



Australian Government
Productivity Commission

Natural Disaster Funding Arrangements

Productivity Commission
Draft Report
Volume 1

September 2014

This is a draft report prepared for further public consultation and input. The Commission will finalise its report after these processes have taken place.

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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).

Opportunity for further comment

You are invited to examine this draft and comment on it by written submission to the Productivity Commission, preferably in electronic format, by **21 October 2014**. Further information on how to provide a submission is included on the inquiry website <http://www.pc.gov.au/projects/inquiry/disaster-funding>

The Commission will be holding public hearings in late October 2014 (23 October to 30 October). Likely locations for public hearings are Adelaide, Brisbane, Canberra, Melbourne, Sydney and Townsville, but the ultimate location and timing of public hearings will be determined by participant demand.

The Commission invites parties to register their interest in appearing before a public hearing by **10 October 2014**.

The final report will be prepared after further submissions have been received and public hearings have been held, and will be forwarded to the Australian Government by the end of 2014.

Commissioners

For the purposes of this inquiry and draft report, in accordance with section 40 of the *Productivity Commission Act 1998* the powers of the Productivity Commission have been exercised by:

Jonathan Coppel

Commissioner

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
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
SPP	Specific purpose payment
SPP	State Planning Policy
VBRC	Victorian Bushfires Royal Commission
VMIA	Victorian Managed Insurance Authority
VFI	Vertical fiscal imbalance
VPPs	Victorian Planning Provisions

Glossary

Asset and liability management	An approach used by organisations to jointly manage specific risks to their assets and liabilities in order to achieve their financial objectives.
Asset management plans	Documents 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	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 a eligible disaster event to a more disaster-resilient state.
betterment	An increase in the resilience of an asset to natural disasters.
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 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.
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

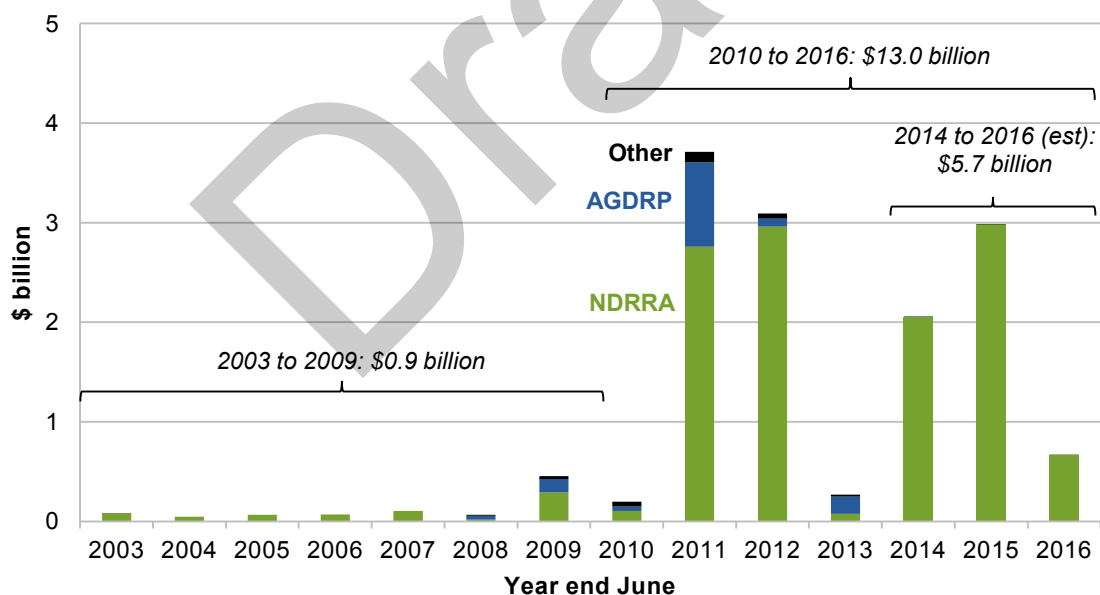
- Australia is exposed to natural disasters on a recurring basis. Effective planning and mitigation of risks is an essential task for governments, businesses and households.
- Current government natural disaster funding arrangements are not efficient, equitable or sustainable. They are prone to cost shifting, ad hoc responses and short-term political opportunism. Groundhog Day anecdotes abound.
- The evolution of the funding arrangements can be characterised by growing generosity by the Australian Government during the previous decade, followed by a swing to constrain costs and increase oversight after the recent concentrated spate of costly disasters.
- Governments generally 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, especially the Australian Government.
- Australian Government post-disaster support to state governments needs to be reduced, and support for mitigation increased. Some budget provisioning is also needed.
 - The Commission's preferred funding reform option is to provide a principal level of support to states commensurate with relative fiscal capacity and the original 'safety-net' objective, with the option of top-up insurance for those states that require it.
 - States need to shoulder a greater share of natural disaster recovery costs to provide them with more autonomy and a sharper incentive to manage, mitigate and insure these risks.
 - Australian Government mitigation funding to states should be increased.
- Governments have a role in providing emergency relief payments to individuals who have been seriously affected by natural disasters, to avoid immediate economic and social hardship. Reducing duplication, inconsistency, inequity and inefficiency in the provision of such relief is needed.
- Governments can also do better in terms of policies that allow people to understand natural disaster risks and have incentives to manage them effectively.
 - Information is critical to understanding and managing natural disaster risk. Information on hazards and risk exposure has improved significantly in recent years, but there are opportunities to improve its 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 evidence that land use planning is not always incorporating natural disaster risk. Greater transparency is needed.
- Insurance is an important risk management option, especially for private assets. Households and businesses should be relied upon to manage natural disaster risks to their assets. Insurance markets in Australia for natural disaster risk are generally working well. Pricing is increasingly risk reflective, even to the individual property level.

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.

These natural disasters have also had a significant financial impact on the Australian, state, territory and local governments. 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 could be mitigated. Similarly, better management of natural disaster risk by government can reduce the fiscal costs of natural disasters over time. 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, which can result in inequitable and unsustainable policies.

The natural disaster funding arrangements matter, not because of their fiscal impact *per se*, but because they are a key driver of the incentives that influence the way governments and the community manage natural disaster risks. This draft report presents the Commission's preliminary assessment of current natural disaster funding arrangements and options 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 has been asked to undertake an inquiry into the efficacy of Australia's natural disaster funding arrangements. In particular, the Commission is to analyse the quantum, coherence, effectiveness and sustainability of current Commonwealth, state and territory expenditure on natural disaster mitigation, resilience and recovery, and to develop findings on the following:

- 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 request 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 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 an important element of the community's resilience to natural disasters.

The Commission has used an evidence-based approach and economic principles to guide its identification and assessment of reform options for this draft report. The Commission has engaged widely with stakeholders, considered evidence from overseas and taken into account findings and recommendations arising from other reports of relevance.

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 property losses. Floods have also been frequent and, when they occur, 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).

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	0	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>

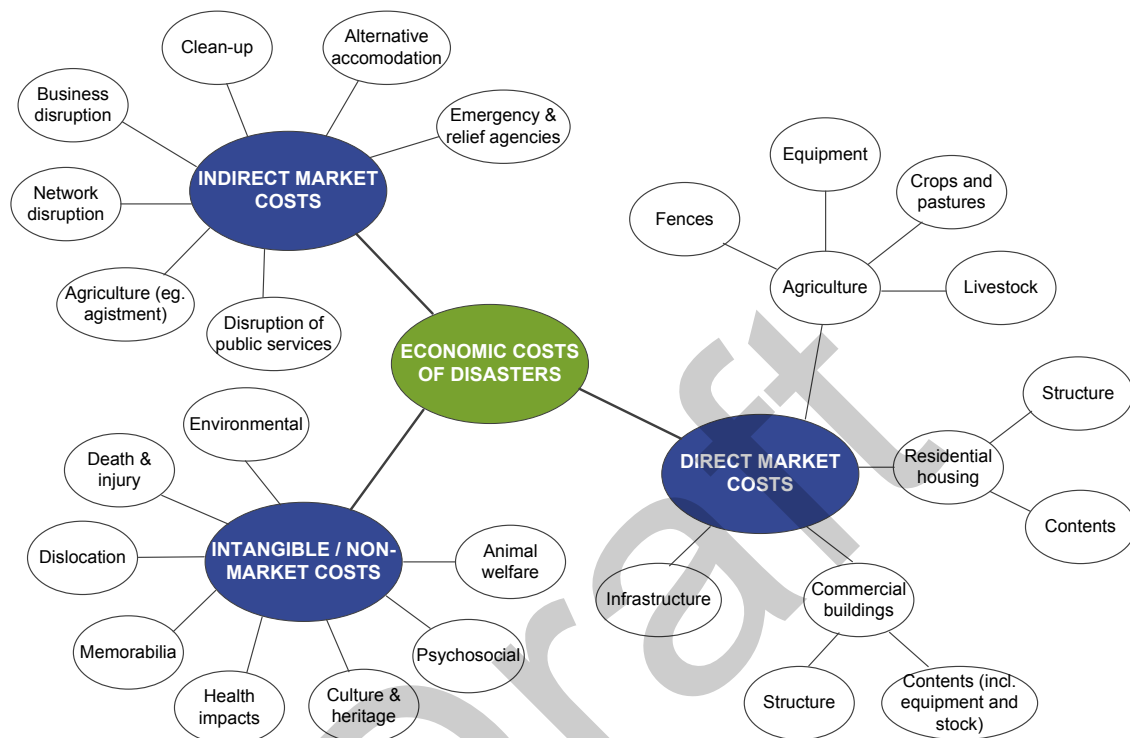
^a Where events were recorded as impacting multiple jurisdictions, costs have been divided evenly across those jurisdictions. – Nil or rounded to zero.

However, 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

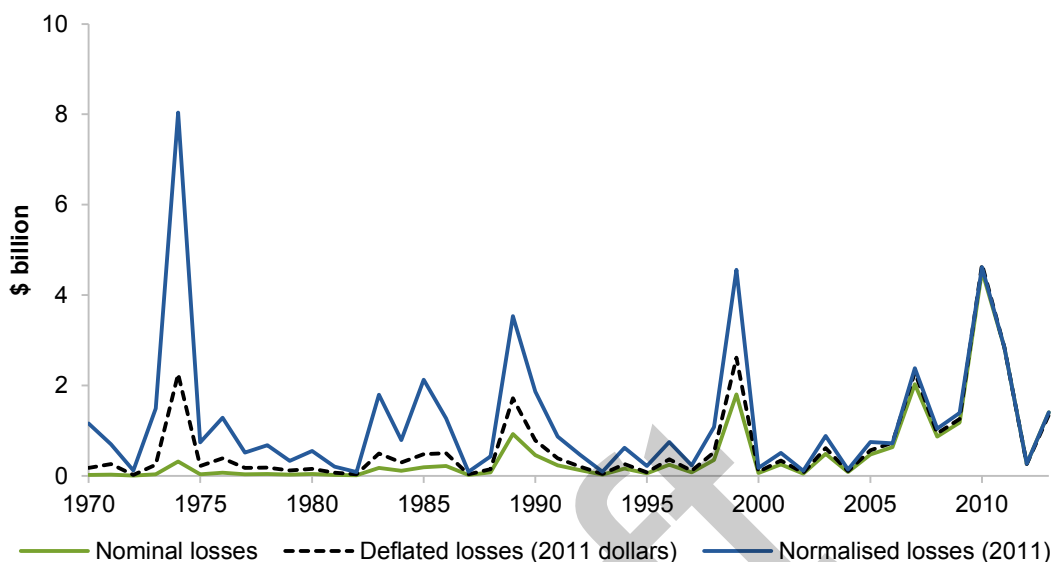
- non-market costs, such as deaths and injuries as well as impacts on social wellbeing and the natural environment (figure 2).

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. A recent estimate by Deloitte Access Economics put the total economic cost of natural disasters at \$6.3 billion per year. The Commission has used insurance losses (scaled up) to proxy the economic costs of natural disasters. While insurance losses are an imperfect measure, 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 (figure 3). However, 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. Analysis of deflated insurance losses indicates that the average annual losses for the period 1970–2006 are 22 per cent of the average losses over the period 2007–2013. An implication of this finding is that policy settings and natural disaster funding arrangements need to be designed well to deal with these costly natural disasters.

Figure 3 Insurance losses from natural disasters^a

^a Normalised losses are insurance losses that would have been incurred if past natural disasters were to happen in 2011. To obtain normalised losses, nominal insurance losses are adjusted for changes in inflation, population, wealth, and building standards in areas prone to tropical cyclones.

There is a general upward trend in nominal insurance losses, with losses increasing significantly in recent years. There is also significant variability around that trend. However, when insurance losses are ‘normalised’ to take account of changes in population, wealth and inflation over time, the upward trend largely 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 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 (often for lifestyle reasons).

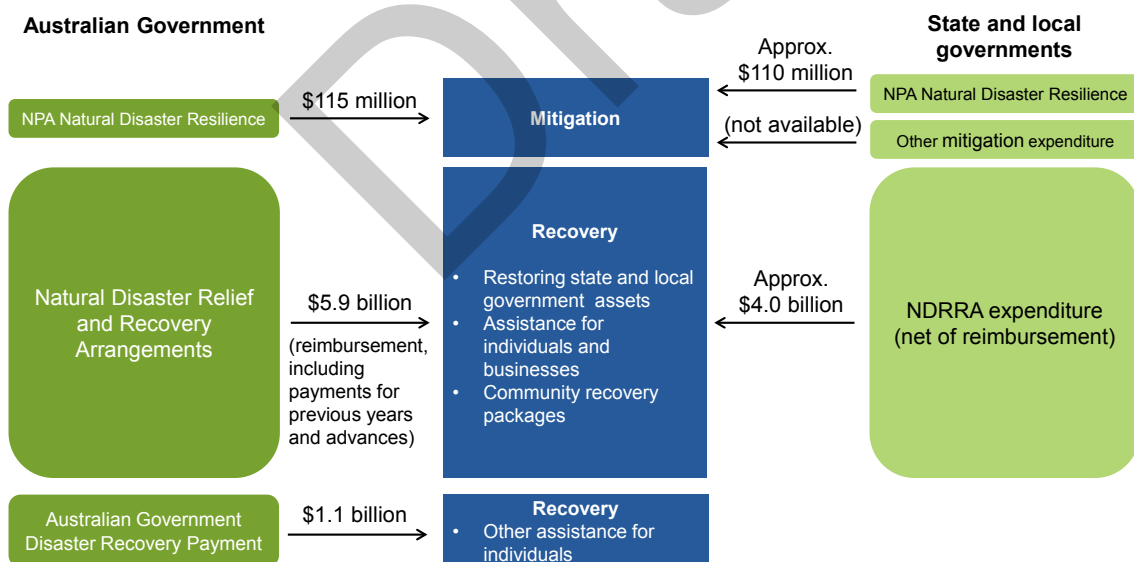
These drivers are likely to continue. For example, the CSIRO reported that ‘in south east Queensland, based on current development patterns, the number of residential buildings affected by a 1 in 100 year storm tide inundation event nearly doubles in 2030 compared with today.’ The Commission’s projections 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 to local governments (local governments are essentially an extension of state 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 typically shared with the Australian Government, due to the high degree of vertical fiscal imbalance (VFI) in the Australian federation (figure 4). VFI refers to the situation where the Australian Government raises more revenue than it requires for its own direct expenditure responsibilities, whereas state governments raise less revenue than they require for their expenditure responsibilities. The Australian Government makes an ongoing contribution to state government budgets. 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 (HFE). In making the HFE calculations, the Commonwealth Grants Commission assumes that all states adhere to the same spending policies on natural disaster relief, such that differences in expenditure across states only reflect differences in the severity and incidence of natural disasters. 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), but 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 specified in implementation plans.

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 tends to be outweighed by post-disaster expenditure. For example, Australian Government mitigation spending was only 3 per cent of what it spent post-disaster in recent years. Similarly, state government mitigation spending through the NPANDR was less than 3 per cent of what they spent on recovery. However, this is likely to be an underestimate. Data on mitigation expenditure by states outside of the NPANDR are difficult to obtain. The available information is incomplete and inconsistent across states. Nevertheless, the partial information that has been provided to the Commission suggests that there is substantial mitigation expenditure by the states outside the NPANDR.

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 Relief 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 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 — the Australian Government only provides assistance if cumulative state expenditure (on events meeting the small disaster criterion of \$240 000) exceeds a certain threshold in a financial year
- reimbursement 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).

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 ‘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.

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.

Other relief and recovery expenditure

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 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 of

the AGDRP reached around \$850 million in 2010-11 following the Queensland floods and Cyclone Yasi.

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 Allowance or Youth Allowance.

A framework for effective risk management

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 risk (figure 5).

Figure 5 **The natural disaster risk triangle**



Effective risk management involves:

- owning risk — allocating responsibility for managing and funding risks
- understanding risk — identifying which risks are faced and their likely consequences, including further research and analysis where necessary
- 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. It may be prohibitively expensive, or impossible, to eliminate risk. 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 and their financial and non-financial capacity.

This suggests that 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. And because everyone has a unique risk appetite, it is not possible to identify the set of risk management actions that will deliver the highest level of wellbeing to the community as a whole.

The role of government

There is a range of 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 discernible roles for government. 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 social capital and community cohesion. Third, governments need to effectively manage natural disaster risk to their own assets and liabilities.

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. For example, the political incentives for mitigation are weak, since mitigation provides benefits that can be highly uncertain and accrue over a long time horizon. By contrast, politicians can be quick to provide generous post-disaster assistance, which provides immediate, observable and private benefits to individuals. 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 and transparent commitment mechanisms so that governments avoid ad hoc policy responses, myopic policy settings and disincentives for private risk management.

Assessing current funding arrangements and options for reform

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 these factors impact 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 diverse 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 VFI, to the extent that the Australian Government is better able to bear very large or geographically diversified risks because of its broader revenue 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 them a greater incentive to effectively manage risks to the community's wellbeing. Transparent budgets can be a powerful force against the political opportunism mentioned above.

It is therefore important that budgets reflect the full range of natural disaster liabilities that governments are exposed to. This will promote incentive neutrality — that is, no systematic bias in favour of one type of risk management activity over another. Where governments do not include any estimate of potential natural disaster costs in their budgets, neutrality is eroded. This creates a bias in favour of recovery expenditure and against mitigation and insurance, and results in governments (and ultimately some communities) retaining more risk than they should.

Two key conclusions emerge from the Commission's assessment of how governments are managing natural disaster risks to their own assets: 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.

Therefore, the reform options proposed by the Commission focus on:

- more transparent budget treatment of natural disaster risks
- reducing Australian Government post-disaster support to states to provide sharper incentives to invest in mitigation and insurance
- increasing Australian Government support for mitigation
- accountability frameworks that reduce prescriptiveness and give states more 'earned autonomy' on how to best undertake recovery and mitigation.

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. 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.

The current budget treatment of natural disaster costs is likely leading to governments retaining more risk than they would were these fiscal risks provisioned for more transparently. Natural disaster recovery costs are treated as contingent liabilities and therefore not included in government financial statements (that is, the forward estimates only include provision for fiscal costs from past disasters). This budget treatment means that most natural disaster costs have become a volatile and growing unfunded liability for governments, especially the Australian Government.

By contrast, mitigation expenditure is an upfront cost that is subject to trade-offs with other policy priorities as well as the scrutiny that applies to budget processes. This results in greater pressure to reduce mitigation spending than there is to reduce recovery spending. It also means that the impact of mitigation on reducing future recovery costs is not fully understood and taken into account.

Australian Government agencies have argued that setting aside funds for disaster recovery would not be practical because of the uncertainties involved in estimating future costs. However, it is arguably a misrepresentation to treat *all* natural disaster recovery costs as contingent liabilities. Given how regularly natural disasters call on the fiscal purse and the established policy entitlement, it would be more accurate to describe at least some of the

costs as an unbudgeted demand risk. Further, in the absence of any provisioning, incentive neutrality (especially between mitigation and recovery expenditure) will remain elusive.

Where natural disaster risks to the Australian Government budget can be reasonably anticipated and quantified, the Australian Government should publish estimates of the average annual costs and provision for these risks in the forward estimates through regular appropriation. For more catastrophic, less quantifiable risks, it may be more efficient to fund the related costs if and when the risks are realised. Such provisioning could inform any imputed savings from reform (box 2).

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 invest in mitigation or insurance because they generally must bear the full costs themselves, whereas they only pay a fraction 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. However, the current extent of Australian Government support is difficult to justify — the NDRRA cover up to 75 per cent of the marginal costs of a broad range of relief and recovery works, with an uncapped Australian Government contribution. This is much higher than fiscal support in other service delivery areas that are principally the responsibility of states, such as education and health.

Further, the low small disaster criterion (\$240 000) and reimbursement thresholds in the NDRRA extend beyond a ‘safety net’. The NDRRA is being accessed for small, routine weather events and is providing support to states with little demonstration that they have undertaken appropriate risk management and exhausted their own resources first. Instead of being an ‘insurer of last resort’, for some government assets the Australian Government has become the ‘insurer of first resort’.

There is no clear rationale for the Australian Government to have a higher exposure to natural disaster risks than to other fiscal risks. The rate of marginal funding support provided to states after a disaster should be reduced to better align with relative fiscal capacity (50 per cent for above-threshold costs). Raising the small disaster criterion and the reimbursement threshold would mean that Australian Government involvement is triggered only when states are faced with extraordinary fiscal impacts from natural disasters.

Taken collectively, such changes would be compatible with the original safety-net objective of the NDRRA and would provide a sharper incentive for states to invest in mitigation and insurance, since they will shoulder a greater proportion of the costs of recovery. This could also prevent some wasteful reconstruction.

The NDRRA also influence and constrain the ways state and local governments make decisions about disaster recovery works.

- The NDRRA are biased toward rebuilding all damaged assets. This is leading to excessive reconstruction expenditure — Groundhog Day anecdotes abound of the same asset repeatedly damaged by successive natural disasters and repeatedly rebuilt in the same location and to the same standard.
- Prescriptive, input-based conditions (such as restrictions on the use of local government employees' labour (day labour)) are preventing state and local government from pursuing the most efficient recovery options.
- While the NDRRA allow for funding of betterment (rebuilding an asset to a more disaster-resilient standard), the Betterment provision has only been used once (for a municipal swimming pool in Tumut, NSW). There are numerous impediments to its use, including a higher administrative burden, lower reimbursement rate and lack of a budget allocation by the Australian Government (which means that betterment must be funded by offsetting savings elsewhere).

The Commission has identified three options for reforming Australian Government post-disaster support (table 2). All the options:

- reduce the disincentives for mitigation and insurance
- give state and local governments greater autonomy in how funds are spent
- reduce the inefficiencies that arise from the prescriptive nature of the NDRRA (both in terms of reducing compliance costs and addressing rules that lead to wasteful spending)
- reduce the fiscal risks transferred to the Australian Government, to better align with fiscal capacity and the original safety-net objective of the NDRRA.

Each of these options requires the states to take greater ownership of natural disaster risk by reducing the Australian Government financial contribution to natural disaster recovery and by reducing the types of activities that are eligible for funding support. The latter is also intended to discourage states from undertaking activities that undermine private-sector risk management (like cleaning up debris on private property or providing distortionary subsidies). Box 2 shows illustrative fiscal impacts of option 1; the fiscal impacts of option 3 cannot be estimated because event-level expenditure data are not available. Reform options 1 and 2 provide support to states when an annual expenditure threshold has been exceeded, and are therefore more reflective of fiscal capacity and an ongoing (cumulative) fiscal safety net (table 3). Option 3, by contrast, provides greater short-term fiscal certainty to both the Australian and state governments because it provides an event-based (non-cumulative) safety net. Under this model, there would be no recourse to the Australian Government for small regular disasters, but support would be available for larger disasters.

Table 2 The Commission's proposed funding reform options

Option 1: Reformed NDRRA	Option 2: Option 1 plus 'top-up' insurance	Option 3: Block grant model
<ul style="list-style-type: none"> • Flat reimbursement 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 principal 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

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

	<i>Current NDRRA Cumulative threshold</i>		<i>Reform option 1 Cumulative</i>	<i>Reform option 3 Single event</i>
	1st threshold (0.225%)	2nd threshold	0.45%	0.2%
NSW	143	250	286	127
Vic	110	192	219	97
Qld	94	164	188	83
SA	34	59	68	30
WA	57	100	115	51
Tas	11	19	21	9
NT	11	19	22	10
ACT	9	16	19	8

All three options afford the states greater autonomy to expend funds in accordance with local preferences. As such, they depart from the prescriptive and inefficient reimbursement model currently in place. All reform options hinge on the existence of reliable methods to estimate assessed damages and the expected costs of reconstruction soon after a disaster has occurred. This presents some challenges. The full extent of damage may not be known immediately and input costs can be uncertain, especially when these are driven up by the scale of a disaster. Further, costs are likely to vary significantly across Australia, especially in regional and remote areas. But more granularity in pricing estimates creates additional administrative complexity and adds to the compliance burden.

The Commission does not at this time view the challenges of reasonably estimating these costs to be insurmountable. This would require an on-the-ground assessment of damages combined with an estimate of reconstruction costs based on the type of asset and its ‘service standard’. This cost estimate would be made using benchmark prices which reflect cost of reconstruction for that type of asset to its previous service standard in accordance with current engineering standards. Benchmark prices are used in other areas of service delivery, and there are several tools and models available that could be adapted to this task, including the potential involvement of professional loss assessors.

Further, this approach offers significant benefits over a reimbursement model. By providing the bulk of funding based on benchmark cost estimates, state and local governments would have greater flexibility in how they undertake post-disaster reconstruction, including betterment. States would bear the consequences of cost overruns, but by the same token, would reap the benefits where projects come in below budget. It also requires greater pre-planning and transparency.

Overall, the Commission prefers option 2. It provides a principal level of support to states, commensurate with relative fiscal capacity and the original concept of a fiscal safety net, but also provides top-up support to those states that require it. Importantly, this additional support would be risk-rated. That is, states that face higher natural disaster risk would pay higher premiums to the Australian Government for any additional support purchased. This would require states to transparently articulate a risk appetite (and the associated trade-offs) and have a better understanding of their exposure to natural disaster risks.

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

The Commission is proposing a staged three-year transition period to implement its preferred option and associated recommendations relating to mitigation funding and accountability arrangements, and seeks feedback on the proposed transition.

