

# Risky Business

Insurance and Natural Disaster Risk Management

Suncorp Personal Insurance Public Policy



One Company  
Many Brands



# Foreword



There's little doubt that Australia has faced an unprecedented series of natural disasters in recent years. The so called *Summer of Disasters* in 2011 has brought home to us all the power of flood, earthquake, cyclone and bushfire.

The response to these disasters continues to astound me. Thousands of emergency response personnel swung into immediate action and since then, a small army has been hard at work rebuilding homes and infrastructure.

In Queensland alone, Suncorp has put through more than 40,000 disaster claims, valued at just over \$1 billion. The Queensland Reconstruction Authority is also making good headway, with \$7 billion dollars of work in the pipeline or already completed.

The community itself has also been astonishing, with thousands of families picking up the pieces and getting on with rebuilding their homes and livelihoods.

Sadly however, many homes remain exposed to the harsh impacts of natural disaster. In the townships of Roma and Emerald, Suncorp assessors have visited some homes three times in as many years.

In my mind, repeated natural disaster damage is simply unacceptable. After speaking with our customers, and seeing the emotional stress that comes with having your home repeatedly destroyed by flood water, I believe we need to do better.

Recently, Suncorp has stopped accepting new customers in Roma and Emerald. This decision was hard to make, we would much prefer to offer insurance to anyone that wants it.

The fact is however, that repeated floods have caused costly damage in Roma and Emerald and these costs have translated into higher insurance premiums. Ultimately, no matter how Suncorp goes about business, higher claims costs will always drive higher insurance premiums.

Recognising that insurance premiums were increasing significantly, and that many homes remain exposed to unacceptably high risks, Suncorp decided to stop accepting new customers in Roma and Emerald.

Our goal was to drive action around protecting Roma and Emerald against the costs, both economic and social, of repeated disaster. With appropriate mitigation in place, the risks would reduce and Suncorp could lower our insurance premiums.

The circumstances in Roma and Emerald are not unique. The risks associated with natural disaster are rapidly increasing right around Australia, but investment in mitigation is not.

We all know that bushfires, cyclones and floods are a part of living in Australia.

So the question is: Why aren't we ready?

I asked my team to examine what Australia can do better. In this paper, Suncorp puts forward the facts, the ideas, and the recommendations that we hope will allow us to protect what matters and create a brighter future for Australia.

## **Mark Milliner**

Chief Executive Officer,  
Suncorp Personal Insurance

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# About the Suncorp Group

The Suncorp Group of companies or simply 'Suncorp' is one of Australia's leading financial services groups. Our portfolio of leading brands offer financial services products across personal insurance, commercial insurance, banking, life insurance and superannuation, all with the aim of creating brighter futures for our customers, staff, shareholders, and the community.

Suncorp has five core businesses: Personal Insurance; Commercial Insurance; Vero New Zealand; Suncorp Bank and Suncorp Life. These are supported by corporate and shared services divisions. Collectively, the Suncorp Group has around 16,000 employees and holds relationships with more than nine million customers.

## Suncorp Personal Insurance

Suncorp includes Australia's largest general insurance business in terms of gross written premium. The key to Suncorp's success in personal insurance is its portfolio of well known brands. AAMI, GIO, Suncorp, Apia and Shannons are some of the brands in the Suncorp Group that have built reputations for insurance innovation, outstanding customer service and trustworthy products.

Suncorp's personal insurance products aim to protect what matters to our customers. Suncorp offers motor, home and contents, travel, boat, motorbike and caravan insurance. Over the 2010-11 financial year, the Suncorp Group paid more than \$9.3 billion in claims. That's more than \$25 million each and every day.

# Executive Summary

The recent series of natural disasters worldwide has highlighted that natural disaster risk is rapidly changing. Increasingly intense weather, sustained economic growth, urbanisation and population shifts towards coastal regions have combined to increase exposure to natural hazard risks.

In Australia, these changing risks have been demonstrated recently through the 2011 Summer of Disasters in Queensland and the 2009 Victorian Bushfires in Victoria. Combined, these events demonstrated the widespread social and financial costs associated with increasing natural disaster risks. Claims payments resulting from these disasters now total more than \$4.8 billion.

Insurance has protected the Australian community from the immediate and severe cost impact of these disasters. Insurance does not however, protect communities from the widespread escalation of disaster risk. As disaster risk increases, the financial costs of recovery will also increase which in turn drives higher insurance premiums. High insurance premiums can place financial pressure on many families and lead to under-insurance and non-insurance in the community.

To alleviate the cost of living pressures associated with increasing disaster risk, a national coordinated approach to disaster risk management is needed. Australia's current investment in disaster prevention has not kept pace with Australia's increasing natural disaster risk profile. As a result, some communities are now exposed to unsustainably high levels of natural disaster risk. A coordinated effort is required to drive forward disaster risk reduction and improve Australia's overall approach to Natural Disaster Risk Management.

Consistent regulations, easily accessible natural hazard risk information, improved land-use planning systems, stronger building codes, robust mitigation programs and post-disaster improvements to infrastructure are just some of the things that can be changed to significantly reduce disaster risks. Communities that implement improved Natural Disaster Risk Management practices will not only benefit by avoiding the costs associated with natural disaster, but will also be rewarded with lower insurance premiums.

The shared responsibility approach to Natural Disaster Risk Management states that government, industry and the community all have a role to play, working together to prevent natural hazards from becoming natural disasters. It is our hope that a nationally coordinated approach to Natural Disaster Risk Management will enable more effective action from industry and the community. Working together, Australia will be able to more effectively respond to natural disaster risk exposures and avoid the consequences of severe natural hazard events in the future.

# Natural Disaster Risk

## Summary

Australia's natural disaster risk profile has increased significantly in recent years, and this trend appears likely to continue. More frequent extreme weather events, economic growth, urbanisation and population shifts towards high risk areas have all combined to dramatically increase Australia's risk exposure. The chance that natural hazard will become natural disaster is greater than ever.

Natural hazards are a fact of life in Australia. Each and every Australian is exposed to some level of risk associated with bushfire, flood, storm, cyclone, landslide or earthquake. In many ways, Australian's are accustomed to this risk. The 'Australian Stories' section of Australia.gov.au even features our natural disaster history alongside national treasures such as the Great Barrier Reef, Kakadu National Park and our unique flora and fauna.<sup>1</sup>

Natural hazards however, can quickly become natural disasters and should not be underestimated. The harsh reality of disaster has been demonstrated by both the 2009 Victorian Bushfires and the 2010/11 Summer of Disasters in Queensland. The emotional, social and financial cost of these events cannot easily be described.

The Council of Australian Governments defines disaster to be "A serious disruption to community life which threatens or causes death or injury in that community and/or damage to property..."<sup>2</sup> It is both the hazard itself, and the community's ability to cope with that hazard, that determines when a natural hazard becomes a natural disaster.

In Australia, this risk of natural hazard becoming natural disaster is rapidly increasing. More frequent extreme weather events, economic growth, urbanisation and population shifts have all contributed to this change in risk.

