up to 50 per cent for movement of essential items, including food, building materials, stock, fodder, water, machinery or fuels. Upper limit of \$5,000 per applicant.</p>	<p>Nil</p>

SA	TAS	ACT	NT
Emergency Works and Operations (known as the Local Government Disaster Fund). Grants available to councils to meet the additional cost of emergency work to restore essential services including the provision of emergency levee banks which are in excess of normal operations.	<p>Determined on the recommendation of the State Disaster Committee. No standing programme.</p> <p>Freight Subsidy to Primary Producers. Determined on the recommendation of the State Disaster Committee. No standing programme.</p>	Nil	<p>Emergency Works and Operations (known as General Assistance). Provision for a range of assistance for:</p> <ul style="list-style-type: none"> • Transportation costs of manpower, rescue evacuation, equipment and materials including aircraft, vessel and vehicle transport, charter and hire costs. (Excludes salary and other committed costs that otherwise would have been incurred); • Provision of emergency food and other consumable and expendable items for immediate use; • Above normal salary costs for public servants engaged in relief, coordination and administration efforts; • Costs associated with use of specialists and voluntary personnel; • Removal of debris and clean up; • Construction of earthworks/structures eg levee banks/sand-bagging and hire/ movement of buildings, machinery and equipment; • Emergency public health and safety measures; and • Relocation of stores, plant and equipment to place of safety. • Freight Subsidies for Primary Producers. • While no specific arrangements are in place, reference is made in NT NDRA documentation that freight subsidies may apply.

Table 5: State and Territory natural disaster relief measures (continued)

NDRA	NSW	VIC	QLD	WA
Non-NDRA State/Territory Relief Measures	State provides Personal Hardship and Distress support to persons affected by disaster, on basis of need, where expenditures on disaster is below the Small Disaster Threshold, on same conditions as NDRA.	State provides Personal Hardship and Distress support to persons affected by disaster, on same conditions as NDRA, where expenditures on disaster is below the Small Disaster Threshold, where a minimum of 5–6 households have been affected by a particular natural emergency. Natural Disaster Relief Payments to Councils. Victoria Grants Commission meets shortfall in municipal expenditures not reimbursed under NDRA schemes – see 2.2(b) above.	State Disaster Relief Arrangements. Completely State funded. Not subject to Commonwealth eligibility criteria, or small disaster threshold. flexible application. Provides for two general types of assistance: <i>Disaster Relief Assistance</i> (same as PHD under NDRA) –Emergency payments to individuals, and to assist with dwelling contents and repairs to make private dwellings habitable and secure. <i>Counter Disaster Operations</i> – provides for reimbursement of costs incurred by combat agencies and Local Govts in response activities.	Where expenditure insufficient for disaster to be declared, and (in WA) consequent NDRA relief is therefore not available, State provides Personal Hardship and Distress support to persons affected by disaster.

SA	TAS	ACT	NT
State provides Personal Hardship and Distress support to persons affected by disaster, where expenditures on disaster are below the Small Disaster Threshold.	State provides Personal Hardship and Distress support to persons affected by disaster where expenditures on disaster are below the Small Disaster Threshold.	Territory provides Personal Hardship and Distress support to persons affected by disaster, where expenditures on disaster are below the Small Disaster Threshold.	Territory provides Personal Hardship and Distress support to persons affected by disaster, where expenditures on disaster are below the Small Disaster Threshold.

