

# Australia

## National progress report on the implementation of the Hyogo Framework for Action (2009-2011)

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# Outcomes for 2007-2009

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## Area 1

*The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.*

### **Outcomes:**

Australia has adopted a comprehensive and integrated approach to the management of emergencies and disasters. This approach:

- encompasses all hazards, recognising that dealing with the risks to community safety requires a range of activities to prevent, prepare for, respond to and recover from any emergency; and
- is integrated, ensuring the involvement of governments, all relevant organisations and agencies, the private sector and the community.

Rising impact costs, increasing exposure and vulnerability of Australian communities and growing uncertainties associated with future risks including those arising from climate change have created an impetus to refocus efforts to strengthen Australia's resilience to disasters.

In 2009 all Australian governments (Federal Government, and government of each State and Territory) agreed to develop ways to further strengthen Australia's resilience to disasters.

The resilience-based approach to disaster management recognises that protecting communities from the impacts of disasters is a shared responsibility among all sectors of society and at all levels of government.

This approach envisages that individuals, households, businesses, governments and communities will grow to recognise and understand current and potential risk, take action to reduce exposure and vulnerability, and be better able to respond, recover from and adapt to change from emergencies and disasters of all types.

This approach is grouped around four key themes: (1) a new resilience-based strategic direction and framework to guide national policy and programs for natural disaster arrangements and the governance structures to support these; (2) improvements to the efficiency and effectiveness of funding arrangements for natural disaster mitigation, relief and recovery activities; (3) ways to strengthen coordination and partnerships between governments, including arrangements for delivery of human relief and recovery services to disaster-affected communities and individuals, and arrangements for Commonwealth physical support to a State or Territory led disaster response; and (4) improvements to national emergency management capabilities.

## Area 2

*The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.*

### **Outcomes:**

In November 2009, Australian governments endorsed a National Disaster Resilience Framework, which sets clear principles to guide the efforts of the emergency management community in fostering disaster resilience in Australia.

The main objective of the Framework is to support the development of an evidence base which can be used for effective risk management decisions. It is designed to improve collective knowledge about natural hazard risk in Australia so that support can be provided to emergency risk management and natural hazard mitigation. Current priorities under the Framework include preparing risk assessment guidelines for the Australian, State and Territory Governments as well as local government to undertake risk assessments in a consistent and, where required, rigorous way with a focus on outcomes.

In December 2009, Australian governments further agreed to adopt a whole-of-nation resilience-based approach to disaster management which recognises that a national, coordinated and cooperative effort is required to enhance Australia's capacity to withstand and recover from emergencies and disasters.

Governments also agreed to establish the National Emergency Management Committee, a high level body comprising representatives from the Commonwealth, State and Territory and the Australian Local Government Association.

These decisions and arrangements recognise that States and Territories have primary responsibilities for preventing, preparing for, responding to and recovering from emergencies or disaster events within their jurisdiction. However, the Australian Government and governments of the States and Territories have shared interests and specific responsibilities in the provision of timely and coordinated services to people effected by disasters.

In February 2011 the Council of Australian Governments (comprising the Australian Government and governments of all States and Territories) adopted a National Strategy for Disaster Resilience. The purpose of the Strategy is to provide high-level guidance on disaster management to federal, state, territory and local governments, business and community leaders and the not-for-profit sector. It addresses the complexity of building disaster resilience through a national, coordinated, whole-of-government approach.

### **Area 3**

*The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

#### **Outcomes:**

Reconstruction is an element of the recovery phase, which occurs after a community has been impacted by disaster.

Risk identification, assessment and management is strongly emphasized in the National Strategy for Disaster Resilience, which was agreed by all Australian governments in early 2011. The Strategy notes that reducing risks in the built environment requires planning approaches that anticipate likely risk factors and the vulnerability of the population. Responsible land-use planning can prevent or reduce the likelihood of hazards impacting communities. Following a disaster, recovery efforts may require significant infrastructure reconstruction. 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.

The Strategy is supported by agreements with the States and Territories ('States') that provide a mechanism for the Australian Government to provide financial assistance to restore or replace disaster affected public assets to a more disaster-resilient standard than their pre-disaster standard and to reduce the risk of its future damage or destruction from another natural disaster.

The governments of several States have incorporated risk reduction approaches in their reconstruction

of communities affected by natural disasters in the 2009-11 period.

In January 2011 the town of Grantham, in the south of the State of Queensland, was devastated by floods with the loss of ten lives.

The Queensland government has offered residents the opportunity to be moved to a new location on higher ground. Under the plan, residents of Grantham will be given the option to move to the new site, with the local government ('Council') offering all land-owning residents a voluntary swap of equivalent-sized blocks of land. Homeowners will need to pay for moving buildings or building new homes. It is expected between 70 and 80 per cent of Grantham residents will move up to the new area. A fast-tracked plan means development will start in June 2011 and the first residents should be able to move into their new homes by the end of the year. The Council has indicated that its decision was not just for safety reasons, but for the psychological benefit of residents, and to assist in attracting new residents to the town. The land buy-back and relocation plan was the result of a long consultation process that started just a few days after the January flood. The Council's wide-ranging land-swap offer is believed to be an Australian-first.

A further example of the incorporation of risk reduction approaches into the reconstruction of affected communities is evident in the decision by the government of the State of Victoria, in response to severe flooding in the northern part of the State in early 2011, to buy back land from some flood-affected farmers under a US\$21 million flood package. The Government buyback program will be voluntary and allow people to move off flood-prone land and re-establish elsewhere. A local community-based committee will identify land for potential buyback. The purpose of the program is to create flood-paths where there are no levees in the area to enable better management of future floods.

Effective risk management and risk reduction in a disaster resilience context requires the differences in vulnerability of people, buildings and areas to disasters to be assessed and taken account of. The 2009 Victorian Bushfires Royal Commission Report also provides an example of risk reduction approaches being incorporated into the reconstruction phase. The Commission's Report noted that as fire refuges in bushfire prone areas that provide shelter for residents and visitors from bushfires face different risks, designated community bushfire refuges should be identified, established and advertised, giving priority to areas where bushfire risk is identified as high.

More broadly, after the fire and flood disaster events during 2009-11, building codes that set the standard for the construction of buildings and other structures have been reviewed and updated, so that new homes built in areas of higher bushfire risk, or those re-built in the reconstruction phase after a disaster event, will be built to a higher bushfire resistant standard. This work has recognised that different States face different risks.

# Strategic goals

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## Area 1

*The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.*

### **Strategic Goal Statement 2011-2013:**

The Australian Government recognises that achieving sustainability for Australia means maintaining and improving the wellbeing and opportunities of current and future generations. A sustainable Australia is a nation of sustainable communities which have the services, job and education opportunities, affordable housing, amenity and natural environment that make them places where people want to work, live and build a future. The Government has a broad-ranging policy agenda for the sustainability of Australia's environment, economy and social and cultural opportunities now and into the future, at the local, regional and national levels. This agenda has been enhanced with the release of the Australian Government's Sustainable Population Strategy which outlines the Government's framework for a sustainable Australia, aiming to ensure that future population change is compatible with the economic, environmental and social wellbeing of Australia. This agenda includes environmental sustainability which encompasses the protection of the natural and built environment; sustainable use of Australia's natural resources; and conservation of biodiversity and our heritage. The Sustainable Population Strategy notes that sustainable environments are those which are resilient in the face of threats and which continue to provide value to the nation over time. It is supported by a range of measures funded by the Australian Government including measuring sustainability, to improve the information on Australia's sustainability and develop indicators to assist decision-making at the regional level.

In this context, in February 2011 the Council of Australian Governments' adopted the National Strategy for Disaster Resilience (the Strategy). The Strategy complements the broader, sustainable Australia policies outlined above.

The Strategy emphasises that disaster resilience is a shared responsibility for individuals, households, businesses and communities, as well as for governments. It focuses on encouraging and empowering governments, businesses and communities at the state and local level to build resilience, by providing greater understanding of the disaster risks that they face, and the practical steps that they can take to better prepare themselves. In agreeing to the Strategy, Australian governments recognise that disaster resilience requires a greater scrutiny on the investments made by governments, including whether they are investing enough in mitigation and preparedness to minimise the impact of disasters in the first place, rather than relying on increasingly expensive, post-disaster recovery efforts.

The Strategy recognises that having knowledge and understanding of hazards and risks is of little use unless the information can be translated into relevant controls and mechanisms for dealing with them. Planning approaches that anticipate likely risk factors and the vulnerability of the population can prevent or reduce the likelihood of hazards impacting communities. Responsible land use planning can reduce or prevent the likelihood of hazards impacting communities. The strategic planning system is particularly important in contributing to the creation of safer and sustainable communities. For instance, appropriate and sustainable land-use planning practices are likely to reduce the risk of repeated damage to such infrastructure or manage the number of people and assets in areas where risk profiles have increased over time

Priority outcomes of the Strategy include that all levels of decision making in land use planning and building control systems take into account information on risks to the social, built, economic and natural environments and that building standards and their implementation are regularly reviewed to ensure they

are appropriate for the risk environment.

## Area 2

*The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.*

### **Strategic Goal Statement 2011-2013:**

At the Australian Government level, the establishment of the National Emergency Management Committee and the development of the National Strategy for Disaster Resilience and other related strategies referred to in this report will lead to enhanced consultative and decision-making mechanisms and a clearer national direction for the building of resilience to all hazards.

Other work by Australian Government agencies also contributes to strengthened arrangements such as:

- the Australian Government position paper, *Adapting to Climate Change in Australia* released in early 2010. The paper outlines the Australian Government's role in adaptation, which includes building community resilience and establishing the right conditions for people to adapt; taking climate change into account in the management of Commonwealth assets and programs; providing sound scientific information; and leading national reform. The position paper identifies six national priority areas for action: water, coasts, infrastructure, natural ecosystems, natural disaster management, and agriculture.
- the Australian Government is helping local governments to identify their risks from climate change and develop responses. Through the Local Adaptation Pathways Program local councils undertake climate change risk assessments and develop action plans to prepare for the likely local impacts of climate change; and
- the Australian Government places continuing priority on ensuring that Commonwealth disaster recovery activities address the recovery needs of individuals, families and communities affected by the social and community impacts of disasters. The principle underlying Commonwealth financial assistance measures is to provide a balance to support those individuals and communities most in need, while still encouraging communities and individuals to understand and manage their own risks, such as by personal self-help measures including taking out adequate insurance.

## Area 3

*The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

### **Strategic Goal Statement 2011-2013:**

The identification and where appropriate reduction of risk underpins the design and implementation of emergency preparedness, response and recovery policies and programmes by Australian governments.

Examples of this are described throughout this report.

This approach is expected to continue into the future, particularly in areas such as climate change and the implementation of the recently adopted National Strategy for Disaster Resilience.

National coordination and leadership by the Australian Government can lead to a more informed and consistent approach to risk management and to enhanced disaster resilience.

It will be guided by overarching national agreements, such as the National Strategy for Disaster

Resilience and the National Partnership Agreement on Natural Disaster Resilience, which is the funding mechanism through which many of the Strategy's initiatives will be implemented. One of the outcomes of the Agreement is the reduced risk of disasters in all States and Territories. This will be achieved through the conduct of risk assessments to inform State and Territory risk mitigation priorities, as well as implementation of a program of activities to address agreed priorities.

## Priority for action 1

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 1: Core indicator 1

*National policy and legal framework for disaster risk reduction exists with decentralised responsibilities and capacities at all levels.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Is DRR included in development plans and strategies? No
- \* No: National development plan
- \* No: Sector strategies and plans
- \* No: Climate change policy and strategy
- \* No: Poverty reduction strategy papers
- \* No: Common Country Assessments (CCA)/ UN Development Assistance Framework (UNDAF)

#### **Description:**

Under Australia's constitutional arrangements, State and Territory governments have primary responsibility for the planning and delivery of response to disasters and emergencies within their jurisdictions. Accordingly, each State or Territory prepares and maintains its own natural disaster preparedness arrangements, managed through a State/Territory emergency management plan (or similar) and covered by State legislation.