Box 2 Illustrative fiscal impact of reform option 1

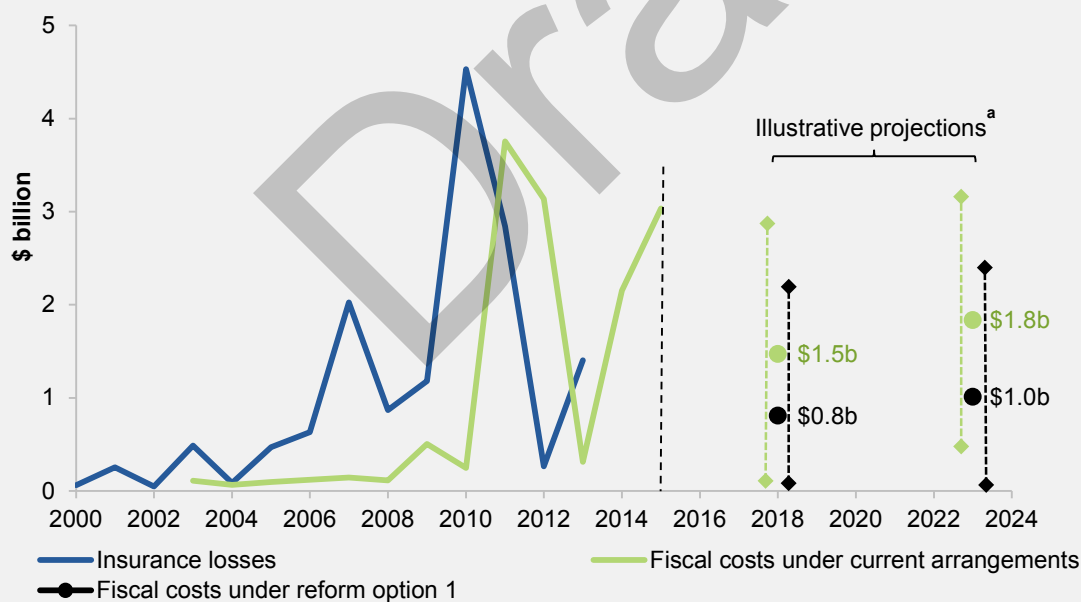
The Commission's fiscal analysis of reform option 1 consists of two parts:

- a historical analysis (covering 2007-08 to 2013-14) comparing Australian Government NDRRA expenditure under reform option 1 to expenditure under current arrangements
- a forward-looking analysis with projections of fiscal costs in the medium and long term.

Illustrative estimates were constructed to show what NDRRA expenditure would have been if selected aspects of reform option 1 had been implemented (changes to thresholds, cost-sharing rate and eligible expenditure; data are not available to model the impact of changing the small disaster criterion).

- The Australian Government's NDRRA share would have been nearly 30 percentage points lower under reform option 1, translating to cumulative savings of over \$4 billion over seven years, or about \$600 million annually.
- NDRRA cost savings would have been particularly high in years following catastrophic natural disasters, such as the 2010-11 Queensland floods and Cyclone Yasi.

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 reform option 1 is expected to be 55 per cent of expenditure under current arrangements (see figure). 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).



^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.

These imputed savings estimates are based on a period of unusually high natural disaster severity. As such, they are probably overstated (or at the high end). Furthermore, the imputed savings estimates also need to be informed by the form of provisioning governments adopt for future disaster recovery costs.

Interaction with horizontal fiscal equalisation

The treatment of natural disaster relief expenses in the formula used by the Commonwealth Grants Commission to distribute GST revenue among the states elicited opposing views from inquiry participants. Some jurisdictions argued that current practice may reduce the incentive to take appropriate prevention and insurance measures, while others argued that it does not have a significant impact. This is the quintessential HFE debate, and is not unique to the natural disaster expense assessment.

The HFE principles that guide the distribution of GST revenue among the states create another avenue for cost shifting. The GST redistribution due to natural disaster relief costs has totalled \$739 million over the past four years. However, the Commission is not able to ascertain to what extent the equalisation of natural disaster relief costs affects the incentives that states have to effectively manage natural disaster risks in their jurisdictions. The Commission considers it may impact on 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. The White Paper on the Federation may recommend more holistic changes to both VFI and HFE. Arguably, a more enduring and optimal solution to improving the natural disaster funding arrangements would involve achieving significant, lasting reforms to federal financial relations.

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. However, the extent of the underinvestment in mitigation is not known, and the benefits of significantly increasing mitigation spending have not been sufficiently demonstrated.

Inquiry participants advocated increased mitigation spending. In many cases the argument was based on selected evaluations of mitigation works that successfully prevented damage during a 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). It is not possible to generalise from a sample of projects that increased government expenditure on mitigation would deliver widespread net benefits to the community.

Nonetheless, there is scope for the Australian Government to provide additional mitigation funding to states to assist with the reduction in post-disaster support and to manage its fiscal risk exposure. 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 Australian Government should use some of the imputed ‘savings’ from reducing recovery funding to increase funding for mitigation. Increased funding should be conditional on matched funding contributions from states, in addition to transparent institutional and governance arrangements for identifying and selecting mitigation projects.

The key elements of these arrangements are:

- proposals would be supported with robust and transparent evaluations (including cost–benefit analysis and assessment of non-quantifiable impacts) and subject to public consultation, with the analysis and decisions publicly disclosed
- private funding sources would be used where feasible and efficient
- local and state governments partnering with insurers (box 3).

Box 3 Utilising private funding for mitigation

Mitigation is not the responsibility of governments alone: there are also incentives for individual property owners to undertake voluntary mitigation. These incentives can include reduced risk of property loss or damage in a natural disaster event, higher property values and lower insurance premiums.

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 can most influence the level of exposure to natural disaster risk.

- In the first instance, costs should be allocated to the party causing the risk or that has the most control over the risk (including government agencies).
- Where this is not feasible, beneficiaries should pay (with costs allocated to direct beneficiaries before indirect beneficiaries).
- Only if neither of these options is feasible should costs be funded through general taxation.

Insurers also 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 upfront commitments to reduce insurance premiums). An example of this is the Property Resilience and Exposure Program. This is an initiative of the Insurance Council of Australia, and 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.

The Australian Government would want to be confident that its increase in mitigation spending ultimately benefits consumers through a corresponding reduction in insurance premiums where natural hazard risks have been materially reduced. For large mitigation projects, the post-mitigation premiums should be subject to some independent review. For example, there would be merit in the Treasury and the Australian Government Actuary expanding their existing work on insurance in north Queensland to the broader home and contents insurance market, to better understand how insurers price these products.

Accountability frameworks should be strengthened

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

Ideally, a more efficient approach would be to give the states greater autonomy in how they spend funds from the Australian Government and instead monitor key outputs and outcomes. This approach underpins other areas of Commonwealth–state relations, such as the *Intergovernmental Agreement on Federal Financial Relations*. It is also consistent with recent reforms to Commonwealth financial accountability arrangements under the *Public Governance, Performance and Accountability Act 2013* (Cwlth).

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

- states having developed and published risk assessments in accordance with the National Emergency Risk Assessment Guidelines
- states having adequate insurance arrangements, including sufficiently detailed asset registers and insurance arrangements subject to regular review and market testing
- increased transparency of natural disaster liabilities in state budgets
- local governments having asset registers and asset management plans that incorporate natural disaster risk planning, consistent with their long-term financial plans
- states demonstrating effective and transparent decision-making mechanisms to prioritise mitigation spending based on cost–benefit analysis.

State government use of insurance

State and local governments generally have adequate insurance for their non-road 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.

While the NDRRA include a requirement that state and local governments have adequate insurance, this is not enforced. Essentially, local and state governments receive zero-cost natural disaster insurance for assets that meet the definition of ‘essential public assets’ under the NDRRA. Where they do have insurance, any NDRRA reimbursements are reduced in line with insurance payouts. These characteristics of the NDRRA weaken state and local governments’ incentives to take out insurance.

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 because some roads are damaged on a repeated basis. Better information about this asset base may help insurance markets to understand and price insurance for roads. Where they do not already do so, state and local governments should compile and publish detailed registers of road asset condition and maintenance for all roads over which they have jurisdiction.

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 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 disaster event occurring, many of the problems that have beset traditional insurance for roads are avoided. While such products can sometimes be more costly than traditional insurance, recent advances have improved their viability for governments and large companies. State and local governments should further investigate non-traditional insurance products for roads.

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 assistance to individuals and businesses are inconsistently applied, inefficient in their administration, prone to overlaps and duplication, and can be very costly.

- The eligibility criteria (and specifically the definition of ‘adversely affected’) for the AGDRP have been inconsistently applied across natural disaster events. This leads 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 through the AGDRP appears excessive for short-term emergency needs (such as temporary accommodation, food and clothing) and relative to other government support 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 — for example, \$383 for someone on the age pension). At current rates, the AGDRP can add up quickly for families.
- 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 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 largely anecdotal.

There is merit in providing an emergency relief payment to individuals who have been seriously affected by natural disasters in order to avoid immediate economic and social hardship. These payments should be modest and distributed quickly after the event. 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.

The case for government assistance to businesses and primary producers after a natural disaster is weak. Viable businesses should have access to insurance and credit through commercial institutions. Studies of US businesses receiving post-disaster aid have found that government assistance after a natural disaster was, at best, irrelevant to the businesses’ ultimate survival and recovery.

The Australian Government should cease reimbursement of state emergency personal assistance under category A of the NDRRA and all assistance to businesses and primary producers under categories B and C. Furthermore, the Australian Government should reduce the amount provided under the AGDRP and remove Ministerial discretion by legislating the eligibility criteria. This would reduce (the quite considerable) administrative costs and address inequitable treatment across different disaster events due to successive changes to the eligibility criteria for the AGDRP.

The Commission considers that the Disaster Recovery Allowance should be maintained. It fills a gap between emergency disaster relief 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.

In the event that assistance to businesses is justified and remains a feature under the NDRRA, 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 the easiest to administer. These should be narrowly targeted to business reinstatement and not for economic stimulus. In 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.

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

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. In many instances, 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, and sharing and communicating information.

Australian Government organisations such as the Bureau of Meteorology, Geoscience Australia, CSIRO and Bushfire and Natural Hazards Cooperative Research Centre all provide information and research that can contribute to increased natural disaster resilience. State and local governments also collect a significant amount of information on natural disaster risks. Furthermore, insurance companies have significantly increased their knowledge and analysis of natural hazards, particularly floods. While there are still some gaps in the understanding of natural disaster risk, it is likely that most information gaps can be addressed without significantly changing current funding arrangements.

Several inquiry participants suggested a national platform for natural hazard data could improve the availability and consistency of information. A national platform for the consolidation and provision of such data is likely to incur high costs and yield limited community-wide benefits, given the diversity of information needs across users and hazard types. Much natural disaster data is already publicly available. There could be some benefits in better coordinating and prioritising the research work undertaken by the likes of Geoscience Australia, CSIRO and the Bureau of Meteorology to improve the transparency and accessibility of research. But there is no compelling case in the evidence so far for establishing a national ‘clearing house’ for natural hazard data.

Data consistency

Guidelines for information collection, such as for hazard modelling, mapping and ‘metadata’, would improve the consistency of hazard information. Guidelines would also help local governments establish confidence in securing and using the information that

they need to carry out their responsibilities, including politically difficult land use planning.

The guidelines should incorporate sufficient flexibility to allow for different user needs and objectives. Such guidelines could be developed at either the state or national level. Work on such guidelines for flood mapping is already underway by Geoscience Australia and the Attorney-General's Department. If this project is beneficial, it could be extended to other natural hazards.

Data sharing

Data collected by governments often has public-good characteristics, but is not always shared by governments. Sometimes the release of such information has been impeded by:

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

Often these impediments arise more from perceptions about the consequences of information release than from reality. 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 where they have not already done so.

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. However, there could also be scope for the private sector, especially insurers, to provide some of this information (for example, information that is customised to an individual's circumstances). Governments and insurers should explore low-cost channels, such as land rates notices, property rental contracts or insurance renewal notices, to communicate natural disaster information to households.

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 one state, 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 hasten 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 impacting on 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. State governments need to articulate the relative importance of natural disaster risk management relative to other priorities in state planning policies, and support local governments in the implementation of these policies.

There is growing awareness of the need to integrate natural disaster risk management into all aspects of the land use planning process, but this has not always been 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, Suncorp Group (sub. 71, p. 15) argued that:

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.

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 or 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 how to prioritise the competing objectives of land use planning. Increased transparency and accountability of local government decision making would also assist.

Local governments require sufficient resources to be able to fulfil their responsibilities in land use planning. Inadequate financial resources and/or a lack of appropriate skills, expertise and information can impede local governments' ability to effectively implement planning policies. State governments should review the adequacy of local governments' resources and capabilities to carry out their land use planning responsibilities effectively, and provide further resources where they are not adequate.

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. Such charges would lead to the level of risk being better reflected in private asset prices, and would influence residents' expectations and disaster risk management decisions. In general, there are few legislative barriers to local governments seeking variation in rates or imposing special levies to fund natural disaster risk management activities. For most local governments the main constraint in raising additional own-source revenue is their constituents' willingness and capacity to pay (the latter particularly an issue for geographically large and sparsely populated regional and remote local governments).

Some local governments expressed concern that legal liability inhibits them from sharing natural hazard information publicly, or making planning decisions based on risk assessment. On the other hand, legal experts have indicated that the potential legal liability of local governments to subsequent property owners as a result of failing to release reasonably accurate hazard information could be much greater than their liability for releasing the information.

State governments should clarify the legal liability of local governments in relation to sharing natural hazard information and making related changes to planning regulations, as ultimately, the liability rests with state government. Consideration could also be given to some increased legal protection for local governments in jurisdictions where they do not already have such protection. In particular, the provisions for injurious affection in Queensland's *Sustainable Planning Act 2009* should be repealed.

Building regulations

Overall, Australia's building stock is of a high quality and building regulations are effective in reducing the impacts of natural disasters. They are regularly reviewed and updated to ensure they reflect a current understanding of natural disaster risk.

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 materially, such as cyclone building codes implemented following Cyclone Tracy. Geoscience Australia simulated the impact that Cyclone Tracy would have on Darwin if it were to reoccur in 2008 and estimated that reconstruction costs would be 90 per cent less than in 1974.

The stated objectives of building regulations are to achieve national minimum standards for safety, health, amenity and sustainability. While some insurers have argued in favour of expanding this brief to explicitly include building resilience, the Commission's view is that the current objectives are appropriate, on the basis that property owners and builders can choose to increase building resilience to gain private benefits.

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 can be very expensive. Retreat or relocation strategies may be the only viable option in very high risk areas — for example, the town of Grantham in Queensland implemented a relocation policy following the devastating 2011 floods — but these options are very expensive and only viable in exceptional circumstances.

Regulating 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. Increased investment and improvements in information and analytical tools by insurers have led to more accurate and granular pricing of natural disaster risk.

However, insurance policies may not be effective in encouraging mitigation where the price signals associated with risk are distorted, such as by specific insurance taxes or subsidised premiums. These state taxes 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, such 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 being aware of, or recognising, mitigation measures taken by households. Improved information for consumers about natural disaster risk, provided in an accessible and relevant format, could help.

In cases where non and underinsurance is 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 other mitigation options, such as relocation.

International experience has shown that government intervention in property insurance markets (either through direct provision of insurance or by providing 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.

Natural disaster funding arrangements: reform roadmap

<i>Policy areas and associated problems</i>	<i>Causes</i>	<i>Proposed solutions</i>
Government as asset owner <ul style="list-style-type: none"> • Overinvestment in relief and recovery • Underinvestment in mitigation • Underinvestment in insurance • Inefficient reconstruction expenditure 	<ul style="list-style-type: none"> • Political opportunism • Diluted link between asset and risk ownership • Budget treatment • Absence of asset and liability management • Ineffective betterment provisions • Roads are difficult to insure • Prescriptive input-based controls 	<ul style="list-style-type: none"> • Treat natural disaster risks transparently in budgets (rec 3.3) • Reduce Australian Government post-disaster support (rec 3.1) • Increase Australian Government support for mitigation (rec 3.2) • Make greater use of private funding and user charging (rec 3.2) • Compile asset registers and develop long-term asset management plans (rec 3.4) • Explore non-traditional insurance products for roads (rec 3.4) • Establish accountability frameworks that give states more autonomy for natural disaster risk management (rec 3.2)
Management of shared risks <ul style="list-style-type: none"> • Excessive payments to individuals/business/farmers • Unfair treatment of individuals affected by disasters 	<ul style="list-style-type: none"> • Duplication of activities between governments • Ministerial discretion of who is 'adversely affected' • AGDRP payments too high • Distortionary, unjustified business assistance 	<ul style="list-style-type: none"> • Reduce amount provided under AGDRP (rec 3.5) • Cease reimbursement of certain state assistance under the NDRRA (rec 3.5) • Legislate eligibility criteria for the AGDRP and Disaster Recovery Allowance (rec 3.5)
Information <ul style="list-style-type: none"> • Lack of data sharing • Lack of data consistency and confidence • Risks not well understood by communities 	<ul style="list-style-type: none"> • Licensing and intellectual property rights • Concerns over legal liability, privacy, the accuracy and currency of information and how data will be used • Different user needs • Ineffective communication • Lack of capacity or willingness to properly understand natural hazard risks at the household level 	<ul style="list-style-type: none"> • Provide more information to stakeholders (rec 4.1) • Clarify legal liability of local governments (rec 4.6) • Regular information to households through a variety of means (rec 4.3) • Greater consistency in vendor statements (rec 4.3)
Built environment <ul style="list-style-type: none"> • Type of, and too much, development in high natural disaster risk areas 	<ul style="list-style-type: none"> • Land use planning frameworks may not incorporate risk • Competing objectives • Local government politics • Lack of local government capacity • Liability concerns by local governments • Asset prices not reflecting risk 	<ul style="list-style-type: none"> • Provide local governments with sufficient guidance, resources and capability (recs 4.4, 4.5) • Increase government transparency and accountability (rec 4.4) • Form government–insurer partnerships to share information and facilitate mitigation (rec 4.2) • Put in place more efficient cost recovery (rec 3.2) • Increase legal protection for local governments (recs 4.6, 4.7)
Insurance <ul style="list-style-type: none"> • Non and underinsurance 	<ul style="list-style-type: none"> • High price of insurance (or no insurance available) • Information asymmetry 	<ul style="list-style-type: none"> • Remove state and territory taxes and levies on insurance (rec 4.8) • Improve household information about natural disaster risks (rec 4.9)

Draft recommendations, findings and information requests

Budget treatment of natural disaster risks

INFORMATION REQUEST

Do state, territory and local governments maintain up-to-date asset registers?

How is asset management planning integrated into state, territory and local government budgets?

How do state, territory and local governments' asset management plans incorporate natural disaster risk management?

DRAFT FINDING 2.1

The budgetary 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 budgetary provision for the costs of recovery from future natural disasters there is a systematic bias against mitigation and insurance.

DRAFT RECOMMENDATION 3.3

The Australian Government should publish estimates of the future costs of natural disasters to its budget in the Statement of Risks. It should also provision through annual appropriation for some base level of natural disaster risks that can be reasonably foreseen. For more catastrophic, less quantifiable risks, it is likely to be more efficient to finance the related costs if and when the risks are realised.

INFORMATION REQUEST

The Commission seeks feedback on approaches for the Australian Government to provision for some base level of natural disaster risk in the budget each year.

- *What would be the advantages and disadvantages of using historical averages?*
 - *Are there more sophisticated models available to estimate potential future liabilities?*
 - *How should 'imputed savings' from changes to the Natural Disaster Relief and Recovery Arrangements be estimated?*
-

Funding arrangements for recovery

DRAFT FINDING 2.2

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' funding capacity.
- The NDRRA 'small disaster criterion' is too low. It captures small, routine events that are unlikely to constitute natural disasters.
- A marginal reimbursement rate of 75 per cent is excessive and is not consistent with other cost-sharing arrangements in the Federation.
- The scope of eligible expenditures under the NDRRA is unclear in some cases, and includes activities that are the core responsibilities of state and territory governments. Ministerial discretion for 'exceptional circumstances' assistance adds more uncertainty around eligible expenditure.

DRAFT FINDING 2.4

Prescriptive requirements in the Natural Disaster Relief and Recovery Arrangements (NDRRA) limit the scope for cost shifting, but also impose administrative costs.

- 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 provisions.
- A lack of clarity around what constitutes 'current building and engineering standards' leads to inconsistent application of the clause and inequitable outcomes.

DRAFT RECOMMENDATION 3.1

The Australian Government should:

- reduce its marginal cost sharing contribution rate to disaster recovery outlays to 50 per cent under the Natural Disaster Relief and Recovery Arrangements
- increase the triggers for Australian Government assistance (small disaster criterion and annual expenditure threshold).

In conjunction with this reduction in funding assistance, the Australian Government should provide state and territory governments with increased autonomy to manage relief and recovery expenditure in a way that reflects the preferences and characteristics of their communities.

INFORMATION REQUEST

The Commission seeks information from state and territory governments regarding natural disaster costs by event to inform its analysis of the small disaster criterion. In particular, the Commission requests a list of Natural Disaster Relief and Recovery Arrangements eligible events with total expenditure for each event for the past five financial years.

INFORMATION REQUEST

Should there be a more explicit definition of counter disaster operations under the Natural Disaster Relief and Recovery Arrangements (or any future arrangements)?

- *To what extent are extraordinary counter disaster operations costs subject to separate Australian Government cost-sharing arrangements?*
 - *To what extent are activities that are the normal responsibilities of state and territory governments being included as eligible expenditure under this clause?*
 - *To what extent do councils utilise day labour and own equipment for community recovery activities, such as counter disaster operations?*
-

INFORMATION REQUEST

What sort of trigger is most appropriate for an upfront grants model (under the Commission's reform option 3)? Is a threshold of 0.2 per cent of state or territory government revenue an appropriate measure of fiscal capacity where an event-based trigger is used?

Funding arrangements for mitigation

DRAFT FINDING 2.5

On balance, total mitigation expenditure across all levels of government is more likely to be below the optimal level than above it, given the biased incentives towards recovery under current budget treatments and funding arrangements. However, the extent of the underinvestment in mitigation is not known, and the benefits of significantly increasing mitigation spending have not been sufficiently demonstrated.

DRAFT RECOMMENDATION 3.2

If the Australian Government reduces the relief and recovery funding it provides to state and territory governments, it should increase annual mitigation expenditure gradually to \$200 million, distributed to the states and territories on a per capita basis. The amount of mitigation spending could be adjusted over time to reflect the imputed 'savings' from reduced relief and recovery funding.

Increased mitigation funding should be conditional on matched funding contributions from the states and territories and best-practice institutional and governance arrangements for identifying and selecting mitigation projects. These would include:

- project proposals that are supported by robust and transparent evaluations (including cost–benefit analysis and assessment of non-quantifiable impacts), consistent with National Emergency Risk Assessment Guidelines risk assessments and long-term asset management plans, and subject to public consultation and public disclosure of analysis and decisions
- considering all alternative or complementary mitigation options (including both structural and non-structural measures)
- using private funding sources where it is feasible and efficient to do so (including charging beneficiaries)
- partnering with insurers to encourage take-up of adequate private insurance and private mitigation through measures such as improved information sharing and reduced premiums.

Transitional requirements

INFORMATION REQUEST

To what extent would currently available estimation methods, such as the National Impact Assessment Model, inform the estimation of benchmark costs? Would additional assessment tools need to be developed? Who should be responsible for developing these tools?

- *Could this be overseen by the Australian Government Reconstruction Inspectorate?*
- *What timeframe would be required for the development of benchmark cost estimates to be applied across all jurisdictions?*

INFORMATION REQUEST

What governance and institutional arrangements would be required to implement the Commission's 'top-up' insurance option? Could premiums be estimated by the Department of Finance, the Australian Government Actuary, Comcover or another body?

- How could reinsurers be involved in this process?*
- What timeframe would be required before such a model could be operational?*

In addition to allowing cover for a lower small disaster criterion, smaller annual expenditure threshold and higher rate of cost sharing from the Australian Government, would there be merit in the 'top-up' insurance option also providing cover for broader eligible expenditure?

INFORMATION REQUEST

What transitional arrangements are required for state and territory governments to meet the proposed accountability requirements put forward by the Commission to apply to both mitigation and recovery assistance?

Interaction with federal financial relations

DRAFT RECOMMENDATION 3.6

The Commonwealth Grants Commission should revisit its assessment of 'average state policy' and accompanying accountability requirements for natural disaster policies once the Australian Government has announced its decision regarding relief and recovery funding arrangements.

Government insurance

DRAFT FINDING 2.3

There are several impediments to state, territory and local governments taking out adequate insurance for their road assets against natural disaster damage.

- The current natural disaster funding arrangements reduce the incentive for state, territory and local governments to insure their assets.
- Most state, territory and local government asset registers are not adequate 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.

DRAFT RECOMMENDATION 3.4

State, territory and local governments should further investigate non-traditional insurance products for roads. Where they do not already do so, state, territory and local governments should compile and publish detailed registers of road asset condition and maintenance for all roads over which they have jurisdiction (and have these registers independently audited). This may help insurance markets to understand and price the risk. Consideration should be given to the Victorian model in this regard.

INFORMATION REQUEST

The Commission seeks information on recent advances in tailored parametric or index-based insurance and catastrophe bonds, or other relevant instruments through capital markets, for use by governments to provision for natural disaster risk on an ex-ante basis.

Managing shared risks

DRAFT FINDING 2.6

The Australian Government Disaster Recovery Payment (AGDRP) is significantly higher than the Crisis Payment that is provided to assist income support recipients with the impacts of traumatic events. As such, the AGDRP may be higher than necessary to meet the emergency needs of people affected by natural disasters.

Eligibility criteria for the AGDRP tend to be adjusted following a major natural disaster and have progressively become broader in their scope. Ministerial discretion over the eligibility criteria has led to inconsistent and inequitable treatment of people in comparable circumstances and has contributed to increased program costs.

There is overlap and duplication between the AGDRP and state and territory government emergency assistance to individuals. The Australian Government is better placed than the states and territories to provide emergency assistance to individuals in an efficient and timely manner.

DRAFT FINDING 2.7

The case for government assistance to businesses and primary producers after a natural disaster is weak.

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

DRAFT RECOMMENDATION 3.5

The Australian Government should:

- cease reimbursement to state and territory governments under the Natural Disaster Relief and Recovery Arrangements for relief payments for emergency food, clothing or temporary accommodation and assistance to businesses and primary producers (including concessional loans, subsidies, grants and clean-up and recovery grants)
- reduce the amount provided under the Australian Government Disaster Recovery Payment (AGDRP). The Australian Government Crisis Payment may provide a reasonable benchmark in this regard
- legislate the eligibility criteria for the AGDRP and the Disaster Recovery Allowance and make these not subject to Ministerial discretion.

Information

DRAFT 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 REQUEST

If guidelines for the collection and dissemination of hazard mapping and modelling are developed:

- *who would be best placed to develop these guidelines?*
 - *what hazards could be covered?*
 - *how could guidelines for hazard types be prioritised for development?*
-

DRAFT RECOMMENDATION 4.1

When collecting new natural hazard data or undertaking modelling, all levels of governments should:

- make information publicly available where it is used for their own risk management and/or there are significant public benefits from doing 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.