Table 6: Disaster management arrangements

	COMMONWEALTH	NSW	VIC	QLD
Principal Legislation	No legislation	<i>State Emergency and Rescue Management Act 1989</i> (as amended). Last reviewed in 2000	<i>Emergency Management Act 1986</i>	<i>State Counter Disaster Organisation Act 1975</i>
Scope of principal legislation	Nil	<ul style="list-style-type: none"> • Defines emergencies and stages of emergencies • States responsibilities of the Minister and State Disasters Council • Specifies the scope of the State Disaster Plan and its operation • Establishes emergency management committees at State, District and Local levels and lays down their responsibilities • Provides for the appointment of Emergency Operations Controllers at State, District and Local levels • Provides for the declaration of a State of Emergency • Specifies special powers of emergency services officers • Coordination of rescue 	<p>Provides for:</p> <ul style="list-style-type: none"> • Organisation of emergency management in Victoria • Appointments to specific leadership positions • Creation of the Victoria Emergency Management Council • Emergency Response and Recovery Plan (the management structure) • Specific emergency response powers • Responsibilities of municipal councils • Appointment and powers of the Emergency Services Commissioner • Compensation of volunteer emergency workers • State of Disaster (provisions and powers) • Declaration of an emergency-related exclusion area • Preparation of the DISPLAN (the State Response Plan) which must identify agencies primarily responsible for responding to emergencies; specify roles of agencies and coordinators; describe coordination arrangements and regions • Appointment and powers of Police as response coordinators • Establishment of State and regional committees 	<p>Provides for:</p> <ul style="list-style-type: none"> • Definition of 'disaster' • Declarations of a State of Disaster and wide ranging powers following such a declaration • Establishment of key committees (State Counter Disaster Organisation; Central Control Group) • Functions of the Executive Officer, Central Control Group • Establishment of Disaster Districts and Disaster District Control Groups • Designation of local governments to Disaster Districts • The powers and duties of local governments in relation to Counter Disaster Plans • State Emergency Service and reference to its response and rescue related functions • The powers and functions of the Director, SES • Protection from liability of persons acting in good faith under the Act • Offences relating to obstruction of activities of an authorised person operating under the Act

WA	SA	TAS	ACT	NT
No legislation. Arrangements derived from Cabinet Minute of August 1995 and detailed in Policy Statement (No.7) issued by State Emergency Management Committee	<i>State Disaster Act 1980</i>	<i>Emergency Services Act 1976</i>	<i>Emergency Management Act 1999</i>	<i>Disasters Act 1982 (as amended)</i>
<p>Provides for:</p> <ul style="list-style-type: none"> • Definition of emergency • Describes roles/ responsibilities of: • The State Disaster Council • The State Emergency Coordinator (Police Commissioner) • District, Local and Metropolitan (Perth) Emergency Coordinators (all Police) • The State, District and Local Emergency Management Committees and functional and hazard sub committees • State, District and Local Operations Coordination Groups attached to above Emergency Management Committees • Hazard Management Agencies • Combat Agencies • Support Organisations • Activation processes • Command, Control and Coordination processes • Assignment of Recovery responsibility to Hazard Management Agencies 	<p>Provides for:</p> <ul style="list-style-type: none"> • Protection of life and property in the event of a 'disaster' or a 'major emergency' • Definition of both terms. Disaster definition encompasses concept of threatened as well as actual disaster; indicates any occurrence, which involves loss of life, injury to persons, animals, property damage and requires extraordinary measures. Includes natural disasters, human, plant and animal disease and hostilities. Major emergency' similar definition, though of lesser scale, but still requiring diverse resources and/or threatening to become a disaster • Legislation provides for: <ul style="list-style-type: none"> — State Disaster Committee — Recovery Committee — Administration, including appointment of officers, delegations, authorised officers — Declarations of State of Disaster and State of Emergency — Powers of Minister and other officers during such — Offences — Immunity from liability — Protection of employment rights — State Disaster Relief Fund 	<p>Provides for:</p> <ul style="list-style-type: none"> • Definition of 'disasters' • Establishment and assignment of functions to the components of the State's disaster management system including: <ul style="list-style-type: none"> — The State Emergency Service — State Disaster Committee — State Disaster Executive — Region Disaster Coordinators — Region Disaster Planning Groups • Describes the functions of the SES under the Act • Act assigns duties and powers to municipalities with respect to counter disaster measures, local counter disaster plans and local emergency services • Act provides for declaration of States of: <ul style="list-style-type: none"> — Alert (Director SES) — Emergency (Minister) — Disaster (Premier) 	<p>Part 1:</p> <p>Emergency management preparedness, including responsibility for emergency management (Executive Director; Emergency Services Bureau); Establishment of Emergency Management Committee; ACT Emergency Management Plan; Commonwealth and interstate cooperation.</p> <p>Part 2:</p> <p>Management of emergencies, including declared emergencies; Minister's provisions; Territory Controller; emergency functions and powers; Management Executive, recovery management provisions.</p> <p>Part 3:</p> <p>Compensation provisions</p> <p>Part 4:</p> <p>Specific legislative provisions for the ACT Emergency Service and the ACT Ambulance Service</p> <p>Part 5:</p> <p>Miscellaneous aspects, including emergency relief funds, gifts and donations, victimisation</p>	<p>Provides for:</p> <ul style="list-style-type: none"> • The establishment and functions of the NT Counter Disaster Council • The duties of the Territory Counter Disaster Controller • The powers and duties of the Director of the NT Emergency Service • The establishment, purpose and composition of the NT Emergency Service • Arrangements for Regional and Local Counter Disaster Committees, their composition, functions and duties • The declarations of states of emergency and disaster and the powers attached resulting from such declarations • Powers of delegation, offences under the Act, compensation, personal injury, entry upon Aboriginal land and the provision to make Regulations under the Act