The Australian Government supports the States and Territories by providing funding through the Natural Disaster Resilience Program (2010-11). This program consolidates the previous Bushfire Mitigation Program, the Natural Disaster Mitigation Program and the National Emergency Volunteer Support Fund. This will enable more strategic and targeted use of the funds available for activities that enhance disaster resilience. Within this national approach, States and Territories have the flexibility to effectively meet the requirements of local communities threatened by disaster, in the context of their risk priorities, recognising that these priorities may change over time. The Program will fund nationally significant emergency management projects, as well as local resilience projects.

A large number of departments and agencies of the Australian Government contribute to the implementation of national disaster resilience and emergency management policies, coordination, programs and service delivery, including the Attorney-General's Department, responsible for the provision of strategic leadership and coordination in the development of policy and advice to the Australian Government on disaster resilience and emergency management matters.

#### **Context & Constraints:**

The national policy framework for disaster risk reduction has evolved since the last progress report, and

continues to do so, in many areas, including:

- establishment of the National Emergency Management Committee;
- the development and endorsement by Australian governments of the National Strategy for Disaster Resilience; and
- the development of the National Strategy to Reduce Bushfire Arson.

An 'all hazards' approach to national security has been adopted, which includes aims to protect Australians from risks to their safety, whether from man-made or natural events, and this approach permeates the policy development initiatives listed above. The protection of critical infrastructure to ensure availability of essential services in the event of any hazard is also evolving, with a view to helping owners of critical infrastructure better respond to and recover from disruptions, regardless of their cause, or whether they were foreseen or not.

To ensure their relevance, accuracy and acceptance by all jurisdictions and stakeholders, the drafting, consultation and endorsement stages of all policies and strategies needs to be carefully managed. This is particularly so in the case of new policies, those involving a wider range of stakeholders or that have the potential for significant additional workloads, responsibilities or resource implications for stakeholders.

The legal framework also provides context for disaster risk reduction measures in Australia. For example, Australia is a signatory to the International Health Regulations (2005). Amongst Australia's responsibilities is to report incidents of international concern to the World Health Organization within 24 hours of the event through the designated National Focal Point. The Commonwealth's National Health Security Act (2007) gives effect to these responsibilities, which are implemented through the National Health Security Agreement between the Commonwealth and jurisdictions.

## **Priority for action 1: Core indicator 2**

*Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels*

### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

### **Means of verification:**

\* Is there a specific allocation of budget for DRR in the national budget?

\* 0 % allocated from national budget

\* 0 USD allocated from overseas development assistance fund

\* 0 USD allocated to hazard proofing sectoral development investments (e.g transport, agriculture, infrastructure)

\* 0 USD allocated to stand alone DRR investments (e.g. DRR institutions, risk assessments, early warning systems)

\* 0 USD allocated to disaster proofing post disaster reconstruction

**Description:**

In the immediate aftermath of the February 2009 bushfires in the State of Victoria, the Commonwealth and Victorian Governments responded quickly to the need for urgent relief and humanitarian assistance. The Commonwealth has continued to work with the Victorian Bushfire Reconstruction and Recovery Authority to ensure the longer term rebuilding and recovery of all of the impacted communities.

The Commonwealth's funding commitment to the Victorian bushfire response, recovery and reconstruction effort has totalled in excess of \$US420m and included payments to individuals, community organisations and direct assistance to the Victorian Government through programs such as the Natural Disaster Relief and Recovery Arrangements (NDRRA) and under the Statewide Plan for Bushfire Reconstruction and Recovery.

This funding has supported a wide range of recovery programs, including the cleanup of fire damaged dwellings, comprehensive case management and mental health services, community service hubs, small business and primary producer assistance, tourism support, environmental recovery and the construction of memorials and community facilities.

The Commonwealth continues to promote its services regularly across the bushfire affected regions to ensure people are aware of their entitlements and to provide advice, through agencies under the Human Services portfolio, including Centrelink, Medicare Australia, Commonwealth Rehabilitation Service Australia, Hearing Australia and the Child Support Agency, together with the Australian Taxation Office, the Department of Education, Employment and Workplace Relations, the Department of Veterans' Affairs, the Department of Innovation, Industry, Science and Research and the Department of Health and Ageing.

Local economies and businesses are continuing to show signs of recovery, with additional support available to existing and new businesses wanting to establish in affected areas through the \$US9m Victorian Bushfires Business Investment Fund, jointly funded by the Commonwealth and Victorian Governments.

**Context & Constraints:**

Budget allocations for disaster risk reduction or related purposes in the national budget are allocated to a number of agencies, under various programs. There is no one, all-encompassing, Australian Government budget allocation for disaster risk reduction purposes.

Under Australia's constitutional arrangements, State and Territory governments have responsibility for emergency management and disaster resilience within their jurisdictions. Australia's emergency management and disaster resilience arrangements are based on partnerships between the Commonwealth, State, Territory and local governments; business and industry; and the community. These partnerships aim to minimise vulnerability to hazards; protect life, property and the environment; minimise adverse social impacts during emergencies; and facilitate recovery, rehabilitation and reconstruction.

The Australian Government provides \$US25m p.a to the States and Territories to supplement their own disaster mitigation budgetary expenditure.

More broadly, as outlined elsewhere in this Report, the Department of Families, Housing, Community Services and Indigenous Affairs and other Australian Government Departments have a range of mainstream programs that can be used as flexible program approaches to support Australian Government disaster recovery responses in major disasters (such as the very substantial Australian Government funds provided to assist the rebuild of communities from the 2009 Victorian bushfires).

There are many agencies at all levels of government as well as organisations in the non-government arena that make a contribution to Australia's disaster resilience in various ways, financial and otherwise.

This makes it difficult to quantify the level of resources that have been allocated to implement disaster risk reduction plans and activities at all administrative levels. This context also makes it more challenging to reallocate resources between different elements of disaster resilience, such as from recovery to mitigation and prevention.

### **Priority for action 1: Core indicator 3**

*Community Participation and decentralisation is ensured through the delegation of authority and resources to local levels*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Do local governments have legal responsibility and budget allocations for DRR? No
- \* No: Legislation
- \* No: Budget allocations for DRR to local government

#### **Description:**

Community participation and decentralisation through the delegation of authority and resources to local levels is an increasing theme that permeates disaster resilience policies and programs throughout Australia. Some 500,000 people volunteer their time and services to enhance Australia's capacity to prepare for, respond to and recover from emergencies and disasters.

The Australian Government supports community participation in disaster risk reduction in a range of ways. One example is the Local Adaptation Pathways Program, by which the Australian Government provides funding to help local councils undertake climate change risk assessments and develop action plans to prepare for the likely local impacts of climate change.

The Australian Government is working with the States and Territories to enhance the attraction, support and retention of emergency volunteers.

This support is demonstrated through the sponsorship of the Australian Emergency Management Volunteer Forum, the 2011 National Emergency Management Volunteer Summit and the Volunteer Leadership Program. The Program is designed to assist volunteers to develop and enhance their leadership skills and abilities, with participants drawn from across the emergency management volunteer sector.

Support for the not-for-profit sector is an important contributor to Australia's disaster resilience efforts. Mechanisms are in place by which the sector is supported to provide advice to government on disaster recovery and emergency management issues and to contribute to policy development, such as the National Strategy for Disaster Resilience (discussed below).

The Natural Disaster Resilience Program aims to create safer, sustainable communities better able to withstand the effects of natural and non-natural disasters. The Program is administered as a partnership with the States and Territories. Funding for projects is prioritised within States and Territories in the context of their natural disaster risk priorities. This approach allows each State and Territory to allocate funding based on their own risk priorities, while allowing for changes in priorities over time.

**Context & Constraints:**

The recently adopted National Strategy for Disaster Resilience acknowledges the notion of shared responsibility and community participation. The strategy calls for an integrated, whole-of nation-effort to build the nation's resilience to disasters and risks and to support communities to become more adaptive and empowered.

Community participation and decentralisation and delegation of authority and resources to local levels needs to take account of the three tiers of government in Australia and the structures and processes that have built up over time in that context.

In addition to the Australian Government and State and Territory Governments, there are 565 local governing bodies across Australia.

The Australian Government, through the Department of Regional Australia, Regional Development and Local Government, assists local governments to manage their own futures, including providing essential services and developing effective planning initiatives. This includes a regional and local community infrastructure program and providing financial assistance grants to local government. Over \$US 33 billion in grants to local government have been made by the Australian Government since 1974-75. One component of this funding is for 'general purposes' with councils able to expend the funds according to local priorities.

Local councils also receive funding from the government of the State or Territory in which they are located.

**Priority for action 1: Core indicator 4**

*A national multi sectoral platform for disaster risk reduction is functioning.*

**Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Means of verification:**

\* Are civil society organisations , national planning institutions, key economic and development sector organisations represented in the national platform? Yes

\* 0 civil society members (specify absolute number)

\* 0 sectoral organisations (specify absolute number)

\* 0 women's organisations participating in national platform (specify absolute number)

**Description:**

Australia has well-established platforms, bodies and mechanisms for disaster risk reduction. These are

both within, and between, levels of government, and with the non-government organisations.

The senior governance committees include representation by Ministers or senior officials from the Australian Government, State and Territory governments, the Australian Local Government Association and New Zealand. Committees that report to the National Emergency Management Committee also include representatives from the non-government sector. Economic sector organisations, including both major private sector companies as well as industry groups, are represented in the national platform through the Trusted Information Sharing Network for Critical Infrastructure Resilience (TISN).

The TISN is an avenue of business-government engagement that provides a forum in which owners and operators of critical infrastructure can work together by sharing information on security and resilience issues which affect critical infrastructure.

The TISN is supported by a number of Australian Government agencies, such as the Department of Health and Ageing, which works in partnership with owners and operators of critical health infrastructure, particularly to highlight specific health sector issues that may impact upon the safety and security of the health of the community and promote strategies for owners and operators of critical health infrastructure to be more resilient in the face of all hazards.

The Australian Government Disaster Recovery Arrangements and its Disaster Recovery Committee facilitate the coordination and implementation of disaster recovery assistance in response to disasters that occur within Australia and for the provision of assistance to Australians adversely affected by off-shore disasters. A recent example of these arrangements in practice was the coordination of the Australian Government's recovery assistance to Victoria after the severe bushfires in that State in early 2009.

#### **Context & Constraints:**

There are disaster risk reduction platforms and mechanisms in the States and Territories.

There are a number of civil society organisations, national planning institutions, economic and development sector organisations represented in the many consultative and decision-making bodies and platforms at all levels of government. It is not practical to specify absolute numbers of such organisations in these bodies and platforms.

Challenges for the future include:

- ensuring the continued effective management of Australian Government managed decision-making and consultative forums, to ensure continued clarity of role, responsibilities and workplan of such forums;
- ensuring that representation in the various groups that make up the platform remains relevant and evolves with changing priorities, agency responsibilities and the increasing role of the private and not-for-profit sector;
- bringing together sometimes competing aspirations for emergency management and disaster resilience between the three tiers of government in Australia; and
- more fully engaging the private sector and non-government agencies.