DRAFT 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, and 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
- collaboration to inform households of the risks that they face and adequacy of their insurance to fully cover rebuilding costs, and to encourage private funding of mitigation through incentives such as reduced premiums.

DRAFT RECOMMENDATION 4.3

State and territory governments should hasten implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap*, including reviewing the regulatory components of vendor disclosure statements. Furthermore, the Land Use Planning and Building Codes Taskforce should consider possibilities for regular, low-cost dissemination of hazard information to households by governments and insurers (for example, the work of the Insurance Council of Australia to develop natural hazard ratings at a household level).

Regulating the built environment

DRAFT RECOMMENDATION 4.4

State governments should:

- clearly articulate the statewide natural hazard risk appetite in land use planning policy frameworks
- provide local governments with guidance on how to prioritise competing objectives within land use planning
- provide local government 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.

Furthermore, local governments should publish the reasoning behind development assessment decisions.

DRAFT RECOMMENDATION 4.5

The onus is on state governments to ensure that local governments in their jurisdiction are sufficiently resourced to effectively implement their land use planning responsibilities. State governments should review the adequacy of local governments' resources and capabilities, and provide further resources and support where they are not adequate.

DRAFT RECOMMENDATION 4.6

State governments should provide additional support and guidance to local governments that addresses the extent of local governments' legal liability when releasing natural hazard information and making changes to land use planning regulations.

DRAFT RECOMMENDATION 4.7

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

DRAFT 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
- a clearer link between road-user preferences and maintenance and investment decisions.

Insurance

DRAFT RECOMMENDATION 4.8

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

DRAFT RECOMMENDATION 4.9

Insurers should provide additional information to households regarding their insurance policies, the natural hazards they face and possible costs of rebuilding after a natural disaster. This work could be led by the Insurance Council of Australia to ensure consistency in the provision of information across insurers.

INFORMATION REQUEST

What is the prevalence of sum insured versus total replacement cost cover in household building and contents insurance policies? Has this changed in recent years? Are there any impediments to insurers disclosing an indicative estimate of the difference between the sum insured and the replacement value of the property?

Are there barriers to insurers recognising property-level mitigation through reduced premiums? Where commercial insurers adopt more risk-reflective pricing are reinsurers adjusting their prices accordingly?

DRAFT FINDING 4.2

International experience has shown that government intervention in property insurance markets (either through direct provision of insurance or by providing reinsurance) 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.

1 About the inquiry and effective risk management

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.

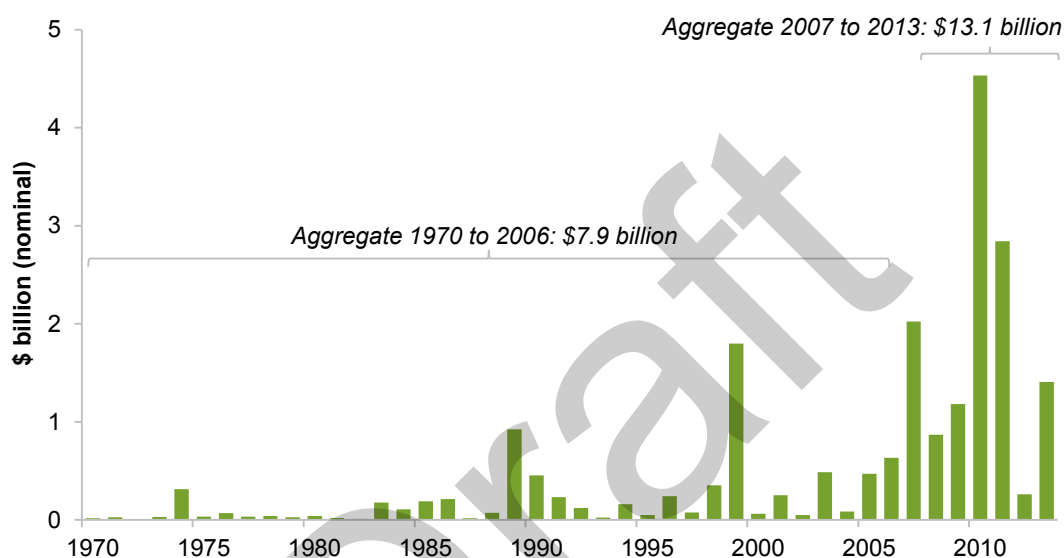
Estimating these costs is challenging. Some impacts, such as loss of life and damage to the environment, do not readily lend themselves to market values. And estimates of the tangible impacts (for example, property damage) vary widely depending on the methodology and data sources used. Further, the economic impacts of natural disasters tend to be nonlinear — that is, as the size of a natural disaster increases, its disruptive effect is amplified. 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.

Using the value of insured losses as a partial proxy for natural disaster costs shows that these costs are increasing, and have been particularly high in recent years (figure 1.1). For example, analysis of deflated insurance losses over the period 1970 to 2013 indicates that average annual insurance losses for the period 1970–2006 were 22 per cent of the average losses over the period 2007–2013. The increased costs of natural disasters have mainly been driven by population growth, increased settlement in areas that are exposed to disaster risks and increased asset values. Moreover, projections suggest that climate change could increase the frequency and intensity of some extreme weather events and potentially natural disasters. (Supplementary papers 2 and 8 elaborate on the impacts of natural disasters, the drivers of the costs of disasters and future projections.)

Natural disasters have also 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. The large and volatile fiscal impacts of natural disasters mean that they can pose material risks to the financial sustainability of governments.

The recent disasters have also exposed the bias embedded in the current funding arrangements towards disaster recovery and against disaster risk mitigation. 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. Better understanding and managing these 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 to help communities better prepare for disasters. 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
- the interaction between natural disaster funding and federal financial arrangements

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- 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.

The Commission has used an evidence-based approach and economic principles to assess the current arrangements and identify reform options for this draft report. It has engaged widely with stakeholders, actively encouraged public participation (supplementary paper 1) and considered practices from overseas (supplementary paper 9). The Commission has also taken into account evidence, analysis and recommendations arising from other reports on natural disaster management and funding (box 1.1) and is following several other ongoing and relevant reviews, such as the Financial Systems Inquiry and the Australian Government White Paper on the Reform of the Federation.

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 Australian Government funding of around \$100 million each year to the states and territories for disaster mitigation; 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 do not have adequate insurance for non-road assets, and that all states and territories except Victoria and the ACT lack 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 natural disaster relief 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 around \$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

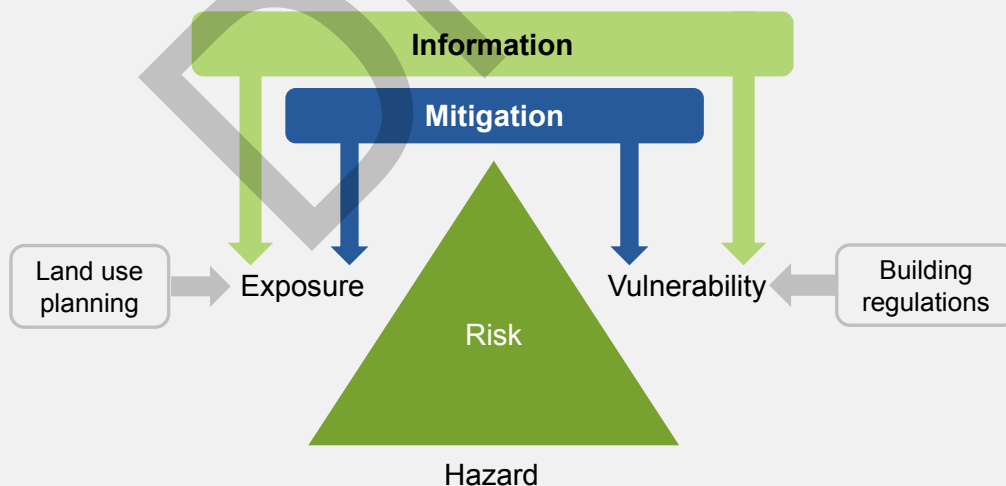
The overarching goal of this inquiry is to identify reforms to natural disaster funding arrangements that improve the living standards of Australians. This objective is grounded in the *Productivity Commission Act 1998* (Cwlth), which states:

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 — potential damage that could occur in the future (box 1.2). As such, natural disaster funding is not a traditional service delivery activity, but essentially a *risk management* activity. Risk management is a process that can 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 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).

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. It includes reducing risk through mitigation, funding the transfer of risk

through insurance, and bearing some residual risk. (Box 1.3 defines other concepts that are related to this inquiry.)

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.

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, 2014); PC (2012); UNISDR (2009).

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).

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, 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

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, there are a range of impediments to asset owners effectively managing natural disaster risk (figure 1.2). Governments therefore need to *provide a framework for effective risk management*.

An effective risk management policy framework would mean that households, businesses and governments that face risks have incentives to manage them in ways that reduce the risks 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.

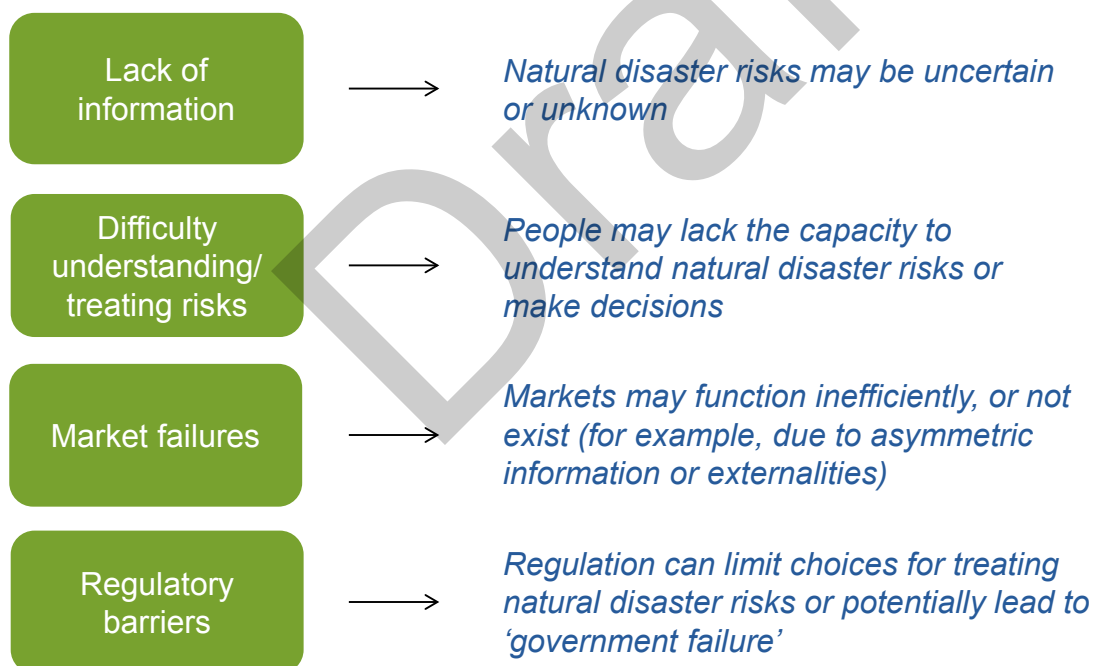
This report therefore identifies where the disaster funding arrangements are not consistent with effective risk management, and where they are not, what change or reform is needed. Over time, arrangements that provide incentives for effective natural disaster risk management should contribute to increased 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.

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



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.

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- 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 — if the owner of the asset reaps the benefits of risk management actions, why should anybody else incur 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, rather than asset owners individually, 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. 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, they should consider efficient forms of cost recovery that support effective risk management. 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 or creates a risk should be responsible for its management.
2. *Beneficiary pays* — Where it is not efficient for the risk creator to pay, the beneficiary of the risk management should be responsible.
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 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. Fiscal transfers from the Australian Government comprise almost 50 per cent of state and territory budgets. As in many other federations, the Australian Government 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 3).

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.

While 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 have 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.

While 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 states and territories 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. Typically 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 also 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 sub-optimal risk management (supplementary paper 4).

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. Natural disaster funding arrangements will likely involve, up to a point, some role for governments in information gathering and provision.

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

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.

This is not an argument for naïve cost–benefit analysis. It is a process for identifying and considering all the options and giving decision makers all the available information so they can make a good decision. 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 decision-making process. 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 is largely ex post, which can create perverse incentives, including a bias against mitigation expenditure. However, 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 appropriated 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. Applying the principle of neutrality, identifying the appropriate funding option and carrying out rigorous and transparent assessment of policy options can help to identify the most cost-effective options. Avoiding some other practices and pitfalls can also reduce waste.

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- Administration and oversight of the funding arrangements should be efficient and avoid unnecessary ‘red tape’.
 - The arrangements should not impede effective risk management by households, businesses or any level of government.
 - The arrangements should seek to prevent repeated disaster events causing repeated recovery costs.
 - Duplication of roles and responsibilities can increase costs, without necessarily leading to better outcomes.

1.3 A guide to the report

This report consists of an overview, four chapters and nine supplementary papers. The chapters contain evidence from submissions and other research, analysis of the current natural disaster funding arrangements, draft findings, draft recommendations and information requests. 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 identifies several options for reform to the major natural disaster funding arrangements.
- Chapter 4 identifies reforms to other policy areas that influence the way households and businesses manage the natural disaster risks they face.

Supplementary papers

- Supplementary paper 1 describes the conduct of the inquiry and the Commission’s engagement with inquiry participants. It lists the submissions that were received and the other consultation the Commission had with inquiry participants, and presents participants’ views on a range of themes that were raised in submissions.
- Supplementary paper 2 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 3 describes the current natural disaster funding arrangements and how they have evolved over time.
- Supplementary paper 4 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.

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- Supplementary paper 5 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 6 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 7 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 8 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. It also provides a partial quantitative assessment of one of the reform options from chapter 3.
 - Supplementary paper 9 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.

Draft

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 impacts on 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 tipped away from mitigation and insurance in favour of increased 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.
- Prescriptive requirements in the Natural Disaster Relief and Recovery Arrangements can reduce the potential for cost shifting. But they impose administration and compliance costs and can prevent state, territory and local governments from using cost-effective approaches to recovery.
- Overall government expenditure on mitigation is likely to be too low. However, the extent of the shortfall is unknown and the case for significantly increasing expenditure is not strong.
- The current arrangements for providing emergency assistance to individuals and businesses are inconsistently applied, inefficient in their administration, prone to overlap and can be very costly.
 - The level of assistance through the Australian Government Disaster Recovery Payment is significantly higher than other government support to people who experience traumatic events, such as the Crisis Payment and may be higher than necessary to meet the short-term emergency needs of people affected by natural disasters.
- Viable businesses have access to commercial options to manage natural disaster risks (such as business interruption insurance). There is little justification for governments to provide assistance to businesses following natural disasters.

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.¹ 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 and territory levels, including arrangements for mitigation and for post-disaster recovery (section 2.1). (Supplementary paper 3 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.

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.

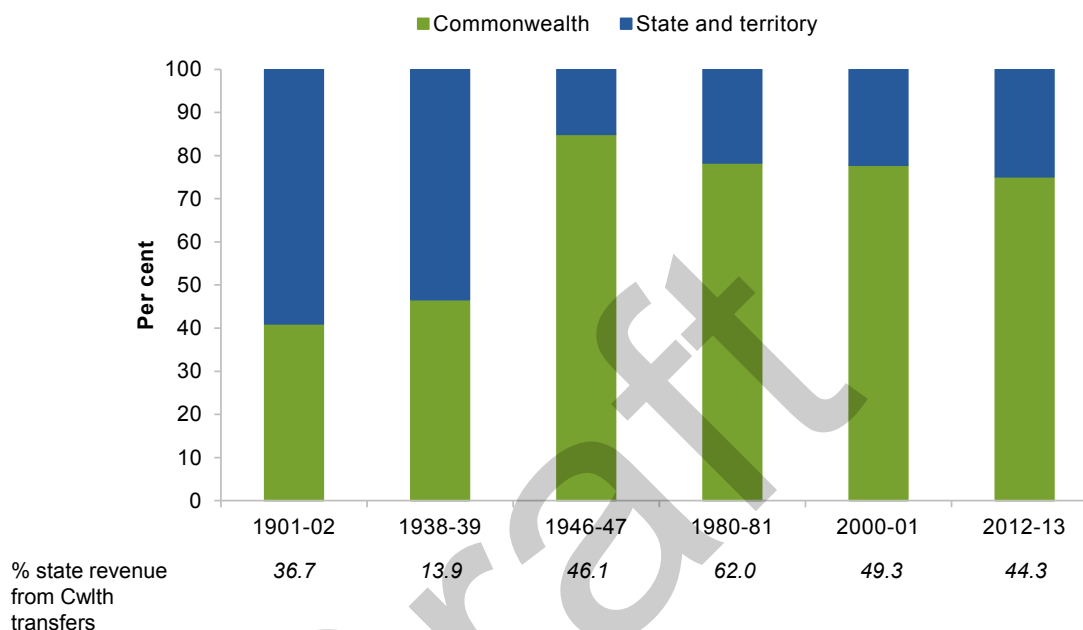
However, Australia has a high degree of vertical fiscal imbalance. This refers to the situation where the Australian Government raises more revenue than it requires for its own direct expenditure responsibilities, whereas state and local governments raise less revenue than they require for their expenditure 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 at times provides a ‘safety net’ by bearing some of state governments’ fiscal risks. Australian Government involvement in funding natural disaster recovery raises questions about whether transfers from the Australian Government dilute the relationship between asset ownership and risk ownership (chapter 1).

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 (HFE). Through the HFE process, the Australian Government distributes GST revenues so that each state has the fiscal capacity to provide services and

¹ From here on, references to ‘states’ refer to states and territories and their governments.

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 (2014).

The process that the Commonwealth Grants Commission follows when determining how to distribute GST revenues to the states is based on the assumption that all states adhere to the same spending policies on natural disaster relief, and that differences in expenditure only reflect differences in the severity and incidence of natural disasters (CGC 2013). In essence, this process distributes natural disaster relief costs 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 extent of cost sharing through the HFE transfers poses the question — what impact does the equalisation of natural disaster relief costs have on the incentives for states to effectively manage natural disaster risks in their jurisdictions? Arguably, enduring and fundamental reform of the natural disaster funding arrangements requires significant, lasting reforms to federal financial relations. The Australian Government is reviewing Commonwealth-state financial relations in the Federation White Paper.

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

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Redistribution ^a
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

^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).

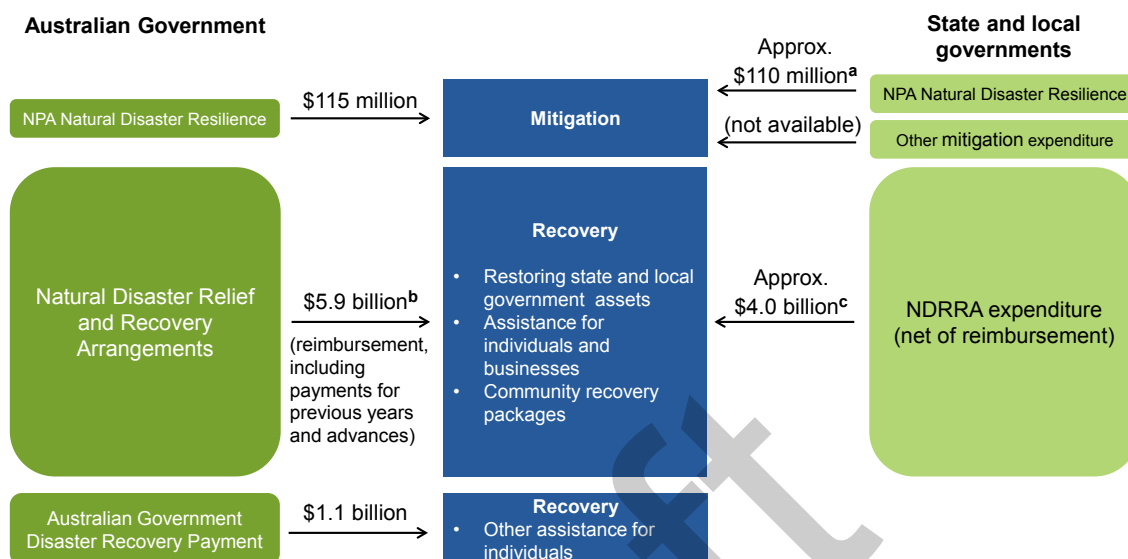
The major national natural disaster funding policies

Currently, 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 3 sets out in greater detail the historical development of the arrangements.)

- The **Natural Disaster Relief and Recovery Arrangements** (NDRRA) 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). The Australian Government provides reimbursement for a portion of eligible expenditure on assistance to individuals and businesses, and for restoration of essential public assets.
- 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 for 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 Australian Government reimbursement does not always occur in the same year in which state and territory governments incur eligible expenditure. ^c Eligible expenditures reported by state and territory governments, less estimates of reimbursement owed for expenditures incurred. Some data have not been audited. Figure excludes expenditure in Victoria in 2012-13 and the Northern Territory in 2011-12 and 2012-13.

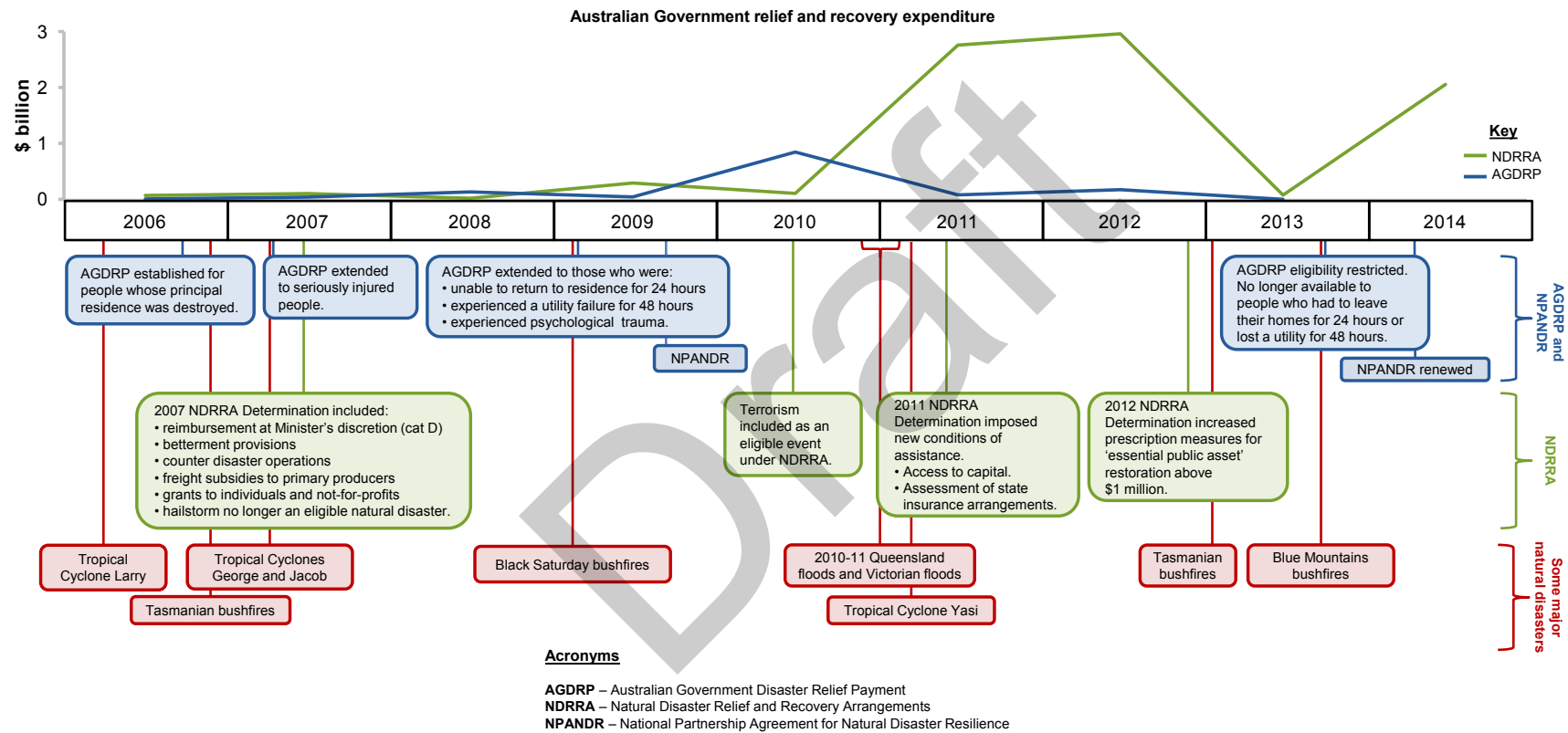
Sources: Attorney-General's Department (pers. comm., 30 July 2014); COAG Council on Federal Financial Relations (2014); Treasury (various years); Data provided by state and territory governments.

The NDRRA

Under the NDRRA, the Australian Government undertakes to reimburse state governments for a proportion of eligible expenditure on assistance to households and businesses, and for the restoration of essential public assets. The fundamental elements of the NDRRA are:

- annual thresholds — the Australian Government only provides assistance if cumulative state expenditure (meeting the small disaster criterion) exceeds a certain threshold in a financial year
- 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) 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).

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



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. In the 1985 version of the *Determination*, assistance was only available for some emergency payments for personal hardship, some concessional loans to primary producers and small businesses and restoration and replacement of essential public assets. Over time the range of measures that are eligible for reimbursement 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 ‘counter disaster’ operations. Category D was added in 2007 to cover acts of ‘exceptional’ relief and recovery. More recently the level of prescription, oversight and eligibility criteria have been tightened to constrain costs (figure 2.3).

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).

The NDRRA are intended to ‘complement other strategies in relation to natural disasters, such as insurance and disaster mitigation planning and implementation’ (Attorney-General’s Department 2012, p. 1). Reflecting this, the *Determination* sets out several requirements that states must meet to be eligible for NDRRA funding, including that they 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).