## Weather

Extreme weather events are becoming increasingly frequent and severe in Australia. Data from the Insurance Council of Australia (ICA) and the Intergovernmental Panel on Climate Change (IPCC) shows that the number and intensity of extreme weather events is increasing.

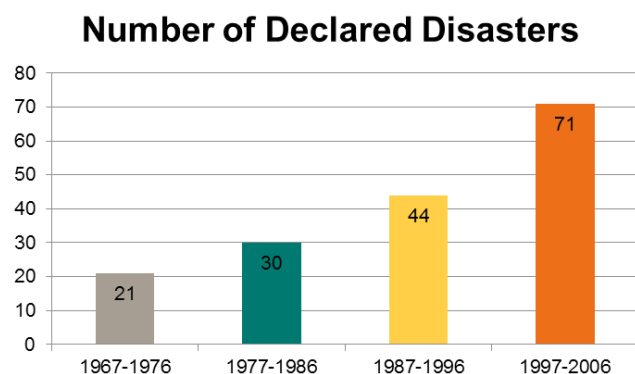
The ICA declares a disaster when insured losses associated with an event exceeds \$10m. Figure 1 shows the number of declared weather disasters by decade, starting when records began in 1967.

The IPCC Fourth Assessment Report in 2007 considered the question *has there been a Change in Extreme Events like Heat Waves, Droughts, Floods and Hurricanes?* Responding:

Since 1950, the number of heat waves has increased and widespread increases have occurred in the numbers of warm nights....Generally, numbers of heavy daily precipitation events that lead to flooding have increased, but not everywhere. Tropical storm and hurricane frequencies vary considerably from year to year, but evidence suggests substantial increases in intensity and duration since the 1970s...<sup>3</sup>

In 2011, the Climate Commission further warned that south-east Australia can expect longer bushfire seasons and an increased number of heavy precipitation events in the future.<sup>4</sup> The increasing frequency and intensity of extreme weather events has a significant effect on Australia's risk exposure to disaster risk.

**Figure 1 – Frequency of Declared Disasters**



Note: Graph derived from: Historical Disaster Statistics, Insurance Council of Australia, available: <http://insurancecouncil.com.au/industry-statistics-data/disaster-statistics> (Accessed: 25/06/2012)

1 See: <http://australia.gov.au/about-australia/australian-stories/natural-environment>

2 *National Strategy for Disaster Resilience*, Council of Australian Governments, February 2011, p. 22, Available: <http://www.em.gov.au/Documents/1National%20Strategy%20for%20Disaster%20Resilience%20-%20.pdf>.PDF (Accessed: 25/06/2012)

3 *Climate Change 2007: Working Group I: The Physical Science Basis*, Intergovernmental Panel on Climate Change, Solomon, S. Et al, 2007, available: [http://www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/faq-3-3.html](http://www.ipcc.ch/publications_and_data/ar4/wg1/en/faq-3-3.html)

4 *Grim warning on extreme weather for Australia*, Climate Commission, 21/11/2011, Available: <http://climatecommission.gov.au/media-releases/grim-warning-on-extreme-weather-for-australia/> (Accessed: 25/06/2012)



Photo: Severe storms cause roof damage in The Gap, Brisbane on 16 November 2008.

**Suncorp Customer Response Team**

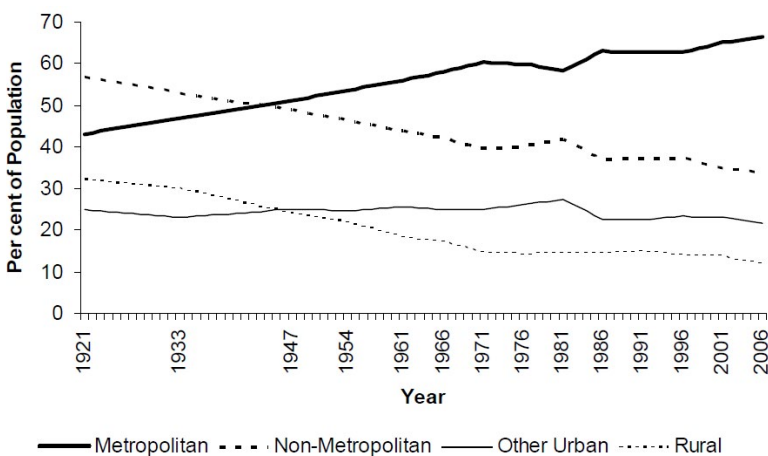
**Economic Growth**

Sustained economic growth in Australia has created increased demand for larger, more valuable homes. The Australian Bureau of Statistics (ABS) building activity data shows that, over the twenty years to 2008, the cost of building a new home increased nearly fourfold, with the size of new homes increasing by almost a third.<sup>5</sup>

New Australian homes are now the largest in the world. Research conducted by Commonwealth Securities has found the average size of new Australian homes in 2008-09 was 214.6m<sup>2</sup>. Australian homes are well ahead of our nearest competitor the United States at 201.5m<sup>2</sup> and are 2.8 times larger than new homes in the United Kingdom, at just 76.0m<sup>2</sup>.<sup>6</sup>

The trend towards larger, more valuable homes has an obvious influence over natural disaster risk. Larger homes increase the potential for damage to occur, and higher values increase repair costs post-disaster.

**Figure 2 - Australia: Changing Distribution of the Population between Urban and Rural Sectors, 1921-2006**



Source: Demographic Change and Liveability Panel Report, Hugo, G et al., December 2010, p.49, available: <http://www.environment.gov.au/sustainability/population/publications/pubs/demographic-panel-report.pdf> (Accessed: 26/06/2012)

5 A twenty year history of the cost of building a new house, Australian Bureau of Statistics, 18/10/2011, Available: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/8752.0Feature%20Article1Dec%202008?opendocument&tabname=Summary&prodno=8752.0&issue=Dec%202008&num=&view=> (Accessed: 26/06/2012)

6 Australian homes are biggest in the world, Commonwealth Securities, 30/11/2009, Available: <http://images.comsec.com.au/ipo/UploadedImages/craigjames3f6189175551497fada1a4769f74d09c.pdf>

## Urbanisation and Population Shifts

Australia is one of the most highly urbanised countries in the world. The Advisory Panel on Demographic Change and Liveability recently highlighted that 87% of Australians live in urban areas, with 4 out of 5 living within 50km of the coast.<sup>7</sup> Figure 2 shows the history of Australia's urbanisation since 1921 based on Australian Census data.

Growing urban populations and the 'sea change' phenomenon is an ongoing trend in Australia. ABS data shows that the population of Australia's capital cities grew at a rate of 1.6% in 2010-11, outpacing the remainder of Australia at 1.2%. Coastal areas are also growing rapidly with populations in the Gold Coast, Cairns, Newcastle and Mandurah again growing substantially in 2010-11.<sup>8</sup>

The combination of increased urbanisation and population shifts towards coastal regions has contributed the overall increase of natural disaster risk. Urbanisation leads to a greater concentration of assets and population shifts place these assets in high risk coastal locations.

