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Productivity Commission

Natural Disaster Funding Arrangements

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The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Further information on the Productivity Commission can be obtained from the Commission's website (www.pc.gov.au).



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17 December 2014

The Hon Joe Hockey MP
Treasurer
Parliament House
CANBERRA ACT 2600

Dear Treasurer

In accordance with Section 11 of the *Productivity Commission Act 1998*, we have pleasure in submitting to you the Commission's final report into *Natural Disaster Funding Arrangements*.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'J Coppel'.

Jonathan Coppel
Commissioner

A handwritten signature in dark ink, appearing to read 'Karen Chester'.

Karen Chester
Commissioner

Terms of reference

Productivity Commission Inquiry into Natural Disaster Funding Arrangements

Terms of Reference

I, Joseph Benedict Hockey, Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission (the Commission) undertake an inquiry into the efficacy of current national natural disaster funding arrangements. The inquiry should take into account the priority of effective mitigation to reduce the impact of disasters on communities.

Background

In the last five years, natural disasters around the country have claimed more than 200 lives and impacted hundreds of thousands of people. Natural disasters also have significant financial and economic costs. The impacts and costs of extreme weather events can be expected to increase in the future with population growth and the expanding urbanisation of coast lines and mountain districts near our cities.

Many communities experience repeated disruptions from flood, cyclone and fire events. Some of these events are unforeseen and the damage is unavoidable, but in many cases the consequences of natural disasters could be mitigated.

The National Strategy for Disaster Resilience underpins a coordinated and cooperative effort to enhance our ability to prepare for, withstand and recover from natural disasters. The benefits associated with building the resilience of our communities and investing in disaster mitigation include: improved community safety and resilience, a reduction in damage to property, speedier recovery, and a reduction in overall costs to the national economy. The range of mitigation options are diverse and span both structural and non-structural measures.

However, current Commonwealth funding arrangements are heavily weighted towards disaster recovery, which reduces the economic incentive for state, territory and local governments to mitigate disaster risk.

Disaster management is the responsibility of the state, territory and local governments, which largely determine the type and level of relief and recovery measures to be adopted following a disaster, and manage the administration of assistance measures. In accordance with this responsibility, state and territory governments bear a significant level of disaster relief and recovery expenditure. State, territory and local governments also have responsibility for land use planning.

Notwithstanding this, the Commonwealth has played a major role in providing financial and other assistance to help alleviate the burden on states and territories and to support the

provision of urgent assistance to disaster affected communities. Under the Natural Disaster Relief and Recovery Arrangements (NDRRA), the Commonwealth currently reimburses up to 75 per cent of the state and territory recovery bill after certain thresholds are met, at a cost to the Commonwealth of approximately \$12 billion for events since 2009. The majority of this expenditure is used to provide partial reimbursement to states and territories for rebuilding essential public assets, in particular roads and road infrastructure.

Scope of the Inquiry

The Commission will analyse the full scope (incorporating the quantum, coherence, effectiveness and sustainability) of current Commonwealth, state and territory expenditure on natural disaster mitigation, resilience and recovery, and develop findings on the following:

1. The sustainability and effectiveness of current arrangements for funding natural disaster mitigation, resilience and recovery initiatives, including – where directly relevant to an improved funding model – the management of disaster relief and recovery;
2. Risk management measures available to and being taken by asset owners – including the purchase of insurance by individuals, business and state, territory and local governments, as well as self-insurance options;
3. The interaction between Commonwealth natural disaster funding arrangements and relevant Commonwealth/state financial arrangements;
4. Options to achieve an effective and sustainable balance of natural disaster recovery and mitigation expenditure to build the resilience of communities, including through improved risk assessments. The options should assess the relationship between improved mitigation and the cost of general insurance. In doing this, the Commission should consider:
 - a. How business, the community, Commonwealth, state, territory and local governments can most effectively fund natural disaster recovery and mitigation initiatives;
 - b. How to ensure the right incentives are in place to support cost-effective decision making within and across all levels of government, business, non-government organisations and private individuals;
 - c. Mechanisms and models to prioritise mitigation opportunities and evaluate the costs and benefits of a range of mitigation options;
 - d. Options for urban planning, land use policy and infrastructure investment that support cost-effective risk management and understanding of the changes to the risk profile;
 - e. Options to fund identified natural disaster recovery and mitigation needs, including thresholds for triggering Commonwealth assistance to the states and territories;
5. Projected medium and long term impacts of identified options on the Australian economy and costs for governments as compared to impacts of the current funding arrangements; and

6. Options for transitioning to and implementing any proposed reforms to national natural disaster funding arrangements.

In undertaking the inquiry, the Commission is to take into account the roles and responsibilities of Commonwealth, state, territory and local governments, communities, insurers, business (including private providers of essential infrastructure), non-government organisations and private individuals. The Commission should consider funding for disaster response only where directly relevant to mitigation, relief and recovery and existing Commonwealth/state joint funding arrangements.

The Commission should also take into account evidence from previous reports, reviews and inquiries, including best practice, from overseas and in Australia. It should also take into account relevant recommendations of the Commission of Audit and developments in federal financial relations, noting that the Commonwealth is developing a White Paper on Reform of the Federation.

Further, since much disaster spending is directed towards infrastructure, the Commission should take into account evolving infrastructure and asset management policy and practice at the national, state and local levels.

The scope of the inquiry will be focused on naturally occurring rapid onset events that cause a serious disruption to a community or region, such as flood, bushfire, earthquake, storm, cyclone, storm surge, tornado, landslide or tsunami. This is consistent with the definition included in the Natural Disaster Relief and Recovery Arrangements (NDRRA) Determination.

Process

The Commission is to undertake an appropriate public consultation process including holding hearings, inviting public submissions and releasing a draft report to the public by September 2014.

It will consult with Commonwealth, state and territory, and local governments in undertaking this inquiry.

The final report should be provided to the Government by the end of December 2014. The reports will be published.

J. B. HOCKEY
Treasurer

[Received 28 April 2014]

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Abbreviations

ABCB	Australian Building Codes Board
ABS	Australian Bureau of Statistics
AEMA	Australian Emergency Management Arrangements
AEMC	Australian Emergency Management Committee
AEMI	Australian Emergency Management Institute
AGDRP	Australian Government Disaster Recovery Payment
ALM	Asset and liability management
ANZEMC	Australia–New Zealand Emergency Management Committee
ARIMA	Autoregressive integrated moving average (model)
BCA	Building Code of Australia
BCR	Benefit–cost ratio
BOM	Bureau of Meteorology
BRRT	Building Resilience Rating Tool
CBA	Cost–benefit analysis
CGC	Commonwealth Grants Commission
COAG	Council of Australian Governments
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DIRS	Disaster Income Recovery Subsidy
DRA	Disaster Recovery Allowance
EQC	Earthquake Commission (New Zealand)
EMA	Emergency Management Australia
FEMA	Federal Emergency Management Agency (United States)
GDP	Gross domestic product
GST	Goods and services tax
HFE	Horizontal fiscal equalisation
ILR	Insurance loss ratio

IPART	Independent Pricing and Regulatory Tribunal (NSW)
MCA	Multi-criteria analysis
NBMP	National Bushfire Management Plan
NCC	National Construction Code
NDO	Natural Disasters Organisation
NDRF	National Disaster Resilience Framework
NDRP	National Disaster Resilience Program
NDRRA	Natural Disaster Relief and Recovery Arrangements
NEMC	National Emergency Management Committee
NEMP	National Emergency Management Projects
NERAG	National Emergency Risk Assessment Guidelines
NFID	National Flood Information Database
NFIP	National Flood Insurance Program (United States)
NFRIP	National Flood Risk Information Portal
NIAM	National Impact Assessment Model
NPV	Net present value
NPANDR	National Partnership Agreement on Natural Disaster Resilience
NSDR	National Strategy for Disaster Resilience
OECD	Organisation for Economic Co-operation and Development
PC	Productivity Commission
PPRR	Prevention, preparedness, response and recovery
QRA	Queensland Reconstruction Authority
REPA	Restoration of Essential Public Assets
TISN	Trusted Information Sharing Network
VBRC	2009 Victorian Bushfires Royal Commission
VMIA	Victorian Managed Insurance Authority
VFI	Vertical fiscal imbalance
VPPs	Victorian Planning Provisions

Glossary

Asset and liability management	Used by organisations to jointly manage specific risks to their assets and liabilities in order to achieve their financial objectives.
Asset management plans	Plans that define current levels of service and the processes used to manage and maintain assets, such as infrastructure.
Asset register	A list of an organisation's assets and financial and non-financial information about the assets.
betterment	An increase in the resilience of an asset to natural disasters.
Betterment	A provision in the Natural Disaster Relief and Recovery Arrangements that allows reimbursement of a portion of the cost to restore an essential public asset damaged by an eligible disaster event to a more disaster-resilient state.
Contingent liability	Something that could create an obligation for government funding but is uncertain and not wholly under the control of the government.
Exposure	People, property or other elements present in hazard zones that are subject to potential losses.
Fiscal risks	The risk that fiscal outcomes vary from what was expected at the time of the budget or other forecast.
Hazard	A source of potential harm or a situation with a potential to cause loss.
Horizontal fiscal equalisation	The process whereby the Australian Government distributes goods and services tax revenues so that each state and territory has the fiscal capacity to provide services and infrastructure to the same standard (assuming they each make the same effort to raise revenue and operate at the same level of efficiency).
Incentive neutrality	Achieved when policy frameworks are not biased toward one option (such as toward disaster recovery over mitigation) and where decisions consider the impacts of the options over time, and are not biased toward delay or immediate action.

Mitigation	Measures taken in advance of disasters to reduce their impacts.
Natural disaster	A naturally occurring rapid onset event that causes a serious disruption to a community or region, such as flood, bushfire, earthquake, storm, cyclone, storm surge, tornado, landslide or tsunami.
Provision	Setting aside funds or capital to cover anticipated future losses or costs.
Recovery	Actions to support affected communities to restore damaged property and economic activity, as well as physical and psychological health and wellbeing.
Residual risk	The level of risk that a person or organisation remains exposed to after taking action to reduce the level of risk.
Resilience	The ability of communities to continue to function when exposed to hazards and to adapt to changes rather than returning to the original pre-disaster state.
Response	Actions taken in anticipation of, during and immediately after an emergency to minimise its effects.
Risk	The combination of the probability of an event and its negative consequences.
Risk appetite	The level of risk that a person or organisation is willing to tolerate or bear rather than devoting further resources to reduce the risk.
Risk management	The systematic application of management policies, procedures and practices to the tasks of identifying, analysing, evaluating, treating and monitoring risk.
Shared risks	Risks that have impacts that affect many parties and that cannot be distinctly allocated to individual assets and so are shared by the community.
Vertical fiscal imbalance	The situation where the Australian Government raises more revenue than it requires for its own direct expenditure responsibilities, whereas state and territory governments raise less revenue than they require for their expenditure responsibilities.
Vulnerability	The characteristics and circumstances of a community or asset that make it susceptible to the damaging effects of a hazard.

OVERVIEW

Key points

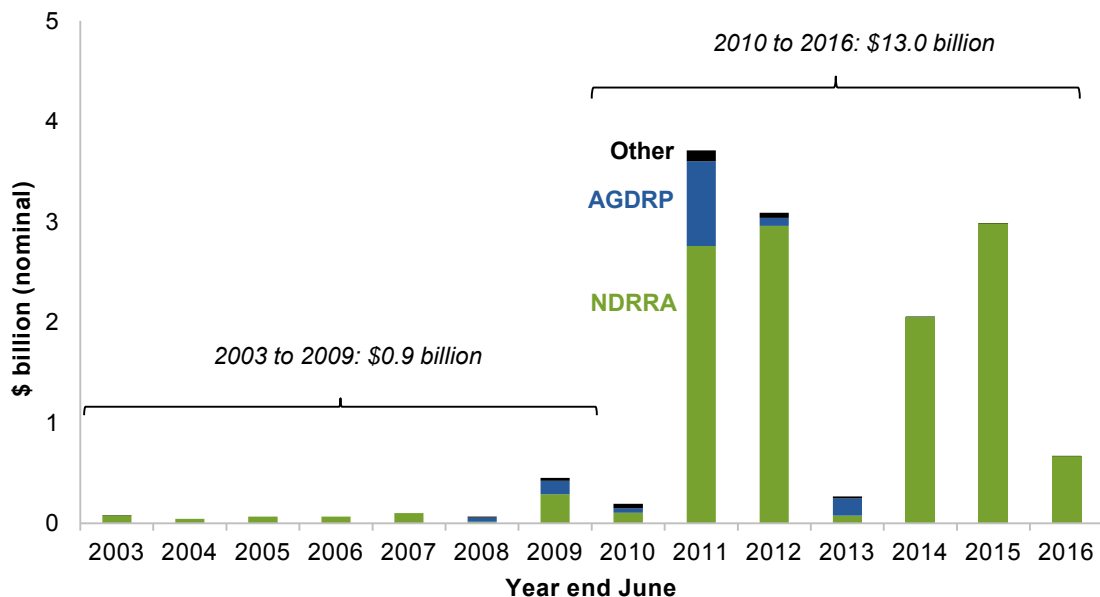
- Australia is exposed to natural disasters on a recurring basis. Effective planning and mitigation of risks is an essential task for governments, businesses and households.
- Current government natural disaster funding arrangements are not efficient, equitable or sustainable. They are prone to cost shifting, ad hoc responses and short-term political opportunism. Groundhog Day anecdotes abound.
- Governments overinvest in post-disaster reconstruction and underinvest in mitigation that would limit the impact of natural disasters in the first place. As such, natural disaster costs have become a growing, unfunded liability for governments.
- The funding arrangements matter because they impact the incentives to manage risks, including by using potent but politically challenging levers like land use planning. The reform imperative is greatest for states most exposed to natural disaster risk, like Queensland.
- The recommended reforms comprise a coherent policy package across recovery and mitigation funding, budget treatment of recovery costs, and accountability requirements for all governments. ‘Cherry picking’ component parts would see the much needed balance between mitigation and recovery, as well as greater state autonomy, remain elusive.
- Australian Government post-disaster support to state and territory governments (states) should be reduced, and support for mitigation increased. Greater budget transparency and some provisioning is also needed.
 - States need to shoulder a greater share of natural disaster recovery costs to sharpen incentives to manage, mitigate and insure against these risks. The Australian Government should provide a base level of support to states commensurate with relative fiscal capacity and the original ‘safety-net’ objective of disaster recovery funding, with the option for states to purchase ‘top-up’ fiscal support.
 - Australian Government mitigation funding to states should increase to \$200 million a year and be matched by the states.
 - These reforms would give state and local governments autonomy in how they pursue disaster recovery and mitigation. The reforms should be supported by performance and process-based accountability mechanisms that embed good risk management.
- Governments have a role in providing emergency relief payments to individuals seriously affected by natural disasters, to defray immediate economic and social hardship. Such relief should be provided in a consistent, equitable and efficient way.
- Governments can do better in terms of policies that enable people to understand natural disaster risks and also to give them the incentive to manage the risks effectively.
 - Information on hazards and risk exposure has improved significantly in recent years, but there are opportunities to improve information consistency, sharing and communication.
 - Regulations affecting the built environment have a significant influence on the exposure and vulnerability of communities to natural hazards. While building regulations have generally been effective, there is a need to transparently incorporate natural disaster risk management into land use planning.
- Insurance is an important risk management option. Insurance markets in Australia for natural disaster risk are generally working well, and pricing is increasingly risk reflective. Insurers can and should do more to inform households on their insurance policies, the natural hazards they face and the indicative costs of rebuilding after a natural disaster.

Overview

Natural disasters are an inherent part of the Australian landscape. Since 2009, natural disasters have claimed more than 200 lives, destroyed 2670 houses and damaged a further 7680, and affected the lives and livelihoods of hundreds of thousands of Australians. They have also had major effects on the natural environment. These impacts, when geographically concentrated, can significantly affect communities and regions. A recent report by Deloitte Access Economics estimated the total economic cost of natural disasters at \$6.3 billion per year.

These natural disasters have also had a significant financial impact on governments in recent years, following a concentrated spate of natural disasters. Over the past decade, the Australian Government has spent around \$8 billion on post-disaster relief and recovery, with another \$5.7 billion to be spent over the forward estimates for past natural disaster events (figure 1). State and territory governments have spent a further \$5.6 billion on relief and recovery over the past decade.

Figure 1 **Australian Government post-disaster expenditure**



Some natural disasters are unforeseen and their impacts are unavoidable, but in many cases the consequences of natural disasters can be mitigated. Similarly, better management of natural disaster risk by government can reduce the costs of natural disasters, including

fiscal costs. The reform imperative is greatest for a jurisdiction like Queensland, which has incurred the highest natural disaster costs in recent years. While the past several years have been an outlier — the concentrated spate of severe natural disasters is a rare occurrence — the high costs incurred in Queensland are not only a reflection of the state's higher hazard risk. They also reflect inadequate risk management, manifest in suboptimal land use planning, asset management planning and insurance of government assets.

The natural disaster funding arrangements matter, not because of their fiscal impact *per se*, but because they impact on incentives for governments and the community to manage natural disaster risks. There is a longstanding concern that governments underinvest in mitigation and spend too much on recovery, leading to higher overall costs for the community. Furthermore, government responses to natural disasters can be ad hoc and emotionally and politically charged, resulting in reactive 'policy on the run' and inequitable and unsustainable outcomes.

This inquiry report presents the Commission's recommended reforms to achieve a more effective and sustainable balance of natural disaster mitigation, relief and recovery expenditure to build the resilience of communities.

What has the Commission been asked to do?

The Commission was asked to undertake an inquiry into the efficacy of Australia's natural disaster funding arrangements. In particular, the Commission was to analyse the quantum, coherence, effectiveness and sustainability of Commonwealth, state and territory expenditure on natural disaster mitigation, resilience and recovery, and to develop findings on:

- the sustainability and effectiveness of current arrangements for funding natural disaster mitigation, resilience and recovery initiatives
- the risk management measures available to and being taken by asset owners
- the interaction between natural disaster funding and federal financial arrangements
- options to achieve an effective and sustainable balance of expenditure on natural disaster mitigation and recovery
- how stakeholders can most effectively fund natural disaster recovery and mitigation initiatives
- how to ensure the right incentives are in place to support cost-effective decision making
- mechanisms and models to prioritise and evaluate mitigation opportunities
- the role of urban planning, land use policy and infrastructure investment in supporting cost-effective risk management
- options to fund identified natural disaster recovery and mitigation needs.

The terms of reference also requested the Commission to investigate the medium and long-term impacts of reform options on the Australian economy and costs to governments, and to consider the transitional and implementation issues of proposed reforms. The funding arrangements between states and territories and their respective local governments are outside the scope of this inquiry.

The terms of reference define natural disasters as ‘naturally occurring rapid onset events that cause a serious disruption to a community or region, such as flood, bushfire, earthquake, storm, cyclone, storm surge, tornado, landslide or tsunami’. Heatwaves and drought are outside the scope of this inquiry.

Disaster response is also outside the scope, except where directly relevant to mitigation, relief and recovery and existing Commonwealth–state joint funding arrangements. The Commission acknowledges that Australia’s response capabilities, including the dedicated efforts of emergency services workers, volunteers and defence personnel, are a crucial element of the community’s resilience to natural disasters.

Natural disasters and their impacts

Australia is exposed to a wide variety of natural *hazards* that become natural *disasters* when they significantly and negatively impact the community. While natural hazards can cause considerable damage, some hazards (such as bushfires) are important parts of natural ecosystem processes, and therefore also have benefits.

Over the past 40 years, storms have been the most frequent disasters causing insured losses. Floods have also been frequent and, when they occur, are typically the most expensive events. Bushfires are less frequent, but account for most fatalities. Across the country accumulated insurance losses have been greatest in New South Wales (mostly hail and storms), followed by Queensland (mostly floods and cyclones) (table 1).

The costs of natural disasters go beyond insured losses. Disasters impose a range of economic, social and environmental costs on governments, businesses, households and communities. These include:

- direct market costs caused by the physical event, such as damage to private properties and public infrastructure
- indirect market costs, such as disruptions to economic activity
- non-market costs, such as deaths and injuries as well as impacts on social wellbeing and the natural environment (figure 2).

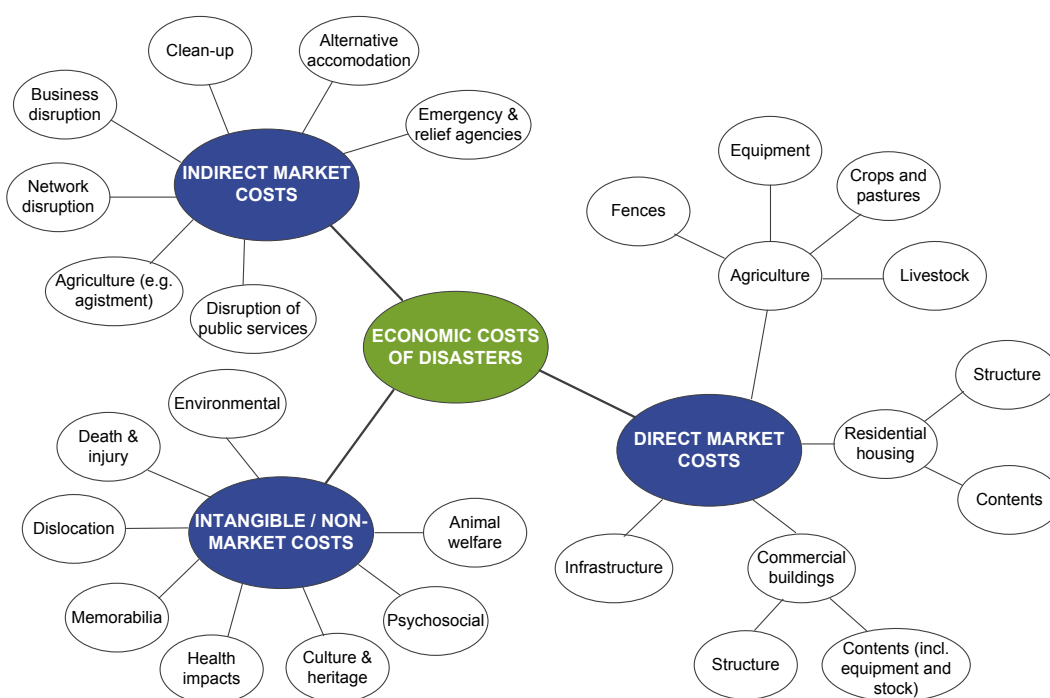
Table 1 Insurance losses by natural hazard, 1970–2013^a

\$ million (2011 dollars)

<i>Event type</i>	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>	<i>Total</i>
Bushfire	527	1 650	-	189	96	100	-	440	3 002
Cyclone	36	-	3 329	-	486	-	1 529	-	5 379
Flood	965	400	3 630	-	24	51	123	-	5 192
Storm	2 747	2 439	1 376	47	1 232	34	-	-	7 874
Hail	4 856	294	949	92	-	86	-	-	6 277
Earthquake	1 657	-	-	-	15	-	-	-	1 671
Total	10 788	4 783	9 283	327	1 852	271	1 652	440	29 395
<i>Per cent</i>	<i>36.7</i>	<i>16.3</i>	<i>31.6</i>	<i>1.1</i>	<i>6.3</i>	<i>0.9</i>	<i>5.6</i>	<i>1.5</i>	<i>100.0</i>

^a Where events were recorded as impacting multiple jurisdictions, costs have been divided evenly across those jurisdictions. – Nil or rounded to zero.

Figure 2 Types of economic costs of natural disasters



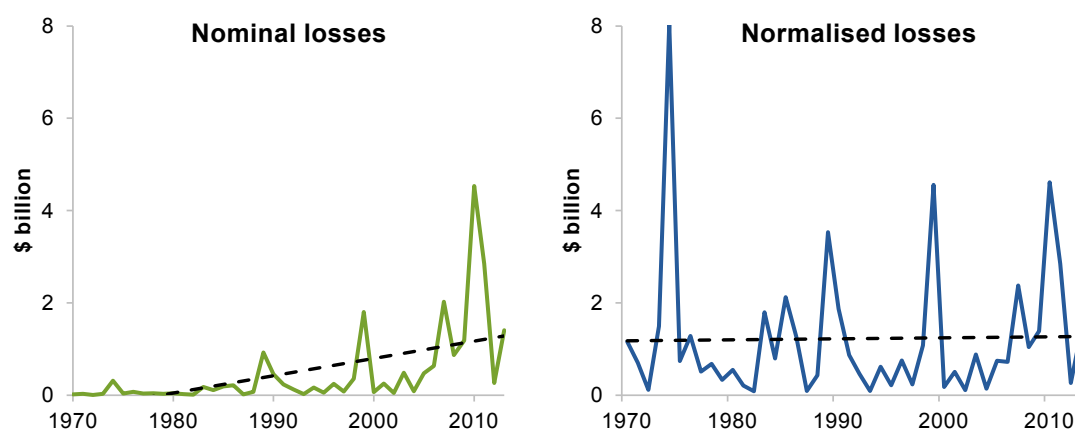
The economic costs of natural disasters are difficult to measure. There are some data on the direct market costs of natural disasters, but only limited data on the indirect and non-market costs. Further, the economic impacts of natural disasters are likely to be nonlinear — that is, as the size of a natural disaster increases, its disruptive effect is amplified. While insurance losses are an imperfect measure of the economic costs of natural disasters, they are the most comprehensive and consistent source of data available.

Insurance losses from natural disasters exceeded \$21 billion over the period 1970 to 2013 (in nominal terms), or an average of \$480 million each year. The bulk of these losses arose from a relatively small number of events — indeed, only 10 per cent of natural disasters accounted for 80 per cent of recorded insurance losses. An implication of this finding is that policy settings and natural disaster funding arrangements need to be designed well to deal with these infrequent but costly natural disasters.

Nominal insurance losses have increased over time, and have been particularly high in recent years (figure 3). However, when insurance losses are ‘normalised’ to take account of changes in population, wealth and inflation over time, the upward trend disappears. This suggests that the rising cost of natural disasters can be explained by the rising exposure and vulnerability of communities to natural disasters. For example:

- the number of houses, businesses, infrastructure and other assets exposed to natural disasters has increased (partly in line with population growth)
- the value and size of assets at risk has increased
- an increasing number of people have settled in areas prone to natural disasters, such as along the coast and urban fringe.

Figure 3 Insurance losses from natural disasters^{a,b}



^a Normalised losses are estimated insurance losses that would have been incurred if past natural disasters were to happen in 2011. To obtain normalised losses, Risk Frontiers adjusted nominal insurance losses for changes in inflation, population, wealth, and building standards in areas prone to tropical cyclones. ^b Dashed lines represent linear trends fitted to the data.

These socioeconomic drivers are likely to continue. For example, the CSIRO reported that ‘in south east Queensland, based on current development patterns, the number of residential buildings affected by a 1 in 100 year storm tide inundation event nearly doubles in 2030 compared with today.’ Climate change may also affect future costs through changes in the frequency and intensity of some extreme weather events. The Commission’s

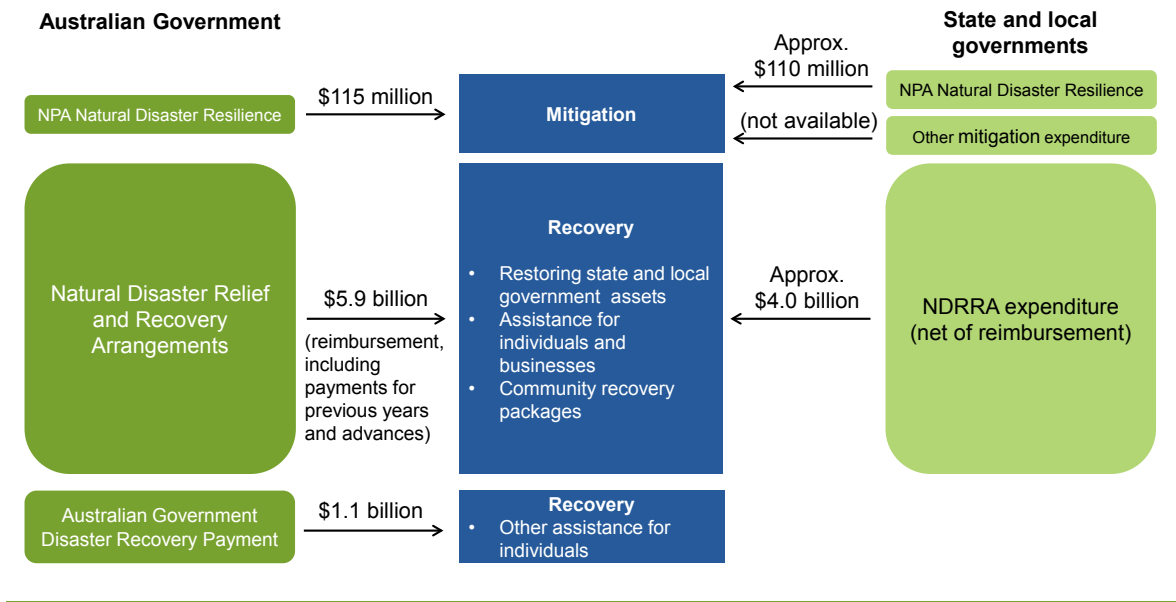
projections indicate that, based on past trends, nominal insurance losses from natural disasters are likely to grow by around 5–6 per cent per annum over the next decade.

Current funding arrangements

Most infrastructure and government service delivery is the responsibility of state and territory governments (from hereon, ‘states’). Some of this responsibility has been devolved by states to local governments. Consequently, state and local governments are primarily responsible for managing the risks that natural disasters pose to government assets and service delivery.

However, responsibility for funding natural disaster costs is shared with the Australian Government, largely due to the high degree of vertical fiscal imbalance in the Australian Federation (figure 4). Almost half of state government revenue comes from Australian Government transfers. The Australian Government also acts as a ‘safety net’ by bearing some of state governments’ fiscal risk, including a portion associated with natural disasters.

Figure 4 **The major national natural disaster funding arrangements**
Expenditure for 2009-10 to 2012-13



In addition to cost-sharing arrangements with the Australian Government, the costs of natural disaster relief are also shared among the states through the process of horizontal fiscal equalisation. In essence, this process distributes natural disaster relief costs across all states on a per-capita basis, regardless of where natural disasters occur. Queensland, the Northern Territory and Victoria have been the main beneficiaries of this process in recent years (representing a redistribution of some \$647 million, \$18 million and \$13 million

respectively to these jurisdictions over the past four years). Other jurisdictions have also benefited in the past.

Pre-disaster expenditure

Funding for natural disaster mitigation is also shared between the states and the Australian Government, through the National Partnership Agreement on Natural Disaster Resilience (NPANDR). Between 2009-10 and 2012-13, the Australian Government spent around \$115 million on the NPANDR, and there was at least another \$110 million of matched (mostly state government) spending under this agreement.

Governments also invest in natural disaster mitigation in other ways. The Australian Government funds National Emergency Management Projects and several programs relating to volunteer support, education and research. State and local governments embed mitigation in their core activities, such as infrastructure investment.

Government investment in mitigation is insignificant compared to post-disaster expenditure. For example, Australian Government mitigation spending was only 3 per cent of what it spent post-disaster in recent years. Mitigation expenditure by state governments is likely to be higher, but information on this expenditure is not comprehensive. Overall, the clear impression is one of insufficient investment in mitigation.

Post-disaster expenditure

The Australian Government spent over \$8 billion on post-disaster activities between 2002-03 and 2012-13. Most of this was through the Natural Disaster Relief and Recovery Arrangements (NDRRA) (about \$6.5 billion), with a further \$1.3 billion through Australian Government Disaster Recovery Payments (AGDRP). Over the same period, there was at least another \$5.6 billion of NDRRA eligible expenditure by state (and implicitly local) governments, net of Australian Government reimbursements. There is limited information about state relief and recovery expenditure outside of the NDRRA.

The NDRRA are the primary mechanism through which the Australian Government shares the costs of natural disasters with the states. These arrangements are intended to act as a safety net against large, unexpected fiscal impacts from natural disasters. The Australian Government reimburses state governments for a proportion of their eligible expenditure on relief and recovery, including expenditure by their local governments. NDRRA expenditure largely consists of restoring essential public assets (particularly roads) and providing assistance to individuals and businesses. Funding flows to local governments through state-based relief and recovery arrangements.

The fundamental elements of the NDRRA are (box 1):

- thresholds for assistance — the Australian Government provides assistance only if cumulative state expenditure (on events meeting the small disaster criterion of \$240 000) exceeds a certain threshold in a financial year
- cost-sharing rates — the level of reimbursement (up to 75 per cent) depends on the level of state expenditure and the type of activity
- eligible expenditure — reimbursement is only available for defined activities, falling under three categories (with a fourth category available for discretionary assistance as determined by the Prime Minister).

Box 1 **NDRRA categories, thresholds and assistance rates**

There are four categories of relief and recovery assistance.

- Category A — emergency assistance to individuals.
- Category B — restoration of essential public assets; financial assistance to small businesses, primary producers, voluntary nonprofit bodies and individuals; and 'counter disaster operations' for public health and safety.
- Category C — community recovery packages and recovery grants to small businesses and primary producers.
- Category D — acts of relief or recovery carried out in circumstances deemed to be exceptional.

Reimbursement is based on the total amount that states spend on the above eligible measures each financial year, counting only events where state expenditure exceeds the 'small disaster criterion' (currently \$240 000). Reimbursement rates depend on whether annual expenditure has exceeded either of two thresholds. These are:

- first threshold: 0.225 per cent of total state government revenue and grants in the financial year two years prior
- second threshold: 1.75 times the first threshold.

Threshold values for 2014-15 are set out in the table below.

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
First threshold	143	110	94	34	57	11	11	9
Second threshold	250	192	164	59	100	19	19	16

Expenditure below the first threshold is reimbursed at 50 per cent for category A and C measures, with no reimbursement for category B measures below this threshold. Any portion of expenditure between the first and second thresholds is reimbursed at 50 per cent, and any expenditure that exceeds the second threshold at 75 per cent (for categories A, B and C).

Category D (exceptional circumstances) assistance is generally determined on a case-by-case basis and is not bound by the above thresholds.

Over time the range of measures that are eligible for reimbursement under the NDRRA has increased, especially in revisions to the NDRRA *Determination* in 2006 and 2007, and now includes more types of assistance to individuals, interest rate subsidies and grants for businesses, freight subsidies for primary producers, and funding for ‘counter disaster operations’. Category D was added in 2007 to cover acts of ‘exceptional’ relief and recovery.

The NDRRA are intended to ‘complement other strategies in relation to natural disasters, such as insurance and disaster mitigation planning and implementation’. Reflecting this, state governments must meet several requirements to be eligible for NDRRA funding, including:

- having adequate access to capital to fund infrastructure losses (for example, insurance)
- submitting independent assessments of their insurance arrangements to the Australian Government and responding appropriately to recommended changes
- developing and implementing disaster mitigation strategies and encouraging their local governments to do likewise.

These requirements reflect attempts to create, through prescription, incentives for state and local governments to manage the risks to their assets and communities in an efficient and sustainable way.

Post-disaster assistance to individuals

State governments have traditionally provided assistance to individuals, small businesses and primary producers affected by natural disasters, with some of the cost partially reimbursed by the Australian Government through the NDRRA. The Australian Government has also directly provided financial assistance under its own programs.

The AGDRP was introduced in 2006 to provide a one-off, non-means-tested payment of \$1000 for adults and \$400 for children who are adversely affected by a major disaster. Eligibility depends on being resident in a declared disaster zone and being ‘adversely affected’. The definition of ‘adversely affected’ has varied considerably across different disaster events. The AGDRP was initially estimated to cost \$3 million per year. The cost peaked at around \$850 million in 2010-11 following the Queensland floods and Cyclone Yasi and at a time when the eligibility criteria were at their broadest.

The Australian Government also provides the Disaster Recovery Allowance, a payment to individuals who have lost income as a direct result of a disaster. Payments are made for up to 13 weeks at a rate equivalent to the maximum rate of Newstart or Youth Allowance.

A framework for effective risk management

Natural disaster risk arises from the interaction of three elements: the probability of a natural hazard occurring, the exposure of people, property and the environment to the hazard, and their vulnerability to the impacts (figure 5). Risk management can be used to reduce the impact of risks, including by managing the consequences when they occur. Even when little can be done to reduce the probability of natural hazards, it is possible to reduce the exposure and vulnerability of the community, and hence the risk.

Figure 5 **The natural disaster risk triangle**



Effective risk management involves:

- owning risk — taking responsibility for managing and funding risks
- understanding risk — identifying which risks are faced and their likely consequences
- treating risk — making decisions on how to best manage risks, such as through mitigation, insurance or by retaining risks.

Risk management is not costless. The benefits of risk management need to be traded off against other priorities. In some cases, it may be prohibitively expensive, or impossible, to materially reduce risk. Risk cannot be eliminated. That is, there is an implicit level of residual risk, or ‘risk appetite’, that a household, business, community or government is willing to tolerate without devoting further resources to reduce the risk. This level of risk will generally depend on their preferences, their financial and non-financial capacity and their ability to transfer risk to a third party.

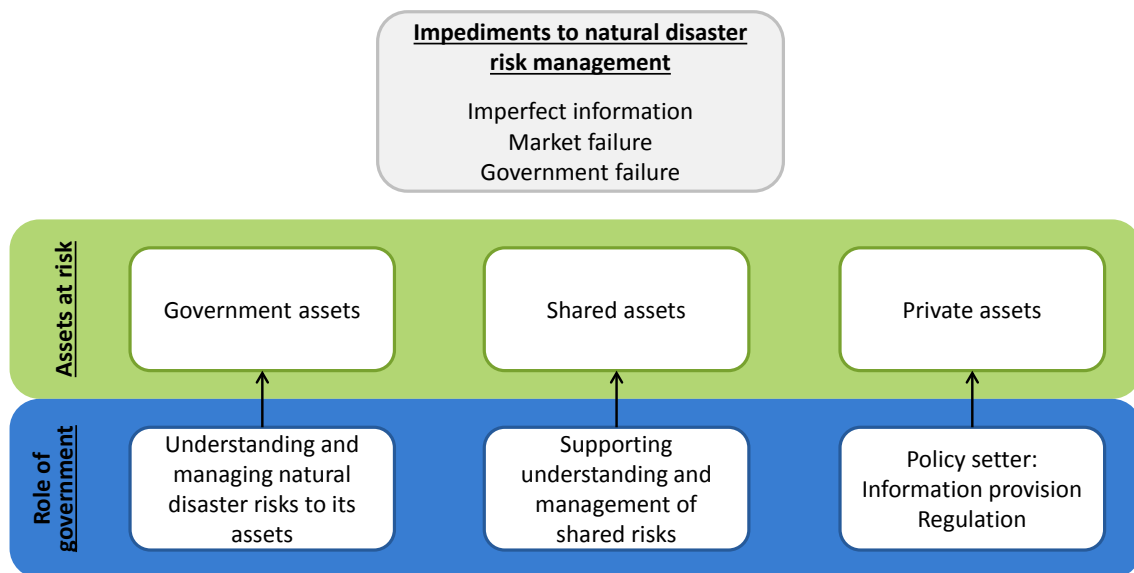
Households, businesses and governments are generally best placed to manage natural disaster risks to their own assets — asset owners typically have a clear incentive to identify and implement the risk management options that most closely align with their risk appetite. However, there are impediments to asset owners effectively managing natural disaster risk. These include:

- a lack of information, such as on the future likelihood and impacts of some natural hazards

- difficulty understanding or treating risks because of cognitive and behavioural biases, such as myopia
- market failures, such as asymmetric information, externalities and ‘public-good’ characteristics
- regulatory barriers and distortionary taxes, such as insurance-specific taxes.

In the presence of these impediments, there are three roles for government (figure 6). First, governments can set policy to reduce impediments to effective risk management by households and businesses. Second, they can support the management of ‘shared’ risks, such as the effects of natural disasters on community cohesion. Third, governments need to effectively manage natural disaster risk to their own assets and liabilities.

Figure 6 **Role of government in natural disaster risk management**



However, government action is not always in the best interests of the community (government failure). Research shows that natural disaster policy is beset by political opportunism and short-sightedness (myopia), which biases how funding is allocated to natural disaster risk management. Politicians can be quick to provide generous post-disaster assistance, which provides immediate, observable and private benefits to individuals and has strong political salience. By contrast, the political incentives for mitigation are weak, since mitigation provides public benefits that accrue over a long time horizon. Over time, this bias creates entitlement dependency and undermines individual responsibility for natural disaster risk management.

To create incentives for better risk management, natural disaster policy and funding arrangements need to clearly define roles and responsibilities (and how these relate to private and public risks), and have strong, transparent and credible commitment

mechanisms so that governments avoid ad hoc policy responses, myopic policy settings and disincentives for private risk management.

Reforming natural disaster funding arrangements

Funding arrangements matter, not because of their fiscal impact *per se*, but because of the *incentives* they create for natural disaster risk management. The current funding arrangements should therefore be assessed from three perspectives.

1. Is government, as asset owner, effectively managing natural disaster risks?
2. Is government effectively supporting the management of shared risks?
3. Is government, as policy setter, creating an environment that is conducive to effective risk management by households and businesses?

Government as asset owner

In assessing whether governments, as asset owners, are effectively managing natural disaster risks, the Commission has considered the allocation of responsibilities across levels of government (*risk ownership*) and the management of fiscal and budgetary risks (*risk understanding*). Both of these factors affect the efficiency of *risk treatment* options undertaken by governments.

The principle that asset ownership should align with responsibility for managing and funding risks is also applicable to governments. In some situations, it may be appropriate for higher levels of government to assume some responsibility. This could be the case where disparate approaches increase overall costs, or where risk management actions have spillover effects on other jurisdictions. In these situations, coordinated action across jurisdictions may allow risks to be managed at lower overall cost. It may also be justified on the grounds of vertical fiscal imbalance, to the extent that the Australian Government is better able to bear very large or geographically diversified risks because of its broader revenue and jurisdictional base.

Government budgets are the principal tool to allocate limited funding to competing priorities. Budgets can make governments' decisions more transparent to taxpayers. This, in turn, can make governments more accountable for their decisions, and give more incentive to effectively manage risks to the community's wellbeing. Transparent budgets can be a powerful force against political opportunism. It is therefore important that budgets reflect the full range of natural disaster liabilities that governments are exposed to.

The Commission's assessment of how governments are managing natural disaster risks to their own assets reveals that governments are overinvesting in post-disaster recovery and underinvesting in mitigation and insurance. The key problems are the current budget treatment of natural disaster costs and the intergovernmental cost-sharing arrangements

(namely the NDRRA). A related problem of current funding arrangements is unnecessary prescriptiveness and red tape that lead to wasteful spending.

The Commission is therefore recommending an overhaul of the natural disaster funding arrangements in the form of a coherent policy package across recovery and mitigation funding, budget treatment of recovery costs, and accountability requirements for state and local governments. This reform package involves:

- reducing Australian Government post-disaster support to states to sharpen their incentives for mitigation and insurance
- significantly increasing Australian Government support for mitigation
- more transparent budget treatment of natural disaster risks
- establishing accountability frameworks that reduce prescriptiveness and give states more ‘earned autonomy’ on how to best undertake recovery and mitigation.

It is important that this funding reform model is adopted in its entirety. ‘Cherry picking’ component parts would see the much needed balance between mitigation and recovery, as well as greater state autonomy, remain elusive.

Australian Government post-disaster support should be reduced

The NDRRA dilute the link between asset ownership, risk ownership and funding. This creates a financial disincentive for state and local governments to manage these risks (especially through land use planning) and a further disincentive to invest in mitigation or insurance. State and local governments generally must bear the full costs of these risk mitigators themselves, whereas they only pay a portion of the cost of restoring an asset damaged by a natural disaster under the NDRRA.

Some Australian Government fiscal support after a major natural disaster is warranted on the grounds of relative fiscal capacity. Historically, the intention of the NDRRA (and its precursors) was to provide assistance to states when natural disasters impose a significant fiscal burden. However, the current extent of Australian Government support goes well beyond what is needed to redress relative fiscal capacity and deliver the ‘safety-net’ policy objective. Instead of being an ‘insurer of last resort’, for some government assets the Australian Government has become the ‘insurer of first resort’.

The reimbursement model under the NDRRA is also problematic. It drives the behaviour of local and state governments, leading to excessive expenditure on activities that are eligible for reimbursement, and inadequate expenditure on other activities that may be more cost effective and have greater benefits to the community but are not eligible for reimbursement.

- ‘Groundhog Day’ anecdotes abound of the same asset repeatedly damaged by successive natural disasters and yet repeatedly rebuilt in the same location and to the same standard. For example, a water intake plant in Queensland was damaged by

floods in 2011. Soon after it was reconstructed to its pre-disaster state, it was damaged again by flooding in 2013.

- By contrast, betterment (rebuilding an asset to a more disaster-resilient standard) is rarely undertaken under the NDRRA because it is subject to a lower reimbursement rate, a higher administrative burden and lack of a budget allocation by the Australian Government (which means that offsetting savings must be made elsewhere to fund betterment). The Betterment provision in the NDRRA has only been used once.

Furthermore, input-based conditions under the reimbursement model — such as restrictions on the use of local government employees' labour (day labour) — are preventing state and local governments from pursuing the most cost-effective and efficient recovery options.

In the draft report, the Commission identified three options for reforming Australian Government post-disaster support. In principle, an event-based model (option 3) is preferred given most disaster damage is sustained from a small number of large disasters. Such a model would provide funding support for large natural disasters, but there would be no recourse to the Australian Government for smaller, more routine disasters that states should be able to manage independently. Funding would be provided as a single upfront grant, soon after a disaster occurs, reflecting an assessment of damage and expected recovery costs. This model would provide greater short-term fiscal certainty to both the Australian and state governments, and afford greater autonomy to state and local governments to expend funds in accordance with local preferences.

An event-based model would be a significant departure from the current funding arrangements and would not be feasible in the short term (but may be feasible in the medium term, as discussed later). The Commission is therefore recommending that the Australian Government comprehensively refocus the current arrangements to provide support to states when an annual expenditure threshold has been exceeded (option 2 in the draft report). This would be more reflective of fiscal capacity and the safety-net policy objective, and avoids the risk of an event-based model not adequately capturing cumulative fiscal risk.

The key features of the Commission's recovery funding model are summarised in table 2. This funding model is intended to lower the cost of managing natural disaster risk by:

- strengthening the incentives for mitigation and insurance
- giving state and local governments greater autonomy in how funds are spent
- removing the inefficiencies that arise from prescriptiveness (both in terms of lowering compliance costs and addressing rules that lead to wasteful spending)
- reducing the fiscal risks transferred to the Australian Government, to better align with fiscal capacity and the original safety-net objective of the funding arrangements.

The above reforms would only apply to natural disaster cost-sharing arrangements between the Australian Government and the states. Each state would continue to have full autonomy on how it provides support to its local governments.

Table 2 Key features of the Commission’s recovery funding model

Cost sharing	50 per cent of above-threshold costs
Annual expenditure threshold	0.45 per cent of total state government revenue
Small disaster criterion	\$2 million, indexed over time
Provision of funding	Essential public assets — assessed damages and benchmark prices Community recovery — reimbursement model, transitioning to untied grants based on assessed recovery costs
‘Top-up’ fiscal support	Actuarially fair premium for states to purchase a lower small disaster criterion or threshold, or higher cost-sharing rate

Funding shares and thresholds for assistance

Like the NDRRA, the Commission’s recovery funding model has thresholds to trigger Australian Government cost-sharing. The small disaster criterion should be increased to \$2 million and the annual expenditure threshold doubled to 0.45 per cent of total state government revenue (table 3). 50 per cent cost sharing should apply to costs above the threshold.

Table 3 Comparison of state and territory revenue thresholds
\$ million, 2014-15

<i>Jurisdiction</i>	<i>Current NDRRA cumulative threshold</i>		<i>Reformed cumulative threshold</i>
	1st threshold (0.225%)	2nd threshold	0.45%
NSW	143	250	286
Vic	110	192	219
Qld	94	164	188
SA	34	59	68
WA	57	100	115
Tas	11	19	21
NT	11	19	22
ACT	9	16	19

The recommended higher **thresholds** are more likely to be consistent with the safety-net policy objective of the funding arrangements. The Commission considers that state governments do have the capacity to manage disaster recovery costs well beyond the current funding thresholds without compromising fiscal sustainability. States routinely experience variability to their budgets — for example, from fluctuations in royalty or

taxation revenue — that significantly exceeds the current NDRRA thresholds. Despite this variability, many states have achieved their fiscal objectives, including maintaining strong credit ratings and delivering budget surpluses.

The current **small disaster criterion** (\$240 000) is too low; the NDRRA are being accessed for small, routine weather events. Increasing the small disaster criterion to \$2 million would reduce the number of funding activations relative to current arrangements, and consequently reduce the burden of administration for all levels of government, without significantly affecting the amount of assistance provided by the Australian Government to the states. For example, if a small disaster criterion of \$2 million had been imposed over the period 2011-12 to 2013-14, there would have been 61 fewer activations of the NDRRA (46 per cent of total activations), but total eligible NDRRA expenditure would have been reduced by only 1 per cent.

Selecting the ‘right’ **cost-sharing rate** should be informed by the trade-off between relative fiscal capacity and incentives to effectively manage natural disaster risks. The current top cost-sharing rate of 75 per cent is much higher than in other service delivery areas that are principally the responsibility of states — for example, the national health reform funding agreement envisaged the Australian Government eventually funding 50 per cent of efficient growth of hospital activity. A case has not been made for the Australian Government to have a higher exposure to natural disaster fiscal risks than to other fiscal risks borne by state governments. Indeed, the policy imperative is to ensure the cost-sharing rate does not go beyond that required by relative fiscal capacity, given the perverse impact this would have on incentives for states to manage these risks. A marginal cost share of 50 per cent would better align with the degree of relative fiscal capacity in the Australian Federation, while still providing significant fiscal support to state governments.

Changing these funding parameters means that states would shoulder a greater share of disaster recovery costs (box 2). The Commission considers that the fiscal impact on the states is manageable, even for the Queensland Government. For example, the reforms would have historically imposed estimated additional costs of \$3.3 billion over seven years (an average of around \$470 million annually) — representing 1.2 per cent of Queensland state government revenue. Moreover, by sharpening incentives to better manage natural disaster risks, fiscal costs for all governments would be lower than they would otherwise have been in the long term.

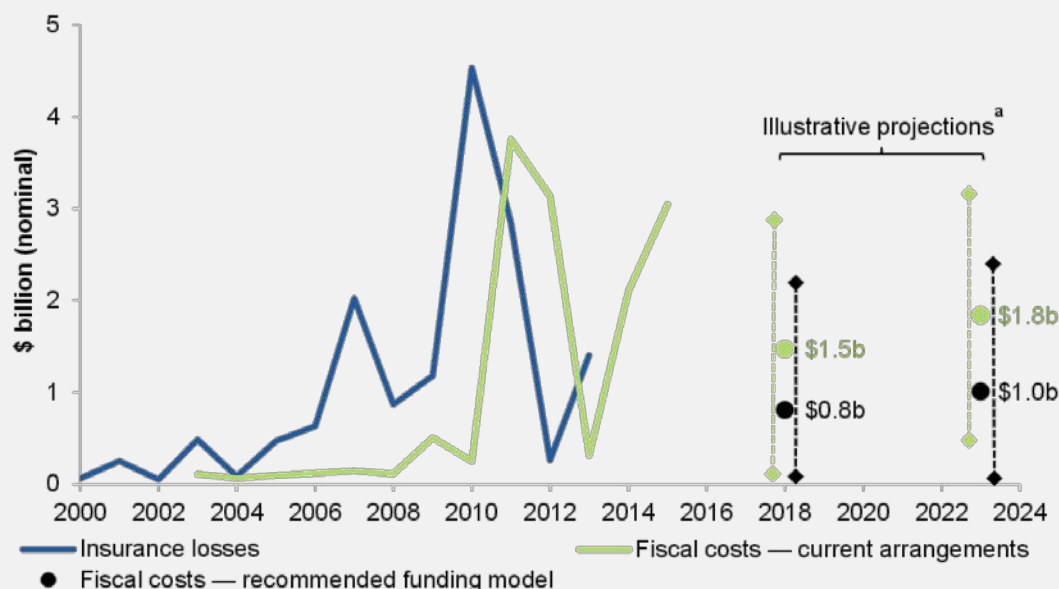
Box 2 Illustrative fiscal impact of reformed recovery funding

Illustrative estimates were constructed to show what NDRRA expenditures would have been over the period 2007-08 to 2013-14 if principal aspects of the Commission's recovery funding model had been implemented (changes to thresholds, cost-sharing rate and eligible expenditure). Under this model:

- the Australian Government's NDRRA share would have been nearly 30 percentage points lower, translating to a cumulative reduction of over \$4 billion over seven years
- states would have borne a higher proportion of recovery costs, with the largest fiscal impact on Queensland (\$3.3b)¹, followed by New South Wales (\$0.6b) and Victoria (\$0.5b) over the seven years. The additional costs would be shared among all jurisdictions through the process of horizontal fiscal equalisation. Assuming the same process as currently applies, above-average spending on disaster relief in one jurisdiction, for example Queensland, would be partly funded by a reduction in other jurisdictions' GST shares.

Changes to the cost-sharing rate play a large part in the reduction in NDRRA costs borne by the Australian Government. The fiscal impacts are not as significant for changes in the state revenue threshold and eligible expenditure items. While the increase in the small disaster criterion could not be modelled in this exercise due to data limitations, other data show that increasing the small disaster criterion has a negligible impact on the costs borne by the Australian Government. This reflects the fact that most natural disaster costs result from a small number of large disasters.

The Commission also projected Australian Government fiscal costs under its recommended funding model. These projections indicate that average annual Australian Government expenditure could be around \$650 million lower in the medium term (2018) and \$850 million lower in the long term (2023). These estimates are based on a period of unusually high natural disaster severity. As such, they are probably overstated (or at the high end).



^a The figure shows central projections (the green and black dots) and one standard deviation intervals (the green and black diamonds). Negative intervals are truncated at zero.

¹ The Queensland Government (sub. DR184) reported a fiscal impact of \$5.3 billion. This estimate included the costs of removing insurance duty. In the draft report, the Commission recommended replacing insurance duty with more efficient revenue sources.

Eligible expenditure

Australian Government funding should be available for the restoration of essential public assets, community recovery activities and exceptional circumstances.

The **restoration of essential public assets** should be funded based on assessed damages and benchmark prices. This would involve an on-the-ground assessment of damages (by the relevant state or local government) as soon as practicable after a disaster occurs, combined with an estimate of reconstruction costs based on the type of asset, its 'service standard' and benchmark prices. The rationale for moving to this model is that:

- reconstruction can take a long time, meaning that Australian Government reimbursement under the NDRRA has taken place many years after an event. This can create fiscal uncertainty for all levels of government
- the reimbursement model is more susceptible to cost overruns
- states would have complete autonomy regarding how the funds are spent. This would enable jurisdictions to prioritise expenditure on a best-for-network approach and consider replacement, betterment and abandonment in a neutral fashion
- similarly, it would remove the need for prescriptive input controls. For instance, jurisdictions could use day labour or contract labour as they see fit.

There was strong support from inquiry participants to give state and local governments greater autonomy in the restoration of essential public assets. However, there were mixed views on the feasibility of an assessed damages and benchmark prices approach. Key concerns raised by inquiry participants were difficulties in obtaining accurate estimates of damage immediately after an event and states bearing the risk of cost overruns.

Based on evidence received, the Commission considers that this approach is feasible, if accompanied by a transition period. There are existing pricing models and assessment tools that could readily be adapted to this task. Another important input into this approach is local government asset management plans and asset registers (which are part of the Commission's accountability recommendation). Where these plans pre-identify betterment of assets, the Australian Government should also share 50 per cent of the costs of betterment.

The Commission considers that **community recovery activities** eligible for government funding should be limited to counter disaster operations, personal hardship relief and community relief packages. These expenditures should continue to be cost shared on a reimbursement basis in the interim, pending the development of a model to assess recovery costs for these types of activities.

- Australian Government cost sharing for counter disaster operations should be limited to activities that have widespread community benefits (like public health and safety), would be underprovided without government support, and that are additional to the normal responsibilities of state and local governments.

-
- Australian Government cost sharing for (state-provided) assistance to individuals should be limited to medium and longer-term assistance for people who have limited financial resources and have suffered severe losses, as well as personal and financial counselling aimed at alleviating personal hardship and distress.
 - Assistance should be provided to nonprofit organisations to help restore social networks, community functioning and community facilities, where these organisations can generate community-wide benefits that could not be achieved without some support from governments.

The Commission also considers there should be provision in the funding arrangements for Australian Government cost sharing in **exceptional circumstances**. This could enable a higher level of cost sharing in the case of extraordinary and catastrophic natural disasters that clearly overwhelm a state's medium-term fiscal capacity (for example, where the cost of debt servicing increases significantly and capacity to fund essential services is under threat), with the principles transparently articulated in policy documents to guide ministerial discretion. Cyclone Tracy, which hit Darwin in 1974, is one example of an extraordinary and catastrophic natural disaster that could warrant such exceptional support.

'Top-up' fiscal support

The Australian Government should provide the option of 'top-up' fiscal support to the states — alongside the base recovery funding model — and charge an actuarially fair risk premium to states for this support. This model would allow states to purchase a lower small disaster criterion, a lower annual expenditure threshold, or a higher cost-sharing rate. Pricing this fiscal support would draw on catastrophe loss modelling work to estimate the Australian Government's contingent liabilities from future natural disasters.

A notable feature of this approach is that it is 'risk rated'. That is, states that face higher natural disaster risk would pay higher premiums to the Australian Government for the amount of fiscal support purchased. This would require states to transparently set a risk appetite and lead to more explicit provisioning for natural disaster risk.

Australian Government support for mitigation should be increased

Total mitigation expenditure across all levels of government is likely to be suboptimal, given the bias against mitigation and betterment arising from the NDRRA and the budget treatment of relief and recovery expenses. Inquiry participants strongly advocated increased mitigation spending.

However, the extent of the underinvestment in mitigation is not known, and the benefits of significantly increasing mitigation spending have not been sufficiently demonstrated. In many cases the purported benefits are based on selected evaluations of mitigation projects that successfully prevented damage during a subsequent natural disaster, without regard to

the ex-ante probability of a natural disaster occurring (that is, whether the mitigation would have been justified given the probability of future natural disasters).

Nonetheless, there is scope for the Australian Government to provide additional mitigation funding to states to increase the resilience of communities and assist with the reduction in post-disaster support. A key lesson from the ineffective betterment provisions in the NDRRA, and the support among local governments for the Queensland Betterment Fund, is the need to allocate explicit funds to mitigation and betterment. However, the use of such funds requires robust governance and transparent decision-making processes.

The Commission recommends that Australian Government mitigation funding to the states be increased to \$200 million per year. This funding would be separate from existing Australian Government funding for national mitigation and resilience projects. Increased funding should be conditional on matched funding contributions from states, in addition to transparent institutional and governance arrangements for project selection (discussed below). Projects should not be limited to ‘hard’ mitigation like flood levees. ‘Soft’ mitigation, like community education and other preparedness measures, can yield significant benefits over time where it modifies behaviour and results in the avoidance of disaster risk.

In the draft report, the Commission recommended that this mitigation funding be distributed among the states on a per-capita basis. While some participants agreed with this approach, the majority argued for funding to be distributed based on natural disaster risk. As an interim measure, the Commission recommends that mitigation funding be allocated to the states based on the current allocation of NPANDR funds. This distribution appears to have broad support among the jurisdictions, and takes into account several risk-contributing factors such as population and past disaster costs.

Over time, a more refined and forward looking risk-based formula should be developed for the allocation of mitigation funding. This formula should reflect relative levels of future natural hazard risk across jurisdictions, the community’s vulnerability and exposure to different types of natural hazards, and the likely effectiveness of mitigation measures.

Transparency and accountability should be strengthened

Natural disaster risks should be transparently budgeted

Because natural disasters can have significant impacts on government budgets, governments need to understand and manage the level of financial risk they are exposed to and put in place measures to finance natural disaster costs.

Currently, the Australian Government treats recovery costs from future natural disasters as an unquantified contingent liability, and so does not provision for them in the budget forward estimates. This creates a systematic bias in favour of recovery expenditure and

against mitigation and insurance, and has seen natural disaster costs become a volatile and growing unfunded liability for government.

Some Australian Government agencies have argued that provisioning for disaster recovery would not be practical because of the uncertainties involved in estimating future costs. However, such provisioning was made in the past. Natural disasters are a regular occurrence in Australia and it is arguably a misrepresentation to treat *all* future natural disaster recovery costs as contingent liabilities.

As a first step, the Australian Government should treat natural disaster contingent liabilities more transparently in its budget. This would involve taking steps to quantify the size of these liabilities and disclosing the estimates and their confidence ranges in the budget's Statement of Risks. Catastrophe loss modelling should inform this analysis and is also needed for other elements of the reforms.

Second, the Australian Government should provision for some level of future natural disaster recovery costs in the forward estimates. This level of provisioning is not intended to fully capture the likely cost to the Australian Government in any given year. The high variability of natural disaster expenditures means that more catastrophic, low probability risks can be financed on an ex-post basis. Rather, the provision should capture a smaller, base amount in recognition of the fact that some level of Australian Government expenditure on natural disasters can be reasonably anticipated each year. This would promote incentive neutrality — that is, reduce the systematic bias against mitigation.

Accountability frameworks should be strengthened

The prescriptive, input-based conditionality under the NDRRA (such as the restriction on the use of day labour) is inefficient, and goes against the grain of good-practice accountability and performance monitoring. There was considerable support from inquiry participants, including from all levels of government, to reduce the inefficiencies arising from the level of prescriptiveness and the duplication in oversight arrangements.

A more efficient approach would be to give the states greater autonomy in how they spend both their own funds and funds from the Australian Government, and instead monitor key outputs and outcomes.

Australian Government funding for natural disaster recovery and mitigation should be conditional on institutional and governance arrangements that demonstrate 'earned autonomy', and outputs and outcomes should be transparently reported. Specifically, the institutional and governance arrangements should comprise:

- states having published risk assessments in accordance with the National Emergency Risk Assessment Guidelines
- states having adequate insurance arrangements, subject to regular review (box 3)
- increased transparency of natural disaster liabilities in state budgets

-
- state and local governments having asset registers and asset management plans that incorporate natural disaster risk.

Box 3 Government insurance arrangements

Other than for roads, state and local governments generally have adequate insurance for their assets. Only the Victorian and ACT governments have insurance for main road assets, meaning that the vast majority of Australian roads (including local government roads) are uninsured.

Under current funding arrangements there are weak incentives for states to take out insurance for essential public assets. Essentially, state and local governments receive zero-cost natural disaster insurance for these assets through the NDRRA. Where they do have insurance, any NDRRA reimbursements are reduced in line with insurance payouts.

Commercial insurance is often not available for road assets because of uncertainty about the level of exposure to natural disaster risks, the difficulty in distinguishing maintenance from reconstruction costs, and the fact that some roads are damaged on a repeated basis. The Commission's proposed accountability arrangements, in particular those relating to asset registers and asset management plans, will assist in better understanding this asset base and may help insurance markets to understand and price insurance for roads.

Non-traditional insurance products — such as parametric insurance (where payouts are based on a certain 'trigger', such as a set level of rainfall, rather than on losses of the policyholder) — are a potential alternative to traditional insurance arrangements for difficult-to-insure assets such as roads. Because payouts are typically based on a predefined trigger occurring, many of the problems that have beset traditional insurance for roads are avoided.

State and territory governments should continue to test the insurance market for essential public assets, including exploring non-traditional insurance products. The Australian Government should continue with the three-yearly reviews of states and territories' insurance arrangements. The reviews, and government responses to their recommendations, should be published.

States should also be required to demonstrate effective and transparent decision-making mechanisms to prioritise mitigation spending. These should include:

- supporting mitigation proposals with robust and transparent evaluations (including cost-benefit analysis and assessment of non-quantifiable impacts), plus public disclosure of analysis and decisions
- undertaking transparent ex-post evaluations of mitigation projects
- local and state governments partnering with insurers (where feasible)
- using private funding sources where feasible and efficient.

Insurers benefit indirectly from mitigation and hence should be willing to partner and share information with state and local governments to inform land use planning decisions, the prioritisation of mitigation expenditure and the identification of private funding options (including through reduced insurance premiums). For large mitigation projects where

natural hazard risks to private property have been materially reduced, ex-post evaluations should include an analysis of post-mitigation insurance premiums.

More generally, where mitigation provides private benefits but may require some collective action, governments should consider cost-recovery options. Doing this efficiently would involve allocating the costs of mitigation to the party that has the most influence or control over the risk. Where this is not possible, the beneficiaries should pay, and only where neither of these options are feasible should the costs be borne by taxpayers.

Government management of shared risks

When a significant disaster overwhelms a community, some degree of risk sharing with government may be appropriate to protect vulnerable populations and maintain social cohesion. Disaster relief payments — coupled with charitable contributions, nonprofit and volunteer efforts, and the existing social safety net — provide for the management of shared risks.

Inquiry participants expressed concerns that the current arrangements for providing financial assistance to individuals and businesses are inconsistently applied, inefficient in their administration, prone to overlaps and duplication, and very costly.

- The eligibility criteria (specifically, the definition of ‘adversely affected’) for the AGDRP have been inconsistently applied across natural disaster events. This has led to inequality and perceptions of unfairness, and could explain the tendency to expand the eligibility criteria over time, which has contributed to the escalation in the costs of the AGDRP.
- The level of assistance provided through the AGDRP is more generous than other government support payments for people who experience traumatic events, such as the Crisis Payment (a one-off payment equal to one week’s payment of the claimant’s existing income support), and may be higher than necessary to meet immediate needs such as short-term accommodation, clothing and food for a few days.
- Having two levels of government (and charities) providing assistance to individuals creates further inconsistency (and thereby inequity), duplication and potentially excess payments.

There is also the risk that the expectation of government financial assistance will create ‘moral hazard’ (also known as ‘charity hazard’ when assistance is from community groups) by reducing incentives for individuals and businesses to take out insurance and invest in mitigation, though the evidence for this is scarce and largely anecdotal.

Having in place a framework for providing assistance reduces the likelihood that governments will take an ad hoc approach, which could be ineffective, excessive or misdirected. The Australian Government has institutional arrangements in place to efficiently deliver emergency assistance to people in need (through Centrelink), and is

better placed to deliver such assistance than state or local governments, especially in a post-disaster context.

Specifically, there is merit in providing an emergency relief payment to individuals who have been seriously affected by natural disasters in order to reduce immediate economic and social hardship. These payments should only cover immediate essential needs and be distributed quickly after the event.