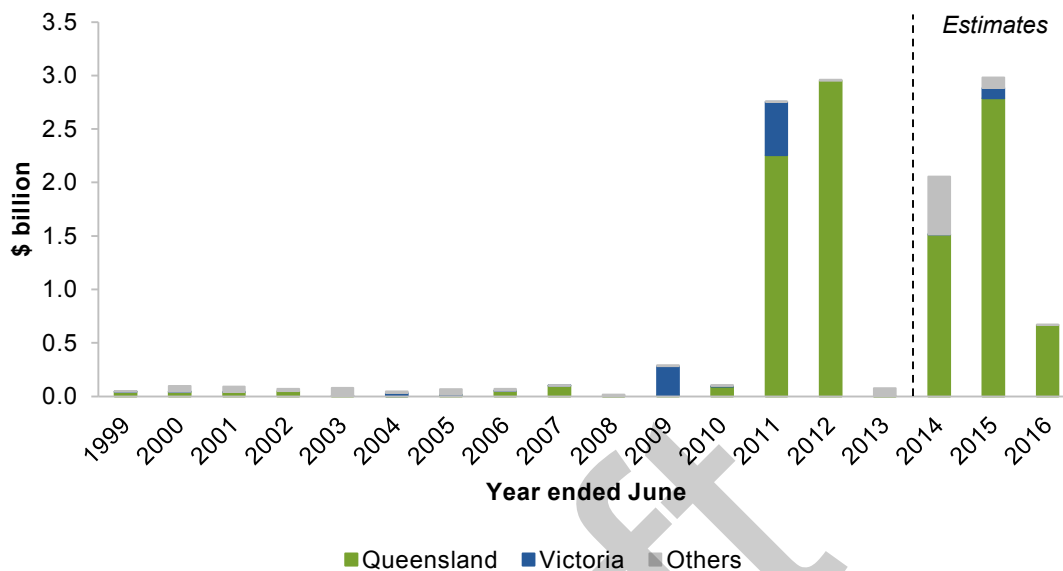
These requirements, and others in the NDRRA, can be interpreted as attempts to create through prescription incentives for state and local governments to act in a manner that is consistent with the principles of effective risk management. Section 2.2 discusses whether these prescriptive requirements have been effective and consistent with the principles of effective risk management.

Inquiry participants’ views on the NDRRA

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.

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, and no provision for future NDRRA expenditure in Australian Government budgets — funding is entirely *ex post*. In recent years, following a series of extremely damaging natural disaster events, Australian Government expenditure through the NDRRA has increased massively (figure 2.4).

Some 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 take actions to reduce the risks to their assets and communities and to make provision for disaster events (Actuaries Institute, sub. 97; 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 2014–2016 are forward estimates from the 2014-15 Budget.

Data source: Treasury (various years).

In an attempt to constrain the costs of the NDRRA, in more recent years the eligibility criteria have become more prescriptive about the activities that are eligible for assistance and the Australian Government has taken on an expanded role in oversight of state and local governments' reconstruction activities.

The trend toward increased Australian Government oversight is exemplified in the *National Partnership Agreement for Victorian Flood Reconstruction and Recovery* and the *National Partnership Agreement for Natural Disaster Reconstruction and Recovery* with the Queensland Government. The Agreements were reached in 2011, following floods in Victoria and floods and Cyclone Yasi in Queensland. The Agreements allowed for advance payment of NDRRA funds, but imposed conditions and additional oversight, including the establishment of the Australian Government Reconstruction Inspectorate to 'oversee the 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 intention of the stricter eligibility criteria and increased oversight has been to ensure that Australian Government funds are spent efficiently. Some inquiry participants argued that this has been necessary and beneficial. Others acknowledged the importance of achieving value for money, but were critical of the red tape imposed by the arrangements. Common criticisms of the prescriptive features of the arrangements include:

- the eligibility criteria are overly complicated, which imposes costs on state and local governments
- the criteria are applied inconsistently, which creates confusion and leads to perceptions of inequitable treatment
- restrictions on the type of labour and equipment that can be reimbursed can delay reconstruction works and lead to higher costs (the ‘day labour’ issue)
- the arrangements favour rebuilding damaged assets to the same standard, leading to missed opportunities to rebuild to a more disaster-resilient standard and avoid repeated damage (the ‘Betterment’ clause), and also reducing the incentive for governments to consider rebuilding to a lower standard, in a different location or not at all.

The prevailing view among inquiry participants is consistent with the submission of the Australian Government Attorney-General’s Department.

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. (Attorney-General’s Department, sub. 90, p. 22)

The specific criticisms of the prescriptive NDRRA eligibility criteria are discussed in section 2.2.

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).

Table 2.2 Expenditure on the AGDRP

<i>Year</i>	<i>No. of events</i>	<i>Approximate number of claimants</i>	<i>Accrual^a (\$ million)</i>	<i>Cash^b (\$ million)</i>	<i>Example natural disaster events</i>
2006-07	6	na	29	–	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 per event basis. ^b Expenditure determined on an annual cash basis. – Nil. Payments related to events in 2006-07 were paid out in 2007-08.

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

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 principle 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.

The shifting eligibility criteria raised concerns among participants. For example, Senator Doug Cameron regarded the tighter criteria for the Blue Mountains bushfires as unfair ‘penny pinching’ (sub. 69, p. 4). Other participants’ views on the AGDRP included:

- discussion of the overlap between the AGDRP (and other Australian Government payments) with state government hardship payments that are eligible for reimbursement under the NDRRA (Australian Red Cross, sub. 56)
- concern that the payment can contribute to a ‘culture of entitlement’ (McGowan and Tiernan, sub. 83, p. 17)
- discussion of the rate and targeting of the payment.

Other payments to individuals

The Australian Government makes payments to individuals including employees, small business people and farmers 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).²

The DRA can be activated by the Australian Government Minister for Justice, and the eligibility criteria can vary between disasters. 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 offered to individuals affected by the NSW bushfires of October 2013 and Cyclone Ita, which hit far-north Queensland. The Attorney-General's Department (sub. 90, p. 26) stated '[c]urrent expenditure for these two activations has not exceeded \$50,000 (as at 29 April 2014)'.

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>
	\$ million
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.

² Prior to the legislation establishing the DRA, assistance was provided through the Disaster Income Recovery Subsidy.

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 3 presents data on Australian Government expenditure under the NPANDR and predecessor programs.) Numerous inquiry participants commented on the level of funding for mitigation and resilience (including through the NPANDR). Most argued for substantially increased mitigation funding, either through an expanded NPANDR, or other means.

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>
	%	\$ million
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
Australian Capital Territory	5	2.6
Northern Territory	5	2.6
Total	100	52.2

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 problems 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. This includes:

- 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, corresponding liabilities, and how to fund them. Asset management planning helps inform broader strategic decisions, such as long-term financial plans or government budgets. It requires:

- developing and 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.

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.

There is limited information on the prevalence and quality of asset management planning by state and local governments, and how efficiently they integrate natural disaster risk. It appears that all states have asset registers. For example, the Victorian Government (sub. 105, p. 46) stated:

State Departments and public bodies are required to maintain a register of assets held or managed by it, and develop, implement and keep under review a risk management strategy.

However, the Department of Finance 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.

There is only limited evidence on the asset management plans of local governments. The Victorian Auditor-General recently 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)

New South Wales, Queensland, South Australia and Western Australia all have legislative requirements relating to local government asset management strategies. However, the Commission has not come across evidence of the effectiveness of these requirements, particularly as they relate to natural disaster risk management.

INFORMATION REQUEST

Do state, territory and local governments maintain up-to-date asset registers?

How is asset management planning integrated into state, territory and local government budgets?

How do state, territory and local governments' asset management plans incorporate natural disaster risk management?

Budget frameworks and natural disaster risks

Currently Australian governments do not make explicit provision for future natural disaster recovery costs in budgets. Budget estimates include anticipated expenditure on recovery from past natural disaster events. However, future natural disaster costs are 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. Under the system of *Government Finance Statistics* contingent liabilities are not included directly in government financial statements.

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.

The Australian Government makes no explicit provision for natural disasters. 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.

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 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. (NSW Government, sub. 103, p. 19)

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 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.

DRAFT FINDING 2.1

The budgetary 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 budgetary provision for the costs of recovery from future natural disasters there is a systematic bias 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, the high degree of vertical fiscal imbalance in the Australian federation results in some dilution of the link. Through the NDRRA, the Australian Government bears some of state and local governments' costs of natural disaster recovery, 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 overwhelm their capacity. McGowan and Tiernan (sub. 83, p. 6) traced the history of the NDRRA to 1974:

On Christmas Day of that year, Darwin was devastated by Tropical Cyclone Tracy. Recognition that the potential costs of natural disasters might exceed the capacity of individual states and territories and require assistance from the Australian Government resulted in Commonwealth and State negotiations about the level of and mechanisms for such assistance. As a consequence, the National Disaster Relief Assistance scheme was introduced to provide relief assistance and reconstruction grants to disaster affected communities. ... This scheme was the predecessor of the National Disaster Relief and Recovery Arrangements (NDRRA).

The recognition that Australian Government assistance should be available when the cost of disasters exceeds state governments' capacity was confirmed in a report to COAG in 2002, which 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 assist 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)

State and local governments expressed general support for the proposition that the Australian Government should provide assistance to the lower levels of government when the costs of disasters exceed their ability to pay. There was also general support for the idea that the NDRRA should be a 'safety net' (box 2.2).

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)

Beyond 'risk management' it is also important that the Australian Government continues to have a role in funding response and recovery work once the state/territory government expenditures have reached a certain threshold, given the cost of response and recovery is potentially beyond the financial capacity of state/territory governments. (Victorian Coastal Council, sub. 76, p. 3)

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 (Queensland), sub. 78, p. 1)

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)

... 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)

In the context of vertical fiscal imbalance, safety net and cost sharing arrangements are inevitable. However, funding support should not undermine incentives 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', reimbursement rates and eligibility criteria) and their implications for risk management.

Thresholds for 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). An annual threshold based on state revenue is consistent with the objective of providing safety net support where natural disasters impose significant fiscal burdens on the states, but it is open to question whether current thresholds are consistent with state governments' capacity to pay. Local and state governments generally argued against changes to the structure of the current NDRRA, including the thresholds and reimbursement rates. Examples of state and local government responses are presented in box 2.3.

Box 2.3 State and local governments contend that they could not cover any reduction in NDRRA funds

Selected state government responses

States and Territories do not have sufficient fiscal capacity to absorb a major decrease in funding alongside their extensive responsibilities across the emergency management spectrum. (Victorian Government, sub. 113, p. 36)

The Queensland Government does not believe there is a demonstrated need to change the current levels of funding protection to aid recovery from rapid onset disasters, and in fact believes that a change would have negative impacts on the Queensland and Australian communities. (Queensland Government, sub. 31, p. 5)

Selected local government association responses

NDRRA funding should not be reduced but should be increased as cost shifting to local governments is not viable or sustainable. (North West Queensland Regional Organisation of Councils, sub. 16, p. 1)

... Local Government does not have the financial capacity to adequately deal with natural disasters without substantial support from the Australian Government. (LGNSW, sub. 81, p. 3)

It is believed the current threshold levels are appropriate. Councils simply do not have the revenue generating capacity of the State and Federal Governments. If additional costs were pushed down to the Local Government level, Councils simply would not be able to restore infrastructure in a timely fashion. It would take years for essential public assets to be repaired. (FNQROC, sub. 36, p. 7)

For local government, maintaining the level of Commonwealth support provided as a proportion of the costs of natural disasters once relevant trigger points are reached is essential. (LGAQ, sub. 34, p. 12)

Selected local government responses

... 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 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. Affordability for local government beyond current arrangements is not possible. (Toowoomba Regional Council (Queensland), sub. 78, p. 1)

State budgets are exposed to factors beyond the control of governments that can have serious implications for revenue and expenditure. 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 volatile. The Australian Government does not provide assistance to states to deal with these external shocks, even though they could have more significant impacts on government finances than natural disasters.

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 modest economic effects.

On the face of it, the current thresholds for NDRRA reimbursement are too low. State governments would appear to have capacity to bear additional disaster recovery costs without compromising fiscal sustainability. 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 2.5). Moreover, all state and territory governments currently have good credit ratings, suggesting that they would have little difficulty borrowing to fund disaster recovery.

Table 2.5 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
Government average net operating balance 2008-09 – 2012-13	581	403	-1 227	-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 2012-13*, Cat. no. 5512.0).

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)

For state government expenditure on an event to be counted toward the state's threshold for eligible expenditure, the event must meet the 'small disaster criterion'. Currently the requirement is that the event must generate state expenditure of \$240 000. The criterion has been set at that level since 2004, without indexation. Previous reviews of the natural disaster funding arrangement 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 proposed increasing the small disaster criterion to \$50m for New South Wales, Victoria and Queensland; \$20m for South Australia and Western Australia and \$5m for Tasmania, the Northern Territory and the ACT.

Confidential data received from state governments suggest that 'small' disasters account for a high proportion of the total number of events, but a very small proportion of total state government recovery expenditure. For example, data from one large jurisdiction show that events with recovery expenditure of less than \$2 million accounted for approximately 50 per cent of the number of events, and less than 5 per cent of total eligible expenditure.

Limited information is available on the costs of individual NDRRA-eligible disasters or reconstruction projects. As a result, the Commission has not been able to form a representative picture of what kind of event would trigger \$240 000 in government expenditure. However, intuitively and based on some data, the \$240 000 small disaster criterion is too low. It captures small, routine events that are unlikely to cause 'serious disruption to a community or region'. Nor would it be beyond the capacity of a state or local government to fund in the course of its normal operations.

Cost-sharing rates

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. 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.

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 (special 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 (Queensland) (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.

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- 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 4. It could undermine incentives to insure government assets, and also undermine private sector efforts to manage natural disaster risk (discussed in section 2.3).

Counter disaster operations

The NDRRA permits cost sharing for counter disaster operations to protect the general public and ensure health and safety (category B). This can include reimbursement for costs such as supplies for disaster centres and fuel used by local government crews when clearing fallen trees from roads. The Australian Government also shares the costs of extraordinary counter disaster operations to assist individuals, such as ‘operations to protect a threatened house or render a damaged house safe and habitable’ (Attorney-General’s Department 2012, p. 2).

Counter disaster operations constitute 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)

There is a case for sharing the cost of counter disaster operations on the grounds that these actions can have widespread community benefits, and would likely be under-provided without government support. However, under the current arrangements the definitions of counter disaster operations are not clear. In particular, the eligibility criteria are likely to capture some core state government response activities, which creates the risk of cost-shifting to the Australian Government for these activities.

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.

DRAFT FINDING 2.2

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’ funding capacity.
- The NDRRA ‘small disaster criterion’ is too low. It captures small, routine events that are unlikely to constitute natural disasters.
- A marginal reimbursement rate of 75 per cent is excessive and is not consistent with other cost-sharing arrangements in the Federation.
- The scope of eligible expenditures under the NDRRA is unclear in some cases, and includes activities that are the core responsibilities of state and territory governments. Ministerial discretion for ‘exceptional circumstances’ assistance adds more uncertainty around eligible expenditure.

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 2.4).

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)

Box 2.4 Effects of the NDRRA on state and local government risk management

Some stakeholders have 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 (Queensland), 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 have 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)

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. They 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 2.5).

Box 2.5 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. These arrangements include commercial insurance or reinsurance, self-insurance through government-owned insurance captives and non-insurance (Department of Finance and Deregulation 2012a) (table 2.6). The Australian Government has a captive insurer, Comcover, which provides insurance services to Australian Government agencies, including purchasing reinsurance (Department of Finance 2014).

Table 2.6 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 Review of government insurance arrangements. .. Not applicable.

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

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).

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 9 has more detail about the New Zealand approach to managing natural disaster risks to government-owned assets.)

Some local governments commented on the proposition that the NDRRA reduces incentives for them to insure their assets.

LGNSW does not accept the conclusion that the NDRRA reduces the incentive for Local Government to take out insurance (LGNSW, sub. 81, p. 4)

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

The Australian Local Government Association (sub. 52, p. 21) stated:

Any arrangement for insurance of infrastructure assets would also need to have regard to arrangements that exist for the reimbursement of local governments by state/territory governments for damages they incur as a result of natural disasters. Councils would be concerned if the establishment of costly (and perhaps marginal) infrastructure insurance arrangements led to them incurring additional (insurance premium) costs and a reduction in financial support from the states in the event of a natural disaster.

State and territory insurance arrangements were reviewed by the Department of Finance 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, many 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 (box 2.6). 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 6 provides an example of how private owners of infrastructure assets have sought out non-standard options to insure their assets, including those in remote areas, and recent advances in the development and cost effectiveness of these products.

Box 2.6 State and local government perspectives on asset insurance

Some governments stated that insurance is not available

... the ability to insure some public assets in Queensland, particularly roads, is difficult – if not impossible – because the risk profile for this infrastructure is problematic and difficult to determine. Consequently, some road assets in Queensland’s 170,000km road network are uninsurable, and alternative ways to provide better protection and resilience are required. (Queensland Government, sub. 31, p. 4)

While councils generally have adequate insurance arrangements for buildings and other property, they do not as a rule, insure roads and bridges. It is not common practice for governments (local, state or federal) to insure these types of assets anywhere in Australia or anywhere else in the world according to insurance industry experts. Consequently, this type of insurance is not readily available in the commercial market. (LGNSW, sub. 81, p. 4)

Some governments stated that insurance is not efficient

The road assets of RMS [NSW Roads and Maritime Services] are not covered by insurance; however this does not reflect an absence of risk management. In this case it has been determined by the State that it is better to retain the risk of damage to state owned roads from natural disasters because of the likely high costs of commercial insurance due to significant uncertainties in calculating probable maximum loss, the geographic spread of risk and the capacity to reallocate maintenance budgets to fund repairs. (NSW Government, sub. 103, pp. 7–8)

In the case of East Gippsland the estimated cost to replace infrastructure damaged since only 2011 is in the order of \$16 million. Even assuming that East Gippsland Shire could purchase insurance to cover the damage incurred, it is likely that the premiums would be extremely high. There is a distinct likelihood that given our risk exposure and history of events that East Gippsland Shire would be in effect uninsurable. If East Gippsland Shire was to consider a program of self insurance then significant funds would have to be directed to this on an annual basis. If resources of the rate payers of East Gippsland were to be used to fund such a scheme this would have significant financial consequences for our municipality and would be unsustainable. (East Gippsland Shire Council (Victoria), sub. 93, p. 10)

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.

DRAFT FINDING 2.3

There are several impediments to state, territory and local governments taking out adequate insurance for their road assets against natural disaster damage.

- The current natural disaster funding arrangements reduce the incentive for state, territory and local governments to insure their assets.
- Most state, territory and local government asset registers are not adequate 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

The NDRRA *Determination* and related guidelines strictly prescribe the activities that state and local governments can be reimbursed for. From the perspective of the Australian Government, the prescriptive framework and extensive oversight arrangements can constrain the costs of assistance to the states. However, for state and local governments, the requirements are an administrative burden and can increase the costs of reconstruction (box 2.7). The problems with these aspects of the arrangements are discussed in the following sections.

The reimbursement approach

State and local governments are reimbursed by the Australian Government for eligible recovery expenditure. The reimbursement 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. This reduces the incentive for state and local governments to choose the most efficient reconstruction options, because for every dollar that is wasted, they pay as little as 25 cents.³

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

³ Adjustments through the HFE process of allocating the pool of GST revenue further reduce this figure.

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).

Box 2.7 NDRRA compliance costs: participant views

Numerous state and local governments acknowledged the need for efficiency, accountability and robust monitoring and reporting arrangements to achieve value for money (for example, MAV sub. 98; ORRTTG, sub. 27; Senator Doug Cameron, sub. 69; Toowoomba Regional Council (Queensland), sub. 78; Victorian Government, sub. 105). However, they also noted that the arrangements impose high compliance costs and limit flexibility in reconstruction.

Processes for making claims for financial assistance through the respective NSW State Government agencies ... were unnecessarily arduous and complicated. (Wagga Wagga City Council (NSW), sub. 82, p. 2)

As a rule of thumb, the indirect cost to Councils to administer NDRRA requirements is 10–15%. (FNQROC, sub. 36, p. 6)

The current NDRRA arrangements place a high administrative workload for local government at a time of greatest community need. ... TRC [Toowoomba Regional Council] is being subjected to five levels of audits:

- Council's internal and financial auditors;
- QIORA auditors;
- Queensland Audit Office;
- Commonwealth Inspectorate auditors;
- Australian Audit Office.

The program management and administrative resourcing for these auditing requirements is excessive. (Toowoomba Regional Council (Queensland), sub. 78, p. 3)

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 acknowledged that Victoria ‘does not appear to have raised a major risk of misuse of funds’ but nevertheless argued that ‘Any 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’ (Australian Government Reconstruction Inspectorate, sub. 39, p. 6).⁴

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’. 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 2.8). 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

⁴ To date in Victoria, the Inspectorate’s oversight has been restricted to three projects.

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.

Box 2.8 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

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 2.9). 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 if that is the best option. This has the potential to lead to excessive reconstruction expenditure.

Box 2.9 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 (Queensland) 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: Outback Regional Road and Transport Group (sub. 27); QRA (2014).

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 2.10). 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 7).

Box 2.10 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)

DRAFT FINDING 2.4

Prescriptive requirements in the Natural Disaster Relief and Recovery Arrangements (NDRRA) limit the scope for cost shifting, but also impose administrative costs.

- 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 provisions.
- A lack of clarity around what constitutes 'current building and engineering standards' leads to inconsistent application of the clause 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.

Inquiry participants generally commented favourably on the NPANDR, but argued that the level of financial commitment for mitigation and resilience was insufficient (box 2.11). 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.

Box 2.11 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)

Governments have not allocated sufficient funds for mitigating weather related risks. (IAG, sub. 24, p. 19)

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 National 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. 9)

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)

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, 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. (Deloitte Access Economics 2013, p. 9)

These savings are based on benefit-cost ratios from selected mitigation projects. The Commission considers that caution should be exercised when extrapolating benefit-cost ratios from select mitigation projects to the total quantum of mitigation funding.

DRAFT FINDING 2.5

On balance, total mitigation expenditure across all levels of government is more likely to be below the optimal level than above it, given the biased incentives towards recovery under current budget treatments and funding arrangements. However, the extent of the underinvestment in mitigation is not known, and the benefits of significantly increasing mitigation spending have not been sufficiently demonstrated.

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. Not-for-profit 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 assistance to households and businesses to avoid economic and social hardship in the immediate aftermath of disasters.

Post-disaster emergency assistance to individuals

The Australian Government provides emergency assistance to individuals and households through the AGDRP and the DRA. State governments also provide assistance to households through their own programs, some of which is reimbursed through category A of the NDRRA. 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 inefficient, 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 economic and social hardship. Inquiry participants generally supported some level of assistance to people affected in the immediate aftermath of natural disasters (for example, Australian Red Cross, sub. 56; Government of South Australia, sub. 67; McGowan and Tiernan, sub. 83; Queensland Farmers' Federation, sub. 29; Victorian Government, sub. 105).

Emergency disaster assistance should be modest and distributed quickly after the event. Payments should be focused on meeting people's immediate needs, such as short-term accommodation, and clothing and food for a few days. It should not be provided as 'compensation' to people who experience disaster damage, nor should it be a substitute for people using their own resources. 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 one-off 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.

The level of assistance through the AGDRP appears higher than what may be needed for short-term emergency needs and relative to the Crisis Payment.

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.

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)

However, Senator Doug Cameron 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. (Senator Doug Cameron, sub. 69, p. 4)

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 problem’s genesis is that for each disaster the Australian Government Minister for Justice has discretion to set the criteria, leading to inequitable outcomes over time. 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 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

Excessively 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 Queensland floods and Cyclone Yasi.

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.

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, the Commission considers it 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 also provide emergency assistance to individuals and households immediately after a disaster through category A of the NDRRA. Some participants noted that the existence of Commonwealth and state assistance programs can lead to duplication, inconsistent application of assistance across jurisdictions, confusion and red tape. Others commented that state assistance to households is administered less efficiently than the AGDRP (box 2.12). 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.

The Victorian Government (sub. 113, p. 37) did not agree that state payments should be rolled into a single payment.

AGDRP reform could complement Victoria's well-targeted, well-managed personal hardship assistance program, administered by the DHS [Department of Human Services].

Box 2.12 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. 8, 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)

Two levels of government (and charities) providing such assistance creates further inconsistency (and thereby inequitable treatment), duplication and potentially excess payments. 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. 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. The case for Australian Government cost sharing for sub-clause (a) payment — emergency food, clothing or temporary accommodation — is weak.

There are other types of assistance that state governments provide to households where the case for NDRRA cost sharing is stronger. Specifically, through category A sub-clauses (b) (c) and (g), state governments are partially reimbursed for 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.

DRAFT FINDING 2.6

The Australian Government Disaster Recovery Payment (AGDRP) is significantly higher than the Crisis Payment that is provided to assist income support recipients with the impacts of traumatic events. As such, the AGDRP may be higher than necessary to meet the emergency needs of people affected by natural disasters.

Eligibility criteria for the AGDRP tend to be adjusted following a major natural disaster and have progressively become broader in their scope. Ministerial discretion over the eligibility criteria has led to inconsistent and inequitable treatment of people in comparable circumstances and has contributed to increased program costs.

There is overlap and duplication between the AGDRP and state and territory government emergency assistance to individuals. The Australian Government is better placed than the states and territories to provide emergency assistance to individuals in an efficient and timely manner.

Post-disaster assistance to businesses

Small businesses and farmers 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 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 assistance to businesses affected by disasters, although some identified problems with the current arrangements, including complexity, inequitable outcomes and poor targeting (box 2.13).

Box 2.13 Assistance to businesses: participant views

Many participants supported the case for 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)

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)

The case for government 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.

Several participants observed that if businesses are not viable, short-term assistance is ineffective and costly.

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)

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. (Treasury, sub. 91, pp. 2–3)

Participants also raised concerns about the form of government 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 2.14). In general, direct grants from governments are the most transparent and cost-effective mechanism for assistance, and are the easiest to administer.

DRAFT FINDING 2.7

The case for government assistance to businesses and primary producers after a natural disaster is weak.

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

Box 2.14 Form of business 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). (Treasury, sub. 91, p. 4)

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, p. 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 Intergovernmental natural disaster funding reform

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 local governments needs to be reduced, and support for mitigation increased. Some budget provisioning is also needed.
- The Commission's reform options are designed to provide stronger incentives for effective natural disaster risk management by all levels of government, with greater accountability.
 - States need to shoulder a greater share of natural disaster recovery costs to provide them with more autonomy and a sharper incentive to manage these risks.
- The Australian Government could provide recovery funding to states through three reform options. The reform options comprise bundled policy packages across recovery and mitigation funding, budget treatment of recovery funding, and accountability requirements for state and local governments. The reform options are:
 - reformed National Disaster Relief and Recovery Arrangements that utilise reimbursement for community relief and recovery and payments based on assessed damages and benchmark prices for reconstruction of essential public assets (option 1)
 - an insurance 'add-on' to option 1 where states can purchase additional levels of cover for eligible expenditure from the Australian Government (option 2)
 - upfront block grants assessed straight after an eligible natural disaster event (option 3).
- The Commission prefers option 2 at this time. It provides a principal level of support to states commensurate with relative fiscal capacity and the original 'safety-net' objective, with the option of top-up insurance for those states that require it.
- The reform options provide scope for increased mitigation funding from the Australian Government. This funding should be distributed between the states on a per-capita basis and conditional on matched funding contributions and transparent and robust decision making.
- Conditionality is needed for the provision of Australian Government funding to state and local governments for mitigation and recovery. These conditions would support good governance and risk management. They would also afford state and local governments 'earned autonomy' with greater discretion in how funds are ultimately spent.
- The Australian Government is best placed to deliver emergency relief payments to individuals who have been seriously affected by natural disasters. The amount provided under the Australian Government Disaster Relief Payment should be decreased and the eligibility criteria should be legislated.