## Priority for action 2

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 2: Core indicator 1

*National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

\* Is there a national multi-hazard risk assessment available to inform planning and development decisions? No

\* No: Multi-hazard risk assessment

\* - % of schools and hospitals assessed

\* - schools not safe from disasters (specify absolute number)

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

#### **Description:**

Risk assessments are conducted at a local, state and national level. Examples at the national level include:

- the extent of climate change risks to coastal ecosystems, infrastructure and settlements;
- the Climate Change Adaptation Program, to better understand and manage risks linked to the carbon pollution already in our atmosphere;
- a national risk assessment of the vulnerability of Australia's infrastructure to climate change (the first infrastructure sector to be assessed is transport);
- studies to determine the vulnerability of Australian communities and various building types to increased wind risk; and
- detailed regional climate change risks assessments, such as assessing the vulnerability of the south east region of the state of Queensland to future climate change impacts.

Risk assessments are supported and informed by information and sound methodology.

Examples include:

- the National Risk Assessment Framework: which delivers on a commitment by governments to develop and implement a five year national programme of systematic and rigorous disaster risk assessments; and
- online resources of risk information, including reports, hazard and exposure data, models and maps to

support best-practice risk assessments across Australia through a website ([www.ga.gov.au/hazards](http://www.ga.gov.au/hazards)).

Risk is also considered in other ways. One example is through a national, pre-season bushfire and seasonal briefing conducted by Australian Government agencies with State and Territory emergency management agency representatives. The aim of the briefing is to facilitate pre-season bushfire and seasonal hazard preparedness and planning dialogue between the Commonwealth and the States.

The resilience of facilities such as schools and hospitals to disasters is the responsibility of the State or Territory government in which the facility is located. This includes the siting, design and standard of construction of buildings, as well as their operation and ability to respond safely to emergencies either on the premises or close by. Building construction standards vary from State and Territory and take into account particular local conditions and potential vulnerabilities, such as fire or cyclone.

### **Context & Constraints:**

As discussed throughout this report, risk assessments based on hazard data and vulnerability information are prepared at national and local levels.

They are prepared by a range of Australian Government agencies as well as agencies of other levels of governments, private sector companies and not-for-profit sector organisations. The purpose of their preparation varies, and there is likely to be some variation in the standard of the assessment, from organisation to organisation.

Australian Government agencies provide assistance through the provision of risk management data and information. Examples include:

- Geoscience Australia: supporting Australian participation as a public sponsor in the Global Earthquake Model: <http://www.globalquakemodel.org/>. The Model will provide an authoritative standard for calculating and communicating earthquake hazard and risk by developing much-needed global datasets, building open-source tools, and engaging scientists and engineers and users around the world; and collaborating with the insurance sector to develop improved natural hazard risk assessment methods and tools.

- the Bureau of Meteorology's Disaster Mitigation Policy Program, the aims of which include:

- to facilitate greater collaboration between the Bureau's Climate, Hydrological, Weather and Oceanographic Services programs with regard to the Bureau Of Meteorology's disaster mitigation activities;

- to ensure ongoing and effective interaction with other Commonwealth and State agencies with which the Bureau may have a joint role in the provision of Disaster Mitigation services;

- to ensure warning services match and support community and agency action plans;

- to engage in community and agency awareness programs;

- to continue to investigate the implementation of new services in marine weather, air quality, human health and comfort, and enhanced community safety through a focus on natural disaster mitigation;

- to ensure the relevance and visibility of the Bureau's disaster mitigation related services to the community; and

- to support international disaster mitigation activities - in particular those initiated by the World

Meteorological Organisation and those supported as part of the International Strategy for Disaster Reduction.

## **Priority for action 2: Core indicator 2**

*Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities*

### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

### **Means of verification:**

\* Are disaster losses systematically reported, monitored and analysed? Yes

\* Yes: Disaster loss database

\* Yes: Reports generated and used in planning

### **Description:**

A number of Australian Government agencies monitor and analyse disasters and resultant losses and have developed systems and databases to facilitate this. These include:

- Geoscience Australia monitors earthquakes in Australia and the region and provides alerts to Australian Government agencies; its Sentinel 'hotspots' website provides information on fires for emergency and fire management agencies and the public.
- the Australian Tsunami Warning Centre operates 24 hours a day, 7 days a week, to detect and verify tsunami threats to Australia; and

Other systems in operation or under development, include:

- the development of open source natural hazard risk models and information to make available to stakeholders (government, research agencies and the public), in support of disaster prevention, mitigation, preparedness and vulnerability reduction;
- an open source hydrodynamic modelling tool that has underpinned tsunami hazard assessments in Australia;
- an open source earthquake risk model that will underpin the release of the next version of the Australian earthquake hazard map, as well as disaster risk reduction activities in Indonesia;
- an open source tropical cyclone risk model that underpins the National Wind Risk Assessment and disaster risk reduction activities in the Philippines;
- sharing natural hazard risk information and fundamental data, examples include: the Australian Flood Studies Database; providing online access to aggregated data from the National Exposure Information System; and an updated version of the Australian earthquake hazard map;
- a tsunami impact modelling workshop for Australian and State government emergency management

agencies;

- workshops with Indonesian agencies to develop the next Indonesian national earthquake hazard map;
- workshops with technical agencies in the Philippines to investigate flood and tsunami, tropical cyclone, severe wind hazard and impact; and
- tsunami impact assessments in the Pacific.

### **Context & Constraints:**

At the Australian Government level, there is no one, central disaster-loss database.

The reporting, monitoring and analysis of disaster losses is primarily the responsibility of the government of the State or Territory in which the disaster occurs. It is understood that various systems are in place to achieve this, across a number of agencies, and that such analysis informs the planning processes in those jurisdictions.

While there are some hazards that are common across jurisdictions, such as those arising from climate change, many are not. The impacts of the hazards, and therefore the priority that communities and governments may give to responding to them, also varies between jurisdictions.

Organisations and agencies in the disaster resilience arena, and related arenas, are increasing efforts to collaborate to identify common areas of concern and where combined resources may be efficiently utilised.

The analysis of disasters and resultant losses is also undertaken by non-government bodies, such as insurance industry professional bodies and insurance companies.

The Australian Government Crisis Coordination Centre connects all relevant Australian Government and jurisdictional agencies to centralise an Australian Government response to domestic crises and the domestic implications of an international crisis, in order to develop a single, timely and consistent picture or understanding of a crisis, its implications and the national capacity to respond. In the event of an international crisis the Centre will also contribute to the Department of Foreign Affairs and Trade's Interdepartmental Emergency Task Force.

A number of Australian Government agencies also operate centres or facilities to assist with the monitoring and response to hazards across the all hazard spectrum. Details of a number of these are included in this report.

### **Priority for action 2: Core indicator 3**

*Early warning systems are in place for all major hazards, with outreach to communities.*

### **Level of Progress achieved:**

5: Comprehensive achievement with sustained commitment and capacities at all levels

### **Means of verification:**

\* Do risk prone communities receive timely and understandable warnings of impending hazard events?

Yes

- \* No: Early warnings acted on effectively
- \* Yes: Local level preparedness
- \* Yes: Communication systems and protocols
- \* Yes: Active involvement of media in early warning dissemination

**Description:**

Australian governments have, and continue to develop and introduce, a range of technological solutions to detect hazards and to warn affected persons of them.

Examples include:

- the development in 2009 of a national telephone-based emergency warning capability which sends warnings to fixed line telephones and mobile telephones based on the customer's registered service address.

This system ('Emergency Alert') funded by the Australian Government but owned and operated by the States and Territories, became operational on 1 December 2009 and, as of 25 March 2011, has been used 280 times and issued in excess of 6.54 million messages. The system has been used in a number of States and Territories for flood, tsunami, bushfire, chemical incident and missing person emergencies (see [www.emergencyalert.gov.au](http://www.emergencyalert.gov.au)).

Research into the feasibility of delivering warnings to mobile phones based on the handset's location at the time of an emergency has been undertaken. The Australian Government has committed funding to enable the States and Territories to establish this enhanced capability.

- The Australian Government's Australian Tsunami Warning System operates 24 hours per day, 7 days per week to detect and verify tsunami threats to Australia.

A further tsunami-related initiative is the tsunami education and awareness program that has been prepared in partnership with the volunteer organisation Surf Life Saving Australia and in conjunction with the States and Territories. The program has been developed to assist life savers and other beach management personnel deal with the general public in the event of a tsunami warning. The program includes an interactive online resource, education materials, and the development of procedures that incorporate all emergency service agencies and authorities in the event of a tsunami; and

- the Bureau of Meteorology and the Australian Broadcasting Commission (Australia's public broadcaster) continue to provide timely information on hazards, by radio, television and the Web.

**Context & Constraints:**

The development, adoption and implementation of early warning systems is subject to the respective roles of governments in the disaster management arena.

There are national level systems, as well as those specific to particular jurisdictions; for the detection of a hazard (such as for fire or tsunami); for the warning of affected persons about the hazard (such as the national telephone-based emergency warning system).

Contextual issues include:

- respecting the role and authority of jurisdictional governments and their agencies;
- maintaining awareness of advances in technology of potential value for disaster resilience purposes;
- collaborating across jurisdictions to develop and adopt a common technology platform;
- agreeing on guidelines and protocols to manage the application of technological developments. Examples include the National Telephony Guidelines, agreed by all governments in 2009, that provide a consistent telephony based warning methodology for emergency services in each jurisdiction; agreed protocols for the use of recorded voice announcements to provide valuable emergency information to callers to the emergency call service (Triple Zero - similar to the US 911 service); and the national emergency call centre surge capability, to assist State and Territory emergency information lines when their local capacity is overwhelmed; and
- involving all relevant levels of government as well as non-government organisations.

### **Priority for action 2: Core indicator 4**

*National and local risk assessments take account of regional / trans boundary risks, with a view to regional cooperation on risk reduction.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Does your country participate in regional or sub-regional DRR programmes or projects? Yes
- \* No: Programmes and projects addressing trans-boundary issues
- \* Yes: Regional and sub-regional strategies and frameworks
- \* Yes: Regional or sub-regional monitoring and reporting mechanisms
- \* No: Action plans addressing trans-boundary issues

#### **Description:**

Australia works with bilateral, multilateral and regional partners to reduce the risk of, and respond to disasters and humanitarian emergencies in Africa, Asia and the Pacific. The Australian Government Department of Foreign Affairs and Trade has responsibility for leading the Australian Government's response to major international incidents.

Australia has in place a disaster risk reduction policy for its aid program, which provides strategic guidance and a coherent framework for its regional and international engagement in this area. Australia is:

- working through the East Asia Summit to progress closer regional cooperation;

- accepting the non-ASEAN lead country role for the “Disaster Risk, Vulnerability Identification, Reduction and Prevention in selected ASEAN Regional Forum (ARF) sub-regions” core area of the ARF Disaster Relief Work Plan;
- working with Indonesia to develop ARF Strategic Guidelines which provide ARF members with a common understanding of regional civil-military cooperation and coordination procedures used in disaster relief;
- working with Singapore to develop a geospatial disaster relief mapping service to provide a single rapid access point for data on affected countries;
- participating in disaster relief exercises;
- drafting a Regional Engagement Action Plan, to help build capacity and resilience in our region; and
- funding travel of developing country partners to attend tsunami warning meetings and to upgrade equipment.

In addition, as co-chair with Indonesia of the APEC Emergency Preparedness Working Group (EPWG), Australia has pursued the EPWG's goal of building capacity in the region to mitigate, prepare for, respond to, and recover from emergencies and disasters.

Australia has worked with Indonesia to harmonise economic damage assessment techniques (2009), and with Thailand to strengthen public-private sector partnerships that build resilience to disasters (2010). Australia also worked closely with Vietnam in 2009 to support the annual meeting of heads of emergency management agencies from APEC's 21 economies, and their focus on integrating disaster management education into school curricula.