### Recommendation

1. In recognition of increasing natural disaster risk, the Council of Australian Government's should implement the National Strategy for Disaster Resilience across all three levels of government.
2. The implementation of this strategy should focus on developing a shared responsibility approach to natural disaster risk management.



Photo: South Brisbane during the Great Flood of 1893

**Photographer Unknown**

<sup>7</sup> *Demographic Change and Liveability Panel Report*, Prof. Graeme Hugo et al., December 2010, p.47, available: <http://www.environment.gov.au/sustainability/population/publications/pubs/demographic-panel-report.pdf> (Accessed: 26/06/2012)

<sup>8</sup> 3218.0 - Regional Population Growth, Australian Bureau of Statistics, 30/03/2012, available: <http://www.abs.gov.au/ausstats/abs@.nsf/Products/3218.0~2010-11~Main+Features~Main+Features?OpenDocument> (Accessed 26/06/2012)



# Natural Disaster Cost

## Summary

As the risks associated with natural hazard events increase, the cost of disaster recovery also increases. This increasing financial risk is driving significant increases to insurance premiums, which in turn places pressure on communities, insurers and governments. While insurance can protect an individual from sudden and extreme financial loss, insurance cannot protect against a community wide escalation of risk.

The cost of natural disaster is difficult to measure. Numbers can be placed on lives, homes and economic impact, but the true level of destruction is difficult to grasp. Whenever considering the cost of disaster, it's important to also remember the *impact*.

The UN Secretary-General's Special Representative for Disaster Risk Reduction, Margareta Wahlström, recently said:

"Over the last twenty years, it is conservatively estimated that disasters have killed 1.3 million people, affected 4.4 billion and resulted in economic losses of \$2 trillion. These are staggering numbers when you consider what it means in terms of missed opportunities, shattered lives, lost housing, schools and health facilities destroyed, cultural losses and roads washed away."<sup>9</sup>

The harsh reality of natural disaster has been recently demonstrated by both the 2009 Victorian Bushfires and the 2010/11 Summer of Disasters in Queensland. The emotional, social and financial cost of these disasters can only be described as extreme. The financial cost of these disasters, being the easiest to measure and communicate, is discussed below, but the emotional and social impact should not be forgotten.

## Financial Cost

The 2009 Victorian Bushfires Royal Commission conservatively estimated the cost of the Black Saturday Bushfires to exceed \$4 billion.<sup>10</sup> The 2010/11 Summer of Disasters is estimated to have damaged Queensland's Gross State Product by \$6 billion dollars.<sup>11</sup>

Repairing the homes, cars, businesses, roads, schools and farms damaged by natural disaster can place a significant burden on communities and individuals. Without external assistance, many communities could not afford to appropriately fund disaster relief and recovery.

Adequate protection against the financial costs of disaster is imperative to getting communities back on their feet post-disaster. In Australia, disaster relief and recovery funding comes from a mix of government expenditure, insurance claims payments and charitable donations. It is difficult to determine the complete amount of disaster recovery funding, however Table 1 shows estimated disaster relief and recovery funding for both the Black Saturday bushfires and Queensland's Summer of Disasters.

**Table 1 – Estimated Disaster Relief and Recovery Funding<sup>12</sup>**

Disaster	Australian Govt	State Govt	Charitable Donations	Insurance Industry
2009 Victorian Bushfires	\$468 m <sup>i</sup>	\$269 m <sup>ii</sup>	\$386 m <sup>iii</sup>	1 070 m <sup>iv</sup>
2010-11 Summer of Disasters (Queensland)	\$5 099 m <sup>v</sup>	1 800 m <sup>vi</sup>	\$266 m <sup>vii</sup>	3 782 m <sup>viii</sup>

Total community expenditure on relief and recovery following the Black Saturday Bushfires and Summer of Disasters is estimated to exceed \$13 billion. This amount is equivalent to roughly 1% of Australia's GDP,<sup>13</sup> or 28% of GST revenue in 2010-11.<sup>14</sup> Certainly, the financial cost of disaster, however it is measured, is significant.

9 UNISDR counts the cost of 20 years of inaction on climate change and risk reduction, United Nations Office for Disaster Risk Reduction, 13/06/2012, Available: <http://www.unisdr.org/archive/27162> (Accessed 25/06/2012)

10 Final Report, Volume 1: Appendix A, The 2009 Victorian Bushfires Royal Commission, July 2010, available: [http://www.royalcommission.vic.gov.au/Finaldocuments/volume-1/PF/VBRC\\_Vol1\\_AppendixA\\_PF.pdf](http://www.royalcommission.vic.gov.au/Finaldocuments/volume-1/PF/VBRC_Vol1_AppendixA_PF.pdf) (Accessed: 26/06/2012)

11 Road to Recovery, Deloitte Access Economics, October 2011 pg. 7 available: <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MTEyOTcyfENoaWxkSUQ9LTF8VHlwZT0z&t=1> (Accessed: 26/06/2012)

12 Note: Disaster relief and recovery funding is highly variable and likely to increase over time. These figures are guides only and do not represent definitive values of disaster recovery. Data sources for this table have listed within the end notes.

13 Key National Account Aggregates, Australian Bureau of Statistics, 28/10/2011, p. 27, available: [http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/DE6B4AD6BFF518BDCA25794A0011FA29/\\$File/52040\\_2010-11.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/DE6B4AD6BFF518BDCA25794A0011FA29/$File/52040_2010-11.pdf) (Accessed: 27/06/2012)

14 Budget Paper No. 1, Australian Government Budget 2012-13, 8/05/2012, p. 5-23, available: [http://www.budget.gov.au/2012-13/content/bp1/download/bp1\\_bst5.pdf](http://www.budget.gov.au/2012-13/content/bp1/download/bp1_bst5.pdf) (Accessed: 27/06/2012)

## Insurance

Australia's general insurance industry provides a safety net against the financial cost of disaster. Following the Summer of Disasters, Suncorp processed around 40,000 insurance claims, valued at just over \$1 billion in Queensland alone. These claims payments are projected to contribute \$1.2 billion and 3700 full time jobs towards the Queensland economy over ten years.<sup>15</sup>

Insurance provides protection against the financial risk of natural disaster by sharing risk across a community. Policyholders (the community) pay a premium into an insurance pool. This pool is then used to fund the recovery of those who suffer an unexpected financial loss. In essence, the premiums of the many pay for the loss of a few, so that no one person suffers an extreme loss.

The sharing of risk across a large number of policyholders allows for extreme financial risk to become an affordable annual premium. It is important to remember that insurance simply spreads the financial risk associated with disaster, it does not reduce it. If the financial risks associated with natural disaster increase, then insurance premiums will also increase.

Over the past decade the relationship between cost of claims and insurance premiums is clear. The increasing level of natural disaster risk, combined with escalating recovery costs are driving significant increases to the premiums every Australian pays for their insurance.