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 budget treatment of this funding. This has led to a bias towards governments retaining risks rather than investing in mitigation or transferring 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 policy reform options for the natural disaster funding arrangements and assesses their relative merits. The reform options comprise bundled policy packages across recovery funding arrangements, mitigation funding, budget treatment of recovery funding and what is needed for state and local governments to ‘earn autonomy’.

Section 3.1 revisits the policy framework for effective natural disaster management, with a focus on what is required for government in its role as an asset owner and service provider. Section 3.2 presents three different options for funding recovery. These options are all designed to improve effective natural disaster risk management as outlined in section 3.1. These options are assessed against criteria and a preferred funding reform option is identified. Section 3.3 examines policy and funding options for natural disaster mitigation. Section 3.4 discusses how accountability and transparency for natural disaster risk management can be strengthened across all levels of government and identifies conditions that the Australian Government should place on receipt of funding for mitigation and recovery activities. Section 3.5 examines policy for managing shared risks and section 3.6 identifies some transitional and implementation issues posed by the reform options.

3.1 A framework for effective natural disaster management

From a principles-based perspective, asset owners are generally best placed to make decisions regarding how to manage natural disaster risks to their assets (chapter 1). Managing these risks involves taking responsibility for all elements of risk management — funding, accessing information, treating risks through mitigation and insurance, and retaining some residual risk in accordance with risk appetite. In doing so, asset owners receive the full benefits and incur any costs of risk management actions taken.

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. The principle that asset ownership should align with responsibility for managing and funding risks is also applicable to governments (chapter 1).

The essential ingredients needed to apply to this principle include:

- clearly defined roles and responsibilities
- funding from the Australian Government that does not reduce incentives for effective risk management by states and provides incentive neutrality across options and time to manage risks
- autonomy for states to articulate a risk appetite and manage risks in a way that reflects the preferences and characteristics of their communities
- accountability.

An application of governance and risk management principles would suggest that state and local governments should fund and finance the majority of natural disaster risk management, including mitigation and recovery. Natural disaster management is the responsibility of state and local governments. State governments 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.

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. There was a strong view from inquiry participants supporting a role for the Australian Government in funding natural disaster risk management. The majority of participants argued for the basic structure and level of Australian Government funding for disaster recovery — and hence its implied risk appetite — to stay the same or increase (chapter 2 and supplementary paper 1).

Yet by providing funding for natural disaster management, the Australian Government influences and constrains how state and local governments make decisions about disaster recovery works and their investment in mitigation and insurance. In proposing reforms to the current arrangements the Commission seeks a difficult balance — whereby the Australian Government provides funding to states, but does so in way that minimises disincentives to manage natural disaster risks and encourages efficient expenditure on recovery and mitigation.

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 that in other service delivery areas that are principally the responsibility of states, such as education and health (chapter 2). A decrease in the Australian Government’s contribution 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.

Selecting the ‘right’ amount that the Australian Government should contribute (its risk appetite) should be informed by the trade-off between relative fiscal capacity and the incentives to effectively manage natural disaster risks. The Commission proposes that the Australian Government provide a lower level of assistance. This would be compatible with the original ‘safety-net’ objective and would promote greater accountability and neutrality. A marginal contribution rate of 50 per cent would more closely align with the degree of VFI in the Australian federation, while still providing significant fiscal support to state governments.

In reducing the contribution of the Australian Government to funding natural disaster recovery, the states would have greater ownership of natural disaster risks in their jurisdictions. 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 (box 3.1).

Box 3.1 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 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’ (FRRR, sub. 50, p. 5).

DRAFT RECOMMENDATION 3.1

The Australian Government should:

- reduce its marginal cost sharing contribution rate to disaster recovery outlays to 50 per cent under the Natural Disaster Relief and Recovery Arrangements
- increase the triggers for Australian Government assistance (small disaster criterion and annual expenditure threshold).

In conjunction with this reduction in funding assistance, the Australian Government should provide state and territory governments with increased autonomy to manage relief and recovery expenditure in a way that reflects the preferences and characteristics of their communities.

3.2 Relief and recovery

Natural disaster relief and recovery incorporates actions to support affected communities to restore damaged property and economic activity, as well as physical and psychological health (chapter 1). Some inquiry participants promoted a change in thinking regarding what should constitute ‘recovery’. The Regional Australia Institute (2013, p. 2) stated that ‘recovery arrangements need to be viewed within a resilience framework, which moves beyond relief and reconstruction to incorporating local renewal and adaption to the post disaster environment’.

Policy frameworks for recovery need to have strong and transparent commitment mechanisms so that governments avoid ad hoc policy responses, myopic policy settings and disincentives for private risk management. In other words, they need to provide neutral incentives across relief and recovery activities, as well as mitigation, so that government actions increase community wellbeing over time.

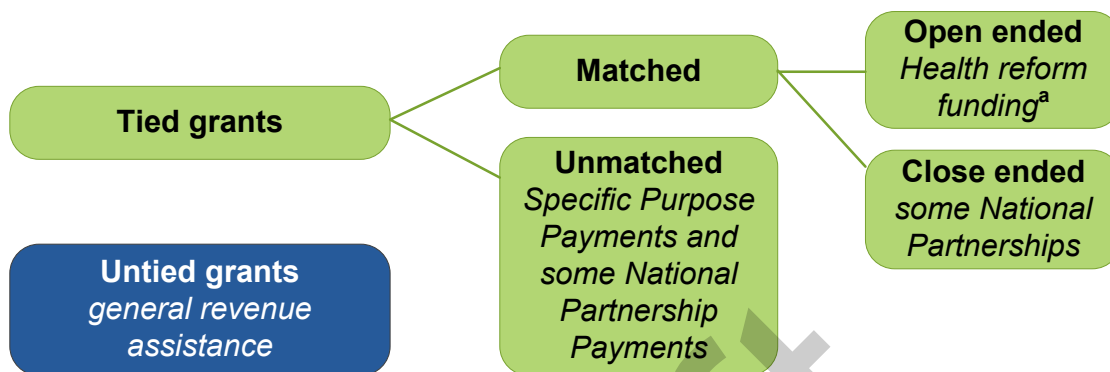
There is a range of ways that the Australian Government could provide funding for natural disaster recovery to lower levels of government. Figure 3.1 depicts the broad types of funding mechanisms available to federal governments.

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 (tied)
- National Partnership Payments — matched and unmatched grants for the delivery of services in a particular sector, such as health or education (tied)

- General revenue assistance which includes GST payments to be used by the states for any purpose (untied).

Figure 3.1 Funding mechanisms under a federal framework

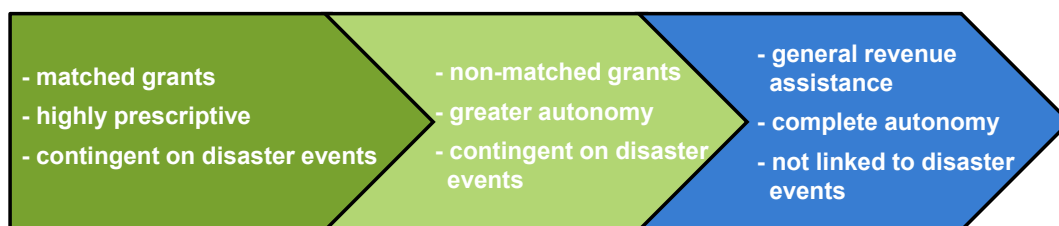


^a In the 2014-15 budget, the Australian Government announced that it will cease activity-based health reform funding by 1 July 2017.

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 figure 3.1. These alternatives reside along a spectrum — with greater levels of Australian Government prescription and involvement associated with certain funding types. For example, where funding is provided through general revenue assistance, it is by definition provided without ‘strings attached’. In contrast, matched grants generally require a greater level of oversight so that eligible expenditure can be matched and reimbursed by the Australian Government.

Figure 3.2 provides a stylised representation of this spectrum, moving from prescriptive and tied funding on the left (states have very limited autonomy on how to spend funds) to untied funding on the right (states have complete autonomy on how to spend funds). As the level of autonomy increases so does the disconnect between the need to spend funds on specific natural disaster events, or on natural disaster risk management at all.

Figure 3.2 Spectrum of funding options



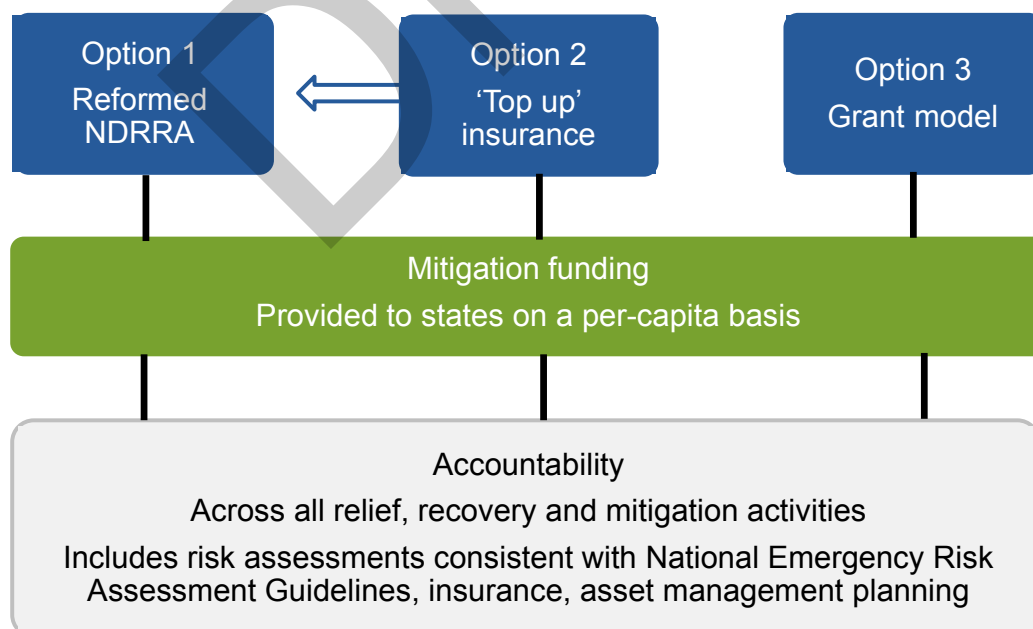
The choice of funding mechanism affects the incentives for states to undertake certain expenditures and depends on the objectives behind the provision of funds. For example, matching requirements encourage greater scrutiny and local ownership of grant-financed expenditures, but they may not be appropriate for jurisdictions with limited fiscal capacity (Shah 2006). Further, fewer restrictions on how funds can be spent can allow better trade-offs, for example across mitigation, relief and recovery expenditure. Complete autonomy over the use of funds would provide neutrality across natural disaster management and other areas of government expenditure.

The Commission is proposing three possible reform options across the range of available relief and recovery funding mechanisms to the Australian Government.

- Reformed NDRRA model — essentially a hybrid form, tied matched grants model
- ‘Top-up’ insurance for reformed NDRRA — enables states to purchase additional levels of cover from the Australian Government for eligible expenditure
- Grants model — unmatched grants.

The policy options are bundled policy packages across recovery and mitigation funding, budget treatment of funding recovery and accountability requirements for states to ‘earn autonomy’ and access mitigation funding (figure 3.3).

Figure 3.3 **Bundled packages of reform options**



These reform options all give states and local governments greater autonomy in how funds are spent, fund more mitigation and reduce the fiscal risks transferred to the Australian Government. This in turn will reduce the inefficiencies that arise from the prescriptive nature of the NDRRA and reduce disincentives for mitigation and insurance. Consequently, there are several common elements across all three reform options (table 3.1).

Table 3.1 Comparing the core elements of the reform options

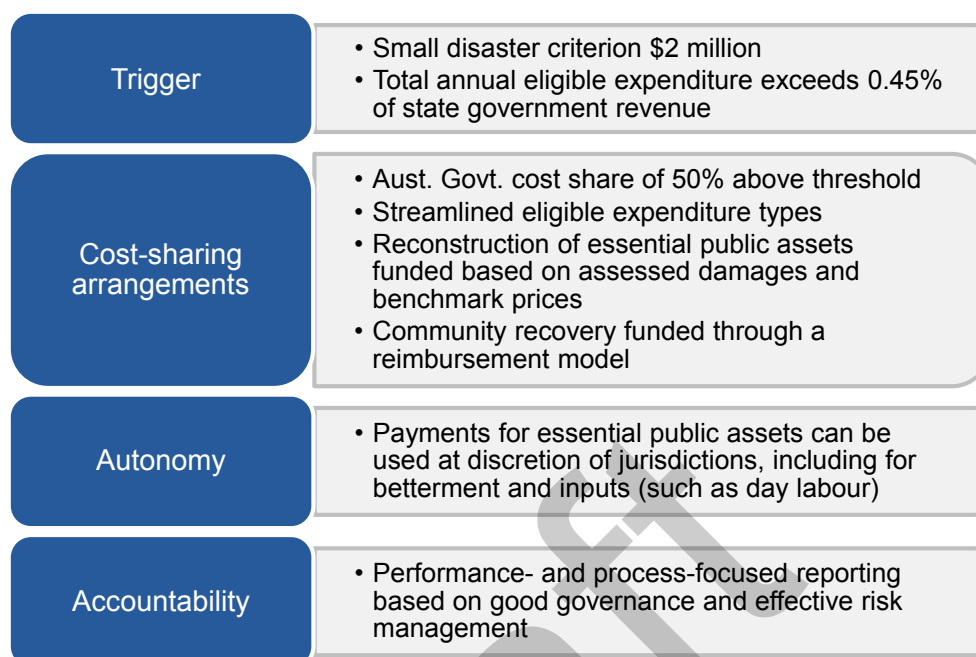
Marginal cost share	50% — Options 1 and 3 50% base, can purchase higher cost share — Option 2
Trigger	0.45% — Options 1 and 2 cumulative financial year trigger and small disaster criterion of \$2 million (Can purchase lower trigger under option 2) 0.2% — Option 3 event-based trigger
Provision of funding	Options 1 and 2 payment based on assessed damages and benchmark prices for restoration of essential public assets (reimbursement for community recovery) Option 3 upfront grant based on assessed damages and benchmark prices for all expenditure
Eligible expenditure	The same across all options
Autonomy for state and local governments to spend funds	Greatest for option 3 (autonomy across all expenditure) Options 1 and 2 provide autonomy for restoration of essential public asset expenditure
Accountability requirements	The same across all options

A fourth option would be to provide regular untied funding through general revenue assistance with no link to natural disaster events. It would obviate the need for prescriptiveness and oversight and allow states to determine how funds are spent within disaster management and across other areas of government service delivery, and make trade-offs. However, in practice such an approach is not sustainable. In particular, maintaining an Australian Government commitment to not provide additional assistance when natural disasters occur is untenable. For these reasons, the Commission does not view this to be a feasible reform option.

The Commission's reform options only apply to natural disaster cost-sharing arrangements between the Australian and state governments. Each state would continue to have full autonomy on how it provides support to its local governments.

Option 1: Reformed NDRRA model

This option retains the broad structure of the NDRRA, but with comprehensive changes to how the arrangements operate. Figure 3.4 provides an overview of the key elements of this reform option.

Figure 3.4 **Option 1: Reformed NDRRA model**

Funding shares

Greater incentive neutrality and accountability would be secured by:

- setting the cost-sharing rate to a flat 50 per cent
- increasing the small disaster criterion (the threshold which an individual disaster's costs must exceed) to \$2 million and doubling the annual expenditure threshold (which accumulated expenditure over the financial year must exceed) to 0.45 per cent of state government revenue
- streamlining what is considered eligible expenditure.

The current small disaster criterion and annual expenditure thresholds in the NDRRA extend beyond a 'safety net' (chapter 2). Raising the small disaster criterion and the annual expenditure threshold would mean that Australian Government involvement is triggered only when states are faced with extraordinary fiscal impacts from natural disasters. As shown in supplementary paper 2, most of the costs of natural disasters are driven by small numbers of large events.

The Commission is proposing that the small disaster criterion be increased and in this draft report has proposed a criterion of \$2 million as part of reform option 1. This represents an increase on the current level, but is more consistent with the 'safety-net' objective. The Commission's proposed small disaster criterion is also considerably below that recommended by the Commission of Audit in their 'amended NDRRA' option (a small

disaster criteria of \$50 million for New South Wales, Victoria and Queensland; \$20 million for South Australia and Western Australia and \$5 million for Tasmania, the ACT and the Northern Territory) (National Commission of Audit 2014b). The Commission seeks information from states regarding the costs of disaster events and also requests views from stakeholders regarding what an appropriate level would be for the small disaster criterion.

The Commission is also proposing to double the current annual expenditure threshold (to 0.45 per cent of state government revenue). Table 3.2 provides an indication of how the proposed threshold would translate for each state relative to the existing arrangements. Applying a percentage threshold is one way to approximate where state fiscal capacity may be stretched, but it is never going to be an exact science (box 3.2).

Table 3.2 Comparison of state expenditure thresholds
\$ million, 2014-15

	<i>Current NDRRA Cumulative threshold</i>		<i>Reform option 1 Cumulative</i>	<i>Reform option 3 Single event</i>
	First threshold (0.225%)	Second threshold (0.39%)	0.45%	0.2%
NSW	143	250	286	127
Vic	110	192	219	97
Qld	94	164	188	83
SA	34	59	68	30
WA	57	100	115	51
Tas	11	19	21	9
NT	11	19	22	10
ACT	9	16	19	8

INFORMATION REQUEST

The Commission seeks information from state and territory governments regarding natural disaster costs by event to inform its analysis of the small disaster criterion. In particular, the Commission requests a list of Natural Disaster Relief and Recovery Arrangements eligible events with total expenditure for each event for the past five financial years.

Box 3.2 The choice of a trigger

All three reform options require explicit triggers for Australian Government assistance. The trigger for these options should target fiscal capacity to manage a natural disaster event. The current approach of utilising a trigger based on eligible expenditure relative to state government revenue and grants is appropriate in this context.

A trigger could be based on a single event, or alternatively it could be cumulative over a period of time, such as a 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).

Augusta Margaret River Shire Council also expressed concern regarding the operation of the thresholds, noting that a contribution from the Australian Government is only triggered if the State reaches its NDRRA threshold for the period. The council stated that 'this may be unknown at the time that the State is considering a proposal from a local government, resulting in uncertainty and extended delays in restoring infrastructure to current engineering standards' (Augusta Margaret River Shire Council (WA), sub. 49, p. 1).

Funding mechanism

Funding for community recovery — such as counter disaster operations, personal hardship relief and community relief packages — would continue to be provided under the current reimbursement model. Although the types of eligible expenditure would be rationalised.

Reconstruction and replacement of essential public assets would be excised from the current reimbursement model and funded based on assessed damages and benchmark prices. The Australian Government would contribute 50 per cent of the estimated cost of reconstruction (above the annual threshold). This contribution would be assessed and provided at the end of the financial year in conjunction with funding for community recovery. This means that cash payments would better approximate accrual (event year) liabilities.

The rationale for excluding essential public assets from the reimbursement model and moving towards cost estimates based on 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 benchmark cost estimate 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 pre-planning and transparency
- states would 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 should reduce the bias for rebuilding damaged assets to the same standard. It would also allow states to use day labour or contracted labour as they see fit.

Assessed damages and benchmark prices

Departing from the reimbursement model for essential public assets hinges on the existence of reliable methods to estimate the expected costs of reconstruction soon after a disaster has occurred. This would require an on-the-ground assessment of damages combined with an estimate of reconstruction costs based on the type of asset and its 'service standard'. This cost estimate would be made using benchmark prices that reflect the cost of reconstruction for that type of asset to its previous service standard in accordance with current engineering standards. A post-disaster assessment would be required by the relevant local government or state body in order to estimate damage. Where significant reconstruction is required, over \$5 million in value, an independent expert assessment could also be required. The role of the Australian Government Reconstruction Inspectorate could be reconfigured to provide advice and clarity on eligibility and cost estimates, in addition to conducting random audits.

Benchmark prices are used in other areas of service delivery, and state infrastructure or roads departments may have pricing models that could inform the derivation of these prices. The Disaster Loss Assessment Guidelines and National Impact Assessment Model are existing tools that could also be adapted to this task (box 3.3).

Box 3.3 Assessing damages and applying benchmark prices

All three reform options require reliable methods to assess damages and apply benchmark prices after events occur. Reform options 1 and 2 require benchmark prices for reconstruction of essential public assets. Option 3 would also require cost estimates to be made for short-term emergency response costs and broader community recovery efforts. As such, several different methods and information sources may be necessary to generate these estimates.

The Government of South Australia (sub. 67) provided information on two tools that can be used to estimate the value of losses immediately after an event.

- The Natural Disaster Loss Assessment Guidelines — include guidance on conducting post-event estimates for reconstruction programs, insured property losses and broader indirect losses and intangible losses.
- The National Impact Assessment Model (currently a pilot) — an immediate post-event impact assessment framework for determining the size and scope of recovery programs.

In addition, 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).

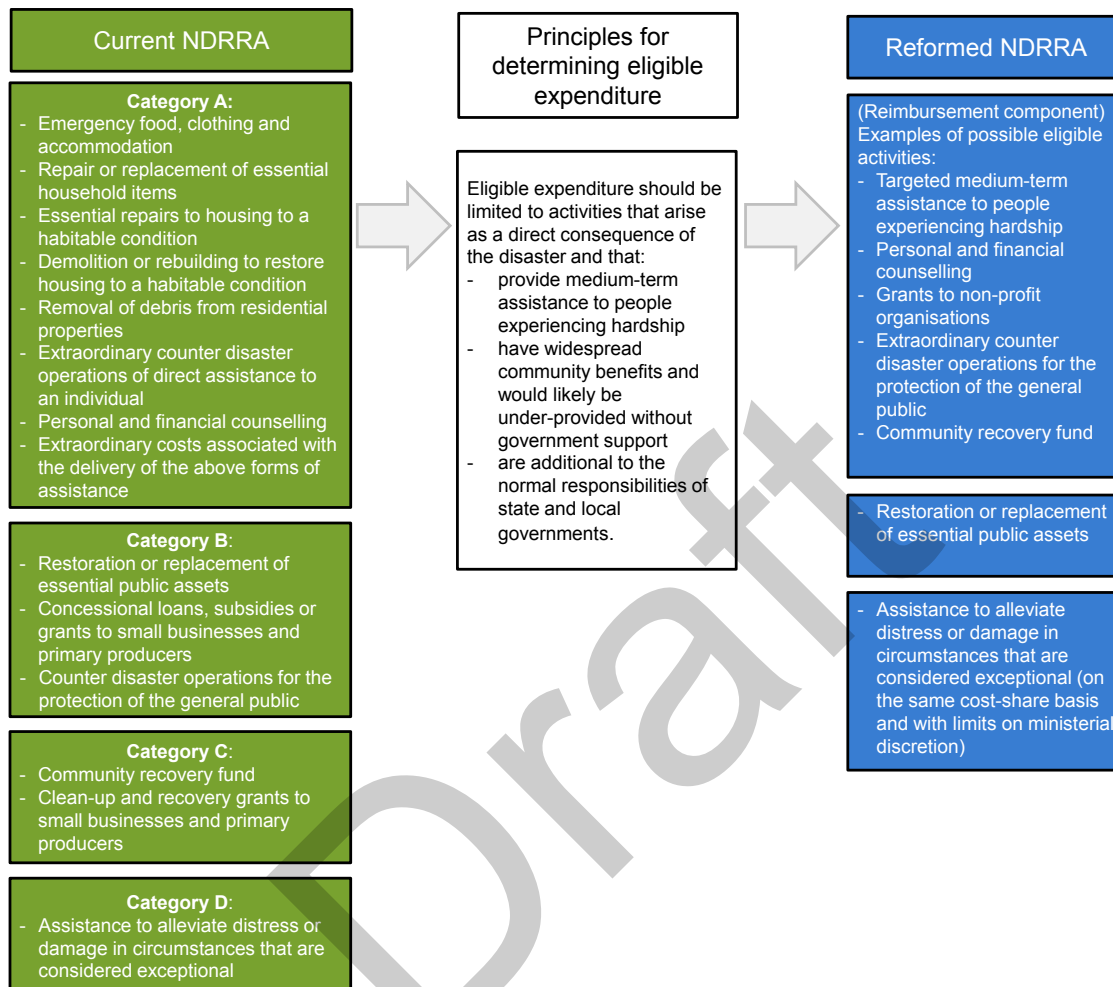
The development of benchmark prices could build on existing pricing models and data already held by state infrastructure and roads departments. The Commission has noted that while benchmarking information in Australia is disappointingly limited, some valuable sectoral work has been done in the areas of road and rail in particular (PC 2014).

The Australian Government Reconstruction Inspectorate is required to undertake benchmarking of construction costs under its terms of reference and the provisions of the National Partnership Agreements with Victoria and Queensland (ANAO 2013a). In addition, Queensland is already undertaking some benchmarking. For example, 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).

Eligible expenditure under the reimbursement component

There is considerable scope to rationalise and clarify the current expenditure types that are eligible for cost-sharing under the NDRRA (chapter 2). This is of relevance for reform options 1 and 2 (which are based on a reformed NDRRA), but is also pertinent to the upfront grants model under option 3 where the grant amount is based on some estimate of eligible costs that the Australian Government would contribute towards. Figure 3.5 provides an overview of current and proposed eligible expenditure types.

Figure 3.5 Eligible NDRRA expenditure under current and proposed arrangements



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 the responsibility of households. Reimbursement through the NDRRA for these costs has the potential to displace private risk management actions. Where governments choose to undertake such activities, they should pursue cost recovery from the beneficiaries.

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 (chapter 2).

Beyond the restoration of essential public assets, eligible expenditure should be limited to community recovery activities that arise as a direct consequence of the disaster and that:

- provide medium-term targeted assistance to people experiencing particular hardship
- have widespread community benefits and would likely be under-provided without government support
- are additional to the normal responsibilities of state and local governments.

Further, there is a need to clearly identify what types of expenditure are eligible and to provide for transparency and accountability in the cost-sharing arrangements.

There would also be benefits from having some provision in the funding arrangements for Australian Government cost sharing in exceptional circumstances. This currently occurs through category D of the NDRRA, but in an inconsistent and inequitable way (chapter 2). This provision should continue to be available, but with costs shared on the same basis (that is, 50 per cent) as other recovery expenditure and with limits placed on ministerial discretion.

Assistance for community recovery

Currently, state relief payments (reimbursed through category A of the NDRRA for emergency food, clothing or temporary accommodation, under subclause 3.2.2 (a)) result in unnecessary duplication with the Australian Government Disaster Recovery Payment (AGDRP) (chapter 2). Due to its established processes for emergency situations, network scale and access to national administrative data, the Australian Government is better placed to administer emergency relief payments and minimise the administrative costs involved (section 3.5).

