

Total expected economic cost in real terms in 2050

\$33bn
2050

\$9bn
2015

5. Recommendations

This report offers four recommendations:

- Pre- and post-disaster funding should better reflect the long-term nature of social impacts
- A collaborative approach involving government, business, not-for-profits and community is needed to address the medium- and long-term economic costs of the social impacts of natural disasters
- Governments, businesses and communities need to further invest in community resilience programs that drive learning and sustained behaviour change
- Further research must be done into ways of quantifying the medium- and long-term costs of the social impacts of natural disasters.

This report estimates that the total economic cost of natural disasters is underestimated by more than 50% due to social impacts not being accounted for. It has also highlighted some of the gaps that exist in quantifying the complex web of direct and indirect, tangible and intangible outcomes and costs of natural disasters.

The four recommendations outline strategies to help reduce the trauma and long-term social impacts and economic costs of future natural disasters.

1 Pre-and post-disaster funding should better reflect the long-term nature of social impacts

The analysis has demonstrated that the intangible costs of natural disasters are at least as high as the tangible costs. Significantly, they may persist over a person's lifetime and have profound effects on communities. It is crucial that funding and policies better reflect the complexities and long-term nature of these impacts.

While recovering and building resilience into physical infrastructure is important, this needs to be balanced against measures to address the social and psychological trauma of natural disasters.

As well as funding emergency services during disasters, and infrastructure and physical recovery post-disaster, government, businesses and the not-for-profit sector must also invest in services that support people, small businesses and communities after the debris is cleared. These programs and services are most effective when coordinated across sectors, promoting community connection and a culture of resilience.

This report supports a national, long-term preventative approach to managing natural disasters and protecting communities, by building social capital. This will require long-term commitment and multi-year funding to achieve. A critical way to ensure long-term impacts are minimised is by 'strengthening local capacity and capability, with greater emphasis on community engagement and a better understanding of the diversity, needs, strengths and vulnerabilities within communities' (COAG's *National Strategy for Disaster Resilience* 2011).

There is significant evidence that resilient and prepared communities are more likely to withstand the negative impacts of natural disasters.

5. Recommendations

2 A collaborative approach involving government, business, not-for-profits and community is needed to address the medium- and long-term economic cost of the social impacts of natural disasters.

Individuals, businesses, governments and communities all feel the social impacts of natural disasters. These impacts are complex and multifaceted, but it is clear that they touch all levels of government and cross all portfolios, from infrastructure and planning to health and education.

This highlights the importance of a collective perspective on building resilience, including the need for coordinated approaches to ensure that disaster response and resilience measures consider all direct and indirect, tangible and intangible aspects of natural disasters. This collective perspective should be considered within strategic planning processes, to ensure that disaster resilience is integrated across the various portfolios, in accordance with the National Strategy for Disaster Resilience (NSDR).

A coordinated approach with sustained resourcing also enhances the consistency and effectiveness of community awareness, education and engagement programs. Evidence shows these programs can create communities that work together to understand and manage the risks they confront. This promotes communities that are better able to withstand a crisis and have a better ability to recover from them.

Several areas will need to adapt to ensure they encompass the social impacts of natural disasters. For instance, community education may grow to include information on other social issues related to disasters. Risk information could include the likelihood of social impacts occurring while adaptation research could encompass best practice methods for responding to the social and psychological impact of natural disasters.

Support from business and community advisory groups would help facilitate a more coordinated response. Businesses, not-for-profits and all government departments should be represented at the highest levels of policy development and decision-making.

Therefore, building on the Roundtable's previous recommendations, it is essential to consider measures to develop resilient and safer communities at the centre of government, as separate but connected policy issues. This can be achieved by establishing a national resilience advisor to effectively coordinate across departments and deliver faster progress on building a resilient Australia.

3 Governments, businesses and communities need to further invest in community resilience programs that drive learning and sustained behaviour change.

It is clear that funding of mitigation measures should not only focus on building physical infrastructure such as flood levees, but also on social and psychological measures such as community awareness, education, and engagement programs. To enhance social capital by building social networks and connections, these programs should include:

- Preparedness and mitigation strategies aimed at reducing the exposure and vulnerability of individuals and communities to disasters. Community awareness, education and engagement programs will be important in shifting community mindsets towards a culture of preparedness and prevention
- Community recovery and resilience measures that encourage social connectedness and ensure individuals have the support they need in their own communities.

While there are challenges in ensuring these programs lead to behaviour change – including appropriate program design and upfront multi-year funding – they can yield a positive return on investment by reducing the overall impacts on individuals, businesses, governments and communities after a natural disaster. Key considerations for the design of these programs include:

- Implementing appropriate incentives
- Multi-level programs that focus on learning and behaviour modification, in addition to general awareness campaigns
- The need for psychological preparedness
- Local solutions
- The need for solid data and evaluation
- Community connection to foster a culture of resilience.

5. Recommendations

Given the widespread nature of social impacts after a natural disaster, it is important that communities, not-for-profits, emergency management agencies, businesses and governments collaborate when designing and delivering preparedness programs and campaigns. These programs need to not only educate communities about disaster preparedness and mitigation, but also foster a culture of connectedness and resilience within communities.

It is critical that these programs are evidence-based to ensure investment is cost-effective and allows for continuous improvement. This means improving the ability to evaluate the effectiveness of programs, and draw out key learnings through better data and methodologies.