Table 6: Disaster management arrangements (continued)

	COMMONWEALTH	NSW	VIC	QLD
Principal Portfolio responsible	Emergency Management Australia (Department of Attorney-General)	Minister for Emergency Services	Department of Justice (within which is the Office of the Emergency Services Commissioner) and Victoria Police, reporting to the Minister for Police and Emergency Services.	Department of Emergency Services, reporting to the Minister for Emergency Services.
Other Departments or Statutory Authorities involved	<ul style="list-style-type: none"> • Australian Defence Forces • Bureau of Meteorology • AGSO-Geoscience Australia • Department of Health and Ageing 	<ul style="list-style-type: none"> • NSW Police Service • Department of Information Technology and Management • Department of Community Services • Premier's Department • Department of Local Government Planning NSW • NSW Treasury • NSW Agriculture – exotic animal disease • NSW Fire Brigades • NSW Rural Fire Service • Ambulance Service of NSW • State Emergency Service • Department of Transport • Department of Public Works and Services • Environmental Protection Authority • Department of Health 	<ul style="list-style-type: none"> • Victoria Police • Department of Human Services-Public Health • State Emergency Recovery Unit • Country Fire Authority/Metropolitan Fire and Emergency Services Board • Aircraft Rescue Fire Service • Department of Natural Resources and Environment • Marine Board of Victoria (with VCA/Local Port Operator) • VICSES • Rural Finance Corporation • Others – including all Government departments and many agencies 	<ul style="list-style-type: none"> • Queensland Health • Department of Families • Department of Main Roads • Qld Rail • Department of Public Works • Qld Fire and Rescue Service • Qld Transport (Maritime) • Department of Primary Industries <p>All other State government departments provide support under the State Counter Disaster Organisation arrangements</p>