The Commission considers that the Disaster Recovery Allowance should be maintained. It fills a gap between emergency disaster relief, access to insurance and credit arrangements, and the general social security safety net, and has merit as a relatively non-distortionary means of reducing economic disruption to a disaster-impacted community. It is available to people that can demonstrate a loss of income as a result of a disaster, including employees, sole traders and primary producers.

However, the case for other government financial assistance to businesses and primary producers after a natural disaster is weak. Although some inquiry participants favoured retaining government support for businesses, they provided no evidence of the *need* and *effectiveness* of such assistance — namely that recovery would not occur without this assistance. Viable businesses can typically access insurance and credit through commercial institutions. Research shows that assistance to disaster-affected businesses has relatively little effect on the businesses' ultimate survival and recovery.

The Australian Government should cease reimbursement of state emergency personal financial assistance and all financial assistance to businesses and primary producers. The Australian Government should also legislate the eligibility criteria for the AGDRP to remove Ministerial discretion. This would address short-sighted changes to the eligibility criteria that inevitably result in inequitable treatment over time and across disaster events. The Australian Government should also review the amount provided under the AGDRP to be more reflective of immediate emergency relief needs and other comparable payments.

In the event that governments continue to provide post-disaster assistance to businesses, this assistance should be provided through direct grants. Direct grants are the most transparent and least distortionary mechanism for providing transitional assistance after a natural disaster, and are the easiest to administer. These should be narrowly targeted to business reinstatement and not for economic stimulus. By contrast, tied grants (such as subsidies for freight or other business inputs) can distort business behaviour. Concessional loans are complex to administer, create an ongoing relationship between the business and the government, and lead to non-viable businesses being burdened with debt that they may ultimately be unable to repay.

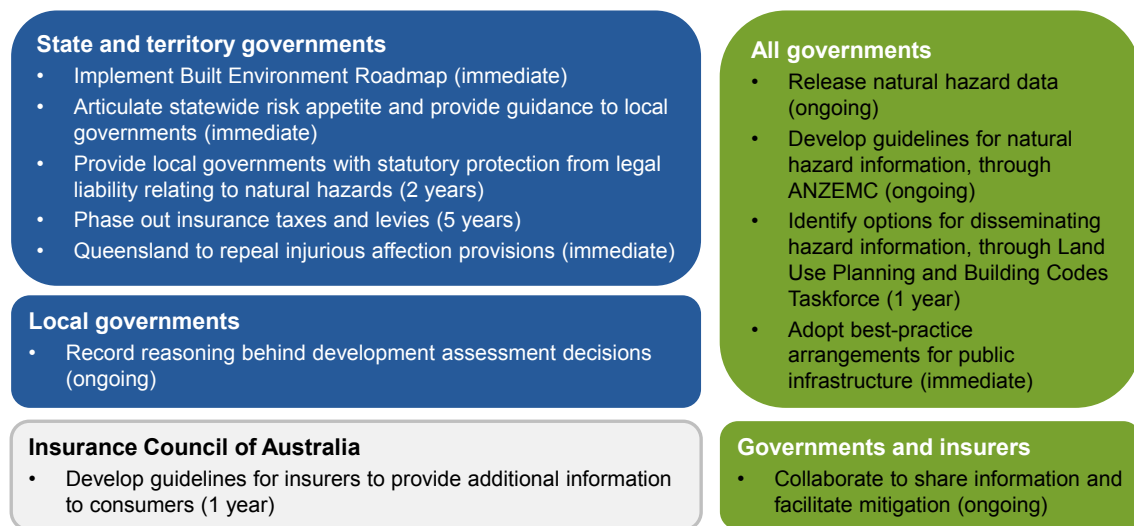
Government as policy setter

Government policy can influence the exposure and vulnerability of the community to natural disaster risks, as well as influencing private risk management, by:

- providing information, or addressing asymmetries in information, where appropriate (risk understanding)
- effectively regulating land use planning, building standards and insurance (risk treatment).

The recommended reforms in these policy areas are summarised in figure 7.

Figure 7 Policy reforms to improve natural disaster risk management



Information and communication

To manage the natural disaster risks they face, households, businesses and governments need to understand these risks and their risk management options. Information on natural disaster risks in Australia has improved significantly in recent years, driven partly in response to recent large natural disasters. All levels of government, research institutions and the private sector (particularly insurers) have been involved in these efforts.

Many participants acknowledged the significant improvements in the availability of information on natural hazards and exposure in recent years, but the Commission also received evidence of residual information gaps (particularly on the vulnerability of assets). It is likely that over time the most significant of these information gaps will be addressed through the continued work of government agencies, research institutions and the private sector. Information on natural hazards, exposure and vulnerability is not stationary in time,

and thus the existence and severity of data gaps will evolve over time. In this context, it is important that there are good processes for coordinating and prioritising research activities.

On balance, governments and insurers appear to have sufficient information to inform risk assessments, guide identification of mitigation priorities and price risk accurately. The main gaps relate to data consistency, accessibility and infrastructure, in addition to communicating information to households.

Data consistency

Data consistency is critical where comparisons need to be made across jurisdictional boundaries. This can be achieved through centralised data collection, or through the application of standards or guidelines to data collection at the local or regional levels. Much hazard modelling and mapping, particularly for flood and bushfire, needs to be done at a local or regional level, but would benefit from a nationally consistent approach. Guidelines would also help local governments establish confidence in securing and using the natural hazard information they need to carry out their responsibilities, including politically difficult land use planning.

Work on guidelines for flood mapping is already underway by Geoscience Australia and the Attorney-General's Department, under the auspices of the Australia–New Zealand Emergency Management Committee. This work should be extended to the development of guidelines for natural hazard mapping, modelling and metadata. These guidelines should cover all hazards that need to be modelled and mapped at the local or regional level, and for which there are benefits in having greater consistency across regions.

Data accessibility

A key concern raised by participants was the accessibility of natural hazard information. Data collected by governments often have public-good characteristics, but are not always shared by governments. The release of such information has been impeded by:

- licencing and intellectual property rights that restrict how information can be disclosed
- concerns over legal liability and privacy
- concerns about the accuracy and currency of information
- views on how the public will use the information.

Sometimes these impediments (such as restrictive licensing) are legacy issues, and will be resolved over time as new data acquisitions are made under creative commons. The other impediments arise more from perceptions about the consequences of information release rather than from the data itself. In many cases, there is no compelling evidence that releasing natural hazard information held by governments would make the community worse off overall, provided the information is reasonably reliable. Governments at all

levels should make their natural hazard-related data publicly available in accordance with the principles of open public sector information.

Data infrastructure

Several inquiry participants suggested that a single national platform for natural hazard data could improve the availability and consistency of information. Some of the proposed platforms are highly ambitious and would go beyond simply collating existing public data in a central location to fundamentally changing the custodianship of the data.

The case for a central repository of information is strongest for data that are more efficiently collected nationally, and where universal coverage is desirable to inform national decision making. However, central repositories can be costly and inflexible, and may not meet the diversity in information needs across users. Furthermore, natural disaster risk management relies on multidisciplinary data, and any information infrastructure needs to be compatible with other competing uses of such data. Much natural hazard data is already publicly available at the national level. Addressing the accessibility barriers mentioned above will go a long way in making information more accessible. But the Commission considers that the benefits of a national ‘clearing house’ for collating or standardising all information on natural hazards would be unlikely to exceed the costs.

Communicating information to households

There is some evidence that individuals may not have the capacity or willingness to properly assess, understand and treat natural disaster risks. Governments can play a role in overcoming these impediments by providing information that is as specific, concise, targeted and easily understandable as possible. There is also scope for the private sector, especially insurers, to provide some of this information. Governments and insurers should explore low-cost channels, such as land rates notices, property rental contracts or insurance renewal notices, to communicate standardised natural hazard information to households. Such communication would complement more in-depth community education initiatives that aim to raise awareness of natural disaster risks and management.

Vendor statements are an existing mechanism to communicate natural hazard risk to property owners. However, the effectiveness of these statements as a mechanism for disclosing natural hazard risk varies across jurisdictions. Only Victoria has been assessed as having a ‘robust’ system of vendor disclosure, identifying flood, bushfire and landslide risk. The Commission considers that there is merit in consistent guidelines for the disclosure of natural hazards affecting existing properties. State governments should accelerate implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap*, including reviewing the regulatory components of vendor disclosure statements.

Regulating the built environment

Government regulation of the built environment can materially influence the level of natural disaster risk by directly influencing the exposure and vulnerability of communities. These regulations also inform residents' understanding of their level of natural disaster risk and, as such, influence asset prices and decisions about investment. If land use planning and building regulations do not appropriately reflect the risks of natural disasters, they could lead to excessive or inappropriate development in high-risk areas, and could weaken the link between natural disaster risks and asset prices.

Land use planning and building regulations only apply to new properties and developments or significant modification to existing properties. This corresponds to only a small proportion of the housing stock each year (1.3 per cent for building regulations), so the impact of changes to these policies has a long lag time. This legacy effect heightens the importance of embedding analysis of natural disaster risk into decision making on land use planning and building regulations in the first instance.

Land use planning

Land use planning is perhaps the most potent policy lever for influencing the level of future natural disaster risk. But it is a challenging policy area that must balance a range of (sometimes competing) priorities, including the management of natural disaster risk. Responsibility ultimately rests with state governments to clearly articulate the statewide natural disaster risk appetite in planning policy frameworks and the embedded trade-offs, guide local governments' interpretation and implementation of these policies, and ensure that local planning schemes and development decisions are consistent with state planning policy.

There is growing awareness of the need to integrate natural disaster risk management into all aspects of the land use planning process, but this is not always achieved in practice. Inquiry participants expressed concern that development continues to be approved in high-risk areas, or that good local government decisions are being overturned. For example:

A good example of the need to strengthen planning regulations is the recent approval of a 970-dwelling complex in a flood plain by the Gold Coast City Council. Although the development is sufficiently high risk to warrant an evacuation helipad, a three-day emergency food supply and two lifeboats, the Council felt they did not have the legal standing to decline the development application. (Suncorp Group, sub. 71, p. 15)

Effective natural disaster risk management in land use planning does not necessarily imply that there should be no development in high-risk areas. Land use planning systems need to be transparent and sufficiently flexible to incorporate community preferences. The problem is uninformed and opaque decision making.

State governments could help local governments to better incorporate natural disaster risk management into land use planning decisions by providing additional guidance on appropriate benchmarks or parameters for managing a given level of risk (such as specifying appropriate planning controls to apply in areas that face a defined level of bushfire risk), as well as how to prioritise the competing objectives of land use planning. Increased transparency and accountability of local government decision making would also assist.

Local governments also require sufficient resources to be able to fulfil their responsibilities in land use planning. The onus is on state governments to ensure that the local governments in their jurisdictions are appropriately resourced to undertake their delegated planning roles. Financial capacity constraints could also be overcome by greater recourse to user charging. Where development is permitted in high-risk areas, planning schemes generally do not incorporate efficient cost recovery from beneficiaries. Council rates and charges should reflect the cost of providing services, including the cost of managing natural disaster risk to public assets over time. In general, there are few legislative barriers to local governments implementing such charges. The main constraint in raising additional revenue is often their constituents' willingness and capacity to pay. This is particularly an issue for geographically large and sparsely populated remote local governments.

Some local governments expressed concern that legal liability inhibits them from making natural hazard information public, or making planning decisions based on risk assessment. On the other hand, legal experts have indicated that failing to release reasonably accurate hazard information could be a source of much greater legal liability for local governments than any liability arising from releasing the information.

State governments should introduce legislative protection for local governments from liability for releasing natural hazard information and making changes to local planning schemes where such actions have been taken 'in good faith' and consistent with state planning policy and legislation, similar to the current provisions in New South Wales. Furthermore, the provisions for injurious affection in Queensland's *Sustainable Planning Act 2009* should be repealed.

Existing areas of settlement

Existing areas of settlement pose challenges for natural disaster risk management because of the limited reach of land use planning and building regulations. Retrofitting existing dwellings to present-day building regulations may not be cost effective. In some places it may be more efficient for governments to implement structural mitigation measures (with costs recovered from the private beneficiaries where feasible). Retreat or relocation strategies may also be possible in very high-risk areas — for example, the town of Grantham in Queensland implemented a relocation policy following devastating floods in 2011 — but these options are very expensive and are only viable in exceptional circumstances.

Insurance

Price signals provided by insurance can be an effective way to convey information about risk and encourage risk management. The Commission's analysis suggests that, in general, insurance markets in Australia for natural disaster risks to private assets are working well. Much progress has been made in recent years, with improvements in information collection and better analytical tools by insurers having led to more accurate and granular pricing of natural disaster risk. That said, the Commission received evidence of insurers still using postcode-based pricing in some areas and for some natural hazard risks.

Insurance policies may not be effective in encouraging mitigation where the price signals are not risk reflective or are distorted by specific insurance taxes or levies. Taxes and levies significantly raise the cost of insurance and contribute to non-insurance and underinsurance. They should be phased out and replaced with less distortionary taxes.

More risk-reflective insurance pricing, combined with the inclusion of flood cover in policies and the expensive natural disasters of recent years, has resulted in significant increases in insurance premiums for some properties. While these price rises are unwelcome to affected property holders and may lead to non-insurance or underinsurance, they send an important price signal about the level of natural disaster risk.

In some cases, underinsurance is compounded by information asymmetry in the insurance market, with consumers not understanding their natural disaster risk or their insurance policy, or alternatively insurers not recognising mitigation measures taken by households. Insurers can and should address this information asymmetry by improving the information provided to consumers about natural disaster risk. This could include information on natural hazards in their area, indicative rebuilding costs and examples of household-level mitigation options.

In cases where non-insurance and underinsurance are primarily due to the affordability of insurance, better information is unlikely to improve coverage. This can be a difficult issue to address, particularly where high premiums affect disadvantaged households. Subsidising premiums for these households would dull incentives to manage the risks, and would be a short-term and potentially costly solution. Governments may need to consider structural mitigation measures (such as flood levees) or relocation options.

International experience has shown that government intervention in property insurance markets through subsidies is overwhelmingly ineffective. It creates moral hazard as well as fiscal risks. Some foreign governments have had to bear significant costs following large natural disasters because their insurance schemes failed to accumulate adequate reserves.

Transition and implementation

Reforming natural disaster funding arrangements will involve material changes across all levels of government. While some reforms build on efforts already underway, others will

be more substantial and require sequencing. The Commission acknowledges that some jurisdictions may require time to fully meet the recommended accountability requirements. The Australian Government will need to set out a clear timetable so reforms can be introduced in a coherent way to minimise any unnecessary disruption.

Reforms to funding arrangements should be introduced gradually over three years. There should be no change to recovery funding (including the cost-sharing parameters) in the first year. This will give state and local governments time to adjust to funding changes and put the necessary processes in place.

In particular, the Australian Government will need to develop a methodology for assessing damages to essential public assets, while states will need to establish benchmark pricing models for essential public assets within their jurisdictions. After this, recovery funding for essential public assets would be provided based on assessments of damage from natural disasters and application of the benchmark prices. The states (or relevant local government) would do these assessments using the methodology developed by the Australian Government.

Australian Government funding for community recovery activities should continue to be provided to the states on a reimbursement basis in the short term. Eventually, the Australian Government should provide this funding as untied grants, based on an assessment of how much funding would be reasonable to support community recovery. This model should be developed in consultation with the states. Once an assessment model is developed for all recovery activities, then it would be more feasible to move to an event-based model where all funding is provided upfront as an untied grant.

Mitigation funding from the Australian Government to the states should be progressively increased (over three years) to \$200 million per annum. After five years, the Australian Government should review the quantum and effectiveness of mitigation spending and state government processes for selecting projects and matching funds. By then, it should also transition to a more refined and forward-looking risk-based formula for allocating mitigation funding to the states.

These reforms will improve the sustainability and effectiveness of natural disaster funding, but some elements are uncertain. Given the recommendations represent a significant shift away from existing arrangements, the Australian Government should commission an independent and public review in five years to evaluate how well the new system is achieving its goals.

Interaction with federal fiscal relations

The GST redistribution due to natural disaster relief costs creates another avenue for cost-shifting. It is not clear to what degree equalisation of natural disaster relief costs affects the incentives for states to effectively manage natural disaster risks, but it may influence incentives at the margin. It would be imprudent at this stage to recommend

ad hoc changes to the GST distribution formula due to the significant potential for unintended consequences. As reforms progress, the Commonwealth Grants Commission would need to revisit its assessment of each state against ‘average state policy’ on natural disaster funding, and adjust the GST distribution formula accordingly.

The Commission’s reform package was developed in the context of the current degree of vertical and horizontal fiscal imbalance in the Australian federation. The Australian Government is reviewing federal fiscal relations through the Reform of the Federation White Paper process, which may recommend more holistic changes to taxing and spending powers in the federation.

Some inquiry participants cautioned against making large-scale changes to cost-sharing arrangements for natural disasters while the White Paper process is ongoing. However, the architecture of the Commission’s reform package for natural disaster funding is robust to changes in vertical fiscal imbalance. The funding parameters can be revised following any substantive changes to vertical fiscal imbalance and there will always be a role for Australian Government financial support in the event of severe and catastrophic disasters.

Summary of reforms

<i>Current problem</i>	<i>Proposed response</i>	<i>Main benefits of change</i>
Recovery funding		
<i>Reforming recovery funding arrangements to provide stronger incentives for effective natural disaster risk management by governments</i>		
Current cost-sharing rules under the Natural Disaster Relief and Recovery Arrangements (NDRRA) exceed the requirements for a 'safety net' and relative fiscal capacity.	<p>Increase thresholds to 0.45 per cent of state government revenue.</p> <p>Reduce the Australian Government cost-sharing rate to 50 per cent of above-threshold costs.</p> <p>Apply small disaster criterion of \$2 million to events at the state level.</p> <p>Streamline what is eligible expenditure.</p> <p>(Recommendation 3.1)</p>	States bear an increased share of post-disaster recovery costs, giving them stronger incentives to manage, mitigate and insure against these risks and allowing greater autonomy.
The current reimbursement model drives behaviours and reduces incentives for state and local governments to implement the most appropriate and cost-effective options for disaster recovery.	<p>Move towards:</p> <ul style="list-style-type: none"> assessed damages and benchmark prices for essential public assets an untied grants model for community recovery funding. <p>(Recommendations 3.1, 3.2 and 3.4)</p>	<p>States have greater autonomy in how they allocate recovery funding to respond to local circumstances.</p> <p>More neutral incentives to consider replacement, betterment and abandonment of assets.</p>
The Australian Government Disaster Recovery Payment (AGDRP) is higher than necessary, has led to inconsistent and inequitable outcomes, and overlaps with state relief payments.	<p>Legislate eligibility criteria for AGDRP and review level of assistance.</p> <p>Cease cost sharing for state immediate emergency relief assistance.</p> <p>(Recommendation 3.3)</p>	<p>Emergency relief assistance is provided more efficiently, equitably and consistently.</p> <p>AGDRP would be more equitable and sustainable over time.</p>
Mitigation funding		
<i>Increasing investment in disaster mitigation, with robust governance and transparent decision making</i>		
Total mitigation expenditure across all levels of government is more likely to be below the optimal level than above it.	<p>Australian Government to increase mitigation funding to states to \$200 million per annum:</p> <ul style="list-style-type: none"> initially, distributed according to the current allocation under the NPANDR subsequently, according to a more risk-based allocation. <p>(Recommendation 3.5)</p>	Increased investment in appropriate mitigation activities, which may reduce the future economic costs of natural disasters and insurance premiums where natural hazard risks to private property have been materially reduced.
Accountability arrangements		
<i>Greater transparency and accountability in the management of natural disaster risk by all levels of government</i>		
Current budget treatment of natural disaster costs is not transparent and leads to governments taking on more risk than they would otherwise.	<p>Australian Government to:</p> <ul style="list-style-type: none"> publish estimates and ranges of future recovery costs provision for a base level of recovery costs each year. <p>(Recommendation 3.6)</p>	<p>Increased accountability and transparency of government activities.</p> <p>Greater neutrality across planning, mitigation and recovery expenditure.</p>

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<i>Current problem</i>	<i>Proposed response</i>	<i>Main benefits of change</i>
Current NDRRA input-based conditions are prescriptive, inflexible and restrict state and territory governments' autonomy. Red tape costs imposed by various oversight bodies.	State and territory governments would have increased autonomy, in exchange for demonstrating sound governance and institutional processes and transparently reporting on a number of key outputs and outcomes (such as risk assessments and insurance arrangements). (Recommendation 3.7)	Increased state ownership, autonomy and accountability for managing natural disaster risk. Increased transparency and accountability of state expenditure and asset management.
Other policy reforms		
<i>Improving the availability, sharing and communication of information</i>		
Gaps and inadequacies in information on natural hazards, exposure and vulnerability. Inconsistency in data collection, leading to uncertainty in the reliability of information. Natural hazard information is not always available, accessible, or adequately communicated to households.	All levels of government to make new and existing natural hazard data publicly available. State and local governments to explore opportunities for partnerships with insurers. Development of guidelines for natural hazard information. Implementation of the Built Environment Roadmap, including more consistent guidelines for vendor disclosure. (Recommendations 4.1, 4.2, 4.3 and 4.4)	Increased data availability and accessibility to all users. Households are better informed about the risks that they face, and the adequacy of their insurance cover.
<i>Increased legislative and policy guidance, support and protection for local governments</i>		
State and local governments have not given sufficient consideration to natural disaster risk in land use planning.	States to articulate statewide risk appetite and provide guidance to local governments on implementing state planning policies and prioritising competing objectives. (Recommendation 4.5)	Increased transparency about how natural disaster risk is incorporated in land use planning. More appropriate land use planning decisions. Asset prices better reflect natural hazard risk.
Concerns about legal liability deter local governments from releasing natural hazard information and making planning and development decisions based on such information.	States to introduce statutory protection from legal liability for local governments. Queensland Government to repeal injurious affection provisions. (Recommendations 4.6 and 4.7)	Local governments have increased confidence to share and act upon natural hazard information in land use planning and development assessments.
<i>Reducing distortions and information barriers in insurance markets</i>		
State taxes and levies on insurance distort price signals.	State and territory governments to phase out insurance taxes and levies, and replace with less distortionary taxes. (Recommendation 4.8)	Improved affordability and price signals to policyholders and potentially greater take-up of insurance.
Many consumers do not adequately understand their insurance policies.	Insurance Council of Australia to develop guidelines for insurers to provide additional information to customers. (Recommendation 4.9)	Households are better informed about their natural disaster risk and insurance policy.

Recommendations and findings

FINDING 2.1

Current government natural disaster funding arrangements are inefficient, inequitable and unsustainable. They are prone to cost shifting, ad hoc responses and short-term political opportunism.

Funding arrangements for recovery

FINDING 2.3

Some cost sharing between the Australian and state and territory governments in the form of a fiscal 'safety net' to assist with the cost of natural disasters is inevitable because of vertical fiscal imbalance.

The current funding arrangements exceed the requirements for such a safety net.

- The current thresholds for funding under the Natural Disaster Relief and Recovery Arrangements (NDRRA) do not constitute a major fiscal burden that exceeds state and territory governments' own funding capacity.
- The NDRRA small disaster criterion is too low. It captures small, routine weather events.
- A marginal reimbursement rate of 75 per cent is excessive and is not consistent with relative fiscal capacity and average cost-sharing arrangements in the Federation.
- The scope of eligible expenditures under the NDRRA is unclear. Ministerial discretion for exceptional circumstances assistance adds more uncertainty around eligible expenditure and leads to inequitable outcomes.

FINDING 2.4

The current natural disaster funding arrangements reduce the incentives for state, territory and local governments to insure their assets. Most state, territory and local governments do not have adequate insurance for their road assets. This partly reflects the fact that:

- some state, territory and local government road asset registers are inadequate for the requirements of insurers
- most state, territory and local governments have not fully explored the use of non-traditional insurance instruments for insuring roads.

RECOMMENDATION 3.1

The Australian Government should fund natural disaster recovery by:

- cost sharing with state and territory governments for community recovery and reconstruction of essential public assets at a rate of 50 per cent above an annual expenditure threshold
- providing funding based on assessed damages and benchmark prices
- providing an option for state and territory governments to purchase 'top-up' fiscal support at an actuarially fair price.

Australian Government involvement should be triggered where an annual (financial year) cumulative expenditure threshold of 0.45 per cent of total state government revenue is met, on an accrued basis. A small disaster criterion of \$2 million (indexed over time) should be applied to events at the state or territory level.

The Australian Government should also establish a transparent mechanism for exceptional circumstances fiscal support in the event of extraordinary and catastrophic natural disasters that clearly overwhelm a state or territory's medium-term fiscal capacity.

RECOMMENDATION 3.2

Where asset management plans at the local, state or territory level pre-identify and cost betterment of assets (improving asset resilience to natural disasters), the Australian Government should share 50 per cent of the betterment component of reconstruction costs following damage from a (eligible) natural disaster.

RECOMMENDATION 3.4

Funding to state and territory governments for community recovery should be provided as untied grants, with a transition period pending the development of a framework to assess community recovery costs. During the transition period, the Australian Government should continue to provide funding for community recovery through a reimbursement model.

Eligible community recovery expenditure during this transition period should be rationalised to counter disaster operations, personal hardship relief and community relief packages. Eligible expenditure should be limited to activities that arise as a direct consequence of a natural disaster and that:

- have widespread community benefits and would be underprovided without government support
- provide targeted longer-term assistance to people who have limited financial resources and have suffered severe losses
- provide personal and financial counselling aimed at alleviating personal hardship and distress arising as a direct result of a natural disaster
- are additional to the normal responsibilities of state, territory and local governments.

Funding arrangements for mitigation

FINDING 2.6

Mitigation expenditure across all levels of government is likely to be below the optimal level, given the biased incentives towards recovery under current budget treatments and funding arrangements. However, the extent of the underinvestment in mitigation is not known.

RECOMMENDATION 3.5

The Australian Government should gradually increase the amount of annual mitigation funding it provides to state and territory governments to \$200 million. Initially, this funding should be distributed to state and territory governments in accordance with the allocation under the National Partnership Agreement on Natural Disaster Resilience.

Transparency and accountability

FINDING 2.2

The budget treatment of natural disaster costs as an unquantified contingent liability means that governments make decisions about natural disaster risk management without having full information about the potential consequences.

Where governments make no explicit budget provision for the costs of recovery from future natural disasters, there is a systematic bias in risk management against mitigation and insurance.

RECOMMENDATION 3.6

The Australian Government should:

- publish estimates (and their confidence ranges) of future costs of natural disasters to its budget in the Statement of Risks. These estimates should be informed by catastrophe loss modelling
- provision for a base level of natural disaster expenditure in the budget forward estimates, in recognition of the fact that there will be some level of Australian Government expenditure on natural disasters each year.

FINDING 2.5

Prescriptive requirements in the Natural Disaster Relief and Recovery Arrangements (NDRRA) limit the scope for cost shifting, but also impose administrative costs and act as an impediment to efficient and cost-effective reconstruction.

- The reimbursement model under the NDRRA reduces the incentives for state, territory and local governments to implement the most cost-effective options for disaster recovery.
- Restrictions on reimbursement for inputs for reconstruction (such as restrictions on reimbursing the use of 'day labour') lead to wasteful spending.
- The bias in the NDRRA toward rebuilding damaged assets to their pre-disaster standard leads to excessive reconstruction expenditure.
- There are numerous barriers to the use of the Betterment provision.
- A lack of clarity around what constitutes 'current building and engineering standards' leads to inconsistent and inequitable outcomes.

RECOMMENDATION 3.7

State and territory governments should be required to report on the following accountability requirements:

- published risk assessments in accordance with the National Emergency Risk Assessment Guidelines
- transparent natural disaster liabilities in state and territory government budgets
- asset registers and asset management plans at the state, territory and local government level that incorporate natural disaster risk
- implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap*
- effective mechanisms to identify and prioritise mitigation spending based on cost-benefit analysis and transparent decision making.

Specifically, effective mechanisms to identify and prioritise mitigation spending should include:

- project proposals that are supported by robust and transparent evaluations (including cost-benefit analysis, public consultation and assessment of non-quantifiable impacts), and that are consistent with state risk assessments
- considering alternative or complementary mitigation options (including structural and non-structural measures)
- using private funding sources where it is feasible and efficient to do so (including charging beneficiaries)
- transparent ex-post evaluation of mitigation projects.

The Australian Government should continue with the three-yearly reviews of state and territory governments' insurance arrangements. The reviews, and government responses to their recommendations, should be published.

Managing shared risks

FINDING 2.7

Ministerial discretion over the eligibility criteria for the Australian Government Disaster Recovery Payment (AGDRP) has succumbed to short-sighted policy changes and led to the inconsistent and inequitable treatment of people in comparable circumstances and has contributed to increased program costs.

The AGDRP might be higher than necessary to meet the immediate emergency needs of people affected by natural disasters and is higher than comparable Australian Government assistance to people affected by crises.

There is overlap and duplication between the AGDRP and state and territory government emergency assistance to individuals.

FINDING 2.8

The case for government direct financial assistance to businesses and primary producers after a natural disaster, beyond the Disaster Recovery Allowance, is weak.

If governments do provide direct financial assistance to businesses and primary producers, untied grants are a more efficient, effective and equitable instrument than loans and subsidies.

RECOMMENDATION 3.3

The Australian Government should:

- legislate the current eligibility criteria for the Australian Government Disaster Recovery Payment (AGDRP) and remove Ministerial discretion
- review the amount provided under the AGDRP so that it is more reflective of immediate emergency relief needs, and against other comparable payments.

Information

FINDING 4.1

The availability of information on natural hazards and exposure has improved significantly in recent years, especially in relation to floods. However, there is scope for greater coordination and prioritisation of natural hazard research activities across governments and research institutions.

RECOMMENDATION 4.1

Governments at all levels should make new and currently held natural hazard data publicly available in accordance with open public sector information principles. When collecting new natural hazard data or undertaking modelling, all levels of government should:

- make information publicly available unless it would not be in the public interest to do so
- use private-sector providers where cost effective, and use licencing arrangements that allow for public dissemination. Where there are costs involved in obtaining intellectual property rights for existing data, governments should weigh up these costs against the public benefits of making the data freely accessible
- apply cost recovery where governments are best placed to collect or analyse specialist data for which the benefits accrue mostly to private sector users.

RECOMMENDATION 4.2

State and territory governments, local governments and insurers should explore opportunities for collaboration and partnerships. Partnerships, for example, could be formed through the Insurance Council of Australia and state-based local government associations (or regional organisations of councils). Consideration could be given to the Trusted Information Sharing Network model. Partnerships could involve:

- governments sharing natural hazard data that they already hold and undertaking land use planning and mitigation to reduce risk exposure and vulnerability
- insurers sharing expertise and information (for example, claims data) to inform land use planning and mitigation decisions
- collaboration to inform households of the risks that they face and to encourage private funding of mitigation through incentives such as reduced premiums.

RECOMMENDATION 4.3

Governments should task the Australia–New Zealand Emergency Management Committee with leading the development of guidelines for the collection and dissemination of natural hazard mapping, modelling and metadata. Guidelines should be developed for all hazards that need to be modelled and mapped at the local/regional level and where consistency across regions is desirable.

RECOMMENDATION 4.4

State and territory governments should prioritise and accelerate implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap*, including reviewing the regulatory components of vendor disclosure statements. The Land Use Planning and Building Codes Taskforce should be tasked to identify and consider options for regular, low-cost dissemination of hazard information to households by governments and insurers.

The built environment

RECOMMENDATION 4.5

State and territory governments should:

- clearly articulate the statewide natural hazard risk appetite in land use planning policy frameworks by identifying the risks posed by natural hazards and specifying appropriate planning controls for each given level of risk
- provide local governments with guidance on how to prioritise competing objectives within land use planning
- provide local governments with guidance on how to integrate land use planning and building standards. Consideration should be given to Victoria's *Integrated Planning and Building Framework for Bushfire* in this regard.

State and territory governments should regularly review their published risk appetite and guidance documentation to ensure it is up-to-date, accessible and incorporates relevant hazard information.

Local governments should record the reasoning behind development assessment decisions, where they do not do so already, and (at a minimum) provide this information to the public upon request.

RECOMMENDATION 4.6

State governments, where they have not already done so, should provide local governments with statutory protection from liability for releasing natural hazard information and making changes to local planning schemes where such actions have been taken 'in good faith' and in accordance with state planning policy and legislation.

RECOMMENDATION 4.7

The provisions in the Queensland *Sustainable Planning Act 2009* for injurious affection should be repealed.

RECOMMENDATION 4.10

All governments should put in place best-practice institutional and governance arrangements for the provision of public infrastructure, including road infrastructure. These should include:

- stronger processes for project selection that incorporate requirements for cost–benefit analyses that are independently scrutinised and publicly released
- consideration of natural disaster risk in project selection and asset management planning
- a clearer link between road-user preferences and maintenance and investment decisions.

Insurance

RECOMMENDATION 4.8

State and territory taxes and levies on general insurance should be phased out and replaced with less distortionary taxes.

RECOMMENDATION 4.9

Insurers should provide additional standardised information to households regarding their insurance policies, the natural hazards they face and indicative costs of rebuilding after a natural disaster. This work should be led by the Insurance Council of Australia developing guidelines, within one year, to ensure consistency in the provision and presentation of this information across insurers.

FINDING 4.2

International experience has shown that government intervention in property insurance markets through subsidies weakens the price signals that insurance premiums send to households and businesses about the level of risk faced. These schemes also create fiscal risks. Governments have had to bear significant costs following large natural disasters because their insurance schemes failed to accumulate adequate reserves.

Transition and implementation

RECOMMENDATION 5.1

The Australian Government should schedule an independent and public review of the progress of reforms to natural disaster funding arrangements five years after implementation has commenced. This review should examine the operation and efficacy of the arrangements, including the:

- use of assessed damages and benchmark prices for the reconstruction of essential public assets
- use of upfront grants for community recovery
- feasibility of moving away from a cumulative trigger for recovery funding and towards an event-based model
- quantum and impacts of mitigation funding, and the institutional arrangements used by states and territories to allocate the mitigation funding they receive
- accountability arrangements for each level of government, including those that relate to Australian Government budgeting for natural disasters, insurance of state and territory government assets, and use of asset management planning by state, territory and local governments
- progress implementing the Commissions' recommendations in relation to land use planning, information provision and insurance.

In developing terms of reference for this review, the Australian Government should consult with state and territory governments.

RECOMMENDATION 5.2

The Australian Government should establish a framework for the development of benchmark prices for the reconstruction of essential public assets. This should set out the broad parameters that state and territory governments should follow, without prescribing particular prices to be used.

The Australian Government should also develop a methodology for assessing damages to essential public assets from natural disasters, to enable the application of benchmark prices.

Both tasks should be completed as soon as possible and within one year.

RECOMMENDATION 5.3

State and territory governments should develop benchmark prices for the reconstruction of essential public assets and submit these to the Australian Government for approval within one year. In developing these prices, they should consult with local governments and relevant experts, and draw on asset management plans. The prices should be reviewed and updated over time.

RECOMMENDATION 5.4

Within three years, the Australian Government should develop and implement a framework for untied grants for community recovery assistance to state and territory governments. This framework should take into account factors such as the type, location and scale of a disaster, and the number of people affected.

RECOMMENDATION 5.5

The Australian Government should develop a formula for allocating mitigation funding to state and territory governments on the basis of where such funding is likely to achieve the greatest net benefits, taking into account the future risks of natural disasters. This should be completed within five years and in consultation with state and territory governments.

1 About the inquiry

Key points

- Natural disasters create risks to community wellbeing. The impacts are nonlinear — most of the damage is due to a small number of major disasters. Managing these risks can reduce the impacts of natural disasters and increase overall community wellbeing.
- The national natural disaster funding arrangements matter not because of their fiscal impacts per se, but because of the incentives they create for the way governments and the community manage natural disaster risks.
- Assessing the current funding arrangements means considering how they influence the ownership, understanding and treatment of risks. Specifically, on:
 - *risk ownership* — asset owners should be responsible for managing risks and funding risk management
 - *risk understanding* — the arrangements should facilitate (or at least not create impediments to) parties understanding the natural disaster risks they face
 - *risk treatment* — the arrangements should provide neutral incentives for households, businesses and governments to make trade-offs and choose the risk management options that deliver the greatest net benefits, including reducing risks through mitigation, transferring risks through insurance and retaining risks.
- Households and businesses are generally best placed to manage natural disaster risks to their assets, but may be impeded from doing so by imperfect information, market failures and inadequate capacity.
 - Government can potentially address some of these impediments by providing public good information, regulating markets and supporting the management of shared risk.
- Governments also need to manage natural disaster risk to government assets and services.
 - The principle that asset ownership should align with responsibility for managing and funding natural disaster risk also applies to government. Vertical fiscal imbalance means that some cost sharing between the Australian Government and state and territory governments is inevitable. However, fiscal transfers from different levels of government break the link between asset ownership, risk ownership and risk management funding, and can undermine incentives for effective risk management.
- Transparency and accountability of government efforts to manage natural disaster risk can be enhanced through articulating a risk appetite, incorporating natural disaster costs in budgets, and robust processes for assessing policy options.

Australia has a long history of climate variability and extreme weather events that impose significant costs on society and governments. This inquiry follows a spate of natural disasters that have resulted in loss of life, injury, psychological trauma and widespread damage across large parts of Australia. Since 2009, natural disasters have claimed more

than 200 lives, destroyed 2670 houses and damaged a further 7684 houses, and affected hundreds of thousands of people. Through these impacts, natural disasters impose economic, social, personal and environmental costs on governments, businesses, households and communities.

Estimating these costs is challenging. Some impacts, such as loss of life and damage to the environment, do not readily lend themselves to market values. And estimates of the tangible impacts (for example, property damage) vary widely depending on the methodology and data sources used. As such, estimates of the economic costs of natural disasters vary significantly. The Senate Environment and Communications References Committee (2013) reported estimates ranging from \$900 million to \$4 billion per year. Deloitte Access Economics (2013) estimated that the economic cost of natural disasters is around \$6.3 billion per year. Although these costs appear large, they do not represent a material economy-wide impact relative to Australia's GDP (approximately \$1.5 trillion in 2013 (ABS 2014)). However, since the impacts of disasters tend to be localised, economic costs can be large relative to the income and economic activity in the region affected by the natural disaster.

The value of insured losses can be used as a partial proxy for natural disaster costs, although the relationship between insurance losses and economic costs varies depending on the type of event, its severity and location. Data from the Insurance Council of Australia show that these costs are volatile, but increasing over time (figure 1.1). The increase has mainly been driven by population growth, increased settlement in areas that are exposed to disaster risks and increased asset values. The costs have been particularly high in recent years. For example, analysis of deflated insurance losses over the period 1970 to 2013 indicates that average annual losses for the period 1970–2006 were 22 per cent of the average losses over the period 2007–2013.

Further, the economic impacts of natural disasters tend to be nonlinear — that is, as the size of a natural disaster increases, its disruptive effect is amplified. An implication of this finding is that policy settings and natural disaster funding arrangements need to be designed well to deal with these infrequent but costly natural disasters.

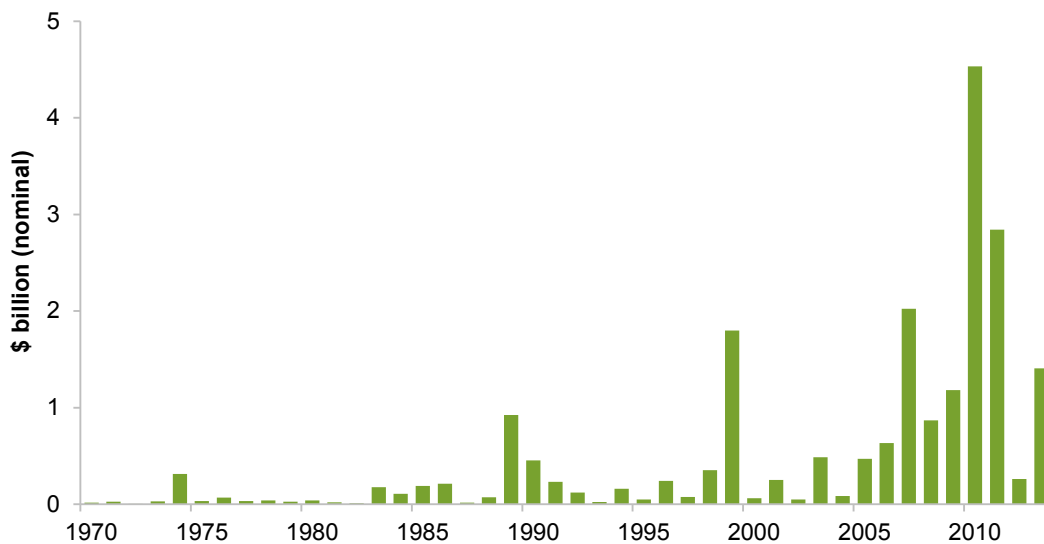
It is difficult to predict accurately how many natural disasters will occur in the future and there are risks in drawing conclusions about future climate trends from past trends. Evidence suggests that the climate is changing and this is expected to lead to greater variability and changes to the frequency, intensity, location and duration of extreme weather events such as bushfires and tropical cyclones. This could affect the costs of natural disasters in the future. (Supplementary papers 1 and 7 elaborate on the impacts of natural disasters, the drivers of the costs of disasters and future projections.)

Natural disasters have had a significant fiscal impact on the Australian, state, territory and local governments. Over the decade to 2012-13, the Australian Government spent around \$8 billion on post-disaster relief and recovery, with another \$5.7 billion to be spent over the forward estimates (2013-14 to 2015-16) for past natural disaster events. State and

territory governments have spent a further \$5.6 billion on relief and recovery over the same period.

Natural disaster funding arrangements matter, not because of their fiscal impact per se, but because of the incentives they create for the way governments and the community manage natural disaster risks. The recent disasters have exposed the bias embedded in the current funding arrangements towards disaster recovery and against disaster risk mitigation. Better understanding and management of natural disaster risks is essential to reducing their costs and increasing community wellbeing.

Figure 1.1 Insurance losses from natural disasters



Source: ICA (2014b).

1.1 What has the Commission been asked to do?

This inquiry is the first comprehensive review of natural disaster funding arrangements in over a decade. The Australian Government has asked the Commission to assess the full scope of Commonwealth, state and territory expenditure on natural disaster mitigation, resilience and recovery and to identify reforms which achieve an effective and sustainable balance between natural disaster recovery and mitigation funding. Specifically, the Commission has been asked to develop findings on:

- the sustainability and effectiveness of current arrangements for funding natural disaster mitigation, resilience and recovery initiatives
- the risk management measures available to and being taken by asset owners

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- the interaction between natural disaster funding and federal financial arrangements
 - options to achieve an effective and sustainable balance of expenditure on natural disaster mitigation and recovery
 - how stakeholders can most effectively fund natural disaster recovery and mitigation initiatives
 - how to ensure the right incentives are in place to support cost-effective decision making
 - mechanisms and models to prioritise and evaluate mitigation opportunities
 - the role of urban planning, land use policy and infrastructure investment in supporting cost-effective risk management
 - options to fund identified natural disaster recovery and mitigation needs.

The terms of reference also request the Commission to investigate the medium- and long-term impacts of reform options on the Australian economy and on the costs to governments, as well as to consider the transitional and implementation issues of the proposed reforms.

The terms of reference limit the inquiry to considering funding for disaster response only where it is directly relevant to mitigation, relief and recovery and to existing Commonwealth–state joint funding arrangements. The scope of the inquiry is also limited to ‘naturally occurring rapid onset events that cause a serious disruption to a community or region, such as flood, bushfire, earthquake, storm, cyclone, storm surge, tornado, landslide or tsunami.’ Drought and heatwave are not within the scope of this inquiry. Nor are longer-term phenomena, such as coastal erosion or climate change (although both could increase the frequency and/or intensity of disaster events.)

The Commission has used a principles-based approach and the available evidence to assess the current arrangements and to develop reform options. It has considered practices from overseas (supplementary paper 8), and has taken into account evidence, analysis and recommendations arising from other reports on natural disaster management and funding (box 1.1). The Commission has also followed several other relevant reviews, such as the Financial Systems Inquiry and the Australian Government White Paper on the Reform of the Federation.

Throughout the inquiry process the Commission has engaged widely with stakeholders and has actively encouraged public participation through meetings and roundtables around Australia, submissions and public hearings (appendix A). A draft report was released for public comment in September 2014. It included 9 draft findings, 16 draft recommendations and 11 information requests. The Commission received 119 submissions prior to the release of the draft report in September 2014, and received a further 108 submissions following the draft report. In addition, 57 participants appeared at public hearings following the draft report.

Box 1.1 **Previous reviews of natural disaster management and funding**

Several reports have made recommendations for changes to Australia's natural disaster funding arrangements.

- A report to COAG by a high level officials group recommended a package of reforms to natural disaster funding (COAG 2002). These included increasing Australian Government funding to the states and territories for disaster mitigation by around \$25 million each year; reform of Natural Disaster Relief and Recovery Arrangements (NDRRA) assistance to households, businesses and communities; and the introduction of 'betterment' provisions in the NDRRA.
- A review of state and territory governments' asset insurance arrangements that was undertaken by the Department of Finance (drawing on input from KPMG) found that Tasmania and the Northern Territory did not have adequate insurance for non-road assets, and that all states and territories except Victoria and the ACT lacked insurance for road assets (Department of Finance and Deregulation 2012a). It recommended that all jurisdictions adopt a common framework for identifying cost-effective insurance options, along with further investigation of models to fund the cost of road damage.
- The Productivity Commission's report *Barriers to Effective Climate Change Adaptation* outlined features of the current NDRRA that may be inconsistent with effective risk management (PC 2012). It found that the NDRRA may lower the incentives for state and territory governments to adequately maintain or insure their infrastructure, that betterment provisions may be underutilised due to unclear administrative and funding arrangements, and that local governments sometimes lack the capacity to undertake effective mitigation. The Commission recommended a review of disaster prevention and recovery arrangements.
- Deloitte Access Economics (2013), in a report commissioned by the Australian Business Roundtable for Disaster Resilience and Safer Communities, estimated that the annual economic cost of natural disasters would rise from \$6 billion in 2012 to \$12 billion by 2030 and \$23 billion by 2050. It also estimated that increased Australian Government expenditure on pre-disaster resilience (of about \$250 million per year) would reduce these costs by more than 50 per cent by 2050. It recommended increased identification and prioritisation of mitigation activities.
- Two reports by the Australian National Audit Office found that the Australian Government Reconstruction Inspectorate's assessment of rebuilding projects under the NDRRA had generally provided assurance of value for money in Queensland, but it had yet to undertake any value for money reviews in Victoria (ANAO 2013a, 2013b). The reports recommended improvements in how the Inspectorate collects information from state, territory and local governments and scrutinises projects.
- The National Commission of Audit (2014b) recommended that the Disaster Recovery Allowance be abolished and that the NDRRA be replaced with a grant provided after each major natural disaster. Under this model, the Australian Government would provide the relevant state or territory government funding equivalent to 25 to 33 per cent of estimated reconstruction costs.

1.2 The conceptual framework

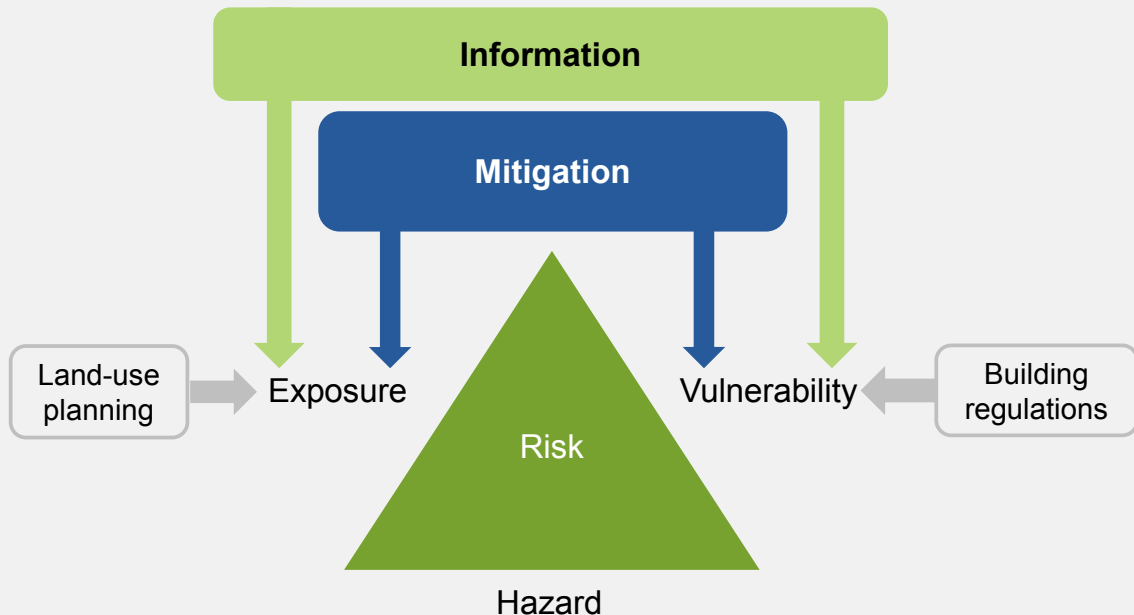
The overarching goal of this inquiry is to identify reforms to natural disaster funding arrangements that improve the living standards of Australians. This objective is grounded in the *Productivity Commission Act 1998* (Cwlth), which states:

In the performance of its functions, the Commission must have regard to the need ... to improve the overall economic performance of the economy through higher productivity in the public and private sectors in order to achieve higher living standards for all members of the Australian community. (s. 8(1)(a))

Natural disasters pose *risks* to community living standards — damage that could occur in the future (box 1.2). Households, businesses, communities and governments can improve overall living standards by managing these risks. Even when little can be done to reduce the probability of natural hazards, it is possible to reduce the exposure and vulnerability of the community, and hence natural disaster risk.

Box 1.2 The natural disaster risk triangle

Natural disaster risk arises from the interaction of three elements: the probability of a natural *hazard* occurring, the *exposure* of people, property and the environment to the hazard and their *vulnerability* to the impacts.



Sources: Adapted from ERSA (sub. 12); Granger (2014).

Risk management is a process that consists of:

- risk ownership — determining who is responsible for managing risks to which assets
- risk understanding — identifying which risks are faced and their likely consequences, including further research where necessary

- risk treatment — making decisions on how to best manage the risk, such as reducing risk through mitigation, funding risk transfer through insurance and bearing some residual risk.

As such, natural disaster funding is not a traditional service delivery activity, but essentially a *risk management* activity.

Natural disaster risk management is complex, and decision makers need to deal with uncertainty, long time frames, unquantifiable costs and benefits, and stakeholder values and expectations. Effective natural disaster risk management involves a combination of pre- and post-disaster actions by households, businesses, communities and all levels of government. (Box 1.3 defines other concepts that are related to this inquiry.)

The objective of natural disaster risk management is not to reduce the level of risk to zero. Risk management actions have benefits and costs, and the resources that are allocated to risk management have to be traded off against other priorities (table 1.1). That is, every dollar spent on disaster mitigation or recovery is a dollar that cannot be spent on other consumption or investment. So effective risk management involves decisions, trade-offs and actions so the community's exposure to risk is aligned with its tolerance for risk (risk appetite).

Households and businesses are generally best placed to manage natural disaster risks to their 'assets', broadly defined to include buildings and other property, as well as physical and psychological health and wellbeing. However, impediments exist that can prevent asset owners from effectively managing natural disaster risk (figure 1.2). Governments can reduce these impediments by providing a *framework for effective risk management*.

Table 1.1 Examples of trade-offs in natural disaster risk management

Type of trade-off	Examples	
	Households/businesses	Governments
Resources allocated to risk management	Spending money and time modifying buildings, rather than on consumption or recreation	Funding for natural disaster management rather than for education or healthcare, or reducing taxes
Risk management tools to use	Investing in mitigation, rather than purchasing additional insurance	Spending on mitigation rather than recovery
Specific risk management projects	Installing fireproof roofing, rather than a sprinkler system	Constructing a flood levee, rather than requiring higher floor levels in buildings
Current and future outcomes	Investing in risk modification today, rather than waiting until the costs and benefits become clearer	Investing in mitigation today to reduce potential costs in the future, rather than investing in other things that would benefit future generations

Box 1.3 **Some terminology used in this inquiry**

Natural disaster — A naturally occurring rapid onset event that causes a serious disruption to a community or region, such as flood, bushfire, earthquake, storm, cyclone, storm surge, tornado, landslide or tsunami.

Hazard — A source of potential harm or a situation with a potential to cause loss.

Exposure — People, property or other elements present in hazard zones that are subject to potential losses.

Vulnerability — The characteristics and circumstances of a community or asset that make it susceptible to the damaging effects of a hazard.

Risk — The combination of the probability of an event and its negative consequences.

Risk appetite — The level of risk that a person or organisation is willing to tolerate or bear rather than devoting further resources to reduce the risk.

Residual risk — The level of risk that a person or organisation remains exposed to after taking action to reduce the level of risk.

Risk management — The systematic application of management policies, procedures and practices to the tasks of identifying, analysing, evaluating, treating and monitoring risk.

Mitigation — Measures taken in advance of disasters to reduce their impacts.

Resilience — The ability of communities to continue to function when exposed to hazards and to adapt to changes rather than returning to the original pre-disaster state.

Response — Actions taken in anticipation of, during, and immediately after an emergency to minimise its effects.

Recovery — Actions to support affected communities to restore damaged property and economic activity, as well as physical and psychological health and wellbeing.

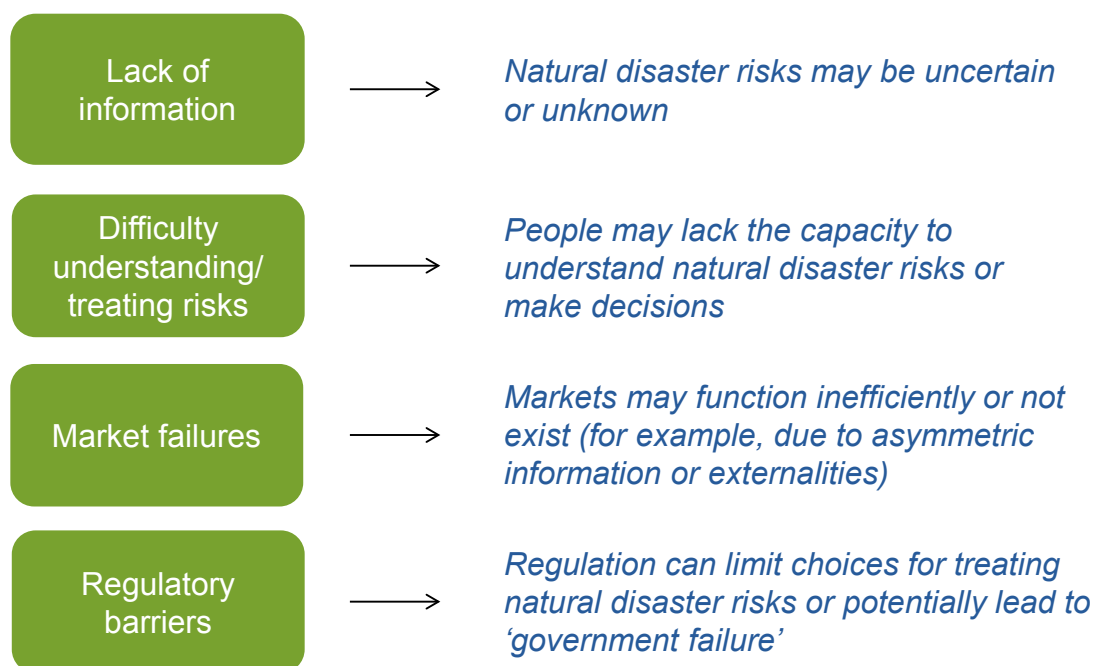
Incentive neutrality — Achieved when policy frameworks are not biased toward one option (such as toward disaster recovery over mitigation) and where decisions consider the impacts of the options over time, and are not biased toward delay or immediate action.

Vertical fiscal imbalance — The situation where the Australia Government raises more revenue than it requires for its own direct expenditure responsibilities, whereas state and territory governments raise less revenue than they require for their expenditure responsibilities.

Horizontal fiscal equalisation — The process whereby the Australian Government distributes goods and services tax revenues so that each state and territory has the fiscal capacity to provide services and infrastructure to the same standard (assuming they each make the same effort to raise revenue and operate at the same level of efficiency).

Sources: CGC (2013); COAG (2002, 2014b); PC (2012); UNISDR (2009).

Figure 1.2 **Impediments to effective natural disaster risk management**



An effective risk management policy framework would mean that households, businesses and governments have incentives to manage risks in ways that reduce them to a level that they are prepared to accept at a cost they are prepared to bear. It would also facilitate effective and efficient natural disaster recovery. Such a framework involves three broad roles for governments.

- Managing risks to government-owned assets, liabilities and service delivery.
- Supporting management of ‘shared’ risks, such as the effects of natural disasters on community cohesion.
- Reducing impediments to effective risk management by households, businesses and governments.

The natural disaster funding arrangements are an important part of the risk management framework because they influence the incentives governments, households and businesses have to manage natural disaster risks. This report therefore assesses whether the incentives created by current funding arrangements are consistent with the principles of effective natural disaster risk management, and where they are not, what change or reform is needed. Over time, arrangements that provide incentives for effective natural disaster risk management should contribute to increased community living standards.

Assessing the current funding arrangements means considering how they influence the ownership, understanding and treatment of risks. Specifically, on:

- *risk ownership* — the arrangements should establish clear roles and responsibilities, and promote transparency and accountability in decision making

-
- *risk understanding* — the arrangements should facilitate (or at least not create impediments to) parties understanding the natural disaster risks they face
 - *risk treatment* — the arrangements should provide neutral incentives for households, businesses and governments to choose the risk management options that deliver the greatest net benefits, including reducing risks through mitigation, transferring risks through insurance and retaining risks. The arrangements should promote cost-effectiveness and avoid waste.

The following sections explain in more detail how these features of the funding arrangements influence natural disaster risk management and community wellbeing.

Risk ownership

The natural disaster funding arrangements should allocate roles and responsibilities in ways that strengthen incentives for people and organisations to manage the natural disaster risks they face. A starting point is that asset owners, including households, businesses and governments, should be responsible for managing natural disaster risks to their assets. Aligning asset ownership with risk ownership has several benefits.

- Legal authority — asset owners generally have the legal authority to take risk management actions.
- Incentives to manage risks — where asset owners incur the costs of natural disasters, they have incentives to identify the risk management options that align with their risk appetites.
- Fairness — where the owner of the asset reaps the benefits of risk management actions, it is arguably not fair that other people should bear the costs.

In some cases the characteristics of the risk, the asset or the owner mean that diluting the link between asset ownership and risk ownership can lead to more effective risk management and increased community wellbeing. This can include cases where risks affect the community broadly, and can be more effectively and efficiently managed through collective approaches, and cases where the asset owner does not have the capacity to effectively manage risks.

Allocating responsibility for shared risks

Some natural disaster risks are ‘shared’ — they do not align neatly with asset ownership. For example, natural disasters can damage intangible assets, such as environmental amenity and community cohesion. In these cases it may be less effective for asset owners to independently manage natural disaster risks to their assets. This could occur when no single asset owner has the capacity to effectively manage a risk — either because they lack the necessary resources or capability, or because they do not have legal authority to manage the risk. It could occur when there are economies of scale in a coordinated

approach (such as sandbagging a river bank rather than each individual house). In these cases a shared approach to risk management could be more effective. This could be through governments or through voluntary action (such as by volunteer emergency services, Landcare groups or Rotary Clubs).

Where governments decide to manage such shared risks, efficient cost recovery can help to align the benefits of risk management with the costs. Cost recovery mechanisms (such as user charges) can provide asset owners with a signal about the level of risk they face. It is also arguably a more equitable approach than funding risk management from general government revenue, if it means that the costs of risk management are (partially or fully) recouped from the beneficiaries. The NSW Independent Pricing and Regulatory Tribunal (sub. 26) cited a hierarchy it has developed to identify which party should be responsible for the costs of risk management.

1. *Risk creator pays* — Where possible, the party that causes an adverse impact, creates or can influence a risk should bear the costs of its management.
2. *Beneficiary pays* — Where it is not efficient for the risk creator to pay, the beneficiary of the risk management should bear the costs.
3. *Taxpayer pays* — As a last resort taxpayers should bear the cost of risk management.

Allocating roles and responsibilities when asset owners lack capability

Sometimes asset owners might not be capable of effectively managing risks. Factors that influence someone's risk management capability include:

- whether they have access to the information they need to understand their risks and risk management options
- their ability to make good decisions (including the effects of cognitive biases)
- their access to financial and other resources to implement effective risk management options (box 1.4).

Where asset owners lack the capability to manage risks, measures to improve their capability could lead to better outcomes. This could include providing access to information or decision-making tools, or providing funding for risk management. However, governments need to be wary of 'moral hazard' when they provide funding support for risk management. Moral hazard describes situations where intervention to reallocate responsibilities for funding risk management can reduce the incentives people have to effectively manage those risks.

Box 1.4 **Financial capacity for risk management**

An asset owner's financial capacity to manage risks includes the capacity to *finance* risk management and the capacity to *fund* risk management.

- *Financing* refers to supplying the capital to pay the upfront costs of natural disaster management.
- *Funding* refers to revenue sources to pay for the financing costs of natural disaster management.

This distinction is important. For example, an individual may not have the income or savings to finance the upfront capital required to raise the floor of a house to mitigate against flood risk. However, if the activity is expected to yield future benefits (reduced flood damage), capital markets should be able to provide the finance for that activity (via a loan), with the individual funding the activity over a number of years (via loan repayments, which might in part be funded through lower insurance premiums).

Similarly, and where collective mitigation may be required, such as for a flood levee, insurers have been known to identify potential insurance premium reductions from the specific mitigation action. Where households benefit (through lower premiums), local governments could seek to recoup some of the savings as a source of funding for the mitigation investment (such as through rates or user charges).

Allocating roles and responsibilities in a federation

A central task for this inquiry is to assess the way that responsibility for natural disaster risk management (including funding) is allocated across the different levels of government. The decision about which level of government should be responsible for natural disaster risks can be guided by the principle of *subsidiarity*. This is the proposition that the risk should be borne by the lowest level of government that is capable of managing it.

State, territory and local governments are responsible for the majority of asset and service provision, and the attendant natural disaster risk. In this context, the subsidiarity principle implies that the Australian Government should only manage natural disaster risks that local, state and territory governments are not capable of managing themselves.

However, the Australian federation has a high degree of vertical fiscal imbalance (VFI). VFI refers to the situation where the Australian Government raises more revenue than it requires for its own direct expenditure responsibilities, whereas state and territory governments raise less revenue than they require for their expenditure responsibilities. To address this imbalance the Australian Government provides funds to state and territory governments. Fiscal transfers from the Australian Government comprise almost 50 per cent of state and territory budgets. As well as its regular transfers to the states and territories, the Australian Government, like the national government of other federations, acts as a fiscal 'safety net' by bearing some of the costs of natural disasters incurred by lower levels of government. Further cost sharing also occurs between the states and territories through the operation of horizontal fiscal equalisation (chapter 2 and supplementary paper 2).

The Australian Government, with its larger and diverse sources of revenue, has more capacity than the states and territories to reallocate expenditure or borrow funds when a catastrophic natural disaster occurs. As such, it can potentially be efficient for the Australian Government to assume some of the fiscal risks associated with catastrophic natural disasters.

Although some cost sharing is inevitable given the existence of VFI, cost sharing in the natural disaster funding arrangements breaks the link between asset ownership, risk ownership and risk management funding, and can influence incentives to effectively manage these risks. It also inevitably results in some level of cost shifting.

Accountability and transparency for natural disaster risk management

The natural disaster funding arrangements should encourage transparent and accountable decision making. Accountability broadly involves being held to account to an authority for one's actions. In the context of this inquiry, accountability can be thought of in a broader sense of governments being transparent in their decision making (the risks they are tolerating and the trade-offs they are making) and being accountable to the community for fulfilling their roles and responsibilities in natural disaster risk management.

Government budgets are the principal tool for allocating limited funding to competing priorities. Budgets can also make government decisions and trade-offs more transparent to taxpayers. This, in turn, can make governments more accountable for their decisions, and give them stronger incentives to effectively manage risks to the community's wellbeing.

Although the fiscal impact of natural disasters can be uncertain and volatile, it is nonetheless important that these impacts are transparently reflected in government budgets. Failing to report estimates of natural disaster risks can result in governments giving inadequate consideration to these risks in their budgets, and over time can lead to systematic misrepresentation of the underlying budget position (OECD 2013).

Another dimension of accountability in natural disaster risk management is making local, state and territory governments accountable for how they spend funds provided by higher levels of government. Although accountability is desirable, there are different ways of achieving it. Where higher levels of government seek to ensure accountability through prescriptive conditions, the benefits need to be balanced against the costs of compliance and monitoring. Excessively prescriptive conditions can reduce the flexibility of lower levels of government to spend money in ways that deliver cost effectiveness and the greatest net benefits to their communities.

Articulating a risk appetite

Effective risk management requires alignment of the risk owner's appetite for risk with their risk exposure. Often a party's risk appetite is not explicitly stated, but can be revealed

or imputed by its actions. For example, when a home owner takes out building insurance, they will generally agree to an ‘excess’. The level of excess they choose reflects their risk appetite. For households and small organisations, this approach can be consistent with effective risk management.

However, where governments and businesses face larger and more complex risks and where their actions can affect other parties, clearly articulating their risk appetite is an essential prerequisite for accountability (through transparency) and therefore more effective risk management. Governments should consider the level of natural disaster risk that they face and are prepared to bear. This should be clearly articulated and should inform decisions about natural disaster risk management.

KPMG (2008) identified some characteristics of a well-defined risk appetite. It should:

- reflect organisational objectives and stakeholder expectations
- acknowledge a willingness and capacity to take on risks
- be documented in a formal risk appetite statement
- include a tolerance for losses that can be reasonably quantified
- be approved by high-level decision makers (such as a board or legislators)
- be periodically reviewed.

Risk understanding

To effectively manage natural disaster risks, households, businesses and governments need to understand their risks and risk management options. The importance of understanding risks is recognised widely in research and policy documents, such as the *National Strategy for Disaster Resilience*, which states that one of the characteristics of a disaster resilient community is that:

People understand the risks that may affect them and others in their community. They understand the risks assessed around Australia, particularly those in their local area. They have comprehensive local information about hazards and risks, including who is exposed and who is most vulnerable. (COAG 2011c, p. 5)

Effective risk management can be impeded where:

- information is not *available* — that is, the relevant information on natural hazards, exposure and vulnerability does not exist
- information is not *accessible* — the information is not presented in a form that the risk owner can understand and act on
- information is *asymmetric* — one party holds more information on a risk than another (this is particularly relevant in insurance markets).