#### **Context & Constraints:**

Further examples of Australia's risk assessments taking account of regional / trans boundary risks include:

- the Australian Government Bureau of Meteorology has completed assessments in fourteen Pacific countries of their capacity to receive, communicate and respond effectively to tsunami warnings;
- in 2010 Australia and Indonesia launched the Australia Indonesia Facility for Disaster Reduction in Jakarta. The Facility aims to reduce the devastating impacts of natural disasters by strengthening national and local capacity in disaster management in Indonesia, and promoting a more disaster resilient region. The Australian Government is providing expert staff and US\$73 m over five years and the Indonesian Government will provide counterpart staff, services and support arrangements. Australia and Indonesia will manage the new facility.
- Australia provides ongoing support to the International Federation of Red Cross and Red Crescent Societies' International Disaster Response Laws, Rules and Principles programs in Asia and the Pacific which aim to address operational challenges in international disaster relief operations;
- Australia supports international and regional organisations including UN ISDR and the World Bank's Global Facility for Disaster Reduction and Recovery, to facilitate improved coordination, harmonisation and collaboration amongst disaster risk reduction stakeholders in partner countries; and
- Australia's bilateral support of national governments to implement disaster risk reduction activities and supports capacity development of NGOs to reduce disaster risk.

## Context:

A study of Disaster Risk Management Needs in the Asia Pacific in 2007 found that there is a lack of coordination between regional stakeholders for a variety of reasons, including: lack of resourcing and capacity in some organisations limiting their ability to either lead or participate in regional fora; an unwillingness by some stakeholders to realign existing programs with those of other stakeholders; a lack of knowledge about global and regional policy reforms; and, generally, insufficient understanding about the priorities and programs of other stakeholders.

This results in actual, or potential, duplication of effort in a range of areas, including: regional networks and meetings, knowledge management, capacity building and training, and risk assessment and hazard mapping.

## Priority for action 3

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 3: Core indicator 1

*Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Is there a national disaster information system publicly available? Yes
- \* Yes: Web page of national disaster information system
- \* Yes: Established mechanisms for accessing DRR information

#### **Description:**

The Australian Government recognises that data collected in the response and recovery phases of disasters is fundamental to improving planning and preparedness for future disasters through an improved knowledge of risks. A range of data is collected by Australian Government agencies. Examples include:

- Geoscience Australia collects data on an ad-hoc basis, and has a range of capabilities that can be enabled in the risk and impact analysis, satellite imagery and mapping areas. These capabilities are undergoing continual development. Examples include:

- using its Rapid Inventory Capture System to gather data on damaged structures,
- providing satellite data to government, emergency managers, insurance companies, infrastructure providers, researchers and the public,
- providing a bushfire hotspots service through the Sentinel website,
- providing advice on macroeconomic impacts and recovery times for economic sectors affected by disasters; and
- providing advice on the numbers of people potentially exposed, by integrating the National Exposure Information System with analysis of satellite imagery.

The Attorney-General's Department publishes the Australian Emergency Management Manual series and has launched a flood specific manual. A tsunami series will be published during FY 10-11 and the extant Recovery Manual is being reviewed. The Department also publishes the Australian Journal of Emergency Management on a quarterly basis, see <http://www.ema.gov.au/AJEM>.

The Australasian Libraries in the Emergency Sector (ALIES) is the library network which collaborates to fulfil the information needs of the emergency and national security sector in Australia and New Zealand by exchanging and sharing knowledge, skills and resources; maintaining a distributed Australasian emergency management collection, and providing an expert information service.

#### **Context & Constraints:**

There are ongoing efforts across government to increase the amount of relevant information on disasters that is available and accessible to stakeholders. There are increasing community demands for timely and relevant information to be made available to the public before, during and after emergencies.

Throughout this report there are examples of enhancements to the amount of information provided to the public as well as information-sharing between stakeholder organisations in the disaster resilience arena.

One example is the Australian Safer Communities Awards (ASCA) that recognise best practice and innovation by organisations and individuals that have developed and successfully implemented an initiative to help build safer communities across Australia. ASCA covers all aspects of community safety in the context of emergency management – risk assessment, research, education and training, information and knowledge management, prevention, preparedness, response and recovery. It is sponsored by the Australian Government's Attorney-General's Department.

ASCA reflects the need to empower citizens and localities to build resilience, and to support local-level initiatives to do so.

However, there are a number of significant challenges to be dealt with before an optimum amount of information can be made available to all stakeholders in the disaster resilience arena.

They include: the large number of government, private sector, and not-for-profit sector organisations involved; the coordination of the information and knowledge generated through the various mitigation and other programs by the States and Territories to ensure that best practice approaches are being shared and lessons learnt; and achieving agreed standardised approaches to information gathering and publication.

The work currently underway to develop overarching strategies in the disaster resilience arena that bring together all governments and stakeholder organisations should reduce any unnecessary barriers or inhibitions that impede the flow of disaster related information.

### **Priority for action 3: Core indicator 2**

*School curricula , education material and relevant trainings include disaster risk reduction and recovery concepts and practices.*

#### **Level of Progress achieved:**

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

#### **Means of verification:**

- \* Is DRR included in the national educational curriculum? No
- \* No: Primary school curriculum
- \* No: Secondary school curriculum
- \* No: University curriculum
- \* No: Professional DRR education programmes

#### **Description:**

Examples of school curricula and education materials including disaster risk reduction concepts are:

- in one State, 'Disaster Education Resources for Young People and Children' aims to develop age-appropriate resources on natural disasters that would provide young people, children and their families with knowledge of what to do before, during and after an event to enhance their individual and community safety. A DVD and a web-page was prepared, which contains a collection of fifteen, two-minute stories about cyclones, bushfires and severe storms and floods. Young people share their personal experiences with different disasters affecting their local areas.

- another involves a fun, interactive and self-directed educational resource which recognises the roles young children can play in raising disaster awareness and preparedness in their household. It is a package of computer games, quizzes and activities for children aged seven to eleven. It is available from a website and on CD ROM.

- in June 2010 the Australian Government launched new education materials for school students. The materials are an interactive media game, actual student experiences and lesson plans aimed at teaching kids how to be ready for an emergency. The materials have a strong focus on personal stories and experiences and include:

'Dingo Creek – The Recovery' raises awareness of local risks and impacts of disasters by introducing the recovery process through engagement with an affected community;

'Living with Disasters' includes ten digital stories from young people who experienced the events of the 2009 fires in the state of Victoria in order to learn how families and communities were affected; and

'People, Get Ready' comprises four activities to build student understanding and awareness of emergency issues prior to a natural disaster occurring.

The materials are available from the Australian Government Emergency Management Australia website at [www.ema.gov.au/schools](http://www.ema.gov.au/schools).

### **Context & Constraints:**

Disaster risk reduction (DRR) is not a feature of the national educational curriculum.

As the content of primary and secondary education curriculum is the responsibility of State and Territory governments, its inclusion in primary or secondary school curriculums is the responsibility of those governments.

Any inclusion in university curriculum would be the responsibility of the individual university and considered in the context of subject and degree requirements.

In regard to professional DRR education programmes the Australian Government's Emergency Management Institute is a centre of excellence for knowledge and skills development in the national emergency management sector. The Institute provides a range of education, training, professional development, information, research and community awareness services to the nation and our region. It offers courses including nationally accredited training courses and professional development programs.

The Institute continues to focus on improving knowledge and development in the emergency management sector. It supports broader national security capability development efforts to build community resilience to disaster. It plays a significant role in building the capacity and professionalism of the emergency management sector in Australia.

### **Priority for action 3: Core indicator 3**

*Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Is DRR included in the national scientific applied-research agenda/budget? Yes
- \* No: Research outputs, products or studies
- \* No: Research programmes and projects
- \* No: Studies on the economic costs and benefits of DRR

#### **Description:**

The Australian Government supports a range of disaster resilience related research activities including:

- climate change science research activities through the \$US28m Australian Climate Change Science Program;

- the work of Geoscience Australia and the Bureau of Meteorology described elsewhere in this report; and

- bushfire research, by the Bushfire Cooperative Research Centre (CRC) ([www.bushfirecrc.com](http://www.bushfirecrc.com)), to undertake research tasks arising from the 2009 Victorian bushfires and to implement programs relating to safe prevention, preparation and suppression, fire management, community self-sufficiency, protection of people and property, education, training, communication and community outreach. The Bushfire CRC is a national research centre developed in partnership with fire and land management agencies and research institutions to reduce bushfire risk to the community.

Other Australian Government initiatives that invest in projects can also contribute to research methods and tools that indirectly assist with broader disaster resilience objectives.

One example is the 'digital regions initiative' which promotes projects to improve services and make sure that regional, rural and remote communities benefit from broadband and digital technologies and are not left behind ([www.dbcde.gov.au](http://www.dbcde.gov.au)). In 2009 several of the projects that successfully applied for funding will contribute to improved emergency management and broader disaster resilience objects, such as:

- bushfire spotting and response technologies in the north east region of the State of Victoria, to use remote cameras, telemetry and video conferencing to enhance fire detection, management and response capability; and

- bushfire prediction technology project in the State of Western Australia, to provide communities with bushfire alerts and access to simulation maps.

#### **Context & Constraints:**

The National Risk Assessment Framework is designed to improve collective knowledge about natural

hazard risk in Australia so that support can be provided to emergency risk management and natural hazard mitigation. The natural hazards covered in the Framework are bushfires, earthquakes, floods, storms, tropical cyclones, storm surges, landslides, tsunamis, tornados and meteorite strikes.

The main objective for the National Risk Assessment Framework is to support the development of an evidence base which can be used for effective risk management decisions. Three other goals are linked to this main objective. They are:

- to increase the value of risk information acquired by improving methodologies for risk analysis and by employing minimum levels of acceptance for methods and deliverables;
- to support the objectives of risk management by developing tools, guidelines and databases which assist all stakeholders to conduct risk assessments; and
- to foster the development of systems for coordinating, sharing, aggregating, and making available consistent information on risk that is essential to support risk management decisions.

Australian, State and Territory Governments as well as local governments have endorsed and agreed to apply national guidelines for the preparation of risk assessments in a consistent way and with a focus on outcomes.

Another current priority is to reach an understanding of existing gaps in knowledge and develop strategies to prioritise and address these gaps so the understanding of natural hazard risk in Australia will be increased.

### **Priority for action 3: Core indicator 4**

*Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Do public education campaigns on DRR reach risk-prone communities? Yes
- \* Yes: Public education campaigns.
- \* No: Training of local government
- \* Yes: Availability of information on DRR practices at the community level

#### **Description:**

All Australian governments have endorsed the need for and importance of a nationwide public awareness strategy to stimulate a culture of disaster resilience.

This was reinforced in February 2011, when all governments endorsed the National Strategy for Disaster Resilience that recognises that a national, coordinated and cooperative effort is needed to enhance Australia's capacity to withstand and recover from disasters. The Strategy aligns with the principle that disaster resilience is based on all sectors of society taking their share of responsibility for preventing, preparing for, responding to and recovering from disasters. They can do this by drawing on guidance,

resources and policies of government and other sources such as community organisations. The Strategy recognises that influencing long term attitudinal and behavioural change will require continuous and consistent messaging and the development and availability of guidance and resources. It aims for information on disaster risk to be communicated in a manner appropriate to its audiences, and to consider the different needs, interests and technologies used within communities. The Strategy's priority outcomes include that current information is available on websites and in other forms about disaster risk and mitigation; and that communities are supported through appropriately targeted training and awareness activities.

In endorsing the national Resilience Strategy, Australian governments agreed to a series of priority actions, including developing guidance, in a prioritised sector approach, to assist business, the non-government sector, governments, and communities in building disaster resilience through existing planning processes, wherever possible. A community engagement framework will be developed, aimed at assisting people to understand risks and use the information in making decisions. The framework will consider a range of sources of information and methods of dissemination (such as insurance companies, the education system, local networking) and give particular attention to the emerging role of social media. Core messages will be developed to reinforce this approach.