WA	SA	TAS	ACT	NT
Police and Emergency Services portfolio. Responsibility for overall coordination of emergency management is assigned to the Commissioner of Police as the State Emergency Coordinator.	Department of Justice (which encompasses Police and all Emergency Services).	Department of Police and Public Safety, reporting to the Minister for Police and Public Safety.	Department of Justice and Community Safety. Under the Act, the Executive Director, Emergency Services Bureau, is responsible for emergency management.	Police, Fire and Emergency Services portfolio
<ul style="list-style-type: none"> • Police Service • Fire and Emergency Services Authority • Office of Energy • Department of Premier and Cabinet • All other government departments and statutory authorities under the State Emergency Management Committee 	<ul style="list-style-type: none"> • Primary Industries SA • Ambulance operations • SA Water Corporation • SA Country Fire Service; Metropolitan Fire Service • SA Health Commission • SA Police Department • SA State Emergency Service • Department of Family and Community Services • Department of Defence/ ADF • Others: <ul style="list-style-type: none"> – Public Hospitals – Public Transport Board – Supply Services SA 	<ul style="list-style-type: none"> • Department of Health and Human Services including: <ul style="list-style-type: none"> – Department of Infrastructure, Energy and Resources – Department of Premier and Cabinet – Department of Primary Industries, Water and Environment – Department of State Development 	<ul style="list-style-type: none"> • Department of Health, Housing and Community Care • Department of Education and Community Services • Department of Urban Services • Department of Treasury • Chief Minister's Department • ACT WorkCover • Canberra Airport • Telecommunications Providers • ActewAGL • Australian Federal Police • Department of Defence • Emergency Management Australia • Agriculture, Fisheries, Forests Australia • Department of Health and Family Services 	<p>Virtually all Territory departments/ Statutory Authorities have some role in emergency response, however minor. The main coordinating agencies are those co-opted as members of the NT Counter Disaster Council:</p> <ul style="list-style-type: none"> • Department of Chief Minister • Department of Transport and Works • Power and Water Authority • Territory Health Services • Police, Fire and Emergency Services • Department of Defence/ ADF

Table 6: Disaster management arrangements (continued)

	COMMONWEALTH	NSW	VIC	QLD
Major Coordination Body for disasters and role/ functions	<p>Commonwealth Counter Disaster Task Force (Department of Prime Minister and Cabinet)</p> <p>Responsible for policy advice to Government.</p> <p>National Emergency Coordination Centre (Emergency Management Australia)</p> <p><i>Role/Functions:</i></p> <ul style="list-style-type: none"> • hazard monitoring; • situation appraisal; and • receives requests and arranges for Commonwealth assistance. 	<p>State Emergency Management Committee (SEMC)</p> <p>Responsible for emergency planning at State level.</p> <p><i>Role/Functions:</i></p> <ul style="list-style-type: none"> • identification of threats/hazards; • viability of emergency management structures; • emergency response allocation, coordination (and review of systems); • review legislation; • advise Minister on creation of combined local government emergency management arrangements • declaration of States of emergency; • communication in/between functional areas; • hazard management guidelines; • emergency management training; • emergency management educational material on policies/procedures; • training exercises; • advise re local government resource use for DISPLAN contact point for Commonwealth support; • DISPLAN standing orders, instructions and SOPs; • assist Minister re preparation/review DISPLAN; • arrange warnings of emergencies to public; • review plans at all levels and in functional areas; • hazard management guidelines; and • emergency management training. 	<p>Victoria Emergency Management Council</p> <p><i>Role:</i> Advises the Minister (as Coordinator –in-Chief of Emergency Management) on all matters and is the senior policy making body outside Cabinet. It has no role in operational response and recovery matters.</p> <p>The State Emergency Response Coordination Centre (SERCCC)</p> <p><i>Role:</i> central coordination group and location for emergency response operations.</p> <p>Major Emergency Strategy Team</p> <p><i>Role:</i> can be convened to determine operational strategy in a major emergency.</p> <p>Central Government Response Committee</p> <p><i>Role:</i> convened by the Department of Premier & Cabinet in case of extreme crises in which whole of government response is needed. Includes all govt departments; does not direct emergency response. Reports to: Major Incidents Committee of Cabinet. Comprises Premier, Treasurer, Ministers for Police and Emergency Services and Health</p> <p><i>Role:</i> to determine government policy in anticipation of or during major emergencies or crises.</p>	<p>State Counter Disaster Organisation (SCDO)</p> <p>Responsible for the development of disaster management policy and for oversight of the State Counter Disaster Plan.</p> <p><i>Role/Functions:</i></p> <ul style="list-style-type: none"> • coordinate the resources necessary to ensure all steps are taken to plan for and counter the effects of a disaster; • provide advice and assistance to the Minister for Emergency Services on all matters with respect to counter disaster; • executive arm is the Central Control Group; • working group of Department/Agency at State level is the State Disaster Coordination Group. Its role is to assist in the provision of coordinated whole of government support to disaster stricken communities.