In general, risk owners have incentives to obtain and use the best quality information. They often understand their exposure to hazards and their vulnerability better than any other party. However, there can be cases where it is not efficient for each risk owner to collect and analyse hazard and risk information. This could happen where there are economies of scale in information collection, or where information has ‘public good’ characteristics. These characteristics could lead to under-provision of information and compromise effective risk management (supplementary paper 3).

In these cases there can be benefits from collective information gathering. This can be done by commercial providers who then on-sell the information to individual risk owners, or by governments (either directly or by funding commercial providers). Where governments opt to collect, analyse and distribute information about hazards and risks they should be mindful of the benefits and costs of doing so. Obtaining and understanding information about risks is costly, and at some point the costs of further information will exceed the benefits. Nevertheless, there is a role for governments in information gathering and provision, up to a point.

Understanding the risks to government-owned assets

To understand the natural disaster risks to their assets, governments need to integrate consideration of natural disaster risks into their asset and liability management and asset management planning, and ultimately their long-term financial plans. This includes understanding:

- exposure to natural disasters (the extent to which government-owned assets are exposed to natural hazards)
- vulnerability to natural disasters (the condition of the assets and their susceptibility to natural hazard damage)
- financial information about assets, including their value, depreciation and costs of maintenance and replacement.

Risk treatment

Risk treatment involves taking actions to mitigate, transfer and bear natural disaster risks. Effective natural disaster risk management means identifying and implementing the options that provide the largest net benefits to the community. Natural disaster funding arrangements create a set of incentives for risk owners to take various actions. The arrangements should be consistent with the principle of incentive neutrality. That is, the arrangements should not be biased in favour of any particular risk management option across the spectrum of mitigation, relief and recovery.

Neutrality applies to the consideration of competing options at a point in time. For example, whether to allocate resources to building a flood levee, or to research bushfire behaviour. It also applies over time. The arrangements should be consistent with a

thorough consideration of the implications of decisions over time, and should not be biased toward ‘kicking the can down the road’.

Processes for assessing policy options

When making decisions about which risk management options to pursue there are well-established approaches to policy assessment to guide government actions. In general these involve:

- identifying all the options
- identifying and attempting to quantify (or at least explain) all the potential impacts, including the potential of risk treatment options to prevent loss of life, injury, psychological harm, financial losses and environmental damage
- weighing up the benefits and costs of each option
- choosing the risk management measures that provide the greatest net benefits, given the risk appetite and available resources
- explaining the decision to stakeholders.

Natural disaster risk management is complex, and decision makers need to deal with uncertainty, long time frames, unquantifiable costs and benefits, and stakeholder values and expectations. This complexity is a compelling argument for a rigorous and transparent process for identifying and considering all the options and giving decision makers all the available information so that they can make a good decision. Where risk owners deviate from these principles, it is less likely that they will implement effective natural disaster risk management.

Choosing the right option to finance disaster recovery

Risk owners need to put in place measures to finance the costs of natural disaster recovery. There are two broad options: drawing on provisions set aside before disasters occur (ex-ante financing) and obtaining funds if and when a disaster occurs (ex-post financing). Both have advantages and disadvantages (table 1.2). Current government practice in Australia for natural disaster recovery costs is to rely on ex-post financing, which can create perverse incentives, including a bias against mitigation expenditure. However, some forms of ex-ante provisioning can also have significant costs. The optimal approach will likely consist of provisioning for some risks ex ante, and choosing to bear others ex post.

Table 1.2 Advantages and disadvantages of ex-ante and ex-post financing

<i>Approach</i>	<i>Examples</i>	<i>Advantages</i>	<i>Disadvantages</i>
Ex ante	<ul style="list-style-type: none"> • Drawing on provisions set aside in reserve funds • Drawing on funds provisioned in budgets for natural disaster costs (for example, based on historical averages) • Self-insurance schemes • Commercial (re)insurance 	<ul style="list-style-type: none"> • Reduced fiscal impact when disasters occur • Lower fiscal volatility • Incentive to explicitly trade off mitigation and recovery, including intertemporal impacts (neutrality) 	<ul style="list-style-type: none"> • Reserve funds can have high opportunity costs • Incentives to divert funds to other uses • Insurance can be costly
Ex post	<ul style="list-style-type: none"> • Budget reallocation • Taxation • Debt financing 	<ul style="list-style-type: none"> • Potentially lower opportunity costs • Lower administrative costs 	<ul style="list-style-type: none"> • Sudden need for funds can be costly, leading to fiscal volatility • Can reduce incentives to holistically manage risk (compromising neutrality) • Less transparent

Sources: G20 and OECD (2012); OECD (2008, 2013, 2014); Phaup and Kirschner (2010).

Cost-effectiveness and avoiding waste

A final principle for effective management of natural disaster risks is that the funding arrangements should be cost-effective and should avoid waste. Carrying out rigorous and transparent assessment of policy options can help to identify the most cost-effective options. There are other practices that can also reduce waste. In particular:

- administration and oversight of the funding arrangements should be efficient and avoid unnecessary ‘red tape’
- the funding arrangements should not impede effective risk management by households, businesses or any level of government
- the funding arrangements should seek to prevent repeated disaster events causing repeated recovery costs if mitigation, betterment or not rebuilding damaged assets would be more efficient and effective
- avoiding duplication of roles and responsibilities.

1.3 A guide to the report

This report consists of an overview, five chapters, one appendix and eight supplementary papers. The chapters contain evidence from submissions, public hearings and other research and analysis of the current natural disaster funding arrangements. The supplementary papers set out additional detail, evidence and participants' views.

- Chapter 2 describes the major national natural disaster funding arrangements and provides an assessment of the arrangements against the conceptual framework outlined in this chapter.
- Chapter 3 recommends reforms to the major natural disaster funding arrangements.
- Chapter 4 recommends reforms to other policy areas that influence the way households and businesses manage the natural disaster risks they face.
- Chapter 5 discusses the implementation and transition to the Commission's recommended funding model.

Supplementary papers

- Supplementary paper 1 documents the types of natural disasters covered by the inquiry and their incidence in Australia over the past four decades. It defines the various components of natural disaster costs and analyses the insurance losses and fiscal costs of natural disasters over time.
- Supplementary paper 2 describes the current natural disaster funding arrangements and how they have evolved over time.
- Supplementary paper 3 provides a more in-depth discussion of the principles of effective natural disaster risk management, including the role of households, businesses and governments in managing risks to their own assets and managing 'shared' risks.
- Supplementary paper 4 examines different types of natural disaster mitigation measures, and identifies approaches to assessing, funding and financing mitigation activities. It highlights some examples of current Australian practice.
- Supplementary paper 5 examines issues related to natural disaster insurance, including insurance by households and businesses, and insurance of government-owned assets. It also discusses possible distortions in the insurance market and other issues, such as insurance coverage and affordability, that could reduce the effectiveness of insurance in managing risks.
- Supplementary paper 6 deals with the regulations affecting the built environment and natural disaster risk management, including land use planning and building regulations, and issues affecting existing settlements.
- Supplementary paper 7 presents estimates of the recent costs of natural disasters and the Commission's illustrative economic and fiscal cost projections in the medium and

long term under current funding arrangements, and a partial quantitative assessment of the recommended funding model from chapter 3.

- Supplementary paper 8 describes natural disaster funding arrangements in other comparable countries including Canada, France, Germany, Japan, New Zealand, the Netherlands, the United Kingdom and the United States.

2 The performance of Australia's natural disaster funding arrangements

Key points

- Current natural disaster funding arrangements break the link between asset ownership, risk ownership and risk funding across levels of government. This influences the incentives to effectively manage natural disaster risk.
 - When combined with the disparate treatment of disaster mitigation and recovery spending in government budgets, the balance of incentives is biased against mitigation and insurance in favour of recovery spending.
- The Australian Government provides funding support to state and territory governments for natural disaster costs because of their potentially large fiscal impact and because of state and territories' lower fiscal capacity.
- The current thresholds for reimbursement of state and territory recovery expenditure through the Natural Disaster Relief and Recovery Arrangements are too low, and the reimbursement rates are too high. They go beyond a 'safety net' to assist states and territories with the fiscal impacts of major natural disasters.
- Further, the reimbursement model, and accompanying prescriptiveness, drives state, territory and local government decisions about disaster recovery and can prevent state, territory and local governments from pursuing the most cost effective recovery options.
- Overall, government expenditure on mitigation is too low. However, the extent of the shortfall is unknown.
- The current arrangements for providing emergency assistance to individuals are inconsistently applied, inefficient in their administration, prone to overlap and can be very costly.
 - The eligibility criteria for the Australian Government Disaster Recovery Payment have succumbed to short-sighted changes, and the payment might be higher than necessary to meet the immediate emergency relief needs of people severely affected by natural disasters.
- Viable businesses have access to commercial options to manage natural disaster risks (such as business interruption insurance). There is little evidence and justification for governments to provide financial assistance to businesses following natural disasters beyond the immediate income support provided through the Disaster Recovery Allowance.

Natural disasters happen frequently in Australia, and there is a role for the Australian, state, territory and local governments to contribute to managing those risks. (From here on, references to 'states' refer to states and territories and their governments.) Chapter 1 identified three broad roles for governments in natural disaster risk management:

managing the risks to government-owned assets and service delivery; supporting management of ‘shared’ risks; and setting policies to reduce impediments to effective risk management by households, businesses and governments. The design of the current funding arrangements influences how governments perform each of these roles.

This chapter describes the current natural disaster funding arrangements at the Australian and state levels, including arrangements for mitigation and for post-disaster recovery (section 2.1). (Supplementary paper 2 includes more detail on the current arrangements.) Section 2.2 assesses current funding arrangements (against the framework developed in chapter 1) in the context of managing risks to government assets, and section 2.3 assesses how effectively current funding arrangements for assistance to individuals and businesses support the management of shared risks.

This chapter finds that current natural disaster funding arrangements diminish the incentives for governments to take pre-emptive actions to reduce the impacts of disasters and to insure themselves against the costs of disaster recovery. They also exacerbate the political economy bias to short-termism. This leads to inefficient and inequitable outcomes, which undermine the sustainability of the funding arrangements in the long run.

FINDING 2.1

Current government natural disaster funding arrangements are inefficient, inequitable and unsustainable. They are prone to cost shifting, ad hoc responses and short-term political opportunism.

2.1 Current natural disaster funding arrangements

Constitutional responsibilities and federal fiscal arrangements

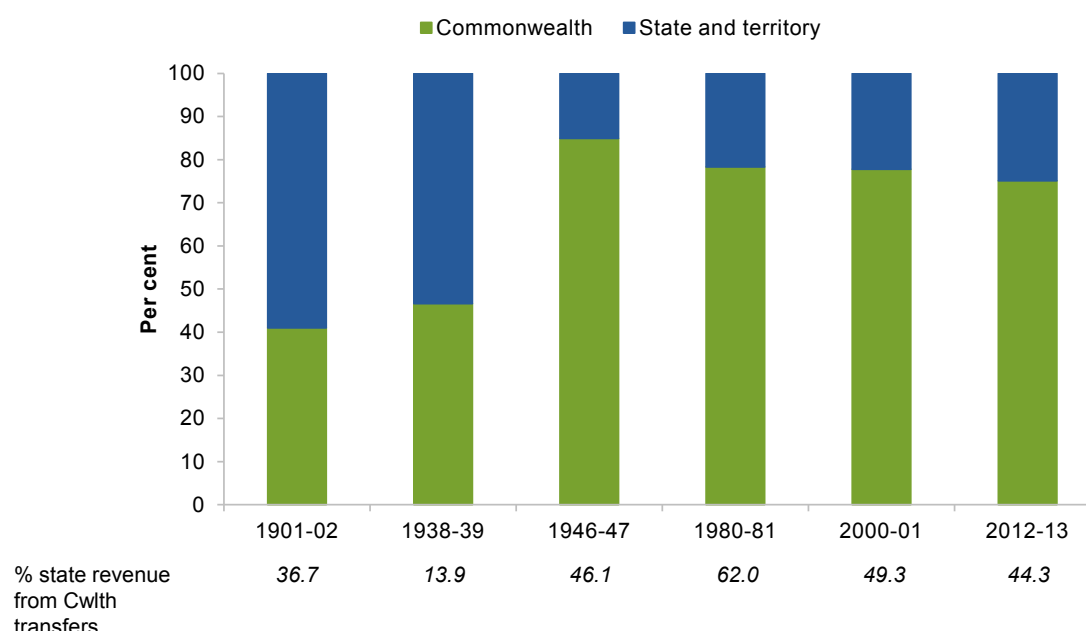
The natural disaster funding arrangements are shaped by the Australian Constitution, which assigns the roles and responsibilities of each level of government. Most service delivery is the responsibility of the state governments (local governments are essentially an extension of state governments). Consequently, most natural disaster risk management is the responsibility of those levels of government.

However, Australia has a high degree of vertical fiscal imbalance. This refers to the situation where the Australian Government raises more revenue than it requires for its own direct expenditure responsibilities, whereas state and local governments raise less revenue than they require for their expenditure responsibilities. As in many federations, the Australian Government makes an ongoing contribution to state government budgets. (Roughly half of state government revenue comes from Australian Government transfers

— figure 2.1). The Australian Government also provides a ‘safety net’ by bearing some of state governments’ fiscal risks.

In addition to cost-sharing arrangements with the Australian Government, the residual state spending on natural disaster relief that is reported under the Natural Disaster Relief and Recovery Arrangements (NDRRA) is shared among the states through the process of horizontal fiscal equalisation (HFE). Through the HFE process, the Australian Government distributes GST revenues so that each state has the fiscal capacity to provide services and infrastructure to the same standard, if they make the same efforts to raise revenue, and operate at the same level of efficiency.

Figure 2.1 Proportion of total revenue collected by each level of government



Data source: CGC (2014b).

In making HFE calculations, the Commonwealth Grants Commission (CGC) assumes that state spending that is reported under the NDRRA framework is determined by that common framework and is not subject to significant policy differences. The CGC therefore considers that differences in states’ NDRRA-eligible expenditure only reflect differences in the severity and incidence of natural disasters. Any other spending on natural disasters which is not recognised under the NDRRA, whether for mitigation or relief and recovery, is not separately identified or treated in this way (CGC, pers. comm., 15 October 2014).

In essence, this process distributes the costs of natural disaster relief that states incur (not including the costs that are reimbursed through the NDRRA) across all jurisdictions on a per capita basis, regardless of where the natural disaster occurs. Queensland, the Northern

Territory and Victoria have been the main beneficiaries of this process in recent years (table 2.1), but other states and territories have benefited in the past.

The natural disaster funding arrangements are one element of the broader system of federal financial relations. The Australian Government is reviewing Commonwealth-state financial relations in the Reform of the Federation White Paper. The review and recommended reforms to the natural disaster funding arrangements in this report are framed in the context of the current degree of vertical fiscal imbalance in the Australian federation. Arguably, further and more fundamental reform of the natural disaster funding arrangements requires significant, lasting reforms to federal financial relations.

Table 2.1 Natural disaster relief expenses, GST redistribution
\$ million

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>	<i>Redistribution^a</i>
2011	2.5	-17.3	94.9	-34.5	-35.6	-9.7	7.7	-8.1	105.2
2012	-65.7	50.2	172.0	-60.7	-75.3	-16.6	4.7	-8.6	226.8
2013	16.7	-24.2	148.1	-59.9	-61.9	-14.8	5.7	-9.6	170.5
2014	-37.3	4.6	232.0	-87.2	-81.4	-15.0	0.1	-15.7	236.7
Total	-83.8	13.3	647.0	-242.3	-254.2	-56.1	18.2	-42.0	

^a The total redistribution for each year is the sum of all the positive numbers across all jurisdictions.

Source: CGC (pers. comm., 22 July 2014).

The major national natural disaster funding policies

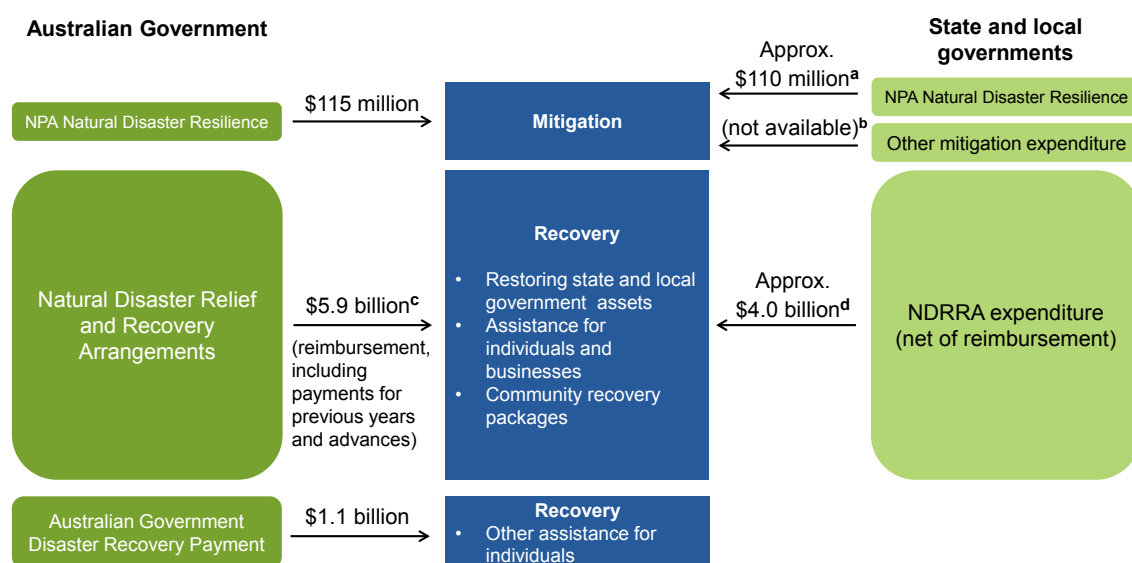
The national natural disaster funding arrangements consist of three main elements (figure 2.2). The arrangements have undergone many changes over time as new policies have been added and NDRRA determinations have been released. The evolution of the funding arrangements can be characterised by growing generosity by the Australian Government during the past decade, followed by a swing to constrain costs and increase oversight following the recent spate of costly disasters (figure 2.3). (Supplementary paper 2 sets out in greater detail the historical development of the arrangements.)

- The **Natural Disaster Relief and Recovery Arrangements** set out the framework for the Australian Government to share the costs of natural disaster recovery with state governments (and ultimately, through the states to local governments).
- Australian Government assistance to individuals.
 - The **Australian Government Disaster Recovery Payment** (AGDRP) is a one-off payment to individuals that are affected by a major disaster.
 - The **Disaster Recovery Allowance** (DRA) is paid for up to 13 weeks to people who demonstrate a loss of income.

- The **National Partnership Agreement on Natural Disaster Resilience (NPANDR)** is an intergovernmental agreement for shared funding of activities that contribute to natural disaster resilience and mitigation.

The following sections explain the features of the main national natural disaster funding arrangements.

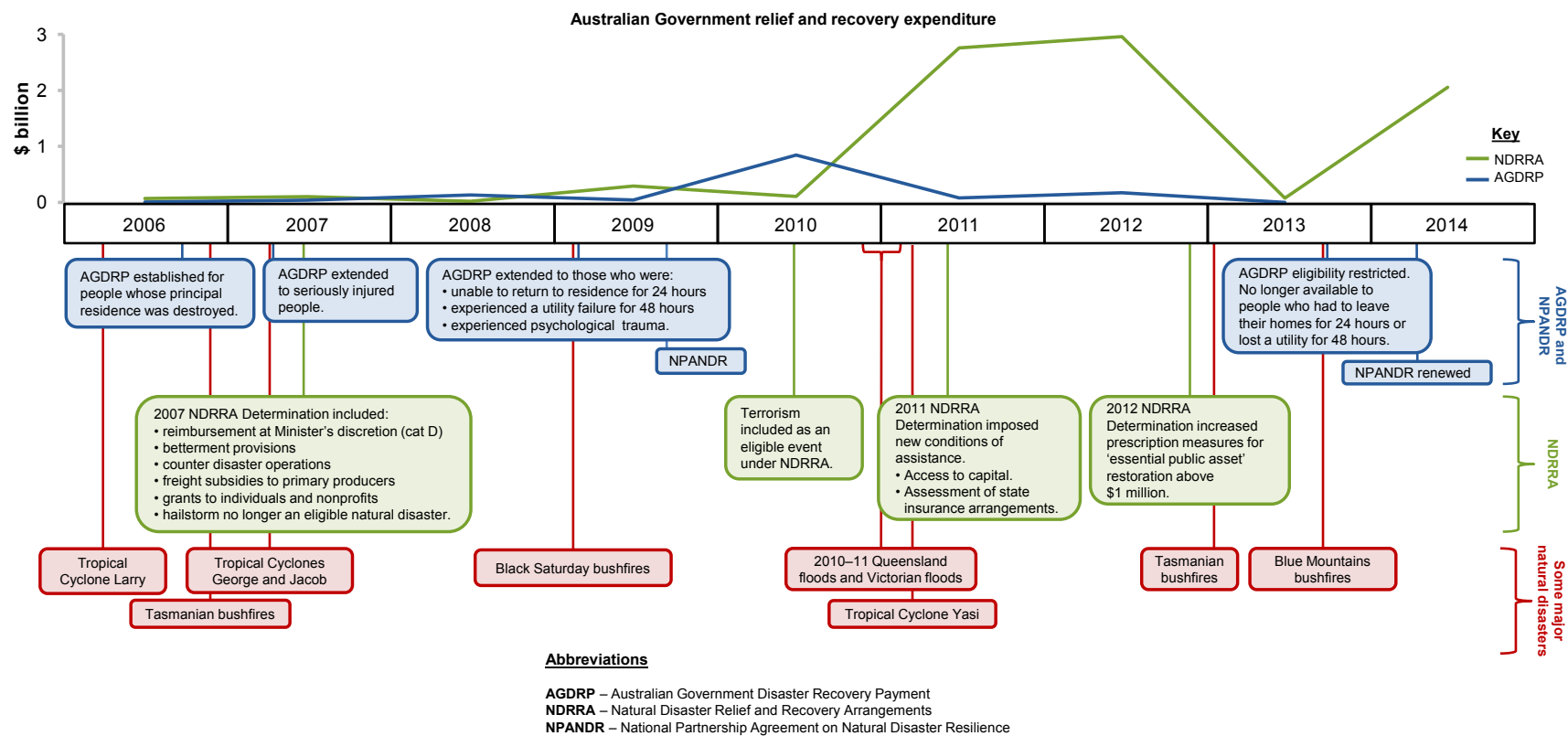
Figure 2.2 The major national natural disaster funding arrangements
Expenditure for 2009-10 to 2012-13



^a Estimate based on state and territory implementation plans. ^b Most state and territory government mitigation spending is part of the business as usual activities of government, and in particular general infrastructure spending. As a result, consistent data on state and territory mitigation spending does not exist. It is likely that this spending exceeds the total spending through the NPANDR. ^c Australian Government reimbursement does not always occur in the same year in which state and territory governments incur eligible expenditure. ^d Eligible expenditures reported by state and territory governments, less estimates of reimbursement owed for expenditures incurred. Some data have not been audited. Excludes expenditure in Victoria in 2012-13 and the Northern Territory in 2011-12 and 2012-13.

Sources: Attorney-General's Department (pers. comm., 30 July 2014); COAG Council on Federal Financial Relations (2014); Treasury (various years); data provided by state and territory governments.

Figure 2.3 Policy evolution of the Australian Government natural disaster funding arrangements



The NDRRA

Under the NDRRA, the Australian Government reimburses state governments for a proportion of eligible expenditure on assistance to households and businesses, and for the restoration of essential public assets. Eligible expenditure includes many activities that are undertaken by local governments. Local governments do not receive NDRRA funding directly from the Australian Government. State and territory governments are responsible for delivering relief and recovery assistance in their own jurisdiction under arrangements that typically replicate the NDRRA (ALGA, sub. 52; supplementary paper 2).

The fundamental elements of the NDRRA are:

- assistance eligibility thresholds — the Australian Government provides assistance only if cumulative state expenditure (meeting the small disaster criterion) exceeds a certain threshold in a financial year
- the small disaster criterion — only events that lead to expenditure above the ‘small disaster criterion’ (currently \$240 000) can be counted toward the annual threshold
- cost-sharing rates — the level of reimbursement (up to 75 per cent of eligible relief and recovery activities) depends on the level of state expenditure and the type of activity
- eligible expenditure — reimbursement is only available for defined activities, falling under three categories (with a fourth category that was added in 2007 available for discretionary assistance as determined by the Prime Minister).

The terms of the Arrangements are set out in the NDRRA *Determination* (box 2.1), which is issued from time to time by the relevant Australian Government Minister. To be eligible for NDRRA funds, states must:

- have adequate access to capital to fund infrastructure losses (for example, insurance)
- submit independent assessments of their insurance arrangements to the Australian Government and respond appropriately to recommended changes (otherwise funds may be reduced)
- develop and implement disaster mitigation strategies and encourage their local governments to do likewise (states must reduce assistance to a local government by 10 per cent if it has not done this).

Over time, the range of measures that are eligible for reimbursement has increased, especially in revisions to the NDRRA *Determination* in 2006 and 2007. A series of severe disasters over the period 2009–2012 led to a dramatic increase in NDRRA payments (figure 2.4). In an attempt to constrain the costs of the NDRRA and to ensure that Australian Government funds are spent efficiently, in recent years the criteria for the activities that are eligible for assistance have been made more prescriptive and the Australian Government has taken on an expanded role in oversight of state and local governments’ reconstruction activities.

Box 2.1 NDRRA categories, thresholds and assistance rates

There are four categories of relief and recovery assistance.

- Category A — emergency assistance to individuals.
- Category B — restoration of essential public assets; financial assistance to small businesses, primary producers, voluntary nonprofit bodies and individuals; and ‘counter disaster operations’ for public health and safety.
- Category C — community recovery packages and recovery grants to small businesses and primary producers.
- Category D — acts of relief or recovery carried out in circumstances deemed to be exceptional.

Reimbursement is based on the total amount that states spend on the above eligible measures each financial year, counting only events where state expenditure exceeds the ‘small disaster criterion’ (currently \$240 000). Reimbursement rates depend on whether annual expenditure has exceeded either of two thresholds. These are:

- first threshold: 0.225 per cent of total state government revenue and grants in the financial year two years prior
- second threshold: 1.75 times the first threshold.

Threshold values for 2014-15 are set out in the table below.

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
First threshold	143	110	94	34	57	11	11	9
Second threshold	250	192	164	59	100	19	19	16

Expenditure below the first threshold is reimbursed at 50 per cent for category A and C measures, with no reimbursement for category B measures below this threshold. Any portion of expenditure between the first and second thresholds is reimbursed at 50 per cent, and any expenditure that exceeds the second threshold at 75 per cent (for categories A, B and C).

Category D (exceptional circumstances) assistance is generally determined on a case-by-case basis and is not bound by the above thresholds.

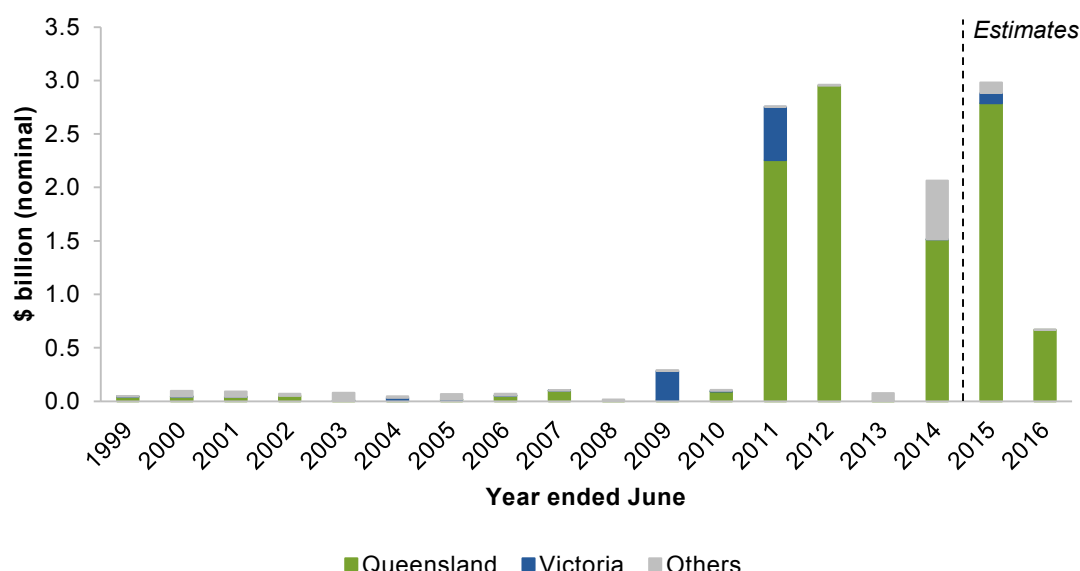
Source: Attorney-General’s Department (2012).

Opinions of the effectiveness and sustainability of the NDRRA vary between the levels of government. State and local governments expressed support for the broad characteristics of the arrangements. The reimbursement-based model and the eligibility criteria that are defined in the *Determination* give state and local governments certainty that they will receive funding for specified relief and recovery actions and confidence to proceed rapidly following a disaster, although recipients are generally critical of the prescription and red tape imposed by the arrangements.

The Australian Government perspective on the arrangements is influenced by the status of the NDRRA as an uncapped, unfunded liability for the Australian Government; there is no upper limit to the potential expenditure. There is concern that the high level of assistance

reduces state and local governments' incentives to take actions to reduce the risks to their assets and communities (Department of Finance, sub. 92; DIRD, sub. 99).

Figure 2.4 **Australian Government NDRRA payments^a**



^a Actual cash payments to the states and territories. Some payments may relate to natural disasters that occurred in previous years. Figures for 2015–2016 are forward estimates from the 2014–15 Budget.

Data source: Treasury (various years).

The AGDRP

The AGDRP is a one-off, non-means-tested payment of \$1000 for adults and \$400 for children who are adversely affected by a major disaster (as determined by the Minister for Justice). The payment was introduced in December 2006 to replace the use of ex-gratia payments to disaster victims (FaHCSIA 2008). The payment can be activated for natural and man-made disasters (including terrorism) that occur in Australia or offshore.

Expenditure on the AGDRP has varied significantly from year to year due to the size and frequency of events and changes in eligibility criteria. Since its introduction, annual expenditure has been as low as \$11 million (in 2007–08) and reached around \$850 million in 2010–11 (table 2.2).

The eligibility criteria have broadened over time, until late 2013 when they were made more restrictive.

- December 2006 (first activation of AGDRP) — Tasmanian bushfires. Payment was available only to people whose principal place of residence was destroyed or rendered uninhabitable.

- 2007 (WA cyclones) — Eligibility was extended to people who were seriously injured.
- 2009 (Victorian bushfires) — Further extended to include payment to people who experienced psychological trauma, people who were unable to return to their residence for 24 hours, and people who experienced a utility failure for 48 hours.
- October 2013 (Blue Mountains bushfires) — Eligibility pared back to include only people who were seriously injured, who lost a family member or whose residence was destroyed or suffered major damage.

Table 2.2 Expenditure on the AGDRP

<i>Year</i>	<i>No. of events</i>	<i>Approximate number of claimants</i>	<i>Accrual (\$m)^a</i>	<i>Cash (\$m)^b</i>	<i>Example natural disaster events</i>
2006-07	6	na	29	— ^c	New South Wales storms; Gippsland floods; Tropical Cyclone George
2007-08	2	41 000	11	39	Queensland floods
2008-09	5	114 000	150	133	Victorian Black Saturday bushfires
2009-10	6	35 071	27	43	New South Wales Mid-North Coast floods
2010-11	6	715 000	855	845	Queensland floods; Tropical Cyclone Yasi; Victorian floods
2011-12	4	64 000	73	80	Queensland floods; Victorian floods
2012-13	4	142 000	168	171	Tasmanian bushfires; Queensland floods

^a Expenditure determined on a per event basis. ^b Expenditure determined on an annual cash basis. ^c Payments related to events in 2006-07 were paid out in 2007-08. **na** Not available. — Nil or rounded to zero.

Sources: Attorney-General's Department (pers. comm., 30 July 2014; various years); FaHCSIA (various years).

Other payments to individuals

The Australian Government makes payments to individuals including employees, sole traders and primary producers who are 16 years of age or older, and can demonstrate loss of income as a direct result of a disaster. Since 1 October 2013, these payments have been available through the Disaster Recovery Allowance (DRA).¹

¹ Prior to the legislation establishing the DRA, assistance was provided through the Disaster Income Recovery Subsidy.

The DRA can be activated by the Australian Government Minister for Justice, and the eligibility criteria are legislated in the *Social Security Act* 1991 (Cwlth). A person can be eligible for the DRA if they:

- are over 16 years old (additional criteria apply to people under 22 years of age)
- are not receiving a social security entitlement or other payment
- work in an industry that has been affected by a declared disaster event (the Minister is responsible for specifying that a disaster event has occurred, the affected area and the affected industries)
- have suffered a loss of income.

DRA payments are made for up to 13 weeks, at a rate equivalent to the maximum rate of Newstart Allowance or Youth Allowance. To date, the DRA has only been activated twice — for the NSW bushfires of October 2013 and for Cyclone Ita, which hit far-north Queensland in April 2014. In total, approximately \$125 000 in DRA payments were made for these two events (Attorney-General's Department, pers. comm., 10 November 2014). The modest total level of expenditure to date largely reflects the newness of the scheme.

State and territory governments also provide financial and non-financial assistance to households (including emergency assistance and ongoing assistance to people who experience severe hardship). Some of this expenditure is eligible for reimbursement through category A of the NDRRA (table 2.3).

Table 2.3 State and territory expenditure on NDRRA category A measures^{a,b}

<i>Financial year</i>	<i>Total expenditure</i>
	\$m
2008-09	65
2009-10	47
2010-11	89
2011-12	124
2012-13	62

^a Excluding Tasmania. ^b Data for some states and territories have not been finalised or audited.

Source: Data provided by state and territory governments.

The NPANDR

The NPANDR is an agreement between the Australian Government and the states to fund mitigation projects in accordance with the National Strategy for Disaster Resilience. Under the agreement, the Australian Government provides funding for activities undertaken by states and territories that increase disaster resilience.

Since its establishment in 2009, the Australian Government has provided approximately \$27 million per year through the NPANDR to states and territories. The Australian Government has agreed to \$52.2 million in funding over 2013-14 and 2014-15 under the current agreement. (Supplementary paper 1 presents data on Australian Government expenditure under the NPANDR and predecessor programs.)

To receive NPANDR funds each jurisdiction is required to agree to an implementation plan. The Australian Government commits funding of up to 50 per cent of the estimated costs of activities specified in the implementation plans. Each jurisdiction's funding allocation is capped, based on historic allocations, populations, costs of disasters and relative disadvantage and adjusted by agreement to provide a minimum share for the territories and Tasmania (table 2.4).

Table 2.4 Allocation of Australian Government NPANDR funding
2013-14 to 2014-15

<i>Jurisdiction</i>	<i>Allocation</i>	<i>Total</i>
	%	\$m
New South Wales	26	13.5
Victoria	16	8.4
Queensland	23	12.0
South Australia	8	4.2
Western Australia	12	6.3
Tasmania	5	2.6
Northern Territory	5	2.6
Australian Capital Territory	5	2.6
Total	100	52.2

Source: Attorney-General's Department (2014a).

2.2 Managing risks to government-owned assets

Australian governments own large portfolios of assets, including essential public assets that are exposed to natural disaster risks. In 2012-13, the total value of land and fixed assets on general government balance sheets was just over \$1 trillion. Approximately 57 per cent was owned by state governments, 33 per cent by local governments and 10 per cent by the Australian Government. The funding arrangements for managing natural disaster risks to these assets include funding for reconstruction (the NDRRA) and mitigation (the NPANDR and the 'Betterment' clause of the NDRRA).

There are several aspects of the current funding arrangements that are not consistent with effective management of natural disaster risks to government-owned assets. The major problems relate to the:

- fiscal and other frameworks for the management of natural disaster risks

-
- cost-sharing arrangements for disaster recovery
 - prescriptive requirements for reconstruction
 - level of Australian Government mitigation funding.

These issues are explained in the following sections.

Fiscal frameworks to manage natural disaster risks

To effectively manage natural disaster risks, governments need to understand the nature of the risks that they face and the implications of their risk management decisions. Measures that can contribute to understanding and managing natural disaster risks include:

- asset and liability management, incorporating asset management planning to understand and plan for the impacts of natural hazards on government-owned assets
- budget frameworks to understand the potential fiscal impacts of natural disasters and the trade-offs that governments have made (explicitly or implicitly) in relation to natural disaster risk management.

Transparent asset management planning and budget frameworks inform government decision making, and help make governments accountable for those decisions.

Asset management planning and natural disasters

Asset and liability management is an approach used by organisations to holistically and jointly manage risks to their assets and liabilities in order to achieve their financial objectives. Banks developed the approach and it has spread to other organisations, including superannuation funds and governments, which use it as part of:

... managing and containing the financial risk exposure of the public sector as a whole, so as to preserve a sound balance sheet needed to support a sustainable policy path and economic growth. (Das et al. 2012, p. 3)

Asset management planning is an important subset of asset and liability management, given that the vast majority of natural disaster costs relate to the restoration of essential public assets. Essentially, asset management planning involves understanding one's asset base and corresponding liabilities, and how to fund them. It requires:

- maintaining asset registers that record the location and condition of assets
- maintaining financial information about assets, including their value, depreciation and costs of maintenance and replacement
- defining the level of service for each asset category
- programs for maintenance.

Asset management planning helps inform broader strategic decisions, such as long-term financial plans or government budgets. Where consideration of natural disaster risks is integrated into governments' asset management planning, and ultimately their long-term financial plans (budgets), it can lead to investment decisions that reduce the costs of natural disasters over time. For example, after a natural disaster, asset management plans can help prioritise assets for betterment as well as identify assets that should be abandoned.

State governments stated in submissions that they maintain asset registers and have asset management plans. Local governments in most jurisdictions are required to maintain asset management plans, generally with a 10-year timeframe. There is limited information on the quality of asset management planning by state and local governments, and how well they integrate natural disaster risk. However, there is some evidence that asset management practices are improving, albeit disparately across jurisdictions. For example, in 2012 the Department of Finance and Deregulation (2012a) in its *Review of the Insurance Arrangements of State and Territory Governments under the NDRRA* stated that current understanding of government assets is inadequate, and that this was an impediment to state governments being able to manage natural disaster risks through insurance. More recently the Victorian Auditor-General reported on *Asset Management and Maintenance by Councils*. He stated:

... in recent years councils have improved their asset management practices by applying available asset management guidance, self-assessing their asset management performance annually, and developing asset management systems, frameworks, strategies and plans. This provides a good foundation on which to build more advanced asset management practices. However, significant deficiencies remain in areas such as asset renewal planning and practice, the quality of asset management plans, linking of service levels to these plans, the development of asset management information systems, and in monitoring, evaluation and reporting on asset management. (Victorian Auditor-General 2014, p. vii)

The Local Government Association of Queensland (sub. DR188, p. 15) stated 'Queensland councils, supported by LGAQ, have in recent years significantly improved their asset management practices'. Similarly, the NSW Government (sub. 114, p. 28) submitted that: 'A recent asset infrastructure audit found that council asset management planning is improving'.

On balance, it appears that asset management practices of state and local governments are improving. While this should assist with more effective natural disaster risk management, there is little evidence that natural disaster risk is explicitly integrated into asset management plans. However, these risks are often considered as part of general risk management. This would appear to be appropriate in the majority of cases, and is consistent with the 'mainstreaming' of natural disaster risk. However, in certain local government areas — namely those where assets are subject to regular and repeated damage from natural disaster events — there would be merit in more explicit integration of natural disaster risk into asset management plans.

Budget frameworks and natural disaster risks

Risk understanding requires that natural disaster risks are transparently reflected in government budgets (chapter 1, supplementary paper 3). This includes:

- acknowledging potential liabilities arising from natural disasters, and quantifying them where possible
- making some provision in the budget for the costs of future natural disasters.

Natural disaster costs are often treated as ‘contingent liabilities’ — potential future obligations that are dependent on events that may or may not occur and are not under the control of the government. International best practice generally involves governments explicitly acknowledging their exposure to contingent liabilities and disclosing them in their budget documents as a memorandum item, ideally with some indication of their likely magnitude and probability (OECD 2013). This approach can improve the transparency of government decision making and improve understanding of a government’s total liabilities by making its risk appetite more explicit.

Under the Australian *Charter of Budget Honesty Act 1998* (Cwlth), the Australian Government’s budget must include a statement of risks that might materially affect its fiscal position, quantified where feasible. These risks include contingent liabilities as well as publicly-announced commitments that are not yet included in estimates of such liabilities. In the 2014-15 Budget, this *Statement of Risks* included an explicit acknowledgment of disaster recovery costs as a contingent liability that may affect the Government’s financial position. However, the potential size of natural disaster risks to Australian Government finances is not quantified.

As natural disasters and their impacts are unpredictable, the cost of future disasters is unquantifiable and not included in the forward estimates. (Treasury 2014, p. 8–17)

Not quantifying the potential costs of future natural disasters means that governments are not aware of the level of risk that disasters pose to budgets, and consequently may not take appropriate measures to address those risks.

Useful insights can be gleaned from the risks posed by population ageing. The Australian Government has decided to more explicitly acknowledge these risks, and the five-yearly *Intergenerational Reports* document population trends and assess their potential impacts on government budgets. This has led to improved understanding of governments’ long-term fiscal risks, including superannuation liabilities, health costs and aged pensions and has been a first step towards the development of reforms in this area. Quantifying and reporting the fiscal risks of natural disasters could drive more effective natural disaster risk management.

A further step is to *provision* for natural disaster recovery. That is, setting aside some funds to put toward the cost of future recovery. The Foundation of Rural and Regional Renewal (sub. 50, p. 6) stated:

... having a budget provision for future disaster recovery can create stability and enable better planning and coordination before a disaster strikes and more efficient resourcing and deployment of those resources at the local level during and post a disaster.

Currently the Australian Government does not make explicit provision for future natural disaster recovery costs in its budget. Budget estimates only include anticipated expenditure on recovery from past natural disaster events and when the NDRRA have been triggered. Future natural disaster costs are funded on an ex-post basis. The Department of Finance (sub. 92, p. 4) explained the reasoning for this as follows:

Given the uncertainties involved in making reasonable estimates of the amounts of funding for future disaster, the Commonwealth does not make provision in its estimates for future disasters, only for those that have occurred.

This view appears to be a recent development, as in the past the Australian Government made some budget provision (roughly \$80 million a year) in the forward estimates for potential NDRRA costs (Attorney-General's Department 2009, p. 24).

Although catastrophic natural disasters are low probability and difficult to predict, current funding arrangements also apply to small, routine disaster events that occur every year. It is arguably a misrepresentation to treat *all* natural disaster recovery costs as a contingent liability. Given how regularly natural disasters call on the fiscal purse, it would be more accurate to describe at least some of the costs as an unbudgeted demand risk.

The NSW Government (sub. 103, p. 19) takes an approach that could provide lessons for other jurisdictions, by budgeting for a proportion of the costs of disaster response and recovery through a *Disaster Relief Account*.

Currently, the central disaster provision is set at \$95 million for 2014-15. The figure is based on past expenditures and the expected impact of new policies. This budget does not attempt to capture all volatility in natural disaster costs but to reasonably capture expected costs based on a long term annual median cost calculation.

Apart from the annual provision, there is no reserve fund dedicated to natural disaster expenditure. In years when the natural disaster budget in the DRA is insufficient to meet the funding needs of all eligible response and recovery activity, supplementary funds are sought through either a diversion of resources from the budget, supplementation from the consolidated fund or borrowing.

Similarly, the Local Government Association of South Australia (sub. DR161, p. 5) noted that:

Within SA up until a few years ago, it was standard practice for the State Government to include an annual appropriation in its Budget (as well as a provision in its forward estimates) for estimated eligible claims by Councils covering future natural disasters. The amounts

provided were based on the average cost (to the State) of such expenditure over the previous ten years.

Explicit provisioning for natural disaster recovery expenses could increase the incentive for governments to mitigate or insure against the risks. Currently, the costs of mitigation and insurance premiums are funded on an ex-ante basis (that is, they are provisioned for), so governments seeking to improve the budget bottom line have an incentive to reduce their spending on these items. With no explicit provision for recovery, there is a systemic bias against mitigation and insurance.

Where governments do not make provision for natural disaster recovery, funding for recovery has to come from either surplus funds (if available), reduced expenditure in other areas, borrowing or increased taxes. Following the natural disasters in the summer of 2010-11, and against the backdrop of a government commitment to achieve a budget surplus, the Australian Government introduced the *Temporary Flood and Cyclone Reconstruction Levy* (flood levy) in 2011. The flood levy was a temporary tax that applied to income earned in the 2011-12 financial year.

Although there are advantages and disadvantages to ex-post financing, the flood levy demonstrates some potential problems with relying exclusively on ex-post measures. First, for political reasons, the people who were affected by a declared natural disaster were exempt from the levy. Excluding beneficiaries from paying goes against the grain of efficient cost-recovery and reduces their incentives to manage natural disaster risks. Second, if policy makers work under the implicit assumption that they can resort to hypothecated levies to fund recovery, they have less incentive to pursue effective mitigation options.

The systematic bias against mitigation and insurance in current budget frameworks exacerbates the political bias against mitigation. Researchers have found that governments gain more ‘political capital’ from spending on disaster relief, which is immediate, observable and provides private benefits to households. Healy and Malhorta (2009) analysed voter responses in the United States to spending on disaster preparedness and disaster relief. They found that voters reward incumbent politicians for disaster relief spending, but not for spending on preparedness.

FINDING 2.2

The budget treatment of natural disaster costs as an unquantified contingent liability means that governments make decisions about natural disaster risk management without having full information about the potential consequences.

Where governments make no explicit budget provision for the costs of recovery from future natural disasters, there is a systematic bias in risk management against mitigation and insurance.

Cost-sharing arrangements for disaster recovery

Aligning asset ownership with risk ownership provides the strongest possible incentives for effective risk management. However, cost-sharing arrangements in response to vertical fiscal imbalance have resulted in some dilution of the link. Through the NDRRA, the Australian Government bears some of state and local governments' natural disaster recovery costs, and as such 'owns' some of the risk.

Historically, the intention of the NDRRA (and its precursors) was to provide assistance to states when natural disasters impose a significant and unexpected fiscal burden. The last comprehensive review of the natural disaster funding arrangements (in a report to COAG in 2002) stated that the role of the Australian Government in natural disaster management includes:

- supporting them [state and local governments] 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. (COAG 2002, p. 19)

The recommendations of that report were largely endorsed by COAG, and the idea that the NDRRA exists to provide safety net assistance to help state governments with the fiscal burden of major disasters is reflected in the current NDRRA *Determination*, which states:

Natural disasters often result in large-scale expenditure by state governments in the form of disaster relief and recovery payments and infrastructure restoration. To assist with this burden, the Commonwealth has made arrangements to provide financial assistance to the states in some circumstances. (Attorney-General's Department 2012, p. 1)

There was general agreement among inquiry participants that the appropriate role of the Australian Government is to provide a fiscal 'safety net' where natural disasters result in unanticipated and 'large-scale expenditure' by state governments (box 2.2). However, there is no agreement about what these terms mean and therefore how this should translate to the form and quantum of assistance.

How these terms are interpreted and applied has important implications for natural disaster risk management. Some level of cost sharing is justified to ensure that communities are able to recover from severe and catastrophic natural disasters. The arguments for fiscal risk sharing in federations and currency unions for *jurisdiction-specific* and *temporary* shocks is well established. However, any assistance from the Australian Government to the states can create moral hazard. To be effective and sustainable, the natural disaster funding arrangements should not materially undermine incentives for lower level jurisdictions to effectively manage natural disaster risks. Otherwise, poor decisions today can embed unavoidable and compounded costs in the future.

The following sections assess the mechanisms used for sharing costs (including the NDRRA thresholds, small disaster criterion, cost-sharing rates and eligibility criteria) and their implications for risk management.

Box 2.2 General principles for Australian Government disaster recovery assistance: participant views

Some participants advocated Australian Government assistance when lower levels of government cannot fund disaster recovery activities

The Australian Government must continue to play a role in providing financial assistance to individuals, communities and lower levels of government in circumstances where they are unable to fund their own disaster mitigation, relief and recovery activities. (MAV, sub. 98, p. 36)

The ability for councils to call upon financial assistance from the Commonwealth and State Governments through the NDRRA in their time of need to reconstruct infrastructure is essential. (Toowoomba Regional Council (Qld), sub. 78, p. 1)

In East Gippsland we consider that the program is designed to provide equitable outcomes to communities affected by natural disasters that are beyond their control. Ultimately we believe that the program is designed to ensure that affected communities are able to get back up and operating as effectively as possible as soon as possible so that they can continue to contribute to the economy and wellbeing of community functionality. (East Gippsland Shire Council (Vic), sub. DR183, p. 4)

Some participants consider the current NDRRA to be an effective safety net

In effect, the NDRRA provide an effective safety net to aid rapid recovery when disaster strikes. (Queensland Government, sub. 31, p. 1)

We believe that the current funding model strikes the right balance, in terms of capacity to pay. We think, as a state, on a capacity basis, we're probably shouldering a little bit more than what we would probably do, if it was done on a purely revenue basis, but we think it's about right and we're not asking for changes in our favour, we're asking for that funding model to continue. (David Crisafulli, Minister for Local Government, Community Recovery and Resilience, trans., Brisbane, pp. 38–9)

... current NDRRA funding arrangements are however considered adequate in terms of providing an important financial safety net to help alleviate significant burden on states and territories after major emergencies and disasters. (Government of South Australia, sub. 67, p. 15)

Current arrangements provide a basic but very expensive safety net ... (Regional Australia Institute, sub. 61, p. 11)

The current relief and recovery arrangements do provide a safety net for jurisdictions affected by natural disasters provided that appropriate risk management measures are applied. The current policy for relief and recovery supports the principle of shared responsibility for the cost of natural disasters across all tiers of government and does not unfairly discriminate against smaller jurisdictions. (LGAT, sub. 65, p. 8)

... without the NDRRA safety net, the community would not have been restored to its pre-disaster condition. (Tumut Shire Council (NSW), sub. 70, p. 3)

... the NSW Government is concerned about the finding that current arrangements exceed the requirements for a 'safety net'. Whilst this finding relies heavily on the concept of a 'safety net', more detailed analysis and discussion is needed about the meaning of this concept, and principles for its operation. (NSW Government, sub. DR217, p. 3)

LGNSW strongly disagrees that current funding arrangements exceed the requirements of a vertical fiscal imbalance safety net. The unpredictability of disaster events distinguishes this cost category from other cost sharing arrangements. (LGNSW, sub. DR196, p. 5)

I think to maintain a 75/25 split is outrageous. I know state people and people in government in Queensland and in Victoria fight ferociously to think that they can justify morally that it should stay at 75/25. I'm a proud taxpayer and a proud citizen of the state and I hold no empathy for that at all. I think the more there can be a 50/50 split you will nip in the bud a lot of efforts to optimise the advantage that people can get out of the current situation. They cry moral indignation that this somehow is the big policeman from the federal government trying to chisel down their entitlements. I don't hold anything of that. (Australian Government Reconstruction Inspectorate, trans., Brisbane, pp. 117–118).

Thresholds for Australian Government cost sharing

Currently, NDRRA assistance for rebuilding damaged assets is available if eligible expenditure exceeds 0.225 per cent of state government revenue. Higher levels of cost sharing are available if state expenditure exceeds a second threshold (1.75 times the first threshold — equivalent to approximately 0.39 per cent of state government revenue). It is open to question whether current thresholds are consistent with a safety net for unanticipated ‘large-scale expenditure’ by state governments.

Participants’ views on this question differed among levels of governments. Most state governments, local governments and local government associations generally opposed increasing the thresholds for assistance. In contrast, the Government of South Australia (sub. DR209, p. 16) stated ‘the current thresholds appear to be low’ and the Victorian Government (sub. DR215) agreed with the need to increase current thresholds (but not to the extent proposed by the Commission).

Some Australian Government participants suggested that Australian Government cost sharing with the states had gone beyond what could be considered a ‘safety net’, and that the high level of assistance reduces state and local governments’ incentives to manage natural disaster risks and make provision for disaster events (Department of Finance, sub. 92; DIRD, sub. 99).

One way to assess whether the thresholds could be increased while continuing to meet the objective of providing a fiscal safety net for unanticipated large-scale expenditures is to evaluate them in the context of state governments’ fiscal objectives, their budgets and other fiscal shocks that they are exposed to. State governments’ fiscal objectives vary among jurisdictions, but some are shared by several states, including:

- achieving and/or maintaining a AAA credit rating
- achieving and/or maintaining a net operating balance.

These fiscal objectives provide some context for assessing whether the current NDRRA thresholds are consistent with unanticipated ‘large-scale expenditure’ for the states. If recovery expenditure consistently compromises state governments’ fiscal objectives, it could be argued that it constitutes unanticipated large-scale expenditure. If recovery expenditure does not materially compromise those objectives it is more difficult to sustain the argument that those thresholds are consistent with large-scale expenditure.

For states that have an objective related to achieving or maintaining a credit rating, increasing the thresholds for cost sharing would not have any material impact on those ratings. Credit ratings reflect the rating agency’s assessment of how likely an entity (such as a state government) is to repay its debts. Ratings agencies consider numerous factors that could influence state governments’ credit worthiness, including institutional frameworks, financial management, budget position, economic conditions and debt burden. Contingent liabilities are considered, but according to Standard and Poor’s *Methodology For Rating International Local And Regional Governments*, a contingent liability would

only be considered to materially affect a local or regional government's credit-worthiness if it represents 'approximately more than 20% of the LRG's [local or regional government] operating revenues' (Standard & Poor's 2010, p. 44). Clearly the thresholds for cost sharing could be significantly increased without any direct adverse effect on credit ratings.

There is evidence that other fiscal objectives could also be achieved with higher thresholds. State governments face significant volatility in their budgets, much of which is beyond their control. For example, several states' budgets are exposed to changing demand and prices for mineral resources (through mining royalties). And all states rely heavily on revenue from stamp duties from the sale of property, which can be highly cyclical. The routine volatility from these important revenue lines has and can be materially higher than the current NDRRA thresholds. For example, one standard deviation in the average change in stamp duty revenue equates to a fiscal shock of around \$750 million in New South Wales and \$560 million in Victoria (table 2.5) — around three times higher than the current NDRRA second thresholds for those states.

Table 2.5 Variation in state government revenue sources
2003-04 to 2012-13

	<i>Stamp duty on conveyances</i>		<i>Payroll tax</i>		<i>Royalties</i>	
	<i>Average change</i>	<i>Standard deviation^a</i>	<i>Average change</i>	<i>Standard deviation^a</i>	<i>Average change</i>	<i>Standard deviation^a</i>
	\$m	\$m	\$m	\$m	\$m	\$m
NSW	72	754	290	226	121	282
Vic	98	561	226	119	ne	ne
Qld	3	479	252	138	164	968
SA	22	115	40	33	ne	ne
WA	64	585	253	157	419	585
Tas	2	24	15	12	ne	ne
NT	7	21	13	9	ne	ne
ACT	5	54	16	9	ne	ne

^a The standard deviation of the annual (absolute) change in revenue over the period 2003-04 to 2012-13.
ne Not estimated

Sources: ABS (*Taxation Revenue, Australia*, Cat. no. 5506); state and territory government budget papers (various years); Productivity Commission estimates.

Despite the volatility to their budgets, many state and territory governments have been able to maintain strong budget positions. Over the period 2008-09 to 2012-13, four jurisdictions had average operating balances that exceeded their first and second NDRRA thresholds (table 2.6).

The Australian Government does not provide *systemic* assistance to states to deal with the external shocks that adversely affect their budget position, even though they could have more significant impacts on government finances than natural disasters. Nor does the

Australian Government ‘claw back’ the benefits of periodic windfalls that accrue to states due to unanticipated high revenue. State governments are expected, and able, to manage the volatility that affects their budget, positive and negative, including at levels that significantly exceed the current NDRRA thresholds and those recommended in this report.

On the face of it, the current thresholds for NDRRA reimbursement are too low. Higher thresholds would likely be reflective of the ‘safety net’ policy objective of the funding arrangements. State governments have the capacity to manage disaster recovery costs well beyond the current funding thresholds without compromising fiscal sustainability. When faced with risks to their budget positions, state governments have access to numerous sources of funding, including relatively efficient taxes such as land tax and payroll tax. State governments could raise revenue through these taxes to fund disaster recovery costs with immaterial economic effects. Moreover, all state and territory governments currently have good credit ratings, suggesting that they would have little difficulty borrowing to fund disaster recovery.

Table 2.6 State and territory government net operating position and NDRRA thresholds

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Average net operating balance 2008-09 to 2012-13	581	403	-1227	-258	772	-118	202	-51
NDRRA thresholds 2014-15								
First threshold	143	110	94	34	57	11	11	9
Second threshold	250	192	164	59	100	19	19	16

Sources: ABS (*Government Finance Statistics, Australia*, Cat. no. 5512.0); Attorney-General’s Department (2014b).

The small disaster criterion

A natural disaster is defined in the current NDRRA *Determination* as:

... 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. (Attorney-General’s Department 2012, p. 1)

In substance, the definition appears to try to distinguish natural disasters from routine natural hazard events. Clearly not all natural hazard events will meet this definition. The distinction between natural disasters that lead to large-scale expenditure by state governments and routine hazard events that cause a small amount of damage is reflected in the small disaster criterion. Currently for state government expenditure on an event to be

counted toward the state's threshold for eligible expenditure the event must generate state expenditure of \$240 000. The criterion applies at the state level. Therefore an event that spans across several local governments and where cumulative expenditure across those local governments exceeds \$240 000 is eligible. The criterion has been set at that level since 2004, without indexation. Previous reviews of the natural disaster funding arrangements have advocated increasing the level of the criterion.

- As part of the 2012 Review of state insurance arrangements, the Department of Finance and Deregulation (2012a, p. 46) stated that the small disaster criterion is low 'taking into consideration the value of state assets, the significant state revenue streams and the values used by the Insurance Council of Australia when declaring natural disaster events'. It recommended that the small disaster criterion be increased for essential public assets so that only 'more significant disaster events' would meet the criterion.
- The National Commission of Audit (2014a) proposed increasing the small disaster criterion to \$50 million for New South Wales, Victoria and Queensland; \$20 million for South Australia and Western Australia and \$5 million for Tasmania, the Northern Territory and the ACT.

In the context of state government budgets, \$240 000 cannot be described as 'large-scale expenditure'. It is unlikely that events of this size would cause 'serious disruption to a community or region', although some local governments that have a small revenue base might require assistance from state governments to deal with this level of damage. The current small disaster criterion captures events that are — in the context of each state as a whole — better described as routine weather events than natural disasters.

State governments expressed a range of views on the Commission's draft recommendation to increase the small disaster criterion. The New South Wales (sub. DR217), Queensland (sub. DR184), Tasmanian (sub. DR223) and ACT (sub. DR206) governments opposed increasing the criterion. Victoria (sub. DR215) agreed that there is a case to increase the criterion, albeit not to the recommended \$2 million. South Australia (sub. DR209) argued that the value of the criterion should be based on a percentage of state government revenue.

Local governments generally opposed increasing the small disaster criterion (for example, Gympie Regional Council (Qld), sub. DR152; Mackay Regional Council (Qld), sub. DR133; Shoalhaven City Council (NSW), sub. DR167; Sunshine Coast Regional Council (Qld), sub. DR153). However, some local governments agreed that there is a case for a higher criterion:

Raising the triggers to a higher (but still affordable level) is considered reasonable, as \$240,000 is a relatively small amount and does not represent a "disaster". ... It is considered that raising the trigger to \$2 million is too high an increase and that a lower amount should be considered ... (Cassowary Coast Regional Council (Qld), sub. DR140, p. 4)

Central Highlands Regional Council acknowledges that a \$240,000 event could be considered a minor happening and understand that the Australian Government may wish to raise this trigger. (Central Highlands Regional Council (Qld), sub. DR174, p. 5)

Many local governments argued that setting a higher level for the criterion would mean that they would not be eligible for assistance if recovery costs in their local government areas were below the threshold. Small and remote local governments, including Indigenous local governments, that have limited revenue and large road networks were particularly concerned that increasing the threshold could have disproportionate effects on them. For example, the Municipal Association of Victoria (sub. DR162, p. 8) stated:

For many councils \$240,000 is a large proportion of their discretionary budget. If an emergency in a council fell just short of this threshold such a budgetary shock would put significant stress on a council and its ability to effectively meet its everyday responsibilities. The increase of the trigger from \$240,000 to \$2 million would further exacerbate this risk.

The Moree Plains Shire Council (NSW) (sub. DR138, p. 2) echoed this concern:

While it seems reasonable to raise thresholds for federal funding for “small” disasters, it is vital for rural councils in particular that state funding remain available due to their inability to raise funds from a limited, and already financially stressed, rate base.

Concerns that increasing the NDRRA small disaster criterion would necessarily flow through to individual local governments is misguided for at least two reasons. First, the threshold applies per event, not to individual local government areas. For example, the Queensland Government (sub. DR184, p. 12) stated:

Since 2011, in Queensland this change [increasing the small disaster criterion to \$2 million] would have resulted in eight NDRRA activated natural disaster events falling below the threshold for small disasters, impacting more than fifty local government areas. This includes eight indigenous councils that have no rates base to support increased recovery costs.

If a disaster leads to costs that exceed the threshold in a state or territory, including across more than one local government area, the Australian Government will share the costs of recovery. The costs in a specific local government area do not determine Australian Government cost sharing.

Second, where the recovery costs of an event are below the threshold, but still material for a local government, state governments are not precluded from providing assistance, particularly for small revenue base councils. The assumption that assistance will only be forthcoming if the Australian Government shares the costs illustrates the effect that the arrangements have had on the behaviour of decision makers following a natural disaster. The prescriptive arrangements under the NDRRA appear to make state governments less willing to assist local governments that face damage from weather events, unless they meet the specific (and in some cases arbitrary) criteria in the NDRRA.

Data on state government expenditure on NDRRA-eligible events show that disasters that impose relatively small costs account for a significant proportion of eligible events, by number (table 2.7). For example, over the period 2011-12 to 2013-14, the Australian Government activated the NDRRA for 134 events with estimated expenditure over the \$240 000 small disaster criterion. Of these activations, 61 were for events with eligible expenditure of between \$240 000 and \$2 million. Total expenditure on these 61 events

totalled \$55 million, whereas expenditure on the remaining 73 events (above the \$2 million criterion) was \$6.2 billion — approximately 99 per cent of total eligible expenditure. Setting the small disaster criterion at a higher level would reduce the number of NDRRA activations, and as such would reduce the burden of administration for all levels of government. Increasing the threshold to \$2 million would better distinguish between routine weather events and natural disasters and have a trivial effect on the total amount of funds that the Australian Government provides to the states for natural disaster relief and recovery.

Table 2.7 Small disaster criterion: a breakdown of NDRRA expenditure
2011-12 to 2013-14

	<i>NDRRA expenditure between \$240,000 and \$2 million</i>		<i>NDRRA expenditure over \$2 million</i>	
	Number of events	% of state NDRRA-eligible expenditure	Number of events	% of state NDRRA-eligible expenditure
NSW	28	3	24	97
Vic	10	4	13	96
Qld	4	0	14	100
SA	8	6	12	94
WA	7	14	4	86
Tas	1	3	2	97
NT	1	3	4	97
ACT	2	100	0	0
Total	61	1	73	99

Source: Productivity Commission estimates.

Cost-sharing rates

The cost-sharing rate under the NDRRA determines how much support the Australian Government will provide the states in the event that natural disasters lead to unanticipated and large-scale expenditure. Currently, the Australian Government funds up to 75 per cent of the cost of some disaster reconstruction and recovery activities, once cumulative annual spending has exceeded a state's second threshold. The rate of cost sharing should reflect:

- the relative fiscal capacities of the Australian and state governments
- any additional benefits that come from national funding (such as economies of scale and 'spillover' benefits to other jurisdictions).

The best available indication of the fiscal capacity of states to fund the activities that are their responsibility is the level of cost sharing for other state government activities.

Cost-sharing rates vary depending on the activity. Some participants noted that under the *National Partnership Agreement on Land Transport Infrastructure Projects*

(COAG 2014a) the Australian Government provides up to 100 per cent of the cost of selected road and rail projects (including maintenance). Participants suggested that because a significant proportion of NDRRA-eligible expenditure is for repairing damaged road assets, the level of cost sharing under this agreement is a reasonable benchmark for disaster recovery cost sharing.

There are several flaws with this suggestion. First, under the Agreement the Australian Government chooses which projects to fund. The high level of cost sharing comes at the expense of state government autonomy, and is inconsistent with the NDRRA, where expenditure is determined by local and state governments, subject to guidelines.

Second, the cost share of up to 100 per cent under the National Partnership Agreement is unusual in the broader context of Australian Government cost sharing for infrastructure investment. For example, Commonwealth payments funded 59 per cent of state investment in infrastructure in 2009-10, but fell to 22 per cent in 2012-13 (CGC 2014a). Other service delivery areas have different cost-sharing rates. For example, the national health reform funding agreement envisaged the Australian Government eventually funding 50 per cent of efficient growth of hospital activity.

Clearly the Australian Government's contribution to state government activities varies depending on the activity, the jurisdiction and over time. To base the cost-sharing rate for the national natural disaster funding arrangements on one particular arrangement would be arbitrary. A more reasonable approach would be to consider average Commonwealth-state cost sharing, across all activities and jurisdictions, as an appropriate indicator of relative fiscal capacity in the federation. Currently, through a combination of general revenue assistance (including GST allocations), National Specific Purpose Payments, National Partnership payments and National Health Reform funding, the Australian Government provides almost half of state government revenue.

Cost sharing for natural disaster recovery in excess of this level would need to be justified on the basis that there are national-level benefits from disaster recovery that justify higher levels of cost sharing. Natural disaster recovery could have some benefits to other jurisdictions, although it is likely that the adverse effects of natural disasters on the national economy are temporary and typically offset by an above-trend 'bounce back' in national output (RBA 2011). If disaster recovery does produce 'spillover' benefits to other jurisdictions, those benefits will be reflected to some extent through the HFE process. The reallocation of GST funds to reflect disaster recovery expenditure means that states which are not affected by a natural disaster contribute to disaster recovery costs in other states.