Currently, category A subclauses (b) and (c) provide assistance to people with low incomes who experience extreme losses and do not have insurance. There is a case for governments to provide this support in order to minimise economic and social hardship. In addition, personal and financial counselling (currently provided through category A subclause (f)) is a relatively low-cost item, and can have benefits to the community more broadly if it improves the effectiveness and sustainability of recovery. These areas of expenditure are more suited to delivery by state governments. However, there is a rationale for the Australian Government to share the costs.

The case for government assistance to businesses and primary producers after a natural disaster is limited (chapter 2). The Australian Government should remove concessional loans and subsidy programs from the NDRRA. Where assistance to businesses remains a feature under the NDRRA, this assistance should be provided through direct grants. These should be narrowly targeted to business reinstatement and not provided for economic stimulus. Assistance to help restore social networks, community functioning and community facilities produces community-wide benefits that could not be achieved without some support from governments. Further, assistance to nonprofit organisations that

alleviates the financial burden of natural disasters is also likely to provide community-wide benefits. Assistance to nonprofit organisations is also best provided as a grant, as opposed to concessional loans or interest rate subsidies.

Counter disaster operations

Under the current arrangements the definitions of counter disaster operations are unclear and can encompass activities that are the responsibility of private households (for example, under ‘extraordinary counter disaster operations of direct assistance to an individual’), and core state government response functions. This creates the possibility of excessive Australian Government funding for these activities (chapter 2). The definition of eligible counter disaster operations needs to be tightened to comprise extraordinary counter disaster operations for the protection of the general public.

Day labour and council equipment

A large number of local governments posited that reimbursement for local government day labour should be available under the NDRRA. This would no longer be an issue for reconstruction of essential public assets under the Commission’s three reform options. However, concerns regarding an inability to receive reimbursement for day labour or use of local government equipment were also raised in the context of expenditure on emergent works and counter disaster operations (LGASA, sub. 13; Sunshine Coast Council (Qld), sub. 112). These issues would still be evident for community recovery activities under options 1 and 2.

INFORMATION REQUEST

Should there be a more explicit definition of counter disaster operations under the Natural Disaster Relief and Recovery Arrangements (or any future arrangements)?

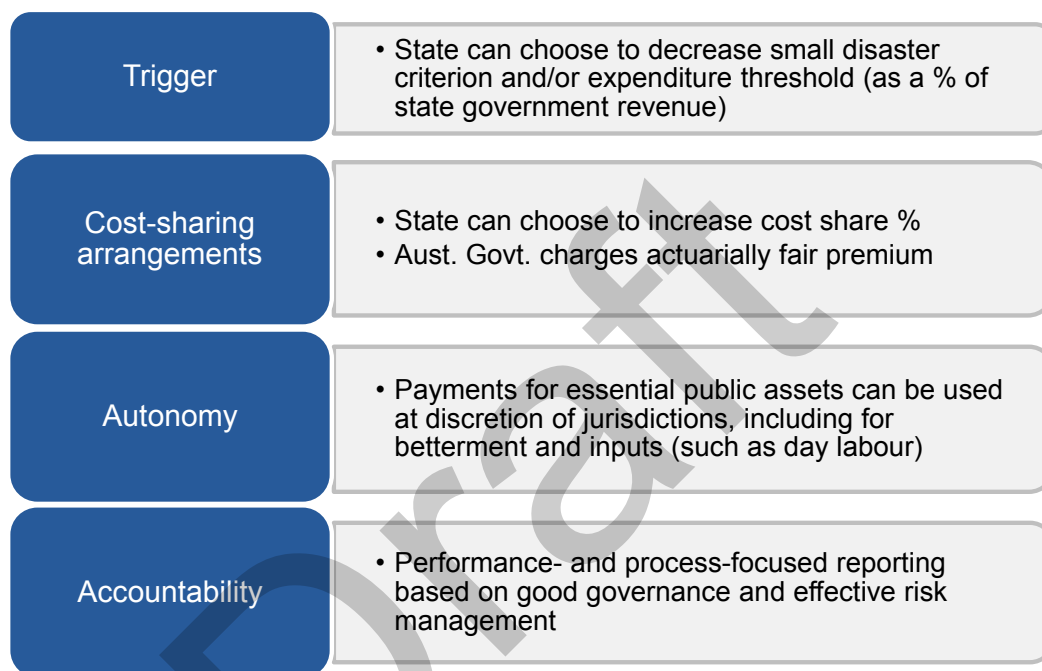
- *To what extent are extraordinary counter disaster operations costs subject to separate Australian Government cost-sharing arrangements?*
 - *To what extent are activities that are the normal responsibilities of state and territory governments being included as eligible expenditure under this clause?*
 - *To what extent do councils utilise day labour and own equipment for community recovery activities, such as counter disaster operations?*
-

Option 2: ‘Top up’ insurance for reformed NDRRA

One option is for the Australian Government to provide an explicit insurance arrangement between the states and the Australian Government alongside the support provided under the reformed NDRRA (option 1) (figure 3.6). Through such an arrangement, the Australian

Government would charge the states a risk premium for additional cover above that provided by the reformed NDRRA. Additional cover would be optional and linked to elements of the reformed NDRRA — for example, by lowering the small disaster criterion, raising the threshold, or increasing the cost-share percentage. This option would be subject to the same accountability requirements as option 1.

Figure 3.6 **Option 2: ‘Top-up’ insurance for reformed NDRRA**



A notable feature of this approach is that it is the only option proposed by the Commission that is ‘risk rated’. That is, states that face higher natural disaster risk would pay higher premiums to the Australian Government for any additional coverage purchased. The premium charged to states would reflect the risk of additional ‘top-up’ cover chosen by the state. Premiums would 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 could engage the services of reinsurers to price this insurance.

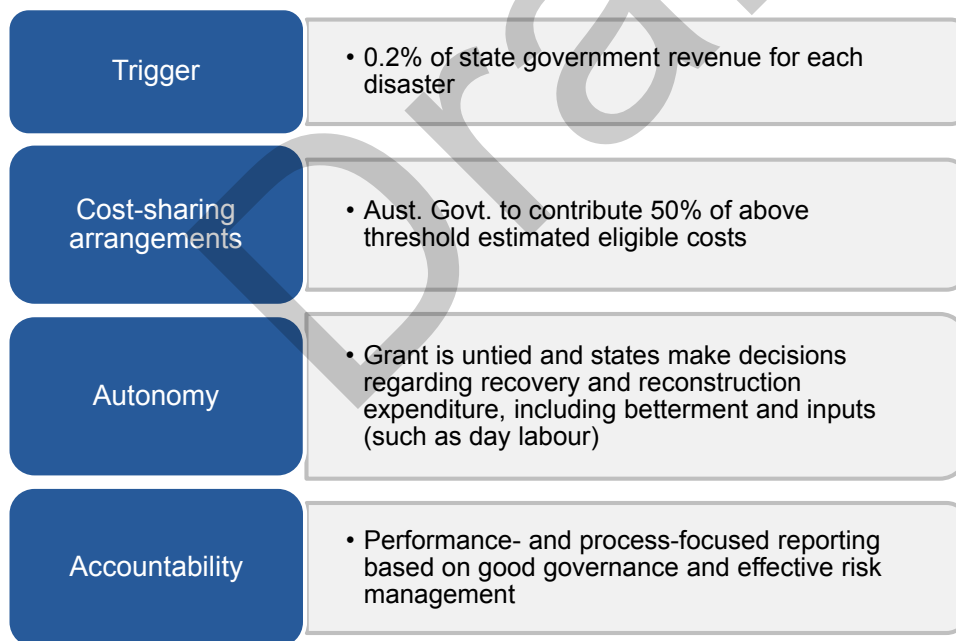
Such an arrangement would enable states to set a risk appetite and elect (and provision for) a higher level of coverage than the level provided under option 1. States would continue to utilise commercial insurance arrangements for public assets, and obtain coverage through the Australian Government only for any residual risk where they can demonstrate that commercial insurance is not available (likely to predominantly be the case for road assets). The use of a premium would provide a signal for states regarding the risk that they face and how they are managing that risk.

There are risks associated with the Australian Government more explicitly providing insurance to the states for natural disasters, albeit these risks also extend to options 1 and 3. In particular, information asymmetry and moral hazard problems could arise regarding state asset bases. The Australian Government could manage these issues by setting accountability conditions as proposed in section 3.4.

Option 3: Block grant model

The Commission's third reform option is for the Australian Government to provide states with an upfront grant of 50 per cent of above-threshold eligible disaster costs for each medium-sized disaster (one with assessed eligible damages exceeding 0.2 per cent of state government revenue) (figure 3.7). Eligibility for a grant would be determined on an event-by-event basis to avoid the need for reconciliation of total expenditure each financial year (box 3.2). An event-based trigger would also provide greater short-term fiscal certainty to both the Australian and state governments.

Figure 3.7 Option 3 – Block grant model



Similar to the arrangements proposed for option 1, this grant could be based on an upfront assessment of damage and the likely costs of relief and recovery, but for all eligible activities (figure 3.5). The additional requirement to estimate recovery costs upfront will pose greater estimation challenges relative to options 1 and 2. Under this model, there would be no recourse to the Australian Government for small scale-events, but immediate support would be available for larger disasters.

The provision of block upfront grants to fund natural disaster recovery would provide complete autonomy to states to expend funds in accordance with local preferences for both community recovery and reconstruction of essential public assets. It would also require significantly less oversight, reporting and bureaucracy at all levels of government in terms of the machinery needed for the provision of funds. In particular, where the process for determining the grant amount is clearly articulated and can be estimated quickly, this would reduce bureaucratic delays currently experienced for eligibility approvals and acquittal of completed works. Some accountability requirements could be imposed to ensure adherence to good-practice risk management and governance practices, as suggested in section 3.4.

The use of an event-based trigger also introduces some challenges. In particular, the trigger may not adequately target a state's fiscal capacity. For example, a jurisdiction could experience multiple disasters over a short period of time. Where these events are below the threshold for an eligible event the state would not receive any Australian Government assistance.

Thus, a risk with this model, and to a lesser degree with options 1 and 2, is that the Australian Government could experience repeated requests for further assistance (Government of South Australia, sub. 67), if for instance natural hazard events fall below the threshold (individually or cumulatively) or if reconstruction costs turn out to be much higher than expected. This risk is potentially elevated under this option given that the non-cumulative eligibility threshold of the scheme requires a higher (medium-disaster) event threshold. Consequently, an upfront grant model would need to incorporate very clear criteria setting out on what basis grants are provided to minimise the potential for discretionary or ad hoc responses by government.

INFORMATION REQUEST

What sort of trigger is most appropriate for an upfront grants model (under the Commission's reform option 3)? Is a threshold of 0.2 per cent of state or territory government revenue an appropriate measure of fiscal capacity where an event-based trigger is used?

Assessing reform options

This section assesses the relative merit of the three proposed reform options against the criteria of incentive neutrality, cost effectiveness and feasibility. An overview of each reform option is provided in table 3.3 and a summary of how each option performs against the criteria is provided in table 3.4.

Table 3.3 Summary comparison of reform options with current arrangements

	<i>Trigger</i>		<i>Cost sharing</i>			<i>Betterment</i>	<i>Accountability</i>
	Small disaster criterion	Threshold	Australian Government contribution	Funding type	Eligible expenditure		Conditions on receipt of funding
Current	\$240 000	First threshold: 0.225% State revenue Second threshold: 1.75 times first threshold	50% above first threshold, 75% above second threshold Categories A and C reimbursed for 50% of all eligible expenditure below first threshold	Reimbursement model, cat C and D must be declared	Categories A, B, C and D	50% where criteria met	Reimbursement model plus high-level requirements outlined in Determination
Option 1	\$2 million	0.45% of state government revenue	50% above threshold for estimated costs	Recovery (reimbursement model) Essential public assets (assessed damages and benchmark prices)	Community recovery and reconstruction of essential public assets	At discretion of state	Reimbursement model for recovery; good governance and risk management guidelines
Option 2	State can choose a criterion below \$2 million	State can choose a threshold below 0.45% of state government revenue	State can choose to raise cost share (from 50%) for above threshold costs	Same as option 1	Same as option 1	Same as option 1	Same as option 1
Option 3	..	0.2% of state government revenue (per event)	50% above threshold for estimated costs	Upfront grant	Same as option 1	Same as option 1	Good governance and risk management guidelines

.. Not applicable.

The Commission has undertaken a partial quantitative analysis of the fiscal costs of reform option 1, which provides an indication of what the fiscal savings to the Australian Government would have been if selected aspects of reform option 1 had been implemented (box 3.4). However, equivalent analysis for the other reform options was not feasible.

Incentive neutrality

The Commission's proposed reform options are intended to provide stronger incentives for effective risk management by all Australian governments. The desired outcome is for a funding model where there are no biases in how funding and policy decisions are made by governments across mitigation, relief and recovery, now and in the future.

Accordingly, all three options shift greater ownership of natural disaster risk to the states by reducing the level of Australian Government contribution to natural disaster recovery funding, and by reducing the types of activities that are eligible for funding support. The latter is intended to discourage governments from undertaking activities that undermine private-sector risk management (such as cleaning up debris on private properties or providing distortionary subsidies) and cost shifting.

By reducing the total Australian Government contribution to recovery expenditure and by providing state governments with autonomy over use of funds, the Commission's reform options are more likely to lead to funding being allocated to disaster mitigation, relief and recovery that better aligns with the community's preferences. A key element of this increased autonomy is that states work with local governments to determine where, when and how to invest in community recovery after a natural disaster.

This approach means that state governments will have a known funding envelope within which to invest in betterment. Assessments regarding betterment projects should be made on a case-by-case basis where net benefits can be demonstrated and the investment is supported through a jurisdiction's long-term asset management plan. By providing states with autonomy regarding restoration and replacement of essential public assets, the Commission's reform options obviate the need for rules and guidance around what constitutes betterment.

Neutrality across government expenditure over time would be promoted by increased disclosure and provisioning for natural disaster costs, in particular in the Australian Government budget. By introducing greater provisioning for natural disaster risk, the 'top up' insurance model would deliver the greatest neutrality over time. This option would also provide greater incentives for governments to use other available risk policy levers to reduce residual risk, such as effective land use planning regulation, in response to the price signal provided by the insurance premium.

Box 3.4 Illustrative fiscal impact of reform option 1

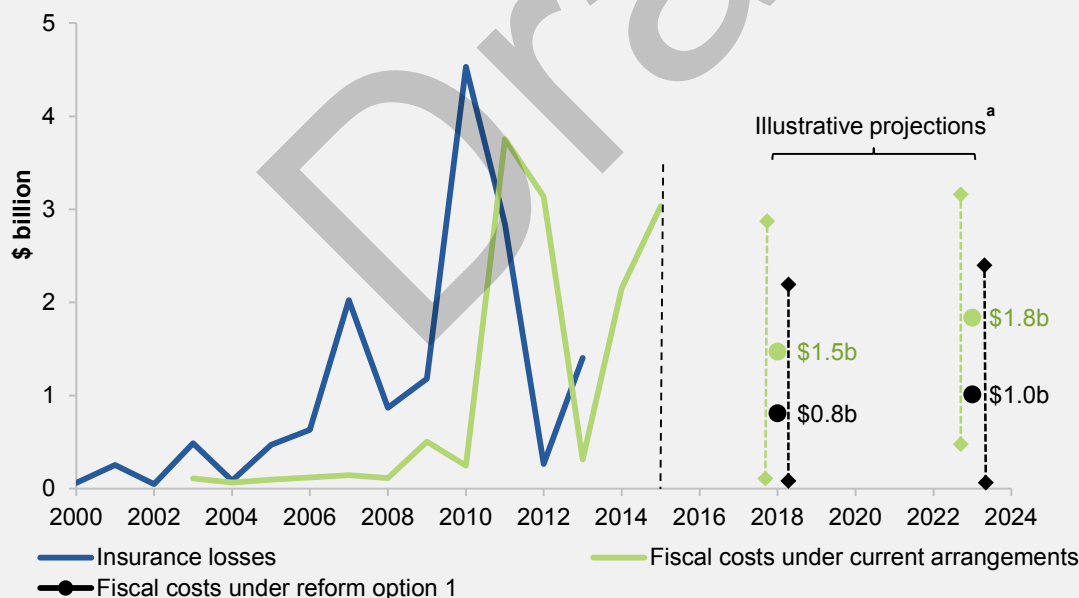
The Commission's fiscal analysis of reform option 1 consists of two parts:

- a historical analysis (covering 2007-08 to 2013-14) comparing Australian Government NDRRA expenditure under reform option 1 to expenditure under current arrangements
- a forward-looking analysis with projections of fiscal costs in the medium and long term.

Illustrative estimates were constructed to show what NDRRA expenditure would have been if selected aspects of reform option 1 had been implemented (changes to thresholds, cost-sharing rate and eligible expenditure; data are not available to model the impact of changing the small disaster criterion).

- The Australian Government's NDRRA share would have been nearly 30 percentage points lower under reform option 1, translating to cumulative savings of over \$4 billion over seven years, or about \$600 million annually.
- NDRRA cost savings would have been particularly high in years following catastrophic natural disasters, such as the 2010-11 Queensland floods and Cyclone Yasi.

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 reform option 1 is expected to be 55 per cent of expenditure under current arrangements (see figure). 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).



^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.

These imputed savings estimates are based on a period of unusually high natural disaster severity. As such, they are probably overstated (or at the high end). Furthermore, the imputed savings estimates also need to be informed by the form of provisioning governments adopt for future disaster recovery costs.

Cost effectiveness

Considerable improvement in cost effectiveness is anticipated across all reform options by moving away from the prescriptive and inefficient reimbursement model currently in place. By providing funding as a fixed amount through a payment or grant based on assessed damages and benchmark prices, state and local governments would have a strong incentive to maximise the bang for their recovery buck in the use of funds. In addition, the requirements for states and local governments to maintain asset registers, road hierarchies and asset management plans should also support better-informed decisions regarding reconstruction of essential public assets.

The reformed NDRRA option (and by extension the ‘top-up’ insurance option), by still involving a reimbursement component for community recovery expenditure, may not perform as well against a cost-effectiveness criterion as option 3 (although there are likely to be fewer concerns relative to those identified for essential public assets).

Feasibility

In retaining some of the NDRRA architecture, the reformed NDRRA option (option 1) is likely to pose fewer transitional and implementation issues. The framework is well understood by stakeholders. The current funding arrangements do not provision for recovery costs — as such, the reform options only pose transitional budgetary issues with the related requirement for some base level provisioning going forward.

All three options necessitate the development of a process to assess damages and apply benchmark prices. This is likely to involve the Australian Government and states agreeing on regional benchmark prices and engineering standards to determine grant amounts. This presents some challenges. The full extent of damage may not be known immediately and input costs can be uncertain, especially when these are driven up by the scale of a disaster. Experience in the United States has shown that initial estimates can be wrong by a large margin (supplementary paper 9). Further, costs are likely to vary significantly across Australia, especially in regional and remote areas, but more granularity in pricing estimates creates additional administrative complexity and compliance burden. Challenges in assessing damages and applying benchmark prices are heightened for option 3 where an estimate needs to be made of both recovery and reconstruction costs.

The Commission does not at this time view the challenges of reasonably estimating these costs to be insurmountable. Benchmark prices are used in other areas of service delivery, and there are several tools and models available that could be adapted to this task, including the potential involvement of professional loss assessors. Further, there are significant benefits to this approach over the reimbursement model.

Table 3.4 Natural disaster funding reform options: a summary comparison

<i>Criterion</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
Incentive neutrality	Moderate	High	Moderate
Cost effectiveness	Moderate	Moderate	High
Feasibility	High	Moderate	Low

Option 2 would require a model for pricing risk and premiums for any ‘top up’ coverage provided by the Australian Government to states. The Australian Government could engage the services of reinsurers to price this insurance. As this coverage is provided for additional eligible expenditure, rather than insurance for state and local assets, it is likely to be more straight forward to estimate ‘actuarially fair’ premiums, and historical NDRRA claims data could be useful in this regard. Nevertheless, this may require some new administrative arrangements for the ongoing management of the scheme.

The ability of these reform options to improve on the current arrangements is heavily reliant on the development of credible pre-commitment by the Australian Government. Critically, any model would need to minimise the potential for discretionary or ad hoc responses by government. For example, the level of discretion in responses in the United States appears to have contributed to an increasing share of recovery costs borne by the federal government in recent years, with increasing use of congressional cost-share waivers (supplementary paper 9).

None of the three reform options completely avoid the potential for ad hoc responses. The risks of politically motivated discretionary responses to a spate of natural disasters are particularly pronounced for option 3. For example, pressure could be exerted on the Australian Government to provide additional assistance where the event-based trigger does not adequately capture cumulative fiscal risk in a jurisdiction, or where upfront grant amounts are not seen to be sufficient (or are not used wisely).

Overall, the Commission’s preferred option at this stage is option 2. It provides a principal level of support to states commensurate with relative fiscal capacity and the original concept of a fiscal ‘safety net’, but provides top-up support to those states that require it. Importantly, this additional support would be risk-rated. This would require states to transparently articulate a risk appetite (and the associated trade-offs) and have a better understanding of their exposure to natural disaster risk.

3.3 Mitigation

The Commission's proposed reforms provide scope for increased mitigation funding from the Australian Government. The Australian Government should use some of the imputed 'savings' from reductions in relief and recovery funding to increase funding for mitigation. The Commission recommends that Australian Government funding for mitigation be increased to \$200 million per year over a transition period. Increased funding should be conditional on matched funding contributions from state and local governments (collectively) and best practice institutional and governance arrangements for identifying and selecting mitigation projects.

Mitigation is not the responsibility of governments alone. There are also 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. In cases where mitigation provides private benefits but requires some collective action, governments should give consideration to 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 5).

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 5).

An argument has been made by inquiry participants to better integrate recovery and mitigation efforts, and to better coordinate mitigation and resilience activities more broadly (supplementary papers 1 and 5) (box 3.5). The National Strategy for Disaster Resilience has also identified this as a priority, but it is not clear how this might work in practice.

Local governments and communities play a key role in identifying and implementing mitigation options. However, it is also important that the selection and prioritisation of mitigation activities be based on robust decision-making frameworks that incorporate cost-benefit analysis to determine the best way to allocate scarce resources. In this respect, the states are generally best placed to coordinate, identify and prioritise mitigation activities in their jurisdictions.

Given the roles and responsibilities of states in this space, coordination at the state level is both practical and aligns with the subsidiarity principle. 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 usual budget processes.

Box 3.5 Participant views on better coordinating mitigation and resilience 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. (Bureau of Meteorology, 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 (ABDRSC, 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).

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'.

Insurers also benefit indirectly from increased expenditure on mitigation and hence should be willing to partner and share information with state and local governments to inform land use planning decisions and the prioritisation of mitigation expenditure (chapter 4). For example, insurers are well placed to facilitate mitigation through identifying mitigation options and mechanisms for private funding.

The Commission is recommending that increased mitigation funding be distributed among the states on a per-capita basis. Project selection and distribution of funds within states would be based on risk assessment and cost–benefit analysis.

Funding would be conditional on matched contributions from the states and implementation of best-practice institutional and governance arrangements for identifying and selecting mitigation projects (section 3.4). These would include:

- proposals to be supported with robust and transparent evaluations (including cost-benefit analysis and assessment of non-quantifiable impacts) and be subject to public consultation and public disclosure of analysis and decisions

-
- mitigation objectives and priorities should be considered as part of usual business of government, including as part of asset management planning and project-approval processes
 - consideration to be given to all alternative or complementary mitigation options (including both structural and non-structural measures)
 - private funding sources should be exhausted first where feasible and efficient
 - transparent monitoring and ex-post evaluations of mitigation projects
 - local and state governments should partner with insurers to identify private funding sources and encourage take-up of adequate private insurance and private mitigation through measures such as improved information sharing and reduced premiums.

Further, mitigation funding from the Australian Government would be provided only where states meet broader accountability requirements relating to recovery and relief arrangements (as outlined in section 3.4).

DRAFT RECOMMENDATION 3.2

If the Australian Government reduces the relief and recovery funding it provides to state and territory governments, it should increase annual mitigation expenditure gradually to \$200 million, distributed to the states and territories on a per capita basis. The amount of mitigation spending could be adjusted over time to reflect the imputed 'savings' from reduced relief and recovery funding.

Increased mitigation funding should be conditional on matched funding contributions from the states and territories and best-practice institutional and governance arrangements for identifying and selecting mitigation projects. These would include:

- project proposals that are supported by robust and transparent evaluations (including cost-benefit analysis and assessment of non-quantifiable impacts), consistent with National Emergency Risk Assessment Guidelines risk assessments and long-term asset management plans, and subject to public consultation and public disclosure of analysis and decisions
- considering all alternative or complementary mitigation options (including both structural and non-structural measures)
- using private funding sources where it is feasible and efficient to do so (including charging beneficiaries)
- partnering with insurers to encourage take-up of adequate private insurance and private mitigation through measures such as improved information sharing and reduced premiums.

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 will address the broader issues around governments' accountability to the public for natural disaster management, in particular through budgeting and provisioning for natural disaster risk. The second part of this section will discuss the specific accountability and transparency requirements that the Australian Government needs to have in place for the use of Commonwealth 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 4).

Natural disasters can have significant impacts on government budgets and balance sheets. This means that governments need to understand and manage the level of financial liability they are exposed to and put in place measures to finance natural disaster costs. In choosing how to finance these costs, governments face a trade-off. One option is to appropriate funds each year to cover any costs of natural disasters that could arise. But this kind of ex-ante provisioning has an opportunity cost because natural disasters are unpredictable and those funds cannot be used in other policy areas in the same year, even when there are no natural disasters. The alternative is to finance some risks ex post — that is, by reallocating funds or raising taxes if and when a natural disaster occurs.

As noted in chapter 2, the current budget treatment by the Australian and state governments is likely leading to governments retaining more risk than they would were these risks more transparently reported (box 3.6). This is because, while the contingent liabilities are generally acknowledged in budget statements, they are not quantified or provisioned for. Such an approach can also accentuate a bias against natural disaster mitigation expenditure. This is because governments make annual appropriations for mitigation expenditure and include it in budget forward estimates, and consequently trade it off against other spending priorities.

Box 3.6 Participant views on budgeting and provisioning for natural disaster risk

Several inquiry participants submitted that the budget treatment of natural disasters should change. For example, the Tasmanian Farmers and Graziers Association (sub. 38) recommended that governments consider 'pre-event' funding for natural disaster recovery costs, either by including these in budget estimates or having cash available to finance unexpected costs. Some participants recommended the establishment of a dedicated disaster relief fund to meet the Australian Government's financial commitments when disasters occur (FRRR, sub. 50; Institute of Chartered Accountants, sub. 14). The Tasmanian Government (sub. 115) submitted that the Australian Government could consider taking out reinsurance for future NDRRA costs, or consider providing states with an advance against future NDRRA reimbursement that can be used to fund mitigation and betterment activities. Both these options would effectively involve a level of provisioning by the Australian Government.