WA	SA	TAS	ACT	NT
<p>State Emergency Management Committee (SEMC). The SEMC is comprised of an executive and four functional groups.</p> <p><i>Role:</i> to assist in the development of emergency management policy and provide direction, advice and support to government agencies, industry, commerce and the community so as to ensure an efficient emergency management capability for the State of Western Australia.</p> <p>State Emergency Coordinator (Commissioner of Police)</p> <p><i>Role:</i> to develop and implement emergency management arrangements for WA and to be responsible for coordination during emergencies.</p>	<p>State Disaster Committee</p> <p><i>Role:</i> planning for response and recovery.</p> <p>Emergency Management Council and Emergency Management Council Standing Committee</p> <p><i>Role:</i> to provide the governance function and the policy direction on strategic matters.</p>	<p>State Disaster Committee/ Executive Committee's role: advice, coordination, monitoring, reporting, representation re emergency management policy.</p> <p>Executive's role: Institution and coordination of emergency operations during State of Emergency or disaster.</p> <p>State Emergency Service is the main coordination body for emergency management.</p> <p><i>Role/Functions:</i></p> <ul style="list-style-type: none"> • coordination of members of the public, volunteers and community resources in support of statutory emergency services during significant emergency events; and • provide executive and secretarial services to the State Disaster Executive and the Region Disaster Planning Groups. 	<p>Emergency Management Committee</p> <p><i>Role:</i> Primary role is to provide liaison between relevant agencies, organisations and other persons in relation to emergency management and to support the Executive Director, Emergency Services Bureau in emergency management.</p> <p>Territory Controller</p> <p><i>Role:</i> Under a declared State of Emergency, the Territory Controller is responsible for managing the emergency on behalf of the ACT government. The Chief Police Officer is nominated Territory Controller. Management Executive: provides assistance to Territory Controller under a declared State of Emergency.</p> <p>Territory Emergency Operations Centre/ Territory Government Coordination Centre (TEOC/TGOC)</p> <p>During emergency events, the Territory Controller, Management Executive and relevant Liaison Officers are located in the TEOC/TGOC, which provides the facilities and staff to control and coordinate response to and recovery from an emergency event.</p>	<p>The Northern Territory Counter Disaster Council</p> <p><i>Role:</i> to provide quality advice to government in relation to emergency response and counter disaster measures within the NT and to oversee such response.</p>

Table 6: Disaster management arrangements (continued)

COMMONWEALTH		NSW	VIC	QLD
Local Govt or other disaster management committees		<ul style="list-style-type: none">• Local Emergency Management Committees (150)• District Emergency Management Committees (18)• Bushfire Management Committees (140)• Floodplain Management Committees (approx 70)	Municipal Councils are required under the Emergency Management Act to maintain Municipal Emergency Management Planning Committees and under the <i>Country Fire Authority Act 1958</i> to have Municipal Fire Prevention Committees at the discretion of the Country Fire Authority.	<p>Under the <i>SCDO Act</i>, local governments are required to have counter disaster arrangements in place. This is effected through the Local Government Counter Disaster Committees.</p> <p>Additionally, there are Disaster District Control Groups (DDCG) in 23 Districts (based on Police districts). Each DDCG has several local governments and the Coordinator of the Groups is responsible for approval of local government counter disaster plans.</p>
Disaster Plan	COMDISPLAN	New South Wales State Disaster Plan (DISPLAN)	There is no single plan. Parts 4 and 5 of the Emergency Management Manual Victoria contain the State Emergency Response and Recovery Plans respectively.	State Counter Disaster Plan