To promote the Resilience Strategy Australian governments will look to engage key stakeholder groups across government, business, academia and the not-for-profit sector in a prioritised sector approach, to promote the concept of disaster resilience amongst the broader Australian community. Existing communication channels will be utilised to promote core messages in the most cost effective manner; tailor messages to specific sectors, communities and organisations about the practical steps they can take to build disaster resilience; and adopt a long term sustainable approach to influence attitudinal and behavioural change. Core messages will be developed to reinforce this approach. A Disaster Resilience Strategic Communications Plan is to be developed by governments, in consultation with key stakeholders. The Plan will aim to work towards a countrywide public awareness strategy to stimulate and maintain a culture of disaster resilience, in both urban and rural communities.

All Australian governments conduct public awareness raising activities to stimulate and maintain effective emergency preparedness and response in the community, to both urban and rural communities.

Examples of effective public awareness raising include the correct use of the Triple Zero emergency assistance telephone service; household preparations for forthcoming fire and storm seasons; and on the commencement of operation of a national telephone-based emergency warning capability ('Emergency Alert') which sends warnings to fixed line telephones and mobile telephones based on the customer's registered service address.

Since it commenced operation in 2009, Emergency Alert has been used many times in the States and Territories ('States') for a wide range of emergencies. In the lead up to Emergency Alert's commencement, all Australian governments agreed on core messages to be promoted to the community about the capability, when people might receive a warning message by telephone, what they should do if they receive a warning message, and the wording to be used to convey the messages. With funding from the Australian Government the States developed the media (television, radio and print) advertisements to promote the new warning system. Even though the public-awareness raising involved a nationwide campaign, each State and Territory retained the ability to tailor the core message to fit local conditions, and the precise method by which the message would be communicated to their community. Periodic reminders about Emergency Alert to the community are publicised and promoted in each State, and reinforced more regularly in the lead up to the higher risk (fire, flood, storm) summer season.

State government authorities are responsible for coordinating and planning for the response to disasters

and civil emergencies. Each has its own strategies to develop and maintain public awareness of disaster resilience with a particular focus on the role of the individual to be prepared to respond effectively in time of emergency. Community-based organisations also contribute to planning for the response to emergencies.

A culture of disaster resilience in the community is supported by public awareness projects and programs tailored to the needs of the region/State. Examples include safety in storms ('StormSafe'), floods ('FloodSafe'), and fire safety in the context of kindergartens and primary schools etc. In 2011, the government of the State of Western Australia released a new DVD aimed at delivering vital home safety messages in twelve languages to assist recently arrived migrants to that State to stay safe this winter. The 16 minute DVD contains vital fire safety messages and reflects research in Western Australia that shows that 60 per cent of deaths from house fires in that State between 1992 and 2006 were of people from non-English speaking backgrounds. The DVD provides new arrivals to the State with information in their first language about the role of the fire service and also what to do if a fire starts in their home. In releasing the DVD, leaders of those communities with large proportion of people from non-English speaking backgrounds were encouraged to ensure the DVD is made widely available throughout their community.

The Australian Emergency Management Institute (AEMI) is a centre of excellence for knowledge and skills development in the national emergency management sector. In addition to its significant role in building the capacity and professionalism of the emergency management sector in Australia, the Institute provides a wide range of disaster resilience related community awareness services to the nation and our region. For example, in electronic form, the Emergency Management in Australia website – provides the key online access point for emergency management information from the Australian Government. The Institute prepares Australian Emergency Management Manuals and Handbooks that guide emergency management doctrine in Australia and are available to download from the website. AEMI produces numerous public awareness raising printed publications (i.e. natural hazards: what to do before, during and after), with emphasis on mitigation and preparedness and provided nationally to the States and Territories for dissemination as requested. The Institute publishes the Australian Journal of Emergency Management which is provided free of charge in print format to a subscriber base of over 3,000. It is also available electronically via the Emergency Management in Australia website and a number of externally hosted databases. All Institute community education and awareness material is developed for national applicability and accessibility.

The Institute also delivers training courses aimed at extending emergency management expertise to local government through its Emergency Management for Local Government and Business Continuity Management for Local Government courses. Places are available at other courses delivered by the Institute for local government representatives.

In the context of country-wide public awareness raising for disaster resilience, being able to communicate effectively with the community is a vital component of risk management, disaster mitigation, response and recovery. For over a decade, the Institute has worked to build emergency management capability to engage with multicultural communities to address their needs in relation to dealing with disasters and developed a range of programs and publications. Numerous information sessions, diversity forums and community events have been delivered collaboratively. Resources have also been developed and shared nationally as part of the following projects: a practical guidebook for emergency management organisations with state-wide demographic profile (Western Australia), a community newsletter (Australian Capital Territory), an emergency management exercise report involving culturally and linguistically diverse (CALD) community members (in the State of South Australia) and a state-based CALD community engagement map (Victoria).

Public awareness of disaster resilience is also enhanced through the school curriculum, which provides

opportunities for teachers and students to study the issues involved in the risk and consequences of disaster. These issues, and the knowledge of preparedness and risk reduction methods, can often be studied in a local context, developing life skills and knowledge at an early age, which can influence families and local communities.

The Attorney-General's Department's schools education program supports the learning and teaching in this area with publications, videos and interactive learning games for students, teachers and the general public. The latest interactive resource is due to be available later in 2011. The Institute's School Education program develops teacher resources for school age education nationally of disaster risk, impact, preparedness, planning, response and recovery. This is primarily web-based, but hard copy education kits are provided free of charge to any school on request.

**Context & Constraints:**

Challenges in public awareness raising of disaster resilience include:

- when attempting to educate school children, the school curricula can become oversubscribed and bringing new activities into the curricula can be difficult;
- it can be difficult to maintain a continuing public awareness, as the frequency of some events in Australia such as earthquakes and tsunami is low; and
- ensuring that national publicity campaigns to develop and maintain public awareness of existing and new disaster resilience capabilities are nationally consistent, but allow for appropriate tailoring of the message to suit each State. For instance, in recognition that while each State faces a range of risks of natural disasters, the risks of particular hazards (i.e. fire or cyclone) varies significantly between them.

## Priority for action 4

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 4: Core indicator 1

*Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

\* Is there a mechanism in place to protect and restore regulatory ecosystem services? (associated with wet lands, mangroves, forests etc) Yes

\* No: Protected areas legislation

\* No: Payment for ecosystem services (PES)

\* No: Integrated planning (for example coastal zone management)

\* No: Environmental impacts assessments (EIAs)

\* No: Climate change adaptation projects and programmes

#### **Description:**

Historically, the size, severity, timing, location and impact of disasters have been difficult to predict. Although risk management approaches go some way to understanding hazards and supporting risk reduction, warnings that climate change is likely to see weather patterns become less predictable and more extreme increase the uncertainty about Australia's future risk profile.

Land-use planning in respect to the challenges posed by climate change is an important element of work underway by a number of Australian Government agencies working collaboratively together.

One example is in the area of targeted climate change vulnerability assessment as a part of the National Coastal Vulnerability Assessment project. This work is led and funded by the Department of Climate Change and Energy Efficiency, and includes contributions from Commonwealth and State and Territory government agencies, as well as academic, research and commercial organisations. Geoscience Australia's contribution aimed to provide indicative, quantitative estimates of the potential impacts to residential buildings and basic infrastructure in coastal areas from sea-level rise projections combined with information on storm tides (where available) on a national scale.

The work of the Bureau of Meteorology, described elsewhere in this report, also informs the work underway in the area of adaption to climate change.

#### **Context & Constraints:**

The Department of the Environment, Water, Heritage and the Arts develops and implements national policy, programs and legislation to protect and conserve Australia's environment.

The Department of Climate Change and Energy Efficiency leads the development and coordination of Australia's climate change policies in three areas: mitigation policy through domestic emissions reduction; adaptation to the unavoidable impacts of climate change; and helping to shape a global solution through Australia's international climate change strategy.

Environment related policies and plans, including those associated with land use, natural resource management and adaptation to climate change, are generally the responsibility of the States and Territories. These include measures to protect and restore regulatory ecosystem services associated with wet lands, mangroves and forests, coastal zone management, environmental impacts assessments and climate change adaptation projects and programmes.

#### **Priority for action 4: Core indicator 2**

*Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Do social safety nets exist to increase the resilience of risk prone households and communities? Yes
- \* Yes: Crop and property insurance
- \* No: Employment guarantee schemes
- \* No: Conditional cash transfers
- \* Yes: DRR aligned poverty reduction, welfare policy and programmes
- \* No: Microfinance
- \* No: Micro insurance

#### **Description:**

The Australian Government is responsible for a diverse range of programmes and services designed to support and improve the lives of many of the most vulnerable Australians including financial support in a crisis, closing the gap on Indigenous disadvantage, reducing homelessness and making housing more affordable. Examples include:

- Australian Government programmes managed by the Department of Families, Housing, Community Services and Indigenous Affairs have a broad purpose of supporting and strengthening social cohesion in communities. This work encompasses an extensive range of programs, a number of which can provide support in a disaster, for example Emergency Relief, Financial Counselling and Family Support. The Department also actively engages with the not-for-profit community sector in regard to these programs and broader policy issues.

- an Attorney-General's Department project to enhance community resilience to natural and man-made

disasters amongst culturally and linguistically diverse (CALD) communities, through increased engagement between these communities and the emergency management sector recently concluded with a National Forum.

The project was funded for four years (2006-2010) through the Australian Government National Action Plan to Build on Social Cohesion, Harmony and Security. Outcomes include:

- the establishment of new relationships and partnerships between government, non-government, CALD community organisations and communities;
- effective engagement and enhanced understanding between the emergency management sector and CALD communities; and
- publication of a booklet 'Participation, Partnerships, Respect and Resilience – National Examples of Emergency Management in a Multicultural Society'.

A project to build on these achievements will be conducted from July 2010 – June 2011. It aims to facilitate research with multicultural youth into emergency management volunteer participation, develop a knowledge network, convert existing community emergency action guides into languages other than English and develop a national partnership to advocate for and support work in this area at a strategic level.

#### **Context & Constraints:**

Other Australian Government programs aim to reduce the vulnerability of those people in the community most at risk. Such programs also contribute to the enhanced disaster resilience of the individual and their family, and therefore contributes to the disaster resilience of the community generally.

For example, the Australian Government provides funding to States and Territories to increase the supply of social housing, with a view to providing approximately 19,300 additional dwellings by 2012 and providing opportunities to grow the not-for-profit housing sector. In response to the Victorian bushfires, the Commonwealth provided \$US2.8 million under the pre-existing \$US5.06 billion Social Housing Initiative towards the building of affordable housing in towns affected by the bushfires.

Other Australian Government programs contribute to reducing the impact of disasters. These include a Crisis Payment: a one off payment provided to people receiving a social security pension or benefit who are in severe financial hardship, such as those affected by a disaster, for example if their home is destroyed by bushfire or flood and they have not received or are ineligible for the Australian Government Disaster Recovery Payment.

The vulnerability of members of the community to the impact of disasters can also be reduced through purchase of insurance policies to insure against losses of income or assets. A large range of insurance policies is available in Australia for businesses and individuals to insure against a wide range of insurable losses. These can include crop and property losses.

A large number of non-government, disaster response organisations were consulted in the process of formulating the National Strategy for Disaster Resilience endorsed by Australian governments in February 2011.

#### **Priority for action 4: Core indicator 3**

*Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Means of verification:**

- \* Are the costs and benefits of DRR incorporated into the planning of public investment? Yes
- \* No: National and sectoral public investment systems incorporating DRR.
- \* No: Investments in retrofitting infrastructures including schools and hospitals

**Description:**

Economic activities both within, and across State borders, are vulnerable to disruption from disasters. Accordingly, the Australian Government, as well as the government of each State and Territory have roles to develop and implement policies and plans to reduce the vulnerability of economic activities. The risk reduction criteria and strategies adopted in the planning of public investment is a matter for the responsible government and its agencies.