Other participants indicated that setting aside funds would not be practical because of the uncertainties involved in estimating future costs (Department of Finance, sub. 92), or would not always be feasible for local governments given the size of natural disaster liabilities relative to their budgets (LGAQ, sub. 34).

Moreover, the Australian Treasury has previously argued that setting aside funds for disaster recovery would be costly and lead to an expansion in the government's balance sheet (Australian Government 2012). Similarly, the OECD (2008) has noted that while ex-ante financial planning appears to be desirable in many situations, certain disasters can be so unpredictable that it may be more efficient to deal with them on an ex-post basis, as ex-ante solutions (such as reserve funds) would be extremely costly.

Natural disaster risk is a fact of life in Australia. This means that governments need to acknowledge and disclose the extent of the financial risks that natural disasters pose to their budgets. As a first step, 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 (and 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. These methods can be refined over time in the event that they turn out to be systematically too high or too low, or to reflect changes in risk exposure and mitigation.

Governments also need to establish clear frameworks for financing these risks. 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 — the larger number of smaller events that happen throughout Australia in most years. A case can be made for the Australian and state governments to provision for some base level of natural disaster costs by setting aside funds (on an annual and non-accumulative basis rather than by setting up dedicated reserve funds).

Specifically, the Australian Government should treat natural disaster contingent liabilities more explicitly in its budget. This should involve taking steps to quantify the range of potential financial liabilities and disclosing these figures in the budget's Statement of Risks. While full provisioning is unlikely to be cost effective, the Australian Government should provision for some base level of natural disaster costs under the NDRRA (reformed or not) each year, representing a level of expenditure that is likely to occur on an ongoing basis. Box 3.7 provides a discussion of the Commission's estimates that could be used as a starting point to assist in determining an amount for the Australian Government to provision.

Box 3.7 Provisioning for a base level of natural disaster risk

The Commission's estimates suggest that NDRRA costs to the Australian Government were on average around \$1.4 billion annually over the period 2007-08 to 2013-14 under current funding arrangements (supplementary paper 8). Provisioning at this level is likely to be disproportionate given the recent spate of particularly severe natural disasters. Consequently, a 'discount' could be applied to this estimate. This discount could be based on historical data that extend over a longer period to capture an average under more 'normal' conditions. For example, analysis of deflated insurance losses over the period 1970–2013 indicates that the average insurance losses for the period 1970–2006 are 22 per cent of the average losses over the period 2007–2013. Any discount could be changed over time as more data are gathered under reformed funding arrangements, or alternative and more sophisticated methods are developed to estimate future fiscal liabilities.

Should the Government decide to implement the Commission's proposed reform option 1, for example, estimates of average costs under this model may provide a better starting point.

Illustrative costs to the Australian Government, 2007-08 to 2013-14

	\$m	\$m
Average annual cost	1 400	800
Discounted to 22 per cent	310	180

Best practice would also involve state governments more explicitly quantifying their fiscal risks from natural disasters and provisioning as appropriate. Under reform option 2, some provisioning would occur automatically for states that choose to purchase 'top-up' insurance from the Australian Government, as the premiums charged would need to be appropriated in state budgets.

DRAFT RECOMMENDATION 3.3

The Australian Government should publish estimates of the future costs of natural disasters to its budget in the Statement of Risks. It should also provision through annual appropriation for some base level of natural disaster risks that can be reasonably foreseen. For more catastrophic, less quantifiable risks, it is likely to be more efficient to finance the related costs if and when the risks are realised.

INFORMATION REQUEST

The Commission seeks feedback on approaches for the Australian Government to provision for some base level of natural disaster risk in the budget each year.

- *What would be the advantages and disadvantages of using historical averages?*
 - *Are there more sophisticated models available to estimate potential future liabilities?*
 - *How should 'imputed savings' from changes to the Natural Disaster Relief and Recovery Arrangements be estimated?*
-

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 3.8). 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) (PGPA Act) sets out a framework for regulating resource management by the Commonwealth and relevant entities. The Act is intended to provide the foundations for a system of 'earned autonomy' for Commonwealth entities. The position paper for the Commonwealth Financial Accountability Review (which informed the development of the PGPA Act) noted that:

A more nuanced and proportionate approach to risk could contribute to more effective monitoring and oversight arrangements. The aim would be to improve accountability and performance through managing risk not through increasing control ... The concept of earned autonomy is premised on the notion that devolution provides important benefits to Commonwealth operations in terms of agility, innovation and improved performance. The emphasis on devolution needs, however, to be supplemented with appropriate attention to performance and risk. The system should reward good performance and discourage poor performance, while minimising perverse incentives. (Department of Finance and Deregulation 2012b, p. 23)

Box 3.8 **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.

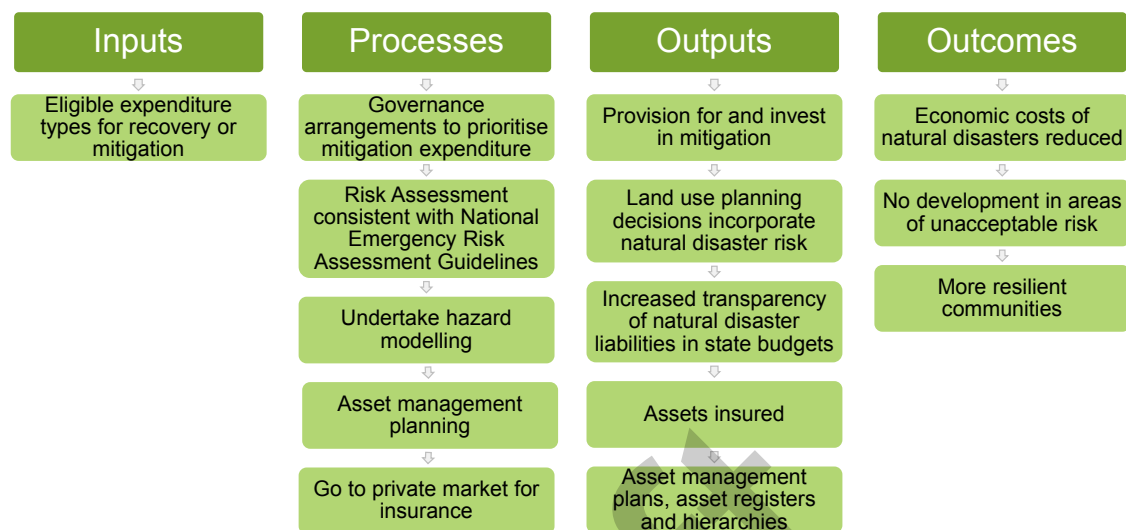
Under the framework, policy outcomes and objectives are separated from funding arrangements. National Agreements establish the policy objectives in the key service sectors and establish outcomes and performance benchmarks. Funding is provided separately in National Specific Purpose Payments and the provision 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.

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.

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 3.8). 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) argues 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 government’s activities (Koeberle, Silarszky and Verheyen 2005; Shah 2006).

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). Alternatively, rather than withholding funding entirely, this could be operationalised in a way that governments that meet requirements receive a larger proportion of funding from the Australian Government, or are provided with more flexible access to recovery funds (Regional Australia Institute, sub. 61).

Figure 3.8 Examples of possible conditions to be placed on funding



The Commission favours moving away from the current approach of prescriptive input-based conditionality combined with project-based audit towards more outcomes-focused performance management and ‘earned autonomy’. Such an approach was generally supported by participants (box 3.9). In particular, the costs imposed by excessive red tape and bureaucracy can be seen under the current arrangements (chapter 2). While bodies like the Australian Government Reconstruction Inspectorate and the Queensland Reconstruction Authority might reduce wasteful expenditure, they can also create complex layers of bureaucracy.

It is easier to determine compliance with prescriptive input-based conditions (such as the use of contract labour to reconstruct a road) than it is to demonstrate compliance with process or performance-based conditionality. For example, determining whether a jurisdiction’s policies are consistent with best-practice policy principles regarding infrastructure investment or that a jurisdiction is making appropriate land use planning decisions would require a high degree of judgment. Consequently, imposing strict financial penalties alongside the Commission’s proposed accountability requirements is unlikely to be practicable.

The Commission also has concerns that 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. Thus, a real risk in designing conditionality for recovery funding would be to introduce a different set of perverse incentives or costs.

Ideally, a more efficient approach would be to 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*.

Box 3.9 Participant views on imposing conditionality on Australian Government provision of funds for natural disaster management

Shoalhaven City Council (NSW) (sub, 25, p. 4) noted that council projects funded under the NDRRA 'have been subjected to constant reviews and examinations by the State administering bodies and disputes over claims. This has resulted in further costs to SCC and substantial time delays'. It advocated changing arrangements to allow more control of funding by the owner of the asset.

The Attorney-General's Department (sub. 90, p. 22) pointed out the potential risks in increased oversight.

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.

The Queensland Government (sub. 31) argued that rather than project-by-project audit, the focus should be on significantly streamlining processes with agreed methodologies applied that ensure accountability. It highlighted the systems and processes put in place by the Queensland Reconstruction Authority — including its Value for Money Strategy, submission guidelines and infrastructure damage assessment processes — and noted the potential to replicate these nationally.

Accountability within the Commission's proposed models

The key lever to strengthen states' ownership and accountability for managing natural disaster risk is the Commission's proposal to reduce the Australian Government funding contribution across all options (albeit diluted by horizontal fiscal equalisation). However, in recognition of the significantly greater degree of autonomy provided alongside funding through these reform options, some high-level requirements for states are needed for transparency and accountability across the suite of recovery and mitigation funding proposed by the Commission, including:

- states having developed and published risk assessments in accordance with the National Emergency Risk Assessment Guidelines
- states having adequate insurance arrangements (supplementary paper 6)
- increased transparency of natural disaster liabilities in state budgets
- state and local governments having asset registers, road hierarchies and asset management plans consistent with their long-term financial plans (chapter 4)
- states demonstrating effective mechanisms to prioritise mitigation spending based on cost-benefit analysis (supplementary paper 5).

There may be a need to adapt 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.

State insurance arrangements

Under current arrangements there are weak incentives for states to take out insurance for essential public assets (chapter 2). Currently, only the Victorian and ACT governments have insurance for road assets. While the NDRRA include a requirement that state and local governments have adequate insurance, this is not enforced in practice.

Traditional commercial insurance is often not available for road assets because of a lack of information about the roads, uncertainty about distinguishing maintenance from reconstruction, the level of exposure to natural disaster risks, and some roads are damaged on a repeated basis (supplementary paper 6).

Non-traditional insurance products, such as parametric insurance arrangements, are a potential alternative to traditional insurance for difficult-to-insure assets such as roads. They can reduce information problems and transaction costs as the payout is not based on the cost of the damage incurred, but rather is triggered by a particular event. While they can sometimes be more costly than traditional insurance, recent advances may have improved their relevance and viability.

There is merit in continuing the reviews of state and local government insurance arrangements under all three of the Commission's reform options. In particular, for option 2, this could form part of the mechanism for states to demonstrate that public assets covered by the scheme cannot be commercially insured. Recommendations stemming from these reviews should be enforced.

This requirement would dovetail with other elements of the Commission's proposed accountability arrangements, in particular those relating to asset management plans and asset registers for road assets. These would aid any approach to the private market to seek insurance (supplementary paper 6). Some states already maintain these instruments and make them publicly available. 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 the risk management strategies and reporting on the strategies to the Victorian Government (Victorian Government, sub. 113).

DRAFT RECOMMENDATION 3.4

State, territory and local governments should further investigate non-traditional insurance products for roads. Where they do not already do so, state, territory and local governments should compile and publish detailed registers of road asset condition and maintenance for all roads over which they have jurisdiction (and have these registers independently audited). This may help insurance markets to understand and price the risk. Consideration should be given to the Victorian model in this regard.

INFORMATION REQUEST

The Commission seeks information on recent advances in tailored parametric or index-based insurance and catastrophe bonds, or other relevant instruments through capital markets, for use by governments to provision for natural disaster risk on an ex-ante basis.

Long-term asset management plans

Long-term asset management planning supports an asset owner's understanding of their asset base, liabilities and funding over the lifetime of these assets. A condition for Australian Government recovery funding could be that state governments require local governments to put in place asset management plans that incorporate natural disaster risk (box 3.10). Long-term asset management plans should include asset registers and hierarchies and contain clear linkages to other relevant strategic documents, such as a local government's long-term financial plan.

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). 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). In some cases, states may need to provide further support and guidance to local governments to assist them to meet these asset management planning requirements.

Box 3.10 **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, private–public 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).

3.5 Managing shared risks

When a significant disaster overwhelms a community, some degree of risk sharing with government 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 hazards because they anticipate governmental or private aid.

The Australian Government has a role in managing shared risk to the community in providing a welfare safety net, and providing relief payments after disasters. 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.

There is merit in providing an emergency relief payment to individuals who have been seriously affected by natural disasters in order to avoid immediate economic and social hardship. These payments should be modest and distributed quickly after the event. 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. The Australian Government has institutional arrangements in place to efficiently deliver assistance to people in need (through Centrelink), and is best placed to deliver such assistance.

The eligibility criteria for the AGDRP have been successively broadened in recent years (chapter 2). While there was support by participants for tighter and more targeted eligibility requirements (Government of South Australia, sub. 67), significant concerns were raised regarding perceptions of unfairness due to discretionary modifications to eligibility (Senator Doug Cameron, sub. 69). One way to address this issue would be to legislate the AGDRP eligibility criteria. This could reduce administrative costs and address criticisms of inequitable treatment across different disaster events.

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 significantly higher than comparable payments, for example, the maximum rate of the Australian Government Crisis Payment (currently \$383 per adult) (chapter 2).

Some people may need assistance beyond immediate emergency needs like temporary accommodation, food and clothing. This can be provided through the existing social safety net and other more targeted measures, such as the Disaster Recovery Allowance. This allowance is income tested and can be made available to individuals, 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.

Assistance measures provided by state and local governments (and funded through the NDRRA), such as community recovery funds and personal and financial counselling, as well as personal and community support programs provided by nonprofit organisations, also assist to fill any gap between emergency disaster relief and the general social security safety net. It is important that these activities have a longer-term focus and extend beyond the early stages of recovery (FRRR, sub. 50; UCAA, sub. 46).

DRAFT RECOMMENDATION 3.5

The Australian Government should:

- cease reimbursement to state and territory governments under the Natural Disaster Relief and Recovery Arrangements for relief payments for emergency food, clothing or temporary accommodation and assistance to businesses and primary producers (including concessional loans, subsidies, grants and clean-up and recovery grants)
- reduce the amount provided under the Australian Government Disaster Recovery Payment (AGDRP). The Australian Government Crisis Payment may provide a reasonable benchmark in this regard
- legislate the eligibility criteria for the AGDRP and the Disaster Recovery Allowance and make these not subject to Ministerial discretion.

3.6 Implementation

The Commission's three proposed reform options involve material changes to the current funding and policy arrangements for natural disaster risk management. They are presented as 'bundled' policy packages incorporating transitional and accountability requirements. Some reform options would require greater adjustment than others. For example, the Commission's recommendations regarding the AGDRP could be implemented immediately. In contrast, recommendations relating to recovery and mitigation funding would require a staged transition.

Transitioning to new arrangements for funding recovery

The Commission's preferred reform option (option 2) does not require large-scale change in governance and institutional frameworks. However, time and resources would be needed to establish the estimation methods for damage assessment and benchmark prices and to put in place the insurance arrangements. While the Commission is aware that there are currently some estimation tools available, it is likely that further development and tailoring would be required. A range of government bodies across all three levels of government would need to be involved in the development of these methods.

In addition, option 2 would require the Australian Government to develop a model for pricing risk and setting premiums for 'top up' coverage. This is likely to require some new administrative arrangements for the ongoing management of the scheme.

The Commission is proposing a one-year transition period for its preferred option to commence, and seeks feedback from inquiry participants regarding the feasibility of this timeframe.

Mitigation funding

The Commission is proposing that the Australian Government use some of the imputed ‘savings’ from the proposed reduction in relief and recovery funding to fund mitigation projects. This will require a process to estimate imputed savings and also some sequencing across the provision of mitigation and recovery funding.

Under the Commission’s recommendations, the increase in Australian Government funding for mitigation is to be conditional on states meeting best-practice institutional and governance arrangements for identifying and selecting mitigation projects, in addition to broader accountability requirements related to recovery funding. Some form of institutional arrangements is likely to be required at the Australian Government level to assess the extent to which state governments have implemented appropriate arrangements.

A partial increase in mitigation funding would be provided immediately to assist states to be better prepared for natural disasters. The Commission proposes a staged increase in mitigation funding over a three-year period where the final increase in mitigation funding is conditional on states meeting accountability requirements (table 3.5).

Accountability arrangements

Transitional arrangements may also be required to ensure that lower levels of government have appropriate capacity to meet the accountability requirements associated with mitigation and recovery funding. For example, transition time could be needed where the Australian Government requires that local governments have asset management plans in place. While many local governments already have these plans in place some capacity building may be required for more resource-constrained councils.

Table 3.5 Transitioning and sequencing natural disaster funding reforms

	2015-16 Year 1	2016-17 Year 2	2017-18 Year 3
Reformed NDRRA with ‘top-up’ insurance	✗	✓	✓
Mitigation	Increase to \$100m	\$150m	\$200m
Accountability			
Commence implementing	✓	✓	✓
Conditions applied	✗	✗	✓
Australian Government Disaster Relief Payment	✓	✓	✓

INFORMATION REQUEST

To what extent would currently available estimation methods, such as the National Impact Assessment Model, inform the estimation of benchmark costs? Would additional assessment tools need to be developed? Who should be responsible for developing these tools?

- *Could this be overseen by the Australian Government Reconstruction Inspectorate?*
 - *What timeframe would be required for the development of benchmark cost estimates to be applied across all jurisdictions?*
-

INFORMATION REQUEST

What governance and institutional arrangements would be required to implement the Commission's 'top-up' insurance option? Could premiums be estimated by the Department of Finance, the Australian Government Actuary, Comcover or another body?

- *How could reinsurers be involved in this process?*
- *What timeframe would be required before such a model could be operational?*

In addition to allowing cover for a lower small disaster criterion, smaller annual expenditure threshold and higher rate of cost sharing from the Australian Government, would there be merit in the 'top-up' insurance option also providing cover for broader eligible expenditure?

INFORMATION REQUEST

What transitional arrangements are required for state and territory governments to meet the proposed accountability requirements put forward by the Commission to apply to both mitigation and recovery assistance?

Interactions with federal financial relations

The costs of natural disaster relief and recovery to the states (net of NDRRA reimbursements from the Australian Government) are shared among the states through the process of horizontal fiscal equalisation. The current horizontal fiscal equalisation assessment assumes that all states adhere to the same spending policies on natural disaster relief, and that differences in expenditure only reflect differences in the severity and incidence of natural disasters (CGC 2013).

This assumption that all states are following the same ‘average’ policy on natural disaster risk management is questionable at best (chapter 2). As argued by the ACT Government (sub. 94. p. 7), current horizontal fiscal equalisation practice ‘... has potential to distort State and Territory decisions on natural disaster risk management. In particular, it may reduce the incentive to take appropriate prevention and insurance measures.’ However, the Commission is not able to ascertain to what extent the equalisation of natural disaster relief costs affects the incentives states have to effectively manage natural disaster risk in their jurisdictions. The Commission considers it may impact on incentives at the margin.

However, 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. This equalisation versus efficiency debate is not unique to the natural disaster expense assessment, and any reforms to horizontal fiscal equalisation need to be undertaken in a holistic manner. The Australian Government is reviewing vertical and horizontal fiscal inequality in the Federation White Paper, and this process may recommend more holistic changes to the horizontal fiscal equalisation system.

At the very least, and following the Government’s decision on the new funding arrangements, the Commonwealth Grants Commission should revisit its assessment of ‘average state policy’ and accompanying accountability requirements, to determine whether states are indeed adhering to average state policy, and if not, make adjustments to the GST distribution formula accordingly. If reform option 2 is pursued, the insurance premiums paid by states and any corresponding payouts should be treated by inclusion. The proposed increase in mitigation funding should be treated the same way as the current payments under the National Partnership Agreement on Natural Disaster Resilience.

The Commission’s proposed reform options to recovery and mitigation funding are developed in the context of the current degree of VFI in the Australian Federation. Should the Federation White paper recommend, and the Australian Government implement, broader reforms that lessen VFI, then the reform options in this paper may need to be revisited. They are amenable to evolving with changes in Commonwealth–state financial arrangements that lessen VFI.

DRAFT RECOMMENDATION 3.6

The Commonwealth Grants Commission should revisit its assessment of ‘average state policy’ and accompanying accountability requirements for natural disaster policies once the Australian Government has announced its decision regarding relief and recovery funding arrangements.

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 irrespective of the funding arrangements.
- Information is critical to understanding and managing natural disaster risk. Hazard information has improved significantly in recent years, but there are opportunities to improve its consistency, sharing and communication.
- There is scope for improved information provision to the community on natural disaster risks by both 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.
- 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. Greater transparency by state governments on the level of natural disaster risk tolerance embedded in state planning policies is a policy imperative.
- State governments need to strengthen their guidance on how local government prioritise competing land use planning objectives, integrate land use planning and building standards, share information used in land use planning, and assess liability associated with changes to planning regulations.
- Insurance is an important risk management option. In general, insurance markets in Australia for natural disaster risk are working well and much progress in pricing this risk at the property level has been made in recent years.
- Removing distortionary state taxes and levies on general insurance would reduce the price of insurance and improve affordability. Premiums are likely to be particularly distorted in New South Wales, where a fire services levy is imposed on commercial and residential insurance in addition to stamp duty on general insurance.
- Inadequate consideration of natural disaster risk within asset management planning by state and local governments can lead to greater costs in recovery.
 - More robust processes for project selection of essential public assets that incorporate transparent cost–benefit analyses as well as transparent investment decisions are needed.

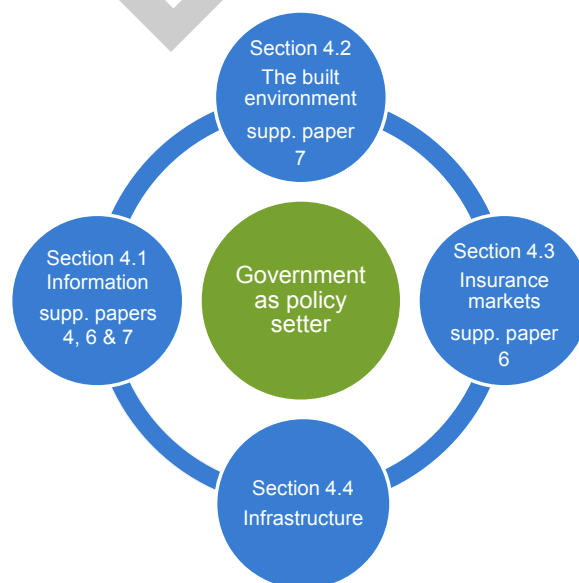
This chapter examines how governments can influence the level of natural disaster risk and can best support management of natural disaster risk through broader policy settings. State and local governments can influence natural disaster risk levels — especially through land use planning — by directly influencing the exposure and vulnerability of communities to natural disasters.

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 competitively
- 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.

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 4). 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.

Participants identified some concerns in the availability of hazard information and difficulties in accessing 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 that are 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

Insurance companies have significantly increased their knowledge and analysis of natural hazards, particularly floods (box 4.1). 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 6 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 Recent improvements in natural hazard information

There has been marked improvement in recent years in understanding the science of natural hazards and the community's exposure to them, as the following examples demonstrate. Many of these initiatives have involved improving understanding of floods, followed by bushfire, as these 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.

- 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 (which indicates flood risks in a consistent format for over 6 million properties) and Data Globe (a national-level repository of property-level information on exposure to bushfire, earthquake, cyclone, flood and other hazards). 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.
- Geoscience Australia has:
 - embarked on the \$12 million National Flood Risk Information Project in July 2012. This project collates existing flood studies and maps held by governments across Australia and provides flood information online. As at September 2014, the online portal covered about five million dwellings (indicative estimate provided by Geoscience Australia, based on analysis to date) (Geoscience Australia, pers. comm., 5 September 2014). Outputs of the project include the development of an online portal to access flood risk information and publishing guidelines on the roles and responsibilities of different parties in developing and disseminating flood information
 - collated Light Detection and Ranging (LiDAR) elevation studies conducted by various levels of government and made these available online where possible — high-resolution studies now cover around 4.5 per cent of the continent and 70 per cent of the population
 - consolidated nationally consistent information on the exposure of buildings to natural hazards through the National Exposure Information System
 - developed national hazard maps and models for earthquakes and tropical cyclones.
- The Australian Government has provided funding of \$47 million over eight years (until 2021) for the Bushfire and Natural Hazards Cooperative Research Centre to undertake multidisciplinary research on natural hazards and partner with end users.
- Some state governments have made considerable investments in hazard mapping. 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. The Victorian Government has developed a statewide bushfire hazard map and undertaken detailed vegetation mapping following the 2009 bushfires. The Northern Territory Government is in the process of mapping and modelling flood and storm surge risks across the Territory.

Sources: Attorney-General's Department (2014); Geoscience Australia (2014a, 2014b, pers. comm., 28 August 2014, sub. 111); Northern Territory Government (sub. 117); Queensland Government (sub. 95); Risk Frontiers (sub. 19).

Governments also collect extensive information on natural disaster risks. Australian Government organisations such as the Bureau of Meteorology, Geoscience Australia, the CSIRO and Bushfire and Natural Hazards Cooperative Research Centre all provide information and research that can increase natural disaster resilience (box 4.2 and supplementary paper 3). 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 is expected to be spent on bushfire research and 22 per cent on flooding.

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).

Although the level of natural hazard information has increased, some participants identified gaps in natural hazard data collection. For example, the Bureau of Meteorology (sub. 105, pp. 6–7) stated that 'the existing riverine flood data collection infrastructure across Australia is fragmented; and poorly funded, designed and maintained in some locations'. The report for the Australian Business Roundtable for Disaster Resilience and Safer Communities observed that there are gaps in high-resolution elevation data across the country (collected via Light Detection and Ranging, known as LiDAR), and that many studies of populated areas along the east coast have been licenced only for government use and are not publicly available (Deloitte Access Economics 2014). To overcome such gaps, some insurers have purchased elevation data directly from governments or commissioned their own studies (for example, IAG, sub. 24).