Eligible expenditure

Cost sharing for disaster recovery through the NDRRA is available for certain types of state government expenditure, including:

- emergency assistance to households and ongoing support for low income earners who have experienced significant losses
- assistance to small businesses, primary producers and nonprofit bodies
- counter disaster operations
- restoration of essential public assets
- community recovery packages
- assistance for ‘exceptional circumstances’.

Cost sharing can be justified in cases where:

- asset owners lack the capacity to recover from natural disaster impacts
- market mechanisms (such as insurance) are not available to fund recovery activities
- a shared approach to recovery achieves greater benefits than relying on the efforts of households and businesses (for example, because of economies of scale or because of ‘spillover’ benefits).

Several inquiry participants called for the eligible expenditure under the NDRRA to be expanded.

- The Queensland Murray-Darling Committee (sub. 48, p. 7) stated that environmental assistance should be eligible for NDRRA category C funding rather than relying on the triggering of category D (exceptional circumstance) funding.
- The Queensland Government (sub. 31, p. 34) suggested that ‘eligibility of restoration of natural assets under the NDRRA would promote a more orderly and timely disaster response for those severely impacted areas’.
- Burdekin Shire Council (Qld) (sub. 11) and the Local Government Association of South Australia (sub. 13) suggested that recreational facilities should be included as ‘essential public assets’ and be eligible for NDRRA reimbursements.
- Tumut Shire Council (NSW) (sub. 70) recommended that justifiable emergency response administrative costs should be eligible for reimbursement under the NDRRA.

The Commission does not support broadening the range of state government disaster recovery activities that are eligible for cost sharing with the Australian Government. This would not be consistent with the principles for effective risk management discussed in chapter 1 and supplementary paper 3. It could undermine incentives to insure government assets, and also impair private sector efforts to manage natural disaster risk (discussed in section 2.3).

Counter disaster operations

The NDRRA permit cost sharing for ‘extraordinary counter disaster operations of direct assistance to an individual’ and ‘counter disaster operations for the protection of the general public’ (Attorney-General’s Department 2012, p. 2). Activities that have been reimbursed under this clause have included supplies for disaster centres, fuel used by local government crews when clearing fallen trees from roads and the costs of making houses safe. Counter disaster operations can have widespread community benefits, such as public health and safety, and would likely be under-provided without government support.

Most of these activities are the constitutional responsibility of state governments (as part of emergency response functions). Cost sharing with the Australian Government could be justified in cases where counter disaster operations are beyond the state and/or local government’s capabilities to adequately respond (for example, due to the scale and severity of the impact from a disaster, or the cumulative impact from multiple disasters). In the absence of clearly articulated criteria, there is a risk of cost-shifting from state government to the Australian Government.

Further, where governments provide counter disaster operations of direct assistance to individuals and private property, they should be limited to circumstances where the activities are essential to protect the health and safety of the community and would not be adequately provided without government support. Providing support beyond these circumstances poses the risk that such assistance could create moral hazard and reduce incentives for individual risk management.

Counter disaster operations have constituted a significant proportion of Australian Government expenditure through the NDRRA.

From 1 July 2007 to 30 June 2014, total estimated expenditure on counter disaster operations under the NDRRA will be \$1.2 billion. Expenditure peaked in 2008–09 at \$321 million, which is largely reflective of the costs associated with the 2009 Victorian bushfires. For some events, expenditure on counter disaster operations will outweigh expenditure on other measures, including restoration of essential public assets. For example, in Victoria in 2008–09, counter-disaster operations costs constituted almost 70 per cent of total NDRRA expenditure. Over time, a much broader range of state and territory pre-deployment and response costs have been covered under the NDRRA than was originally envisaged. (Attorney-General’s Department, sub. 90, p. 19)

In the draft report, the Commission noted that the scope of counter disaster activities eligible for reimbursement was unclear and potentially too broad. The Victorian Government cautioned against setting a definition that limits Australian Government cost sharing for ‘core’ state government activities.

Victoria does not support the Commission’s proposal to tighten the definition of eligible counter disaster operations to comprise only those extraordinary operations for the protection of the general public. Under this tightened definition, counter disaster operations to protect private property would be ineligible for cost-sharing. This would have significant financial

implications for Victoria if the State were to experience extraordinary bushfires or significant floods, as evidenced in recent years.

Victoria currently claims reimbursement for a proportion of aerial firefighting costs, which are over and above the normal core budget for the Department of Environment and Primary Industries, the Victorian Government Department in control of resourcing the State aerial fire response. If the Commonwealth were to cease cost-sharing for these operations, significant strain would be placed on the Victorian Government to deliver these necessary services in protection of private property. Protecting private property with counter-disaster operations can save lives, and prevents significant private property damage which, even if covered by insurance, has significant social and economic consequences for individuals and communities. (Victorian Government, sub. DR215, p. 13)

Participants provided some anecdotal evidence that local governments try to constrain the costs of counter disaster operations by limiting assistance to households. The Mareeba Shire Council (Qld) (trans., Townsville, p. 50) stated:

Cyclone Ita. We took a conscious decision this year that with the tree damage that occurred ... that we would do the immediate clear — tree clean up and debris clean up — for three days only, because in previous lives I've experienced it where residents, a fortnight later, might have a general perimeter of the property and suddenly it appears on the side of the road and the council has to take it away. With the stringent rules about what can be claimed in during the emerging period, these days councils would end up with a cost after a fortnight. So we actually — we were very stringent this year, after Ita, we've got three days to do it, after that each rate payer is on their own.

Nevertheless, concerns remain about the definition of counter disaster operations and the eligibility of various activities. The Australian Government has recently released a guideline (NDRRA Guideline 10) that clarifies which activities are eligible counter disaster operations. The guideline goes some way to elaborating on the principles for determining what activities should be eligible for reimbursement. For example, it states:

Counter disaster operations assistance under the NDRRA is not intended to cover a broad range of response type activities which are the constitutional responsibility of the states. States should only seek to claim costs associated with extraordinary counter disaster operations under the NDRRA. ...

In accordance with emergency management responsibilities; state and local governments are required to ensure that they are prepared for and able to respond to natural disasters, this includes having a reasonable level of resources (human, capital and financial) to be able to undertake response and recovery activities, including counter disaster operations. (Attorney-General's Department 2014c, p. 1)

However, participants suggested that the lack of clarity has not yet been satisfactorily resolved.

NSW Government agencies suggest that there should be a more explicit definition of counter disaster operations under the Natural Disaster Relief and Recovery Arrangements (NDRRA). Although the Australian Government released a new NDRRA guideline about Counter Disaster Operations in October 2014, some interpretation by States and Territories is still required. The guideline would benefit from further explanations and examples to illustrate what States and Territories could reasonably be expected to incur for Counter Disaster Operations. (NSW Government, sub. DR217, attachment, p. 3)

Although the Australian Government has sought to clarify the definition of counter disaster operations, it appears that there is need for further clarity and certainty. In particular, there is a need to more clearly distinguish when the scale of activities goes beyond the normal emergency response responsibilities of state and local government.

Exceptional circumstances

Category D of the NDRRA is used to provide assistance to the states for:

... an act of relief or recovery carried out to alleviate distress or damage in circumstances that are, in the opinion of the Minister, exceptional. (Attorney-General's Department 2012, p. 3)

Participants raised concerns that NDRRA category D funding is not transparent and is applied inconsistently.

Category D has been used to provide extended concessional loans to businesses, primary producers and not-for-profit organisations following the 2010–2011 Victorian floods. It was also more recently used to provide assistance to Morwell residents given the exceptional circumstances of the mine fire and its effects on the community. Decisions on Category D funding appear to be made through negotiations between State and Commonwealth governments. This decision making process is however generally not transparent and there is often significant delays in the announcement of support leading to lost opportunities and considerable community and business angst. (MAV, sub. 98, p. 27)

There are benefits from having some provision in the funding arrangements for exceptional circumstances. However, currently there is no guidance on the activities that can be funded through category D, nor is there any guidance on thresholds for reimbursement or cost-sharing rates. Full ministerial discretion and lack of transparency about funding decisions increases the likelihood that assistance will be provided inconsistently, inequitably and at excessive levels.

FINDING 2.3

Some cost sharing between the Australian and state and territory governments in the form of a fiscal ‘safety net’ to assist with the cost of natural disasters is inevitable because of vertical fiscal imbalance.

The current funding arrangements exceed the requirements for such a safety net.

- The current thresholds for funding under the Natural Disaster Relief and Recovery Arrangements (NDRRA) do not constitute a major fiscal burden that exceeds state and territory governments’ own funding capacity.
- The NDRRA small disaster criterion is too low. It captures small, routine weather events.
- A marginal reimbursement rate of 75 per cent is excessive and is not consistent with relative fiscal capacity and average cost-sharing arrangements in the Federation.
- The scope of eligible expenditures under the NDRRA is unclear. Ministerial discretion for exceptional circumstances assistance adds more uncertainty around eligible expenditure and leads to inequitable outcomes.

The effects of the current arrangements on mitigation

As well as creating a large, unfunded liability for the Australian Government (and, through HFE, reducing the GST allocation of states that experience less natural disaster damage), cost-sharing arrangements dilute the link between asset ownership and risk ownership and tend to weaken incentives for effective risk management. In principle, the higher the proportion of disaster recovery costs that the states (as asset owners) bear, the stronger the incentive for them to invest in mitigation to reduce the level of natural disaster risk to their assets. Although there is a strong in-principle case that the NDRRA reduce incentives for mitigation, participants disagreed on whether this has material effects in practice (box 2.3).

Box 2.3 Effects of the NDRRA on state and local government risk management

Some participants stated that the NDRRA reduce risk management incentives

... the high share of Commonwealth contribution has created perverse incentives for State and local governments to minimise their investment in mitigation measures such as planning and development, capital investment and insuring assets. ... The very low threshold (\$240,000 in damage) triggering potential Commonwealth NDRRA support, when taken with the past AGDRP arrangements, has also contributed to ongoing community expectations that the Commonwealth will provide support for 'minor' disasters, including financial support for losses that are potentially insurable and/or avoidable or otherwise capable of being provided by State and local governments. (National Commission of Audit 2014a, pp. 93–94)

When the NDRRA Category B provisions are triggered, the Commonwealth provides up to 75 per cent of state and local government costs of restoring the assets to the pre-disaster condition. ... This changes the financial costs/benefits relationship for state and local government decision making on road expenditure and may lead to under investment in mitigation of disaster risks. (Department of Finance, sub. 92, pp. 2–3)

... there is a strong case for believing the NDRRA currently lacks incentives to encourage effective asset management, strategic investment in mitigation and works against the principles set out by the broader infrastructure agenda. (DIRD, sub. 99, p. 6).

The NDRRA does provide some disincentive for State and Local Governments investment in disaster mitigation. (Rockhampton Regional Council (Qld), sub. 68, p. 2)

Current arrangements have inadvertently resulted in significantly more support being provided to Queensland relative to other states which have a greater level of insurance cover for their assets. By relying primarily on NDRRA funding, Queensland effectively uses the Commonwealth as its insurer of first resort. (AGRI, sub. 39, pp. 7–8)

Others stated that there is no effect

The Queensland Government rejects the assumption that the current arrangements act as a disincentive for states and territories to fund mitigation works. (Queensland Government, sub. 31, p. 3)

There is no evidence that the NDRRA has resulted in lower rates of insurance or risk mitigation activities by Tasmanian councils. (LGAT, sub. 65, p. 4)

Most of the historic losses from natural disasters in South Australia (92% of costs claimable under the NDRRA from 2004–05) have been borne by the South Australian Government. The internalising of these costs provides sufficient incentive for mitigation, and is reflected in South Australian policies that mitigate losses from natural hazards such as bushfire, floods and coastal inundation. (Government of South Australia, sub. DR209, p. 12)

There is some evidence that the current arrangements have created expectations that the Australian Government will share the cost of mitigation, and that these expectations have reduced mitigation investment by other governments, as demonstrated by the Queensland Betterment Fund experience:

Following the natural disaster events of January 2013, the Queensland Government sought a contribution of \$100 million from the Commonwealth, to be matched by the State, for a \$200 million dollar fund to increase Queensland's resilience to natural disasters and provide a streamlined process for local governments to undertake betterment projects. The Commonwealth approved funding of \$40 million, which was matched by the State to create the current \$80 million Betterment Fund. (Queensland Government, sub 31, p. 26)

Local and state government participants were united in the view that the current ‘Betterment’ clause in the NDRRA results in missed opportunities for cost-effective mitigation. The Betterment clause is a provision in the NDRRA that allows reimbursement for restoring essential public assets to a more disaster resilient state. It has the potential to reduce the future damage caused by natural disasters to government-owned assets, particularly for assets that are subject to repeated disaster impacts. Participants argued that the onerous administrative requirements needed to access funding are effectively precluding the uptake of Betterment funding. Participants identified five specific barriers to the use of the Betterment clause.

- The Australian Government does not allocate specific funds for Betterment. Funding has to be offset by savings elsewhere.
- The Australian Government contributes a lower proportion of the cost of Betterment works than for works to rebuild damaged assets to their pre-disaster standard.
- Betterment funding is only available if the Australian Government is ‘satisfied with the cost effectiveness of the proposal’. This means that the administrative burden is higher than is required to rebuild to the pre-disaster standard.
- Communities place a high value on getting ‘back to normal’. If betterment actions take longer, they are less likely to be favoured by disaster-affected communities.
- Local governments also reported being discouraged by state governments and Australian Government agencies from applying to use the Betterment clause (box 2.4).

Collectively, these characteristics result in the current arrangements being systematically biased against betterment and in favour of rebuilding to the pre-disaster standard. As a result, the Betterment clause is not a cost effective or viable option for local and state governments rebuilding disaster damaged assets. This is inevitable with arrangements that treat betterment as a separate activity from standard disaster reconstruction. More detailed regulations around the Betterment clause such as rolling out nation-wide ‘value for money criteria’ would not resolve this fundamental problem. This is equally relevant for abandoning assets or rebuilding elsewhere. Such a systemic bias against Betterment will remain embedded as long as choosing betterment over restoring assets in the same location to their pre-disaster standard has a differential financial cost (in the form of less cost sharing).

Box 2.4 Local governments have been discouraged from applying for Betterment funds

... 'betterment' activities (under the NDRRA) receive no budget allocation, and must be funded by savings elsewhere in the Attorney-General's portfolio. It is suggested that these budget accounting conventions lead to an inherent reluctance by bureaucracy to sympathetically consider betterment applications. (LGASA, sub. 13, p. 10)

Some of our council members report being discouraged from making betterment claims. The reduction in Commonwealth funding from half or two-thirds of the cost of replacement to only one third of the cost of betterment is also a deterrent. (FMA, sub. 79, p. 5)

Funding for betterment is difficult to obtain as it is presumed in some instances that Council is 'gold plating' – this is an easy stance for the Federal and State governments to take particularly under current budget constraints. (FNQROC, sub. 36, p. 19)

... this [Betterment funding] is difficult to obtain and appears to be actively discouraged, or at least not promoted, by the State funding bodies administering the Commonwealth funds. ... Council staff have reported that 'betterment' has been actively discouraged and called into question including recent disaster funded road repairs. (Shoalhaven City Council (NSW), sub. 25, p. 2)

Before the Inquiry commenced, a Victorian Council submitted a draft betterment application to EMA, seeking support for the relocation of a road away from the local river canal, following repeated damage to that road in three flood events since March 2011. However EMA has advised it will not consider any betterment applications while this Inquiry is underway. (Victorian Government, sub. 105, p. 24)

Currently NDRRA reimbursement is targeted at response and recovery following an eligible event. There is minimal focus on mitigation and the process of applying for betterment grants is unworkable. (Northern Territory Government sub. 117, p. 4)

The effects of the current arrangements on government asset insurance

Governments use various arrangements for insuring their assets and essential public infrastructure, which vary by jurisdiction and level of government (supplementary paper 5). These arrangements include commercial insurance or reinsurance, self-insurance through government-owned insurance captives and non-insurance (Department of Finance and Deregulation 2012a) (table 2.8).

The current arrangements influence the uptake of insurance by governments in at least two ways. First, through the NDRRA the Australian Government essentially provides, at no charge, insurance for damage to 'essential public assets'. Second, states are not reimbursed for damage that is recoverable from any other source, including insurance payouts. While this reflects the intention to limit financial assistance to cases where the states cannot cover large disaster costs on their own, the requirement could reduce states' incentives to insure their assets.

There is some concern that the current disaster funding arrangements reduce governments' incentives to take out insurance. One indication of this was the response to a House of Representatives Standing Committee on Economics inquiry into the flood levy, when Queensland Government officials stated: 'We did not take that decision in relation to [reinsurance of] natural disaster events because of longstanding arrangements which are in place for natural disaster at a national level' (HRSCE 2011, p. 29).

Table 2.8 State, territory and local governments' insurance arrangements, 2011

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>
Total asset value (\$b) ^a	351	170	173	102	124	19	15	21
Roads (% of total value) ^a	28	39	47	28	17	44	27	16
Insured (% of total value) ^a	67	82	54	72	50	8	32	100
Captive insurer/mutual pool arrangement								
State/territory	✓	✓	✓	✓	✓	✓	✗	✓
Local ^b	✓	✓	✗	✓	✓	✗	✗	..
State/territory government reinsurance arrangements								
Has reinsurance arrangements	✓	✓	✓	✓	✓	✗	✗	✓
Adequate insurance arrangements^c								
State roads	✗	✓	✗	✗	✗	✗	✗	✓
Local roads	✗	✗	✗	✗	✗	✗	✗	✗
Other state assets	✓	✓	✓	✓	✓	✗	✗	✓

^a Includes state and local government assets. Local government data are incomplete. ^b In some states, not all local governments are covered by the mutual pool arrangement. These local governments generally have arranged commercial insurance. ^c As determined by the 2011–2012 Department of Finance and Deregulation Review of government insurance arrangements. .. Not applicable.

Sources: Department of Finance and Deregulation (2012a); KPMG Actuarial (2012).

The submission of the Queensland Government to this inquiry suggests that its position has evolved since 2011 (the Queensland Government has now taken out reinsurance for its non-road assets).

With respect to insurance premiums paid to external insurers and reinsurers, it is important to recognise that prior to 1 November 2011, the Queensland Government did not have external natural disaster insurance to cover its property assets. Rather, the State self-insured for catastrophic risks with the NDRRA cost sharing arrangements, resulting in the Federal Government funding around 75 per cent of all eligible costs. Consequently, prior to 1 November 2011, QGIF did not cover the cost of damage for which funding was available under the NDRRA. (Queensland Government, sub. 95, p. 6)

There is also some international evidence that the availability of funding from a higher level of government can reduce incentives to insure. Under New Zealand's intergovernmental funding arrangements, local authorities must be able to finance only 40 per cent of the cost of restoring assets damaged by a natural disaster (such as through insurance or reserves) to be eligible for central government funding for the remaining 60 per cent. The New Zealand Auditor-General reviewed insurance arrangements for public assets after the 2010–11 Canterbury earthquake. The review found that the availability of central government funding leads to local authorities choosing not to insure some assets. (Supplementary paper 8 has more detail about the New Zealand approach to managing natural disaster risks to government-owned assets.)

Local governments generally rejected the suggestion that the NDRRA reduces the incentives for them to insure their assets (for example, Bundaberg Regional Council (Qld), sub. DR168; LGNSW, sub. DR196; Mackay Regional Council (Qld), sub. DR133). Most local governments that commented on the issue stated that they have insurance for their non-road assets, and that insurance for road assets is not available, or would be prohibitively expensive. Local governments also voiced concerns about suggestions that they should be obliged to take out insurance for their road assets (for example, Diamantina Shire Council (Qld), sub. DR139; LGAQ, sub. DR188).

State and territory insurance arrangements were reviewed by the Department of Finance (and KPMG) in 2012. The review found that most jurisdictions had adequate insurance for non-road assets. (Tasmania and the Northern Territory were the exceptions.) The review considered roads separately, since roads constitute a large proportion of state and territory costs from natural disasters and insurance is difficult to obtain. Moreover, even if there was sufficient appetite in the market to insure roads, some states and territories would be unlikely to meet the data requirements to obtain insurance. This would include clearly identifying the roads to be insured, the value of the roads and the full claims and loss history. The ACT and Victoria are the only jurisdictions with insurance cover for main roads.

State and local governments have argued that it is not possible or cost effective for them to insure their assets. It may be the case that insurance is difficult to obtain for some assets. However, the review suggested that state governments had not fully explored their options for insurance (including parametric or index-based insurance and catastrophe bonds). Although the market for such products is not as mature as traditional insurance, supplementary paper 5 provides an example of how governments overseas and private owners of infrastructure assets have sought out non-standard options to insure their assets, including those in remote areas.

Inquiry participants had mixed views on the possibility of using non-traditional products to insure government assets in Australia. Some participants were supportive of them being investigated as an alternative to traditional insurance in the future (for example, IPART, sub. DR159; Government of South Australia, sub. DR209). Other participants argued that non-traditional insurance products are not a viable option due to their complexity and risk, difficulty in determining an appropriate trigger and their cost, particularly for smaller local governments (Bundaberg Regional Council (Qld), sub. DR168; Douglas Shire Council (Qld), sub. DR189; LGAQ, sub. DR188; LGASA, sub. DR161; Queensland Government, sub. DR184; Toowoomba Regional Council (Qld), sub. DR170).

The current NDRRA *Determination* provides for the Australian Government Attorney-General to recommend changes to state government insurance arrangements, based on the review. The Australian Government can also penalise states that do not respond to those recommendations by reducing the rate of reimbursement for eligible expenditure. The prospect of reduced cost sharing should be an incentive for states to

insure their assets. However, it appears that this has led to little change in state insurance arrangements to date.

FINDING 2.4

The current natural disaster funding arrangements reduce the incentives for state, territory and local governments to insure their assets. Most state, territory and local governments do not have adequate insurance for their road assets. This partly reflects the fact that:

- some state, territory and local government road asset registers are inadequate for the requirements of insurers
- most state, territory and local governments have not fully explored the use of non-traditional insurance instruments for insuring roads.

Prescriptive requirements for reconstruction

Under the NDRRA, state and local governments are reimbursed by the Australian Government for eligible recovery expenditure. The cost-sharing rate is progressive such that, the larger the cost of disaster recovery in a given year, the higher the proportion of the cost that the Australian Government will meet. The reimbursement approach reduces the incentive for state and local governments to choose the most efficient and cost-effective reconstruction options, because for every dollar that is spent, they pay as little as 25 cents.

To create incentives for local and state governments to choose efficient and cost-effective options for recovery the Australian Government sets strict conditions for the activities that are eligible for reimbursement. The eligibility criteria are prescribed in the NDRRA *Determination* and related guidelines.

A reimbursement model with no restrictions on eligibility could lead to open-ended claims on the Australian Government, and the prescriptive framework and extensive oversight arrangements can constrain the costs of recovery that is reimbursed to the states. However, there are several material disadvantages to this approach. First, the restrictions on reimbursement create administrative burdens for all levels of government. Second, the conditions on what expenditure is eligible for reimbursement inevitably drive the behaviour of local and state governments. This can potentially lead to excessive expenditure on some activities, just because they are eligible for reimbursement, and inadequate expenditure on other activities that would have greater benefits to the community but are not eligible for reimbursement. The Attorney-General's Department (sub. 90, p. 22) identified these problems with the reimbursement approach.

While increased oversight may provide the Australian Government with greater assurance that state and territory recovery expenditure is cost-effective, it results in a high level of regulation and delays in recovery activities. It also has the effect of moving the tactical decision-making away from the states and territories and those best-placed to understand and manage the local

issues, and draws the Australian Government into protracted negotiations about what will be funded.

These problems are discussed in the following sections.

Administrative burdens from monitoring and compliance — the National Partnership Agreements with Victoria and Queensland

The Australian Government has sought to enforce efficiency in the recovery works in Queensland and Victoria following the disasters that occurred over the summer of 2010-11. It negotiated National Partnership Agreements with the Queensland and Victorian Governments that supplement the NDRRA by setting out additional governance and monitoring arrangements, including the establishment of the Australian Government Reconstruction Inspectorate and the National Disaster Recovery Taskforce. The role of the Inspectorate is to ‘oversee reconstruction activity to provide assurance that value for money is being achieved in the expenditure of both Commonwealth and State funds during the recovery phase’ (COAG 2011b, p. 7).

The Inspectorate (sub. 39, p. 6) stated that the ‘value for money’ process that it has applied in conjunction with the Queensland Reconstruction Inspectorate:

... has identified \$1.7 billion in rejected or withdrawn claims, of which the Commonwealth would have been liable to reimburse almost \$1.3 billion. In addition, the Inspectorate has identified a further approximately \$100 million of ineligible expenditure.

The Inspectorate recommended that similar oversight arrangements should continue to apply in Queensland and Victoria and should be made a feature of the disaster funding arrangements for all jurisdictions. It suggested that this could be done through amendments to the NDRRA, a National Partnership Agreement or a combination of the two.

These oversight arrangements have not been universally praised, however. For example, the Queensland Government argued that the arrangements lead to excessive red tape, and that accountability arrangements should be streamlined.

While the need for accountability in the payment of NDRRA funds is acknowledged, the administration of NDRRA recoupment in Queensland’s experience has been subjected to extremely high levels of red tape. Eligibility requirements are not identified by the Commonwealth when funding is agreed, definitions are not clear, policy decisions are made retrospectively and the states often operate under the burden of conflicting or changing requirements under multiple NPAs, guidelines and rulings. Any reform of natural disaster funding arrangements should reduce duplication of governance arrangements ensuring accountability, clarifying requirements and streamlining the process for state and local governments. (Queensland Government, sub. 31, p. 32)

The Victorian Government (sub. 113, p. 20) submitted that its existing governance arrangements are ‘robust’, and that ‘Commonwealth oversight is duplicative and does not add value’. The Inspectorate (AGRI, sub. 39, p. 6) acknowledged that Victoria ‘does not

appear to have raised a major risk of misuse of funds’ but nevertheless argued that ‘future agreements with states should provide a clear basis for scrutiny by the Commonwealth and not be left open to being restricted by subsequent interpretation’.²

The divergent opinions on the accountability arrangements illustrate the difficulty of achieving efficient recovery through reimbursement.

Restrictions on council ‘day labour’

Under clause 5.2.5(d) of the NDRRA *Determination*, governments cannot receive reimbursement for ‘amounts attributable to salaries or wages or other ongoing administrative expenditure for which the state would have been liable even though the eligible measure had not been carried out’ (Attorney-General’s Department 2012, p. 9). The intention of this clause is to prevent cost-shifting (where the Australian Government incurs the cost of the normal activities of other levels of government). But evidence presented to the Commission suggests that it has had the effect of precluding some cost-effective options for recovery.

Numerous participants argued that for many local governments it is more cost effective to use their own employees (‘day labour’) and equipment for reconstruction works than to employ contractors (box 2.5). Council work crews typically are familiar with the areas where they are working and are likely to be available to work. Moreover, for some local governments in remote areas, finding contractors that are willing to take on disaster reconstruction work can be very costly.

In some cases in Queensland, local governments have been permitted to use day labour, provided they are able to demonstrate value for money, such as by comparison to benchmark rates. The Institute of Public Works Engineering Australasia (sub. 30, p. 7) stated ‘This approach has worked successfully and significant cost savings for all three levels of government achieved’.

The day labour issue highlights one of the central problems with the NDRRA: a reimbursement model coupled with prescriptive input controls that is intended to reduce waste and prevent cost shifting can have the unintended consequence of constraining asset owners from taking the most efficient and cost-effective risk management actions.

Participants from local and state governments universally supported the Commission’s view that the restriction on day labour leads to inefficiency (for example, Cassowary Coast Regional Council (Qld), sub. DR140; Diamantina Shire Council (Qld), sub. DR139, Gympie Regional Council (Qld), sub. DR152; Sunshine Coast Regional Council (Qld), sub. DR153; Toowoomba Regional Council (Qld), sub. DR170).

² To date in Victoria, the Inspectorate’s oversight has been restricted to three projects.

Some participants called for the Commission to make a specific recommendation regarding the use of day labour (for example, FNQROC, sub. DR148). However, the problem with the day labour clause in the current NDRRA would not be resolved with better drafting. The overriding problem is that the current arrangements are highly prescriptive and the prescriptive conditions and oversight lead to unintended consequences. The only way to sustainably resolve the problems with the day labour clause is to move away from the current approach of reimbursement which inevitably requires such prescription and oversight by the Australian Government.

Box 2.5 Day labour: participant views

Day labour is a significant issue

The most significant for this region is the issue of 'Day Labour'. (FNQROC, sub. 36, p. 20)

The expensive and drawn out process of obtaining contract resources should be understood and included in the discussion of funding local government labour. (IPWEAQ, sub. 17, p. 5)

The position of RAPAD [Remote Area Planning and Development Board] Councils is that they should be able to engage and reimburse the wages of their own works staff during normal hours instead of engaging contractors when this is the most appropriate and cost effective way to deliver works. (ORRTG, sub. 27, p. 17)

Local governments can carry out reconstruction at lower cost

... [T]he use of Council Day Labour is encouraged as ... Council having a greater understanding of the localised aspects of construction (such as material sourcing and quality management) and the fitness-for-purpose requirements for the particular assets to be re-instated, where the outsourced works were more likely to have been undertaken to meet modern standards requirements. ... Outsourcing activities generally also incur costs associated with tendering and contract administration, which are generally not required for work self-performed by Council. ORRTG, sub. 27, p. 19)

The requirement for Local Government to employ contractors for reinstatement works following a natural disaster event in remote and regional Australia is unrealistic and in all cases would amount to a considerable additional cost to both the Federal and Local Government. It is estimated that contractors cost in the vicinity of 100% more than if Local Government was to use their own day labour due to mobilisation, accommodation and administrative costs not to mention the profit margin applied by the contractors. (Shire of Kulin (WA), sub. 96, p. 1)

This situation of course has consultants salivating across the state following a disaster, but whether it's the profit motive, or the inability to understand, sympathise, or work with the community, the results delivered by consultants invariably cost more and achieve less, than those delivered by community employed engineers. (Tumut Shire Council (NSW), sub. 70, p. 5)

Rebuilding to pre-disaster standard

Currently state governments can be reimbursed through the NDRRA for the restoration of essential public assets if:

... the restoration or replacement results in the asset being restored or replaced to its pre-disaster standard, in accordance with current building and engineering standards (Attorney-General's Department 2012, p. 4)

It is unlikely that rebuilding to the same standard is always the best approach. In some cases it would be better to rebuild an asset in a different location, or to a higher or lower standard (box 2.6). The impediments to the use of the ‘Betterment’ clause have already been discussed. In addition to those problems, currently there is no provision in the NDRRA to fund reconstruction to a lower standard, or abandon damaged assets and rebuild elsewhere (or not at all) if that is the best option. This has the potential to lead to excessive reconstruction expenditure and to miss opportunities for more beneficial projects.

Several participants raised concerns about the ‘current building and engineering standards’ clause in the NDRRA. They stated that there is a lack of clarity about the meaning of the clause, and that this leads to inconsistent application and inequitable outcomes (box 2.7). The Australian Government Department of Infrastructure and Regional Development (sub. 99, p. 10) stated that the intention of the ‘current building and engineering standards’ clause is:

... to allow the asset owner a modest level of flexibility to utilise contemporary (rather than obsolete or outdated) construction methodologies and building materials to restore or replace the pre-disaster functionality or utility of an essential public asset.

Although the intention of the clause is sensible, the way it has been interpreted has been problematic (supplementary paper 6).

Box 2.6 **Rebuilding to the same standard: participant views**

Some assets have been damaged repeatedly

There have been several ‘Groundhog Day’ examples of government assets damaged by natural disasters being rebuilt, only to be damaged again by another natural disaster. Most of these are in Queensland, where parts of the state experienced repeated flooding over the period 2010–13.

- The water intake supply station for the town of Gayndah (Queensland) was severely damaged by flooding in 2011. North Burnett Regional Council rebuilt it at a cost of \$1.22 million. However, soon after completion the intake was again damaged by flooding from Tropical Cyclone Oswald in early 2013.
- Some roads owned by Bundaberg Shire Council (Qld) were damaged by flooding in 2011 and 2012, only to be damaged again in early 2013 after they were repaired. In addition, repair of the Gentle Annie Bridge (which was also damaged by flooding in 2011) in January 2013 was interrupted by flooding that caused further damage.
- The Colleges Crossing Recreation Reserve near Ipswich (Queensland) was significantly eroded and covered in debris after flooding in 2011. Ipswich City Council completed restoration of the reserve at a cost of around \$9 million only weeks prior to flooding in January 2013, which also caused extensive damage.
- The Sandringham–Ethabuka Road in Bedourie (Queensland) was damaged by flooding in 2008, and restored by Diamantina Shire Council at a cost of around \$1 million. It was subsequently damaged by flooding in 2010 and 2011.

Sometimes rebuilding to a lower standard (or not at all) is the best option

Recovery is defined in NSW legislation as “the process of returning an effected community to its proper level of functioning after an emergency.” This does not necessarily mean returning the effected community to its pre-disaster level of functioning. If communities or individuals were exposed to an unacceptable level of risk, or prior development was uneconomical in the first case, the objectives of recovery may not involve a return of that community to its exact prior condition. The need to rebuild after a disaster may provide an opportunity to re-establish a more appropriate level of functioning. (NSW Government, sub. 103, p. 6)

Potentially the biggest challenge is to remove the impact of immediate political considerations from local decision making as higher level principles are applied at the local level. Tough decisions need to be made not to rebuild in areas where the risk outweighs the benefit. New building should be sensitively sited and vulnerable areas should be avoided for development. (Victorian Coastal Council, sub. 76, p. 4)

Reconstruction after a flood should not be automatic and rigid eligibility criteria may not allow investment in the optimum outcome for a particular community after a specific event. A more efficient approach may be to direct funding toward relocation or house raising programs, a new levee or other mitigation measures as part of reconstruction or recovery funding. (FMA, sub. 79, p. 3)

Sources: ORRTG (sub. 27); QRA (2014).

Box 2.7 Current building and engineering standards: participant views

There is uncertainty about the meaning of ‘current engineering standards’

There continues to be uncertainty around what current engineering standards should be applied to REPA [restoration of essential public assets] works and what criteria is applied by the State and Commonwealth Governments to determine eligibility of costs where the current engineering standards vary from the pre-event engineering standard of the asset. In some cases the application of current engineering standards for REPA works will result in a higher standard of asset being reinstated than that which existed pre-event. Whilst there may be no change to the “service standard” of the asset there may be changes to material types used in construction, geometry (e.g. traffic lane width slightly increases) or introduction of new design elements (e.g., guardrail where there was none before). In some circumstances the cost increase resulting from the application of current engineering standards have been determined as betterment works and ineligible for Cat B funding. (IPWEA, sub. 30, p. 5)

Conflict arises between the Federal, State and Local Government on the terms “current engineering standards” and “restore to condition prior to the event”. Much of the infrastructure within our region was built in the 1950s to a standard relative to that time. When considering roads, the number and type of vehicles has increased significantly. Rebuilding to current engineering standards means taking into consideration (but is not limited to) current climatic conditions, numbers and types of vehicles which is often viewed as ‘betterment’. (FNQROC, sub. 36, p. 17)

The uncertainty leads to inconsistent and inequitable outcomes

This lack of clarity over which standards are applicable creates confusion and inconsistency, particularly where different standards are applied across different projects in the one local government area, or where different local governments are subject to different engineering standard requirements. (ORRTG, sub. 27, p. 19)

There also is a requirement to better define ‘betterment’ versus ‘current engineering standards’ versus ‘gold plating’ infrastructure. We have examples in the region of where similar works were proposed and in one Council it was ‘current engineering standards’ and then approved, while in the other it was deemed ‘betterment’ and then not approved. (FNQROC, sub. 36, p. 7)

FINDING 2.5

Prescriptive requirements in the Natural Disaster Relief and Recovery Arrangements (NDRRA) limit the scope for cost shifting, but also impose administrative costs and act as an impediment to efficient and cost-effective reconstruction.

- The reimbursement model under the NDRRA reduces the incentives for state, territory and local governments to implement the most cost-effective options for disaster recovery.
- Restrictions on reimbursement for inputs for reconstruction (such as restrictions on reimbursing the use of ‘day labour’) lead to wasteful spending.
- The bias in the NDRRA toward rebuilding damaged assets to their pre-disaster standard leads to excessive reconstruction expenditure.
- There are numerous barriers to the use of the Betterment provision.
- A lack of clarity around what constitutes ‘current building and engineering standards’ leads to inconsistent and inequitable outcomes.

Australian Government mitigation funding

Governments — perhaps in response to the incentives that act against mitigation and resilience — have attempted to ‘lock in’ a commitment to disaster resilience through the National Strategy for Disaster Resilience, backed up by a financial commitment through the NPANDR. Currently the NPANDR provides approximately \$26 million per year to the states, with a requirement that the funding be matched by state or local governments. The funds are distributed on the basis of historic allocations, population, costs of disasters, relative disadvantage and adjusted by agreement to provide a minimum share for the territories and Tasmania.

Inquiry participants generally commented favourably on the NPANDR, but argued that the level of financial commitment for mitigation and resilience was insufficient (box 2.8). Numerous inquiry participants expressed support for increasing Australian Government mitigation funding. In many cases the argument in favour of increased mitigation is based on selected ex-post evaluations of mitigation works that successfully prevented damage, without regard to the ex-ante probability of a natural disaster occurring. Deloitte Access Economics (2013, p. 9), in a report prepared for the Australian Business Roundtable for Disaster Resilience and Safer Communities, estimated that increasing Australian Government pre-disaster resilience funding to \$250 million per year could:

... generate budget savings of \$12.2 billion for all levels of government (including \$9.8 billion for the Australian Government) and would reduce natural disaster costs by more than 50% by 2050.

These savings are based on benefit–cost ratios from selected mitigation projects. However, caution should be exercised when extrapolating benefit–cost ratios from select mitigation projects to the total quantum of mitigation funding.

In the draft inquiry report, the Commission recommended that Australian Government funding for mitigation be increased to \$200 million per year, distributed on the basis of population, with the requirement for funds to be matched by state and local governments. Participants generally welcomed the proposed increase, although some called for even higher Australian Government funding. Most participants opposed a per-capita funding allocation and favoured a risk-based allocation, and some local governments were concerned that they would not be able to provide matching funds (box 2.8). The Attorney-General’s Department (sub. DR226) called for continued funding for cross-jurisdictional mitigation projects, such as the National Emergency Risk Assessment Guidelines and the Australian Emergency Management Knowledge Hub.

Box 2.8 Support for increased mitigation funding

Support for increased mitigation funding in general

Funding supplied for betterment/resilience measures should be increased before the event and will have the consequence of reduced reliance on NDRRA after the disaster event. (NWQROC, sub. 16, p. 1)

Funding on mitigation and resilience activities should increase. In the long-term this - coupled with more easily accessible betterment funding - should reduce the funding necessary for relief and recovery. (MAV, sub. 98, p. 29)

LGNSW maintains that increased funding should be directed to mitigation measures, both in advance of disasters where the risks are identified and in the recovery stage. (LGNSW, sub. 81, p. 3)

Support for increased Australian Government funding in particular

... the amount of funding made available through the NPANDR, is inconsistent with that put towards resilience and/or mitigation in many other developed countries. It is suggested that this amount should be considerably higher in order to meet the key aim of the agreement to enhance "Australia's resilience to natural disasters through mitigation works, measures and related activities that contribute to safer, sustainable communities better able to withstand the effects of disasters." (Queensland Government, sub. 95, p. 10)

Current funding under the National Partnership Agreement for [Natural] Disaster Resilience is regarded by the LGA as inadequate to achieve the resilience strategies that it espouses. The proposal alluded to above by Deloitte Access Economics of around \$250 million a year would be a good starting point. (LGASA, sub. 13, p. 10)

LGAT is of the view that more funding needs to be spent in the resilience and mitigation space and that the Commonwealth must continue to play a major role in this (LGAT, sub. 65, p. 4)

The NSW Government supports an increase in annual mitigation funding. (NSW Government, sub. DR217, p. 6)

Views on the allocation of mitigation funding

Victoria welcomes an increase in mitigation funding, and is supportive of the proposed allocation of funding on a per capita basis, provided smaller jurisdictions receive a meaningful quantum under that allocation. (Victorian Government, sub. DR215, p. 8)

The Queensland Government also considers that Commonwealth annual mitigation expenditure should be allocated to states or projects according to their relative risk profiles rather than on a per capita basis ... Given the comparatively high exposure and vulnerability of its communities, Queensland would be at a distinct disadvantage if the allocation of Commonwealth mitigation expenditure were to be on a per capita basis as currently proposed in the Draft Report. (Queensland Government, sub. DR184, p. 19)

Concern about the requirement for matching funds

A \$200 million contribution from the Commonwealth for mitigation would result in a mitigation program in South Australia of around a \$16 million Commonwealth contribution. This is a significant increase from the \$2 million Commonwealth contribution provided now, but would require the South Australian Government to source an additional \$14 million per annum of state government, local government and other matching community contributions from the state. Unlike the Commonwealth which will realise immediate savings to fund its commitment from the proposed increases in various NDRRA thresholds, the states and territories would need to fund this matching contribution by reducing expenditure in unrelated areas. This could lead to significant delays in states and territories commencing mitigation programs. (Government of South Australia, sub. DR209, p. 8)

The ACT Government strongly supports a commensurate increase in the amount of funding provided for mitigation. Matched funding arrangements should include provisions for in-kind and human resource costs. (ACT Government, sub. DR206, p. 6)

The appetite for higher levels of mitigation expenditure is evident from the experience of the \$80 million Queensland Betterment Fund. Local governments could apply for grants of up to \$2 million for projects to increase the disaster resilience of their assets. The fund was massively over-subscribed:

On announcement of the Betterment Fund, 47 local governments submitted 1,434 betterment project proposals for consideration with an estimated total value of \$1.19 billion, indicating a significant unmet demand for this type of resilience funding. (Queensland Government, sub. 31, pp. 3–4)

This suggests that there is pent-up demand for increased expenditure to increase the resilience of government-owned assets, but asset owners are unwilling or unable to bear the costs.

FINDING 2.6

Mitigation expenditure across all levels of government is likely to be below the optimal level, given the biased incentives towards recovery under current budget treatments and funding arrangements. However, the extent of the underinvestment in mitigation is not known.

2.3 Managing shared risks

Shared risks have impacts that affect many parties, and cannot be effectively managed by households and businesses acting independently. They can include risks to physical assets (including privately-owned assets and assets that are owned by governments on behalf of the community) and also intangible assets, such as community cohesion. Some shared risks can be reduced through mitigation and resilience measures. In other cases where the damage cannot or has not been reduced through mitigation, some of the shared risks can be addressed through ex-post assistance to affected communities.

Managing shared risks is a shared responsibility. Nonprofit organisations, volunteers and community groups have important roles in managing these risks. Governments have a role in supporting the management of shared risks, including by providing financial (or in-kind) assistance to households and businesses to avoid economic and social hardship in the immediate aftermath of disasters.

Post-disaster assistance to individuals

Governments provide two types of assistance to people who have been affected by natural disasters:

- immediate emergency relief (generally cash payments and some in-kind assistance)

-
- longer-term assistance to people who require more tailored assistance to recover from the effects of disasters (including financial advice and grants for structural repairs and essential household equipment).

Immediate assistance programs include the AGDRP and various state and territory emergency assistance grants, which may be eligible for reimbursement through category A of the NDRRA. Most longer-term assistance is provided by state and territory governments. The Australian Government provides some assistance to people whose income is interrupted by disasters through the Disaster Recovery Allowance. As well as government assistance, in some circumstances, individuals may also be eligible for assistance from charitable relief funds — these funds can be substantial but are highly variable depending on the disaster.

Having in place a framework for providing emergency assistance reduces the likelihood that governments will take an ad hoc approach, which can be ineffective, excessive or misdirected. However, the current arrangements for providing emergency assistance to individuals and businesses are inconsistently applied, inefficient in their administration, prone to overlaps and duplication and can be very costly. There is also the risk that the expectation of government assistance will create moral hazard and reduce incentives for individuals and businesses to take steps to manage disaster risks.

A modest level of emergency assistance to individuals is supported

In general, households are responsible for managing the natural disaster risks they face, including by making some provision to deal with the immediate effects of disasters. However, there is merit in providing an emergency relief payment to people who have been seriously affected by natural disasters in order to avoid immediate economic and social hardship. Inquiry participants generally supported some level of assistance to people directly affected in the immediate aftermath of natural disasters (for example, the Australian national, state and territory Councils of Social Service, sub. DR197; Australian Red Cross, sub. 56, sub. DR137; Government of South Australia, sub. 67; McGowan and Tiernan, sub. 83; Queensland Farmers' Federation, sub. 29; Victorian Government, sub. 105).

Emergency relief should be provided in a consistent, equitable and efficient way. Assistance should be needs-reflective, targeted to people who are in genuine need of assistance and distributed quickly after the event. Payments should be set at a level that is adequate to meet people's immediate needs, such as short-term accommodation, and clothing and food for a few days. Assistance should not be provided as 'compensation' to people who experience disaster damage, nor should it be a substitute for people using their own resources. Governments should avoid creating an 'entitlement' mentality in relation to disaster assistance. Longer-term recovery needs can be addressed through people's own resources (savings and insurance), the existing social safety net and assistance from the community and charities.

Currently the AGDRP, at \$1000 per adult and \$400 per child, can add up quickly for families and is significantly more generous than other government support to people who experience traumatic events. The most directly comparable government support payment is the Australian Government Crisis Payment. This is a payment to individuals in receipt of government income support who experience extreme circumstances, such as losing access to a home because of domestic violence or a house fire. The Crisis Payment is a one-off payment, equal to one week's payment of the claimant's existing income-support payment. The maximum Crisis Payment for recipients of different categories of income support is:

- \$356.60 for recipients of Newstart and the Parenting Payment
- \$383 for recipients of the Age Pension or Disability Support Pension.

Several participants suggested that comparisons with the Crisis Payment were not appropriate and that the Commission should consider other benchmarks (WALGA, sub. DR214; LGNSW, sub. DR196). The Australian Red Cross (sub. DR137) noted that the Australian Government provides a travel allowance of up to \$409 per day to Australian Public Servants to cover the costs of food and accommodation when required to travel for work, and suggested that this is an appropriate benchmark for emergency relief payments.

Setting the level of emergency relief payments will always be a matter of judgment. On balance, the AGDRP is high relative to other government payments for emergency relief, and might be higher than necessary for immediate emergency needs, such as short-term accommodation and clothing and food for a few days.

Eligibility for the AGDRP

The AGDRP eligibility criteria have expanded over time. Initially (in 2006), the payment was only available to individuals whose principal place of residence was destroyed or rendered uninhabitable. By 2009, eligibility had been extended to people who were unable to return to their residence for 24 hours, and people who experienced a utility failure for 48 hours. The eligibility criteria were subsequently tightened for the Blue Mountains bushfires in October 2013 so that the AGDRP was available only to people who were seriously injured, who lost family members or whose residence was destroyed or sustained major damage. It was no longer provided to people who lost access to their residence for 24 hours, were isolated in their residence for 24 hours or experienced a utility failure.

Most participants supported the principle that eligibility for assistance (Australian Government or state government) should be limited to people who are significantly affected. For example, former Australian Government Attorney-General, the Hon. Robert McClelland recommended '... to streamline them so that we target them to those in most need' (McClelland, quoted in McGowan and Tiernan, sub. 83, p. 17).

State governments generally agreed.

South Australia supports the recent decision by the Commonwealth Government to restrict the AGDRP criteria to those directly impacted. (Government of South Australia, sub. 67, p. 25)

The AGDRP ... is subject to fraudulent activity, is poorly targeted and costs the Commonwealth a substantial amount of money that could be better directed to Victorians in need. (Victorian Government, sub. 113, p. 37)

After ex-Tropical Cyclone Oswald in January 2013, Queensland introduced the Community Recovery Reforms, with guidelines that are stricter and more closely aligned with the principles of demonstrating hardship and need, thereby encouraging the development of resilience. (Queensland Government, sub. 95, p. 12)

The Australian Red Cross stated '[e]ffort should be put into better targeting payments, rather than reducing the existing amount' (sub. DR137, p. 2).

The loose eligibility criteria can have unintended consequences. The Cassowary Coast Regional Council (Qld) (trans., Townsville, p. 104) provided an example where the eligibility criteria for the AGDRP led to electricity company employees being abused for reconnecting electricity.

... the classic case is people who have lost power for more than whatever it was, 24 or 48 hours, they were abusing Ergon persons who were about to turn the power on because if they waited another hour they'd be eligible; that literally happened. So, as soon as you start putting criteria around it you will get people wanting to work the system and that's exactly what happened in Yasi, physically abusing electricity workers, telling them not to turn it on, go away, come back in a hour or two's time, looking at their watch.

However, Senator Doug Cameron (sub. 69, p. 4) did not agree with the tightening of the criteria following the Blue Mountains fires.

The penny-pinching approach by the Commonwealth to declare only 'significantly impacted criteria' in the *Social Security (Australian Government Disaster Recovery Payment) Determination 2013 (No 5)* was unnecessary and unfair. The AGDRP declaration in many disasters previously including the Tasmanian bushfires in January 2013 and the Victorian bushfires in 2009 included both significantly impacted and moderately impacted criteria.

The tinkering with the AGDRP eligibility criteria has led to inequality and perceptions of unfairness (including the perception that the criteria have been both too narrow and too broad). The root cause of the problem is that for each disaster the Australian Government Minister for Justice has discretion to set the criteria, leading to inequitable outcomes over time.

There was support from inquiry participants for legislating the eligibility criteria of the AGDRP (Central Highlands Regional Council (Qld), sub. DR174, LGNSW, sub. DR196 Queensland Farmers' Federation, sub. DR155). Louise Markus MP (sub. DR193, p. 5) noted that this would 'allow for consistency from disaster to disaster across states and territories ... and remove the perception of inequality and unfairness following a crisis'. However, the Victorian Government (sub. DR215, p. 12) disagreed:

Victoria does not support legislating the criteria for emergency relief payments. As evidenced in the 2014 Hazelwood Coal Mine Fire, relief payments need to be flexible to assist households

experiencing hardship as a result of non-traditional emergency events. Each emergency and community is different, requiring flexibility to effectively support the recovery process.

The political pressure to provide generous assistance (as identified by former Attorney-General McClelland) tends to reward politicians for expanding the eligibility criteria. Ministerial discretion has short-term benefits, but over time short-sighted exercise of this discretion, together with the recent spate of large natural disasters, has contributed to the sharp increases in the cost of the AGDRP.

The effects of disparate and high levels of assistance to households

Generous post-disaster assistance can have several effects. One is that the costs to taxpayers can be very high. The AGDRP was initially estimated to cost \$3 million per year. The cost of the AGDRP reached about \$850 million in 2010-11 following the Brisbane floods and Cyclone Yasi and when eligibility was at its broadest historically.

A second effect is that excessive payment rates, or loose eligibility criteria can create an expectation of assistance from governments, and reduce incentives to manage risks. McGowan and Tiernan (sub. 83, p. 17) quoted the former Australian Government Attorney-General, the Hon. Robert McClelland.

“Part of the problem is that governments have contributed to the development of a culture of entitlement rather than a culture of prevention. This has occurred because the emphasis of government has been on being seen to provide assistance to individuals after they fall victims to a natural disaster rather than on developing strategies and working with communities to prevent those communities from falling victim to disaster in the first place.”

Assistance to households could reduce their incentives to take out insurance or set aside savings to cover the costs of potential disasters. Suncorp Group (sub. 71, p. 19) provided an anecdote that suggests that this does occur.

... a Suncorp customer in New South Wales received a \$1,000 grant following the 2010-11 floods. Upon renewal the customer contacted us to increase their insurance excess to \$1,000, citing the availability of assistance as a reason for increasing their excess above a level they could ordinarily afford to pay. This has not only increased the individual’s reliance on future government assistance, it has also exposed them to substantial additional risk from non-disaster events such as a small kitchen fire for which no government assistance is available.

However, as noted by the Insurance Council of Australia (sub. 57, p. 4):

... the practice is not widespread. The small payments and grants made will typically not provide for the complete restoration of any loss experienced, a fact that appears to have been grasped well by most in the community.

Participants from the nonprofit sector agreed.

There is no ‘moral hazard’ attached to the receipt of emergency grants. Grants are not overly generous and the implication that people rely on them as a form of mitigation is spurious. (Australian national, state and territory Councils of Social Service, sub. DR197, p. 19)

It is sometimes claimed that relief payments and other financial assistance acts as a disincentive for acquiring insurance and also reduces people's resilience. Red Cross would caution against accepting these claims ... For this situation to occur, people would need to make a conscious decision not to insure. However, the amounts paid by the AGDRP and PHDG are generally too small (in the \$100s to \$1000) to act as a disincentive to acquiring insurance. In Red Cross' experience, the rationale for non or underinsurance often lies elsewhere, including for some, affordability. (Australian Red Cross, sub. 56, p. 13)

The Northern Territory Government submission (sub. 117, p. 25) is consistent with this perspective.

The assistance provided by the Northern Territory Government to individuals and businesses is way below the actual replacement costs for all damage or lost goods; rather it provides minimal assistance to enable these groups to commence the recovery process.

On balance, it is unlikely that assistance to households significantly reduces their incentives to manage risks to their property, including through insurance. The amount of funding provided is generally small relative to the potential damage caused by a natural disaster, and assistance provided can be highly variable depending on the disaster. However, the expectation of assistance can increase political pressure for generous post-disaster relief, increasing the costs of the program to taxpayers, leading to unfair outcomes and potentially leading to windfall gains to people who are only moderately affected by disasters.

Overlap and duplication with state government assistance

State governments provide emergency assistance to individuals and households immediately after a disaster, and are reimbursed through category A of the NDRRA. State governments have different eligibility criteria for emergency assistance payments and provide different levels of assistance (table 2.9).

Some participants noted that the existence of Australian and state government assistance programs can lead to duplication, inconsistent application of assistance across jurisdictions, confusion and red tape. Others commented on the efficiency of the administration of state assistance to households (box 2.9). The Australian Red Cross (sub. 56, p. 13) recommended that:

The Australian Disaster Recovery Payment and the base level [state government] Personal Hardship Grants are combined into one grant, with consistent grant amounts, and administered by a single agency.

Two levels of government (and charities) providing such assistance creates further inconsistency (and thereby inequitable treatment), duplication and potentially excess payments. Some state governments agreed that there is duplication, and suggested that the states are better placed than the Australian Government to deliver assistance to individuals, but that the costs should be shared. The Victorian Government (sub. DR215, p. 12) submitted that the AGDRP should be abolished, and that 'support to individuals be

provided through the continuation of cost-sharing under Category A of the NDRRA'. Along similar lines, the Queensland Government (sub. DR184, p. 15) stated:

... local government and/or community agencies are best placed to both assess need and deliver services, and as such a preferable approach to resolving duplication may be to continue funding locally-based personal hardship assistance services.

Table 2.9 Assistance provided through state government immediate/emergency relief schemes^a

<i>Jurisdiction</i>	<i>Adults</i>	<i>Children</i>	<i>Maximum for household/family</i>
	\$	\$	\$
NSW ^b
Vic	500	250	1250
Qld	180		900
SA	280	140	700 ^c
WA	up to \$388 per day	up to \$194 per day	na
Tas	200	100	750
NT	1135
ACT

^a These schemes have varying eligibility requirements but are all non-means-tested. ^b NSW offers in-kind assistance, consisting of a one-off payment for clothing of \$100 per adult and \$50 per child, and food to the value of approximately \$25 per person. ^c SA also provides an accommodation grant of up to \$189. .. Not applicable. **na** Not available.

Source: Attorney-General's Department (pers. comm., 15 August 2014).

The Commission does not agree with this suggestion. The Australian Government has institutional arrangements in place to efficiently deliver emergency hardship assistance to people in need (through Centrelink), and is better placed to deliver such assistance than state or local governments, especially in a post-disaster context. The Commission also considers that people in similar circumstances should be treated similarly, regardless of the jurisdiction in which they reside. As noted above (table 2.9), levels of emergency relief can vary significantly between jurisdictions. State government capacity is likely to vary, and smaller states and territories might not have the capacity to effectively deliver timely assistance in a targeted manner. This could lead to delays, poor targeting, fraud and inequitable outcomes across states. State governments can and should retain autonomy in providing further emergency assistance to disaster-affected communities, but while it provides emergency relief through the AGDRP the case for Australian Government cost sharing for sub-clause (a) payment — emergency food, clothing or temporary accommodation — is weak.

Box 2.9 Assistance to individuals and households: participant views

There is duplication between Australian Government and state programs

... assistance [through the AGDRP] duplicates that provided by states and territories, the cost of which is partially reimbursed by the Australian Government under Category A of the NDRRA. It also leads to inconsistent application of the payment nationally. (Attorney-General's Department, sub. 90, p. 25)

South Australia does consider that the AGDRP duplicates the NDRRA Category A grants that provide immediate Personal Hardship and Distress payments (PHD) to those directly impacted by a disaster. (Government of South Australia, sub. 67, p. 26)

The experience of Red Cross indicates that the Australian Government Disaster Recovery Payment (AGDRP) overlap with state and territory Personal Hardship and Distress (PHDG) payments. ... Having two payments can lead to confusion within the community, which is not ideal in the post disaster environment. It also increases the level of paperwork that those affected need to endure, again not an ideal situation for someone who has potentially lost all of their possessions. (Australian Red Cross, sub. 56, p. 13)

State programs are administered less efficiently

Some Victorian councils have noted that measures relating to individuals, businesses, primary producers are generally well intentioned, but in practice inconsistent in application and implementation. The announcement or declaration of such measures is often delayed, which both misses opportunities for early and effective intervention and leads to frustration and resentment by those affected. (MAV, sub. 98, p. 34)

Generally the AGDRP is paid by Centrelink, an agency with experience in the management of payments. Each state based system is administered by a community services department, by a range of people who are not normally involved in payments. This can lead to inconsistencies in the payments, as well as multiple application processes, queuing for long periods to receive assistance and criticism for being either too generous or too strict with payments. (Australian Red Cross, sub. 56, p. 13)

State programs are administered efficiently

Victoria's experience with the AGDRP is that the program is inconsistently available following disasters, and is poorly targeted. In contrast, Victoria's Personal Hardship Assistance Program, administered by the Victorian Department of Human Services, is consistently available to disaster-impacted communities, and is well targeted to meet individuals' needs. The Commission noted that the Commonwealth is in a better position than States to administer personal payments due to pre-existing infrastructure and networks, such as Centrelink offices. This fails to recognise that similar infrastructure and networks also exist in the State context. (Victorian Government, sub. DR215, p. 12)

The Personal Hardship and Distress provisions in NSW are tightly targeted to those most vulnerable to poor recovery outcomes and have a different objective to the AGDRP. Additionally, the NSW Government believes the Disaster Recovery Allowance is not an appropriate alternative payment to state government relief payments, as it only provides for loss of income from a disaster, and does not meet immediate basic needs, nor assist affected persons already in receipt of Centrelink benefits. (NSW Government, sub. DR217, p. 8)

Queensland has recently undertaken significant reforms of its Personal Hardship Assistance Scheme. The reforms have provided for greater targeting of the impact area in a natural disaster, resulting in more directed analysis of need and service provision to the most impacted members of the community. (Queensland Government, sub. DR184, p. 14)

There are other types of assistance that state governments provide to households where the case for NDRRA cost sharing is stronger. For example, longer-term assistance (such as

replacement of housing and essential belongings, and financial counselling) provided to people who have limited financial resources and have suffered severe losses. Because this type of assistance can involve a longer-term relationship with the recipient, and often requires interactions with services that are provided by state governments, it is likely that state governments are better placed than the Australian Government to manage the delivery of this kind of assistance.

Other assistance to households provided under category A (sub-clauses (d) and (e)) is not consistent with effective risk management and should not be eligible for cost sharing. The costs of clearing debris, necessary demolition and repairs to residential property are the responsibility of households, and should be met from savings and insurance. Reimbursing these costs leads to governments incurring unnecessary costs, and can lead to inequitable outcomes. For example, Tegwen Howell, whose house was destroyed by floods in Queensland in 2011 stated:

We had 50 cubic metres of silt that was washed out of our house and, because it was washed out of the house, the local recovery effort was such that because it was no longer in the house we had to pay to have it removed, rather than them take it away ... That, in itself, cost about \$5000 ... yet the people two doors down, theirs was just taken to the local sports ground and dumped at the local sports ground, again with asbestos in it, to be taken away. (Tegwen Howell, trans., Brisbane, p. 15)

State and local governments generally disagreed that these activities are not the responsibility of governments, arguing that there are broader community benefits from governments undertaking these activities — such as health and safety — especially in the immediate aftermath of a disaster. Where governments do feel the need to carry out such activities, they should consider cost-recovery from the beneficiaries.

FINDING 2.7

Ministerial discretion over the eligibility criteria for the Australian Government Disaster Recovery Payment (AGDRP) has succumbed to short-sighted policy changes and led to the inconsistent and inequitable treatment of people in comparable circumstances and has contributed to increased program costs.

The AGDRP might be higher than necessary to meet the immediate emergency needs of people affected by natural disasters and is higher than comparable Australian Government assistance to people affected by crises.

There is overlap and duplication between the AGDRP and state and territory government emergency assistance to individuals.

Post-disaster financial assistance to businesses

Sole traders and primary producers who can demonstrate loss of income as a direct result of a disaster can be eligible for the Disaster Recovery Allowance, which provides payments equivalent to the maximum rate of Newstart Allowance or Youth Allowance for up to 13 weeks. In addition, state governments provide financial assistance to businesses, and can be reimbursed for some types of assistance through categories B and C of the NDRRA. Many participants supported the provision of financial assistance to businesses affected by disasters, although some identified problems with the current arrangements, including complexity, inequitable outcomes and poor targeting (box 2.10). Although numerous participants argued for retaining state government financial assistance to disaster affected businesses and that the costs should be shared with the Australian Government, they provided no evidence of the need and effectiveness of such assistance — namely that recovery would not occur without this assistance.

The case for government financial assistance to businesses and primary producers after a natural disaster is weak. Businesses are responsible for managing the risks they face, including natural disaster risks. Viable businesses can manage these risks through financial risk management and planning, insurance (including insurance for machinery and buildings and business interruption insurance to offset any loss of revenue) and accessing credit through financial institutions.

Research into the effects of financial assistance to disaster-affected businesses has found that such assistance has relatively little effect on business survival, post-disaster profitability and employment. For example:

Although there is widespread agreement on the need for post-disaster assistance, various studies of US businesses receiving post-disaster aid found that this aid was, at best, statistically irrelevant to survival and recovery. (Regional Australia Institute, sub. 61, attachment 3, p. 7)

More recently Fabling, Grimes and Timar (2014) assessed the effects of the Canterbury earthquakes (New Zealand) on businesses in the Christchurch region, compared with businesses in other parts of New Zealand. They found:

Poor performers are disproportionately, and strongly, selected to exit. In contrast surviving firms, generally speaking, rapidly revert to status quo profitability levels. (Fabling, Grimes and Timar 2014, p. 20)

The Treasury (sub. 91, pp. 2–3) observed that if businesses are not viable, short-term financial assistance is ineffective and costly.

While these types of financial assistance may help individual businesses address short-term cash flow issues following a natural disaster, they do not necessarily lead to sustainable recovery for the local economy or community. This is because the cause of the cash flow problem is not always addressed. Alternatively, devoting resources to broader community and economic recovery (such as repairing roads and other critical infrastructure) may be a better use of government funding.

Box 2.10 Financial assistance to businesses: participant views

Many participants supported the case for financial assistance to businesses

Payment made to farmers and small businesses are often justified and usually lead to broader community benefits and faster community recovery. Some of the short term shocks of natural disasters are difficult to insure against and planned for. (MAV, sub. 98, p. 27)

The business grants/loans scheme assists recovery by speeding up the process of rebuilding production and business capacity and it follows that this assists the community at large to recover. (Queensland Farmers' Federation, sub. 29, p. 6)

The reality is there are many viable and profitable farm businesses that simply require a small amount of assistance to manage through an uncontrollable natural disaster event. (NFF, sub. 35, p. 3)

Clean up payments for small businesses and primary producers will engender goodwill, demonstrate that they are not forgotten and their viability is integral to effective community recovery. (Australian Red Cross, sub. 56, p. 20)

NSW Councils have generally found these payments [NDRRA categories B and C] important for assisting community recovery and alleviating hardship. (LGNSW, sub. 81, p. 5)

Many of the organisations that were affected by the event were eligible for the assistance are fairly resilient and have insurance coverage. However the grants are useful to assist where insurance does not cover all damage as a result of an event, and to get a business back up and running in the interim where insurance is still being assessed and processed through the insurers allowing the community to recover back to a somewhat normal situation and employee jobs to be maintained. (Northern Territory Government, sub. 117, p. 6)

Some participants argued that the lack of multi-peril crop insurance justifies financial assistance

... multi-peril crop insurance is a potential solution but is unlikely to be a viable option without government subsidy (Queensland Farmers' Federation, sub. DR155)

... there is a case for the federal government to underwrite such an insurance scheme with the cost offset against existing natural disaster funding programs. In fact, eligibility for other forms of assistance should be predicated on having taken out the appropriate insurance coverage. (Growcom, sub. DR205, pp. 3–4)

But the current arrangements can be complex, inequitable and poorly targeted

Similarly, NDRRA small business support is complex and could be better targeted. Current assistance includes concessional loans for small businesses re-establishing viable operations, and clean up and recovery grants for small businesses in highly impacted regions to support recovery of the community. (Queensland Government, sub. 95, p. 14)

... from 2011 to 2013 the northern NSW fishing industry was severely impacted by a series of floods that destroyed not only fishing gear and structure but also fish stocks and important habitat. The floods caused damage to fishing gear, equipment and fishing infrastructure. However, of more significant impact were the loss of income due to the flood's impact on fish stocks and the health of the waterways. The financial assistance provided to the fishermen to recover from these impacts did little to address their actual needs. Fishermen are faced with a loss of weekly income due to the loss of fish stocks within the flooded waterways. However, the finance package provided covers for the loss of gear, infrastructure or cost of clean up, not assistance to deal with the loss of income due to the floods impact on the waterways. (Professional Fishermen's Association, sub. 62, p. 1)

Participants also raised concerns about the form of government financial assistance to businesses (including primary producers). These include grants, loans, interest rate subsidies, freight subsidies and subsidies for fodder. Tied grants can distort business

behaviour as businesses focus on meeting specific grant criteria. Loans and interest rate subsidies are complex to administer, create an ongoing relationship between the business and the government and can lead to non-viable businesses being burdened with loans that they cannot afford (box 2.11). In general, direct grants from governments are the most transparent and cost-effective mechanism for assistance, and are the easiest to administer.