Since its commencement, the Australian Government's Critical Infrastructure Program for Modelling and Analysis (CIPMA) has completed a range of scenarios on natural disasters to help enhance Australia's emergency management planning, preparedness, recovery and resilience. These scenarios enable accurate and reliable information to be provided to the owners and operators of critical infrastructure, such as those that provide water, electricity and banking services, thus strengthening the resilience of Australian society and its economy.

CIPMA is a decision making tool that can provide vital information for Government and business operators of critical infrastructure. This tool allows planners, operators and responders to gain a clearer picture of critical vulnerabilities and develop prevention and preparedness plans that will allow for an appropriate response and a quicker recovery in the event of a disaster. For example, if infrastructure was damaged due to a natural disaster within an area that had been modelled by CIPMA, the program would be able to run the scenario and determine the estimated recovery time of the infrastructure damaged or destroyed, the estimated cost of recovery and the flow-on effects of a critical infrastructure service disruption within and across sectors.

The priority sectors for CIPMA at present are banking and finance, communications, energy, transport and water with plans to capture other critical sectors over time.

Geoscience Australia also has the capability to measure economic impacts from a range of disaster events.

**Context & Constraints:**

Since 2009, policy reviews in Australia have recommended that critical infrastructure resilience is a more suitable approach and organising principle for Australian Government critical infrastructure activities, and better reflects the all-hazards approach, as opposed to critical infrastructure protection, which infers a protective security focus.

In June 2010, the Attorney-General launched the Australian Government Critical Infrastructure Resilience (CIR) Strategy, the aim of which is the continued provision of essential services that support Australia's national security, economic prosperity, and social and community wellbeing in the face of all hazards. The Strategy also recognises that disaster resilience would be strengthened where communities have continued access to essential services.

The Trusted Information Sharing Network (TISN) for CIR is one avenue of engagement for this business-government partnership and is a forum in which the owners and operators of critical infrastructure can work together by sharing information on security and resilience issues which affect critical infrastructure. The TISN is made up of a number of groups representing different critical infrastructure sectors, including energy, water, transport, health, food chain, communications and banking and finance.

Work has commenced on the development of a GIS database of Australia's critical infrastructure which will assist in providing decision support to emergency managers and planners.

#### **Priority for action 4: Core indicator 4**

*Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Is there investment to reduce the risk of vulnerable urban settlements? Yes
- \* No: Investment in drainage infrastructure in flood prone areas
- \* No: Slope stabilisation in landslide prone areas
- \* No: Training of masons on safe construction technology
- \* No: Provision of safe land for low income households and communities

#### **Description:**

Planning and management of human settlements including land-use planning and building construction standards are responsibilities of State, Territory and local governments, with a number of non-government organisations also playing important roles. Examples of recent work in this field include:

- in one State, local government is working with the State's fire authority to decide which assets are most at risk from bushfire and what needs to be done to protect them. The risk register uses 'cutting edge' mapping software with local knowledge to quantify and visualise vulnerabilities. Mitigation treatments can then be considered.

- the Australian Building Codes Board ([www.abcb.gov.au](http://www.abcb.gov.au)) is a joint initiative of all levels of government in Australia, with the building industry. It promotes efficiency in the design, construction and performance of buildings through the national Building Code of Australia. Since 2009 it finalised and adopted a new and more effective standard for the design and construction of residential buildings in bushfire prone areas and developed a national Performance Standard for the design and construction of private bushfire shelters.

Australia's building code requires residential buildings in designated bushfire-prone areas to be constructed to reduce the risk of ignition from a bushfire while the fire front passes. Measures are prescribed for assessing the level of bushfire attack and for the design and construction of buildings in order to improve their resistance to ember attack, radiant heat or flame generated by a bushfire.

In the land-use planning arena, Geoscience Australia is supporting the Government's Climate Change Adaptation Program through a continual process to support Australian coastal vulnerability assessments. This includes second-phase, higher-resolution case studies in selected areas and improved access to Geoscience Australia's National Exposure Information System. The organisation's capability in natural hazard risk assessments also informs the development of building codes.

### **Context & Constraints:**

Though the primary responsibility for the effective planning and management of human settlements rests with the State or Territory government in which the settlement is located, the Australian Government contributes indirectly through a number of its programs.

One example is CIPMA (described above) which has commenced work to enable the provision of insights regarding the vulnerability and resilience of electricity transmission lines and dependent communities to extreme heatwaves and bushfires.

CIPMA will examine impacts of extreme weather events and provide strategic analysis into disruptions to essential services. This will assist owners and operators of critical infrastructure assets to better understand the costs and benefits of adaptation to climate change, as well as where and how much to invest in adaptation schemes. CIPMA is committed to engaging with key industry stakeholders to help ensure that the owners and operators of critical infrastructure are better prepared for the risks that climate change presents.

### **Priority for action 4: Core indicator 5**

*Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes*

### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

### **Means of verification:**

- \* Do post-disaster recovery programmes explicitly incorporate and budget for DRR? No
- \* 0 % of recovery and reconstruction funds assigned to DRR
- \* No: Measures taken to address gender based issues in recovery

### **Description:**

Disaster risk reduction measures are integrated into Australian Government post disaster recovery assistance and support to communities and States impacted by disasters.

The Australian Government works to facilitate the early provision of assistance to disaster affected communities through the long-standing Natural Disaster Relief and Recovery Arrangements (NDRRA).

Under the NDRRA, the Australian Government will reimburse a State government half of its expenditure on eligible personal hardship and distress relief assistance to victims (such as for emergency food, accommodation, clothing and replacement of essential household items), psychological and financial counselling and certain long-term recovery measures, once expenditure from an event exceeds a certain threshold. Should a State exceed certain other thresholds, in any one financial year, the Australian Government reimburses up to 75% of eligible State expenditure for all eligible State natural disaster

relief and recovery measures.

The Commonwealth's assistance is intended to complement State measures and strategies in relation to natural disasters, such as insurance and disaster mitigation planning and implementation. To support this approach, a condition of Commonwealth assistance for restoration or replacement of an essential public asset is that the State has developed and implemented natural disaster mitigation strategies in respect of likely or recurring disasters, and has also encouraged local government bodies to develop and implement such strategies.

The Australian Government recognises that it is crucial that post disaster recovery efforts are based on accurate data. Geoscience Australia assists disaster recovery in Australia by providing technical and scientific advice and information to government and the public. This assistance includes the provision of risk and impact analysis, satellite imagery and mapping products.

Geoscience Australia provided the Victorian Bushfires Royal Commission with data on the number of damaged structures from the February 2009 fires in the State of Victoria. It used its Rapid Inventory Collection System for this purpose and also provided advice on the demographic profiles of those affected. Geoscience Australia also supports the Attorney-General's Department by providing advice on how impact and risk information can inform post-disaster recovery and rehabilitation programs so that the Australian community is more resilient to future events.

**Context & Constraints:**

Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes to varying degrees.

Australian governments generally are moving towards a disaster resilience focus and developing related strategies and policies. Anecdotal evidence suggests that this movement includes a focus on disaster risk reduction measures being integrated across the prevention, preparedness, response and recovery spectrum. As part of the resilience-based approach to emergency management, governments are collectively exploring ways to better align recovery arrangements with the resilience agenda. This approach aims to build communities' capacity to prepare for and recover from disasters.

**Priority for action 4: Core indicator 6**

*Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.*

**Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Means of verification:**

\* Are the impacts of major development projects on disaster risk assessed? Yes

\* No: Assessments of impact of projects such as dams, irrigation schemes, highways, mining, tourist developments etc on disaster risk

\* No: Impacts of disaster risk taken account in Environment Impact Assessment (EIA)

**Description:**

The Australian Government is investing in gathering information about national infrastructure and buildings to support hazard risk analysis by governments, businesses and communities. Examples of capabilities and work in this area include:

- a national risk assessment of the vulnerability of Australia's infrastructure to climate change has commenced. The first infrastructure sector to be assessed is transport;
- several case studies have been commissioned to assess the economic costs of climate change adaptation. The first of these studies assesses the likely impact of flooding around the studied area, various adaptation options to reduce the impact, and the timing of implementing measures to achieve maximum benefit;
- the Australian Government report 'Climate Change Risks to Australia's Coasts', released in November 2009, provides the first continental scale mapping of residential buildings at risk from climate change. It also details the risks to coastal infrastructure, services and industry as a result of climate change; and
- Geoscience Australia has the capability to develop an understanding of what assets, business activity and people are exposed to potential or actual disaster events, how vulnerable they are to the hazard and the likely physical and economic consequences. The agency develops engineering, economic and social vulnerability models for the built environment that are representative of buildings, critical infrastructure and the economic activity associated with them.

#### **Context & Constraints:**

The assessment of major development projects is generally the responsibility of the relevant State, Territory and local government. Some significant projects are also subject to assessment by the Australian Government, on environmental and other grounds.

The criteria by which projects are assessed may be specified by the relevant legislation, or developed by the relevant government agency. Such criteria might be relevant to disaster risk impact of the project, such as the type of construction of any structure, safety of the project, impact on neighbouring properties, control of pollution, safety of persons on or in the vicinity of the facility etc.

## Priority for action 5

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 5: Core indicator 1

*Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Are there national programmes or policies to make schools and health facilities safe in emergencies? No
- \* No: Policies and programmes for school and hospital safety
- \* No: Training and mock drills in school and hospitals for emergency preparedness

#### **Description:**

Australian Government policy, technical and institutional capacities for disaster risk management purposes are found in a range of agencies and organisations. The capacities enable each organisation to work towards its own disaster risk management objectives, as well as assisting other Commonwealth and State Government agencies with their work plans, and appropriately engage with the community.

A number of examples of Australian Government agency work are described throughout the report. A further example is the Bureau of Meteorology's Disaster Mitigation Policy Program, the aims of which include:

- to facilitate greater collaboration between the Bureau's Climate, Hydrological, Weather and Oceanographic Services programs with regard to the Bureau Of Meteorology's disaster mitigation activities;
- to ensure ongoing and effective interaction with other Commonwealth and State agencies with which the Bureau Of Meteorology may have a joint role in the provision of Disaster Mitigation services;
- to ensure warning services match and support community and agency action plans;
- to engage in community and agency awareness programs;
- to continue to investigate the implementation of new services in marine weather, air quality, human health and comfort, and enhanced community safety through a focus on natural disaster mitigation;
- to ensure the relevance and visibility of the Bureau Of Meteorology's disaster mitigation related services to the community; and
- to support international disaster mitigation activities - in particular those initiated by the World Meteorological Organisation (WMO) and those supported as part of the International Strategy for Disaster Reduction (ISDR).

State and Territory governments have the autonomy, responsibility for, and capabilities for disaster risk management in their jurisdictions. School and health facility safety, including related policies, programmes and training are the responsibility of the State and Territory government in which the facility is located.

**Context & Constraints:**

Policy, technical and institutional capacities and mechanisms that contribute to disaster risk management exist throughout a range of agencies at all levels of government, as well as the private sector, and the not-for-profit sector.

In the case of warning equipment and technologies for example, the States and Territories have the autonomy to select systems or equipment they consider appropriate in the context of their jurisdiction's hazard profile and operating environment. The Commonwealth does not determine which systems or equipment are adopted or tested by States and Territories, as they are best placed to determine their needs. However the Australian Government draws potential alternative technologies to the attention of States and Territories when it becomes aware of them.

Non-government organisations have a role to play in contributing to the safety of schools and hospitals in emergencies. For example, the February 2009 Victorian Bushfires Royal Commission final report recommends that the Australian Building Codes Board include in the Building Code of Australia bushfire construction provisions for non-residential buildings that will be occupied by people who are particularly vulnerable to bushfires, such as childcare centres, hospitals and aged care facilities.