WA	SA	TAS	ACT	NT
<p>Local Emergency Management Committees exist to develop and maintain effective emergency management arrangements for the local area.</p> <p>District Emergency Management Committees are established to assist the District Emergency Coordinator (Police District Officer) in the enhancement and maintenance of effective emergency management arrangements for the District.</p>	<ul style="list-style-type: none"> • Regional Disaster Committees (10) • Local Disaster Committees established at the discretion of local councils. 	<p>Council Emergency Management Committees exist to coordinate emergency management measures in a Council area. Report to their respective Councils under policy direction.</p>	<p>Not applicable</p>	<p>Regional Counter Disaster Committees are established under s 24 of the Disasters Act.</p>
<p>No plan.</p> <p>The WA Emergency Management Arrangements are detailed in a Policy Statement issued by the State Emergency Management Committee.</p>	<p>State Disaster Plan</p>	<p>Tasmanian Emergency Management Plan</p>	<p>ACT Emergency Plan</p>	<p>No single plan.</p> <p>The combined regional and local Counter Disaster Plans for the Territory constitute the overall Territory Plan.</p>

Table 7: Legal protection for emergency management volunteers

QUESTIONS	NSW	VIC	QLD	WA
1. Is there protection against personal liability for actions causing harm or damage to others?	YES	YES	YES	YES
2. Name of Act(s), relevant Sections	<p><i>State Emergency and Rescue Act, 1989</i> sections 41, 59 and 62.</p> <p><i>Fire Brigades Act, 1989</i> section 78.</p> <p><i>Rural Fires Act, 1989</i> section 128.</p> <p><i>Ambulance Service Act 1990</i>, section 26.</p> <p><i>State Emergency Service Act 1989</i>, section 25.</p>	<p><i>Country Fire Authority Act 1958</i> sections 95 and 92A for volunteer firefighters and auxiliary workers.</p> <p><i>Victorian State Emergency Service Act 1987</i> section 17 for VICSES volunteers.</p> <p><i>Emergency Management Act 1986</i> section 37 for other volunteer emergency workers.</p>	<p><i>Fire and Rescue Service Act 1990</i>, section 129.</p> <p><i>Ambulance Service Act 1991</i>, section 31.</p> <p><i>State Counter-Disaster Organisation Act 1975</i>, section 29.</p> <p><i>Dangerous Goods Safety Management Act 2001</i>, section 185.</p>	<p><i>Fire and Emergency Services Authority of Western Australia Act 1998</i>, section 37.</p> <p>FESA Act is being changed to include SES and Volunteer Marine Rescue Service (VMRS).</p>
3. Is compensation for volunteers available for personal injury, death or damage to personal property under statutory law under common law?	YES	YES	YES (Damage to personal property during authorised activities is generally considered on a case by case basis.)	YES
4. Name of Acts(s), relevant Sections	<p><i>Workers Compensation Act 1987</i></p> <p><i>Workers Compensation (Bush Fire, Emergency and Rescue Services Act, 1987)</i></p>	<p><i>Emergency Management Act 1986</i> sections 27, 28 and 29.</p> <p><i>Country Fire Authority Act 1958</i> sections 63, 64, 65, 95, 92A and 110.</p> <p>Country Fire Authority Regulations 1992 Regulations 85, 89, 90, 91.</p> <p><i>Victoria State Emergency Service Act 1987</i> sections 22, 23 and 24.</p>	<p><i>WorkCover Queensland Act 1996</i> Sections 14–17, and 19.</p>	<p><i>Fire Brigades Act 1942</i> and <i>Bush Fires Act 1954</i>, sections 35a and 37.</p> <p>Under FESA insurance policy for SES and VMRS volunteers.</p> <p>FRS – Regulation 190 of Fire Brigades Regulations 1943.</p>
5. Is financial compensation for lost income available from volunteer agencies for volunteers attending court hearings? If so please give details.	NO	NO	NO	NO
6. Are there provisions for employment protection?	YES	NO	YES	NO
7. Name of Acts(s), relevant Sections	<p><i>State Emergency and Rescue Management Act 1989</i>, Part 3A.</p>	Not applicable	<p><i>State Counter Disaster Organisation Act 1975</i>, section 35.</p>	N/A

