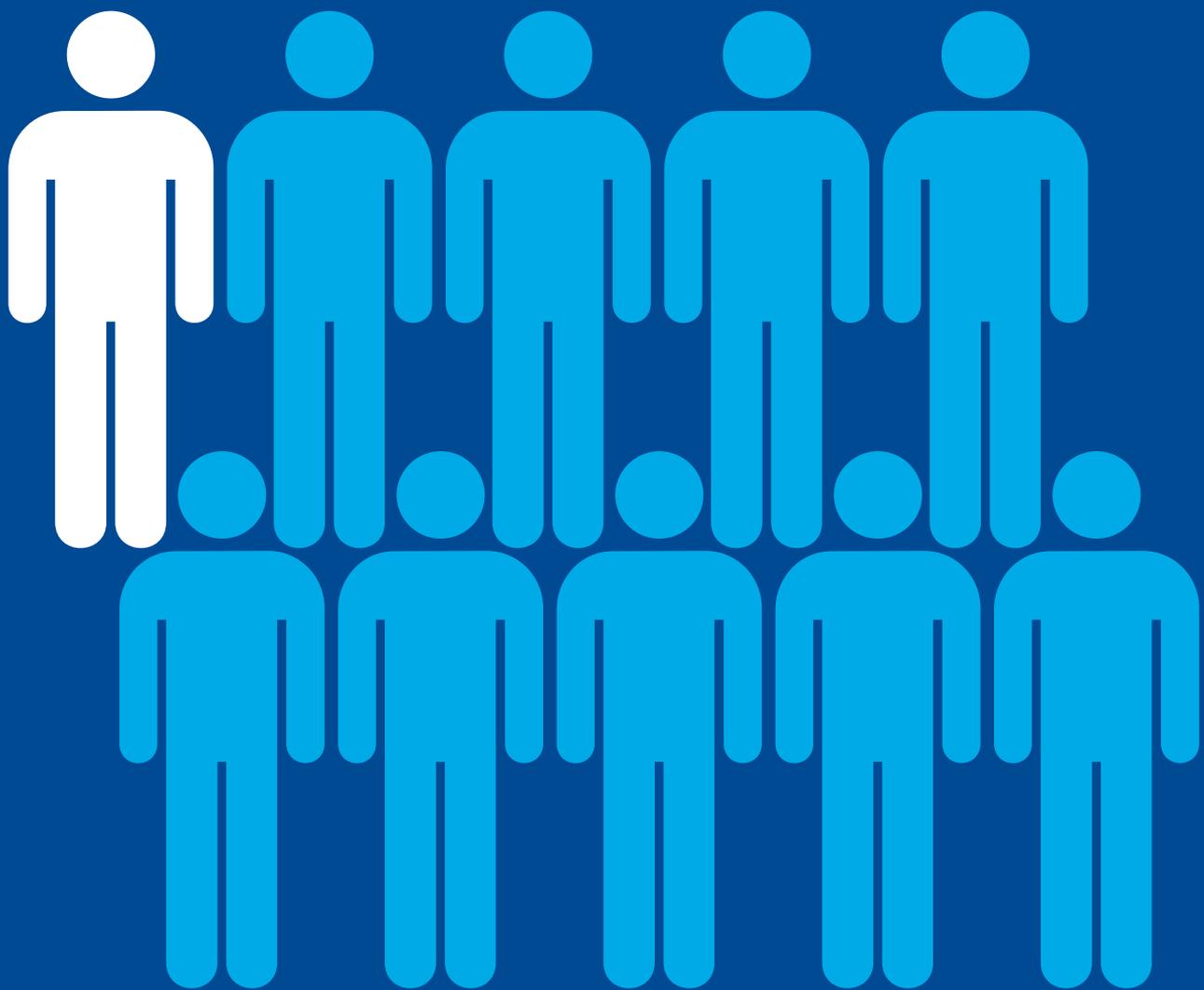


**More than 1 in every 10** people exposed to natural disasters are reported to develop psychological distress with some persisting for the rest of their lives.



# 4. Building resilience: the case for community awareness, education and engagement programs

## Key points

- The long-lasting impacts of natural disasters – sometimes lifetime impacts – means funding should also include resilience and mitigation measures for social and psychological impacts such as community awareness, education and engagement programs
- While data on the effectiveness of these programs is currently limited, there is significant evidence to show that strong social capital and community connectedness contributes to post-disaster recovery.