**Priority for action 5: Core indicator 2**

*Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programmes.*

**Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Means of verification:**

- \* Are the contingency plans, procedures and resources in place to deal with a major disaster? Yes
- \* No: Contingency plans with gender sensitivities
- \* Yes: Operations and communications centre
- \* Yes: Search and rescue teams
- \* Yes: Stockpiles of relief supplies
- \* Yes: Shelters
- \* No: Secure medical facilities
- \* No: Dedicated provision for women in relief, shelter and emergency medical facilities

**Description:**

State and Territory governments have primary responsibility for emergency management in their jurisdictions.

Contingency plans are in place in the relevant Australian Government agencies to meet State and Territory requests for Australian Government assistance arising from any type of emergency or disaster. These plans include the Commonwealth Government Disaster Response Plan (COMDISPLAN), which details procedures for provision of Australian Government assistance through Emergency Management Australia (EMA) in the event of an emergency/disaster in Australia.

EMA maintains a number of hazard-specific contingency plans including:

- managing the reception of persons evacuated into Australia due to disasters or civil unrest in neighbouring countries;
- repatriating and providing care for Australians injured or killed in mass casualty events overseas; and
- coordinating the response to an aviation disaster response within Australia.

EMA also maintains a number of other national contingency plans.

In addition to coordinating Australian Government operations support to the States and Territories, EMA works to enhance plans and arrangements through involvement in multi-agency and multi-jurisdictional exercises. These exercises cover the full spectrum of events including counter-terrorism, mass casualty and major natural disasters.

Australian Government agencies participate in high-level consequence management committees and working groups aimed at identifying and establishing best practice in consequence management.

Preparedness and contingency plans at both the Australian Government and Victorian Government levels were implemented in response to the Victorian bushfires in early 2009. During the response phase, the Australian Government provided a range of physical assistance to the Victorian Government. This included aerial fire-fighting resources, and Australian Defence Force assistance of transportation, provision of field accommodation and support, and supply of heavy machinery and provision of personnel.

### **Context & Constraints:**

Australian governments endorsed the National Catastrophic Disaster Plan in 2010.

The preparation and testing of disaster preparedness plans and contingency plans is the responsibility of the relevant government, private sector firm or not-for-profit organisation.

As indicated elsewhere in this progress report, there are increasing linkages and coordination between all levels of government, industry sectors, and not-for-profit organisations with a view to increased disaster resilience, both within and between jurisdictions and nation-wide. In some jurisdictions there are also regulatory requirements for particular organisations in certain sectors or locations to prepare such plans.

Preparedness is also comprehensively managed in the Australian Government health arena, for examples with measures such as:

: the National Health Disaster Management Capability Audits - conducted regularly to provide an up-to-date 'snapshot' of Australia's health disaster response assets including surge capacity and provide a national assessment of health assets that may be used in an emergency;

: the National Critical Care and Trauma Response Centre in Darwin, Northern Territory, maintains a

state of readiness to respond to a major incident both within the region and for national priorities in the event of a major incident; and

: the National Medical Stockpile was established following the terrorist attacks in the United States of 11 September 2001 and the release of Bacillus anthracis spores in the US in October 2001. It includes counter-terrorism medical counter-measures and pandemic influenza related antimicrobial medicines and immunisations, and a range of personal protective equipment.

### **Priority for action 5: Core indicator 3**

*Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

\* Are financial arrangements in place to deal with major disaster? Yes

\* Yes: National contingency funds

\* No: Catastrophe insurance facilities

\* No: Catastrophe bonds

#### **Description:**

Australian Government financial reserves and contingency mechanisms are in place to support effective response and recovery when required. Examples include:

- under the long-standing Natural Disaster Relief and Recovery Arrangements (NDRRA), the Australian Government will reimburse a State government half of its expenditure on eligible personal hardship and distress relief assistance to victims (such as emergency food, accommodation, clothing and replacement of essential household items); psychological and financial counselling and certain long-term recovery measures, once expenditure from an event exceeds a certain threshold. Should a State exceed certain other thresholds, in any one financial year, the Australian Government reimburses up to 75% of eligible State expenditure for all eligible State natural disaster relief and recovery measures.

- Australian Government measures such as the provision of specified payments with differing purposes and criteria for eligibility for payment, including Crisis Payment, Special Benefit and Bereavement Allowance.

- managed disaster recovery assistance measures under the Australian Government Disaster Recovery Arrangements for onshore and offshore disasters and critical incidents, encompassing:

: activation of the Australian Government Disaster Recovery Payment, which provides one-off immediate financial assistance to Australians adversely affected by major disasters;

: implementation of tailored ex-gratia disaster recovery assistance as required;

: administration of ongoing recovery assistance packages following Bali 2002 and Bali 2005 bombings;

: pandemic preparedness activities; and

: maintenance of the Disaster Assist Website ([www.disasterassist.gov.au](http://www.disasterassist.gov.au)); and

- Australian Government agencies working closely with State government, local government and community organisations to support affected communities when required.

Recently, large areas of Australia were significantly affected by a series of severe weather events which began in December 2010 and continued through January and February 2011. Major flooding had a devastating impact across six States, as well as category five Cyclone Yasi in Queensland and bushfires in Western Australia. A number of deaths in Queensland and Victoria occurred due to these events. Flooding in Queensland was amongst the worst in living memory and three quarters of the State was declared a disaster zone. Cyclone Yasi destroyed critical infrastructure across Queensland including power supply, communications and roads.

The cost of the recovery will be substantial. The Australian Government is providing more than \$US6b for flood and cyclone affected regions across Australia, with the vast majority being invested in re-building damaged public infrastructure, such as roads, bridges and schools. The Government provided extensive support to those who have been affected by these disasters, including through the Australian Government Disaster Recovery Payment and the Disaster Income Recovery Subsidy (see [www.disasterassist.gov.au](http://www.disasterassist.gov.au)). The Australian Defence Force contributed to the whole-of-Government effort in response to the impact of Cyclone Yasi.

### **Context & Constraints:**

The Australian Government, through the Department of Families, Housing, Community Services and Indigenous Affairs has a number of relevant mainstream programmes that can also be used as flexible programme approaches to support Australian Government disaster recovery responses in major disasters. These include the Emergency Relief Program; Family Support Program; support for early childhood services in disaster affected communities; support for young people; and a community investment programme.

The Australian Government Emergency Relief Financial Management Program also provides funding to community organisations to provide support to address immediate needs in a time of crisis including food parcels, clothing, vouchers, help with accommodation and bills and sometimes cash. It also provides appropriate referrals to other services that help to address the underlying causes of financial crisis.

An example is the additional funding of \$US5m provided to 171 Emergency Relief organisations to help service providers meet the increased demand for emergency relief in bushfire affected areas in the state of Victoria in 2009 and to link clients with other community supports to help their recovery.

The Department of Health and Ageing has a range of contingency mechanisms in place to support effective response and recovery when required. These include:

- the Australian Health Protection Committee, the peak health emergency body made up of representatives from the jurisdictions and the Commonwealth, which advises the Australian Health Ministers' Advisory Council on Australia's preparedness for health emergencies, approaches to address any deficits, and to coordinate the national health response to significant incidents.
- the National Health Emergency Response Arrangements, which describe the strategic cooperative and collaborative mechanisms for emergency management response and recovery coordination for the Australian health sector; and
- the Health Security and Counter-Terrorism Response Capability programme assists Australia's network of public health laboratories to respond to bioterrorism events and diagnose outbreaks of infectious

disease, through funding for new equipment and training.

#### **Priority for action 5: Core indicator 4**

*Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews*

#### **Level of Progress achieved:**

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### **Means of verification:**

- \* Has an agreed method and procedure been adopted to assess damage, loss and needs when disasters occur? No
- \* No: Damage and loss assessment methodologies and capacities available
- \* No: Post disaster need assessment methodologies
- \* No: Post disaster needs assessment methodologies include guidance on gender aspects
- \* No: Identified and trained human resources

#### **Description:**

The Australian Government 2008 Homeland and Border Security Review highlighted the need for the establishment of an all-hazards Crisis Coordination Centre to provide a central point of coordination and management. The Centre is currently under development. It will provide whole-of-government information coordination and decision-support to the Australian Government Crisis Committee, and other committees and agencies during a crisis.

The Australian Government and its agencies conduct post-event reviews of its response to hazard events.

An example of this is to identify lessons from the local community response to the devastating 2009 Victorian bushfires, where a number of communities drew on existing community development structures to establish sub-committees focussing on the response to the disaster. In time, those sub-committees will be subsumed back into the ongoing community arrangements. This is an excellent example of established frameworks which support community resilience on all fronts (including disasters).

Such post-disaster assessments are undertaken after natural disaster events of significance and the findings incorporated into improved disaster management processes to deal with future events, focussing on both emergency management aspects and community welfare issues.

Geoscience Australia is able to support State and Territory agencies with mapping support for major bushfire events, and other natural disasters when Commonwealth support is both appropriate and has been sought. Geoscience Australia has expertise and capabilities in the assessment of risk and damage, and provide estimates of the extent of damage to infrastructure.

Australian Government agencies are working to implement natural disaster risk assessment and data collection reforms with a view to achieving a better-informed whole of government approach to the

management of risks posed by natural hazards.

**Context & Constraints:**

Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews.

The Australian Government fosters the sharing of national and international issues, key lessons learned, best practice and innovation through the initiation, chairing or sponsoring of topical emergency management forums.

Relevant information is exchanged during and after events, at a number of levels: within and between agencies of the Australian Government; within and between agencies in each State and Territory government; and at a national level, between the Australian Government and State and Territory governments. These arrangements continue to evolve, as described above.

It is important to note that post-event reviews are a matter for the government of the jurisdiction where the event occurred to decide what, if any review will be conducted, and if so, the form it should take and Government consideration of any recommendations from it.

Learnings from the experience can be shared through the existing extensive inter-agency liaison mechanisms.

A number of Australian Government agencies also operate facilities to assist with the monitoring and response to hazards across the all hazard spectrum and exchange of information. One example is the Department of Health and Ageing:

- the Department's National Incident Room (NIR) is Australia's National Focal Point for communication with the World Health Organization under the provision of the International Health Regulations 2005.
- under existing voluntary arrangements, State and Territory public health officials contact the Department through the NIR if a communicable disease or other health event has potential national or international significance.
- the NIR operates 24 hours a day, 7 days a week and enables efficient coordination of emergency response personnel, and facilitates communication between Australian Government agencies, state and territory health authorities and international organisations. The NIR was the national coordination point for Australia's response to Pandemic H1N1 2009 influenza.

## Drivers of Progress

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### a) Multi-hazard integrated approach to disaster risk reduction and development

#### Levels of Reliance:

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

#### Do studies/ reports/ atlases on multi-hazard analyses exist in the country/ for the sub region?:

Yes

#### If yes, are these being applied to development planning/ informing policy?:

Yes

#### Description (Please provide evidence of where, how and who):

There is continuing work by the Australian Government to work towards an 'all-hazards' approach to disaster risk reduction and development. This is reflected in the strategic policy development on various aspects of disaster resilience underway; the evolution of the critical infrastructure protection program to one of critical infrastructure resilience; and the closer cooperation and linkages between national security and non-national security elements in the government sector.

Necessarily this work requires close consultation with all stakeholders, particularly the governments of the States and Territories and their agencies, as well as the local government sector, private sector and the not-for-profit sector.

### b) Gender perspectives on risk reduction and recovery adopted and institutionalized

#### Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

#### Description (Please provide evidence of where, how and who):

The development of strategic policies in the disaster resilience arena by the Australian Government in consultation with other levels of government currently underway have not included a specific gender perspective to the risk reduction and recovery elements of those policies.

A consideration of gender may be relevant in the implementation of certain risk reduction and recovery measures adopted by State, Territory or local government level agencies.