Figure 3 shows home building insurance average claim size, average premium and the Consumer Price Index (CPI) over the past decade. The trend clearly demonstrates that as the average home claim size increases, so does the average home insurance premium. Insurance provides protection against sudden and severe financial loss associated with an event. Insurance does not provide protection against community wide escalation of risk.

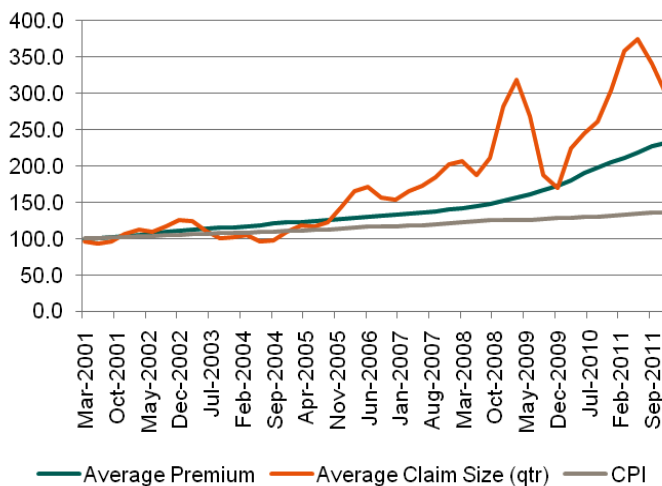


Photo: Goodna home left muddy after the Queensland Floods.

**Sheridan Tighe**

## Insurance Affordability

**Figure 3 - Home Building Insurance - Trend Data**



Notes: Graph derived from trend data published by the Insurance Council of Australia. Available: <http://www.insurancecouncil.com.au/industry-statistics-data/gi-trends-building> (accessed: 22/05/2012)

The numbers in the series do not represent dollar values or frequencies. They represent the percentage change in the index numbers between two consecutive or distant quarters. Source of underlying data: Insurance Statistics Australia. Original data has been indexed to the March quarter 2001 and trended using a 7 term Henderson moving average. The data does not include State or Commonwealth Government taxes and charges.

As average insurance premiums increase at a pace well above that of the CPI, insurance affordability becomes a growing concern. High insurance premiums can lead to under-insurance (not enough cover) and to non-insurance (no cover). Increasing insurance premiums place significant pressure on household budgets forcing policyholders to choose between adequate cover and an affordable premium. Insurance affordability therefore has a range of impacts for the community, insurers and governments.

<sup>15</sup> Road to Recovery, Deloitte Access Economics, October 2011 pg. i available: <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MTEyOTcyfENoaWxkSUQ9LTF8VHlwZT0z&t=1>

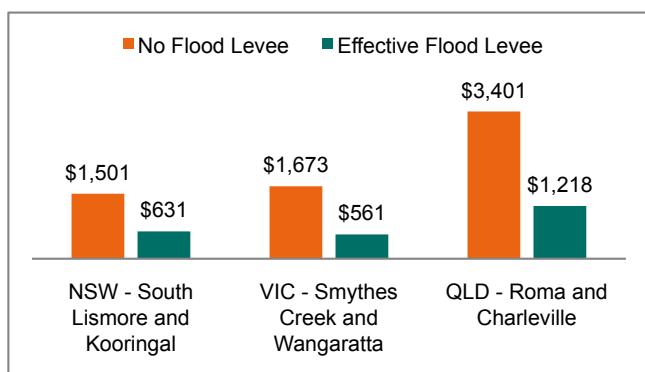
For the community, under-insurance and non-insurance as a result of unaffordable premiums is highly stressful. Without adequate insurance cover, individuals may be forced to bear their own financial loss and pay for home repairs themselves. There are not many families that can afford to rebuild or repair their homes without assistance and most will be forced to rely on family help, charitable donations or government assistance. Some families may enter bankruptcy.

For insurers, lower demand for insurance reduces the potential size of the insurance market. As premiums increase with risk, there are fewer potential customers in the market. A smaller insurance market is less commercially viable as there are fewer policyholders to spread risk, resulting in more volatile losses. Higher premiums may also result in low risk policyholders leaving the insurance pool altogether, leaving only high risk policyholders and creating 'adverse risk selection'. Adverse risk selection occurs when an insurance pool consists of more high risk policies than low risk policies, this affects the efficient sharing of risk and further increases premiums.

For governments, reduced insurance cover will lead to increased community reliance on financial aid following disaster. Communities affected by disaster need external financial assistance to support the local economy and minimise potential hardship. Without the financial assistance that insurance offers, disaster affected communities will require significantly greater amounts of government financial aid to recover from the financial impacts of natural disaster.

To improve insurance affordability, an improved approach to Natural Disaster Risk Management is needed. A good example of effective Natural Disaster Risk Management leading to more affordable insurance premiums is the installation of a flood levee. Figure 4 compares the average home insurance premiums between three towns with flood mitigation, and three towns without. The communities with flood mitigation not only avoid the devastating effects of flood damage, but homeowners also receive substantially lower insurance premiums.

**Figure 4 - Average Premium Comparison (Home Insurance)**



### Recommendation

- As the community comes under greater pressure from the rising cost of insurance premiums, government response efforts should focus on disaster risk reduction, rather than subsidising or otherwise regulating insurance premium levels. This approach will better maintain a viable insurance market and allow premiums to quickly reduce when risks reduce.
- State and local governments should consider increasing insurance premiums as an indicator of increasing risk. An immediate review of natural disaster risk in the area should be conducted with relevant regulations revised where appropriate to facilitate disaster risk reduction.



Photo: Cyclone Yasi damage, 2011.

**Suncorp Customer Response Team**

# Reducing Risk

## Summary

Effective Natural Disaster Risk Management (NDRM) is increasingly important as the financial costs of disaster rise. NDRM is most effective when operated as a set of interconnected processes, which work in conjunction to help communities understand and respond to disaster risk.

Australia currently has all of the key functions of NDRM, but does not coordinate these functions nationally. Natural Disasters should be viewed as a shared responsibility with government agencies, communities, businesses and individuals working together to manage and reduce disaster risk. A nationally coordinated approach to NDRM is needed to improve the outcomes of Australia's current NDRM activities.

Greater investment in disaster prevention through considered urban planning, robust building regulations and disaster mitigation is needed. Greater investment in these activities will help to offset the increasing financial risks associated with natural hazard events.

As the financial costs of disaster increase, it is important that the practice of managing natural disaster risk improves to offset these increased costs. NDRM is the process of understanding, and responding to, natural disaster risks. Effective NDRM can significantly improve disaster resilience and reduce the overall cost of natural disaster.

NDRM is not something that communities are historically good at. In 1988, Jodi Jacobson wrote *"People are willing to tolerate a broad range of threats to health and longevity. Witness the fact that, throughout the world...millions have built homes in areas prone to avalanches and floods."*<sup>16</sup> Certainly, many Australian homes have been constructed in areas subject to extreme natural disaster risk.