Information about asset vulnerability to natural disasters is also less developed. For example, 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 addition to data gaps, some inquiry participants stated that one of the problems was a lack of coordination 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)

Box 4.2 Natural hazard information and research

Information is important for managing natural disaster risks and can increase awareness of risks and inform risk management decisions on natural disaster mitigation measures. Currently, 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 are several Australian Government agencies which undertake research and provide information services, such as meteorological, hydrological, geophysical and other services that support warnings and disaster management. State, territory and local governments provide local natural disaster information (such as statewide risk assessments) and information portals to aid in community preparation and understanding of state emergency response plans.

Current state of data and information gathering

<i>Who collects the information?</i>	<i>What information is collected?</i>
Academic researchers	General research and contribute to innovation in the emergency management sector
Australian Building Codes Board	Wind hazard mapping
Australian Bureau of Statistics	Asset and demographic information
BNHCRC ^a	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	Academic research with a focus on the environment and natural disaster events
Geoscience Australia	Geographic and geological data Produces earthquake and flood hazard mapping data and research
Geoscience Australia and Attorney-General's Department	National Flood Risk Information Project
Insurers	Insurance and natural hazard data
Local governments	Flood mapping
State, territory and local governments	Risk assessments and bushfire mapping

^a The Bushfire and Natural Hazards Cooperative Research Centre (sub. 41) was established in 2013 and is funded for 8 years with \$47 million from the Australian Government and approximately \$80 million in cash and in-kind funding from partner agencies, non-government organisations, government organisations and research institutions.

Sources: BNHCRC (sub. 41); BOM (sub. 105); CSIRO (sub. 72); Deloitte Access Economics (2014); Geoscience Australia (sub. 111).

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. Over time, it is likely that the most significant information gaps in these areas will be addressed without the need for significant changes to the current funding arrangements. A more pressing issue relates to the accessibility of currently available information.

DRAFT 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

Participants identified several barriers that limit the accessibility of currently available natural hazard information.

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 in 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.

... all 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)

Mandating standards 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, they could have different requirements for the level of detail and the way data are presented, and might not see the benefit in paying for a different standard of information.

In contrast, guidelines for information collection, such as for hazard modelling, mapping and 'metadata' (data about the data) 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 also making it publicly available.

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 Geoscience Australia and the Attorney-General's Department. If this project is beneficial, it could be extended to other natural hazards.

INFORMATION REQUEST

If guidelines for the collection and dissemination of hazard mapping and modelling are developed:

- *who would be best placed to develop these guidelines?*
 - *what hazards could be covered?*
 - *how could guidelines for hazard types be prioritised for development?*
-

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, and in particular insurance companies, also develops and compiles natural hazard risk information in the course of its core business operations. Some participants called for both governments and private holders of natural hazard data to make this information publically available (box 4.3).

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)

Inquiry participants also raised 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.

Box 4.3 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)

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)

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. That said, further consideration could be given to providing increased legal protection for local governments in some jurisdictions (section 4.2).

Governments at all levels should make their natural hazard related data publicly available where they have not already done so. 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. Further, there could be some benefits in better coordinating and prioritising the work undertaken by the likes of Geoscience Australia, the CSIRO and the Bureau of Meteorology to improve the transparency and accessibility of research.

There is evidence of governments and private providers duplicating efforts in information collection. The Australian Government initiated the National Flood Risk Information Project in 2012 to improve the quality, availability and accessibility of flood information, and to raise community awareness of flood risks (box 4.1). Australian insurers have also developed a flood database — the National Flood Information Database, which was commissioned by the Insurance Council of Australia and developed by Risk Frontiers and Willis Re. Participants suggested that there is some duplication in the content of the two databases.

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 and hence should be willing to partner with state and local governments to better understand and manage natural disaster risk in their respective jurisdictions (supplementary paper 5). 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.

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 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 Authority 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 to these properties.

Sources: IAG (sub. 24); ICA (2014a); supplementary paper 9.

DRAFT RECOMMENDATION 4.1

When collecting new natural hazard data or undertaking modelling, all levels of governments should:

- make information publicly available where it is used for their own risk management and/or there are significant public benefits from doing 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.

DRAFT 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, and 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
- collaboration to inform households of the risks that they face and adequacy of their insurance to fully cover rebuilding costs, and to encourage private funding of mitigation through incentives such as reduced premiums.

Lack of a national information repository

Several inquiry participants suggested that the lack of a national platform for sharing natural hazard data was impeding effective risk management, and put forward options for improving how data and research are shared.

- 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.

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- The CSIRO (sub. 72, p. 5) submitted that ‘seamless exchange and integration of “big data” would provide better support in decision making’ and improve natural disaster management.

Participants generally emphasised that such approaches would improve the consistency of available information and make it more accessible to local governments, insurers and researchers.

The Australian Business Roundtable for Disaster Resilience and Safer Communities recommended that the Australian Government provide a national open-access platform for ‘foundational’ data (Deloitte Access Economics 2014). This platform would provide a single point of access for data, including weather, topography, demographics and the location of housing and infrastructure (that is, base or foundational information that can be used to analyse multiple natural hazards). The report stated that the platform would reduce the costs that people incur in searching for and collating data, reduce duplication, improve risk pricing by insurers and lead to better decision making for mitigation and land use planning.

However, the proposed platform may go beyond the collation of existing government-held data. The report indicated that it would entail consolidating responsibility for topographic and asset-location data at the national level, moving away from the current approach where such data are held by a mix of public agencies and private sector companies (Deloitte Access Economics 2014).

Much ‘foundational’ data is 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. Building on this work, the Australian Government has also 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).

Going beyond current efforts to further centralise data relevant to natural hazards 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. Further, as noted above, requiring all data to be collected in a standard format could limit the usefulness of information to different stakeholders. 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.

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 6).

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.

Community understanding and decision making about natural disasters could be improved if governments and insurers shared 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.

One option is to increase information disclosure through vendor statements. For example, the Actuaries Institute (sub. 97, p. 9) stated that:

At the point of sale, all parties should be made aware of the natural hazards that the property is exposed to and the cost of the risk premium for those hazards (e.g. as illustrated by an average insurance premium over the previous three years).

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 7).

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* (NEMC 2012b) (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).

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).

The insurance industry has begun to provide risk information to property owners outside of insurance premiums by establishing the Building Resilience Rating Tool (BRRT) (box 4.5). This tool enables property owners to access a rating for their property on a scale of 1 to 5, based on natural disaster risk information.

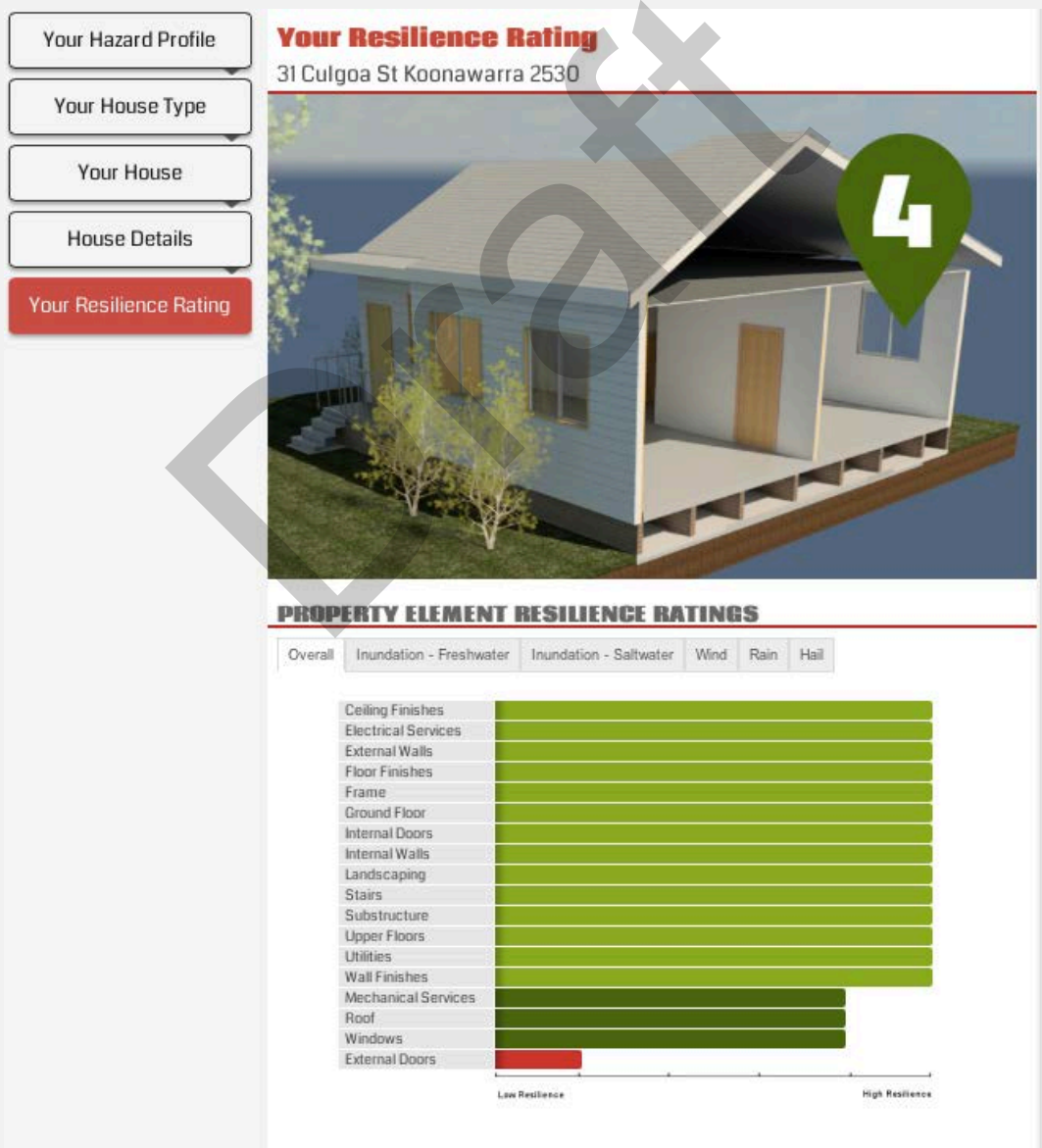
The BRRT provides the community an opportunity to educate themselves about the risks they face and make smarter decisions about building or renovating their homes. (Suncorp Group, sub. 71, p. 13)

Section 4.3 discusses further information that could be provided by insurers to consumers as part of insurance contracts.

Box 4.5 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 different parts of the building are to be damaged 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).

DRAFT RECOMMENDATION 4.3

State and territory governments should hasten implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap*, including reviewing the regulatory components of vendor disclosure statements. Furthermore, the Land Use Planning and Building Codes Taskforce should consider possibilities for regular, low-cost dissemination of hazard information to households by governments and insurers (for example, the work of the Insurance Council of Australia to develop natural hazard ratings at a household level).

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 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, 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.

Policy for managing the built environment

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* (NEMC 2012b).

State governments have a linchpin role, controlling statewide planning policies and legislative enactment of building regulations as well as having substantial responsibility for infrastructure provision. For example, in response to the recommendations of the Victorian

Bushfires Royal Commission, the Victorian Government developed an *Integrated Planning and Building Framework for Bushfire in Victoria*, which sets out how planning schemes and building standards are to be used in response to different levels of bushfire hazard (Victorian Department of Transport, Planning and Local Infrastructure 2013).

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)

Land use planning 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

Managing natural disaster risks through land use planning requires a shared understanding of the nature of the risks, the division and allocation of risks and responsibilities between government and private agents, community risk preferences and transparent articulation of the natural disaster risk appetite underpinning land use planning, regulations and standards.

Natural disaster risk management is just one of the priorities that planners have to consider (others include economic and revenue growth, housing affordability and environmental sustainability). Some local government participants stated that they need guidance on how to balance disaster risk management against other priorities (supplementary paper 7).

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 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 4.6). There is also evidence that local planning authorities have not acted on the advice received from fire and emergency service agencies regarding natural hazard risk (supplementary paper 7). Further, the different decision-making bodies involved means that there is no single clear line of accountability for poor land use planning outcomes.

Box 4.6 Participant views: examples where land use planning decisions have not adequately considered natural disaster risk

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.

The Australasian Fire and Emergency Service Authorities Council (sub. 47, p. 14) submitted that:

... calls for coordinated (or improved) planning response encompassing mapping and zoning, that specified bushfire protection measures within planning instruments, became a significant recurring theme of bushfire inquiry reports such as ... the 2009 Victorian Bushfire Royal Commission.

The Hawkesbury–Nepean Valley in New South Wales is an area that faces 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). The Floodplain Management Association (sub. 79, pp. 8–9) argued that development of this land should not have been allowed to proceed at all, given the level of risk.

... [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.

Suncorp Group (sub. 71, p. 16) also drew attention to the Hawkesbury–Nepean and Gold Coast flood-risk regions.

Similarly, development 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.

There is a need for transparency in the way that land use planning decisions incorporate understanding and management of natural disaster risk. State governments should establish statewide risk appetite through policy documents setting out the links between natural hazard risks, the built environment, policy tools for managing these risks and how these tools should be used to achieve appropriate trade-offs between competing priorities. For example, the Tasmanian Government (2013) released guidelines for considering natural disaster risk in the management of built assets, including through land use planning, building standards, emergency response and recovery, and raising community awareness, while allowing for diversity across local communities.

In some cases, governments and communities have different views on acceptable levels of risk. Decisions informed by public consultation and made with respect to local needs and multiple planning objectives will not necessarily be consistent across regions or states, as the nature of hazards as well as community needs and preferences will vary. For example, the Victorian Government 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 (Victorian Government 2014).

Land use planning systems need to be sufficiently flexible to incorporate variations in community preferences and should be based on good risk management principles. It is crucial that analysis of the costs and benefits of planning decisions is built into the planning process in a transparent manner.

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 interpreting and implementing these policies, and ensure that both local planning schemes and local development decisions are consistent with state planning policy.

DRAFT RECOMMENDATION 4.4

State governments should:

- clearly articulate the statewide natural hazard risk appetite in land use planning policy frameworks
- provide local governments with guidance on how to prioritise competing objectives within land use planning
- provide local government 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.

Furthermore, local governments should publish the reasoning behind development assessment decisions.

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 7). Inadequate funding and/or a lack of skills, expertise and information can impede local governments' ability to implement planning policies. For example, the Australian Local Government Association (sub. 52, p. 13) stated:

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.

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.

DRAFT RECOMMENDATION 4.5

The onus is on state governments to ensure that local governments in their jurisdiction are sufficiently resourced to effectively implement their land use planning responsibilities. State governments should review the adequacy of local governments' resources and capabilities, and provide further resources and support where they are not adequate.

Cost recovery

Where development is permitted in high-risk areas, planning schemes generally do not incorporate efficient cost recovery. Local government rates and charges should reflect the cost of providing services, including the cost of managing natural disaster risks to public assets over time. Where natural disaster risks are higher, this could mean higher rates or developer charges to cover some of the anticipated higher costs of maintenance and recovery works.

In principle, the costs of mitigation 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 mitigation. Supplementary paper 5 outlines more detailed principles for cost recovery for mitigation activities. Cost allocation based on these principles would lead to the level of risk being better reflected in private asset prices, and would influence residents' expectations and disaster risk management decisions.

Inquiry participants provided few examples of this type of cost recovery. Equally, there are few legislative barriers to local governments seeking variation in rates or imposing special levies to fund mitigation activities. For most local governments the main constraint in raising additional own-source revenue is their constituents' willingness and capacity to pay (the latter is particularly an issue for geographically large and sparsely populated regional and remote local governments).

Legal liability

The Commission received representations that effective risk management is being inhibited by concerns about legal liability. This includes concerns relating to:

- local governments being sued where changes to land use planning schemes adversely affect property values
- local governments being sued where they release natural hazard information that adversely affect property values
- local government planning decisions being overruled by higher levels of government or independent bodies.

Changes to planning controls can have an impact on market values. 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. For example, the Local Government Association of Queensland raised this issue in their submission to the Queensland Floods Commission of Inquiry in April 2011. These provisions require compensation for landowners adversely affected by changes to planning regulations (supplementary paper 7) and have been a major concern for local governments in incorporating risk management into planning decisions (PC 2012).

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 (Walker 2013).

Participants also expressed concern about the legal ramifications for local governments of publishing natural hazard information, and submitted that this has affected their decision 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)

To address this issue, the National Emergency Management Committee (NEMC 2012b, p. 17) 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.

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'.

There is legislation which can limit the liability of local governments in civil litigation in each state (with the exception of the Northern Territory and South Australia, for which there is a general but weaker defence at common law). However, the extent of these defences varies between states (Baker & McKenzie 2011). Some participants argued in favour of legislative provisions similar to those available to local governments in New South Wales under section 733 of the *Local Government Act 1993*, which give some indemnity or protection for local governments having made planning decisions 'in good faith' (Beatty Legal, sub. 23).

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.

Local governments' uncertainty could be reduced — without the need for indemnity provisions — by clarifying the extent of local governments' legal liability and implementing requirements for accountability and transparency in decision making through planning legislation. In addition, the injurious affection provisions in Queensland's *Sustainable Planning Act 2009* are a barrier to local governments making effective planning decisions. These arrangements enshrine a right to compensation for changes to a local planning scheme, rather than viewing such compensation as justified only under certain conditions.

DRAFT RECOMMENDATION 4.6

State governments should provide additional support and guidance to local governments that addresses the extent of local governments' legal liability when releasing natural hazard information and making changes to land use planning regulations.

DRAFT 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 7).

Building regulations have evolved over time in response to changing community expectations, improvements in building technologies and also following natural disasters. The changes that have followed natural disasters have tended to improve building standards significantly. For example, following Cyclone Tracy, 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. Some inquiry participants have called for an additional objective of building durability (Actuaries Institute, sub. 97; Suncorp Group, sub. 71). In its 2012 report *Barriers to Effective Climate Change Adaptation* the Commission considered the case for such a measure. It stated that:

The [Australian Building Codes Board] is already considering climate change issues in its decision-making processes, and the current objectives of the building code are likely to lead to some degree of protection to buildings. Further, the Australian Building Codes Board Chairman ... has suggested that a durability requirement would add 'significant upfront costs to construction'.

Private builders and property owners are able to construct buildings to standards in excess of building regulation requirements if they deem durability to be an issue. The private sector is currently developing tools that will assist property owners with assessing the durability of their building — for example, the Building Resilience Rating Tool may help developers to assess the risks to buildings, and ways of minimising these risks ...

Therefore, it is unlikely that introducing a durability objective into the [National Construction Code] would have net benefits ... (PC 2012, p. 199)

Since the completion of the *Adaptation* report, insurers have continued to work on the Building Resilience Rating Tool (box 4.5). 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. Nor are there any regulatory barriers or market failures that would prevent building owners from building to a more disaster-resilient standard. Consequently, as was the case when the Commission published its *Adaptation* report, there is not a strong case for adding building durability as an additional objective in the National Construction Code.

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 7). 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’.

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’.

Applying these regulatory tools to existing areas of settlement can be costly (supplementary paper 7). 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 the devastating 2011 floods — but these options are very expensive and only viable in exceptional circumstances.

Given these considerable costs, 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 such decision making.

4.3 Insurance markets

Insurance plays an important role in helping households, businesses and governments to understand and manage natural disaster risk. Price signals provided by insurance can be an effective tool to 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).

The Commission, however, 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 (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 4.1). 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 (PC 2012).

Table 4.1 State general insurance taxes and levies
2014-15

	Stamp duty rate (%)	Other taxes and levies
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).

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. Inquiry participants also argued that taxes lead to reduced insurance affordability, and potentially result in underinsurance and non-insurance (for example, IAG, sub. 24; Suncorp Group, sub. 71; Treasury, sub. 91).

A number of reviews have recommended that state insurance taxes and levies be removed or reduced. Removing or significantly reducing state insurance taxes would improve the price signal to policyholders and improve the effectiveness of insurance as a risk management tool. The resulting price decrease could also encourage households and businesses to take up insurance or increase their coverage.

DRAFT 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 has also received evidence that information asymmetry in the insurance market may be inhibiting the effective use of insurance as a risk management tool. Research conducted into consumers' understanding of their natural disaster risks and insurance policies suggests in many cases that their understanding is poor (supplementary paper 6). For example, the widespread use of sum insured policies (as opposed to 'full replacement value' policies), means that many households do not appreciate the full cost of rebuilding their assets and are underinsured. 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)

Greater provision of information 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. The Australian Government has regulated that insurers should provide consumers with a 'key fact sheet'. The information in this fact sheet is very high level and only covers key policy inclusions and exclusions (figure 4.2). There would be merit in insurers providing additional information for households, such as on natural disaster risks in their area, whether they are covered for total replacement costs or a sum insured, changes to building standards, and typical rebuilding costs.

Figure 4.2 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"/> Typical rebuilding costs
	<input type="checkbox"/> Changes to building codes and the effect on rebuilding costs

DRAFT RECOMMENDATION 4.9

Insurers should provide additional information to households regarding their insurance policies, the natural hazards they face and possible costs of rebuilding after a natural disaster. This work could be led by the Insurance Council of Australia to ensure consistency in the provision of information across insurers.

The relationship between mitigation and insurance premiums

While there have been significant advances in understanding the *exposure* of assets to natural disaster risk, understanding of the *vulnerability* of people and assets to natural disaster risk is more limited. For example, insurers' knowledge about individual property characteristics can be limited. Addressing these knowledge gaps can lead to more risk-reflective pricing, including premium reductions where property owners have undertaken mitigation works. For example, CGU/SUU is 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).

Insurers may also not recognise the impacts of small-scale mitigation measures where these do not lead to a reduction in their cost of reinsurance. Yet, insurers still benefit from the reduced risk, and competition could still result in the insurer recognising it and reducing the premium (Walker et al. 2014).

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 4.7). 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). The Roma example suggests that there can be benefits in insurers partnering with governments to identify mitigation options that will deliver significant benefits to the community (discussed above).

INFORMATION REQUEST

What is the prevalence of sum insured versus total replacement cost cover in household building and contents insurance policies? Has this changed in recent years? Are there any impediments to insurers disclosing an indicative estimate of the difference between the sum insured and the replacement value of the property?

Are there barriers to insurers recognising property-level mitigation through reduced premiums? Where commercial insurers adopt more risk-reflective pricing are reinsurers adjusting their prices accordingly?

Affordability

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. 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 6).

Box 4.7 Effect of natural disaster mitigation on insurance premiums**Roma, Queensland**

A \$16 million flood levee is currently under construction in Roma, Queensland. It is expected to protect about 500 houses. Suncorp has 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, sub. 71).

Charleville, Queensland

A \$16 million flood levee was recently built in Charleville, Queensland. Risk Frontiers (sub. 19) stated that Suncorp 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 (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.

Rockhampton, Queensland

The proposed flood levee in Rockhampton is expected to protect about 1000 houses (Suncorp, sub. 71). Suncorp has stated that the average premium is expected to decrease by about 32 per cent, or \$400. Analysis by Insurance Australia Group (sub. 24) using NRMA home and contents insurance details suggested that 800 houses could experience a decrease in their premiums of over \$3000. It was proposed that the levee be funded by the Australian and Queensland governments and the Rockhampton Regional Council in partnership (Rockhampton Regional Council nd). At this stage, the Rockhampton flood levee has not received funding (McKay 2014).

Seymour, Victoria

The Seymour Flood Mitigation Project involves building 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 therefore, insurance premiums.

Cyclone building codes

There is evidence 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. The Insurance Australia Group's cyclone premium has been discounted for post-1980 buildings (IAG, sub. 24).

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)

Removing or reducing distortions in the market is one avenue to address affordability and coverage concerns. For example, removing specific taxes and levies on insurance premiums 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.

Underinsurance or noninsurance can be a difficult policy issue to address where high premiums affect disadvantaged households. Subsidising premiums for these 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 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 9).

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 these 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.

DRAFT FINDING 4.2

International experience has shown that government intervention in property insurance markets (either through direct provision of insurance or by providing reinsurance) 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 National Disaster Relief and Recovery Arrangements is directed to repairing roads (supplementary paper 3). 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), who 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 *National Strategy for Disaster Resilience* also emphasised 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, this 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 with 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 accountabilities. 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.

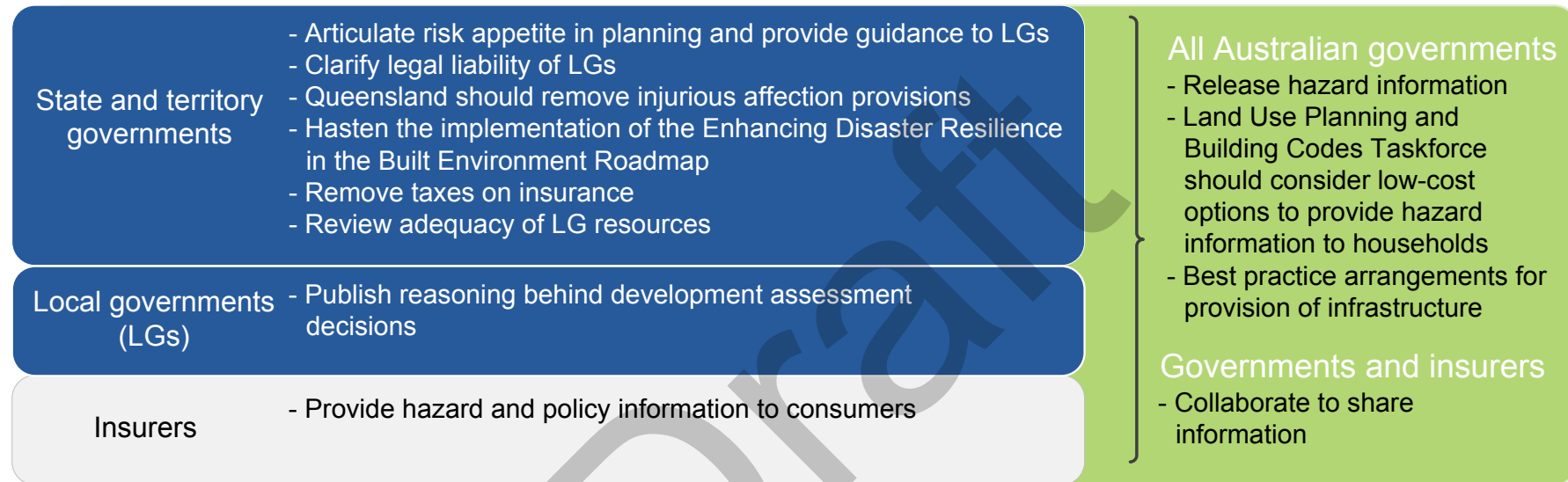
Long-term asset management plans, asset registers and asset hierarchies are also important tools in this context (chapter 3). These documents can inform project selection processes and improve the transparency of asset management.

DRAFT 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
- a clearer link between road-user preferences and maintenance and investment decisions.

Figure 4.3 **Summary of recommendations to improve natural disaster risk management**



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