Evidence suggests that effective preparation programs involve the community as active and equal participants in learning about risks and implementing local mitigation strategies. More research is required to identify the best ways to plan, deliver and evaluate community awareness, education and engagement programs to maximise community participation and encourage learning and modification of behaviour.

Within the spectrum of community-focused activities it is important to balance investment across awareness and information programs, and education and engagement, because all contribute to holistic emergency management.

4 Further research is needed into how to quantify the medium- and long-term costs of the social impacts of natural disasters.

While the social impacts of natural disasters and their complexities are undisputed, there is currently a lack of consistent, outcomes-based data to quantify the costs. The detailed bottom-up analysis of two case studies – the 2010-11 Queensland floods and the 2009 Black Saturday bushfires – offered robust data due to their size and impact. Even then, the available information was based on discrete surveys of people affected up to six months post-disaster. A more consistent methodology for assessing social impacts and measuring their costs will allow for better planning of response services.

Direct and tangible impacts are usually considered as a 'one off' but intangible social impacts tend to persist over time. Hence, data collection needs to better incorporate this temporal component to fully appreciate the true long-term effects of natural disasters on people's lives.

'Dr Rob Gordon, Australia's pre-eminent disaster psychologist, describes recovery as a marathon. And considering the profound effect of a disaster on the lives of people and communities, that is as it should be. It takes time – sometimes a long time – for communities to re-group after a disaster, for people to grieve and take stock, and to try to make sense of what has happened and what the future might hold.'
(Anne Leadbeater, on the AEM Knowledge Hub blog)

This report shows that the social impacts of natural disasters tend to be multiple and interrelated. Importantly, the experience of grief and trauma varies from person to person. It is therefore necessary to not only understand the 'primary' impacts of natural disasters, but also the secondary impacts on individuals and their communities.

5. Recommendations

In addition to the national platform proposed in *Building an Open Platform for Natural Disaster Resilience Decisions* to facilitate access to foundational data, there is a need to incorporate consistent longitudinal data to track social impacts. Figure 5.1 highlights some of the potential areas

that would benefit from better data collection and monitoring, for example by incorporating information about if people have experienced a natural disaster, when the disaster occurred, and the type of disaster.

Figure 5.1: Potential areas to improve data on the social impacts of natural disasters

Health and wellbeing	Education
<ul style="list-style-type: none"> • Health and wellbeing impacts are generally undisputed in the evidence, but quantification and attribution to natural disasters is still difficult • This area would benefit from data on service utilisation post-disaster over time including use of: <ul style="list-style-type: none"> – Hospital admissions data – Outpatient and community health services data – General Practice or Medicare data. 	<ul style="list-style-type: none"> • Education outcomes are largely a second order impact arising as a consequence of trauma and mental health outcomes for children, relocation, and physical injury or family violence outcomes that occur post-disaster. Hence, attribution of these outcomes to natural disasters is challenging. • This area would benefit from more data that links academic outcomes (for example children’s NAPLAN or year 12 results) to those who have been impacted by natural disasters, and the extent of that impact.
Employment	Community
<ul style="list-style-type: none"> • Unemployment and loss of income has been measured as part of the cost of other social outcomes (i.e. as a secondary effect). • This area would benefit from more research into other employment-related outcomes such as the impact of natural disasters on hiring and retaining qualified employees in the medium to long term and the impact on educational outcomes and consequently employment outcomes. 	<ul style="list-style-type: none"> • Community impacts were the most discussed in the evidence yet very little data exists to enable quantification of these outcomes. • The following areas would benefit from better data on the incidence and cost: <ul style="list-style-type: none"> – Community dislocation – Crime (apart from property crime) – Social networks – Loss of heritage/culture.

5. Recommendations

Conclusion

This report extends the research program of the *Australian Business Roundtable for Disaster Resilience & Safer Communities*, by providing a greater understanding of the economic costs of the social impacts of natural disasters and the importance of building community resilience.

The analysis has found that the intangible costs of natural disasters form a substantial part of the total economic costs. Costs such as those relating to health and wellbeing tend to have long lasting impacts over a person's lifetime. From this report, it is clear that the total economic cost of natural disasters is at least double that of existing estimates when intangible costs are included.

As natural disasters are expected to continue to affect Australia and our way of life, building resilience in the community will be critical. Pre- and post-disaster funding directed towards physical mitigation measures, but also social and psychological preparedness, has the potential to mitigate the devastating and costly impacts of disasters.

This report's recommendations outline strategies to help reduce some of the trauma and long-term impacts and costs of natural disasters. Evidence shows that communities with strong social capital are better able to recover from such disasters.

These recommendations reaffirm those made in *Building our Nation's Resilience to Natural Disasters* (2013) and *Building an Open Platform for Natural Disaster Resilience Decisions* (2014), particularly with regard to the need for national coordination and a commitment to long-term annual consolidated funding for pre-disaster resilience; an efficient and open platform for foundational data, and for the removal of barriers to data and research.

This report also supports the need to consider the social impacts of natural disasters when evaluating the benefits of resilient infrastructure in the investment decision-making process, as explored in *Building Resilient Infrastructure* (2016), and continues to highlight the need to invest in building resilience before natural disasters strike.

From this report, it is clear that the total economic cost of natural disasters is at least double that of existing estimates when intangible costs are included