SA	TAS	ACT	NT
YES	YES	YES	YES
<p>CFS: <i>SA Country Fires Act 1989</i> section 64.</p> <p>SES: <i>State Emergency Services Act 1987</i> section 17.</p> <p><i>State Disaster Act 1987</i> section 17 for declared disaster or major emergency.</p> <p><i>Volunteers Protection Act 2001</i>.</p>	<p><i>Emergency Services Act 1976</i> (ES Act 1976) Part v1 section 36.</p> <p><i>Fire Service Act 1979</i> (FS Act 1979) sections 121 and 122.</p>	<p><i>Emergency Management Act 1999</i> Part 7 Miscellaneous No 78(1) (2).</p> <p><i>Bushfire Act 1936</i> section 5P.</p>	<p><i>The Fire and Emergency Services Act 1996</i> section 47 Protection of Members.</p>
YES	YES	YES	YES
<p>CFS: <i>Workers Rehabilitation and Compensation Act 1986</i> section 103(A) and Regulation 17 of Regulations 241 of 1999.</p> <p>SES: Benefits paid in line with the provisions of the <i>Workers Rehabilitation and Compensation Act 1986</i> and funded from Treasury.</p>	<p><i>Workers Rehabilitation and Compensation Act 1988</i> sections 5 and 31.</p> <p>NB Ambulance Service Policy states ambulance volunteers are covered only under the <i>Workers Rehabilitation and Compensation Act 1988</i> as if they were salaried workers.</p> <p>SES and fire volunteers also have this cover but they are also protected under their Acts.</p>	<p><i>Safety, Rehabilitation and Compensation Act 1988</i> (Cwth) Part IV section 4.</p> <p>Either compensation or common law damages.</p> <p>NB For the purposes of compensation, volunteers are taken to be employed by the ACT Public Service and are eligible to the same protection as other employees (Notice No ACT1 of 1994 Gazette S252, 1 July 1994.)</p>	<p>NT Work Health Act 1986.</p>
NO	NO	NO	NO
NO for unfair dismissal.	YES for rehabilitation.	<p>YES</p> <p>YES for Emergency Service Volunteers.</p> <p>NO for Bushfire Volunteers, other than during a Declared State of Emergency.</p>	YES
<i>Workers Rehabilitation and Compensation Act 1986</i> , sections 28(A) and 58(B).	<i>Emergency Services Act 1976</i> Section 42.	<i>Emergency Management Act 1999</i> Part 7, Miscellaneous.	<i>Fire and Emergency Act 1996</i> section 15, Protection of Employment Rights.

Table 7: Legal protection for emergency management volunteers (continued)

	NSW	VIC	QLD	WA
8. Are there arrangements in place to authorise actions of volunteers assisting interstate?	YES	YES CFA and VICSES volunteers are authorised by their legislation to carry out official duties as part of their agency within or outside Vic.	Across border Operational Guidelines are currently being developed between Qld and NSW.	YES
9. Are volunteers assisting interstate covered by workers compensation?	YES <i>Under the Workers Compensation (Bush Fire, Emergency and Rescue Services) Act 1987.</i>	YES – with clarification: not literally workers compensation but volunteer compensation schemes operate inside or outside Victoria for CFA or VICSES volunteers engaged in authorised activity.	YES <i>WorkCover Qld Act 1996</i> sections 139 and 140.	YES
10. If so, which State or Territory covers the volunteers?	NSW covers its own personnel under the above Act.	Victoria covers its CFA or VICSES volunteers engaging in authorised activity interstate.	Qld SES Volunteers are covered under Qld WorkCover arrangements whether they are injured inter or intra State.	WA covers its personnel.
11. Other protective legislation or initiatives?	NO	CFA has a range of other support schemes for its volunteer members – not legislated.	SES additional internal policies that provide for extended coverage under prescribed conditions. The Queensland Government has established the Queensland Government Insurance Fund to underwrite claims against the government and third party personal injury claims against the government/agencies and volunteers. This cover is equivalent to that provided by Public Liability Insurance.	NO
12. Are there any current or emerging legal issues not identified that may be of concern to volunteers? Please describe.	NO	YES The wording/coverage of existing statutory indemnity provisions are currently being examined for weaknesses.	YES The indemnity policy applying to Crown employees is currently under review and consideration is being given to extending it to include volunteers.	NO