FINDING 2.8

The case for government direct financial assistance to businesses and primary producers after a natural disaster, beyond the Disaster Recovery Allowance, is weak.

If governments do provide direct financial assistance to businesses and primary producers, untied grants are a more efficient, effective and equitable instrument than loans and subsidies.

Box 2.11 **Form of business financial assistance: participant views**

The weaknesses and risks of concessional loans and tied subsidies

South Australia does not support the provision of loans and freight subsidies provided under Category B for the following reasons:

- Where there is no apparent market failure in the finance sector, viable businesses should be able to access a loan.
- The eligibility criterion states that loans require the “borrower to have no reasonable prospect of obtaining commercial finance”. This raises the concern of the business’ viability and ability to repay. In most cases, affected businesses do not want to incur further debt.
- Loans are cumbersome. They take too long to deliver, expose taxpayers to unnecessary risks of lending capital, require long-term resources to manage, and are costly to administer.
- Subsidies tied to specific purposes such as freight costs are inflexible (compared to recovery grants) and have an inflationary effect on costs. (Government of South Australia, sub. 67, p. 17)

The following outlines the key risks of providing Category B concessional loans or subsidies. ...

- Debt imposition and ability to service the loan ...
- Fraud (intended and unintended). ...

The financial risk associated with any unrecoverable loans falls more onto the state and territory governments as they will still be required to repay the loan from the Commonwealth. (Treasury, sub. 91, pp. 4–5)

The uptake of concessional loans by small business has been limited, possibly as a result of impacted small businesses losing cash flow after a natural disaster and already having existing business loans, making it difficult for businesses to service an additional loan. (Queensland Government, sub. 95, p. 14)

... Category B freight subsidies appear to have limited utility for horticulture/grains producers and are only available for a set range of activities, such as the movement of materials or machinery used for recovery purposes, the movement of fodder to feed livestock or for the movement of livestock for restocking purposes. (Queensland Government, sub. 95, pp. 13–14)

3 Natural disaster funding reforms

Key points

- Policy and funding frameworks for relief and recovery should provide neutral incentives for how natural disaster risk is managed before and after disasters happen.
- Australian Government post-disaster support to state and territory governments (states) should be reduced, and support for mitigation increased. Greater budget transparency and some provisioning is also needed.
- The Commission's recommended funding model is designed to lower the overall cost of natural disaster risk management by all levels of government and lead to more equitable and sustainable outcomes. The reform imperative is greatest for states most exposed to natural disaster risk, like Queensland.
- The funding reforms comprise a coherent policy package across recovery and mitigation funding, budget treatment of recovery costs, and accountability requirements for all governments. 'Cherry picking' component parts would see the much needed balance between mitigation and recovery, as well as greater state autonomy, remain elusive.
- The Australian Government contribution to post-disaster recovery costs under the Commission's recommended funding model would still provide significant fiscal support to state governments but be more reflective of relative fiscal capacity and the 'safety-net' objective, with the option for states to purchase 'top-up' fiscal support.
- The reforms would provide funding for reconstruction of essential public assets based on assessed damages and benchmark prices — an essential precursor to restoring greater autonomy to the states. This approach removes the wastage that arises from the prescriptive nature of the current arrangements. It would also provide state and local governments greater scope to invest in betterment thereby removing the bias towards rebuilding all damaged assets to pre-disaster form.
- A key element of the reforms is an increase in Australian Government mitigation funding to the states to \$200 million per year. This funding should be conditional on matched funding contributions and transparent and robust decision making. It should initially be distributed between the states in accordance with the allocation under the National Partnership Agreement on Natural Disaster Resilience.
- The Australian Government is best placed to deliver immediate emergency relief payments to individuals who have been seriously affected by natural disasters. The eligibility criteria for the Australian Government Disaster Recovery Payment should be tightened and legislated to avoid inequitable 'policy on the run' criteria changes.

3.1 A framework for effective natural disaster management

All governments own and operate assets on behalf of the community, and also provide services such as education and healthcare. Managing natural disaster risks to these assets and services is a core function of government. Governments also have a role in supporting the management of shared risks, such as the effects of natural disasters on community cohesion (chapter 1).

Natural disaster management is mostly the responsibility of state, territory and local governments. State and territory governments (hereon ‘states’) also control a range of key mitigation levers such as land use planning regulation and infrastructure investment. Consequently, state governments, in partnership with local governments, are best placed to understand the natural disaster risks faced by their jurisdictions and make assessments regarding how to manage these risks.

This allocation of responsibilities is consistent with the governance and risk management principles outlined in chapter 1. Those principles suggest that state and local governments should fund and finance the majority of natural disaster risk management, including mitigation and recovery.

However, with vertical fiscal imbalance (VFI) comes a role for the Australian Government to bear some natural disaster risk — both in terms of sharing the costs of natural disaster management with lower levels of government, as is done in health and education, and through providing a ‘safety net’ that reflects the Australian Government’s greater ability to bear fiscal shocks. In addition, natural disasters do not always adhere to jurisdictional boundaries, suggesting a coordination role for the Australian Government.

Current intergovernmental funding arrangements for natural disasters are not efficient, equitable or sustainable (chapter 2). The incentives for governments to manage risks to their assets, and to support management of shared risks more broadly, are undermined by the structure of the Natural Disaster Relief and Recovery Arrangements (NDRRA) and the budget treatment of this funding. This has led to a bias towards governments retaining risks rather than investing in mitigation or funding the transfer of risks through insurance. Further, the reimbursement funding model of the NDRRA is burdensome and wasteful. As a result, Australian governments and the community are shouldering greater costs from natural disasters.

This chapter presents a policy reform package for natural disaster funding arrangements comprising recovery funding (section 3.2), mitigation funding (section 3.3) and budget treatment of recovery costs and accountability requirements for states to ‘earn autonomy’ (section 3.4). The reform package focuses on:

- reducing Australian Government post-disaster support to states to provide sharper incentives to invest in mitigation and insurance

-
- increasing Australian Government support for mitigation and betterment
 - more transparent and neutral budget treatment of natural disaster risks
 - accountability frameworks that reduce prescriptiveness and give states more earned autonomy on how to best undertake recovery and mitigation.

An assessment of the impacts of this reform package is presented in section 3.5.

3.2 Relief and recovery

Policy frameworks for recovery need to have strong, transparent and credible commitment mechanisms so that governments avoid ad hoc policy responses, myopic policy settings and disincentives for private risk management. They need to provide neutral incentives across relief, recovery and mitigation so that government actions increase community wellbeing over time.

There is a range of ways that the Australian Government could provide funding for natural disaster recovery to lower levels of government. Box 3.1 describes the three avenues through which the Australian Government currently provides financial support to the states.

The choice of funding mechanism affects the incentives for states to undertake certain expenditures and depends on the objectives behind the provision of funds. For example, matched grants encourage greater scrutiny and local ownership of grant-financed expenditures, but they may not be appropriate for jurisdictions with limited fiscal capacity (Shah 2006). Fewer restrictions on how funds can be spent can allow better trade-offs to be made, for example across mitigation, relief and recovery expenditure. Complete autonomy over the use of funds, for example through general revenue assistance, would provide neutral incentives for natural disaster management relative to other areas of government expenditure.

Funding through the NDRRA is provided by tied matched grants on an open-ended basis (that is, the liability to the Australian Government is not capped; it will match all eligible expenditure according to the specified proportional contributions). There are alternatives to this approach as depicted in box 3.1. The Commission proposed three possible reform options in its draft report (figure 3.1).

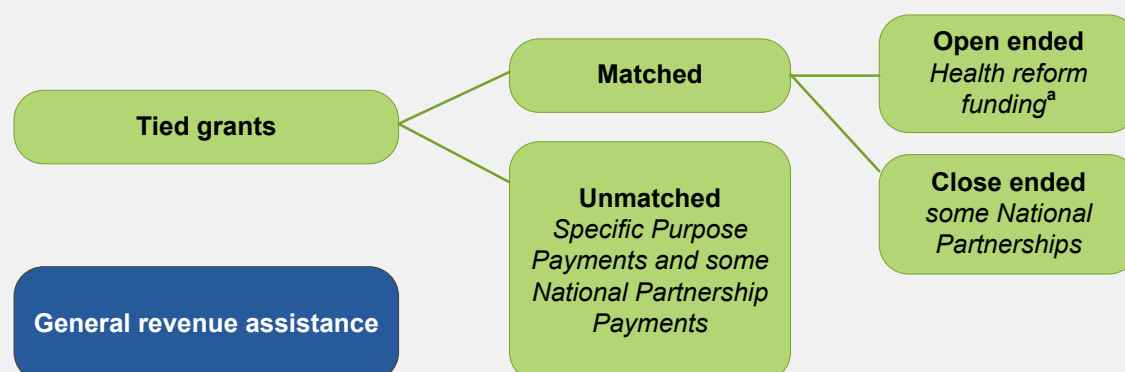
Box 3.1 Australian Government financial support to state and territory governments

There are two broad types of funding mechanisms available to federal governments — tied grants and general revenue assistance (figure below). Tied grants can be further categorised depending on the type of conditions applied to the grants, for example, whether they require the recipient jurisdiction to ‘match’ the federal governments funds by contributing their own funds.

In Australia, the overarching framework for Commonwealth–state financial relations is set out in the *Intergovernmental Agreement on Federal Financial Relations*. The Australian Government currently provides financial support for the states’ service delivery efforts through three avenues:

- National Specific Purpose Payments — unmatched grants based on population shares to be spent in key service delivery sectors
- National Partnership Payments — matched and unmatched grants for the delivery of services in a particular sector, such as health or education
- General revenue assistance, which includes GST payments, to be used by the states for any purpose.

Funding mechanisms under a federal framework



^a In the 2014-15 budget, the Australian Government announced that it will cease activity-based health reform funding by 1 July 2017.

Based on the principles of effective natural disaster risk management (chapter 1, supplementary paper 3) and evidence gathered through the inquiry process, the Commission is recommending a package of reforms to the current funding arrangements (this package closely reflects option 2 presented in the draft report). The reform package comprises policy across recovery and mitigation funding, budget treatment of recovery costs and accountability requirements for states to earn autonomy (figure 3.2).

Figure 3.1 The three reform options in the draft report

<i>Option 1: Reformed NDRRA</i>	<i>Option 2: Option 1 plus 'top-up' insurance</i>	<i>Option 3: Block grant model</i>
<ul style="list-style-type: none"> • Flat cost-sharing rate of 50 per cent for expenditure above threshold • Increase small disaster criterion to \$2 million • Double annual expenditure threshold for reimbursement to 0.45 per cent of state revenue • Streamline what is considered eligible expenditure • Funding for community recovery provided under a reimbursement model • Funding for reconstruction of essential public assets based on assessed damage and benchmark prices 	<ul style="list-style-type: none"> • States have access to base level NDRRA support (under option 1), but can elect to purchase insurance for additional eligible expenditures (for example through lowering the small disaster criterion, lowering the threshold, or increasing the cost-share percentage) • The Australian Government charges an 'actuarially fair' risk premium for this additional coverage • The Australian Government could engage the services of reinsurers to price this insurance 	<ul style="list-style-type: none"> • Funding determined on an event basis, rather than an annual expenditure threshold • Event trigger: 0.2 per cent of state revenue • Australian Government contribution of 50 per cent of eligible costs above trigger • Australian Government contribution paid upfront based on assessment of damage and benchmark prices of relief and recovery

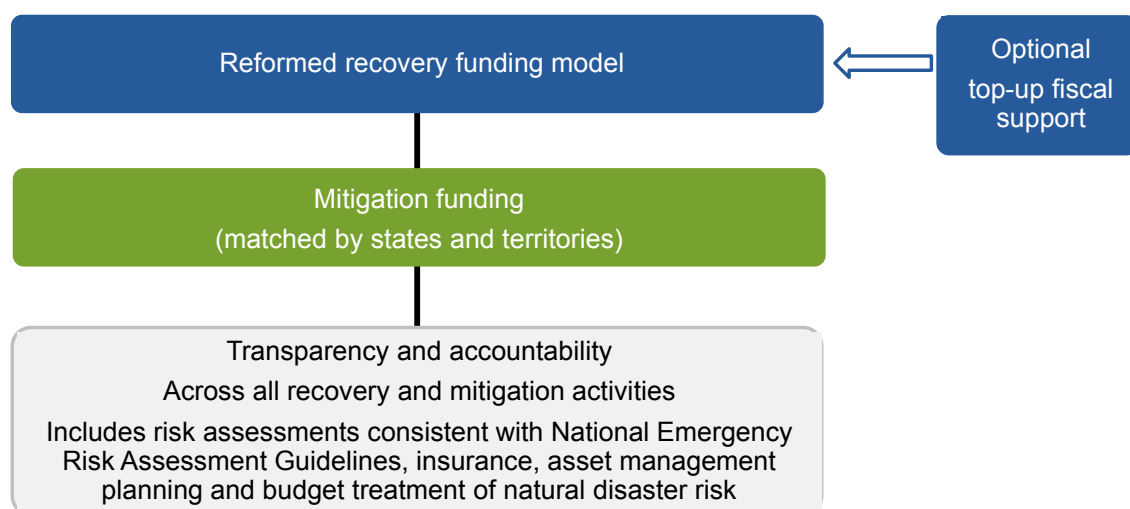
The funding model is intended to lower the cost of managing natural disaster risk by:

- strengthening the incentives for mitigation and insurance
- giving state and local governments greater autonomy in how funds are spent
- reducing the inefficiencies that arise from the prescriptiveness (both in terms of reducing compliance costs and addressing rules that lead to wasteful spending)
- reducing the fiscal risks transferred to the Australian Government, to better align with fiscal capacity and the original safety-net objective of the funding arrangements.

The funding reforms require the states to take greater ownership of natural disaster risk by reducing the Australian Government financial contribution to natural disaster recovery. This approach is not primarily proposed to reduce the Australian Government's fiscal liabilities; rather, it is intended to ameliorate the perverse incentives that have been identified in the NDRRA (chapter 2).

In order to effectively manage natural disaster risk, state governments need autonomy to set a risk appetite and make decisions that best reflect the preferences and characteristics of their communities. There is an important role for local governments in this respect to actively engage with their communities and provide community-level expertise.

Figure 3.2 **The Commission’s recommended funding package**



The Commission considers that a reimbursement approach is incompatible with the objective of providing states with greater autonomy on how to spend recovery funds (chapter 2). The reimbursement model tends to drive the behaviour of local and state governments. This can potentially lead to excessive expenditure on activities that are eligible for reimbursement, and inadequate expenditure on other activities that have greater benefits to the community but are not eligible for reimbursement. Consequently, the Commission’s recommended funding model should provide funding based on assessed damages and benchmark prices, for essential public assets initially, and eventually for the whole suite of recovery funding. The model should also provide states and local governments greater scope to invest in betterment thereby removing the bias towards rebuilding all damaged assets to their pre-disaster form.

Accountability requirements are incorporated in the funding model to strengthen how governments at all levels manage natural disaster risks, and are a prerequisite for allowing greater autonomy in recovery spending. The intention is to provide a system of earned autonomy whereby accountability and performance is improved through robust institutional and governance arrangements and performance reporting, not through increasing control.

Reflective of the current arrangements and the inquiry’s terms of reference, the Commission’s reforms only apply to natural disaster cost-sharing arrangements between the Australian and state governments. Each state should continue to have full autonomy on how it provides support to its local governments.

The key elements of the Commission’s recommendations are illustrated in table 3.1.

Table 3.1 The Commission's natural disaster funding model

Marginal cost share	50 per cent of above-threshold cost
Thresholds	Small disaster criterion = \$2 million, indexed over time Expenditure threshold = 0.45% of total state revenue
Provision of funding	Essential public assets — payment based on assessed damages and benchmark prices Community recovery — reimbursement model, transitioning to an untied grant based on assessed recovery costs
Funding coverage	Essential public assets and community recovery (including counter disaster operations, emergency relief centres, targeted hardship assistance to individuals and recovery assistance to community groups)
'Top-up' fiscal support	Actuarially fair premium charged if states elect lower small disaster criterion or threshold, or higher cost-sharing rate
Governance	State governments have full autonomy to spend funds as they see fit (funding is untied) and on how to provide support to local governments
Accountability	Performance and process-focused reporting based on good governance and effective risk management

RECOMMENDATION 3.1

The Australian Government should fund natural disaster recovery by:

- cost sharing with state and territory governments for community recovery and reconstruction of essential public assets at a rate of 50 per cent above an annual expenditure threshold
- providing funding based on assessed damages and benchmark prices
- providing an option for state and territory governments to purchase 'top-up' fiscal support at an actuarially fair price.

Australian Government involvement should be triggered where an annual (financial year) cumulative expenditure threshold of 0.45 per cent of total state government revenue is met on an accrued basis. A small disaster criterion of \$2 million (indexed over time) should be applied to events at the state or territory level.

The Australian Government should also establish a transparent mechanism for exceptional circumstances fiscal support in the event of extraordinary and catastrophic natural disasters that clearly overwhelm a state or territory's medium-term fiscal capacity.

Funding shares and thresholds for assistance

The current extent of the Australian Government's contribution to funding natural disaster recovery is difficult to justify. The NDRRA cover up to 75 per cent of the marginal costs of a broad range of recovery works, with an uncapped Australian Government contribution. This cost-sharing rate is much higher than the average across other service

delivery areas (reflective of relative fiscal capacity) that are principally the responsibility of states (chapter 2).

Selecting the ‘right’ amount that the Australian Government should contribute (its risk appetite) should be informed by the trade-off between relative fiscal capacity of the states and the impact of Australian Government funding on the states’ incentives to effectively manage natural disaster risks. There was considerable disagreement among inquiry participants regarding the relative fiscal capacity of states and the role of the Australian Government to contribute to natural disaster funding. The majority of participants argued for Australian Government funding for disaster recovery — and hence its implied natural disaster risk appetite — to stay at around the same level (chapter 2).

A case has not been made for the Australian Government to have a higher exposure to natural disaster fiscal risks than to other fiscal risks borne by state governments (chapter 2). A marginal cost-share of 50 per cent would be compatible with the relative degree of fiscal capacity in the Australian Federation and still provide significant fiscal support to state governments.

There would be significant benefits to reducing the marginal cost-sharing rate to 50 per cent. It would sharpen the incentive for states and local governments to invest in mitigation and insurance, as they would share a greater proportion of the costs of recovery. It could also prevent some wasteful reconstruction and be an essential precursor to earned autonomy for states.

The Government of South Australia and WA State Emergency Management Committee Secretariat argued that a higher cost-sharing rate is needed for catastrophic natural disasters.

The major concern is that the 50% marginal rate of contribution for the Commonwealth is open ended. As mentioned above, there are credible natural disaster scenarios in South Australia which cannot be feasibly mitigated and have the potential to affect the financial stability of the state. On this basis the South Australian Government would support the maintenance of a 75% marginal threshold for Commonwealth contribution for ‘major disasters’, even if it were at a higher level than the current threshold of \$59 million. (sub. DR209, pp. 7–8)

Though the report’s suggestion that the proportion of Commonwealth funds committed to recovery ought to be limited to 50%, this State can envisage circumstances where an event is of such widespread and catastrophic proportions that State finances would not be expected to cope with its portion. As a result, these impacts and recovery operations would be financed through a case-by-case negotiation with the Commonwealth and other jurisdictions. (sub. DR216, p. 4)

There is a case for the Australian Government to bear a larger share of costs for truly catastrophic natural disasters — for example, if a major earthquake were to impact a large city. Such catastrophic events can be dealt with through a mechanism (discussed later) for greater Australian Government assistance in the case of exceptional circumstances that clearly overwhelm a state’s medium-term fiscal capacity.

Thresholds for Australian Government cost sharing

Like the NDRRA, the Commission's recommended funding model requires thresholds to indicate when the Australian Government will share the costs of natural disaster recovery with the states. Currently, under the NDRRA this operates through annual expenditure thresholds (total annual eligible expenditure must exceed a threshold for cost sharing to occur) and a small disaster criterion (a threshold to determine which events can be counted towards eligible expenditure).

While the general approach of utilising annual expenditure thresholds and a small disaster criterion is appropriate, the current small disaster criterion is too low and captures routine weather events, and annual expenditure thresholds in the NDRRA extend beyond a safety net (chapter 2). A higher small disaster criterion and annual expenditure threshold would mean that Australian Government involvement is triggered only for natural disasters and when states are faced with large-scale expenditure from those natural disasters.

In its draft report, the Commission considered the trade-offs of an event-based model versus a cumulative annual threshold (box 3.2). In principle, an event-based model is preferred given most disaster damage is sustained from a small number of large disasters (supplementary paper 1). It would provide greater simplicity and certainty regarding eligibility immediately after an event (rather than needing to wait until the end of the year). However, an event-based model would be a significant departure from the current funding arrangements, and is not feasible in the short term (but may be feasible in the medium term, as discussed in chapter 5).

The Commission therefore recommends that the Australian Government comprehensively refocus the current arrangements to provide support to states when an annual expenditure threshold has been exceeded. Australian Government assistance should be triggered where cumulative accrued expenditure exceeds an annual (financial year) threshold of 0.45 per cent of total state government revenue. This is double the first threshold and slightly above the second threshold under the NDRRA. An annual threshold avoids the risk of an event-based model not adequately capturing cumulative fiscal risk. Table 3.2 provides an indication of how this threshold would translate for each state relative to the existing arrangements.

The Commission's analysis indicates that state governments do have the capacity to manage disaster recovery costs beyond the current thresholds without compromising fiscal sustainability (chapter 2). States manage considerable volatility to their budgets — routinely above the current thresholds under the NDRRA — due to fluctuations in revenue from mining royalties, payroll tax and stamp duties. Despite this variability, many states have achieved their fiscal objectives, including maintaining a strong credit rating and delivering budget surpluses.

Applying the expenditure threshold on an accrual basis would mean that all eligible costs of an event would contribute to eligibility in the year of the event. While delays in assessing damages may result in delays in determining eligibility for a year, by its nature

jurisdictions must contend with some uncertainty regarding eligibility over time when applying a cumulative threshold. Applying the threshold on an accrual basis would be administratively simpler and would make it easier to track the costs of individual events.

Box 3.2 **The choice of a threshold for Australian Government assistance**

The Commission's funding model requires an explicit trigger for Australian Government assistance. The trigger should target fiscal capacity to manage a natural disaster event. The current approach of utilising a threshold based on eligible expenditure relative to state government total revenue is appropriate in this context.

The threshold could be based on a single event, or alternatively it could be cumulative over a period of time, such as a financial year. An event-based threshold would provide greater certainty in relation to eligibility after an event, whereas a cumulative expenditure threshold could mean that eligibility may not be clear until the end of the financial year.

Cumulative thresholds require a set of rules to determine what expenditure can contribute to the total and over what time period. For example, a 'small disaster criterion' can be used to ensure that minor events are not incorporated in the total. A cumulative threshold could include all expenditure in that year on eligible events (where the events occurred within a set time period, as is currently the case for the NDRRA) or it could be on an accrual basis.

In the review of insurance arrangements of state governments, the Australian National Audit Office found that the 'expenditure year payment basis' currently utilised in the NDRRA is inappropriate for essential public assets (Department of Finance and Deregulation 2012a, p. 12). The Actuaries Institute (sub. 97, p. 11) also advocated for assessment by 'event year not finance year'. In addition, the rule that expenditure can relate to events up to 24 months prior makes it difficult to transparently determine costs per event. The Australian National Audit Office advocated determining eligibility on a cumulative financial year accrual basis (Department of Finance and Deregulation 2012a).

Table 3.2 Comparison of state expenditure thresholds
\$m, 2014-15

	<i>Current NDRRA cumulative threshold</i>		<i>Reformed cumulative threshold</i>
	First threshold (0.225%)	Second threshold (0.39%)	0.45%
NSW	143	250	286
Vic	110	192	219
Qld	94	164	188
SA	34	59	68
WA	57	100	115
Tas	11	19	21
NT	11	19	22
ACT	9	16	19

The Commission recommends a small disaster criterion of \$2 million. Consistent with findings from previous reviews (Department of Finance and Deregulation 2012a), the small disaster criterion should be indexed. This criterion should apply to events at the state level, and does not mean that damage costs must exceed this level in each local government area.

A small disaster criterion of \$2 million is more likely to capture natural disasters as opposed to more routine weather events. While it represents a significant increase on the current level, it would reduce the number of funding activations relative to current arrangements, and consequently reduce the burden of administration for all levels of government, without significantly affecting the amount of assistance provided by the Australian Government to the states.

The Commission considers that it would be reasonable for states to manage the level of exposure proposed under the funding reforms, but not necessarily local governments. Given the autonomy provided under the funding reforms, it is the role of state governments to institute appropriate arrangements at the state level that recognise local government fiscal capacity, including relative capacity across councils.

Essential public assets

Reconstruction of essential public assets should be funded based on assessed damages and benchmark prices. The Australian Government should contribute 50 per cent of the estimated cost of reconstruction (above the annual threshold). This contribution should be assessed and provided at the end of the financial year in conjunction with funding for community recovery.

The rationale for moving towards cost estimates based on assessed damages and benchmark prices is that:

- reconstruction can take a long time, meaning that the Australian Government provides reimbursement many years after the event. This can create fiscal uncertainty for the Australian Government and cash-flow problems for state and local governments
- the reimbursement model is more susceptible to cost overruns. Under the assessed damages and benchmark prices approach, states would bear the consequences of cost overruns but also reap the benefits where projects come in below budget. It would also require greater planning and transparency
- states should have complete autonomy regarding how the funds are spent. This would enable jurisdictions to make case-by-case decisions regarding betterment and replacement of essential public assets in accordance with cost-benefit analysis, within a known funding envelope from the Australian Government. This would also allow states to use day labour or contracted labour as they see fit. Further, it would negate the need for expenditure-year rules and enable state and local governments to undertake

reconstruction at the most suitable time so that work does not need to meet administrative deadlines.

There was strong support from participants to provide state and local governments with greater autonomy to manage recovery expenditure for these assets (box 3.3). In particular, participants noted that an assessed damages and benchmark prices approach would enable governments to prioritise expenditure on a ‘best for network approach’ (Cassowary Coast Regional Council (Qld), sub. DR140; IPWEA, sub. DR181).

Assessed damages and benchmark prices

Departing from the reimbursement model for essential public assets requires reliable methods to estimate the expected costs of reconstruction soon after a disaster has occurred. This should involve an on-the-ground assessment of damages combined with an estimate of reconstruction costs. This cost estimate should be made using benchmark prices that reflect the cost of reconstruction of an asset to its previous service standard in accordance with current engineering standards.

For example, this process would entail:

- assessing the extent of damage to an asset (for example, 200 metres of local access road damaged to the point where it needs to be replaced)
- identifying the applicable *benchmark price* (for example, \$2200 per metre for that type of road in its specific location)
- calculating the *benchmarked cost* for the asset by multiplying these together (in this case, \$440 000)
- calculating the Australian Government contribution by multiplying the benchmarked cost by 0.5 (\$220 000).

Box 3.3 Support for greater autonomy in the reconstruction of essential public assets

Selected local government responses

More autonomous ability to access funds and then prioritise expenditure on a best for network approach while coinvesting Council funds to achieve even better engineering outcomes and using day labour workforces in delivery are seen as sensible outcomes. (Cassowary Coast Regional Council (Qld), sub. DR140, p. 1)

The MAV supports councils being given increased autonomy to manage relief and recovery expenditure in a way that reflects the preferences and characteristics of their communities. This would alleviate a problem with the current system, which is overly prescriptive and does not allow councils to spend funding efficiently. (MAV, sub. DR162, p. 8)

Councils have the local knowledge, are the authority for the majority of roads, and are ultimately responsible to the local community and the management of risk. Changing arrangements to allow more control of funding by [the] owner of the asset and the risk should be considered by the Commission. (Shoalhaven City Council (NSW), sub. DR167, p. 4)

... it's an opportunity certainly to put the management of the works squarely back in the hands of local government to go and deliver it to a network that they know best. (ORRTG, trans., Townsville, p. 41)

Selected state government responses

The recommendation to allow state[s] and territories increased autonomy to manage relief and recovery expenditure in a way that reflects the preferences and characteristics of their communities is supported by Queensland. (Queensland Government, sub. DR184, p. 6)

Victoria supports the Commission's recommendation to increase State government autonomy to manage relief and recovery expenditure ... This increase in autonomy will cut red tape and allow State and local governments to pursue betterment projects with decreased Commonwealth oversight. (Victorian Government, sub. DR215, p. 7)

The Tasmania[n] Government supports the recommendation to provide state and territory governments with increased autonomy to manage relief and recovery expenditure. This is consistent with best practice. Jurisdictions should have autonomy to manage relief and recovery expenditure in a way that reflects the preferences and characteristics of their communities. (Tasmanian Government, sub. DR223, p. 5)

Participant views

There were mixed views on the feasibility of an assessed damages and benchmark prices approach (box 3.4). In particular, the IPWEA (trans., Sydney, p. 47) stated that:

... the ability to do it is definitely there and in fact local governments and State governments do that each time they actually put an estimate together for non-disaster type work. So the necessary framework, which would need to be driven federally, would then be State-specific and regional-specific based on your climatic conditions, costs, obviously regional and remote have higher cost elements, but in terms of putting the framework together, it certainly is feasible.

Box 3.4 **Participant views on assessed damages and benchmark prices**

A key concern regarding adopting an assessed damages and benchmark prices approach was the difficulty in determining the extent of damage at the outset and potential variation in reconstruction costs:

because once you start construction or set out a tender and accept that tender, you can't stop it halfway through ... when you find further damage under the surface, who's going to fund this, who's going to pay for this? ... It becomes a very high risk for that local government area. (FNQROC, trans., Townsville, p. 83)

... some roads are underwater for three months. So you would need to have an avenue where you could come back and say, 'Well, this wasn't identified in the first place'. (Moree Plains Shire Council (NSW), trans., Brisbane, p. 96)

... benchmark pricing doesn't recognise unique challenges faced during recovery works that can lead to sort of unavoidable and unforeseen increases in costs, including, for instance, scarcity of resources, including contractors, the material source from quarries ... even cases of initial assessment, particularly for flood damage, until you actually start the work you actually sometimes don't know what the damage is. (Victorian Government, trans., Melbourne, pp. 69–70)

Participants noted that benchmark prices are already used in Queensland. Examples of where initial estimates understated actual costs and others where initial estimates overstated the actual cost were provided in the public hearings:

I think Cook Shire had an example where they thought a slip would cost in the order of \$2 million but it ended up with significant revetment works and ended up costing \$10.5. In fact, the opposite happened in the Cassowary Coast where there was one slip that we thought might cost 6 or 8 million came in at half, for exactly the same reason; very often you don't know what it is you've got to fix until you're in the job. So that's why you've got to be very careful with the application of benchmarking. (FNQROC, trans., Townsville, p. 80)

Several participants considered that this was a feasible approach, but that it would require a period of transition:

I think it's a reasonable thing to do, in the road space, for example, because there are indicative costs of road construction across formed and sealed roads, gravel roads and so on, in the various locations across the state, because you get different cost structures, depending on what the climatic conditions are. But there are reasonable indicators for those things and I wouldn't think it would take too long to give you some benchmarks. (MAV, trans., Melbourne, p. 54)

I just want to say that we would support the principle of flexibility, we would support the principle of upfront payments and unit rates. In terms of how they are worked out, I think obviously the QRA would have to have a fairly major role. In principle, I think moving towards that model is a great idea rather than — and moving away from the reimbursement model, as to how it's all worked out, I think there's a fair amount of work to be done on that yet. (Tablelands Regional Council (Qld), trans., Townsville, pp. 65–66)

In particular, the Local Government Association of South Australia (trans., Melbourne, p. 91) provided detail of a trial process in South Australia for advising the state and Australian Government of damage costs immediately after a natural disaster event:

... the council staff can go to the disaster sites, it can be mapped, GIS mapped, so as they are there, we photograph, video, verbal report or a typed report, it gets uploaded to a web page which then gives a geographic location of all the sites of the incidents, and it grades them from moderate, severe or whatever, like a red, green and amber. And the process also then once it's input by an engineer, prints out the estimated costs. We used it for KI [Kangaroo Island], the process was the pilot. The process came within 10 per cent greater than the actual final tender ...

However, others argued that there are considerable practical challenges to the implementation of assessed damages and benchmark prices. These concerns related to the potential for cost overruns, the difficulties in obtaining accurate estimates of damage immediately after an event, particularly in some remote locations where flooded areas may not be accessible, and the ability of benchmark prices to capture variation in regional costs (FNQROC, sub. DR148; Mackay Regional Council (Qld), sub. DR133; Victorian Government, sub. DR215).

Existing approaches

The Commission suggested in its draft report that the Disaster Loss Assessment Guidelines and National Impact Assessment Model (NIAM) are existing tools that could be adapted to assess damages after an event. The NIAM is currently a pilot and is intended to provide an immediate post-event impact assessment framework for determining the size and scope of recovery programs (Government of South Australia, sub. 67).

There were mixed views on the suitability of NIAM within an assessed damages benchmark prices model. The Victorian Government (sub. DR215, p. 7) stated that NIAM would not be suitable to inform the estimation of benchmark costs and that it was ‘untested’ and had not been developed with the intention of establishing benchmark costs. In particular, it argued that:

The impact of an emergency across the recovery environments (social, built, economic, natural and agricultural) is not translated into economic terms, and cannot effectively inform funding for relief and recovery.

However, the Queensland Government (sub. DR184) supported the use of NIAM, but noted that significant work would be required to ensure the adequacy of the model to deal with rapid damage assessment and benchmark prices.

Benchmark prices are used by most states in other areas of infrastructure delivery and the development of benchmark prices could build on existing pricing models and data already held by state infrastructure and roads departments. For example, IPART has developed benchmark prices for essential infrastructure items in New South Wales, including roads (box 3.5). While benchmarking information in Australia is disappointingly limited, some valuable sectoral work has been done in the areas of road and rail in particular (PC 2014).

In particular, approaches and processes in Queensland are already well developed and there is scope for these to be both adapted and applied in other jurisdictions (box 3.6). For example, the IPWEA suggested that the Queensland Department of Transport and Main Roads’ replacement and renewal estimation tool for road valuation could be rolled out at a national level. It added that:

... the damage inspection and cost estimation process can be significantly enhanced through the use of technology platforms which integrate photographic, attribute and geospatial data on damaged assets and linkages to cost estimate data. A number of such systems have been used

very successfully for damage and asset attribute data collection post the Queensland floods ... (IPWEA, sub. DR181).

Box 3.5 IPART's approach to developing benchmark costs

The NSW Government recently asked the Independent Pricing and Regulatory Tribunal (IPART) to develop benchmark or reference costs for essential infrastructure items in four categories: local roads and transport facilities, stormwater management works, local open space and community facilities.

In calculating these 'efficient' costs, IPART defined the appropriate performance outcome for each infrastructure item, identified the minimum scope of the infrastructure needed to meet that performance outcome, and determined the typical scope of work.

A first-principles ('bottom up') method was used to estimate the efficient cost of road, stormwater and some open space infrastructure. This involves adding up the component costs, such as plant, labour and materials. A reference-pricing ('top down') method was used for community facilities and the remaining open space infrastructure. This involves taking the known total cost of a similar project and adjusting for different circumstances such as site conditions or cost escalations.

Benchmark costs were calculated for infrastructure items where sufficient data were available. These costs comprise:

- the base cost, which reflects the typical efficient cost of providing the item within the defined scope (including construction costs, contractor indirect costs and council on-costs)
- adjustment factors, which reflect variations in the cost of infrastructure because of different geographical settings, regional prices, access to materials and congestion
- a contingency allowance, to account for uncertainty in the planning, design and delivery of infrastructure items.

Where a benchmark cost could not be calculated, IPART estimated a reference cost. This provides an indicative range of costs for the infrastructure item (for example, a range from a complex project to a simple solution). A similar methodology to the benchmark costs was used, but with reference items presented as a total project cost (including the base cost and appropriate contingency allowance) rather than a unit rate.

The 'efficient' cost estimates were intended to be used as a guide for local governments in levying development contributions for local infrastructure, with the onus on councils to justify deviation from the benchmark cost. IPART recommended that councils establish formal review mechanisms for addressing disputes about applying benchmark costs and methodologies in local infrastructure plans. If unresolved, the Minister could refer matters to IPART.

Sources: IPART (2014; sub. DR159).

The Commission's view

On balance an assessed damages and benchmark prices approach is feasible and could be developed by building on a range of existing data and processes. The Queensland Reconstruction Authority is already applying an assessed damage and benchmark price approach except with final payments based on actual costs (box 3.6). Circumstances where

a damage assessment cannot be made for an extended period after a disaster are not the norm. Further, any arrangement which applies an annual threshold to determine eligibility will involve state governments managing risk around timing, eligibility of projects and receipt of funding. Finally, while such an approach does introduce a risk of state and local governments bearing cost overruns, it also allows them to reap the benefits of projects that come in under budget while providing states with control on how, when and where to conduct reconstruction across their asset networks.

Box 3.6 Current approaches to assessing damages and estimating benchmark prices in Queensland

The Queensland Government (sub. DR184, p. 15) stated that it:

... has a well-developed damage assessment process and in 2014 has been able to provide relatively accurate damage assessment figures within 4-6 weeks of a natural disaster impacting, though a combination of liaison with local governments, on-ground assessments and tools such as flood mapping. This can be extended to a period of up to three months in northern and western areas susceptible to lengthy and severe wet seasons.

For example, the Queensland Government has developed the Damage Assessment and Reconstruction Monitoring System to collect information about the level of damage to individual homes and buildings. This system uses global positioning system-linked data collection devices to collect and transmit information to allow agencies to access real-time mapping data and build an accurate picture of the scale and location of damage quickly after an event (AGRI 2013; QRA 2012).

Queensland is already undertaking some benchmarking. For example, the Queensland Department of Transport and Main Roads utilises a Replacement and Renewal Estimation Tool for road valuation, including local government roads. The methodology accommodates varying climatic, terrain and soil type data (IPWEA, sub. DR181). In its 2010-11 Value for Money Strategy, the Queensland Reconstruction Authority stated that the cost of restoration of the road network under the NDRRA will be continually compared against the Queensland Department of Transport and Main Roads current and historical benchmarks for capital and maintenance programs (QRA 2011).

The IPWEA (sub. DR181, p. 9) notes that the Queensland Reconstruction Authority has an 'extensive database of actual cost information for flood restoration across Queensland for specific work activity types'. They suggest that this would be a valuable tool for the development of more robust cost estimation tools for flood damage.

The Queensland Government (sub. DR184, p. 16) also noted that by linking the damage information from the Damage Assessment and Reconstruction Monitoring System to benchmark data for activity rates and material costs for reconstruction 'Queensland is well positioned to develop cost estimates for identified eligible disasters damage'.

How it would work

More work needs to be done to develop a robust and reliable model for assessing damages to essential public assets. The Australian Government should develop this model in consultation with the states in order to facilitate consistency in assessments (chapter 5). In

doing so, it could draw on existing techniques, such as the NIAM and methods developed by the Queensland Reconstruction Authority.

A post-disaster assessment would be required by the relevant local government or state body in accordance with an agreed methodology for assessing damage to essential public infrastructure from different types of disasters (developed at the Australian Government level). Where significant reconstruction is required, for example for projects above \$10 million, there should be a requirement for an independent expert assessment of damages. To this end, the Australian Government could certify independent parties (such as engineering professionals) to undertake these assessments. General Commonwealth and state audit processes should provide ongoing oversight that the relevant methodologies and frameworks are being adhered to.

States would be responsible for applying benchmark prices to estimate the relevant Australian Government contribution. Given the existing pricing models and data held at the state level, benchmark prices would be developed and updated by the states and approved by the Australian Government. States are well placed to take account of the particular characteristics of their jurisdictions and work with local governments. For example, inquiry participants emphasised that the costs of reconstructing essential public assets can vary significantly across the country, depending on the local terrain, climate and distance from regional centres (box 3.4).

For transparency, the Australian Government should publish the amounts it pays to each state for each eligible natural disaster. This would essentially be a sum of total costs for essential public assets relating to each disaster event. Payments relating to community recovery (discussed below) could be published alongside these figures. States should also publish the benchmarked cost estimates for each eligible natural disaster event.

An important input to the application of benchmark prices would be local government asset management plans and asset registers. For example, asset registers would need to be regularly updated and provide an estimate of the current replacement value of assets. The Commission's accountability recommendations address the need to strengthen asset management planning and asset register practices at the local government level (section 3.4).

The shift to an assessed damages and benchmark prices approach should be accompanied by an appropriate transition period (chapter 5).

Betterment

The lack of a specific funding allocation for betterment under the NDRRA, and the lower Australian Government share of funding compared to that available for restoration to the pre-disaster standard, are significant impediments to governments improving the resilience of essential public assets after they have been damaged in natural disaster events (chapter 2 and supplementary paper 4).

There was considerable support from participants for greater funding for ‘betterment’. For example, the Victorian Government (sub. DR215, p. 25) stated that:

Betterment, or rebuilding damaged or destroyed assets to a more disaster-resilient standard, is not incentivised under the current NDRRA. Victoria believes that increasing the availability and attractiveness of betterment funding will result in more cost-effective recovery activities over multiple disaster seasons.

A number of participants posited that for some types of assets and local government areas improving resilience is best done after a disaster as part of rebuilding rather than through specific mitigation projects (box 3.7).

Box 3.7 Local government responses on the need for betterment provisions in recovery funding arrangements

For certain natured projects, like up and / or downstream road margin protection with a bitumen seal, distinct economics of scale can be generated during the reconstruction effort (Central Highlands Regional Council (Qld), sub. DR174, p. 6)

Cook Shire does believe that mitigation works should be done and that the best way for this to occur is during restoration works following a Natural Disaster. (Cook Shire Council (Qld), sub. DR128, p. 2)

Shoalhaven City Council has a historic legacy of inadequately designed and constructed roads in disaster prone areas. Rebuilding a road (or other infrastructure) back to its pre-disaster state only could result in repeated failing and further rebuilding costs when subject to the same disaster conditions. ‘Betterment’, where it can be demonstrated to be cost-effective over the longer-term, should remain available from the Commonwealth and more widely encouraged and promoted by the administering agencies. (Shoalhaven City Council (NSW), sub. DR167, p. 2)

Under the Commission’s recommended funding model the Australian Government should cost share 50 per cent of the costs of betterment where this has been incorporated and costed in a jurisdiction’s asset management plan prior to being damaged by a natural disaster. By providing state governments with a known funding envelope for betterment in addition to autonomy on how this money is spent, trade-offs can be made and expenditure prioritised on a ‘best for network approach’. A similar approach was proposed by the Victorian Government (sub. DR215). It recommended that funding be provided for betterment where the asset management plan demonstrates a need to undertake betterment in order to prevent foreseeable future damage.

For betterment to be successfully incorporated into natural disaster funding arrangements in this way, sound asset management planning practices at the local government level will be required. For example, asset management plans should identify critical assets within a network and review service levels from a disaster resilience perspective as well as considering asset rationalisation in the event of a natural disaster (including abandoning, upgrading, downgrading and optimising assets). The Commission is not proposing strict rules for betterment and acknowledges that some local governments face capacity constraints. The risk of ‘gold plating’ assets would be readily managed through the 50 per cent cost share with the state government and accountability requirements that have a strong focus on robust asset management planning (section 3.4).

RECOMMENDATION 3.2

Where asset management plans at the local, state or territory level pre-identify and cost betterment of assets (improving asset resilience to natural disasters), the Australian Government should share 50 per cent of the betterment component of reconstruction costs following damage from a (eligible) natural disaster.

Community recovery

There is considerable scope to rationalise and clarify the current expenditure types that are eligible for cost sharing under the NDRRA (chapter 2). The current approach of categorising expenditure under four types, with numerous subcategories under each category and varying eligibility, is overly prescriptive and burdensome. This prescription leads to perverse incentives and limits flexibility (Victorian Government, sub. DR215).

Under the Commission's recommended funding model, funding for community recovery — such as counter disaster operations, personal hardship relief and community relief packages — should ultimately be provided as untied grants. This would mean that states would have the flexibility to undertake community recovery efforts as they see fit, without prescriptive requirements. It would also allow funding to be provided to communities in a fairer and more consistent way than under the current funding arrangements. This would bring the approach to providing funding for community recovery in line with that proposed for essential public assets (through the assessed damages and benchmark prices approach). There was considerable support from participants for recovery activities to be community-led and reflect the differing circumstances and preferences of affected communities (box 3.8).

Providing community recovery funding as untied grants would involve upfront estimates of the total funding required for community recovery, without specifying which measures states should or should not undertake. In practice, untied grants would be similar to the use of benchmark prices: a formula would be used to calculate a reasonable amount of funding associated with community recovery activities as (or soon after) a natural disaster occurs. The amount could be determined, for example, based on the number of people displaced or injured during a disaster, the geographic scale of the disaster, its location or its type. Such factors can be readily assessed as disasters unfold, and could reasonably reflect the likely need for personal hardship support, counter-disaster operations or other community support. The NIAM could potentially be used to inform this estimate.

Box 3.8 Participant views on community-led recovery

The Regional Australia Institute (sub. 61, p. 18) noted that ‘each disaster impacts a community in a different way, depending on the intensity of the disaster, and the pre-existing economic and social features of the community’. In recognition of this variation, the Attorney-General’s Department (sub. 90, p. 5) advocated for arrangements that ‘clearly position responsibility for tactical expenditure decisions at the local level, which is best-placed to navigate local issues and priorities’. McGowan and Tiernan (sub. 83, p. 16) argued that one-size-fits-all solutions are inappropriate and that ‘different strategies which attempt to address those specific local circumstances are essential’. They posited that community-led responses need to be supported by an integrated policy and funding framework, and expertise from government agencies, non-government organisations and industry.

Several participants acknowledged the importance of building the capacity and resilience of communities. The Red Cross (sub. 56, p. 10) argued that ‘successful recovery relies upon understanding the context, recognising the complexity, using community led approaches, ensuring coordination of all activities, employing effective communication, and acknowledging and building capacity’. The Foundation for Rural and Regional Renewal (FRRR, sub. 50, p. 5) highlighted the importance of initiatives that build community capacity and skills to respond to and recover from natural disasters. It argued that ‘these investments have enabled communities in disaster risk areas to take control of their preparedness for disaster and have assisted them to build a strong level of social capital able to support recovery’.

The Attorney-General’s Department (sub. DR226, pp. 8–9) provided support for this approach, noting:

There are benefits associated with a model involving an upfront assessment of the impact of a disaster and greater state autonomy to prioritise recovery assistance, including for community recovery and counter-disaster expenditure. This could encourage innovation in recovery practices, and remove existing difficulties administering and acquitting eligible expenses in accordance with the Public Governance, Performance and Accountability Act 2013.

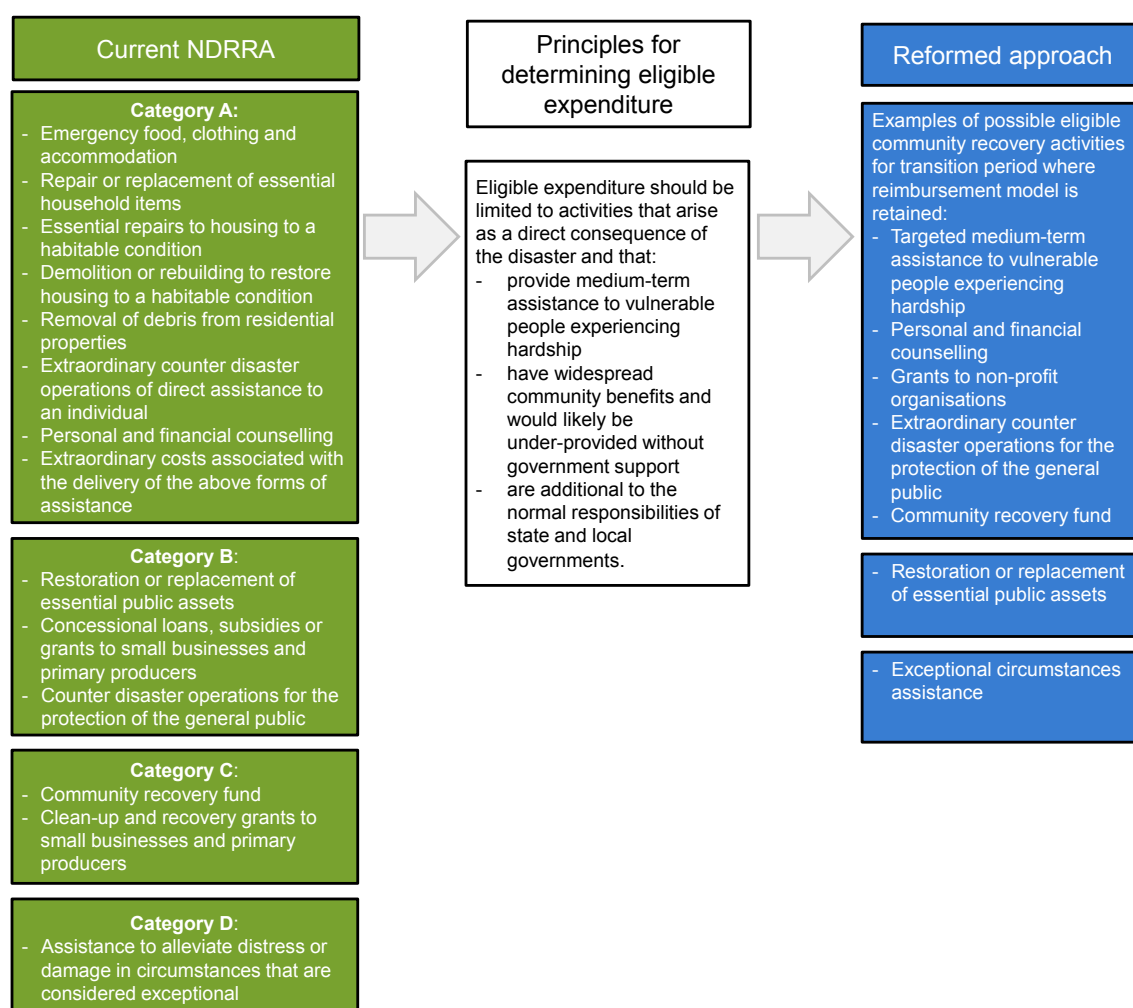
The provision of funding for community recovery in this way represents a significant departure from the current approach. In recognition of this, community recovery should continue to be provided under a reimbursement model until an approach to estimating recovery costs is developed by the Australian Government in consultation with the states (chapter 5). For this transition period, all eligible community recovery expenditure, in accordance with the Commission’s proposed principles, should be reimbursed at a flat rate of 50 per cent above the threshold.

The Commission has taken a principles-based approach to recommending what should constitute eligible expenditure for the transitional period while the reimbursement model is still utilised (rather than explicitly identifying which NDRAA clauses should be removed or retained). Such an approach was supported by the Queensland Government (sub. DR184, p. 25) which noted (in relation to counter disaster operations) that ‘attempting to list all eligible activities creates a rigid framework that could not take into account the varied circumstances and issues associated with individual disaster events’. Further, the Attorney-General’s Department (sub. DR226, p. 9) stated that ‘current data on

community recovery funds under the NDRRA demonstrate wide variability in the type of assistance measures provided, based on the specific needs of each individual community’.

The following sections provide some discussion of how principles for effective risk management could be applied in order to determine eligible community recovery activities (figure 3.3).

Figure 3.3 Eligible expenditures under the Commission’s model



Counter disaster operations

Under current arrangements, state governments can be reimbursed for activities that are not the responsibility of governments or that can be funded through insurance. For example, cleaning up debris, demolition and repairing private housing are primarily the responsibility of households (chapter 2). Reimbursement through the NDRRA for these costs has the potential to displace private risk management actions. Further, there is a lack

of transparency regarding the types of costs that are included under the different NDRRA categories. In particular, there is evidence that some emergency response activities that are the normal responsibility of state governments are receiving reimbursement under counter disaster operations.

Clear principles are needed to determine what constitutes eligible counter disaster operations expenditure, otherwise there is a risk of cost shifting. For the period over which a reimbursement model is utilised, Australian Government cost sharing for eligible expenditure for counter disaster operations should be strictly limited to activities that arise as a direct consequence of the disaster and that fulfil all three of the following criteria:

- are essential to protect the health and safety of the community and would not be adequately provided without government support
- are additional to the normal responsibilities of state and local governments
- the scale and severity of the impacts from a disaster, or cumulatively from multiple disasters, are beyond the state and/or local government's capabilities to adequately respond to.

Some activities that are the responsibility of private households and businesses could be eligible where it can be shown that there are broader public health and safety benefits to the community of governments undertaking these activities, for example clean-up of dangerous waste to prevent contamination of water sources (including toxic waste or dead animals). In the absence of broader community benefits, reimbursement from the Australian Government should not be provided; rather governments can pursue cost recovery from the beneficiaries.

The Australian Government has sought to clarify the definition of counter disaster operations through recently released guidelines (NDRRA Guideline 10) (Attorney-General's Department 2014c). The guidelines go some way to articulate principles for determining eligibility. A stricter application of what is additional to the normal responsibilities of state and local governments is required, in addition to an understanding of what constitutes 'beyond the capabilities' of state and local governments. State and local governments are required to maintain a certain level of capability in order to prepare for, and respond to, natural disasters. Where assistance is to be provided for extraordinary activities, the state or local government would need to demonstrate that it must call on resources beyond that already maintained. For example, this could include prolonged overtime for staff (some overtime would be expected during a natural disaster) or the costs of relocating human and capital resources across large geographic areas in order to assist with response activities.

Assistance to individuals experiencing hardship

When a significant disaster overwhelms a community, some degree of risk sharing with governments may be appropriate, in order to protect vulnerable populations and maintain social cohesion (G20 and OECD 2012). Disaster relief payments, coupled with charitable

contributions, nonprofit and volunteer efforts, and the existing social safety net, provide for the management of shared risks. Such activities, though, need to be mindful of moral hazard and ‘charity hazard’ — where households do not insure, or underinsure, against natural disasters because they anticipate government or private aid.

The Australian Government has a role in managing shared risk to the community in providing a welfare safety net, and providing immediate emergency relief payments after disasters. Yet, disaster relief payments have been distributed on an inconsistent and unfair basis in recent years (chapter 2). This is partly due to significant overlap between payments being provided by different levels of government, assistance provided by charities (often supported by government funding) and Ministerial discretion over eligibility criteria.

The Australian Government is best placed to provide immediate emergency relief to affected individuals, through the Australian Government Disaster Recovery Payment (AGDRP) (chapter 2). The Australian Government has institutional arrangements in place to efficiently deliver emergency assistance to people in need (through Centrelink), and is better placed to deliver such assistance than state or local governments, especially in a post-disaster context. Further, people in similar circumstances should be treated similarly, regardless of the jurisdiction in which they reside.

In addition, the Disaster Recovery Allowance (DRA) is a more targeted form of emergency relief provided by the Australian Government to those affected by natural disasters, including employees, primary producers and sole traders, who can demonstrate that they have experienced a loss of income as a direct result of a declared major disaster. It provides a link between immediate emergency assistance and mainstream income assistance. There was support from inquiry participants for the continuation of the DRA. The Government of South Australia (sub. DR209, p. 23) stated that it ‘allows for recipients to overcome cash flow issues and be more able to participate in the local economy following a disaster, which is a key component for community recovery’.

While the Australian Government provides emergency relief through the AGDRP and the DRA, it should not share the cost for similar immediate payments by state governments under the Commission’s funding model. However, there are other types of assistance that state governments provide to households where the case for Australian government cost sharing is stronger. For example, some people may need assistance beyond immediate emergency needs. There is a case for governments to provide support to people with low incomes who experience extreme losses and do not have insurance in order to minimise economic and social hardship. In addition, personal and financial counselling is relatively low-cost support, and can have benefits to the community more broadly if it improves the effectiveness and sustainability of recovery. Because this type of assistance can involve a longer-term relationship with the recipient, and often requires interactions with services that are provided by state governments, it is likely that state governments are better placed to manage the delivery of this assistance.

There was strong support for the provision of longer-term assistance to individuals experiencing particular hardship (box 3.9). Further, there was broad agreement that these areas of expenditure are more suited to delivery by state governments.

Box 3.9 Longer-term assistance for disaster recovery

People that already face disadvantage can encounter significant difficulties after a disaster. This can include challenges in securing temporary accommodation, repairing or building a house, buying household goods or accessing ongoing medical treatment. Inquiry participants argued that additional support and services are required to help those more vulnerable members of the community that are directly affected by natural disasters.

Whether it is their capacity to prepare for or mitigate against a disaster, evacuate in time, or to recover in the long term from trauma and financial devastation, socially vulnerable people are hit hardest and longest by disasters and emergencies. These people often have fewer resources and less social support, mobility and housing options at their disposal, and so are less able to prepare for, respond to and recover from a disaster or emergency. (The Australian national, state and territory Councils of Social Service, sub. DR197, p. 6)

People who have lost their homes (and potentially loved ones), are highly vulnerable and require immediate assistance ... It is also critical to ensure that long term, targeted personal hardship payments remain in place as a safety net for people in general hardship. (Australian Red Cross, sub. DR137, p. 2)

The Victorian Government (sub. DR215, p. 11) noted that the assistance programs it administers are intended to provide emergency support to those most in need, and are designed to provide 'a safety net to help directly-affected vulnerable Victorians return to a proper and effective level of functioning'. It also argued that these hardship programs are well administered, targeted and seek to prevent long-term dependence on government assistance.

For the period over which a reimbursement model is retained, Australian Government cost sharing for eligible expenditure for assistance provided to individuals experiencing hardship should be limited to:

- targeted longer-term assistance to people who have limited financial resources and have suffered severe losses
- personal and financial counselling aimed at alleviating personal hardship and distress arising as a direct result of a natural disaster.

Australian Government Disaster Recovery Payment

There is merit in providing an emergency relief payment to individuals who have been seriously affected by a natural disaster in order to avoid immediate economic and social hardship. These payments should only cover immediate essential needs and be distributed quickly after the event (and therefore not be means-tested). Having in place a framework for providing assistance reduces the likelihood that governments will take an ad hoc approach, which could be excessive or misdirected (chapter 2).

Currently the AGDRP is significantly more generous than other government support to people who experience traumatic events. Assistance is provided as a one-off, non-means-tested payment of \$1000 for adults and \$400 for children who are adversely affected by a major disaster. This is higher than comparable payments, for example, the maximum rate of the Australian Government Crisis Payment (currently \$383 per adult), and may be higher than necessary to meet immediate needs such as short-term accommodation, clothing and food for a few days.

Inquiry participants expressed mixed views regarding whether the level of payment under the AGDRP is appropriate. A number of participants did not support a reduction in the amount of immediate post-disaster support to individuals (Blue Mountains City Council (NSW), sub. DR204; Victorian Government, sub. DR215) and some participants argued that the focus should be on designing appropriate eligibility to support payments (Louise Markus MP, sub. DR193; Australian Red Cross, sub. DR137).

There is a strong case to legislate the eligibility criteria of the AGDRP in order to prevent inequitable treatment over time and across disaster events due to discretionary modifications to eligibility (chapter 2). The Commission considers the eligibility criteria applied for the Western Australian bushfires in January 2014 to be a reasonable benchmark. The Australian Government should also review the amount provided under the AGDRP considering whether it could be more reflective of immediate emergency relief needs and other comparable payments.

Assistance to community organisations

Assistance to help restore social networks, community functioning and community facilities (currently provided under category C) produces community-wide benefits that could not be achieved without some support from governments. There was broad support for these activities to receive Australian Government support under the arrangements (Queensland Government, sub. DR184; Tasmanian Government, sub. DR223; Victorian Government, sub. DR215). The Australian national, state and territory Councils of Social Service (sub. DR197) noted that the community sector is also vulnerable to natural disasters and that the consequences of major disruptions to the provision of social services at this time could be very serious. Assistance to nonprofit organisations is best provided as a grant as opposed to concessional loans (currently available for community organisations under category B of the NDRRA).

Assistance to businesses and primary producers

The case for financial assistance to businesses and primary producers after a natural disaster is weak. Although numerous participants argued for the Australian Government to contribute to assistance for disaster affected businesses (in the form of grants, subsidised loans and interest rate subsidies) (ALGA, sub. DR173; LGNSW, sub. 81; MAV, sub. 98;

National Farmers' Federation, sub. 35; Northern Territory Government, sub. 117), there was no evidence provided of the need and effectiveness of such assistance (chapter 2).

Some participants agreed with the Commission's view, and noted the importance of ensuring that there is a sufficient safety net for business owners and employees as individuals (WALGA, sub. DR214). The Government of South Australia (sub. DR209) noted that in this respect, the Disaster Recovery Allowance is an important source of short-term income support for employees, small business operators and farmers.

The Australian Government should not reimburse grants, concessional loans and subsidy programs to businesses and primary producers under the Commission's funding model. Where governments do provide such assistance, it should be provided through direct grants. These should be narrowly targeted to business reinstatement and not provided for economic stimulus.

RECOMMENDATION 3.3

The Australian Government should:

- legislate the current eligibility criteria for the Australian Government Disaster Recovery Payment (AGDRP) and remove Ministerial discretion
- review the amount provided under the AGDRP so that it is more reflective of immediate emergency relief needs, and against other comparable payments.

RECOMMENDATION 3.4

Funding to state and territory governments for community recovery should be provided as untied grants, with a transition period pending the development of a framework to assess community recovery costs. During the transition period, the Australian Government should continue to provide funding for community recovery through a reimbursement model.

Eligible community recovery expenditure during this transition period should be rationalised to counter disaster operations, personal hardship relief and community relief packages. Eligible expenditure should be limited to activities that arise as a direct consequence of a natural disaster and that:

- have widespread community benefits and would be underprovided without government support
- provide targeted longer-term assistance to people who have limited financial resources and have suffered severe losses
- provide personal and financial counselling aimed at alleviating personal hardship and distress arising as a direct result of a natural disaster
- are additional to the normal responsibilities of state, territory and local governments.

Sharing the costs in exceptional circumstances

There would be benefits from having some provision in the funding arrangements for additional assistance in exceptional circumstances. For example, in the event of an extraordinary and catastrophic natural disaster the Australian Government would typically be better placed than state governments to access debt markets and secure funds where large-scale expenditure is required. Additional assistance for exceptional circumstances is currently available through category D of the NDRRA, but in the absence of principles or guidelines for such assistance being made available it has been provided in an inconsistent and inequitable way (chapter 2).

The inclusion of special arrangements for exceptional circumstances was supported by inquiry participants. For example, the Victorian Government (sub. DR215, p. 27) noted that ‘given the increasing incidence and impact of natural disasters and the difficulty in accurately predicting the possible damage from all, especially severe, natural disasters’, it is necessary to retain funding for exceptional circumstances. Several participants argued that while consistency and rigour in the provision of this assistance was important, it was also important to ensure that flexibility was maintained. For example, the Government of South Australia (sub. DR209, p. 14) stated that:

The South Australian Government agrees in principle for the need for consistency. However, all disaster events are different and some provision for flexibility from recovery conditions should be retained. Some clearer guidelines and a more consultative process for enacting Category D may assist in this regard.

Under the Commission’s funding model, there would be provision for Australian Government cost sharing in exceptional circumstances. This assistance could be provided on the same basis as other recovery expenditure (that is, 50 per cent), or in other forms, for example through loans or at a higher level of cost sharing. These provisions should only be triggered in the case of extraordinary and catastrophic natural disasters that clearly overwhelm a state’s medium-term fiscal capacity. Cyclone Tracy, which hit Darwin in 1974, is one example of an extraordinary and catastrophic natural disaster that could potentially warrant such exceptional support.

For the potential fiscal liability of such exceptional support to be understood and sustainable, there needs to be clear principles for when such assistance is activated. For example, a state’s medium-term fiscal capacity could be considered to be ‘overwhelmed’ where the natural disaster directly leads to a significant increase in the cost of debt servicing and threatens a state’s capacity to fund essential public services over the medium term. These principles should be transparently articulated in policy documents to guide ministerial discretion. The provision for exceptional circumstances assistance should be triggered subject to joint approval by the Prime Minister, Treasurer, Finance Minister and the relevant portfolio minister.

‘Top-up’ fiscal support

The Australian Government could provide ‘top-up’ fiscal support to the states beyond that provided under the Commission’s funding model and warranted by relative fiscal capacity. This mechanism should be optional and the Australian Government would charge the states a ‘risk premium’ for the greater fiscal support provided. The mechanism would link to elements of the funding model — for example, states could choose to purchase a lower small disaster criterion, a lower annual expenditure threshold, or a higher cost-share percentage.

A notable feature of this approach is that it is ‘risk rated’. That is, states that face higher natural disaster risk would pay higher premiums to the Australian Government for the amount of fiscal support purchased. Premiums should be ‘actuarially fair’ — that is, the premium charged would be equal to the expected costs to the Australian Government of providing the additional cover. The Australian Government would likely need to, at least initially, engage the services of reinsurers or specialist actuaries to assist with pricing.

Such a mechanism would enable states to set a risk appetite and purchase (and provision for) a higher level of coverage. States should continue to utilise commercial insurance arrangements for public assets where available, and the requirements for states to demonstrate adequate insurance arrangements should be enforced (section 3.4). The use of a premium would provide a signal for states regarding the risk that they face and how they are managing that risk.

The Commission proposed a ‘top-up’ insurance component as part of its preferred option in the draft report. However, state governments either requested further information (Queensland Government, sub. DR184; Victorian Government, sub. DR215) or explicitly stated that they would be unlikely to take out this option. For example, the Government of South Australia (sub. DR209, p. 3) noted that it:

... would probably not consider purchasing top up insurance from the Commonwealth if it was available, as the claim profile for small to medium natural disasters is such that most of the costs would not be eligible.

Although participating states would be charged a premium each year, this support would operate differently to an insurance scheme. The premiums collected by the Australian Government should not be set aside as part of a dedicated reserve fund.

The mechanism could be readily accommodated within the framework for budget transparency and provisioning recommended by the Commission (section 3.4). Analysis and modelling to provide quantification of the Australian Government’s exposure in the budget Statement of Risks could also inform the pricing of premiums. The Australian Government’s contingent liabilities are essentially the risks to essential public assets owned by state and local governments, plus community recovery expenses. It is feasible to extend any catastrophe loss modelling of these liabilities (expressed in terms of average

annual damages) to calculate an actuarially fair premium based on different configurations of cost-sharing parameters.