The need to work together and improve NDRM and reduce disaster risk is becoming increasingly apparent. In response to this need the United Nations established an Office for Disaster Risk Reduction (UNISDR) in 1999. UNISDR has the goal of improving NDRM and reducing disaster risks worldwide.<sup>17</sup>

In Australia, the National Strategy for Disaster Resilience was released by the Council of Australian Governments (COAG) in February 2011. It provides an overview of Australia's approach to disaster risk reduction and improving community resilience. The strategy highlights that disaster resilience is a shared responsibility, requiring a national, coordinated and cooperative effort to improve community resilience.<sup>18</sup>

The *National Strategy for Disaster Resilience* is strong foundation however the outcomes from this strategy can be improved. Drawing upon the national strategy, the Prevent, Prepare, Respond and Recover (PPRR) approach to emergency management, and UNISDR's *Ten essentials for making cities resilient*,<sup>19</sup> Suncorp outlines below what we believe are the key changes improve the way Australia manages disaster risk.

## Natural Disaster Risk Management

There are a variety of concepts that have been designed to articulate the various stages of disaster risk management. Common among all disaster management concepts is the need for planning before, during and after an emergency or disaster.

Communities naturally focus upon the 'during' and 'after' stages of disaster management. As a result, developed countries generally have robust emergency response agencies (i.e. Police, Fire and Ambulance) and have strong recovery arrangements to help those affected post-disaster (i.e. insurance, charitable donations, government financial aid).

It is often more difficult for communities to understand the need for 'before' action. Inadequate preparation for disaster is a key driver of escalating disaster losses worldwide. The World Bank recently estimated that the severe natural disasters of 2011 have caused economic losses of \$380 billion (USD).<sup>20</sup> In response to this economic loss there is now a worldwide push to improve disaster resilience through better preparation for disaster.

Suncorp believes an effective NDRM strategy involves several inter-related steps that help to develop overall community resilience to disaster. Figure 5 represents what Suncorp views to be the basic steps to managing disaster risk. The core of the figure is the four emergency management principles of Prepare, Prevent, Respond and Recover. Surrounding the core principles is a set of inter-related actions that are required to manage natural disaster risk.

Australia already has a number of these NDRM actions in place including land-use planning and building codes. Previous 'before' actions such as the implementation of stronger building codes after Cyclone Tracy have reduced both the social and financial costs of several natural disasters in recent years.

It is clear however, that we are still learning the ropes of effective NDRM and several improvements can be made. Below, Suncorp highlights some of the changes we believe can be made within each stage of the NDRM cycle.

<sup>16</sup> *Environmental Refugees*, Volume 86, Jacobson, J, Worldwatch Institute, 1988

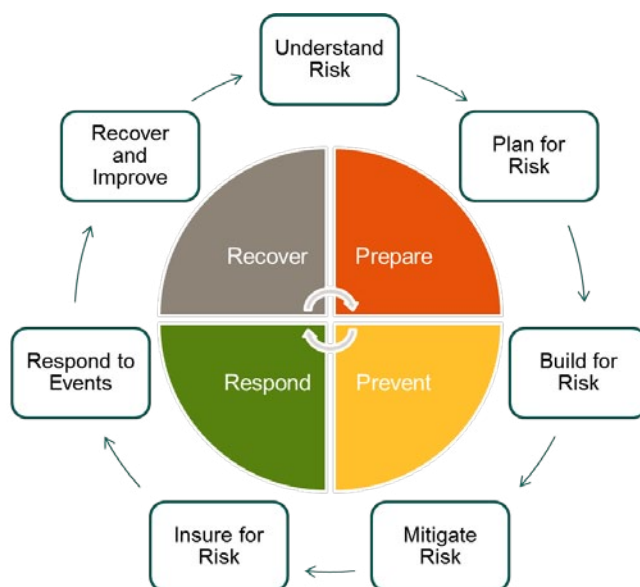
<sup>17</sup> *Who we are*, UNISDR, available: <http://www.unisdr.org/who-we-are> (Accessed: 04/07/2012)

<sup>18</sup> *National Strategy for Disaster Resilience*, Council of Australian Governments, February 2011, p. 2, available: <http://www.em.gov.au/Documents/1National%20Strategy%20for%20Disaster%20Resilience%20-%20pdf.PDF> (Accessed: 02/07/2012)

<sup>19</sup> See: <http://www.unisdr.org/campaign/resilientcities/toolkit/essentials> (Accessed: 04/07/2012)

<sup>20</sup> *G20 Urges Action to Counter Rising Costs from Natural Disasters*, World Bank, 16/06/2012, available: <http://www.worldbank.org/en/news/2012/06/16/g20-urges-action-counter-rising-costs-natural-disasters> (Accessed: 20/08/2012)

**Figure 5 - Basic Steps of Natural Disaster Risk Management**



## Understanding Risk

Effective NDRM relies on a sound understanding of the risks associated with a given location. Traditionally, local governments and emergency response agencies have developed their own understanding of disaster risk, usually in the form of annual exceedance probability (e.g. 1 in 100) maps. The majority of disaster risk maps are developed and held by local government, in recognition of the advantages of firsthand local knowledge.

The local approach to disaster risk mapping is cost efficient, however a number of issues have arisen from the lack of a coordinated national approach to disaster risk mapping. In the absence of national coordination, disaster risk maps are currently developed under a variety of methodologies, to different standards and in many cases not made available for public use.

The disparate approach to risk mapping has made it difficult for communities to understand and prepare for the risks associated with natural disasters in their location. In recognition of these difficulties, the then Assistant Treasurer, Bill Shorten, and Attorney-General, Robert McClelland, announced that Geosciences Australia would host a national flood risk information portal, supported by a nationally consistent framework to improve the collection, comparability and reporting of flood risk information.<sup>21</sup>

This initiative is a positive move for improving understanding of risk in the community, however is limited to just one of Australia's many natural hazards. Hazards such as bushfire, cyclone and storm pose significant risks to Australian homes and should also be mapped and understood in a nationally consistent way. The reactionary and isolated history of hazard risk mapping in Australia has contributed to the escalation of natural disaster risk over time and hazard risk mapping should be improved, nationwide, as a priority.

Following the collection of natural hazard risk information, it is important to communicate that information to the public. Risk information should be made available in public websites and datasets to allow easy and free use of hazard information to inform decision making. In addition, hazard information should be proactively communicated with home owners and residents.

In many jurisdictions, it is currently possible to purchase or move into a home without any formal communication of the natural hazard risks faced by the property. It is impossible for members of the community to prepare for natural disaster if they are not made aware of the extent of their risk. To improve NDRM and overall community resilience, Suncorp believes natural hazard risk information should be proactively communicated to the community via channels such as contracts of sale, rental agreements, rates notices and insurance certificates.

## Recommendations

5. The national flood information project should be expanded to collect standardised risk information for all major natural hazards.
6. This standardised risk information should be made publicly available to inform community-wide decision making.
7. Individuals or businesses identified as high risk should receive proactive communication via a number of channels including rates notices and property titles. Ensuring those at high risk are both informed, and regularly reminded of, their level of natural hazard risk.