For instance, in response to a disaster in one State there has been a program of activities that has allowed men to relax in a supportive environment as part of their personal recovery. Another program has funded over sixty groups of women to gather regularly, have fun and support each other. Both initiatives help the individual, and the community in which they live, to re-build.

### c) Capacities for risk reduction and recovery identified and strengthened

#### Levels of Reliance:

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

#### Description (Please provide evidence of where, how and who):

As discussed throughout this report, capacities for risk reduction and recovery are the responsibility of the government of the relevant jurisdiction.

However cooperative arrangements are in place to share knowledge, information and experience, within and between governments, their agencies and in the private and not-for-profit sectors.

Examples include:

- the critical infrastructure resilience programme, including the Critical Infrastructure Program for Modelling and Analysis (CIPMA) described above;

- the National Aerial Firefighting Arrangements, which are a collaborative arrangement between the Australian and State and Territory Governments to bolster Australia's firefighting capabilities.

These national arrangements enable the coordination and procurement of a fleet of specialised firefighting aircraft that can be strategically positioned across Australia in areas experiencing high fire risk. Aerial resources provide valuable support for ground based firefighting crews and the national fleet comprises a range of rotary and fixed wing aircraft including several high capacity air cranes. The aircraft can be redeployed to areas experiencing high fire risk, thus increasing the level of protection afforded to threatened communities.

The National Aerial Firefighting Arrangements afford a cooperative national approach to sharing costly, specialised resources that may otherwise be out of reach of individual jurisdictions. They are a clear example of Australia's firefighting and land management agencies successfully working together to enhance Australia's capacity to manage bushfires.

- in the bushfire arson arena, a national Work Plan to Reduce Bushfire Arson in Australia has been developed jointly by the Commonwealth, States and Territories to institute a more preventative and collaborative approach to reducing bushfire arson. It specifically focuses on activities that will benefit from a national approach and from sharing resources and expertise; and

- the recently completed Australian Government funded study conducted by States and Territories on managing goods donated in times of disaster recovery.

#### **d) Human security and social equity approaches integrated into disaster risk reduction and recovery activities**

##### **Levels of Reliance:**

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

##### **Description (Please provide evidence of where, how and who):**

Human security and social equity aspects are integrated into disaster risk reduction and recovery activities, but like many areas in the disaster resilience arena, enhancements are constantly being made.

Examples include:

- Australian Government emergency management programs, such as 'Inclusive Emergency Management with Culturally and Linguistically Diverse Communities programme (2006-2010) and a national programme (2010/11) focus on building capacity at local level through increased engagement between the emergency management and culturally and linguistically diverse (CALD) community sectors to encourage mutual learning and understanding. The 2010/11 national program involves multicultural

youth in identifying ways to address recruitment, support and retention of emergency management volunteers; to translate emergency management action guides into languages other than English for newer communities; and build an emergency management knowledge network to promote exchange and promotion of good practice initiatives specific to CALD communities;

- the development of the National Emergency Management Strategy for Remote Indigenous Communities: 'Keeping Our Mobs Safe'; and

- the many programmes managed by the Department of Families, Housing, Community Services and Indigenous Affairs, that support human security and social equity generally, including several programmes which provide support for disaster-affected persons.

It may be expected that the work currently underway to develop and implement over-arching strategies across governments for disaster resilience and recovery will lead to further opportunities for the integration of human security and social equity aspects into disaster risk reduction and recovery activities.

### **e) Engagement and partnerships with non-governmental actors; civil society, private sector, amongst others, have been fostered at all levels**

#### **Levels of Reliance:**

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

#### **Description (Please provide evidence of where, how and who):**

Protecting communities from the impact of disasters is a shared responsibility that cannot be borne by governments alone.

The Australian Government recognises that non-government and community organisations are at the forefront of strengthening disaster resilience in Australia. The dedicated work of these organisations is critical for helping communities to cope with and recover from a disaster. Businesses also can and do play a fundamental role in supporting the community's resilience to disasters. They provide resources, expertise and many essential services on which the community depends. Businesses, including critical infrastructure providers, make a contribution to the nation's disaster resilience by understanding the risks they face and ensuring that they are able to continue providing services during or soon after a disaster.

As part of the Australian Government's role in supporting disaster resilience, it supports preparedness through building capacity of non-government organisations, third party service providers and businesses by raising awareness of business continuity planning and training. This includes the Managing Spontaneous Volunteers project, development of the Pandemic Influenza Business Continuity Planning Kit and provision of training to assist non-government organisations better prepare for a potential human influenza pandemic in Australia.

The National Volunteer Strategy also aims to support and recognise the many and varied contributions of volunteering across Australia, including in emergency management and recovery.

Australian Government emergency management programmes, such as Inclusive Emergency Management with Culturally and Linguistically Diverse (CALD) Communities programs focus on building capacity through increased engagement and the building of partnerships with non-government and private multicultural organisations including peak national organisations and CALD community leaders and members.

Governments recognise the importance of the private sector in maintaining essential services for the community. The Australian and State and Territory Governments have programmes to assist the private sector to improve their disaster resilience. At the Australian Government level this is through the Critical Infrastructure Resilience Strategy.

## **f) Contextual Drivers of Progress**

### **Levels of Reliance:**

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

### **Description (Please provide evidence of where, how and who):**

There has been significant work by the Australian Government and its agencies over the past two years to articulate disaster resilience strategic policy, capability development and emergency management responsibilities and allocate resources between them. These revised arrangements have facilitated greater clarity of those functions and more emphasis on strategic policy development and consultation between partner agencies.

As described throughout this report, work is underway on several national policies on disaster resilience related issues. It is expected that one of the results of this work will be that disaster resilience becomes increasingly embedded in other government policies and programmes, and cascades over time to the private sector and the not-for-profit sector.

# Future outlook

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## Area 1

*The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.*

### **Overall Challenges:**

Previous policy settings have focussed on emergency response rather than fostering self-reliance. This resulted in an expectation from communities that they will be protected from hazards absolutely. The emergency management community is under pressure from an ever increasing demand by the Australian community for its services, a likely increase in risk from man-made and natural hazards, while working with finite resources.

The complexity, interconnectedness and evolving nature of the threats Australia faces has demanded this shift. Individuals need to know and understand their risks and feel empowered to take responsibility for their own decisions and actions, with information and support from government.

### **Future Outlook Statement:**

In the face of a likely escalation in disaster risk, protecting Australia from the impacts of a range of threats is a shared responsibility. It cannot be borne by any single agency, organisation, or sector in isolation. Rather, an integrated, whole of nation effort is required to make Australia better able to withstand a crisis and have an enhanced ability to recover from impacts.

The concept of building resilience represents a complex policy problem that will require new responses by the emergency management community that take advantage of a broader set of policy levers across government, including climate change policies, land use planning policies, and building codes.

In December 2009, the Council of Australian Governments agreed to a new whole-of-nation, 'resilience' based approach to natural disaster policy and programs, which recognises that a disaster resilient community is one that works together to understand and manage the risks that it confronts. This approach will improve our ability to prevent, prepare for, respond to and recover from disasters across social, economic, environmental and governance elements.

Strengthening Australia's disaster resilience is not a stand-alone activity that can be achieved in a set timeframe, nor can it be achieved without a joint commitment and concerted effort by all sectors of society. By working in partnership with all levels of government and the non-government sector, we can build on our current strengths and capabilities, better understand the risks we face and allocate our resources accordingly.

Through the development and subsequent implementation of the Strategy, we hope to see a more disaster resilient Australia, with sectors that work together with a united focus and a shared sense of responsibility to improve resilience, and communities that are informed and well prepared to understand and manage the risks that they confront.

## Area 2

*The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.*

### **Overall Challenges:**

As Australia's previous Hyogo Framework for Action progress report noted that Australia's emergency management sector considered that there was a need for a fundamental shift from a community dependent on government services to a community that more closely participates in emergency planning, preparedness, response and recovery and is, to some degree, self-reliant.

Since then, the development and strengthening of institutions, mechanisms and capacities at all levels, that can systematically contribute to building resilience to hazards has been a focus of the attention of all Australian governments.

Australia has adopted a resilience-based approach to disaster management, which recognises that protecting communities from the impacts of disasters is a shared responsibility among all sectors of society and at all levels of government.

This approach envisages that individuals, households, businesses, governments and communities will grow to recognise and understand current and potential future risk, take action to reduce exposure and vulnerability, and be better able to respond, recover from and adapt to change from emergencies and disasters of all types.

This approach is underpinned by four key themes: (1) a new resilience-based strategic direction and framework to guide national policy and programmes for natural disaster arrangements and the governance structures to support these; (2) improvements to the efficiency and effectiveness of funding arrangements for natural disaster mitigation, relief and recovery activities; (3) ways to strengthen coordination and partnerships between governments, including arrangements for delivery of human relief and recovery services to disaster-affected communities and individuals, and arrangements for Commonwealth physical support to a State or Territory led disaster response; and (4) improvements to national emergency management capabilities.

#### **Future Outlook Statement:**

It is expected that the work by governments described throughout this report, and further initiatives to be commenced in the future, will pay dividends with the strengthening of institutions, mechanisms and capacities at all levels.

However, there are significant challenges to be faced, as outlined in this report.

### **Area 3**

*The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

#### **Overall Challenges:**

The response to disasters and the reconstruction of disaster affected communities will continue to be primarily a responsibility of the government of the State or Territory in which the disaster occurs. Australian Government assistance with reconstruction will be offered in accordance with agreements between governments at the time of the disaster.

A continuing challenge for the future will be bringing together the range of aspirations for emergency management and disaster resilience between the three tiers of government in Australia, and more fully engaging the private sector, non-government agencies and individuals.

#### **Future Outlook Statement:**

Australia is continuing to reform its approach to managing disaster risk to improve the resilience of individuals, communities, businesses and countries in our region.

Such resilience will enable communities to adapt to change, reduce their exposure to risks, and allow them to bounce back from disasters. State and Territory governments have primary responsibility for managing domestic disaster risk. The Australian Government will continue to provide national leadership, funding and coordination for State and Territory governments, ensuring the nation can manage disaster risks, that there is equity and a consistent level of service delivery across the nation and that the costs of disasters are shared equitably.

The strategic outcome and community benefit of successfully managing disaster risk is an increase in the resilience and a reduction in harm to our society, environment and economy.

# Stakeholders

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## Departments/organizations that have contributed to the report

- \* Department of Foreign Affairs and Trade (Gov) - [www.dfat.gov.au](http://www.dfat.gov.au)
- \* AusAID (Gov) - [www.ausaid.gov.au](http://www.ausaid.gov.au)
- \* Geoscience Australia (Gov) - [www.ga.gov.au](http://www.ga.gov.au)
- \* Bureau of Meteorology (Gov) - [www.bom.gov.au](http://www.bom.gov.au)
- \* Dept of Families, Housing, Community Services... (Gov) - [www.fahcsia.gov.au](http://www.fahcsia.gov.au)
- \* Department of Climate Change and Energy Efficiency (Gov) - [www.climatechange.gov.au](http://www.climatechange.gov.au)
- \* Department of Health and Ageing (Gov) - [www.health.gov.au](http://www.health.gov.au)
- \* Australian Building Codes Board (Gov) - [www.abcb.gov.au](http://www.abcb.gov.au)
- \* Bushfire Cooperative Research Centre (Acad & Research) - [www.bushfirecrc.com](http://www.bushfirecrc.com)
- \* Attorney-General's Department (Gov) - [www.ag.gov.au](http://www.ag.gov.au); [ema.gov.au](http://ema.gov.au); [emergency.alert.gov.au](http://emergency.alert.gov.au);
- \* Attorney-General's Department (Gov) - [www.disasterassist.gov.au](http://www.disasterassist.gov.au)