There are risks associated with the Australian Government providing top-up fiscal support to the states for natural disasters. In particular, information asymmetry and moral hazard problems could arise regarding state risk management. The Australian Government could manage these issues through the accountability conditions and expert third party assessment advice of the underlying risks at a state jurisdiction level (section 3.4).

3.3 Mitigation

Total mitigation expenditure across all levels of government is likely to be suboptimal (chapter 2). However, the extent of the underinvestment in mitigation is not known.

A key element of the reform package is a considerable increase in mitigation funding from the Australian Government. Due to the uncertainties involved in what is the ‘optimal’ level of mitigation, this funding should be reviewed after five years in order to assess the ongoing appetite for mitigation and the net benefits of mitigation activities undertaken (chapter 5).

Specifically, Australian Government mitigation funding to the states and territories should be increased initially to \$200 million per year over a transition period. The increased funding should be conditional on matched funding contributions applied at the state level (this could include contributions from state and local governments, nonprofit organisations and the private sector) and best practice institutional and governance arrangements for project selection (section 3.4).

This funding should be separate from existing Australian Government funding for national mitigation projects. Participants supported funding for national projects to continue, for example, those currently supported under the National Emergency Management Projects program (Attorney General’s Department, sub. DR226; BNHCRC, sub. DR172). National level mitigation activities play an important role in supporting state and local government capabilities to spend mitigation funds effectively. Funding for national level mitigation projects should be increased modestly.

Inquiry participants overwhelmingly supported an increase in funding for mitigation by the Australian Government (chapter 2). Some participants argued that \$200 million per annum was not enough (IPWEA, sub. DR181; Queensland Government, sub. DR184; Toowoomba Regional Council (Qld), sub. DR170). This level of funding constitutes a considerable increase on recent levels (for example, a seven-fold increase on funding allocated for the NPANDR in 2013-14). When taking into account that this funding is to be matched by state governments and other beneficiaries, the total amount of available funding for mitigation projects is \$400 million per annum. This is an unprecedented level

of dedicated funding for natural disaster mitigation and would be additional to mitigation efforts undertaken by governments in the course of their usual business.

However, there was concern raised by inquiry participants regarding the matching requirements proposed by the Commission. In particular, local governments cautioned that if strict matching requirements were to be imposed, beneficial projects may not go ahead due to financial constraints at the local government level. This was particularly concerning for remote councils with small rate bases (LGASA, sub. 173; LGNSW, sub. DR196; MAV, sub. DR162). Consequently, a number of participants urged the Commission to incorporate flexibility in the matching arrangements such that differing council capacity could be recognised (Bundaberg Regional Council (Qld), sub. DR168; FMA, sub. DR166; LGAQ, sub. DR221). Australian Local Government Association (sub. DR173, p. 7) argued that:

It is unrealistic to expect all councils with worthwhile mitigation projects to be able to find matching funds. It is also unrealistic to expect that state and territory governments with their own fiscal constraints will always be able to find additional funds on behalf of councils. A mechanism to deal with worthwhile projects in councils without capacity to match funds must be explored.

Some state governments raised concerns about their own capacity to ramp up mitigation funding. The Government of South Australia (sub. DR209, p. 18) noted that:

This is a significant ongoing financial commitment from state and local governments that is as yet unfunded. The need to secure this matching funding under current fiscal conditions would be problematic and the lack of matching funds would reduce the amount and effectiveness of the mitigation expenditure.

Some state and territories provided suggestions regarding how to minimise the fiscal impacts on state governments. For example, the ACT (sub. DR206) recommended that matched funding arrangements should include provisions for in-kind contributions and human resource costs. Further, the Victorian Government (sub. DR215, p. 9) suggested that matching should be the responsibility of states to source ‘either from their own budgets, or from local government or other project managers such as research bodies and the private sector’.

The financial constraints faced by local governments should be recognised in designing a governance framework for the proposed increase in mitigation funding, particularly for those local governments in remote areas with small rate bases. The requirement to match Australian Government funds should be applied at the jurisdictional level without specific rules on contribution rates from different parties. Contributions from research bodies, nonprofit organisations and the private sector would be encouraged and coordinated by state governments.

Governance arrangements

An argument has been made by inquiry participants to better integrate recovery and mitigation efforts, and to better coordinate mitigation activities (supplementary paper 4) (box 3.10). The National Strategy for Disaster Resilience has also identified this as a priority, but it is not clear how this might work in practice.

Box 3.10 Participant views on better coordinating mitigation activities

There was support for more coordinated and strategic approaches to mitigation activities.

A successful disaster mitigation program must be coordinated, national and multi-faceted. (Suncorp Group, sub. 71, p. 2)

... [T]he development of mitigation activities ... should be based on need and driven by properly assessed residual risks. A nationally consistent risk assessment framework is vital to have fair distribution of funds commensurate with real risk. (BOM, sub. 105, p. 20)

The lack of coordinated investment in disaster prevention, partnered with the distorted incentives inherent in our recovery arrangements, remain the persistent barrier to achieving the micro-economic reforms that will improve community safety and reduce the loss of life, damage to property and our economy, and the collective cost of recovery. (Attorney-General's Department, sub. 90, p. 13)

Some participants supported the establishment of a national body or group to coordinate, identify and prioritise mitigation activities across Australia (ABRDRSC, sub. 22; Suncorp Group, sub. 71). Others argued for community-led approaches that reflect local circumstances and expertise (ALGA sub. 52; Blue Mountains City Council (NSW), sub. 28).

The Australian Government Reconstruction Inspectorate (trans., Brisbane, p. 113) also supported the principle of subsidiarity:

... any recommended model should allow responsible jurisdictions to make decisions about resource application in that timely way. It's very difficult to make that from Canberra when you've got a shire up in Cook or something like that. There are peculiarities to the local situation and the more we separate the people who've got the capacity and the best insight to make those activities, the more we diminish the timeliness and the responsive best-value solutions that can be achieved.

Some participants suggested that mitigation programs should be more closely integrated with other infrastructure programs, rather than treated as independent activities. The Insurance Council of Australia (sub. 57) submitted that mitigation infrastructure should be managed by bodies that have responsibility and expertise in managing large-scale infrastructure projects, which provides opportunities to integrate mitigation objectives in the assessment of proposals for other types of infrastructure. The Department of Infrastructure and Regional Development (sub. 99, p. 11) argued that 'the parameters for disaster recovery funding should encourage its expenditure to more closely align with the government's broader infrastructure investment agenda'.

As a general principle, mitigation objectives and priorities should be undertaken as part of the usual business of government, including as part of infrastructure project selection processes and long-term asset management planning (chapter 4). If funds are allocated specifically for mitigation purposes, best-practice arrangements for decision making should apply to the allocation of these funds (by all levels of government) to ensure that projects

or options identified and selected deliver the largest net benefit to the community (supplementary paper 4).

Although arguments are made for both top-down and bottom-up approaches to mitigation, both can be appropriate given the type and scale of the hazard and should not be considered mutually exclusive (supplementary paper 4). Local governments and communities play a key role in identifying and implementing mitigation options. However, the effects of natural hazards often extend across jurisdictional boundaries, creating the need for some level of coordination at a regional or state level.

Given the roles and responsibilities of states, coordination of mitigation activities at the state level is both practical and best aligns with the subsidiarity principle (AGRI, trans., Brisbane; IPART, sub. DR159). Furthermore, state governments have legislative power over complementary tools to assist mitigation, such as land use planning, and have a greater capacity than the Australian Government to engage with local governments and understand the conditions and needs of local communities.

The Australian Government can support mitigation activities undertaken by other levels of government through the provision of national-level information — such as meteorological, geospatial and seismic data — and by assisting in the development of decision-making frameworks and tools to assess mitigation investments. Where the Australian Government considers that particular mitigation investments are required to manage its fiscal risks, it could appropriate funds for these projects through the usual budget processes.

The Australian Government should maintain accountability for mitigation funds provided to state governments through the matching requirements combined with high-level requirements to implement best practice institutional and governance arrangements for project selection (section 3.4). Such an approach would mean that mitigation funding could be provided while giving state governments significant autonomy to manage how funds are spent. The Victorian Government (sub. DR215) made several suggestions regarding different administrative arrangements for mitigation funding. These included:

- the provision of funding for recurrent-type expenditure as well as capital projects
- allocating a proportion of funding towards a less rigorous program for smaller projects, such as those that are currently funded under the current Natural Disaster Resilience Grants Program
- nominating a small proportion of funding to be available for program management, including monitoring and ex-post evaluation of projects and programs.

Projects should not be limited to ‘hard’ mitigation like flood levees. ‘Soft’ mitigation, like community education and other preparedness measures, can yield significant benefits over time where they modify behaviour and result in stronger community resilience and the avoidance of disaster risk. There was support for provision of recurrent mitigation funding for preparedness, education and awareness programs (Australian Psychological Society,

sub. DR144; Deloitte Access Economics (2013); Save the Children Australia, sub. DR164; St John Ambulance, sub. DR141).

The objective of the Commission's approach is to allow autonomy such that states can manage natural disaster risk in accordance with local needs with the certainty of an agreed funding allocation for mitigation provided on an annual basis. Consequently, a range of mitigation options could be accommodated.

Distributing mitigation funding to the states

In the draft report, the Commission recommended that increased mitigation funding from the Australian Government be distributed among the states and territories on a per-capita basis. While some participants agreed with this approach, the majority argued for this funding to be distributed based on risk levels, rather than on a per capita basis (box 3.11, supplementary paper 4).

Box 3.11 Participant views on the basis for distribution of mitigation funding

... funds should be allocated based on national levels of risk rather than population, in order to appropriately and effectively target the most exposed and vulnerable communities and assets nation-wide. (Queensland Government, sub. DR184, p. 19)

The allocation of any future mitigation funds should be on a risk basis in accordance with the current formula used for the [National] Partnership Agreement on Natural Disaster Resilience. This formula recognises that there are many other factors that affect risk other than population, such as climate, geography and the environment (Tasmanian Government, DR223, p. 6)

Victoria ... is supportive of the proposed allocation of funding on a per capita basis, provided smaller jurisdictions receive a meaningful quantum under that allocation. Victoria would support this funding being administered under the National Disaster Resilience Program. (Victorian Government, sub. DR215, p. 8)

... if the only available proactive mitigation funding is directed entirely to the States and Territories on a per capita basis, there could be limited funding for nationally significant projects. (BNHCRC, sub. DR172, p. 1)

... the institute does not support the distribution to the states and territories on a per capita basis. This distribution should be based on exposure and vulnerability of particular communities to the natural hazards that they face. (Planning Institute of Australia, trans., Brisbane, p. 62)

The 'per capita' proposal is a retrograde step as the current model for the allocation of mitigation funds to states and territories is 'based on historic allocations, populations, costs of disasters and relative disadvantage and adjusted by agreement to provide a minimum share for the territories and Tasmania'. (McGowan and Tiernan, sub. DR123, p. 4)

... mitigation funding should be allocated on a priority basis using a cost-benefit analysis to provide funds to those projects that provide the greatest return, which should include the social return. (IAG, sub. DR158, p. 7).

The Commission's initial proposal for a per capita distribution was based on a number of factors, including:

- past insurance losses from natural disasters over a 40-year time horizon are not too dissimilar from a per capita distribution
- the main driver of natural disaster costs is the exposure and vulnerability of communities, which is largely a function of population
- per capita is the basis for distribution of most other government transfers.

A consideration of the most appropriate allocation for the increase in mitigation funding depends on the objective of this funding. The Commission considers that this funding should be provided to primarily decrease the economic costs of natural disasters in Australia. Managing the Australian Government's fiscal exposure is a secondary objective and should not be pursued at the expense of the primary objective. In principle, the ideal approach for distribution of mitigation funding to meet this objective would be based on comparable risk assessments that take into account levels of hazard risk, potential economic costs of natural disasters, and the net benefits of mitigation options. Yet, while the majority of participants advocated for a risk-based distribution, there is no common understanding of what constitutes, or should inform, such a distribution.

Some participants suggested that risk assessment, and the subsequent need for mitigation funding, should be based on past natural disaster events, while others took the view that risk assessments should be based on potential future risks (for example, by using catastrophe loss modelling). Some participants posited that mitigation funding should be directed towards reducing community-wide risks, while others argued the priority should be to reduce potential future NDRRA liabilities that largely relate to essential public assets.

Further work is required to develop a suitable methodology to inform a consistent allocation to states on a forward looking risk assessment basis. As an interim measure, mitigation funding should be allocated to the states using the current allocation agreed by all jurisdictions under the National Partnership Agreement on Natural Disaster Resilience (NPANDR). This distribution appears to have broad support among the jurisdictions, takes into account factors such as population and past disaster costs, and is more risk reflective than a per capita distribution. The Australian, state and territory governments should commit to develop a more refined risk-based model for the allocation of mitigation funding among jurisdictions over time (chapter 5).

RECOMMENDATION 3.5

The Australian Government should gradually increase the amount of annual mitigation funding it provides to state and territory governments to \$200 million. Initially, this funding should be distributed to state and territory governments in accordance with the allocation under the National Partnership Agreement on Natural Disaster Resilience.

3.4 Accountability

In the context of this inquiry, accountability is thought of in the broad sense of governments being accountable to the community for fulfilling their roles and responsibilities in natural disaster risk management, as well as in a more narrow sense of state and local governments being accountable to the Australian Government for use of funds provided.

The first part of this section addresses the broader issues around governments' accountability to the public for natural disaster risk management, in particular through budgeting and provisioning for natural disaster risk. The second part of this section discusses the specific accountability and transparency requirements that the Australian Government needs to have in place for the use of Australian Government funds by state and local governments.

Budgeting and provisioning for natural disaster risk

Budgeting and provisioning for natural disaster risk across government assets and service areas is fundamental to accountability and ultimately neutrality across mitigation and recovery expenditure, now and in the future. Budget and fiscal frameworks can make the government's activities more transparent to taxpayers and promote neutrality across different types of expenditure. This, in turn, can make governments more accountable for their decisions, and give them a greater incentive to effectively manage risks to the community (supplementary paper 3).

Natural disasters can have significant impacts on government budgets and balance sheets. This means that governments need to understand and manage the financial liability they are exposed to and put in place measures to finance natural disaster costs. There are two broad options: drawing on a provision set aside before disasters occur (ex-ante financing) and obtaining funds if and when a disaster occurs (ex-post financing). Both approaches have advantages and disadvantages, and the optimal approach will likely consist of provisioning for some risks ex ante and choosing to bear others ex post (supplementary paper 3).

As noted in chapter 2, the current budget treatment by the Australian and state governments is likely leading to governments retaining more risk than is optimal. This is because of inadequate understanding of the full range of contingent liabilities posed by natural disasters, and the overwhelming reliance on ex-post financing for recovery costs. Such an approach also accentuates the bias against natural disaster mitigation. This is because mitigation is funded on an ex-ante basis and is included in budget forward estimates, and consequently traded off against other spending priorities.

Natural disasters are a regular occurrence in Australia. This means that governments need to acknowledge and disclose the extent and uncertainty of the financial risks that natural

disasters pose to their budgets. Best practice involves governments quantifying these risks (in terms of the magnitude and probability) in their budget statements (IMF 2014; OECD 2013). Although natural disaster risks are inherently uncertain, ranges that indicate the likely magnitude of future costs can be estimated. One approach could be to draw on historical experience, such as adopting a historical rolling average of financial costs (depending on data availability). Another is to draw on more sophisticated natural hazard modelling, similar to the way that insurers model their potential future liabilities (box 3.12). These methods can be refined over time in the event that estimates turn out to be systematically too high or too low, or to reflect changes in risk exposure and mitigation.

Box 3.12 Participant views on budgeting and provisioning for natural disaster risk

There was considerable support from inquiry participants for governments to provision for some natural disaster risk (ALGA, sub. DR173; Central Highlands Regional Council (Qld), sub. DR174; ICA, sub. DR185; MAV, sub. DR162; Suncorp Group, sub. DR176; WALGA, sub. DR214).

However, some participants indicated that setting aside funds would not be practical because of the uncertainties involved in estimating future costs (Department of Finance, sub. 92; Queensland Government, sub. DR184). For example:

Given the history of disaster events in Queensland, it would be problematic to attempt to predict future disaster costs. The best way to manage the risk of these unforeseen events is for governments to maintain a strong balance sheet to allow the flexibility to deal with significant and unexpected cost pressures. (Queensland Government, sub. DR184, p. 24)

Other participants considered that Australian Government provisioning for natural disasters could be informed by catastrophe loss modelling.

In including an estimate of future natural disaster costs within budgets ... the estimate of the cost should represent a true and fair best estimate of future costs ... Actuaries can partner with Government and other experts in catastrophe modelling to enable a robust estimate. (Actuaries Institute, sub. DR208, p. 2)

Modelling will result in a more accurate budget, and reduce the risk of over or under budgeting due to irregularities in past expenditures. Catastrophe modelling expertise is widely accessible and continues to benefit from improvements to exposure mapping. Private providers of catastrophe modelling could be readily engaged to support the development of an appropriate estimate of future natural disaster costs ... (ICA, sub. DR185, p. 3)

In addition, Suncorp Group (sub. DR176) explained how insurers account for future natural disaster expenditure by budgeting for a 'natural hazard allowance', which is a long-run estimate of disaster expenses that can be expected in a typical year. This calculation takes into account exposure data and the statistical probability of extreme events.

Importantly, the natural hazard allowance process does not attempt to provision for the full cost of all natural disasters in any given year. The process seeks to appropriately fund anticipated expenses considering a broad range of factors in an average year. In this way, funding is not required to be held against the most extreme natural hazard events that can occur on an infrequent basis with this risk instead managed through reinsurance arrangements. (Suncorp Group, sub. DR176, p. 10)

As a first step, the Australian Government should treat natural disaster contingent liabilities more transparently in its budget. This was broadly supported by a range of

participants (box 3.12). A more transparent treatment would involve taking steps to quantify the potential financial liabilities and disclose estimates and confidence ranges in the budget's Statement of Risks. At a minimum, catastrophe loss modelling should be utilised to inform this analysis. Once this capability has been established in the Australian Government, it not only provides for greater transparency but would also inform the approach and pricing for the 'top-up' fiscal support.

Second, the Australian Government also needs to establish clear frameworks for financing natural disaster costs. The high variability of natural disaster expenditures means that it is neither practical nor desirable to set aside funds each year to cover all possible contingencies. This is because some catastrophic disasters can be so unpredictable that the costs can only be managed on an ex-post basis. On the other hand, some expenditures can be reasonably expected. For example, the large number of small events that happen throughout Australia in most years.

A case can be made for the Australian Government to provision for some base level of natural disaster recovery costs in the budget forward estimates. Such provisioning was made in the past (chapter 2). The Commission views some provisioning as an essential prerequisite to aligning incentives between mitigation and recovery expenditure over time. This level of provisioning would not be intended to fully capture the likely cost to the Australian Government in any given year of natural disaster recovery costs. Rather, it should capture a smaller, base level amount in recognition of the fact that some level of Australian Government expenditure on natural disasters does occur each year. The provisioned amount could be informed by historical expenditure data.

The funding of natural disaster recovery costs should continue to be done via a special appropriation, as it is currently, which provides flexibility to provide funding as and when required. The key imperative is to provision for a principal level of recovery expenditure in the forward estimates. This would improve transparency and reduce the current bias against mitigation and insurance. Further, both the analysis undertaken for the Statement of Risks and any explicit provisioning would also be necessary for the proposed top-up fiscal support in order to assist with premium pricing where states exercise this option.

Best practice would also involve state governments more explicitly quantifying their fiscal risks from natural disasters and provisioning as appropriate. This is part of the Commission's reform package and is discussed further in the next section.

RECOMMENDATION 3.6

The Australian Government should:

- publish estimates (and their confidence ranges) of future costs of natural disasters to its budget in the Statement of Risks. These estimates should be informed by catastrophe loss modelling
- provision for a base level of natural disaster expenditure in the budget forward estimates, in recognition of the fact that there will be some level of Australian Government expenditure on natural disasters each year.

Accountability for use of Australian Government funds by other levels of government

There has been a shift in the provision of Australian federal funding in recent years through the COAG reform agenda, away from prescriptive conditionality on how the states will deliver services towards a focus on the achievement of outcomes and outputs in areas of policy collaboration (box 3.13). This approach aims to increase flexibility in the delivery of services and increase accountability for outcomes.

A similar shift has been seen in the recent reforms to Australian Government financial accountability arrangements. The *Public Governance, Performance and Accountability Act 2013* (Cwlth) sets out a framework for regulating resource management by the Australian Government and relevant entities. The Act is intended to provide the foundations for a system of earned autonomy for Commonwealth entities whereby accountability and performance are improved through managing risk rather than increasing control (Department of Finance and Deregulation 2012b, p. 23).

In general, conditions can be imposed on funding in a range of ways. Conditions could be placed on the inputs, processes, outputs or outcomes related to the expenditure, or some mix of these (figure 3.4). Further, conditions could be required to be met on an ex-ante or ex-post basis (Koeberle, Silarszky and Verheyen 2005). International experience suggests that output or outcomes-based conditions are likely to lead to better outcomes than input conditionality. For example, Shah (2006, p. 11) argued that grants based on input conditionality can ‘undermine local autonomy and budgetary flexibility while reinforcing a culture of opportunism and rent seeking’. Nevertheless, output and outcome-based measures must also be designed with care — for example, it is important that outcomes are measurable and can be attributed to the recipient government’s activities (Koeberle, Silarszky and Verheyen 2005; Shah 2006).

Box 3.13 **Accountability under the Intergovernmental Agreement on Federal Financial Relations**

The *Intergovernmental Agreement on Federal Financial Relations* is intended to provide funding from the Australian Government in a way that focuses on the achievement of mutually agreed outcomes and provides the states with greater flexibility to direct resources to areas where they will produce the best results. The framework aims to improve wellbeing through ‘enhanced public accountability through simpler, standardised and more transparent performance reporting by all jurisdictions, with a focus on the achievement of outcomes, efficient service delivery and timely public reporting’ (COAG 2011a, p. 5). This approach is an explicit move away from Australian Government prescriptions on state service delivery in the form of financial or other input controls, which inhibit state service delivery and priority setting.

Under the framework, policy outcomes and objectives are separated from funding arrangements. National Agreements establish the policy objectives in the key service sectors and establish outcomes and performance benchmarks. Funding is provided separately in National Specific Purpose Payments and the provision of this funding is not contingent on achieving the outcomes or performance benchmarks outlined in National Agreements. The only condition on National Specific Purpose Payments is that the funding be spent in the sector for which it is provided.

In addition, National Partnership Payments can be provided to support the delivery of specified outputs or projects, to facilitate reforms or to reward those jurisdictions that deliver on nationally significant reforms.

Figure 3.4 **Examples of possible conditions to be placed on funding**



There was some support by participants for the Australian Government to place greater, or more effective, conditionality on the provision of funding for recovery. In particular, participants advocated that funding should be provided only where state governments have undertaken appropriate risk management activities for natural disasters, including taking

out insurance for government assets, implementing land use planning regulation in a way that is consistent with good-practice standards, or adopting long-term asset management plans (AGRI, sub. 39; DIRD, sub. 99; IPART, sub. 26; Regional Australia Institute, sub. 61; WGCS, sub. 66).

The Commission favours moving away from the current approach of prescriptive input-based conditionality combined with project-based audit towards ‘earned autonomy’ and performance and process-based accountability mechanisms that embed good risk management. There was widespread support from participants for such an approach (Mackay Regional Council, sub. DR133; MAV, sub. DR162; Queensland Government, sub. 31; Shoalhaven City Council (NSW), sub. 25). This approach would give the states greater autonomy in how they spend recovery funds from the Australian Government (alongside their own matched funds) and instead monitor key outcomes, similar to the idea behind the *Intergovernmental Agreement on Federal Financial Relations*.

Determining compliance with outcome-focused accountability requirements is less straightforward than that for prescriptive input-based conditions. Further, adopting a funding model that rewards ‘good risk management’ (as defined by the Australian Government) could stifle innovative risk management and lead to ‘box ticking’ to meet requirements and receive funding. Consequently, imposing strict financial penalties alongside an earned autonomy model is unlikely to be practicable. Nevertheless, some controls and auditing do need to be in place in order to manage risk and liabilities to the Australian Government.

Accountability within the funding model

The key lever to strengthen states’ ownership and accountability for managing natural disaster risk is the reduction in the Australian Government contribution to recovery funding. However, in recognition of the significantly greater degree of autonomy provided, some high-level requirements for states are needed for transparency and accountability across the suite of recovery and mitigation funding.

Key outcomes and processes covered by the accountability arrangements include:

- states having published risk assessments in accordance with the National Emergency Risk Assessment Guidelines
- states having adequate insurance arrangements, subject to regular review
- increased transparency of natural disaster liabilities in state budgets
- state and local governments having asset registers and asset management plans that incorporate natural disaster risk
- implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap* (chapter 4)

-
- states demonstrating effective and transparent decision-making mechanisms to prioritise mitigation spending.

There may be a need to adapt these accountability requirements where they apply to very small and remote local governments. Further, it is likely that some support would be required for capacity building of local governments to meet these requirements.

RECOMMENDATION 3.7

State and territory governments should be required to report on the following accountability requirements:

- published risk assessments in accordance with the National Emergency Risk Assessment Guidelines
- transparent natural disaster liabilities in state and territory government budgets
- asset registers and asset management plans at the state, territory and local government level that incorporate natural disaster risk
- implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap*
- effective mechanisms to identify and prioritise mitigation spending based on cost–benefit analysis and transparent decision making.

Specifically, effective mechanisms to identify and prioritise mitigation spending should include:

- project proposals that are supported by robust and transparent evaluations (including cost–benefit analysis, public consultation and assessment of non-quantifiable impacts), and that are consistent with state risk assessments
- considering alternative or complementary mitigation options (including structural and non-structural measures)
- using private funding sources where it is feasible and efficient to do so (including charging beneficiaries)
- transparent ex-post evaluations of mitigation projects.

The Australian Government should continue with the three-yearly reviews of state and territory governments' insurance arrangements. The reviews, and government responses to the recommendations, should be published.

State risk assessments

Currently, under the NPANDR, states are required to publish risk assessments and have agreed to develop new risk assessments by 2017 that are consistent with the revised National Emergency Risk Assessment Guidelines (NERAG) (supplementary paper 2). NERAG provides a consistent methodology for all governments and other relevant stakeholders to assess emergency-related risks from priority hazards. Although NERAG

focuses primarily on risk assessment rather than the broader practice of risk management, its outputs are intended to improve decision making for prioritising risk mitigation activities (NEMC 2010).

While there was some support for the use of NERAG assessments as the basis for risk-based prioritisation of mitigation projects (Government of South Australia, sub. DR209), other inquiry participants did not support their use as a national assessment tool. Some considered NERAG would not be suitable for interstate risk comparisons because of the lack of monitoring or quality control over individual state assessments (ERSA, sub. 12; Queensland Government, sub. DR184).

The NERAG provide a framework for nationally consistent risk assessments as an essential first step in developing, assessing and implementing disaster risk reduction strategies. State governments should continue to refine and publish state risk assessments consistent with the NERAG. These should be subject to periodic review and provide an input to jurisdictional planning schemes.

State insurance arrangements

Under current arrangements, there are diluted incentives for states and territories to take out insurance for essential public assets (chapter 2 and supplementary paper 5). Currently, only the Victorian and ACT governments have insurance for road assets. While the NDRRA include a requirement that state governments have adequate capital to fund liabilities or losses, including insurance (Attorney-General's Department 2012), this is not enforced in practice (chapter 2).

While most state governments have insurance and commercial reinsurance arrangements, traditional commercial insurance is often not available for road assets. This is due to a number of factors, including a lack of information about the roads, uncertainty about distinguishing maintenance from reconstruction, the level of exposure to natural disaster risks and that some roads are damaged on a repeated basis (supplementary paper 5).

The NDRRA Determination requires states to obtain and submit an independent assessment of their insurance arrangements to the Australian Government for review every three years. If the Australian Government Attorney-General recommends a change to the state's insurance arrangements in response to the review, and the state fails to implement the change, the amount the state would be reimbursed under the NDRRA can be reduced (Attorney-General's Department 2012).

As discussed in chapter 2, the Department of Finance and Deregulation (2012a) reviewed state and territory governments' insurance arrangements in 2012. The Tasmanian and Northern Territory governments were found to have inadequate insurance arrangements and were required to undertake a benchmarking process for their non-road assets, including market testing and cost-benefit analysis (Department of Finance and Deregulation 2012a).

The reviews of state government insurance arrangements should continue. This could form part of the mechanism for states to demonstrate that public assets cannot be commercially insured. The reviews, and government responses to their recommendations, should be published.

This requirement would also dovetail with other elements of the accountability arrangements, in particular those relating to asset management plans and asset registers for road assets. These would inform any approach to the private market to seek insurance (supplementary paper 5). Some states already maintain these instruments and make them publicly available (Government of South Australia, sub. DR209; WA SEMCS, sub. DR216). For example, in Victoria, state departments and public bodies are required to maintain a register of assets and develop, implement and keep under review a risk management strategy. The Victorian Managed Insurance Authority is responsible for assisting agencies to fulfil these requirements, monitoring and assessing their risk management strategies and reporting on these strategies to the Victorian Government (Victorian Government, sub. 113).

Increased transparency of natural disaster liabilities in state budgets

The Commission's recommendation relating to the transparency and treatment of natural disaster risk in the Australian Government budget could also be extended to state governments. There was support for such an approach by some participants (MAV, sub. DR162; WALGA, sub. DR214). At a minimum, state governments should acknowledge and disclose the extent of the financial risks that natural disasters pose to their budgets, for example, by attempting to quantify the size and uncertainty of their contingent liability. State governments should also establish clear frameworks for financing these risks. Some states already undertake some provisioning (chapter 2). Further, where states purchase 'top-up' fiscal support, the premium would constitute a form of provisioning.

Long-term asset management plans

Robust long-term asset management planning by state and local governments that incorporates natural disaster risk will play a linchpin role in the funding model.

Long-term asset management planning supports an asset owner's understanding of their asset base, liabilities and funding over the lifetime of these assets. Natural disaster risk management objectives should be appropriately embedded into aspects of asset management, including the acquisition, operation and maintenance of assets alongside other relevant risks. Maintenance plans can be used to define the level and frequency of maintenance and technical specifications required for upgrading assets to improve resilience to future natural disasters. Asset registers should provide an estimate of the current replacement value of assets. This information will enable state and local governments to make more efficient decisions about reconstruction, betterment or

abandonment of assets if they are damaged by a natural disaster. It will also help inform the application of the assessed damages and benchmark prices model. Further, it is an essential prerequisite to increasing Australian Government support for betterment funding.

There are already requirements in some jurisdictions for local governments to implement asset management plans. For example, New South Wales, Queensland, South Australia and Western Australia all have legislative requirements relating to local government asset management strategies (Tan and Artist 2013) (box 3.14). There have also been some initiatives to review the current state of asset management planning at the local government level (for example, Victorian Auditor General (2014)) and to provide support to local governments in developing their capabilities (such as the Local Government Reform Fund) (chapter 2).

Box 3.14 Case study: asset management planning in Western Australia

The Western Australian *Local Government (Administration) Regulations* 1996 set out a framework for local governments to implement ten-year asset management plans for all major asset classes. Under this framework, asset management plans should define current levels of service and the processes local governments use to manage each of their asset classes.

In guidance provided to local governments, the Western Australia Government states that asset management plans should include:

- reference to an asset register (which records all assets and their location, acquisition, disposal, transfer and other relevant transactions based on best current information and random condition or performance sampling)
- defined levels of service for each asset category or particular actions required to provide a defined level of service in the most cost-effective manner
- demand forecasting
- risk management strategies
- financial information such as asset values, depreciation rates, depreciated values or capital expenditure projections for new assets as a result of growth, or to renew, upgrade and extend assets
- strategies to manage any funding gaps
- consideration of alternative service delivery solutions (leasing, public–private partnerships, shared services arrangements)
- information on ‘whole of life’ costing including changes in service potential for assets
- a schedule for asset performance review and plan evaluation
- an asset management improvement program
- clear linkages to other strategic documents, such as the Corporate Business Plan, Long Term Financial Plan and Annual Budget.

Source: Western Australian Department of Local Government and Communities (2012).

There was support from inquiry participants for improved asset management practices that integrate disaster risk management. For example, the IPWEA (sub. DR181, p. 21) advocated for ‘fully integrating disaster management within asset management practices and placing a greater focus on network resilience’ (box 3.15). It noted that:

Whilst many Local Governments across Australia have well established asset management plans and asset registers with linkages to financial plans, there is an opportunity to provide a more consistent and effective approach to the integration of natural disaster risk planning in asset management practices. (IPWEA, sub. DR181, p. 22)

Box 3.15 Best-practice asset management planning

The IPWEA (sub. DR181, p. 23) stated that incorporating natural disaster risk planning into asset management practices should integrate with land-use planning, hazard mapping, risk models, community plans and financial plans. Best practice would include:

- Scenario Modelling to determine the impacts of disasters and combinations of events on infrastructure
- Identification of critical assets within existing and planned infrastructure networks
- Understanding the current risk and resilience of critical assets
- Preparation of asset hierarchies
- Reviewing Service Levels to ensure a sustainable and resilient asset network from both a financial, community expectation and disaster resilience perspective
- Adoption of engineering design standards which meet appropriate technical, financial, functionality and resilience criteria
- Asset rationalisation, including abandoning, upgrading, downgrading and optimising assets
- Integration of asset management plans with the Strategic Financial Plan, likely resulting in increased investment in critical infrastructure and reduced investment on non-critical assets
- Implementation of prioritised capital works and maintenance programs that cost effectively mitigates disaster risk to infrastructure networks and communities.

Similarly, the Municipal Association of Victoria (sub. DR162) stated that while all Victorian councils’ asset management plans incorporate risk assessment and risk management plans, not all incorporate natural disaster risk specifically. The Local Government Association of South Australia (sub. DR161) indicated that most South Australian councils follow best-practice guidance in developing their plans including assessing the critical risks associated with service delivery from infrastructure.

A key accountability requirement under the Commission’s recommended funding model is that state and local governments have asset registers and asset management plans that appropriately consider natural disaster risk, alongside other types of risks, and that are based on best practice (box 3.15). The receipt of funding under the assessed damages and benchmark prices model, along with greater betterment funding support, would require local governments to keep up-to-date asset registers. Further, there would be a considerable incentive to incorporate and manage natural disaster risk within these frameworks in order to meet the requirements to receive funding for betterment projects.

Participants noted that, in some cases, states or the Australian Government may need to provide further support and guidance to local governments to assist them to meet asset management planning requirements (Cassowary Coast Shire Council (Qld), sub. DR140; Lockyer Valley Regional Council (Qld), sub. DR125; MAV, sub. DR162). It would be the role of state governments to provide appropriate support, resources and guidance in order for local governments to meet these requirements. A transition period will be needed for state and local governments, in order to strengthen asset management planning processes and enable jurisdictions to develop plans and asset registers where they are not currently utilised (chapter 5).

Effective mechanisms to prioritise mitigation activities

The increase in mitigation funding from the Australian Government should be conditional on matched contributions from the states and implementation of best-practice institutional and governance arrangements for project selection. These best-practice requirements are intended to ensure that decisions regarding the use of mitigation funding are based on robust and transparent decision-making frameworks so that limited funding is allocated in a way that maximises outcomes for the community. In particular, these frameworks should include cost–benefit analysis and assessment of non-quantifiable impacts, public consultation and public disclosure of analysis and decisions.

While there was general support for accountability requirements that incorporate institutional and governance arrangements for selecting mitigation projects (Government of South Australia, sub. DR209; MAV, sub. DR162), some participants raised concerns regarding the increased costs accompanying these conditions. For example, the Queensland Government (sub. DR184, p. 18) stated that the Commission’s proposed risk assessment processes would ‘impose additional conditions and costs on projects which may be a considerable disincentive to project proponents’. Further, the Government of South Australia (sub. DR209) noted that a requirement for public consultation for mitigation projects would increase administrative costs. In particular, concern was raised regarding the capacity of local governments to undertake rigorous cost–benefit analysis (IPART, sub. DR159). The WA Local Government Association (sub. DR214, p. 14) noted that cost–benefit analysis of mitigation activities ‘is not a core function of local government and these skills would not be available in all local governments’.

The Victorian Government (sub. DR215) also raised this issue and suggested that a proportion of funding could be allocated towards a less rigorous program for smaller projects, similar to the Natural Disaster Resilience Grants Program. A program of this nature would go some way to addressing concerns regarding capacity constraints for certain local governments and organisations. However, where capacity constraints are a concern for larger projects, there is a role for state governments to support the application of cost–benefit analysis by local governments.

The accountability requirements are also intended to reflect best-practice principles for risk management and allocation of costs (supplementary papers 3 and 4). The overall objective

of funding mitigation and betterment should be to increase the wellbeing of the community by reducing the economic costs of natural disasters, while ensuring an efficient allocation of the costs. Responsibilities for funding natural disaster mitigation are spread across households, businesses, all levels of government, insurers and the broader community. In cases where mitigation provides private benefits but requires some collective action, governments should pursue cost-recovery options. Such an approach should allocate mitigation costs to the party that can most influence the level of risk and/or those who benefit from its reduction (supplementary paper 4).

Some participants questioned the feasibility and appropriateness of utilising private funding sources for mitigation activities. For example, a number of participants stated that the scope for cost recovery based on a ‘beneficiary-pays’ approach at the local level would be very limited (MAV, sub. DR162; Queensland Government, sub. DR184; Western Downs Regional Council (Qld), sub. DR180). The Queensland Government (sub. DR184, pp. 19–20) also queried the theoretical argument for such an approach, on the grounds that:

- in most cases it would be very difficult to quantify the financial benefit of mitigation to individuals and communities
- benefits would tend to spread more widely than the immediate geographic area creating externalities
- there would be no clear rationale to implement beneficiary pays arrangements for disaster mitigation, when general tax revenue is used to pay for other social services and infrastructure.

The Commission acknowledges that there are difficulties in uniformly applying a beneficiary-pays approach. However, this does not mean that efforts should not be made to explore options to recover costs from those who privately and directly benefit from a mitigation activity. The extent that these issues apply, are likely to vary on a case by case basis, for example whether the mitigation activity relates to physical infrastructure or ‘soft mitigation’ measures such as early warning systems. Further, there are examples in both social services and infrastructure policy, and for natural disaster mitigation more specifically, of cost recovery being successfully implemented.

Local governments can apply a beneficiary-pays approach through differentiated rates, or alternatively pursue cost recovery via general rates (where those that benefit from the mitigation cannot be identified or excluded or where there are community ‘flow on’ benefits) (supplementary paper 4). Local governments can also recover the costs of mitigation via developer charges or contributions (which are usually capitalised in the value of the property). This can be an equitable approach where the benefits are directly attributable to individual property owners.

Insurers benefit indirectly from increased expenditure on mitigation and hence should be willing to partner and share information with state and local governments (chapter 4). For example, insurers are well placed to facilitate mitigation through identifying mitigation options and mechanisms for private funding. There was general support from both insurers and governments for greater collaboration and information sharing between insurers and

governments (ALGA, sub. DR173; Burdekin Shire Council (Qld), sub. DR165; MAV, sub. DR162; WALGA, sub. DR214). For example, the Insurance Council of Australia (sub. DR185) noted that its Property Resilience and Exposure Program could assist to identify properties that would benefit from mitigation to a greater extent than other properties in areas of hazard risk (chapter 4).

3.5 Impacts of the funding reforms

A quantitative assessment was undertaken for the recommended recovery funding model, but not the ‘top-up’ fiscal support, and consisted of two parts.³ First, Australian Government recovery expenditure under principal aspects of the Commission’s recommended funding model was compared to expenditure under current arrangements using an historical analysis (2007-08 to 2013-14). Second, projections of fiscal costs in the medium and long term were obtained using a forward-looking analysis. Details of the analysis are presented in supplementary paper 7 and the key results are discussed below.

Illustrative estimates were constructed to show what recovery expenditure would have been in the last seven years if selected aspects of the recommended funding model had been implemented. Aspects that were explicitly modelled were:

- a single higher threshold for reimbursement from the Australian Government — 0.45 per cent of total state government revenue
- an Australian Government cost-sharing rate of 50 per cent of all eligible expenditure above the new threshold
- streamlining eligible expenditure (section 3.2).

Other aspects of the recovery funding model were not modelled because of data constraints.

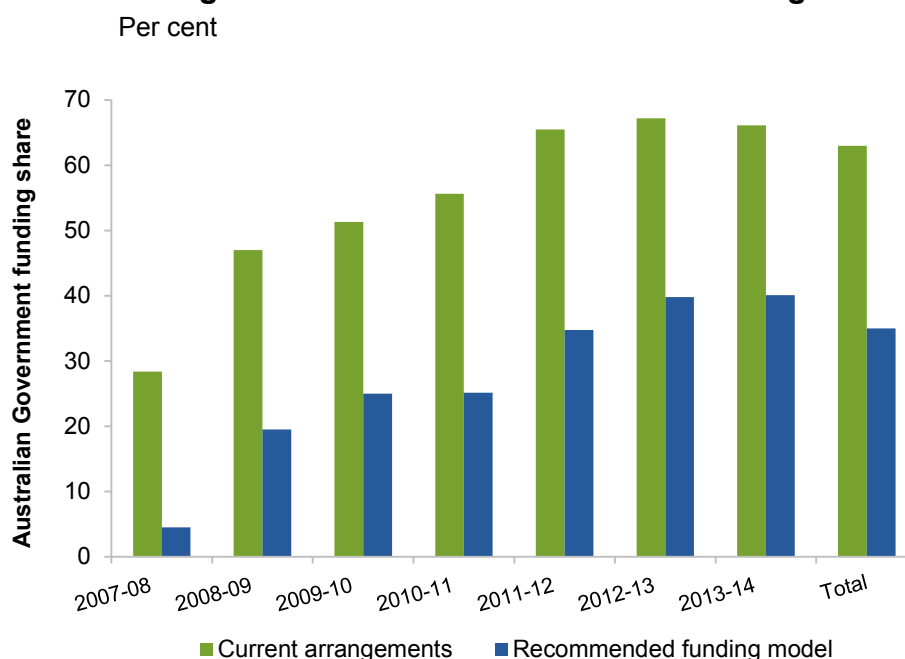
Historical analysis indicated that the Australian Government’s funding share would have been nearly 30 percentage points lower under the recommended funding model, translating to a cumulative decline of over \$4 billion over seven years (figure 3.5). The reduction in recovery costs to the Australian Government would have been particularly high in years following severe natural disasters, such as the 2010–11 Queensland floods and Cyclone Yasi.

Sensitivity analysis showed that changes to the cost-sharing rate play a large part in the reduction in recovery costs to the Australian Government. On the other hand, the fiscal impacts of changes in the annual expenditure threshold and eligible expenditure items are not as significant. While the increase in the small disaster criterion could not be modelled

³ The top-up fiscal support element was not modelled because its cost and potential impacts would vary considerably depending on whether states take up this option and the particular type of additional support they purchase.

in this exercise due to the nature of the data, other data show that increasing the small disaster criterion has a negligible impact on the costs borne by the Australian Government. This is because most natural disaster costs result from a small number of large disasters.

Figure 3.5 Australian Government funding share under current arrangements and the recommended funding model



Data source: Productivity Commission estimates.

The Commission's recommended funding model would mean that states bear a higher proportion of natural disaster recovery costs. For example, the Queensland Government (sub. DR184) estimated that the reforms would have had an impact of almost \$3 billion from 2010-11 to 2013-14; most of this (\$2.7 billion) is driven by the reduction in the cost-sharing rate from 75 per cent to 50 per cent.⁴ In another example, the Victorian Government (sub. DR215, p. 6) stated that:

Under the Commission's proposed changes, Victoria would have been required to bear an additional \$850 million of expenditure in recovery from 2008-09 to 2013-14, which equates to 0.34 per cent of State revenue for that period.

The Queensland Government (sub. DR184, p. 2) argued that:

The proposals represent a massive cost shifting of fiscal responsibility from the Commonwealth to states and territories, and the impact on state and local governments and communities across Australia, particularly in Queensland, would be extreme.

⁴ The Queensland Government (sub. DR184) reported a fiscal impact of \$5.3 billion. This estimate included the costs of removing insurance duty. In the draft report, the Commission recommended replacing insurance duty with more efficient revenue sources.

The Commission does not consider its funding reforms to be a cost-shifting exercise — natural disaster costs are ultimately the responsibility of state jurisdictions. The funding reforms are about restoring incentives and aligning the cost sharing with relative fiscal capacity. If jurisdictions are likely to bear a higher share of the costs, they will face stronger incentives to pursue the most effective and sustainable risk management options for their own assets. In the long run these stronger incentives will decrease the costs of managing natural disasters.

Further, the Commission does not consider the fiscal impacts of natural disasters on states to be unreasonable. In:

- Victoria, the impact translates to less than \$150 million per year over the 2008-09 to 2013-14 period. \$150 million is quite manageable in the context of a \$50 billion state budget and operating surpluses averaging around \$400 million in recent years
- Queensland, the impact is more significant, averaging around \$750 million a year over a four year period, but is nonetheless manageable in the context of Queensland's overall budget. Further, recent history presents a period of unusually high costs for the state and the impact on Queensland would not be of this magnitude each year.

The above estimates are the first-round impacts on state expenditure. The costs of natural disaster relief are shared among all jurisdictions through the process of horizontal fiscal equalisation. Above-average spending on disaster relief in one jurisdiction, for example in Queensland, is partly funded by a reduction in other jurisdictions' GST shares.

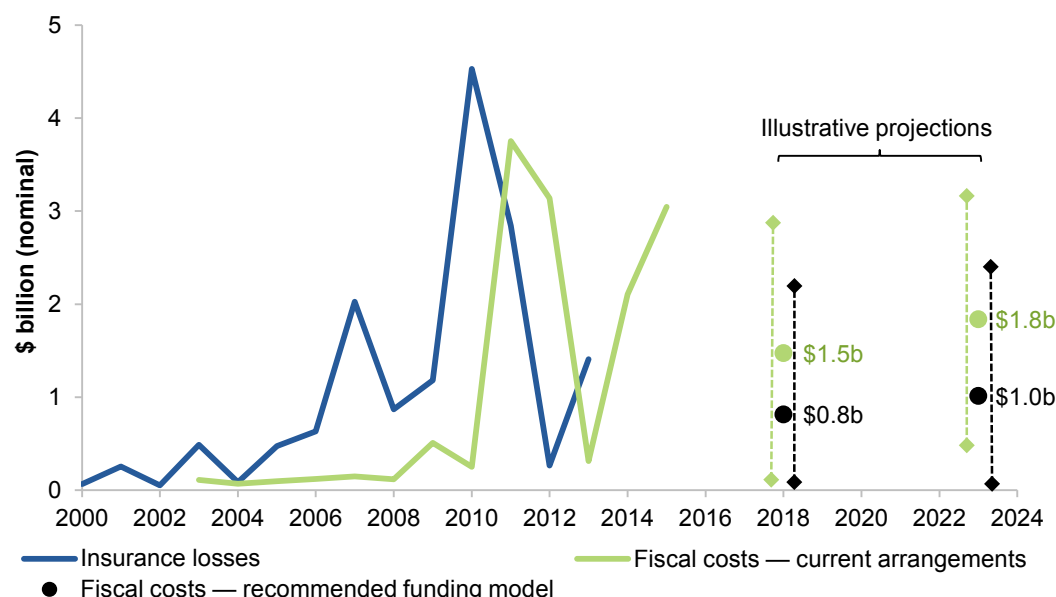
Under the Commission's funding model, states would receive less *contingent* assistance from the Australian Government for recovery costs, but increased *certain* assistance for mitigation each year. The increased mitigation funding would have more than offset the reduction in NDRRA support in many cases in the past for the smaller jurisdictions.

The forward-looking analysis produced illustrative projections of the average fiscal costs of natural disasters to the Australian Government (pre- and post-disaster expenditure). Average expenditure under the funding model is expected to be approximately 55 per cent of expenditure under current arrangements. Average annual Australian Government expenditure could be around \$650 million lower in the medium term (2018) and \$850 million lower in the long term (2023) (figure 3.6). Since these cost reduction estimates are based on a period of unusually high natural disaster severity, they are likely to be overstated (or at the high end).

The Commission has not conducted analysis on the impacts of its funding reforms at the local government or community level. Reflective of the current arrangements and the Commission's terms of reference for this inquiry, the Commission's funding reforms relate to arrangements between the Australian and state governments with complete autonomy provided to state governments on how these are translated at the local level. While a range of participants expressed concern about the likely impacts at the local government level and requested that further analysis be done (box 3.16), the impacts will depend on the

model and approach adopted by each state government to implementing natural disaster funding arrangements.

Figure 3.6 Projected fiscal impact of modelled funding reforms^a



^a The figure shows central projections (the green and black dots) and one standard deviation intervals (the green and black diamonds). Negative intervals are truncated at zero.

Data source: Productivity Commission estimates.

Box 3.16 Participant views on impacts at the local government level of reduced support from the Australian Government for natural disaster recovery

The MAV is concerned that a number of the draft recommendations and the reform options proposed by the Commission will lead to a significant financial burden being placed upon councils that have limited financial capacity to further contribute to natural disaster funding ... Specifically, the effects of a reduction in funding by the Commonwealth on local or state government budgets and the flow-on effects to other services and programs have not been analysed. Nor is there an analysis of the social effects on communities of the Commission's recommended reduction in personal, business and primary producer support payments. (MAV, sub. DR162, p. 4)

LGNSW does not support a reduction in the Commonwealth marginal cost sharing contribution rate to 50 per cent or changes to the small disaster criterion and annual expenditure threshold. While this recommendation is directed towards state governments, it inevitably has implications for Local Government ... The impact on state government budgets will be significant and will be mirrored in the flow on to councils. This leaves councils in a vulnerable and uncertain situation where they will rely on the goodwill of state governments to determine how and when support will be distributed. (LGNSW, sub. DR196, p. 5)

Some local government participants argued that it is likely that state governments would replicate any arrangement between the Australian and state governments at the local level. For example:

Councils should expect some, if not all, of the reductions in funding to States from the proposed options to flow through to the support they receive. (MAV, sub. DR162, p. 4)

Any proposal to substantially reduce the level of assistance provided by the Commonwealth to the States/territories will almost certainly flow on to local government ... The Commission's statement that it would be up to individual jurisdictions to determine how they would provide support to their local governments, while obviously correct, serves to obscure the likely impact on councils and runs the risk of being seen as tantamount to an echo of responsibility shifting from the Commonwealth to the States. (ALGA, sub. DR173, pp. 4–5)

However, it is appropriate that states have autonomy regarding how to provide support to their local governments, on the basis that they have constitutional responsibility for natural disaster management (and local governments are essentially an extension of state governments). Further, the approach to implementing arrangements at the local level could vary considerably on a jurisdiction-by-jurisdiction basis, particularly given the significantly increased autonomy afforded to state governments under the funding reforms.

4 Policy reforms to improve natural disaster risk management

Key points

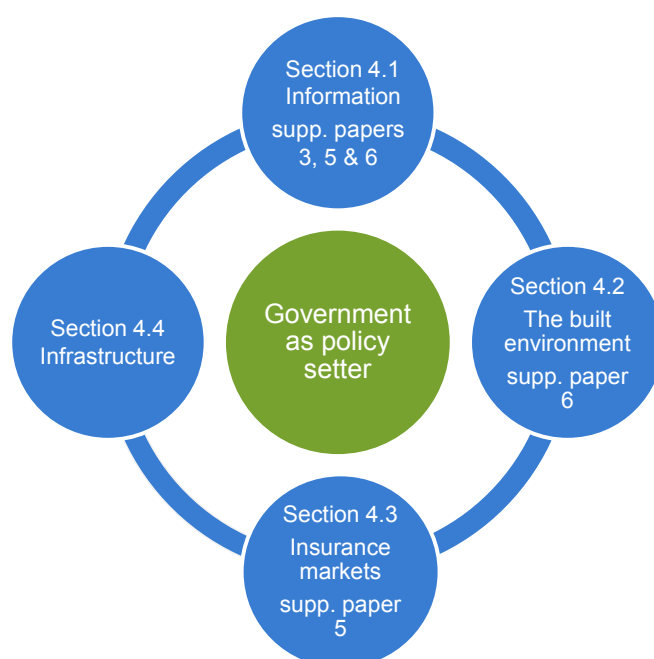
- Governments influence the exposure and vulnerability of communities to natural disaster risk through broader policy settings, in particular by regulating insurance markets and the built environment, and by providing information. Addressing impediments to effective natural disaster risk management in these areas would deliver benefits.
- Information is critical to understanding and managing natural disaster risk. Hazard and risk exposure information has improved significantly in recent years, but there are opportunities to improve information consistency, sharing and communication.
- There is scope for improved information provision to the community on natural disaster risks by the private sector, especially insurers, and state and local governments.
 - Low-cost channels to communicate information to property owners, such as council rates notices, insurance renewals or property rental contracts, could be used.
 - Insurers should do more to inform households about their insurance policies, the natural hazards they face and indicative costs of rebuilding after a natural disaster.
- There could be mutual benefits from insurers and state and local governments partnering to share natural hazard information and facilitate mitigation.
- Land use planning is arguably the most potent policy for managing natural disaster risk. It is also the most politically challenging.
 - Responsibility ultimately rests with state governments to: clearly articulate the statewide natural disaster risk appetite (by hazard type) in planning policy frameworks and the embedded trade-offs, guide local governments' interpretation and implementation of these policies, and ensure local governments have the appropriate resources and capabilities to undertake their planning responsibilities.
 - State governments should introduce legislative protection for local governments from liability for releasing natural hazard information and making changes to local planning schemes where such actions have been taken 'in good faith' and are consistent with state planning policy and legislation.
- Australian insurance markets for natural disaster risk are generally working well, and pricing is increasingly risk reflective. However, this has resulted in increases in premiums and potentially underinsurance and non-insurance in high-risk areas.
- Replacing state taxes and levies on general insurance with more efficient revenue sources would reduce the price of insurance.
- Inadequate consideration of natural disaster risk within asset management planning by state and local governments can impede betterment and lead to greater recovery costs.

This chapter examines how governments can influence the level of natural disaster risk and can best support management of natural disaster risk through broader policy settings. Government policy can influence private and shared natural disaster risk management in three main ways, by:

- reallocating risks to different parties (risk ownership), for example, by ensuring that property rights are legally protected and asset markets operate efficiently
- providing public-good information or addressing information asymmetries where appropriate (risk understanding)
- effectively regulating land use planning, building standards and insurance (risk treatment).

The key policy areas identified by the Commission where governments can influence natural disaster risk and risk management are information provision and sharing, the built environment, insurance markets and infrastructure (figure 4.1). Government action to address impediments in these areas could strengthen incentives for effective natural disaster risk management and deliver benefits irrespective of natural disaster funding arrangements. In many cases, the reforms recommended in this chapter are complementary to the accountability requirements associated with natural disaster funding discussed in chapter 3. The implementation of the reforms recommended in this chapter is discussed in chapter 5.

Figure 4.1 **Key policy areas that influence natural disaster risk management**

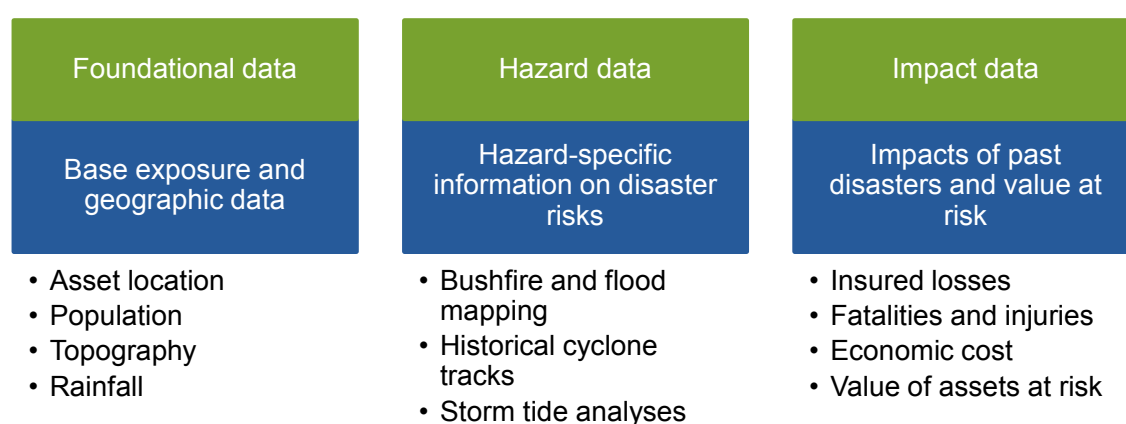


4.1 Information

Natural hazard information is a key input to risk understanding and risk treatment by all parts of the community. In general, households and businesses are responsible for managing their risks, including by obtaining and using information (supplementary paper 3). However, natural disaster information needs to be available and accessible to people who face natural disaster risks. At times, a shared approach to information collection can lead to better outcomes. Natural hazard information may have public-good characteristics, implying some role for government, provided benefits outweigh costs.

Deloitte Access Economics (2014) identified three broad categories of natural hazard information: foundational data, hazard data and impact data (figure 4.2). These data have many users and a variety of purposes. For example, governments might use foundational data such as topographic and geological data, and hazard data such as mapping of fire breaks, when making land use planning decisions. As well, insurers might use hazard data such as flood mapping, and impact data such as past insured losses and the value of assets at risk, when calculating premiums.

Figure 4.2 Types of natural hazard information and examples



Source: Adapted from Deloitte Access Economics (2014).

Participants identified some concerns regarding the availability and accessibility of hazard information. The problems can be summarised as:

- data gaps — hazard information is available for some areas but not for others
- a lack of accessibility
 - data consistency and reliability — users of information are unsure about the quality of some of the data available to them

-
- data sharing by governments and private providers — unwillingness to disclose data due to ownership and licensing issues, litigation risks and concerns about misuse of data
 - natural hazard data are not centralised in one place and can be held by multiple organisations
 - ineffective or inadequate communication of natural disaster risk to communities.

Gaps in natural hazard data

Most natural disaster risk information is provided by governments, although other members of the community such as insurers and academic researchers also contribute information and research. There has been marked improvement in recent years in understanding the science of natural hazards and the community's exposure to them. All levels of government, research institutions and the private sector have been involved in these efforts (box 4.1). Based on current trends, a report commissioned by the Australian Business Roundtable for Disaster Resilience and Safer Communities estimated that over \$283 million in public funding will be directed to natural disaster research over the period 2009–21 (Deloitte Access Economics 2014). Around 45 per cent of this has been allocated to bushfire research and 22 per cent to flooding research.

The Australian Government is a key provider of hazard information through the Bureau of Meteorology, Geoscience Australia and the CSIRO. State and local governments also collect significant information on natural disaster risks. Increasingly, this information is being made available publicly to facilitate decision making by households, businesses and researchers. Furthermore, all states have decided to develop natural disaster risk assessments based on the National Emergency Risk Assessment Guidelines (Attorney-General's Department, sub. 90).

Insurance companies have significantly increased their knowledge and analysis of natural hazards, particularly floods. For example, the Insurance Council of Australia has funded the development of the *National Flood Information Database*, which contains data on the flood risk faced by residential properties. The first version of the database (released in 2008) contained flood risk data for about 672 000 addresses. By 2014, the database included over six million addresses (around 47 per cent of all addresses in Australia) (Risk Frontiers, pers. comm., 15 August 2014). At present, the database is only accessible to insurance companies.

Box 4.1 Natural hazard information and research

Current state of data and information gathering

<i>Who collects the information?</i>	<i>What information is collected?</i>
Academic researchers	General research and contributions to innovation in the emergency management sector
Australian Building Codes Board	Wind hazard mapping
Australian Bureau of Statistics	Asset and demographic information
Bushfire and Natural Hazards Cooperative Research Centre	Research on reducing the risks and costs of natural disasters
Bureau of Meteorology	Weather and other climate information (forecasts, warnings, monitoring and advisory roles)
CSIRO	Applied technical and social research for improved understanding of natural hazards and risks, and of mitigation options and their benefits
Geoscience Australia	Geographic and geological data Produces earthquake and flood hazard mapping data and research, LiDAR elevation studies, National Exposure Information System, natural hazard maps and models
Geoscience Australia and Attorney-General's Department	National Flood Risk Information Project
Insurers	Insurance and natural hazard data
State, territory and local governments	Risk assessments, bushfire mapping and flood mapping

There has been marked improvement in data and information collection and dissemination in recent years. Much of the improvement relates to improved understanding of flooding and bushfires, as they have been the most costly natural disasters in recent years. All levels of government, research institutions and the private sector have been involved in these efforts. For example:

- insurers have adopted more sophisticated data and modelling on natural hazards. These include several initiatives coordinated by the Insurance Council of Australia, such as the National Flood Information Database and Data Globe (supplementary paper 1). These are generally made available only to insurers. However, the public can access some of this information through Insurance Council of Australia initiatives, such as the Building Resilience Rating Tool
- some state governments have made considerable investments in hazard mapping. For example, the Queensland Government has mapped floodplains across the state on a consistent basis, following severe flooding in 2010-11, and has made new and existing flood maps publicly available online.

Sources: BNHCRC (sub. 41); BOM (sub. 105); CSIRO (sub. 72, DR151); Deloitte Access Economics (2014); Geoscience Australia (sub. 111); Queensland Government (sub. 95); Risk Frontiers (sub. 19).

While many inquiry participants acknowledged the significant improvements in the availability of information on natural hazards and exposure in recent years (FMA, sub. 79; Geoscience Australia, sub. DR142; ICA, sub. 57), the Commission also received reports of information gaps (CRCS, sub. DR201; WALGA, sub. DR214). Geoscience Australia noted that most of the recent effort to improve information has exclusively focused on addressing the quality and availability of flood hazard information and information improvements

have not extended to include an equivalent understanding in relation to other hazard types, such as storm surge, bushfires, and severe wind. It also posited that ‘the ability to analyse total exposure of an area to all hazard types, and to prioritise between different hazard types, is still very immature at best’ (Geoscience Australia, sub. DR142, p. 5).

Information about vulnerability to natural disasters is also less developed (FMA, sub. 79; Geoscience Australia, sub. DR142; Suncorp Group, sub. DR176). Insurers submitted that they lack information on the characteristics of buildings (such as building floor heights in flood-prone areas) that make them vulnerable or resilient to natural disaster impacts in order to more accurately price premiums. There also may be gaps in the availability of appropriate ‘metadata’ — information about the methodology, assumptions and organisation of a dataset. These gaps can limit the ability of the data to aid effective decision making (Geoscience Australia, sub. DR142).

Finally, some inquiry participants stated that a contributing problem was a lack of coordination and prioritisation of research into natural hazards.

It is recommended that a national strategy be developed for research investment in the natural hazards space, covering the various requirements of the different levels of government, the non-government organisations and the private sector. (BNHCRC, sub. 41, p. 2)

The Australian Government should also drive a consistent nationwide approach by sponsoring research, acting as a coordinator and ensuring learnings from states and territories regarding application of the research is shared. This would include publishing flood heights across the country, forecasting sea level changes and education about risk management. (Victorian Coastal Council, sub. 76, p. 3)

Overall, information about natural hazards and exposure to hazards is increasing and governments and businesses are working to progressively address many of the important gaps in natural disaster information. While data gaps do exist in some areas, it is likely that over time the most significant of these will be addressed through the continued work of government agencies such as the Bureau of Meteorology, Geoscience Australia, state and local governments, and contributions from the private sector.

Information on natural hazards, exposure and vulnerability is not stationary in time (for example, due to population change and infrastructure development) and consequently ongoing data collection and monitoring are required (CSIRO, sub. DR151). This suggests that the existence and severity of data gaps will evolve over time. In this context, it is important that there are good processes for coordinating and prioritising research activities. The Commission considers that there is scope for improved coordination and prioritisation of natural hazard research activities across relevant research institutions in Australia — including the work undertaken by the likes of Geoscience Australia, the CSIRO and the Bureau of Meteorology.

FINDING 4.1

The availability of information on natural hazards and exposure has improved significantly in recent years, especially in relation to floods. However, there is scope for greater coordination and prioritisation of natural hazard research activities across governments and research institutions.

Information accessibility

A key concern raised by participants was the accessibility of natural hazard information. A number of barriers that limit the accessibility of information were identified and a range of solutions were proposed. Key barriers include:

- legal liability concerns around the release of information by governments
- licensing restrictions
- privacy and commercial concerns
- a lack of consistency in data collection preventing interoperability
- inadequate information ‘infrastructure’ so that potential users are aware of the range of information available and where to access it.

The benefits of addressing these barriers are likely to differ depending on the data in question, and their uses, as this will affect the level of accessibility and consistency required.

Barriers to information sharing

Information on natural disaster risk is developed and compiled by governments to undertake their own functions, including investing in essential public assets and land use planning. The private sector, in particular insurance companies, also develops and compiles natural hazard risk information in the course of its core business operations. Some participants called for governments and private holders of natural hazard data to make this information publically available (box 4.2).

Governments and the insurance industry have been working together to develop and share information.

The insurance industry has been working closely with local, state/territory governments on hazard mapping and disclosure and significant progress is being made. (ICA, sub. 57, p. 9)

The progress in Australia over the last decade with industry/Government initiatives like sharing of flood risk data, flood mitigation projects and studies into strata building risks from cyclonic weather in far north Queensland has increased our understanding and helped reduce uncertainty for insurers when considering and pricing these risks. (QBE Australia, sub. 63, p. 1)

Box 4.2 **Participant views on information sharing by governments and the private sector**

Selected private sector views

We believe the Australian Government has a responsibility to make national hazard information available and accessible to enable informed decision making by all sectors of society. (IAG, sub. 24, p. 17)

Hazard and risk data [should] be made available to the public, land-use planners, government, emergency managers and developers to enhance decision making across the board. (Risk Frontiers did approach the previous government about making its databases available to the public but they seemed to have little appetite for this.) (Risk Frontiers, sub. 19, p. 10)

Informing households about the probable hazards they may face remains a core government responsibility that should continue to be pursued through national initiatives, or at a minimum through consistent State-based initiatives. (ICA, sub. DR185, p. 6)

Selected government views

Data providers, particularly commercial providers, should be strongly encouraged to remove restrictions and not limit either the open release of derived information, or the resolution (or scale) at which it can be provided. This approach would enable more efficient use of available funds and broaden the user-base. (Geoscience Australia, sub. 111, p. 7)

All states and territories have agreed to make their existing risk assessments public ... However, underlying data to inform more localised risk management remains limited or inaccessible — particularly in relation to flood risk. In some cases, the data that exists has been made available to the insurance industry to inform premiums, but is not directly available to the public in a digestible format. (Attorney-General's Department, sub. 90, p. 9)

... [D]ata or modelling on natural hazards should be made public by default, with only very few exceptions ... [such as those] associated with security of critical infrastructure or protecting privacy. Hazard and risk information should also be formatted to meet the needs of the intended audience. (Government of South Australia, sub. DR209, p. 25)

As well as being far more cost effective, it would also be more far 'user friendly' and more accessible to property owners if the relevant risk management information was held by a central body/portal either at the national [or] state level. All spheres of government should be encouraged to use such a portal to disseminate their information. (LGNSW, sub. DR196, p. 9)

Inquiry participants identified a range of impediments that limit the ability or willingness of governments to release some information, such as intellectual property rights and privacy concerns, but the key issue seems to be litigation risk. Some local governments have been reluctant to release natural hazard data because of the perceived risk that property owners may sue for the loss of property values if previously unpublished risks to their properties are revealed. Holders of information in the private sector are faced with a different set of issues, namely around the commercial sensitivity of their information.