<sup>21</sup> *Fixing Flood Insurance*, Joint Media Release, The Hon Bill Shorten MP and The Hon Robert McClelland MP, 14/11/2011, available: <http://ministers.treasury.gov.au/DisplayDocs.aspx?doc=pressreleases/2011/152.htm&pageID=003&min=brs&Year&DocType> (Accessed: 02/07/2012)

## Planning for Risk

Once a greater understanding of hazard risks has been obtained, it is possible to improve Australia's extensive land-use planning systems. Continuous improvements to land-use planning in response to disaster risks can significantly improve future resilience to natural hazard events. New homes and infrastructure should not be built in areas subject to extreme natural hazard risk.

Following the Black Saturday Bushfires and the Summer of Disasters, both Queensland and Victoria have implemented a number of improvements to land-use planning to reduce disaster risk. Unfortunately, these improvements have been targeted at just one hazard (bushfire for Victoria and flood for Queensland) and no significant improvements have been implemented in other jurisdictions.

To support long term reduction of risk, Suncorp believes that COAG should agree to harmonise land-use planning laws and formalise a process for continuous improvement. In particular, it is important for the lessons learnt interstate, and internationally, to be incorporated into local land-use planning instruments without delay.

### Recommendation

8. Land-use planning laws should be consistent across jurisdictions and have an explicit focus on managing disaster risks.
9. Land-use planning systems should be regularly reviewed in consideration of changing disaster risk and improvements developed in other jurisdictions should be incorporated wherever possible.

## Building for Risk

Regardless of how robust land-use planning laws are, homes will always be exposed to some level of natural hazard risk. It is therefore necessary to ensure homes are built in a way that ensures they can withstand known hazards. Similar to land-use planning, building code requirements vary from location to location.

It is disappointing to observe that building code improvements identified as necessary in post-disaster inquiry in one jurisdiction, are not applied equally across all jurisdictions. A good example of the lack of a coordinated approach to building code requirements is application of Australian Standard 3959 (AS3959), construction of buildings in bushfire prone areas.

AS3959 includes a method for determining bushfire risk, and specifies the construction requirements to improve resistance to bushfire attack.<sup>22</sup> Several post-disaster inquiries have highlighted that not requiring application of AS3959 to new buildings has exacerbated community losses associated with bushfire.

In December 2006, recommendation 61 of the ACT Coroner's report into the 2003 Canberra Bushfires stated:

That the ACT government consider taking measures to implement the provisions of the Australian Standard 3959, Construction of Buildings in Bushfire Prone Areas, for the ACT urban area<sup>23</sup>

In July 2010, recommendation 49 of the 2009 Victorian Bushfires Royal Commission stated:

The State modify its adoption of the Building Code of Australia for the following purposes:

- to remove deemed-to-satisfy provisions for the construction of buildings in BAL-FZ (the Flame Zone)
- to apply bushfire construction provisions to non-residential buildings that will be occupied by people who are particularly vulnerable to bushfire attack, such as schools, child care centres, hospitals and aged care facilities
- other than in exceptional circumstances, to apply a minimum AS 3959-2009 construction level of BAL-12.5 to all new buildings and extensions in bushfire-prone areas.<sup>24</sup>

In June 2011, the Special Inquiry into the Perth Hills Bushfires of 2011 found that "...only two areas in Western Australia had actually been declared bushfire prone and therefore compulsorily require compliance with AS3959-2009."<sup>25</sup> Presumably with the aim of increasing the application of AS3959, recommendation 3 of the Special Inquiry stated:

The State Government transfer responsibility for declaring bushfire prone areas from local government to the Western Australian Planning Commission. The Western Australian Planning Commission should urgently assess those areas that should be declared bushfire prone.<sup>26</sup>

AS3959 was first published in 1991 and was amended in 1999, 2000 and 2001. Despite AS 3959 being in existence for more than 20 years, there is still insufficient compliance with the standard to protect Australian communities from bushfire.

The development and application of building codes and standards can be significantly improved in Australia. Post-disaster reviews are routinely conducted and it is common for expert panels to identify potential improvements. These potential improvements should be considered nationally, with a focus on improving overall resilience and applying improvements across all hazard risks.

### Recommendations

10. The Council of Australian Governments should resolve to consider all recommendations provided by post-disaster reviews or inquiries for national implementation.
11. Recommendations from post-disaster reviews or inquiries should be implemented in a timely manner with consideration given to the possible implementation across a broader set of natural hazard risks.

<sup>22</sup> AS 3959-2009, SAI Global, 2009, available: <http://infostore.saiglobal.com/store2/Details.aspx?ProductID=1101539> (Accessed: 02/07/2012)

<sup>23</sup> *The Canberra Firestorm: Volume II*, Doogan, M, December 2006, p. 223, available: [http://www.courts.act.gov.au/resources/attachments/The\\_Canberra\\_Firestorm\\_%28VOL\\_II%29.pdf](http://www.courts.act.gov.au/resources/attachments/The_Canberra_Firestorm_%28VOL_II%29.pdf) (Accessed: 02/07/2012)

<sup>24</sup> *Final Report Summary*, 2009 Victorian Bushfires Royal Commission, p. 34, available: <http://www.royalcommission.vic.gov.au/Commission-Reports/Final-Report/Summary> (Accessed: 02/07/2012)

<sup>25</sup> *Shared Responsibility*, Perth Hills Bushfire February 2011 Review, p. 32, available: [http://shareservices.servicenet.wa.gov.au/bushfire/Perth\\_Hills\\_Bushfire\\_Report\\_Feb\\_2011.pdf](http://shareservices.servicenet.wa.gov.au/bushfire/Perth_Hills_Bushfire_Report_Feb_2011.pdf) (Accessed 02/07/2012)

<sup>26</sup> *Ibid.* p. 36



Photo: Christchurch Earthquake damage.

### **Suncorp Customer Response Team**

## **Mitigating Risk**

Improved land-use planning and construction codes significantly improve the resilience of new homes, but do little to protect existing homes. In cases where existing homes are exposed to high natural hazard risk, mitigation is required to remedy this risk. Without a more effective and comprehensive mitigation program in Australia, insurance premiums for existing homes are likely to continue increasing.

### **Flood Mitigation**

Flood is one of the most costly natural hazards in Australia with almost \$3.5 billion dollars of insured property losses since 2000.<sup>27</sup> The recent Queensland floods have reminded us all how "1 in 100" doesn't mean that floods will only occur once a century, rather there is a 1% chance of flood occurring in any given year. They have also reminded us flood risk can dramatically increase or decrease based on the urban environment.

While flood is a costly natural hazard, flood mitigation is relatively low cost. Flood mitigation can be a sizeable flood dam, a flood levee, some sand bags or simply regularly clearing out drains and gutters. These mitigation measures have been proven time and again to be cost effective measures to protect towns and homes from flood devastation. Surprisingly however, investment in flood mitigation throughout Australia is relatively low.