Often impediments arise more from perceptions about the consequences of information release by governments than from reality. In many cases, there is no compelling evidence that releasing reasonably reliable natural hazard information held by governments would make the community worse off overall. Empirical research on the effect of disclosing flood risk information on property values suggests that the evidence for a significant negative impact is weak.

The balance of evidence suggests that the fears are over-rated. The benefits of disclosure for planning and public education outweigh the risks of adverse effect. (Yeo 2004, p. 267).

That said, further consideration should be given to providing increased legal protection for local governments in some jurisdictions (section 4.2).

Efforts are being made to address these issues. For example, new light detection and ranging data (LiDAR) acquisitions are being guided by the National Elevation Data Framework and made available through creative commons (Geoscience Australia, sub. 111). This Framework is intended to improve investment and access to existing and future elevation data through developing technical standards, access, distribution and use arrangements. Data are accessible through the National Elevation Data Framework Portal (Geoscience Australia 2014). Restrictive licensing that prevented the sharing of government LiDAR data is largely a legacy issue and should therefore be resolved over time (box 4.3).

Box 4.3 Light Detection and Ranging data

Light Detection and Ranging (LiDAR) involves the collection of detailed elevation data using aircraft, often as an input to flood studies (although LiDAR can be used in a broad range of applications in mining, agriculture and forestry). The cost of LiDAR data to inform flood studies means that studies tend to be undertaken for more densely populated areas, or where flood risks are considered to be high and more granular data are needed to inform hazard modelling.

The proportion of the Australian continent for which high resolution LiDAR data are available has increased from around 0.7 per cent in 2007 to 4.5 per cent at present, covering around 70 per cent of the population (Geoscience Australia, pers. comm., 28 August 2014). The area of land covered has increased around 16 fold in New South Wales, and around four fold in each of Queensland and Victoria.

However, concerns remain about the extent of coverage and the accessibility of historical LiDAR data. For example, Deloitte Access Economics (2014) noted that much LiDAR data held by Geoscience Australia are covered by licencing arrangements that mean they cannot be disseminated outside of government, affecting around 200 LiDAR acquisitions (although new data collected by governments are generally being made publicly available). It also noted that state governments have withheld release of LiDAR data due to 'issues around stewardship and custodianship relating, for example, to management of large data volumes and maintaining data currency' (Deloitte Access Economics 2014, p. 40).

Governments at all levels should make currently held natural hazard related data publicly available where they have not already done so, in addition to ensuring that any future data

can be made publicly available in accordance with the Office of the Australian Information Commissioner's Principles on open public sector information. Most state governments also have open data policies. However, in some circumstances, it may not be in the public interest for governments to release information. For example, there may be security or privacy concerns, or public provision of information may not be cost effective. Where there are costs involved in obtaining intellectual property rights for existing data, governments should weigh up these costs against the public benefits of making the data freely accessible.

There was considerable support from inquiry participants for governments to make natural hazard information publicly available (Blue Mountains City Council (NSW), sub. DR204; Cassowary Coast Regional Council (Qld), sub. DR140; Central Highlands Regional Council (Qld), sub. DR174; Shoalhaven City Council (NSW), sub. DR167). In relation to natural hazard data or modelling, the Government of South Australia (sub. DR209) stated this information should be made public by default, with only very few exceptions (for example, related to security of critical infrastructure or privacy). Risk Frontiers (sub. DR132, p. 4) emphasised that governments have a responsibility to ensure that risk information is made as widely available and accessible as possible, regardless of ownership arrangements.

The data does not need to be owned by government, but it could take responsibility for making sure that this data is easily visualized and accessible to homeowners. Nation Map is one possible vehicle for this. In the absence of more open disclosure of hazard information, the only way homeowners will learn about their risk is indirectly via insurance premiums that are increasingly risk-informed.

One existing initiative for making data accessible within an established licensing framework is the Australian Government's Open Access and Licensing Framework (AusGOAL). AusGOAL provides support and guidance to government and related sectors to help facilitate open access to publicly funded information (AusGOAL 2014). Geoscience Australia (sub. DR142, p. 9) submitted that AusGOAL is 'aligned with the government's open data policy but where necessary makes allowance for the incorporation of commercial data under a restrictive licence'.

Partnerships between local and state governments and insurers can reduce duplication in information gathering, increase information disclosure to residents and help to identify mitigation options that will have the largest benefits (box 4.4). Insurers also benefit indirectly from increased expenditure on mitigation (supplementary paper 4). For example, insurers are well placed to facilitate mitigation through identifying mitigation options and mechanisms for private funding (such as reduced premiums). Insurers and insurance information (for example, claims data) can also inform state-level land use planning frameworks and prioritisation of mitigation expenditure.

Partnerships between governments and insurers could be formed under a model similar to the Trusted Information Sharing Network for critical infrastructure. The Trusted Information Sharing Network provides a forum for business and government to share

information on security issues relevant to the protection of critical infrastructure (Attorney-General's Department 2010). The Insurance Council of Australia (sub. DR185, p. 12) noted that trusted information sharing networks are 'useful constructs where an appropriate focus can be maintained on purpose and partners can provide resources equitably'. It also noted that the Property Resilience and Exposure Program (box 4.4) is an example of a trusted information sharing network, encompassing specific local governments and insurers who choose to participate.

Box 4.4 Some examples of partnerships between the insurance industry and governments that encourage information sharing and mitigation

Property Resilience and Exposure Program

The Property Resilience and Exposure Program is an initiative of the Insurance Council of Australia. It encourages local governments and the insurance industry to work together on the issue of insurance affordability, where the drivers might be poor quality hazard data, or a lack of information on development controls and existing buildings. The program provides local governments and the insurance industry with information on the resilience of the housing stock by combining information held by the different parties on hazard mapping and building survey data. In addition, participating local governments are provided with a 'resilience heat map', which identifies areas where properties are at higher risk and might require mitigation measures.

Flood awareness seminars

NRMA Insurance has piloted flood awareness seminars in partnership with local governments, the Floodplain Management Association and the NSW State Emergency Service. The seminars included information on disaster preparedness and recovery, insurance cover and floodplain management. They aimed to encourage consumers to take steps to manage their personal risk.

Resilience STAR program (United States)

The US Government is developing the Resilience STAR program in conjunction with the Insurance Institute for Business and Home Safety. The scheme will certify houses that have been built or retrofitted to a specific standard of disaster resilience. This is in part intended to encourage insurers to offer reduced premiums for these properties.

Sources: IAG (sub. 24); ICA (2014a); supplementary paper 8.

While there was general support from governments and insurers for collaboration (ALGA, sub. DR173; Burdekin Shire Council (Qld), sub. 165; Government of South Australia, sub. DR209; MAV, sub. DR162; WALGA, sub. DR214), insurers emphasised the strong industry preference for national coordination of these issues in the long term and noted that relying on partnerships crafted with individual governments could be inefficient relative to more centralised forms of information sharing (IAG, sub. DR158; ICA, sub. DR185; Suncorp Group, sub. DR176). Some participants also cautioned that there would be inherent limits in what information may be able to be exchanged by the private sector due to competitive and financial pressures (ALGA, sub. DR173). Participants also noted that

there is some distrust between governments and insurers that may constrain such partnerships (LGNSW, sub. DR196). For example, some governments are sceptical that insurers will reduce their premiums in response to mitigation (FNQROC, trans., Townsville, p. 87).

RECOMMENDATION 4.1

Governments at all levels should make new and currently held natural hazard data publicly available in accordance with open public sector information principles. When collecting new natural hazard data or undertaking modelling, all levels of government should:

- make information publicly available unless it would not be in the public interest to do so
- use private-sector providers where cost effective, and use licencing arrangements that allow for public dissemination. Where there are costs involved in obtaining intellectual property rights for existing data, governments should weigh up these costs against the public benefits of making the data freely accessible
- apply cost recovery where governments are best placed to collect or analyse specialist data for which the benefits accrue mostly to private sector users.

RECOMMENDATION 4.2

State and territory governments, local governments and insurers should explore opportunities for collaboration and partnerships. Partnerships, for example, could be formed through the Insurance Council of Australia and state-based local government associations (or regional organisations of councils). Consideration could be given to the Trusted Information Sharing Network model. Partnerships could involve:

- governments sharing natural hazard data that they already hold and undertaking land use planning and mitigation to reduce risk exposure and vulnerability
- insurers sharing expertise and information (for example, claims data) to inform land use planning and mitigation decisions
- collaboration to inform households of the risks that they face and to encourage private funding of mitigation through incentives such as reduced premiums.

Inconsistent data collection

Some participants commented that inconsistencies in information collection can be a barrier to effective use of natural hazard information. For example, Beatty Legal (sub. 23) noted that uncertainty about the reliability of information about disaster risks can hinder local government decision making for mitigation projects. One proposed solution was for

the Australian Government to establish guidelines or standards for the collection of some types of natural hazard information. This could promote consistency in risk information.

... [A]ll stakeholders including insurers and consumers could benefit from a national framework for co-ordinating data collection and related activities. The collection, availability and dissemination of disaster information is currently inhibited by ownership and licensing issues, lack of standardisation, varied quality of data and the absence of a central repository. (ICA, sub. 57, p. 9)

Local governments are ... the holders of significant geospatial data, including information on potential flood risk and other potential natural hazards including bushfire, landslip and coastal inundation. However in the absence of either Commonwealth or state government disaster management guidance and funding assistance, the quality and consistency of information available at the council level is varied. (ALGA, sub. 52, p. 8)

Geoscience Australia (sub. DR142) emphasised the importance of a nationally consistent approach to information governance. It argued that data guidelines:

... should be part of a broader governance framework that covers all relevant hazard, vulnerability, exposure, impact and risk related data, mapping, modelling and derived information, as well as ‘fundamental’ data ... Governance and guidelines should be developed and endorsed through the mechanisms of COAG, and with full involvement of national agencies (i.e. [Geoscience Australia], the Bureau of Meteorology and the Australian Bureau of Statistics) and the jurisdictions. (Geoscience Australia, sub. DR142, pp. 2–3)

However, the CSIRO (sub. DR151) highlighted the need to more systematically identify the decisions that data are intended to inform and the level of consistency required in each case. For example, it stated that where comparisons need to be made across jurisdictional boundaries there can be a case for national standards. By contrast, where datasets are only used locally, there is no need for greater coordination and standardisation. Table 4.1 presents three categories of data provision types to illustrate this point (these categories are based on CSIRO, sub. DR151).

Mandating standards for some types of data could have the unintended consequence of limiting the usefulness of information to local-level decision making. There could be sound reasons for stakeholders to use different approaches to information gathering. For example, different requirements for detail and data presentation may reduce the benefit and therefore willingness to pay for a different standard of information.

One area where interoperability of datasets across local government areas and regions would be desirable is hazard modelling and mapping. Guidelines for the collection of these data (and the associated metadata) would improve the consistency of hazard information. It would also help local governments establish confidence in securing and using the information they need to carry out their responsibilities — including politically difficult land use planning — and in making it publicly available.

There was strong participant support for the development of guidelines for the collection and dissemination of hazard mapping and modelling. Suncorp Group (sub. DR176, p. 14)

stated that standardised guidelines are a ‘fundamental enabling step toward improving data collaboration and sharing’, and suggested that guidelines for hazard modelling should be coordinated and prioritised across hazards by the Australia–New Zealand Emergency Management Committee.

Table 4.1 Categories of spatial data provision

<i>Category</i>	<i>Rationale</i>	<i>Use and examples</i>
National datasets, centrally held	Datasets that are: <ul style="list-style-type: none"> • more efficiently collected and updated nationally • targeted specifically at nationally consistent decision making that requires more-or-less universal coverage. 	For setting broad priorities. Do not need to be highly precise. This could include: <ul style="list-style-type: none"> • fault line mapping • vegetation mapping • rainfall and temperature data.
Regional/local datasets, collected in standardised ways	Datasets that need to be collected in standardised ways so that comparisons can be made across jurisdictional or other boundaries. This can enable a nesting of more detailed datasets for high-hazard regions or critical locations.	Hazard modelling, mapping and metadata, particularly for flood and bushfire.
Locally differentiated datasets	Datasets that are locally differentiated and do not require coordination.	The return on investment from a potential mitigation project. Location of some local government assets.

Source: Adapted from CSIRO (sub. DR151).

Several local government participants considered this to be a role of the states or the Australian Government (Blue Mountains City Council (NSW), sub. DR204; Cassowary Coast Regional Council (Qld), sub. DR140). For example, Mackay Regional Council (Qld) (sub. DR133) suggested that governments should play a greater role in coordinating modelling with an increased emphasis on regional and statewide scale rather than local governments focusing on individual studies. Cassowary Coast Regional Council (Qld) (sub. DR140) stated that such guidelines should be developed for bushfire, flood and coastal hazards (including the impacts of climate change) at minimum.

Guidelines could be developed at either the state or national level, and could include a recommended minimum standard of modelling so that models from different jurisdictions could be integrated. The guidelines should be sufficiently flexible to allow for different user needs and objectives. Work on guidelines for flood mapping is already underway by a working group of the Australia–New Zealand Emergency Management Committee including relevant government agencies, such as Geoscience Australia (box 4.5).

Box 4.5 National Work Program for Flood Mapping

Initiated in early 2011, the National Work Program for Flood Mapping aims to develop standardised flood risk mapping, and is intended to complement the work of the National Flood Risk Information Project. In particular, this work program includes the development of technical specifications for the outputs of flood risk modelling and mapping. This element of the work program is managed by the National Flood Risk Advisory Group with funding through National Emergency Management Projects.

Other outputs of the work program include:

- developing principles to underpin flood risk mapping
- a jurisdictional Flood Risk Mapping Stocktake that provides an overview of flood mapping across states and territories, highlights key gaps and outlines important next steps to improve mapping data across the country.

Source: Pikusa (2013).

RECOMMENDATION 4.3

Governments should task the Australia–New Zealand Emergency Management Committee with leading the development of guidelines for the collection and dissemination of natural hazard mapping, modelling and metadata. Guidelines should be developed for all hazards that need to be modelled and mapped at the local/regional level and where consistency across regions is desirable.

Inadequate information ‘infrastructure’

A need for improved infrastructure to facilitate information access was identified by a number of inquiry participants. In particular, there was considerable support for the Australian Government to hold, and provide free access to, a range of information used in natural disaster risk management. For example:

- the Australian Business Roundtable for Disaster Resilience and Safer Communities (sub. 22) recommended that the Australian Government provide a national open-access platform for ‘foundational’ data, including weather, topography, demographics and the location of housing and infrastructure (Deloitte Access Economics 2014) (box 4.6)
- Beatty Legal (sub. 23, p. 2) proposed a national ‘clearing house’ for disseminating risk information prepared in accordance with nationally accepted standards
- the Bushfire and Natural Hazards Cooperative Research Centre (sub. 41, p. 2) recommended that a ‘national data management infrastructure’ be established to enable access to consistently interpreted, long-term natural hazard data
- the Regional Australia Institute (sub. 61) advocated for the establishment of an ongoing function at the Australian Government level to develop information for use in natural disaster policy decision making.

Box 4.6 The national open-access platform proposed by the Australian Business Roundtable for Disaster Resilience and Safer Communities

The Australian Business Roundtable for Disaster Resilience and Safer Communities has recommended a national open-access platform for foundational data be established by the Australian Government that would provide:

- a single point of access to data
- data generated across state boundaries, and potentially owned by different organisations, in a consistent format
- access to relevant private sector information
- standards and guidelines, and a data submission mechanism to allow providers to efficiently contribute data.

The foundational data proposed to be made available through the platform include: demographic, weather, topographic, geological and asset data. The platform would also collect, maintain and provide metadata.

The Roundtable noted that the required granularity of data would vary with the proposed application and indicated that very high spatial resolutions would be needed for flood and storm surge. Data to analyse bushfire, extreme wind related damage and earthquake risks could be at a lower resolution.

The Roundtable recommended that a 'national platform provider' could be set up to identify and remove impediments to data accessibility (such as licencing and access rights management) and help prioritise data types.

The Roundtable suggested that the platform would require an investment of around \$20 million at the outset, with potentially a further \$5 million annually to maintain the platform. It also noted that 'the detail has yet to be worked out' and that 'there is actually a lot of work that has to be done in order to finally get the final form of the actual database and platform that is being advocated' (ABRDRSC, trans., Sydney, p. 9).

Sources: ABRDRSC (sub. DR160; trans., Sydney, pp. 3–26).

Participants generally emphasised that such approaches would improve the consistency of available information, reduce duplication and make it more accessible to local governments, insurers and researchers.

There is a range of potential information management and provision models that could be adopted to provide improved access to data to inform natural disaster risk management. For example, the Australian Government has recently launched the National Map Open Data initiative, which will make government geospatial datasets publicly available through a single platform (including information on land, water, infrastructure, boundaries and population) (Turnbull 2014).

Information does not necessarily need to be centrally held by the Australian Government to enable access. The Foundational Spatial Data Framework, for instance, provides a common reference for the assembly and maintenance of Australian and New Zealand foundation

level spatial data. The framework incorporates information management policies that address custodianship, user access and the impact of legislation and policy covering privacy, security, intellectual property and licensing (ANZLIC 2014). It provides access to a range of foundational data including address, transport, water, elevation, depth and land cover. These data are collected for differing purposes and held by a range of stakeholders. Some of the data available through the framework are open access and user charges apply for other data. Geoscience Australia (sub. DR142, p. 10) described this sort of approach as a ‘flexible, sustainable and scalable’ solution to information access.

The appropriate information management and provision model will depend on the data in question and their intended uses. The case for a central repository of information is strongest for data that are more efficiently collected nationally and where universal coverage is desirable to inform nationally consistent decision making. However, central repositories of data can be costly, unwieldy and may be compromised by the need for regular updates of the information from different stakeholders. Furthermore, natural disaster risk management relies on multidisciplinary data, and any information infrastructure needs to consider other competing uses of such data.

Much foundational data are already made publicly available at the national level, including by Geoscience Australia and the Bureau of Meteorology, suggesting that the benefits of this platform may be modest. For example, Geoscience Australia (sub. 111) generates, collates and publishes extensive foundational data, including elevation data, satellite imagery, earthquake event catalogues, landslide data and post-disaster survey data on community impact, recovery and resilience. It has also developed a range of studies and models based on these data, including flood studies, nationally consistent information on community assets, and asset vulnerability models for a wide range of hazards. These resources are generally made available free of charge.

The Australian Business Roundtable for Disaster Resilience and Safer Communities’ proposed platform (box 4.6) — while still a high level concept — is ambitious and goes beyond simply collating existing public data in a central location to fundamentally changing the custodianship of the data. Going beyond current efforts to further centralise data relevant to natural hazards (including very high resolution data) and making data freely available and consistent would entail costs. For example, data collected over time or by different parties may not always be in a consistent format, and conversion to a common standard could be expensive and potentially lead to the loss of information value.

Addressing issues around accessibility that relate to legal liability, licensing and the release of government held data (discussed in the previous section) would go a long way to making information more accessible. For these reasons, the Commission considers that the benefits of a national ‘clearing house’ for collating or standardising all information on natural hazards — over and above what is currently happening — would be unlikely to exceed the costs.

There may be merit in building on existing initiatives, such as the National Open Map Data Initiative, and the Foundational Spatial Data Framework, to enhance the collection and

access of certain types of information to assist natural disaster risk management (ICA, sub. DR185). However, the benefits and costs of doing so will need to be considered depending on the specific type of data and its intended use.

Communicating information to the public

Specific, detailed and accurate risk information can improve individuals' awareness of the risks that they face and encourage them to take appropriate action to manage these risks. The Planning Institute of Australia (sub. 53, p. 6) noted that 'the importance and effectiveness of ongoing community education and engagement, in the context of social planning, cannot be underestimated'. The Foundation for Rural and Regional Renewal (sub. 50, p. 5) stated that there are benefits in communicating risks, as 'communities that are engaged and understand the emergency management system, and the communities' role in this, are better equipped at the time of a disaster'.

Communication needs to be clear, specific and targeted to be effective. For example, the National Climate Change Adaptation Research Facility identified some challenges in communicating information.

First, memories are short in relation to the occurrence intervals of extremes. As NCCARF has shown in a number of its research reports ... people forget how to manage extremes during calm-weather periods, and institutional expertise is lost through redeployment or retirement. Second, people are mobile, and move into at-risk areas with no knowledge of how to cope with the events that pose a risk. (NCCARF, sub. 84, p. 3)

It remains the case that where private agents stand to benefit from more specific, tailored risk information, they have an incentive to seek out and potentially pay for this information themselves, just as they would information about other attributes of the property they own or are considering purchasing. However, in some cases, consumers may have access to information but cannot use it because it is not in a usable format (for example, it is too complex) or they have cognitive biases (such as myopia) that can lead to poor financial decisions (supplementary paper 5).

Governments already make some information publicly available, such as state-level flood and bushfire mapping, and a range of public safety information is communicated about managing natural disaster risks (for example, on preparing a bushfire plan). Some local governments also provide detailed risk information to their residents. For example, Lake Macquarie City Council (NSW) (sub. 74) submitted that it is working on developing a free online service to enable residents to access detailed flood-risk information about their property and area. Non-government and community organisations also provide information to households about how to manage natural disaster risk to their properties. For example, Firewise WA (trans., Melbourne) seeks to inform households about how to reduce their properties' vulnerability to bushfire through, for example, choices about building materials and surrounding vegetation.

Community understanding and decision making about natural disasters could be improved if governments and insurers disseminated general hazard information in a manner that is regular and low cost, such as through council rates notices, rental contracts or insurance renewal statements. Such information would not need to be household specific but could be general (for example, about small-scale mitigation options to reduce risks) with some variance by geographic areas. This information could be provided in a similar format to that relating to energy and water consumption on electricity and water bills.

A few participants cautioned that such communication should complement rather than replace more in-depth community education and awareness initiatives that aim to expand public knowledge and skills in natural disaster risk management (these types of mitigation activities are discussed in more detail in supplementary paper 4).

... [I]nformation communication, such as hazard information appearing on household rates notices ... is an essential part of mitigation, but [does not] replace the need for comprehensive education programs assisting individuals to prepare for and respond to hazards that may threaten their health and safety. ... [It] relies on the assumption that community members choose to actively engage with the information provided. (St John Ambulance, sub. DR141, p. 2)

Vendor statements are an existing means of communicating risk information to prospective property buyers. However, the design and content of these statements as a tool for disclosing natural hazard risk varies across jurisdictions (supplementary paper 6).

Vendor disclosure was identified as a priority area for reform by the National Emergency Management Committee in its *Enhancing Disaster Resilience in the Built Environment Roadmap* (section 4.2). It argued that effective natural disaster risk management for the built environment requires ‘a nationally-consistent legislative framework’ with ‘extensive’ vendor disclosure requirements with respect to hazard information during the sale of a property (NEMC 2012a, p. 12). The National Emergency Management Committee identified inconsistencies across jurisdictions, and described the legislative frameworks for vendor disclosure in:

- New South Wales, Queensland, South Australia, Western Australia, Tasmania and the ACT as ‘deficient’
- the Northern Territory as ‘reasonable’ (requiring vendors to disclose flood and storm surge information to buyers)
- Victoria as a ‘robust’ system including flood, bushfire and landslide hazard mapping.

There is merit in consistent guidelines for the disclosure of natural hazards affecting properties. Guidelines for disclosure might also alleviate some of the legal liability concerns regarding releasing hazard information for existing areas of settlement (section 4.2).

There was support from participants for improved disclosure of natural hazard information to households (Cassowary Coast Regional Council (Qld), sub. DR140; FMA, sub. DR166;

ICA, sub. DR185; LGNSW, sub. DR196). The Insurance Australia Group (IAG) (sub. DR158) suggested that this information should be made available through all local government web pages and for renters through the relevant state rental bond board. The MAV (sub. DR162) noted that while it supported vendor disclosure, it is important to ensure that disclosure requirements are not overly burdensome for local governments.

Some participants advocated for vendor disclosure statements to incorporate information about all natural hazards, not just where relevant planning controls exist (FMA, sub. DR166; IAG, sub. DR158). In particular, IAG reported evidence of public confusion where properties are not subject to development controls but still have a small but relevant risk that will be reflected in their home insurance premiums. There is some evidence of states advising local governments to support inclusion of this information in vendor disclosure statements, such as the NSW Government's guidelines to local governments to explicitly include current and future coastal hazards in section 149 planning certificates (NSW Department of Planning and Environment 2014).

The Australian and state governments are currently developing capability and investment plans through the *Enhancing Disaster Resilience in the Built Environment Roadmap* process. These plans will likely include vendor disclosure. Progress is to be reviewed by the Land Use Planning and Building Codes Taskforce (Attorney-General's Department, pers. comm., 3 September 2014).

Risk information is also provided through non-government channels. The insurance industry has begun to provide risk information to property owners outside of insurance premiums by establishing the Building Resilience Rating Tool (box 4.7). This tool enables property owners to access a rating for their property on a scale of one to five, based on natural disaster risk information.

The [Building Resilience Rating Tool] provides the community an opportunity to educate themselves about the risks they face and make smarter decisions about building or renovating their homes. (Suncorp Group, sub. 71, p. 13)

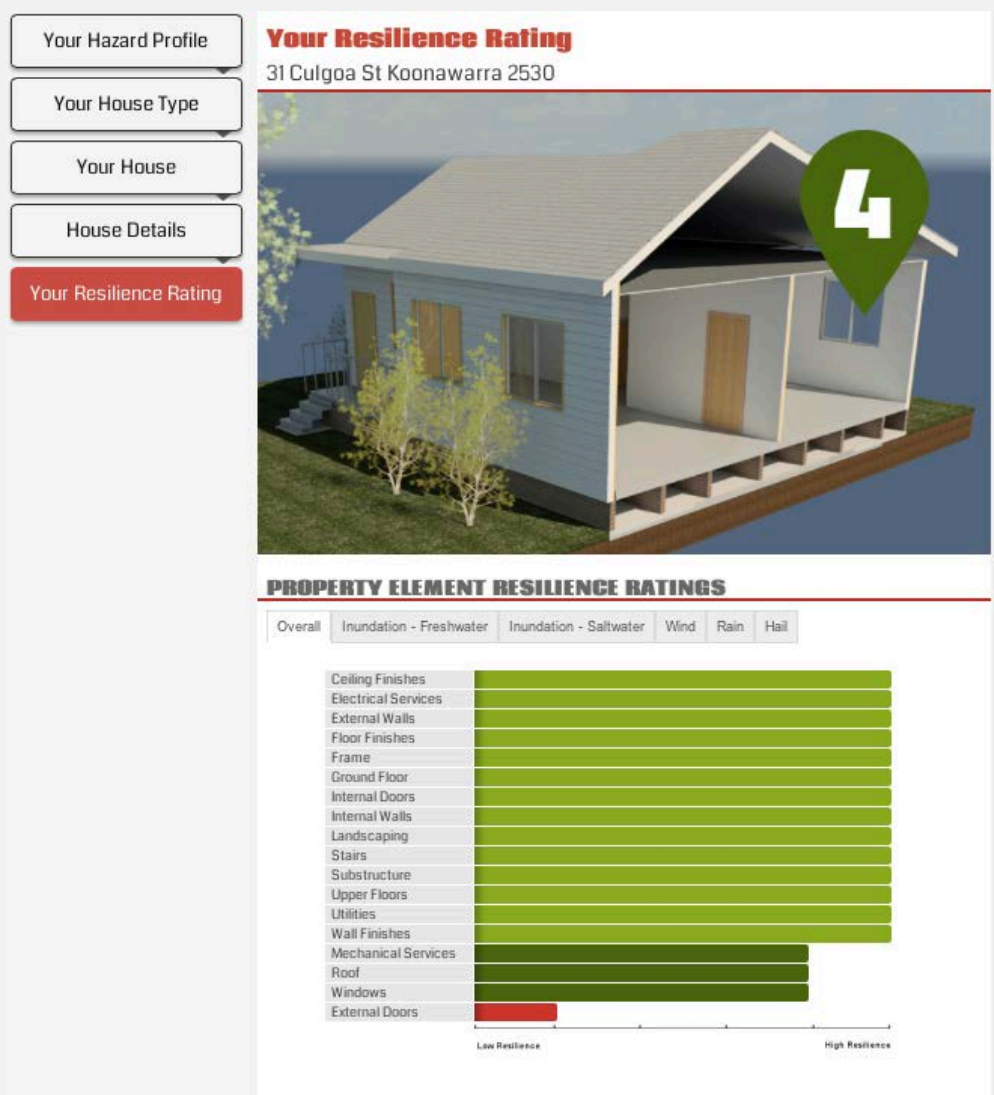
Some inquiry participants (including insurers themselves) cautioned against placing too much responsibility for information sharing on insurers (or other businesses) (ALGA, sub. DR173; FRLC, sub. DR130; Geoscience Australia, sub. DR142; IAG, sub. DR158; Tablelands Regional Council (Qld), sub. DR146). For example, Tablelands Regional Council (Qld) (sub. DR146) expressed the view that insurers' information might be limited in terms of its applicability and representativeness to an entire community or region. IAG (sub. DR158) also noted that while insurers have a role to support and complement information provision by governments, they should not be the sole source of information and that informing households about hazards is a core government responsibility.

Section 4.3 discusses further information that could be provided by insurers to consumers as part of insurance contracts.

Box 4.7 Building Resilience Rating Tool

The Insurance Council of Australia is in the process of developing a Building Resilience Rating Tool to help households understand the vulnerability of their property to several types of natural hazard. It is intended to cover inundation (riverine flooding and storm surge), storms, cyclones, bushfires, earthquakes and extreme heat for a range of property types, including standalone residential properties, strata developments and commercial properties.

When complete, the tool will be provided through an online interface that allows users to enter their street address and detailed information about the location of their property and its age, design and construction materials. A 'resilience rating' (a score out of five) is then calculated for the property, indicating how likely to be damaged are different parts of the building in an extreme weather event. Users are also provided with an indication of the relative likelihood of each natural hazard (at a property level) and with advice on how to improve the resilience of their properties.



Sources: Australian Resilience Taskforce (2014); ICA (pers. comm., 5 September 2014).

RECOMMENDATION 4.4

State and territory governments should prioritise and accelerate implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap*, including reviewing the regulatory components of vendor disclosure statements. The Land Use Planning and Building Codes Taskforce should be tasked to identify and consider options for regular, low-cost dissemination of hazard information to households by governments and insurers.

4.2 The built environment

Regulations affecting the built environment, including land use planning and building regulations, have a significant and enduring influence on the exposure and vulnerability of people and assets to natural disasters. In consequence, they influence the level of natural disaster risk, and the potential future cost of disasters. Land use planning and building regulations inform residents' understanding of their level of natural disaster risks, and as such, influence asset prices and decisions about investment. If land use planning and building regulations do not appropriately reflect the risks of natural disasters, they could lead to excessive or inappropriate development in high-risk areas, and potentially weaken the link between natural disaster risks and asset prices.

Land use planning and building regulations only apply to new properties and developments or significant modification to existing properties. This corresponds to only a small proportion of the housing stock each year, so the impact of changes to these policies has a long lag time. This legacy effect heightens the importance of embedding analysis of natural disaster risk into decision making on land use planning and building regulations in the first instance. It also has implications for the management of natural disaster risk in existing areas of settlement.

Land use planning, building regulations and policies form a suite of integrated tools for managing risk to the built environment. Coordination between these policy areas and between all levels of government is crucial for effective management of risks to the built environment. All governments are working to improve integration between land use planning, building regulations and emergency management under the *Enhancing Disaster Resilience in the Built Environment Roadmap* (Attorney-General's Department, pers. comm., 3 September 2014).

Land use planning

Land use planning systems regulate the growth and development of Australian settlements. Planning is a shared responsibility of state and local governments, which must balance a range of priorities in planning decisions. Land use planning policy and decision making

have had a mixed record in terms of incorporating appropriate natural disaster risk management principles. Participants commented that past planning decisions have increased the cost of natural disasters.

Australia, as in most other countries, has a legacy of poor land planning decisions by individuals and governments that has resulted in concentrations of exposure in hazard-prone places. Often these areas have attractive attributes such as access to water or bushlands and yet by virtue of these same attributes are exposed to one or more perils. (Risk Frontiers, sub. 19, p. 6)

Decisions to develop land are ‘rarely reversible, and then only at great cost and inconvenience’ (Wenger, Hussey and Pittock 2013, p. 4). As such, land use planning has a long-term impact, and where it incorporates effective natural disaster risk management it is arguably the most potent policy for managing natural disaster risk. It is also the most politically challenging. Current land use planning arrangements do not always support effective natural disaster risk management. Greater transparency on what natural disaster risk levels are embedded in state planning policies, as well as greater transparency and accountability of decision making, is a policy imperative.

Acceptable levels of risk and competing priorities

Effective risk management does not necessarily imply that there should be no development in high-risk areas. If there is a strong community preference for living in areas that are prone to flood or fire (for example), it might be optimal for governments to permit such development subject to appropriate management of the risks involved (PC 2012). As noted by Lake Macquarie City Council (NSW) (sub. 74), the competing objectives of land use planning mean that development will rarely be confined to hazard-free areas, so in many cases development will need to incorporate investment in mitigation, whether in the choice of building materials and design standards or in the provision of supporting infrastructure.

However, inquiry participants expressed concern that there have been instances where policy changes by the states, and interpretation and implementation of state planning frameworks by local governments, do not appear to have given sufficient consideration to natural disaster risk management, and as a result have imposed costs on communities (box 4.8). There is also evidence that local planning authorities have not acted on the advice received from fire and emergency service agencies regarding natural disaster risk (supplementary paper 6). Further, the different decision-making bodies involved means that there is no single clear line of accountability for poor land use planning outcomes.

Responsibility ultimately rests with state governments to clearly articulate the statewide natural disaster risk appetite in planning policy frameworks and the embedded trade-offs, to guide local governments interpreting and implementing these policies, and to ensure that both local planning schemes and local development decisions are consistent with state planning policy.

Box 4.8 Participant views: cases where land use planning decisions have not adequately considered natural disaster risk

Some participants drew attention to inadequacies in state planning frameworks, including policy gaps in relation to specific hazards, as well as where state governments have retracted previous natural hazard related requirements. The National Sea Change Taskforce (sub. 18, p. 10) argued that:

State governments in NSW and Queensland have recently revoked existing planning guidelines which incorporated a requirement to take projected sea level rise into account in the assessment of development applications in coastal areas. It is inevitable that as a consequence an increasing number of residential properties will be developed in vulnerable, low-lying coastal areas and exposed to the potential impact of natural disasters. ...

Queensland's previous planning policy had factored in a sea level rise of 30cms by 2050 and 80cms by 2100, which meant that coastal development in vulnerable areas was generally only permitted in special circumstances, such as for marine and fishing precincts.

The Floodplain Management Association (sub. 79) identified a lack of statewide flood risk planning guidelines in New South Wales, and argued that development of the Hawkesbury–Nepean Valley in New South Wales should not have been permitted at all, given the area's ongoing risk of widespread and damaging floods. (A 2014 review found that mitigation options would be costly and provide limited protection against the flood risk, and that evacuation is the only certain way of reducing the risk to life (NSW Department of Primary Industries 2014).)

... [I]n NSW there is currently no effective state-level policy for land use planning in relation to natural hazards including flooding. In addition, there is no planning guideline relating to flood prone land, resulting in a lack of clear principles to guide land use planning and development assessment in these areas. (FMA, sub. 79, pp. 8–9)

Suncorp Group (sub. 71, p. 16) also drew attention to the Hawkesbury–Nepean and Gold Coast flood-risk regions.

[D]evelopment continues in the Hawkesbury–Nepean flood plain, despite multiple government reviews finding it an extreme flood risk ... Suncorp risk estimates place the Gold Coast and Hawkesbury–Nepean among the highest risk areas in the country. These are clear examples of where planning frameworks could be improved to better manage natural hazard risk.

Risk Frontiers (sub. DR132, p. 4) described the effects of the 2009 Victorian bushfires as a 'graphic example of how poor land-use planning practices has put lives and property at risk'.

This event resulted in 173 fatalities despite near perfect forecasts of fire weather. A study undertaken by Risk Frontiers for the Royal Commission found that 25 per cent of the homes destroyed in Kinglake and Marysville were located within 1 m of the bushland; 60% lay within 10 m! Here homeowners died under circumstances where they had little chance of defending homes.

The Australian Coastal Society (sub. DR187) submitted that short-term political decision making has resulted in poor outcomes in coastal management, such as in the impact of the 2011 Queensland storm events. It said that although these storms were not more severe than in the past, the resulting damage and costs were much greater 'because assets and infrastructure had been allowed to be placed in harms way' (Australian Coastal Society, sub. DR187, p. 3).

BG Urban Solutions (sub. DR207, p. 3) submitted that:

... there would have been a whole lot less disaster (and even loss of life) if there had not been quite so many questionable rezonings of obviously flood prone land, such as beside the Nagoa River in Emerald, for example, as well as many other coastal and riverine areas I could cite in Bundaberg, Rockhampton and Livingstone Shire Council areas.

Articulating a statewide risk appetite involves state governments identifying the risks posed by all relevant natural hazards and specifying appropriate planning controls for each given level of risk. Some jurisdictions have indicated that they already incorporate natural disaster risk in state planning policy and provide guidance on balancing competing priorities, or are working on doing so (Government of South Australia, sub. DR209; Queensland Government, sub. DR184; Tasmanian Government, sub. DR223; Victorian Government, sub. DR215; WA SEMCS, sub. DR216).

For example, the Tasmanian Government has endorsed a framework for managing natural disaster risk through land use planning and building regulations in which it will release a series of ‘hazard reports’ that define, identify and map risk bands (acceptable, low, medium, high) for specific hazards, as well as proposed planning and building controls for each of these bands. To date, it has released a draft hazard report for landslide, and is in the process of preparing hazard reports for coastal inundation and coastal erosion (with riverine flooding and storm/severe weather hazards identified for future reports) (Tasmanian Department of Premier and Cabinet 2014). However, some jurisdictions in articulating an acceptable level of risk in relation to specific natural hazards have subsequently removed aspects of it from state planning policy and/or legislation, as noted in box 4.8.

In some cases, governments and communities have different views on acceptable levels of risk. Land use planning systems need to be sufficiently flexible to incorporate variations in local community preferences. Decisions informed by public consultation and made with respect to local needs will not necessarily be consistent across regions or states, as the nature of hazards as well as community preferences will vary. For example, the Victorian Government (2014) made a series of amendments to its bushfire planning regulations in mid-2014 to enable greater flexibility in the way property owners and developers could achieve compliance with bushfire-related planning and building regulations, as a result of public consultation.

James Cook University (sub. DR127, p. 2) cited a few cases in Queensland in which decisions based on public consultation and incorporating local needs and preferences may be very different.

... [I]n the Lockyer Valley an extremely rare hazard event was approached with a retreat strategy of relocation and buyback. At Tully and Hull Heads a much higher probability event (storm surge accompanying a severe cyclone) generated community desire to rebuild on the same site. Rationally, the opposite should have occurred at each location. Good quality and sympathetic community consultation led to the outcome in each location.

Local governments should promote transparency in their implementation of state planning policy and legislative frameworks by recording the reasoning behind development assessment decisions. Some participants expressed concern that a requirement for local governments to separately publish this reasoning would impose an excessive administrative burden, particularly given current resource constraints, and indicated that the rationale for development assessments is already incorporated in current documentation

processes (Blue Mountains City Council (NSW), sub. DR204; FMA, sub. DR166; Gympie Regional Council (Qld), sub. DR152; Moree Plains Shire Council (NSW), sub. DR138; Tablelands Regional Council (Qld), sub. DR146). They argued that in many cases, the relevant information already exists in development assessment reports and resolutions, and it would be an unnecessary added cost for local governments to have to reformat it for separate publication.

Some trade-off between administrative compliance burden and transparency is needed; the Commission considers that local governments should, at a minimum, ensure that the reasoning behind development assessments is recorded and accessible, and this information is made available upon request. The Commission acknowledges that many local governments already do this, and does not intend to create additional reporting requirements. Rather, the intent is to increase transparency and accountability and ensure that the public can find out how and why development decisions have been made.

As an example, the Gold Coast City Council (Qld) has made the reasoning behind its approval (and the conditions imposed) of a development application on the Carrara floodplain in July 2013 publicly available.⁵

Inadequate capacity

Some local governments do not have sufficient resources to fulfil their responsibilities in land use planning as set out in state planning policy frameworks (supplementary paper 6). Inadequate funding and/or a lack of skills, expertise and information can impede local governments' ability to implement planning policies, particularly in the case of remote local governments with large geographic areas and small rate bases. The Australian Local Government Association (sub. 52, p. 13) stated that:

Land use planning could become a much stronger instrument in the risk mitigation area if state and territory governments provided higher level support to local governments. This could be through shared mapping, data and information, training and assistance with interpretation and implementation of state planning policy.

The Commission has previously found that capacity and capability constraints were barriers to local governments planning for and implementing effective risk management (PC 2012). This remains the case.

Financial capacity constraints could be overcome by greater recourse to user charging by some local governments, albeit this remains a challenge for remote and small rate base councils. Where development is permitted in high-risk areas, planning schemes generally do not incorporate efficient cost recovery. Local government rates and charges should

⁵ In July 2013, the Gold Coast City Council approved an application for a mixed-use development on the Carrara floodplain. It has published a detailed rationale for this decision in the minutes from its city planning committee meeting, available online (Gold Coast City Council 2013). The information includes a detailed assessment of the proposal against the relevant provisions of the local area plan, regional plan and state planning policies, including evaluation against a range of planning objectives.

reflect the cost of providing services, including the cost of managing natural disaster risks to public assets. In principle, the costs of risk management should be allocated to the party that can most influence the level of exposure to natural disaster risk, or where this is not feasible, to the beneficiaries of risk management (supplementary paper 4).

Where natural disaster risks are higher, this could mean higher rates or developer charges to cover some of the anticipated greater costs of maintenance and recovery works for associated local government infrastructure. The Commission received little evidence of this occurring, despite most local governments having an efficient tax base. For most local governments, the main constraint in raising own-source revenue is their constituents' willingness and capacity to pay (the latter is particularly an issue for geographically large and sparsely populated remote local governments). Alternatively, local governments could borrow to fund this work. The NSW Independent Pricing and Regulatory Tribunal (sub. DR159) found that many NSW local governments have no or very low debt.

The onus is on state governments to ensure that the local governments in their jurisdictions have adequate understanding of the statewide planning framework (including in relation to guidance on trade-offs and how to manage competing objectives), and are appropriately resourced to implement it.

RECOMMENDATION 4.5

State and territory governments should:

- clearly articulate the statewide natural hazard risk appetite in land use planning policy frameworks by identifying the risks posed by natural hazards and specifying appropriate planning controls for each given level of risk
- provide local governments with guidance on how to prioritise competing objectives within land use planning
- provide local governments with guidance on how to integrate land use planning and building standards. Consideration should be given to Victoria's *Integrated Planning and Building Framework for Bushfire* in this regard.

State and territory governments should regularly review their published risk appetite and guidance documentation to ensure it is up-to-date, accessible and incorporates relevant hazard information.

Local governments should record the reasoning behind development assessment decisions, where they do not do so already, and (at a minimum) provide this information to the public upon request.

Legal liability

The Commission received representations that effective risk management is being inhibited by local governments' concerns about legal liability. This includes concerns relating to:

- being sued where changes to land use planning schemes adversely affect property values
- being sued where they release natural hazard information that adversely affects property values
- planning decisions being overruled by higher levels of government or independent bodies.

Changes to planning controls can have an impact on market values. A large number of local governments in Queensland have expressed concern about the legal liability they face when making planning decisions (or failing to take certain action) on the basis of natural hazard assessments, as a result of the 'injurious affection' legislative provisions in that state (including Brisbane City Council, sub. DR169; Cassowary Coast Regional Council, sub. DR140; FNQROC, sub. DR148; Central Highlands Regional Council, sub. DR174; LGAQ, sub. 34; Lockyer Valley Regional Council, sub. DR125). The Local Government Association of Queensland also raised this issue in its submission to the Queensland Floods Commission of Inquiry in April 2011.

The injurious affection provisions require compensation for landowners adversely affected by changes to planning regulations (supplementary paper 6) and have been a major concern for local governments in incorporating risk management into planning decisions.

A concern to local government in terms of risk management for natural hazards is the potential for compensation claims for injurious affection where a previously allowable use is restricted. Current legislation is open to interpretation and argument when including natural hazard responses in local government planning instruments. The LGAQ has formally requested the State Government to change the planning legislation by limiting the scope for injurious affection for natural hazard responses in local government planning instruments. (LGAQ, sub. 34, p. 3)

The Queensland Government (sub. 95, p. 23) agreed that '[i]ndemnity and compensation of governments altering property rights to protect life and property continues to be an issue identified as a barrier to stronger risk management measures'. In February 2013, the Queensland Government announced that it would begin consulting with local governments and industry on the possibility of a legislative change to the injurious affection provisions (supplementary paper 6). This review process is ongoing; the Queensland Government introduced planning bills to Parliament in November 2014 and indicated that its 'intent is to pass the new legislation in late 2014, for enacting in the second quarter of 2015' (Queensland Department of State Development, Infrastructure and Planning 2014).

Participants also expressed concern about the legal ramifications for local governments of publishing natural hazard information, and submitted that this has affected their decisions to share information.

... [G]overnment bodies (especially local governments) have been reluctant to make flood mapping available to the public for fear that the council would be sued because of the perceived impact on property values ... (ERSA, sub. 12, p. 12)

... [W]hilst many councils do make their flood mapping data publicly available (with appropriate qualifications), there are also other local government authorities that simply do not have relevant data or are more conservative in their approach to making such information freely available. This reticence arises from potential legal liability concerns, the quality of data and the varying methodological approaches adopted by councils in mapping flood risk. (ALGA, sub. 52, p. 8)

... [T]here are risks either way when releasing data that third parties may use for purposes outside of the context in which the data was originally collected. This puts the originator (Council) at risk if e.g. a householder bases their decision to buy a house on inappropriate and dated flood threat information if the house is subsequently flooded. Conversely it could be argued that the information should be openly available for the householder to make an informed decision as possible. ... [I]nformation should be released but have clear caveats indicating the limitations of its application to purposes other than the original intent. (LGASA, sub. DR161, p. 13)

To address this issue, the National Emergency Management Committee recommended increased legal protection for local governments releasing natural hazard information.

Liability on the release of hazard data remains a key consideration. Indemnity for any Local or State Government on the release of natural hazard mapping, investigations or studies also needs to be provided. (NEMC 2012b, p. 17)

In addition, some participants raised concerns that local governments' objections to proposed developments or land uses are being overruled by higher levels of government or independent bodies.

... [E]ven when both councils and emergency service object to new development on the basis of risk, these objections are often dismissed in the Land & Environment Court. (Risk Frontiers, sub. 19, p. 11)

Illustrating the potential flow-on effect of such decisions, the National Sea Change Taskforce (sub. 18) and Suncorp (sub. 71) drew attention to the approval by the Gold Coast City Council of a 970-dwelling complex on a high-risk flood plain. In this case, according to Stephens (2013), the council believed it had no choice but to approve the development, due to a perception of legal precedent set by a court ruling on an adjacent development. In an attempt to impose protective conditions, it required the developer to provide lifeboats, a helipad and a three-day food supply. Suncorp Group (sub. 71, p. 15) cited this as a 'good example of the need to strengthen planning regulations'.

Reducing the liability of local governments has the potential to reduce their accountability for the impacts of planning decisions, development assessments and the quality and

accuracy of the information they release publicly. On the other hand, it could also improve the ability of local governments to make transparent decisions that reflect hazard assessment and overall community risk appetite, rather than being unduly influenced by the possibility of having to pay compensation to some individuals and groups. Further, developers and property owners must take some responsibility for assessing the likely consequences of owning land in high-risk locations.

New South Wales is the only jurisdiction that provides an explicit legislative exemption from liability for reasonably based actions taken by local governments in relation to land susceptible to natural hazards, under section 733 of the *Local Government Act 1993* (NSW) (supplementary paper 6). In a report prepared for the Australian Local Government Association, legal firm Baker & McKenzie (2011) noted that although other jurisdictions have legislation which can limit the liability of local governments in civil litigation (with the exception of the Northern Territory and South Australia, for which there is a general but weaker defence at common law), the extent of these defences varies between states and there might be merit in wider adoption of similar legislation to that in New South Wales.

Inquiry participants in other jurisdictions expressed support for such legislative protection (Beatty Legal, sub. 23; IPWEA, sub. DR181; MAV, sub. DR162). For example, the Municipal Association of Victoria submitted that it:

... supports additional guidance being provided to local government regarding legal liability. However, the Commission should expand this recommendation to include the protection of councils from common law liability where planning decisions are consistent with State planning rules (in Victoria the Victoria Planning Provisions) and associated guidance material. (MAV, sub. DR162, p. 15)

In Queensland, the LGAQ (sub. DR188) and many individual local governments (Brisbane City Council, sub. DR169; Bundaberg Regional Council, sub. DR168; Central Highlands Regional Council, sub. DR174; Lockyer Valley Regional Council, sub. DR125; Mackay Regional Council, sub. DR133; Toowoomba Regional Council, sub. DR169) submitted that beyond removal of the injurious affection provisions, there should be a general statutory exemption from liability. This exemption should cover ‘reasonably-based decision making and actions’ taken to manage natural disaster risk in land use planning (Lockyer Valley Regional Council (Qld), sub. DR125, p. 6).

It is beyond the scope of this inquiry, and the expertise of the Commission, to determine the specific nature and form of a possible statutory exemption from legal liability for local governments. However, some form of increased legislative protection is likely to improve local governments’ ability to share and act upon natural hazard information in land use planning and development assessments. In the absence of any legal impediments or other unintended adverse consequences, state governments (except New South Wales) should introduce such legislative protection. In addition, the injurious affection provisions in Queensland’s *Sustainable Planning Act 2009* are a barrier to local governments making effective planning decisions and should be repealed. These arrangements presuppose an

entitlement to compensation for changes to a local planning scheme, rather than viewing such compensation as justified only in certain circumstances.

RECOMMENDATION 4.6

State governments, where they have not already done so, should provide local governments with statutory protection from liability for releasing natural hazard information and making changes to local planning schemes where such actions have been taken ‘in good faith’ and in accordance with state planning policy and legislation.

RECOMMENDATION 4.7

The provisions in the Queensland *Sustainable Planning Act 2009* for injurious affection should be repealed.

Building regulations

Governments regulate building standards for several reasons, including:

- to reduce the impacts of information asymmetries — many characteristics of a building are hidden and potential buyers might not be able to determine whether the building meets their requirements
- to reduce the likelihood that a building will have negative externalities on neighbours — for example, poorly constructed dwellings pose risks to adjacent buildings.

Overall, Australia’s building stock is of a high quality and building regulations are effective in reducing the impacts of natural disasters. The use of rigorous cost–benefit analysis and review processes provides a strong foundation for natural disaster risk to continue to be appropriately incorporated into building regulations (supplementary paper 6).

Building regulations have evolved over time in response to changing community expectations, improvements in building technologies and following natural disasters. The changes that have followed natural disasters have tended to improve building standards significantly. For example, following Cyclone Tracy in 1974, building codes were updated to require higher levels of resilience to cyclones. Geoscience Australia (sub. 111, p. 3) stated that the changes had been effective in improving building resilience.

A simulation of Tracy’s impact on Darwin in 2008 by Geoscience Australia (GA) estimated the damage severity in terms of reconstruction cost to be 90% less than that incurred in 1974.

The objectives of the National Construction Code are health, safety, amenity and sustainability. Suncorp Group (sub. 71) called for an additional objective of building

durability, while a few other inquiry participants suggested that building regulations could be expanded to support property resilience alongside other goals (ABRDRSC, sub. DR160; Actuaries Institute, sub. 97; IAG, sub. DR158; ICA, sub. DR185; Munich Re, sub. DR136).

In its 2012 inquiry *Barriers to Effective Climate Change Adaptation*, the Commission considered the case for extending building regulations to incorporate resilience and property damage. It noted that the existing building code objectives would likely already provide some measure of protection for buildings, and that private property owners, builders and developers who wish to attain a greater standard of durability are free to do so voluntarily (PC 2012).

Since the completion of the *Adaptation* inquiry, insurers have continued to work on the Building Resilience Rating Tool (box 4.7). There is nothing to preclude insurers from compiling data on building durability, and using that information to inform consumers of their natural disaster risks and to set premiums (supplementary paper 5). Nor are there any regulatory barriers or market failures that would prevent building owners from building to a more disaster-resilient standard.

It is important that changes to building regulations are communicated effectively. Some participants drew attention to a lack of awareness of the effect of updated building regulations on reconstruction costs after the 2013 Blue Mountains bushfires, resulting in underinsurance (supplementary paper 6). For example, Legal Aid NSW (sub. 100, p. 3) recommended that there be ‘effective public education of building code changes and their impact on the cost of rebuild and individual insurance’. The Commission takes the view that increasing awareness of changes to likely reconstruction costs is a shared responsibility between governments, households and insurers. State, territory and local governments are likely to have the most direct access to information about how a change in building regulations is implemented within their jurisdictions, and insurers are responsible for providing their customers with a reasonable level of advice about product coverage and indicative rebuild costs. Ultimately though it is the responsibility of households (who will generally have the most detailed knowledge about their individual property and their financial capacity) to ensure they have the appropriate level of insurance coverage. More information from government and insurers is needed for them to effectively do so (sections 4.1 and 4.3).

Existing areas of settlement

Existing areas of settlement pose challenges for natural disaster risk management because of the limited reach of land use planning and building regulations. Changes to residential building codes impact about 1.3 per cent of the housing stock each year, implying that it would take about 44 years for such changes to cover the entire housing stock (Deloitte Access Economics 2013). Land use planning can have an impact on risk exposure over an even longer period — for example, Suncorp Group (sub. 71, p. 15) argued that ‘a shortfall

in the planning scheme can leave the community at an unacceptable level of risk environment for 100 years or more'. The Bushfire Front Inc (sub. DR131, p. 2) stated that the extent of existing settlement in bushfire-prone areas means that improvements in land use planning and building regulations 'go only about 15% of the way forward'.

Applying these regulatory tools to existing areas of settlement can be costly (supplementary paper 6). Retrofitting existing dwellings to present-day building regulations may not be cost effective. Retreat or relocation strategies may be the only viable options in very high-risk areas — for example, the town of Grantham in Queensland implemented a relocation policy following devastating floods in 2011 — but these options are very expensive and only viable in exceptional circumstances.

Some participants were in favour of government funding for private mitigation where households and communities lack the capacity to pay for such mitigation themselves. For example, the Australian national, state and territory Councils of Social Service (sub. DR197, p. 12) argued that:

Individual or household mitigation activities are rarely affordable for people living in poverty. Low income and disadvantaged groups are more likely to live in poorer quality housing, and have less capacity to adequately prepare their homes against disaster.

Although many participants identified the potentially high cost of retrofitting buildings as a mitigation measure, the CSIRO (sub. DR151, p. 4) noted that there are some cost-effective retrofitting options for some hazard types, for example:

... modest and inexpensive improvements to roof ties deliver significant protection for old buildings in cyclone areas, though less than the full application of cyclone building codes in new buildings.

As another example, in the case of bushfire hazard, several participants favoured the use of land and vegetation management strategies (such as prescribed burning) as more cost-effective strategies for reducing the exposure of existing settlements (supplementary paper 6).

The Commission remains unconvinced of the need for across-the-board financial incentives for such private mitigation in existing areas of settlement. It considers that the costs and benefits of such incentives — whether they seek to encourage mitigation or retreat — should be examined on an individual case basis. There are inherent economic incentives for individual property owners to undertake voluntary mitigation. These incentives can include reduced risk of asset loss or damage in a natural disaster event, higher property values and lower insurance premiums. The role of government should be to provide information to facilitate informed decision making.

4.3 Insurance markets

Insurance plays an important role in helping households, businesses and governments to understand and manage natural disaster risk. Insurance premiums can be an effective tool as they signal the level of risk and encourage risk mitigation. For example, the Floodplain Management Association (sub. 79, p. 10) stated that:

Where people may ignore messages from Council or education campaigns they will not ignore the shock of an insurance premium. Provided those premiums do accurately and reasonably reflect the cost of the risk, it is a legitimate incentive for individuals and governments to address the underlying cause — the vulnerability of property to flood damage.

The Commission's analysis suggests that, in general, insurance markets in Australia for natural disaster risk are working well. Increased investment and improvements in information and analytical tools by insurers have led to better (more granular) pricing of natural disaster risk (ICA, sub. 57; QBE, sub. 63; Risk Frontiers, sub. 19), although pricing in some areas and for some risks is still determined at the postcode level (supplementary paper 5). However, some inquiry participants have commented that the insurance market is not working as well as it could be (for example, Australian national, state and territory Councils of Social Service, sub. DR197; CSIRO, sub. DR151; FNQROC, sub. DR148; FRLC, sub. DR130; John Trowbridge, sub. DR218).

The Commission has identified some areas where the effectiveness of insurance as a risk management tool is being weakened. For example, state insurance taxes distort price signals and reduce affordability, and information asymmetries and cognitive biases (for instance, consumers' understanding of their insurance policy) may lead to underinsurance.

Insurance taxes

Insurance is subject to a number of taxes including GST and state taxes and levies. All states and territories currently impose stamp duty on general insurance premiums. Current rates of stamp duty range from 4 per cent in the ACT to 11 per cent in South Australia (table 4.2). In addition, New South Wales imposes a fire services levy on residential and commercial insurance premiums and Tasmania imposes a fire services levy on commercial property insurance premiums.

While the GST is an efficient broad-based tax, ad hoc state taxes on insurance are inefficient and they distort the price signal that premiums provide to policyholders. *Australia's Future Tax System Review* (Treasury 2010) found that insurance taxes were one of the least efficient taxes.

Table 4.2 State and territory general insurance taxes and levies
2014-15

<i>Jurisdiction</i>	<i>Stamp duty rate (%)</i>	<i>Other taxes and levies</i>
New South Wales	9	Fire services levy. No flat rate ^a
Victoria	10	..
Queensland	9	..
South Australia	11	..
Western Australia	10	..
Tasmania	10	Fire services levy on commercial insurance — 28 per cent
Northern Territory	10	..
ACT	4	..

^a The insurance industry in New South Wales is required to contribute 73.7 per cent of Fire and Rescue NSW's budget. .. Not applicable — fire and emergency services levies are not imposed on insurance premiums.

Sources: ACT Revenue Office (2014); Fire and Rescue NSW (2011); NSWOSR (2013); NTDTF (2011); QOSR (2014); RevenueSA (2013); SROV (2014); TDTF (2014); WADF (2014).

Inquiry participants also argued that taxes levied on insurance reduce insurance affordability, and potentially result in underinsurance and non-insurance (for example, IAG, sub. 24; Suncorp Group, sub. 71; Treasury, sub. 91). Many inquiry participants were supportive of reducing or removing stamp duties on insurance and replacing them with more efficient revenue sources (ALGA, sub. DR173; Central Highlands Regional Council (Qld), sub. DR174; FRLC, sub. DR130; ICA, sub. DR185; LGASA, sub. DR161; Local Government NSW, sub. DR196; MAV, sub. DR162; Suncorp, sub. DR176; Philip Stace, sub. DR135; Tablelands Regional Council (Qld), sub. DR146). For example, IAG (sub. DR158, p. 11) stated that 'removal of insurance taxes will allow premiums to become more affordable'.

While the Victorian Government (sub. DR215) was supportive of removing insurance taxes in principle, other states governments were not supportive of stamp duties being removed. These governments asserted that such an action should only be considered as part of the broader review under the White Paper on the Reform of Australia's Tax System.

South Australian taxes and levies on general insurance is a significant source of revenue. The draft report does not describe any alternative, less distortionary taxes that would make up the loss in revenue, nor has it demonstrated that the savings would result in future disaster loss reductions greater than the loss in revenue. (Government of South Australia, sub. DR209, p. 28)

While the Queensland Government acknowledges the current tax mix available to the states is far from ideal, any proposal to remove state taxing capability should be linked to the Commonwealth's White Paper on the Reform of the Federation and the White Paper on the Reform of Australia's Tax System, and not as a consideration in the review of natural disaster funding arrangements. (Queensland Government, sub. DR184, p. 8)

There was also support from inquiry participants to remove fire services levies on general insurance (Blue Mountains City Council (NSW), sub. DR204; Local Government NSW, sub. DR196). The NSW Independent Pricing and Regulatory Tribunal (sub. DR159) examined the fire services levy in New South Wales as part of a state taxation review in 2008 and recommended removing it and increasing local government contributions and rates to replace it.

Replacing state insurance taxes and levies with more efficient revenue sources, such as broad-based payroll or land taxes, would improve the price signal to policyholders and the effectiveness of insurance as a risk management tool and reduce the price of insurance. Taxes could be phased out over time, as is being done in the ACT. The resulting price decrease could also encourage households and businesses to take up insurance or increase their coverage.

RECOMMENDATION 4.8

State and territory taxes and levies on general insurance should be phased out and replaced with less distortionary taxes.

Information for consumers

The Commission received evidence that cognitive biases and information asymmetry in the insurance market may be inhibiting the effective use of insurance as a risk management tool. Research conducted on consumers' understanding of both their natural disaster risks and their insurance policies suggests in many cases that their understanding is poor (supplementary paper 5). This was also noted by participants.

In our experience, many customers underestimate or are sceptical about the risks they are exposed to. (IAG, sub. 24, p. 14)

Unfortunately, there is a significant information asymmetry when it comes to insurance. Many of the homeowners affected by the Blue Mountains bushfires have discovered that they are under insured, predominantly due to the lack of information on appropriate insurance coverage in bushfire areas. (Senator Doug Cameron, sub. 69, p. 3)

There are many people that are not aware of their policies and the actual meaning of terms used, until unfortunately, a policy is carried out and inadequacies are exposed as occurred in 2013. There were many at that time who were not aware or took seriously the fact that their insured property and contents required updating. (Louise Markus MP, sub. DR193, p. 3)

Insurers have put a number of initiatives in place to help with consumers' understanding of their risks and insurance products. For example, as discussed earlier, the Insurance Council of Australia is developing the Building Resilience Rating Tool to provide consumers with information about the natural hazard risk to their property (section 4.1). In addition, consumers can access web-based calculators, which provide guidance on possible

rebuilding costs and an appropriate sum insured. Some insurers have incorporated these calculators as part of the quote process (ICA, sub. DR185; Suncorp Group, sub. DR176). However, the 2013 Blue Mountains bushfires experience shows that web calculators can get rebuilding costs wrong (IAG, sub. DR158; Suncorp Group, sub. DR176).

The Australian Government has also regulated that insurers should provide consumers with a 'key fact sheet'. This was implemented from November 2014. The information in this fact sheet is very high level and only covers key policy inclusions and exclusions (figure 4.3). The Financial Rights Legal Centre (sub. DR130) asserted that the key fact sheet was not sufficiently tested on consumers.

Inquiry participants noted that there are some barriers to insurers providing information to policyholders, especially information that may be perceived to be personalised advice. Insurers asserted that there are regulatory barriers to giving tailored advice (Suncorp Group, sub. DR176) and in some cases, they do not have the necessary information, such as detail about how building regulations are applied at the local level (ICA, sub. DR185). The Financial System Inquiry considered disclosure requirements in general insurance. It recommended that insurers should improve the guidance they provide to consumers, especially in relation to home insurance. The Inquiry found that 'current regulatory settings allow insurers to provide guidance on the replacement value of home building or contents without needing to comply with the personal advice rules' (Murray et al. 2014, p. 228). It concluded that the industry should standardise the way replacement costs are estimated, and to the extent that this is constrained by the existing regulatory regime the insurance industry should work with government to resolve any barriers. It also said that if the industry does not make significant progress on providing this guidance within a short time frame, government should consider introducing regulatory requirements.

Greater provision of information and continued improvements in the type and way information is provided by insurance companies to consumers about the natural disaster risks they face, how insurance products can assist them manage their risks and an indication of their residual exposure would be beneficial. Insurers should provide additional standardised information for households, such as on natural disaster risks in their area, indicative rebuilding costs and examples of household-level mitigation options.

Figure 4.3 Insurance policy ‘key fact sheet’ for consumers

What it covers	Additional information that could be provided
<input checked="" type="checkbox"/> Events covered under policy	<input type="checkbox"/> Exposure to natural hazards
<input checked="" type="checkbox"/> Specific conditions, exclusions and limits that apply to these events	<input type="checkbox"/> Whether policy is sum insured or full replacement value
<input checked="" type="checkbox"/> Whether covered for legal liability	<input type="checkbox"/> Indicative rebuilding costs
	<input type="checkbox"/> Examples of household-level mitigation options

RECOMMENDATION 4.9

Insurers should provide additional standardised information to households regarding their insurance policies, the natural hazards they face and indicative costs of rebuilding after a natural disaster. This work should be led by the Insurance Council of Australia developing guidelines, within one year, to ensure consistency in the provision and presentation of this information across insurers.

The relationship between mitigation and insurance premiums

Where insurers have good information and are adequately pricing risk, the insurance premium sends a price signal to policyholders about the risk they face and encourages mitigation to reduce risk and the cost of insurance (supplementary paper 5).

There is some evidence that large-scale mitigation measures have led to (or are expected to lead to) lower insurance premiums. Examples include flood mitigation works, mainly levees, in Roma, Charleville, St George and Rockhampton in Queensland, and Seymour in Victoria (box 4.9). There is also anecdotal evidence that price signals provided by insurance companies have led to mitigation activities being undertaken. For example, after repeated flooding in Roma (Queensland) in 2012, Suncorp decided to refuse cover to new customers and increase existing customers’ premiums. Since then, construction on a flood levee has begun and Suncorp is now accepting new customers (Suncorp Group, sub. 71).