In Roma, a flood levee has been discussed since 2005, with cost estimates ranging between \$2m and \$15m. It's estimated that more than \$10m was spent on rescue helicopters in and around Roma during the 2011 floods alone, not to mention the costs of destroyed and damaged infrastructure. Some Suncorp customers have been flooded three times in as many years. Clearly, construction of a flood levee in Roma should already be well under way.

Suncorp has recently stopped issuing new policies in Roma and Emerald. The decision was based out of our concern that, despite repeated severe flood damage, flood mitigation was not being addressed as a priority. The high levels of flood risk and lack of effort to reduce this risk, led Suncorp to significantly increase insurance premiums, which in turn places high cost pressure on the residents of Roma and Emerald.

<sup>27</sup> Historical Disaster Statistics, Insurance Council of Australia, 2012, Available: <http://insurancecouncil.com.au/media/86719/current%20and%20historical%20disaster%20statistics.pdf> (Accessed: 25/06/2012)

The only reasonable way to reduce these premiums is to progress flood mitigation. For this reason, Suncorp elected to apply a temporary embargo on the postcodes of Roma and Emerald. This embargo prevents new customers from purchasing insurance cover with Suncorp, but existing customers are able to continue renewing their current cover.

The temporary embargo has provided a clear signal to the community and governments that Suncorp believes the flood risks in Roma and Emerald to be unsustainably high. Suncorp aims to reduce insurance premiums to affordable levels as soon as practicable, but cannot reasonably do so until plans to reduce flood risk in these towns progress.

### **Bushfire Mitigation**

Bushfire mitigation is more complex than flood mitigation, but is equally important for managing disaster risk. Fuel load management, prescribed burning and fire breaks are examples of government action that can be taken to reduce bushfire risk. Homeowner action to mitigate bushfire risk is perhaps more important than government action and can include installing fire defence systems, maintain low fuel load gardens and clearing shrubs and tall trees close to the home.

A good example of the need for increased homeowner mitigation was found by the Special Inquiry into the 2011 Perth Hills Bushfire. The Special Inquiry heard evidence that evaporative air coolers are prone to ember attack in bushfires, but can also be retrofitted with ember screens for less than \$500.<sup>28</sup> The final report states:

However, while some further analysis remains to be done on the precise cause and effect, the Special Inquiry was alarmed by the fact that **of the houses destroyed in this fire, virtually 50 per cent had been fitted with evaporative air conditioners** with no apparent retrofit to protect them from ember attack.<sup>29</sup>

There is obviously a need to better inform homeowners of the benefits of performing bushfire mitigation action prior the next significant bushfire.



Photo: After the 2009 Victorian Black Saturday Bushfire, Kinglake.

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<sup>28</sup> *Shared Responsibility*, Perth Hills Bushfire February 2011 Review, p. 143, available: [http://sharingservices.servicenet.wa.gov.au/bushfire/Perth\\_Hills\\_Bushfire\\_Report\\_Feb\\_2011.pdf](http://sharingservices.servicenet.wa.gov.au/bushfire/Perth_Hills_Bushfire_Report_Feb_2011.pdf) (Accessed 02/07/2012)

<sup>29</sup> *Ibid.*



## Investing in Mitigation

The 2002 COAG review, *Natural Disasters in Australia*, highlighted that additional investment in disaster mitigation offers all three levels of government a conservative rate of return of 15 per cent. Flood mitigation is particularly effective, with each dollar of investment saving Government \$2.10 in future recovery expenditure.<sup>30</sup> For communities, the investment return can be even greater with lower insurance premiums and better peace of mind.

Suncorp believes that there is a need for a significant change in the way Australians approach disaster mitigation. A recent Productivity Commission Draft Report shows that the Australian government's investment in disaster mitigation between 2005 and 2011 ranged between \$24m and \$37m.<sup>31</sup> In other words, between 2 and 3 Roma flood levees.

The costs of natural disasters are rapidly increasing, but it appears that the investment in mitigation is not. In response to the recent natural disasters in Australia, several government inquiries have been launched to investigate disaster response and recovery. Some have touched on disaster mitigation but none in any great detail.

In the face of rapidly rising natural disaster cost, and insurance premiums that will soon become unaffordable for many Australians, we need to get serious about reforming disaster mitigation. The current National Partnership Agreement on Natural Disaster Resilience is set to expire on 30 June 2013. Before then, Suncorp believes all three levels of government need to have a detailed look into disaster mitigation and determine a better approach for the future.

The insurance industry plays an important role in supporting natural disaster mitigation. Risk based insurance premiums act as a price signal to the market, indicating the level of risk in a community and incentivising risk mitigation. High insurance premiums indicate high levels of risk and provide policyholders the incentive to reduce risk.

More important however, is the reward of a lower insurance premium when risks are reduced. For example, if a professionally designed levee was constructed in Roma, Suncorp would not only be able to recommence insuring new customers, but average premiums in the area would more than halve. Some residents in high risk properties would see premium reductions of up to 70%.<sup>32</sup> Risk mitigation has a broad range of positive effects beyond just lower premiums and Suncorp will continue to advocate improved disaster mitigation throughout Australia.

## Recommendation

12. All three levels of government coordinate to investigate, design and fully fund a disaster mitigation program. A key part of this program should be progression of the shared responsibility approach including the development of strategies that encourage home owners to mitigate personal risks.

## Insure for Risk

Regardless of how good we become at preventing natural hazards from becoming natural disasters, there will always be some level of risk that remains. The insurance industry calls this residual risk, the risk that remains after all cost effective risk management practices have taken place. Having the correct level of insurance cover for this residual risk is an important aspect of individual financial security.

Unfortunately, Australians often neglect their insurance policies and as a result have insufficient cover. After the 2009 Victorian Bushfires, Suncorp found that customers of our GIO insurance brand were underinsured by 56 per cent. To protect against underinsurance, all Suncorp insurance home policies have underinsurance covers built in. Suncorp imposes minimum rebuild values, offers additional safety net cover and even AAMI Complete Replacement Cover, that offers unlimited reconstruction cover. Even with underinsurance protections like these in place, there is no substitute for having the right insurance and the right sum insured.

The insurance industry therefore has the lead responsibility in trying to improve knowledge and understanding of insurance principles in the community. Our direct and indirect contact with customers is vital to improving insurance knowledge and ensuring customers are adequately protected against financial risks. However, since the implementation of Financial Services Reform (FSR) in 2004 the insurance industry has been restricted from providing personal advice to our customers.

Given the number of flood disputes after the Queensland Floods, it's safe to assume allowing some insurance advice over the phone and in branches might improve things. Suncorp believes that a post implementation review of FSR is warranted. The recent progress in developing the home building insurance Key Facts Sheet is a reasonable start, but perhaps it's time to look at the bigger picture.

## Recommendation

13. Insurance disclosure requirements should aim to support individual risk management while minimising regulatory burden on both businesses and consumers.
14. Regulations restricting the provision of personal advice on general insurance should be reviewed with the aim of reducing regulation and improving access to financial advice.