Box 4.9 Effect of natural disaster mitigation on insurance premiums

Roma, Queensland

A \$16 million flood levee in Roma is expected to protect about 500 houses (IAG, sub. DR158). Suncorp Group stated that the levee will result in an average premium reduction of about 30 per cent for a \$300 000 house, and for high-risk customers, about 80 per cent (ABC News 2014; Suncorp Group, sub. 71). IAG (sub. DR158) stated that the mitigation measures will result in reduced insurance premiums for about 1400 properties.

Charleville, Queensland

A \$16 million flood levee was recently built in Charleville. Risk Frontiers (sub. 19) stated that, in response, Suncorp Group reduced average annual building and contents premiums by \$400.

St George, Queensland

St George's recent mitigation works include a \$6 million flood levee, house raising and land swaps. Suncorp Group (sub. 71) stated that the average premium on an existing policy has since decreased by about 15 per cent, and decreased by \$270 for a new building policy. IAG (sub. DR158) stated that 900 properties will see the flood component of their insurance premium reduce to an average of \$247.

Rockhampton, Queensland

The proposed South Rockhampton flood levee project was expected to protect about 1000 houses (Suncorp Group, sub. 71). Suncorp Group (sub. 71) stated that the average premium could decrease by about 32 per cent, or \$400. Analysis by IAG (sub. 24) suggested that the premium for 800 houses could decrease by over \$3000. The levee was to be funded by the Australian and Queensland governments in partnership with the Rockhampton Regional Council. The Rockhampton Regional Council had proposed to source part of their funding from a levy on businesses and residents who would have benefited from the levee. As at October 2014, the South Rockhampton levee had not received funding from the Australian or Queensland Governments and is not going ahead (Rockhampton Regional Council, trans., Brisbane, pp. 27–30).

CGU strata building inspections

CGU/SUU are undertaking a strata building resilience project in north Queensland. This project involves assessments being provided to strata property owners and if repairs are made, properties can be re-rated, potentially reducing premiums (IAG, sub. 24).

Seymour, Victoria

The Seymour Flood Mitigation Project includes a flood levee, which is expected to protect public infrastructure and 400 private properties. Mitchell Shire Council (Vic) (sub. 5, attachment 1) stated that the levee is expected to reduce flood insurance claims and insurance premiums.

Cyclone building codes

Evidence exists that cyclone building codes have reduced insurance premiums. Analysis of damage to buildings from Cyclone Yasi indicated that buildings constructed to requirements introduced in the 1980s sustained much less damage compared with older buildings. IAG's (sub. 24) cyclone premium has been discounted for post-1980 buildings.

However, there are a number of barriers to price signals encouraging effective mitigation and to mitigation resulting in lower premiums. Insurers might not reduce premiums where there is a lack of information about the mitigation measure taken, or about the level of risk before or after the mitigation measure was implemented (IAG, sub. DR158). For example, insurers' knowledge about individual property characteristics can be limited, and therefore, small-scale mitigation measures may not be recognised (supplementary paper 5). As well, the CSIRO (sub. DR151, p. 3) noted that, while price signals might give a good indication of risk, consumers might not understand the premium well enough to know what actions they can undertake to reduce their risk.

While insurance markets may be pricing risk with increasing granularity, it is not clear that this price signal is getting through to consumers in ways which enable them to change behaviour — for example, many insurers indicate that the addition of extra locks will reduce premiums, but equivalent indications of how insured parties should change their behaviour (or modify their assets) to reduce their disaster-related premiums do not seem to be provided.

The Financial Rights Legal Centre (sub. DR130, p. 5) argued that 'current premium pricing and competition does not provide any benefits for consumers to take any personal mitigation strategies', and that there is no independent dispute mechanism policyholders can access when insurers decline to decrease premiums in response to mitigation work. Consumers can access the Financial Ombudsman Service where they have a dispute with their insurer related to non-disclosure, misrepresentation or incorrect application of the premium, or if the insurer has breached any legal obligation or duty they have. The Ombudsman cannot assist with a general dispute about the level of a fee or premium (FOS 2014). Ultimately, consumers rely on insurance market competition and 'shopping around' to get the best price.

Addressing knowledge gaps related to mitigation measures could lead to more policyholders taking action to reduce their risk and more risk-reflective pricing. Insurers should work to increase the transparency of their insurance premiums. Large-scale mitigation projects undertaken by governments should be reviewed, including assessing impacts on insurance premiums (chapter 3).

Affordability and underinsurance

Insurance costs have increased significantly in some geographic areas. This is likely to have contributed to some level of underinsurance or non-insurance in the community. Apart from insurance taxes, the Commission has not identified any major distortions in the property insurance market that might lead to inappropriately higher prices such as through defensive pricing by insurers. The increase in costs appears to reflect an increase in insurers' underlying costs due to, for example, better pricing of risk, introduction of flood cover and the high costs of recent natural disasters.

Community concern regarding insurance affordability and coverage was heightened after the recent spate of natural disasters. For example, after the 2009 Victorian bushfires, the

2010-11 Queensland floods and the 2013 Blue Mountains bushfires, it was discovered that many affected people did not have insurance or were underinsured for these events (Treasury, sub. 91; Trowbridge, Minto and Berrill 2011). While the incidence of non-insurance appears to be very low, studies suggest that a significant proportion of people are underinsured (supplementary paper 5).

Inquiry participants commented on the affordability and coverage of insurance.

There are areas [in Far North Queensland] now where home owners cannot get home insurance and where it can be obtained, it is just too expensive. As a result a larger number of homes in the Far North are now uninsured. (Tablelands Regional Council (Qld), sub. 40, p. 5)

In some parts of Australia, especially North Queensland, there is major community concern about the cost of property insurance. ... These concerns indicate that the cost of insurance (ie the cost of funding the pool) has reached levels that are unacceptable to the community, and may well be unaffordable to many property owners. If they chose to not continue with their insurance, they expose themselves to significant personal loss, including the potential loss of their family home. (NIBA, sub. 64, p. 6)

This issue of affordability is compounded by the fact that often the areas with the highest premiums are those with the lowest earnings. (Actuaries Institute, sub. 97, p. 4)

Some inquiry participants were also concerned about affordability and access to insurance products for businesses such as business interruption insurance. In particular, concerns were raised regarding the limited insurance options for agricultural producers (for example, NFF, sub. 35; Queensland Government, sub. 31). The Queensland Farmers' Federation (sub. DR155, p. 1) stated that:

There are insufficient options for private insurance against natural disaster for the vast majority of farmers. This is a particular challenge for intensive crops and high rotation production systems even for a profitable enterprise.

In response to high insurance costs in north Queensland, the Australian Government has recently announced initiatives aimed at improving affordability and competition, including establishing a comparison or 'aggregator' website for consumers to compare insurance products, allowing licensed brokers to sell policies from foreign insurers and developing a program of engineering assessments for strata-title properties with the aim of making them more resilient (Cormann 2014). Supplementary paper 5 discusses these initiatives in more detail. There would be merit in the Australian Government (after a reasonable period has passed) reviewing the competition and transparency measures implemented for the north Queensland insurance market, and considering whether such measures should be implemented nationwide.

Removing or reducing distortions in insurance and property markets is one avenue to address affordability and coverage concerns. For example, replacing specific taxes and levies on insurance premiums with more efficient revenue sources and reforming planning and building regulations so that development in high-risk areas is limited would improve insurance affordability. In addition, governments should support measures that lead to

prices better reflecting underlying risk, such as addressing information asymmetries or significant information gaps.

Where underinsurance is linked to a lack of understanding regarding what, and how much, households are insured for, this should be directly addressed by governments and insurers through the improved provision of information (discussed earlier). Governments should not try to increase coverage through measures such as mandatory insurance, or mandatory imposition of total replacement cover, which can perversely result in non-insurance.

Affordability, underinsurance and non-insurance can be difficult to address, particularly where high premiums affect disadvantaged households. Some inquiry participants suggested that direct government intervention such as through an insurance pooling scheme and/or subsidising premiums might be warranted (for example, John Trowbridge, sub. DR218; NIBA, sub. DR150; Philip Stace, sub. DR135). However, pooling risk or subsidising premiums for households (including through government-backed reinsurance) would reduce policy holders' incentives to reduce their exposure to risks, either through mitigation or moving away from high-risk areas.

International experience has shown that government intervention in property insurance markets (either through direct provision of insurance or by providing risk pooling through reinsurance) is overwhelmingly ineffective. It creates moral hazard as well as fiscal risks. Some foreign governments have had to bear significant costs following large natural disasters because their insurance schemes failed to accumulate adequate reserves (supplementary paper 8).

Where equity concerns due to elevated prices persist, these are more efficiently dealt with by providing support through the tax and transfer system. In some cases, governments may need to consider structural mitigation measures (such as flood levees) or other options to reduce the level of risk faced by households, such as relocation. There is also a role for insurers to better target lower-income households through offering a range of insurance products that are better suited to their circumstances, such as the current pilot Suncorp and Good Shepherd Microfinance are undertaking into contents insurance for low-income renters (Suncorp Group, sub. DR176; supplementary paper 5).

FINDING 4.2

International experience has shown that government intervention in property insurance markets through subsidies weakens the price signals that insurance premiums send to households and businesses about the level of risk faced. These schemes also create fiscal risks. Governments have had to bear significant costs following large natural disasters because their insurance schemes failed to accumulate adequate reserves.

4.4 Infrastructure

The majority of expenditure under the Natural Disaster Relief and Recovery Arrangements is directed to repairing roads (supplementary paper 2). Consequently, governance and institutional arrangements for road infrastructure that determine where roads are built, to what standard and their maintenance are likely to have significant implications for natural disaster recovery expenditure. Where these processes do not adequately take into account natural disaster risk there are likely to be greater costs involved in recovery.

This issue was raised by the Regional Australia Institute (sub. 61, p. 16), which stated that:

... the ineffectiveness of these policies [local and regional infrastructure arrangements] in improving the state of local roads in particular and the often substandard management of infrastructure by local governments is a key factor exacerbating the scale of disaster costs.

It advocated for proper consideration of natural disaster risks in the development of infrastructure programs. Shoalhaven City Council (NSW) (sub. 25, p. 1) also raised this issue, noting that it ‘currently contends with a historic legacy of inadequately designed and constructed roads’. The Floodplain Management Association (sub. DR166, p. 3) raised this issue for infrastructure more broadly, noting that ‘ensuring natural hazards and resilience issues are considered as part of ‘mainstream’ infrastructure planning and funding will also reduce the pressure on mitigation funding sources to address issues after implementation’.

The *National Strategy for Disaster Resilience* also emphasises the importance of a resilience-based approach to infrastructure policy. It notes that ‘building public and private infrastructure to a more resilient standard, if appropriate, taking into account cost–benefit and other considerations, will reduce the need for significant expenditure on recovery in the future’ (COAG 2011c, p. 12).

The Commission’s inquiry into public infrastructure found that current governance and institutional arrangements for the provision and funding of roads are presenting challenges for coherent long-term planning and investment in road infrastructure (PC 2014). In particular, that inquiry found that decisions on road investments are often based on inadequate information and assessment of the costs and benefits of projects and that road supply is largely determined through government departments and arbitrary ministerial decision making.

The inquiry recommended a clearer link between road-user preferences and maintenance and investment decisions, and stronger processes for project selection, evaluation and review. It recommended that, as a first step in a long-term transition to an improved approach, Road Funds should be established by state governments that would enable roads investments to be considered on a portfolio-wide basis with projects with the highest net benefit to the community being selected.

The inquiry highlighted the importance of sound project-selection processes, in particular properly conducted cost–benefit analysis. It noted the risk of weak incentives for efficiency

and myopia in project selection, which can result in poor projects going ahead and good projects being ignored or stymied by regulatory and other barriers. Arrangements that require cost–benefit analyses to be independently scrutinised and made public (for both projects that have been selected and those that have been rejected) may improve incentives and accountability. The Commission (PC 2014, p. 93) argued that:

Such transparency strengthens the incentives for decision makers to focus on the overall net benefits of projects. It also allows particular estimates (for example, of construction costs or patronage) to be debated and testing done on how the use of different estimates would affect the project’s net benefits. Transparency can help to improve the quality of analyses because proponents and practitioners know that any flaws are likely to be exposed.

There was general support from local government participants for clearer links to road-user preferences in road maintenance and investment decisions and stronger processes for project selection (Blue Mountains City Council (NSW), sub. DR204; LGASA, sub. DR161; Mackay Regional Council (Qld), sub. DR133). However, some local governments suggested that reliance on cost–benefit analysis alone for project selection may not be appropriate (LGNSW, sub. DR196), particularly in some rural and remote areas, and that approaches that allow for continued government investment in rural and regional areas must also be considered (MAV, sub. DR162; Shoalhaven City Council (NSW), sub. DR167; WALGA, sub. DR214). The Government of South Australia (sub. DR209) also questioned whether there would be significant advantages to making cost–benefit analyses publicly available.

However, cost–benefit analysis is more than just a technical tool: it is also a framework for decision making. Even where some costs or benefits cannot be quantified in monetary terms, there is still considerable value in clearly setting out all the likely outcomes of a policy option. This allows for a subjective assessment by the decision maker of whether benefits are likely to exceed the cost. Making the analysis public provides transparency about the decisions that were made (supplementary paper 4).

Long-term asset management plans, asset registers and asset hierarchies are also important tools in this context (chapter 3). These documents can inform project selection processes, improve the transparency of asset management and inform betterment and mitigation identification and prioritisation.

RECOMMENDATION 4.10

All governments should put in place best-practice institutional and governance arrangements for the provision of public infrastructure, including road infrastructure. These should include:

- stronger processes for project selection that incorporate requirements for cost–benefit analyses that are independently scrutinised and publicly released
- consideration of natural disaster risk in project selection and asset management planning
- a clearer link between road-user preferences and maintenance and investment decisions.

5 Implementing natural disaster reforms

Key points

- Implementing the Commission's recommendations will require material policy changes to be made at all levels of government. Achieving this will take time.
- Reforms to natural disaster funding arrangements should be implemented over three years, followed by a holistic review of the arrangements in five years.
- The Australian Government should:
 - set a methodology for assessing damages and a framework for benchmark prices for essential public assets within the first year, in consultation with states and territories
 - adjust cost-sharing arrangements for recovery funding after one year
 - develop and implement a formula for untied grants for community recovery assistance within three years
 - review the amount and allocation of mitigation funding provided to the states and territories within five years, moving towards a forward-looking risk basis for allocation
 - provision in the budget for a base level of disaster recovery costs and publish estimates and confidence ranges of future fiscal costs within one year
 - develop a mechanism to offer top-up fiscal support to states and territories after one year.
- State and territory governments should:
 - immediately commence implementing the accountability requirements for recovery and mitigation funding, including by publishing statewide risk assessments within one year and adopting robust mechanisms for prioritising mitigation spending within three years
 - report annually on their progress in implementing accountability requirements
 - develop benchmark prices for essential public assets within one year
 - report to the Australian Government on their insurance arrangements every three years
 - commence other policy reforms immediately, including increasing statutory protection from legal liability for local governments within two years and phasing out insurance taxes and levies within five years.
- State and territory governments and local governments should have detailed and complete asset registers and asset management plans (appropriately incorporating natural disaster risk) within two and three years respectively.
- The Insurance Council of Australia should, within one year, develop guidelines for insurers to provide information to households regarding their insurance policies, the natural hazards they face and indicative costs of rebuilding after a natural disaster.

The Commission's recommendations — as set out in chapters 3 and 4 — involve a comprehensive refocusing of Australia's natural disaster funding and policy arrangements. They differ from current arrangements in several ways. The recommended funding model involves:

- changing the way that natural disaster recovery costs are shared between the Australian Government and state and territory governments (hereafter 'states') — to better align asset ownership with risk ownership and restore the 'safety net' policy objective
- shifting from a reimbursement model to one based on an upfront assessment of damages to essential public assets and application of benchmark prices (including betterment set out in asset management plans) — to give state and local governments autonomy in how they spend funds
- moving towards providing untied grants for community recovery activities (in addition to essential public assets) — to give lower levels of government even greater autonomy
- distributing Australian Government mitigation funding to the states through a risk-based formula (with funding matched by states) — to better target funding to where the net benefits are likely to be greatest
- strengthening accountability arrangements across all levels of government — including budgeting practices and asset management planning — to allow funds to be spent more efficiently and to achieve a better balance between disaster mitigation and recovery.

Some of these reforms build on efforts already underway (such as mitigation funding and some accountability arrangements) while others represent a significant departure from current practices (such as the use of benchmark prices). Accordingly, some can be implemented immediately or independently, but time and sequencing will be required for other reforms.

In developing a plan to implement the reforms, the Australian Government will need to set out a clear timetable that sequences changes to allow state and local governments to adjust. It will also need to consult extensively with the jurisdictions. Reforms will need to be introduced in a coherent and predictable way to minimise any unnecessary disruption, and to enable a clear understanding of what funding arrangements will apply at any given point in time. Phasing in reforms also allows time to modify and improve policy frameworks should unintended consequences arise. In particular, no major changes to recovery cost-sharing arrangements should be made within the first year after announcing reforms.

The Australian Government will also need to ensure that the Attorney-General's Department has additional resources and capability to implement the reforms. This includes enhanced processes for data collection and analysis to inform the implementation of selected aspects of the recommended funding model.

This chapter sets out transition pathways for the reforms recommended by the Commission, and some of the main steps that each level of government will need to take to implement the reforms. Section 5.1 provides a timetable for key reforms and outlines the

need for a review in five years. Sections 5.2, 5.3 and 5.4 respectively discuss implementation of reforms to recovery funding, mitigation funding and accountability arrangements. Section 5.5 briefly examines other areas for reform and section 5.6 discusses interactions with federal financial relations. Section 5.7 summarises the transitional arrangements.

5.1 The reforms at a glance

The Commission considers that the majority of its recommendations could be implemented within three years. The timing of the key reforms is summarised in table 5.1.

Inquiry participants, especially state governments, supported the need to phase in reforms. For example, the Queensland Government (sub. DR184, p. 28) submitted that ‘it is vital state and territory governments are given an adequate length of time to meet [the accountability] requirements’ for mitigation funding. The Western Australian State Emergency Management Committee Secretariat (sub. DR216, p. 9) supported a staged transition of the reform package so that it ‘can restructure its resourcing/management of the recovery and mitigation components’. Other participants also supported the need for a transition plan (for example, IPWEA, sub. DR181; MAV, sub. 98; Wagga Wagga City Council (NSW), sub. 82).

Table 5.1 Timetable of key reforms

<i>Reform</i>	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>
	<i>2015-16</i>	<i>2016-17</i>	<i>2017-18</i>
Apply new thresholds and cost-sharing rate for disaster recovery	✗	✓	✓
Apply assessed damages and benchmark prices for essential public assets	✗	✓	✓
Adopt untied grants for community recovery funding	✗	✗	✓
Reform Australian Government Disaster Recovery Payment	✓	✓	✓
Increase level of mitigation funding to states	\$100m	\$150m	\$200m
Change Australian Government budget treatment and reporting of natural disaster risks	✗	✓	✓
Start implementing accountability requirements	✓	✓	✓
Release guidelines for natural hazard information	✓	✓	✓
Release guidelines (developed by the Insurance Council of Australia) for insurers to share information with households	✗	✓	✓

Review mechanisms will be crucial for ensuring the reforms work as intended and achieve the desired outcomes. While each reform will require scrutiny as it is rolled out, the Commission is also recommending a more holistic review to take place after five years. This should be an independent and public review involving public consultation that

examines reform progress across natural disaster recovery, mitigation and accountability arrangements.

The Australian Government should consult with the states on the terms of reference for this review. A COAG body such as the Australia–New Zealand Emergency Management Committee (ANZEMC) would be a suitable forum for such consultation.

RECOMMENDATION 5.1

The Australian Government should schedule an independent and public review of the progress of reforms to natural disaster funding arrangements five years after implementation has commenced. This review should examine the operation and efficacy of the arrangements, including the:

- use of assessed damages and benchmark prices for the reconstruction of essential public assets
- use of upfront grants for community recovery
- feasibility of moving away from a cumulative trigger for recovery funding and towards an event-based model
- quantum and impacts of mitigation funding, and the institutional arrangements used by states and territories to allocate the mitigation funding they receive
- accountability arrangements for each level of government, including those that relate to Australian Government budgeting for natural disasters, insurance of state and territory government assets, and use of asset management planning by state, territory and local governments
- progress implementing the Commissions' recommendations in relation to land use planning, information provision and insurance.

In developing terms of reference for this review, the Australian Government should consult with state and territory governments.

5.2 Recovery funding

The reforms to Commonwealth–state funding arrangements for natural disaster recovery contain several elements. Some are relatively straightforward and can be implemented immediately, whereas more time will be needed for others. For example, the Commission's recommendation on reforming the Australian Government Disaster Recovery Payment can be implemented immediately. By contrast, reforms relating to cost-sharing parameters, essential public assets and community recovery assistance will require a staged transition, as set out below.

Cost-sharing arrangements

The Commission has recommended changes to the parameters for Australian Government funding to states for natural disaster recovery (chapter 3). In particular, the Australian Government should share 50 per cent of above-threshold eligible state costs for events where damage exceeds a small disaster criterion of \$2 million, provided total annual state expenditure on these costs exceeds 0.45 per cent of total state government revenue (recommendation 3.1).

These changes should be introduced after one year, with the current parameters under the Natural Disaster Relief and Recovery Arrangements (NDRRA) remaining in place in the interim. This would allow states time to adjust to the reforms, such as by strengthening asset management practices, budgeting approaches and arrangements with local governments. It would also allow time to establish a process for setting and updating benchmark prices for essential public assets, as explained below.

The Commission is recommending a move towards upfront assessments of costs for essential public assets and community recovery. These should be fully in place within one year and three years respectively. Although the Commission supports retention of a cumulative trigger for Australian Government funding in the interim (where funding is assessed at the end of each financial year), upfront cost assessments for all recovery activities would enable a potential future shift towards a system where funding is provided to states on an event basis, and as soon as practicable after a natural disaster occurs (chapter 3). There may be scope to reconsider such a model as part of the review of reforms in five years when upfront cost assessments are in place for all Australian Government recovery funding, and the outcome of the Reform of the Federation White Paper process is known.

Essential public assets

The Commission's recommended funding model will provide states with greater autonomy for disaster recovery activities. Central to this — and an essential prerequisite — is the use of benchmark prices to provide funding for the reconstruction of essential public assets (recommendation 3.1). Under this model, assistance is based on the level of assessed damages and the expected cost to reconstruct a particular type of asset to its previous service standard, rather than on actual reconstruction costs (chapter 3).

Establishing methods for assessing damages and determining benchmark prices will take time, and inquiry participants identified potential difficulties that could arise (box 5.1). However, there is a number of existing estimation and pricing models and information sources that could be adapted to this task. Moreover, feedback from some participants, primarily local governments, suggests that current approaches could be adapted successfully. The Commission proposes a one-year transition period to allow methods to be developed or expanded, after which they would come into effect, with arrangements put

in place to review and refine the methods over time. This process will require action by all levels of government.

Box 5.1 Participant views on implementing benchmark prices

Some inquiry participants drew attention to the difficulties involved in introducing benchmark prices for essential public assets, and emphasised that time would be needed.

I think overall I agree with the three year transition period. I think the first 12 months is really about developing these concepts, technical working groups. The end of the first 12 months actually defining the task, the second year would be actually starting to integrate and get those systems set up with local government, and year three would actually be the go live implementation. (IPWEA, trans., Sydney, p. 49)

Raw data collection through the existing [National Impact Assessment Model] cannot give a complete and detailed picture in terms of type and scale of damage. Additional measures to identify scope and scale would be needed and it should be recognised that this process would take up to two years to develop, trial and implement. (Queensland Government, sub. DR184, p. 16)

[I]n lots of instances, until you have opened the road in question, do you know the extent to which the inundation has damaged it ... The other issue is that how long does this process potentially take to get it reasonable and fair and appropriate. And one thing we don't want is a system which leaves us in a void as to what will be done and when it can be done ... We don't want a situation where it simply takes months and months and months to get a decision as to what the outcome of a financial level of support would be. (LGAQ, trans., Brisbane, p. 82)

Implementation of this funding approach would further require a significant time and resource commitment from all levels of government to establish necessary capability and governance arrangements, supporting policies and guidelines, compile, publish and maintain detailed registers of essential public assets to support benchmarked values, and to develop an integrated roadmap and programme for change. The Department expects that development and implementation of an assessment methodology would reasonably take at least 12–18 months. (Attorney-General's Department, sub. DR226, pp. 12–13)

Australian Government

The Australian Government would play an oversight role by setting relevant frameworks and approving benchmark pricing schedules developed by each state government. While states would have full autonomy in how they spend the funds received from the Australian Government, they would need to comply with high-level accountability requirements (section 5.4).

The Australian Government should set the framework for how states estimate and apply benchmark prices. In doing so, it should consult with the states through the ANZEMC. Rather than being prescriptive or setting prices directly, the framework would set out the broad parameters that states must follow. These could include:

- allowable components of benchmark prices that would apply over all infrastructure categories, such as material costs, labour and equipment costs, and design or administrative expenses

-
- principles for how these components can be set and adjusted over time — for example, how material costs can be varied geographically or where there are economies of scale
 - categories of essential public infrastructure
 - guidance on the application of current engineering standards
 - the level of contingency allowance to be incorporated into prices as a mechanism to reflect uncertainty in the delivery of projects.

While the benchmark prices would be determined by each state (discussed below), the Australian Government would approve the pricing schedules states develop — based on consistency with the framework — and any major modifications. As the framework is intended to be relatively high level, it should be developed as early as possible (within one year).

This work could be done, for example, by the Department of Infrastructure (in consultation with the Attorney-General's Department), which already has expertise in assessing infrastructure construction costs. It could potentially be linked to other benchmarking projects for infrastructure, such as work being done by the Bureau of Infrastructure, Transport and Regional Economics to benchmark road projects (Attorney-General's Department, sub. DR226), or the framework the Commission recommended in its inquiry into public infrastructure (PC 2014).

The Australian Government should also develop a methodology for assessing damages to essential public infrastructure from different types of natural disasters. This should be done within the first year to allow it to be applied once benchmark prices have been developed. The Australian Government should consult with the states via the ANZEMC as part of this process, as well as with relevant experts (such as engineering professionals). Such experts could also play an ongoing role in the Australian Government's certification of independent parties to assess damages where significant reconstruction is required (chapter 3).

The Australian Government's work to develop the framework for benchmark prices and the methodology for assessing damages would need to proceed concurrently with state governments' efforts to develop benchmark prices. While the Australian Government would need to complete its work within the first year, it should aim to complete it as soon as possible to allow sufficient time for states to finalise the development of their benchmark prices.

RECOMMENDATION 5.2

The Australian Government should establish a framework for the development of benchmark prices for the reconstruction of essential public assets. This should set out the broad parameters that state and territory governments should follow, without prescribing particular prices to be used.

The Australian Government should also develop a methodology for assessing damages to essential public assets from natural disasters, to enable the application of benchmark prices.

Both tasks should be completed as soon as possible and within one year.

State and territory governments

The Commission considers that the states are best placed to develop benchmark prices specific to their jurisdiction and apply these to assessments of damage from natural disasters. This is principally because state governments already estimate and apply benchmark prices for public infrastructure, including roads, and have institutional arrangements in place to support this (chapter 3).

Each state government should expand or develop initial benchmark prices for reconstruction of essential public assets within one year. This process will require consultation with local governments, state infrastructure agencies (such as roads departments), and relevant engineering experts, such as the Institute of Public Works Engineering Australasia. The process should also be informed by drawing on estimates of asset replacement values in state and local governments' asset management plans (which will need to be put in place as part of the accountability reforms). Benchmark pricing schedules would need to comply with the high-level framework set by the Australian Government and be subject to its approval, as discussed above.

The objective should be to set benchmark prices that provide a reasonable estimate of the expected costs of replacing different types of asset to the relevant current service or engineering standard in a particular location (as determined by the state). These prices need not be overly precise or detailed. States would have flexibility in how they vary benchmark prices across regions and make adjustments for factors such as input costs (which can increase in the aftermath of a natural disaster), access to construction materials, or any other factors permitted within the Australian Government's framework.

Benchmark prices will also need to be updated by the relevant state agency over time to reflect changes in input costs or other circumstances. This process can be used to iron out any anomalies that arise in compiling the first sets of benchmark prices. Prices should be indexed to the relevant construction price index (for example, the ABS Road and Bridge Construction Index for each state) and reviewed on a periodic basis, such as every three

years. For transparency and predictability, up-to-date benchmark prices should be made publicly available.

When a natural disaster occurs, state (or local) governments would assess the damage to essential public assets using the methodology developed by the Australian Government. States would then be responsible for applying the benchmark prices to estimate the relevant Australian Government contribution (at 50 per cent of the benchmarked cost, above the annual threshold). Any betterment that was pre-identified, detailed and costed in asset management plans could also be included in the benchmarked cost (recommendation 3.2). Further, states would be subject to the accountability requirements set out in section 5.4.

RECOMMENDATION 5.3

State and territory governments should develop benchmark prices for the reconstruction of essential public assets and submit these to the Australian Government for approval within one year. In developing these prices, they should consult with local governments and relevant experts, and draw on asset management plans. The prices should be reviewed and updated over time.

Local governments

Local governments would be largely responsible for assessing damages from natural disasters to the assets for which they are responsible. They should also be consulted by states when developing benchmark prices. Further, local governments would make decisions about how to best use the recovery funding they receive, subject to Australian and state government accountability requirements, including appropriate asset management planning (section 5.4).

Community recovery

Community recovery activities — including counter disaster operations and targeted assistance to households and community groups — would remain part of Commonwealth–state disaster funding arrangements under the Commission’s recommended funding model (recommendation 3.4). Initially, this assistance would continue to be provided to states on a reimbursement basis, with some rationalisation of eligible expenditure types after one year (principles for this rationalisation are set out in chapter 3).

The Commission sees merit in moving away from a reimbursement model towards providing untied grants. These would be based on upfront estimates of funding that would be required for community recovery, without specifying which activities states should or should not undertake. This would give states — and ultimately local governments —

greater flexibility to use funds to meet community needs and would reduce ambiguity over eligibility (chapter 3).

Moving towards an untied-grant approach would provide scope for a considered assessment of how much funding would be reasonable to support community recovery. This would be determined by the Australian Government, with reference to historical experience and the past provision of community recovery funding by event. In doing so, the Australian Government should consult with the states through the ANZEMC. However, this process will take time: a lack of good data on community recovery needs and expenses on a per-event basis means that more research and data collection will be needed on the post-disaster needs of communities.

The Australian Government should examine ways to transition to such an approach within three years. The formula developed should reflect a reasonable amount of funding associated with community recovery activities as (or soon after) a natural disaster occurs (chapter 3). In the interim, this will require better data to be collected on expenditure on different categories of community recovery on an event basis. Once the new funding model is in place, it should be periodically reviewed to ensure the amounts remain appropriate. This could be done every five years.

Separately, the Australian Government should reform the Australian Government Disaster Recovery Payment (recommendation 3.3). This can be done immediately.

RECOMMENDATION 5.4

Within three years, the Australian Government should develop and implement a framework for untied grants for community recovery assistance to state and territory governments. This framework should take into account factors such as the type, location and scale of a disaster, and the number of people affected.

Top-up fiscal support

The Australian Government should offer states the option to purchase ‘top-up’ fiscal support to help them to smooth the costs of natural disasters (recommendation 3.1). This mechanism can be developed alongside reforms to Australian Government budgeting practices.

As discussed in section 5.4, it should be feasible to have arrangements in place within one year to offer top-up fiscal support to states. This would draw on work done to produce estimates and confidence ranges of the contingent liability from future natural disasters to the Australian Government, and could be informed by input from actuaries, catastrophe loss modellers and others. Having these arrangements in place within one year would align with the recommended timeframes for implementing changes to recovery cost-sharing arrangements.

State–local funding arrangements

Local governments play a frontline role in natural disaster response and recovery, and will continue to do so under the Commission’s reforms. Changes to funding arrangements between the Australian Government and the states may necessitate changes to how state governments oversee and fund disaster recovery activities by their local governments (chapter 3).

All states already have policy frameworks in place to provide financial assistance to their local governments for disaster recovery (supplementary paper 2). These frameworks specify how much financial assistance states will provide for recovery activities and the relevant triggers for obtaining assistance from the state.

Under the Commission’s reforms, states will continue to have autonomy in the funding arrangements they set with their local governments for disaster recovery, and will have one year before changes in Commonwealth–state funding arrangements come into effect. In particular, states will retain discretion about what portion of local governments’ recovery costs will be borne by the state government — for example, the Commission does not envisage that the small disaster criterion of \$2 million would be applied uniformly to individual local governments (chapter 2).

As there is significant variation in the capacity of local governments, states may need to provide additional support in some cases, such as for remote local governments that cover large geographic areas and have sparse populations. This is already the situation under current state arrangements, whereby states cover a significant portion (approaching 100 per cent) of some local government recovery costs.

5.3 Mitigation funding

The Commission has recommended that the Australian Government provide the states with \$200 million annually for natural disaster mitigation. This funding is to be matched by jurisdictions, and can include contributions from local governments, nonprofit organisations or the private sector. It would be in addition to increased funding for national projects through the National Emergency Management Projects scheme. States would have autonomy in how they spend the funding they receive and the activities they support, subject to the accountability requirements outlined in chapter 3 and the following section.

Australian Government

The Australian Government should increase annual mitigation funding provided to the states to \$200 million over three years (recommendation 3.5). For example, funding could be immediately increased to \$100 million in the first year to assist states to be better

prepared for natural disasters, then to \$150 million in the second year and \$200 million in the third year.

As an interim measure, mitigation funding should be allocated to the states using the current allocation agreed by all jurisdictions under the National Partnership Agreement on Natural Disaster Resilience (chapter 3). This distribution appears to have broad support among the jurisdictions and takes into account risk-related factors such as population and past disaster costs.

The Australian Government should commit to developing a more refined and forward-looking risk-based formula for the allocation of mitigation funding, in consultation with the states, and within five years. This should aim to distribute funding on the basis of where the net benefits to the community are likely to be greatest in terms of reducing the economic costs of disasters (including damage to private and public property, injury and loss of life). The formula should be forward looking and reflect relative levels of future natural disaster risk across jurisdictions, the community's vulnerability and exposure to different types of natural hazards, and the likely effectiveness of mitigation measures. There would also be scope to review the minimum funding shares for smaller jurisdictions. In developing the allocation model, the Government could draw on inputs such as catastrophe loss modelling (including that undertaken as part of its improved budgeting processes) and evidence of the effectiveness of past mitigation. It should also consult with the states through the ANZEMC.

The level and allocation of mitigation funding should be assessed after five years as part of the broader review of natural disaster funding arrangements (recommendation 5.1). This review should take account of the effectiveness of mitigation projects funded to date (their costs and benefits), the scope for further mitigation, and states' performance on adopting the accountability requirements. Annual mitigation funding from the Australian Government should not be changed unless the review identifies a clear need to.

The timing of these reviews is intended to give state and local governments a reasonable period of time to embed reforms in decision-making processes and realise initial benefits from increased mitigation expenditure.

RECOMMENDATION 5.5

The Australian Government should develop a formula for allocating mitigation funding to state and territory governments on the basis of where such funding is likely to achieve the greatest net benefits, taking into account the future risks of natural disasters. This should be completed within five years and in consultation with state and territory governments.

State and local governments

Mitigation funding would be conditional on states matching the funding (collectively, using state funds and/or contributions from local governments or other beneficiaries), combined with high-level requirements to implement best-practice institutional and governance arrangements for project selection (section 5.4). These include reporting on progress and supporting local governments to have appropriate mechanisms in place. States would be expected to meet the associated accountability requirements within three years.

In addition, states should publish information on each mitigation project that has been funded. This could include a description of the project, its costs, how matched funds were raised, and estimates of the expected benefits.

5.4 Accountability arrangements

The accountability arrangements set out in chapter 3 would strengthen how governments at all levels manage natural disaster risks. Rather than prescribing exactly how state and local governments can spend money, the intention is to provide states with autonomy in the use of mitigation and recovery funds while achieving accountability through robust institutional and governance arrangements, and transparency through performance reporting. However, transitional arrangements are needed to allow state and local governments to develop the capacity to meet the accountability requirements.

Australian Government

Improved budgeting practices would make the Australian Government more accountable to the public for how it manages the fiscal risks of natural disasters. These would also support much-needed neutrality between mitigation and recovery in government policy. Work on implementing recommendation 3.6 can commence immediately. The Australian Government should aim, within one year, to:

- start provisioning for some base level of natural disaster recovery costs in the forward estimates
- start publishing estimates and confidence ranges of the contingent liability from potential future natural disasters in the budget Statement of Risks — this would allow time for the Government to seek input from actuaries or reinsurers, and potentially to develop internal capability to undertake catastrophe loss modelling
- extend the process of estimating the contingent liability to price the premiums for the ‘top-up’ fiscal support.

These reforms are discussed in detail in chapter 3. The specific techniques used could be reviewed on an ongoing or annual basis as part of the budget process.

State and territory governments

The time needed to transition to the accountability requirements for state and territory governments set out in recommendation 3.7 will vary across jurisdictions. Some states submitted that they already have robust governance and institutional arrangements in place (for example, NSW Government, sub. DR217; Victorian Government, sub. DR215). However, others may need to make greater progress.

Implementation of the accountability requirements should commence immediately, but states should be given at least three years to have the requisite processes and institutional arrangements in place, and to support their local governments to do likewise.

In particular, states should:

- publish statewide risk assessments in accordance with the National Emergency Risk Assessment Guidelines within one year
- budget for natural disaster liabilities more transparently within one year
- have detailed and complete asset registers and asset management plans for state-owned assets within two years, and for local government assets within three years (where these are not already in place)
- implement the *Enhancing Disaster Resilience in the Built Environment Roadmap*.

In addition, states should report to the Australian Government on their insurance arrangements every three years. States should be able to present evidence that they have reinsurance for essential public assets or, where they do not, evidence that they have sought quotes from the market (including for non-traditional insurance products) and that the offers were not cost effective.

Further, states will have to put transparent and robust mechanisms in place for mitigation spending. They would be required to:

- support project proposals with robust and transparent evaluations, including cost–benefit analysis
- consider structural and non-structural mitigation measures
- use private funding sources where feasible and efficient
- transparently evaluate mitigation projects ex post
- partner with insurers (where feasible) to facilitate prioritisation, and encourage private funding, of mitigation.

Putting these in place may take longer in some jurisdictions than others, and overall the Commission considers that a three-year period is sufficient for transition.

Performance and process reporting

In return for Australian Government funding for mitigation and recovery, states should report annually on their natural disaster recovery and mitigation activities. This should cover outcomes such as the benefits of mitigation projects (including impacts on insurance premiums) and choices made by communities in how to use disaster recovery funding. Reports should also include detailed data to further aid transparency.

In the initial years, reports could also cover progress in:

- developing and implementing benchmark prices for natural disaster recovery
- asset management planning, including by local governments
- implementing best-practice institutional and governance arrangements for mitigation.

These reports would make state progress transparent and would also allow challenges to be discussed. They should be made public. The ANZEMC could potentially play a role in developing a consistent reporting framework to be applied across jurisdictions.

Local governments

Some of the accountability requirements of state governments will also need to be met by their local governments. In particular, local governments will need to strengthen asset management planning processes and develop asset plans and registers that incorporate natural disaster risk (as appropriate) where they do not already have these. They may also need to adopt more robust processes for assessing mitigation projects, such as through using cost–benefit analysis or recovering the costs of mitigation where the beneficiaries can be easily identified. In most cases, this should be achievable within three years.

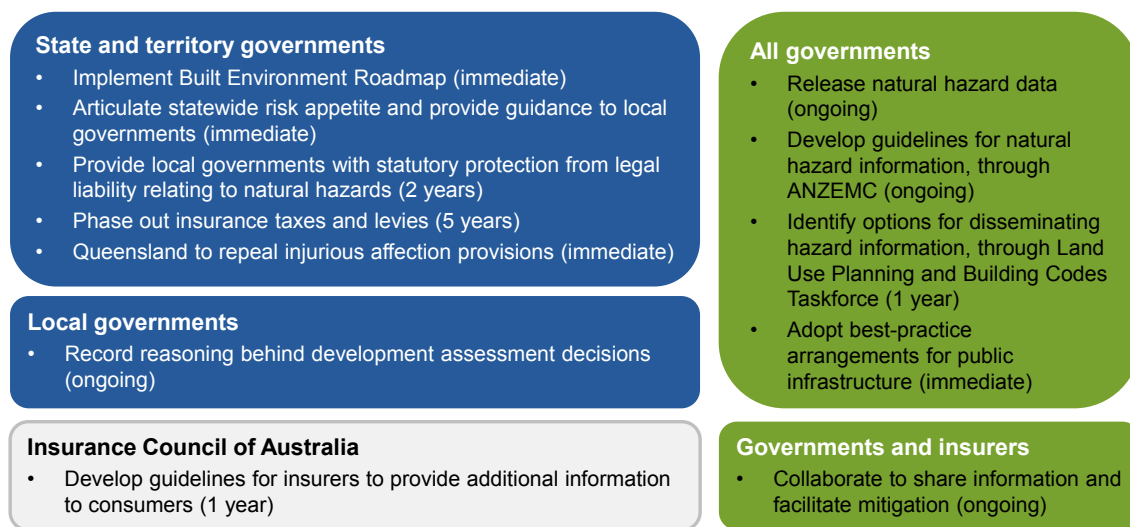
There is significant variation across local governments in terms of their processes and capacities. Inevitably, meeting the accountability requirements is likely to put the most strain on small local governments in remote areas, which may have a small rate base but large infrastructure assets (especially road networks). States should therefore support their local governments by establishing clear frameworks and expectations for asset management planning, as well as for mitigation analysis and assessment. In the case of small mitigation projects, accountability requirements could be reduced in proportion to project costs.

States can also provide guidance or resources, where necessary — for example, they could undertake the cost–benefit analysis for some large mitigation projects. Groups such as local government associations and regional organisations of councils can also play a role in building capacity in the above areas.

5.5 Other policy reforms

The Commission has recommended a range of policy reforms to support the changes to natural disaster mitigation and recovery funding (chapter 4 and figure 5.1). Most of these can and should be adopted immediately, such as all levels of government releasing existing and new natural hazard data (recommendation 4.1), state governments implementing the *Built Environment Roadmap* (recommendation 4.4), and state governments providing clearer guidance to their local governments on land use planning (recommendation 4.5).

Figure 5.1 Other reforms to improve natural disaster risk management



However, the following reforms will require a period of transition.

- The development of guidelines for the collection and dissemination of natural hazard information (recommendation 4.3) will require consultation between the Australian, state and territory governments through the ANZEMC, drawing on external expertise where appropriate. This should take place progressively and incorporate work already underway on guidelines for flood mapping. Guidelines for the highest priority hazards could be released within a year.
- Identifying ways to provide statutory protection from legal liability for local governments relating to natural hazards will likely require states (excluding New South Wales, which already provides statutory protection in its *Local Government Act 1993*) to establish specific legislative reviews (recommendation 4.6). These should be set up within one year and report within two years.
- States could phase out and replace insurance taxes and levies over a period of five years. This would allow states to collect more efficient alternative sources of revenue (such as payroll and land taxes) while giving taxpayers time to adjust (recommendation 4.8).

More broadly, the reforms to land use planning and information provision will support the accountability requirements for recovery and mitigation funding. These reforms will assist with better asset management planning (including identification of risks and deciding where to

locate assets) and encourage states to consider all available mitigation strategies (including land use planning and other regulatory measures).

The Commission has also recommended that insurers provide information to households regarding their insurance policies, the natural hazards they face and indicative costs of rebuilding after a natural disaster (recommendation 4.9). Within one year, the Insurance Council of Australia should develop guidelines for insurers to do this in a consistent manner.

5.6 Interactions with federal financial relations

The costs of natural disaster relief and recovery to the states (net of reimbursements from the Australian Government) are shared among the states through the process of horizontal fiscal equalisation. In its current assessment, the Commonwealth Grants Commission assumes that all state expenditure under the NDRRA (net of reimbursement) is determined by the policy framework of the NDRRA and is not subject to significant policy differences. As such, it considers that differences in state NDRRA expenditure only reflect differences in the severity and incidence of natural disasters (CGC 2013). In other words, it assumes that all states follow the same ‘average’ policy.

Following implementation of the Commission’s reforms to natural disaster funding arrangements, the Commonwealth Grants Commission would need to revisit its assessment of average state policy, and accompanying accountability requirements, on natural disaster funding. If it were to determine that not all states were adhering to the average policy, it would need to make adjustments to the GST distribution formula accordingly. Any increase in mitigation funding provided by the Australian Government should be treated the same way as the current payments under the National Partnership Agreement on Natural Disaster Resilience.

The Commission’s reforms were developed in the context of the current degree of vertical and horizontal fiscal imbalance in the Australian federation. The Australian Government is currently reviewing vertical and horizontal fiscal imbalance through the Reform of the Federation White Paper process. Some inquiry participants cautioned that changes in cost-sharing arrangements for natural disasters should only be made as part of this process (for example, Queensland Government, sub. DR184).

Importantly, the Commission views the architecture of the reforms for natural disaster funding to be enduring. The funding parameters can be revised following any substantive changes to vertical fiscal imbalance and there will always be a role for Australian Government financial support in the event of severe and catastrophic disasters.

5.7 Summary of transitional arrangements

Table 5.2 sets out in detail the timing of the Commission’s recommended reforms and corresponding transitional arrangements. Implementing these reforms will require efforts by all levels of government (as well as insurers).

Table 5.2 Transitional arrangements for the Commission's reforms

<i>Reform</i>	<i>Rec</i>	<i>Implementation arrangements</i>	<i>Responsibility</i>	<i>Timeframe</i>	<i>Review mechanisms</i>
Recovery funding					
Thresholds and cost-sharing rate	3.1, 3.2	Change after one year	Australian Government	One year	Examine as part of the five-year review, or following substantive changes to vertical fiscal imbalance
Assessed damages and benchmark prices for essential public assets	3.1	Maintain current reimbursement model for one year to allow methods to be developed. Index prices and reassess periodically	State governments, with oversight and approval from Australian Government	Australian Government develops frameworks within one year. States develop benchmark prices within one year	States review prices on an ongoing basis and report annually. Broader review as part of the five-year review
Untied grants for community recovery funding	3.4	Maintain reimbursement model in the interim and rationalise eligible activities. Develop untied-grant model by third year	Australian Government, in consultation with states	Over three years	Examine as part of the five-year review
Australian Government Disaster Recovery Payment	3.3	Reform immediately	Australian Government	Immediate	Examine as part of the five-year review
Mitigation funding					
Quantum and allocation	3.5	Increase to \$200 million annually, distributed according to NPANDR allocation. Develop more risk-based allocation	Australian Government, in consultation with states	Increase funding over three years and change allocation within five years	Review quantum and allocation as part of the five-year review. Develop new formula within five years
Governance and institutional arrangements	3.7	Implement over three years, with annual performance reporting	State governments, in conjunction with local governments	Over three years	Annual progress reporting. Progress examined as part of the five-year review
Accountability arrangements					
Improved budgeting by Australian Government, and by states	3.6, 3.7	Provision for base level recovery costs and publish estimates of future costs. Australian Government to extend this to offer 'top-up' fiscal support to the states	Australian Government and state governments	One year	Review annually as part of budget process

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Table 5.2 (continued)

<i>Reform</i>	<i>Rec</i>	<i>Implementation arrangements</i>	<i>Responsibility</i>	<i>Timeframe</i>	<i>Review mechanisms</i>
Statewide risk assessments	3.7	Publish immediately	State governments	Immediate	Update assessments as required
Reporting on state insurance arrangements	3.7	States report to Australian Government every three years	Australian and state governments	Every three years	Every three years
Detailed state and local asset management plans	3.7	State and local governments adopt detailed and complete asset registers and asset management plans	State and local governments	Over two years for states; three years for local governments	Annual progress reporting. Examine in the five-year review
Other reforms					
Make new and existing natural hazard data publicly available	4.1	Implement immediately	All levels of government	Ongoing	Examine as part of the five-year review
Explore opportunities for partnerships with insurers	4.2	Implement immediately where opportunities arise	State and local governments	Ongoing	Examine as part of the five-year review
Develop guidelines for natural hazard information	4.3	Progressively release guidelines	ANZEMC	Within one year for priority hazards	Examine as part of the five-year review
Implement Built Environment Roadmap and identify options for information dissemination	4.4	Commence immediately	States (Roadmap) and Land Use Planning and Building Codes Taskforce (information)	Complete within one year	Examine as part of the five-year review
Clearly articulate statewide risk appetite and provide guidance to local governments	4.5	Implement immediately	State governments	Immediate	States review regularly
Provide local governments with statutory protection from legal liability relating to natural hazards	4.6	Establish reviews within one year, to report within two years	State governments, excluding New South Wales	Over two years	Review within two years
Repeal injurious affection provisions in Queensland	4.7	Implement immediately	Queensland Government	Immediate	
Phase out state insurance taxes and levies	4.8	Replace with less distortionary taxes over five years	State governments	Over five years	Examine as part of the five-year review
Provide additional information to insurance consumers	4.9	Insurance Council of Australia to develop guidelines within one year	Insurance industry	Within one year	Examine as part of the five-year review
Adopt best-practice arrangements for public infrastructure	4.10	Implement immediately	All levels of government	Immediate	Examine as part of the five-year review

A Conduct of the inquiry

The Commission received the terms of reference for this inquiry on 28 April 2014. Following receipt of the terms of reference, the Commission placed notices in the press and on its website inviting public participation in the inquiry. Information about the inquiry was also circulated to people and organisations likely to have an interest in it.

The Commission released an issues paper in May 2014 to assist inquiry participants with preparing their submissions. Following the release of the issues paper a total of 119 submissions were received.

After release of the issues paper the Commission visited every state and territory to meet with key stakeholders that may be affected by, or have information that may be of use to the inquiry. The Commission also held roundtable discussions in Brisbane, Canberra and Melbourne.

The draft report was released on 25 September 2014. Following the release of the draft report a further 108 submissions were received; a total of 227 submissions were received overall. These submissions are available online at: www.pc.gov.au/inquiries/completed/disaster-funding/submissions

Public hearings were held in Sydney on 27 October, in Melbourne on 28 October, Townsville on 30 October and Brisbane on 31 October 2014. A list of participants is provided in table A.2.

The Commission is grateful to all those who have contributed to this inquiry.

Table A.1 Submissions

<i>Participant</i>	<i>Submission number</i>
ACT Government	94, DR206
Actuaries Institute	97, DR208
Attorney-General's Department	90, DR226
Augusta Margaret River Shire Council (WA)	49
Australian Bureau of Meteorology (BOM)	105
Australian Business Register	75, DR191
Australian Business Roundtable for Disaster Resilience and Safer Communities (ABRDRSC)	22, DR160
Australian Centre for Posttraumatic Mental Health (ACPMH)	80
Australian Coastal Society Ltd	58, DR187
Australasian Fire and Emergency Service Authorities Council (AFAC)	47, DR171
Australian Geomechanics Society	DR154
Australian Government Reconstruction Inspectorate (AGRI)	39
Australian Local Government Association (ALGA)	52, DR173
Australian national, state and territory Councils of Social Service	DR197
Australian Psychological Society	85, DR144
Australian Red Cross	56, DR137
Australian Services Union	DR182
Australian Workers' Union of Employees, Queensland (AWUEQ)	116
Banana Growers Council	DR222
BG Urban Solutions	DR207
Beatty Legal	23
Bega Valley Shire Council (NSW)	DR134
Blue Mountains City Council (NSW)	28, DR204
Blue Shield Australia	43
Brisbane City Council (Qld)	DR169
Bundaberg Regional Council (Qld)	DR168
Burdekin Shire Council (Qld)	11, DR165
Burnett River Communities Flood Prevention Organisation (BRCFPO)	DR122
Bushfire and Natural Hazards Cooperative Research Centre (BNHCRC)	41, DR172
Cairns Regional Council (Qld)	21
Cameron, Doug (Senator the Honourable)	69, DR210
Cassowary Coast Regional Council (Qld)	DR140
Catholic Social Services Australia (CSSA)	33
Cavallo, Antonella	110, DR179
Central Highlands Regional Council (Qld)	DR174
Centre for Risk and Community Safety (CRCS)	DR201, DR225
City of Charles Sturt (SA)	8
Clarence City Council (Tas)	DR149
Coastal Communities Protection Alliance – Wooli (CCPAW)	73
Coffs Harbour City Council (NSW)	45
Complex Civil Systems Research Group (CCSRG)	109

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Table A.1 (continued)

<i>Participant</i>	<i>Submission number</i>
Cook Shire Council (Qld)	106, DR128
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	72, DR151
Department of Finance	92
Department of Infrastructure and Regional Development (DIRD)	99
Diamantina Shire Council (Qld)	DR139
Dobes, Leo (Dr)	1
Douglas Shire Council (Qld)	DR189
Dungog Shire Council (NSW)	32
Early Warning Network	42
East Gippsland Shire Council (Vic)	93, DR183
economic Security4Women and National Rural Womens Alliance (eS4w and NRW)	DR120
Emission Trading Association Australia (ETAA)	2
Engineering Management Styles	104
Environment Risk Science and Audit (ERSA)	12
EYefi	107, DR190
Far North Queensland Regional Organisation of Councils (FNQROC)	36, DR148
Financial Rights Legal Centre (FRLC)	77, DR130
Firewise WA	DR145
Floodplain Management Association (FMA)	79, DR166
Foundation for Rural and Regional Renewal (FRRR)	50
Geoscience Australia	111, DR142
Government of South Australia	67, DR209
Great Lakes Council (NSW)	DR157
Growcom	DR205
Gympie Regional Council (Qld)	118, DR152
Hamill, Chris	20
Hawkesbury City Council (NSW)	DR186
Hawkesbury-Nepean Flood Mitigation Action Committee (HNFMAC)	59, DR194
Howell, Tegwen	6
Humane Society International	86
Hunter Councils Inc (NSW)	54
Independent Pricing and Regulatory Tribunal (IPART)	26, DR159
Institute of Chartered Accountants	14
Institute of Public Works Engineering Australia, QLD division (IPWEAQ)	17
Institute of Public Works Engineering Australasia (IPWEA)	30, DR181
Insurance Australia Group (IAG)	24, DR158
Insurance Council of Australia (ICA)	57, DR185
James Cook University	DR127
Kiama Municipal Council (NSW)	9
Kyogle Council (NSW)	3

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Table A.1 (continued)

<i>Participant</i>	<i>Submission number</i>
Lake Macquarie City Council (NSW)	74
Law Council of Australia	102
Legal Aid NSW	100
Legal Aid QLD	DR175
Lewis, Alexander	7
Local Government Association of Queensland (LGAQ)	34, DR188, DR221
Local Government Association of South Australia (LGASA)	13, DR161
Local Government Association of Tasmania (LGAT)	65
Local Government Association of the Northern Territory (LGANT)	55
Local Government NSW (LGNSW)	81, DR196
Lockyer Valley Regional Council (Qld)	108, DR125
Mackay Regional Council (Qld)	DR133
Marcus, Louise (MP)	DR193
Mareeba Shire Council (Qld)	DR213
Max Margetts and Associates	DR129
McGowan, Jim (Adjunct Professor) and Tiernan, Anne (Associate Professor)	83, DR123
Mid Murray Council (SA)	15, DR212
Mitchell Shire Council (Vic)	5
Moorabool Shire Council (Vic)	DR126
Moree Plains Shire Council (NSW)	DR138
Municipal Association of Victoria (MAV)	98, DR162
Munich Reinsurance Company	DR136
Murweh Shire Council (Qld)	DR178
National Climate Change Adaptation Research Facility (NCCARF)	84, DR156
National Farmers' Federation (NFF)	35, DR202
National Insurance Brokers Association (NIBA)	64, DR150
National Sea Change Taskforce (NSCT)	18, DR124
North Burnett Regional Council (Qld)	DR211
North West Queensland Regional Organisation of Councils (NWQROC)	16
Northern Territory Government	117
NSW Farmer's Association	88
NSW Government	103, 114, DR217
Office of the Administrator Indian Ocean Territories	119
Outback Regional Road and Transport Group (ORRTG)	27
Planning Institute of Australia	53
Professional Fishermen's Association	62
Property Council of Australia	44, DR198
QBE Australia	63
Queensland Farmers' Federation	29, DR155
Queensland Government	31, 95, DR184
Queensland Murray-Darling Committee Inc. (QMDC)	48
Regional Australia Institute	61, DR203

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Table A.1 (continued)

<i>Participant</i>	<i>Submission number</i>
Regional Development Australia Orana (RDAO)	89
Risk Frontiers	19, DR132
Rockhampton Regional Council (Qld)	68, DR224
Save the Children Australia	101, DR164
Shaw, Gary	87
Shipping Australia Limited	DR195
Shire of Kulin (WA)	96
Shoalhaven City Council (NSW)	25, DR167
Southern Councils Group	DR163
St John Ambulance	DR141
Stace, Phillip	DR135
Stephen, Paul	DR121
Stewart, Peter J	DR177
Suncorp Group	71, DR176
Sunshine Coast Council (Qld)	112, DR153
Swiss Re	60, DR219
Tablelands Regional Council (Qld)	40, DR146
Tasmanian Farmers and Graziers Association (TFGA)	38, DR227
Tasmanian Government	115, DR223
The Bushfire Front Inc	DR131
Telstra	51
Toowoomba Regional Council (Qld)	78, DR170
Townsville City Council (Qld)	DR199
The Treasury	91
Trowbridge, John	DR218
Tumut Shire Council (NSW)	70
Uniting Church in Australia Assembly (UCAA)	46
Victorian Coastal Council	76
Victorian Government	113, DR215
WA State Emergency Management Committee Secretariat (WA SEMCS)	DR216
Wagga Wagga City Council (NSW)	82
WA Local Government Association (WALGA)	DR214
Wellington Shire Council (Vic)	DR147
Wenger, Caroline	10
Wentworth Group of Concerned Scientists (WGCS)	66, DR192
Western Downs Regional Council (Qld)	DR180
Whitsunday Regional Council (Qld)	DR200
Wode, Graham	DR220
World Animal Protection	37, DR143
YellowBird ALERT	4

Table A.2 Public Hearings

Participant

Sydney, 27 October 2014

Australian Business Roundtable for Disaster Resilience and Safer Communities
Insurance Australia Group
Insurance Council of Australia
Australian Coastal Society
Institute of Public Works Engineering Australasia (National and Queensland Divisions)
Financial Rights Legal Centre
South Australian Fire and Emergency Services Commission
Floodplain Management Association
Swiss Re
National Insurance Brokers Association
Risk Frontiers
Beatty Legal
Economic Security4Women
Australian Services Union

Melbourne, 28 October 2014

National Sea Change Taskforce
Australian Psychological Society
Antonella Cavallo, University of Adelaide (via teleconference)
Australian Red Cross
Australian Local Government Association
Gary Shaw
Municipal Association of Victoria
Victorian Government
Firewise WA
Local Government Association of South Australia
WA Local Government Association (via teleconference)
Wentworth Group of Concerned Scientists
Save the Children
East Gippsland Shire Council (Vic)
Suncorp Group
EYefi

Townsville, 30 October 2014

Douglas Shire Council (Qld)
Queensland Government
Outback Regional Road and Transport Group
Mareeba Shire Council (Qld)
Whitsunday Regional Council (Qld)
Tablelands Regional Council (Qld)
Cook Shire Council (Qld)

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Table A.2 (continued)

Participant

Far North Queensland Regional Organisation of Councils
Central Highlands Regional Council (Qld)
Cassowary Coast Regional Council (Qld)
Townsville City Council (Qld)
Burdekin Shire Council (Qld)
Etheridge Shire Council (Qld)
Croydon Shire Council (Qld)

Brisbane, 31 October 2014

Griffith University
Tegwen Howell
Lockyer Valley Regional Council (Qld)
Rockhampton Regional Council (Qld)
Queensland Government
Regional Development Australia Fitzroy and Central West
Planning Institute of Australia
Local Government Association of Queensland
Moree Plains Shire Council (NSW)
Toowoomba Regional Council (Qld)
National Climate Change Adaptation Research Facility
Australian Government Reconstruction Inspectorate
Adam Matthews

Table A.3 **Visits**

Participant

AUSTRALIAN CAPITAL TERRITORY

Canberra

ACT Chief Minister and Treasury Directorate
ACT Insurance Authority
Attorney-General's Department
Australian Government Reconstruction Inspectorate
Australian Local Government Authority
Commonwealth Grants Commission
Department of Finance
Department of Infrastructure and Regional Development
Department of Prime Minister and Cabinet
Geoscience Australia
Office of the Hon Michael Keenan MP (Minister for Justice)
Regional Australia Institute
Treasury

VICTORIA

Melbourne

Bureau of Meteorology
Bushfire and Natural Hazards Cooperative Research Centre
CSIRO
Institute of Public Works Engineers Australasia
Professor John Handmer
Municipal Association of Victoria
Red Cross
Standard and Poor's
Suncorp Group
Telstra
Victorian Government
Victorian Managed Insurance Authority

NEW SOUTH WALES

Sydney

Deloitte Access Economics
Insurance Australia Group
Insurance Council of Australia
Jardine Lloyd Thompson Group
Local Government NSW
New South Wales Government
Risk Frontiers
Swiss Re
Willis Re

(continued next page)

Table A.3 (continued)

Participant

QUEENSLAND

Brisbane

Environmental Risk Science and Audit

Greg Scoope

Hon David Crisafulli MP (Queensland Minister for Local Government, Community Recovery and Resilience)

Ipswich City Council

Local Government Association of Queensland

Lockyer Valley Regional Council

Planning Institute of Australia

Queensland Government

TASMANIA

Hobart

Local Government Association of Tasmania

Tasmanian Government

WESTERN AUSTRALIA

Perth

RiskCover

Western Australian Government

Western Australian Local Government Association

SOUTH AUSTRALIA

Adelaide

Government of South Australia

Local Government Association of South Australia

South Australian Fire and Emergency Services Commission

Torrens Resilience Institute

NORTHERN TERRITORY

Darwin

Local Government Association of the Northern Territory

Northern Territory Government

Territory Insurance Office

Table A.4 Teleconferences and phone meetings

Participant

Australian Building Codes Board
Department of Prime Minister and Cabinet
Earthquake Commission (New Zealand)
Financial Systems Inquiry Secretariat
Jeff Whalan
Insurance Australia Group (New Zealand)
New Zealand Productivity Commission
New Zealand Treasury

Table A.5 Roundtables

*Participant**Organisation***Brisbane (30 June 2014)**

Cr Donna Stewart	Balonne Shire Council
Cr Rick Britton	Boulia Shire Council
Pip Hold	Brisbane City Council
Cr David Batt	Bundaberg Shire Council
Cr Peter Maguire	Central Highlands Regional Council
Alison Cottrell	Centre for Disaster Studies, James Cook University
Alan Morton	Consultant
Graham Jordan	Consultant
Ben Harman	CSIRO
Ken Granger	Environmental Risk Science and Audit
Darlene Irvine	Far North Queensland Regional Organisation of Councils
Suzanna Barnes-Gillard	Institute of Public Works Engineering Australasia Queensland Division
Chris Champion	Institute of Public Works Engineering Australasia
Michael Kahler	Institute of Public Works Engineering Australasia
David Swan	Local Government Association of Queensland
Greg Hoffman	Local Government Association of Queensland
Roland McMillan	Local Government Association of Queensland
Simone Talbot	Local Government Association of Queensland
Cr Steve Jones AM	Lockyer Valley Regional Council
Cr Deidre Comerford	Mackay Regional Council
David Timms	Outback Regional Road and Transport Group
Kevin Keeffe	Red Cross
Bob Holmes	Rockhampton Regional Council
Cr Margaret Strelow	Rockhampton Regional Council
Adam Cole	Salvation Army

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Table A.5 (continued)

<i>Participant</i>	<i>Organisation</i>
Jim McGowan AM	School of Government and International Relations, Griffith University
Joshua Kelland	Suncorp Group
Marcus Taylor	Suncorp Group
Cr Andrew Smith	Western Downs Regional Council
Graham Cook	Western Downs Regional Council
Canberra (1 July 2014)	
Mike Rothery	Attorney-General's Department
Samantha Chard	Attorney-General's Department
Julie Batch	Australian Business Roundtable for Disaster Resilience and Safer Communities
Leo Dobes	Australian National University
Richard Thornton	Bushfire and Natural Hazards Cooperative Research Centre
Mark Stafford Smith	CSIRO
Kathryn Matthews	Deloitte Access Economics
Ric Symes	Deloitte Access Economics
Stephen Clively	Department of Finance
Paul McInnes	Department of Infrastructure and Regional Development
Neil Greet	Engineers Australia
Leesa Carson	Geoscience Australia
Daniel Smith	Institute of Actuaries of Australia
Tim Andrews	Institute of Actuaries of Australia
David Wellfare	Insurance Australia Group
Alex Sanchez	Insurance Council of Australia
Karl Sullivan	Insurance Council of Australia
Paul Barnes	Queensland University of Technology
Jack Archer	Regional Australia Institute
John McAneney	Risk Frontiers
Ryan Crompton	Risk Frontiers
John Handmer	RMIT
Duncan Bone	Suncorp Group
Chris Foster	Treasury
Karl Jones	Willis Re
Melbourne (2 July 2014)	
Rolf Fenner	Australian Local Government Association
Norrie McConochie	Jardine Lloyd Thompson Group
Greg Hoffman	Local Government Association of Queensland
Neville Hyatt	Local Government Association of SA
Shaun McBride	Local Government NSW
Emma Lake	Municipal Association of Victoria
Martijn Gough	Municipal Association of Victoria

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Table A.5 (continued)

<i>Participant</i>	<i>Organisation</i>
Feergus O'Connor	NSW Government
Mathew Schroder	NSW Government
Phillip Coates	NSW Government
Craig Evans	Queensland Government
Craig Wilson	Queensland Government
Graeme Newton	Queensland Government
David Place	South Australian Fire and Emergency Services Commission
Michael Stevens	Tasmanian Government
Donna Kennedy	Victorian Government
Jenny Atta	Victorian Government
Paul Gabriel	Victorian Government
Rene Jones	Victorian Government
Steve Muncaster	Victorian Government
Hazel Greenhalgh	Victorian Managed Insurance Authority
Mark Cleeve	Victorian Managed Insurance Authority
Peter Ryan	Victorian Managed Insurance Authority
Jodie Holbrook	WA Local Government Association

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