30 *Natural Disasters in Australia*, The Australian Government Department of Transport and Regional Services, 2004, p. 24. available: <http://www.em.gov.au/Publications/Program%20publications/Pages/COAGreportonnaturaldisastersinAustralia.aspx> (Accessed: 22/05/2012)

31 *Barriers to Effective Climate Change Adaptation – Draft Report*, Productivity Commission, April 2012, p. 205, available: <http://www.pc.gov.au/projects/inquiry/climate-change-adaptation/draft> (accessed: 03/07/2012)

32 These premium estimates are indicative only and subject to variation based on the flood mitigation measures completed, individual property circumstances and external factors that influence overall premiums.

## Disaster Response

Australia's disaster response capability is second to none. Our emergency response agencies do a commendable job responding to emergencies and protecting communities from fire, flood and storm. It is important that we continue developing effective disaster response to ensure our response capabilities keep pace with changing disaster risks.

Perhaps the most important aspect of disaster response is to learn the lessons of previous disasters and implement improvements over time. Suncorp supports the Victorian Government's move towards an 'All Hazards, All Agencies' approach to disaster response, as recommended by the 2009 Victorian Bushfires Royal Commission.<sup>33</sup> An integrated approach to managing disaster response is important to ensure that limited response resources are effectively targeted. Suncorp encourages other states and territories to consider if an all hazards, all agencies approach would suit their jurisdictions.

### Recommendation

15. All state and territory governments should consider moving towards the 'All Hazards, All Agencies' approach to emergency response.

## Recover and Improve

Disaster recovery presents a rare opportunity to significantly improve disaster resilience. The widespread destruction forces communities to rebuild homes, infrastructure and community assets. Whilst this comes at significant cost to the community, it also allows for resilience improvements to be implemented.

Suncorp has long rebuilt our customer's homes on a 'new for old' basis, ensuring there is a reduced chance of future claims by building a more resilient home. Following Cyclone Larry in 2005-06, a stronger building code was implemented in Innisfail, and all homes that were repaired or rebuilt following Cyclone Larry were subject to stronger building requirements.

Suncorp has reviewed the claims data following Cyclone Yasi in 2011 and confirmed that the rebuilt areas of Innisfail saw significantly lower average claims costs when compared to surrounding areas. The average repair cost of Cyclone Yasi damage in Innisfail was \$56,000, compared to the nearby and previously undamaged towns of Tully and Cardwell at approximately \$110,000.

The silver lining of the significant cost of disaster recovery is that disaster resilience can be improved at comparatively low cost. This is recognised in the Natural Disaster Relief and Recovery Arrangements whereby the States and Territories can apply to the Commonwealth for additional funding to improve resilience of critical infrastructure. It appears however, that these 'betterment' provisions are rarely accessed for fear of delaying recovery efforts.<sup>34</sup>

It stands to reason that infrastructure damaged once by natural disaster, will be damaged again in the future unless resilience is improved. It simply does not make sense to rebuild to a pre-disaster standard alone. There should always be improvements made to ensure the asset is not damaged by the same natural hazard again in the future.

### Recommendation

16. Infrastructure that is rebuilt or repaired post-disaster should be improved upon to increase resilience to future events.
17. Commonwealth disaster recovery funding should be contingent upon improved resilience for both the asset and surrounding communities.

33 *First steps towards 'all-hazards, all-agencies' emergency management*, State Government of Victoria, 02/03/2012, available: <http://www.premier.vic.gov.au/media-centre/media-releases/3304-first-steps-towards-all-hazards-all-agencies-emergency-management.html> (Accessed: 03/07/2012)

34 *Barriers to Effective Climate Change Adaptation – Draft Report*, Productivity Commission, April 2012, p. 207, available: <http://www.pc.gov.au/projects/inquiry/climate-change-adaptation/draft> (accessed: 03/07/2012)

# Conclusion

Australia, as with much of the world, is experiencing a rapid increase in the risks associated with natural hazards. The increasing cost of natural disaster has been driving insurance premiums higher, with steady increases well above CPI over the past seven years.

The 2011 Summer of Disasters and 2009 Victorian Bushfires had significant emotional, social and financial cost, and have demonstrated the true impact of increasing natural disaster risk. A community focus on Natural Disaster Risk Management is needed to ensure that homes are appropriately protected against these increasing disaster risks.

Insurance will continue to protect communities from the sudden financial impacts of natural disaster, but cannot protect communities from widespread escalation of disaster risk. Better NDRM is not only needed to protect communities from disaster, but also to ensure insurance remains affordable.

Suncorp fully supports the concept that natural disasters are a shared responsibility. An effective response to increasing disaster risk will include actions by government, industry and individuals throughout the community. Key to the success of industry and community action is the support of all three levels of government.

That is why Suncorp believes a nationally coordinated approach to Natural Disaster Risk Management is needed. A consistent approach to understanding and responding to risk at a government level will provide the foundations that will enable greater industry action and motivate the community. It is Suncorp's hope that with the right footing, we can work together to protect what matters and create a brighter future.

## Sources

**Table 1 – Estimated Disaster Relief and Recovery Funding**

- i *Extension of Victorian bushfire rebuilding assistance*, Joint Media Release, The Hon Robert McClelland MP and The Hon Peter Ryan MP, 3/11/2011, available: <http://www.premier.vic.gov.au/media-centre/media-releases/2399-extension-of-victorian-bushfire-rebuilding-assistance.html> (Accessed: 26/06/2012)
- ii *Final Report*, Volume 1: Appendix A, The 2009 Victorian Bushfires Royal Commission, July 2010, p. 344 available: [http://www.royalcommission.vic.gov.au/Finaldocuments/volume-1/PF/VBRC\\_Vol1\\_AppendixA\\_PF.pdf](http://www.royalcommission.vic.gov.au/Finaldocuments/volume-1/PF/VBRC_Vol1_AppendixA_PF.pdf) (Accessed: 26/06/2012)
- iii *Rebuilding Together*, Victorian Bushfire Reconstruction and Recovery Authority, October 2009, p. 3, available: [http://archive.wewillrebuild.vic.gov.au/images/stories/4447\\_VBRRR\\_Statewide\\_Plan\\_WEB.pdf](http://archive.wewillrebuild.vic.gov.au/images/stories/4447_VBRRR_Statewide_Plan_WEB.pdf) (Accessed: 26/06/2012)
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- v *Rebuilding Queensland after the natural disasters of the summer of 2010-11*, Queensland Reconstruction Authority, June 2011, p. 7, available: <http://www.budget.qld.gov.au/budget-papers/2011-12/rebuilding-queensland.pdf> (accessed 27/06/2012)
- vi Ibid.
- vii Ibid. p. 3
- viii *Historical Disaster Statistics*, Insurance Council of Australia, 2012, Available: <http://insurancecouncil.com.au/media/86719/current%20and%20historical%20disaster%20statistics.pdf> (Accessed: 25/06/2012)