This report demonstrates the total economic cost of natural disasters in Australia is estimated at \$9.6 billion in 2015 and is expected to increase to about \$33 billion in 2050. Furthermore, these estimates are based on conservative assumptions, which suggest that actual costs could be even higher. The long-lasting impacts of natural disasters and the high lifetime costs of social impacts are motivation to consider measures to build the resilience of individuals and communities to disasters.

When government policy and funding has focused on resilience and mitigation, it has done so for physical infrastructure, such as building flood levees. However, the high economic cost of social impacts of natural disasters means funding should also include resilience and mitigation measures for social and psychological impacts such as community awareness, education and engagement programs.

Anne Leadbeater, who was awarded the Medal of the Order of Australia for her service to the community of Kinglake in the aftermath of the 2009 Black Saturday bushfires, wrote in the Australian Emergency Management Knowledge Hub blog::

*“A major challenge for those working with impacted communities is that the ‘lights and sirens’ pace of response so often gets carried over into recovery. We forget (or don’t get the chance) to differentiate the ‘urgent’ – food, water, shelter, fuel, material aid, which need to happen quickly, from the ‘strategic’ – community infrastructure, rebuilding, community planning, psychosocial support – those things that need to be carefully considered and thought through and about which community members will want and need to have input when they are ready. Coupled with the well-intentioned desire to relieve peoples’ sadness by fixing stuff and building stuff, it’s not hard to get caught up in a ‘fast equals effective’ bricks and mortar view of recovery.”*

This highlights that while it is important to invest in recovering physical infrastructure, there is also a need to consider community and social infrastructure and psychosocial support when making decisions about post-disaster funding.

## 4.1 Building community resilience

Resilience is related to the capacity of a system to withstand, absorb and recover from disturbances caused by natural disasters. Important in this view of resilience is the notion of adaptation, where adaptation and transformation can be proactive to help prepare for future events, or reactive in response to an event that has already occurred (Handmer & Dovers, 1996; Engle, 2011). Learning from experience and maintaining a focus on review and adjustment helps to build resilience to future events.

The resilience of a community is not a binary characteristic, but rather describes a process of linking a network of adaptive capacities in response to adversity or crisis (Norris et al 2008). The relationship between community resilience and individual resilience may also increase the complexity of the situation, with the resilience of the community impacting the individual’s ability to be resilient to stress and vice versa (Berkas and Ross 2013).

Community resilience to disaster describes two interrelated concepts:

- Coping capacity – the factors influencing the ability of a community to prepare for, absorb and recover from a natural disaster
- Adaptive capacity – the factors that enable adjustment of responses and behaviours through learning, adaptation and transformation.

## 4. Building resilience: the case for community awareness, education and engagement programs

As such, community awareness, education and engagement programs tend to be one of two types:

- Preparedness and mitigation strategies to reduce the exposure and vulnerability of individuals and communities to disasters by shifting the community mindset towards a culture of proactive preparedness and prevention
- Community recovery measures that encourage community and social connectedness to support individuals in times of need and empower them to adapt and improve post-disaster.

Individuals and communities display both coping and adaptive capacities during the four different phases of a disaster: that is, through preparedness, prevention, response and recovery (see Box 5).

Evidence shows that social capital – the networks and resources available to people through their connections to others – is critical in building resilience in communities following disasters. Aldrich (2012) studied four disasters: 1923 Tokyo earthquake, 1995 Kobe earthquake, 2004 Indian Ocean Tsunami and 2005 Hurricane Katrina. Quantitative and qualitative analysis showed that those areas with higher levels of social capital facilitated recovery and assisted survivors in coordinating more effective reconstruction post disaster. This effect was found to be larger than factors such as greater economic resources, assistance from the government or outside agencies and low levels of damage. The book notes:

*‘Even highly damaged communities with low income and little outside aid benefit from denser social networks and tighter bonds with relatives, neighbors, and extralocal acquaintances. Alternatively, neighborhoods with lower levels of social resources can find themselves unable to organize collectively to deter looting and garbage dumping, to communicate necessary requests to the authorities, and to work together to rebuild their community. Deeper reservoirs of social capital serve as informal insurance and mutual assistance for survivors, help them overcome collective action constraints, and increase the likelihood that they will stay and work to rebuild (as opposed to moving elsewhere).’*

### Box 5: Measures to build community resilience

Resilience is the *‘ability of a system, community or society exposed to hazards to resist, absorb, adjust to and recover from the effects of a hazard in a timely and efficient manner, including initiatives to preserve and restore essential structures and functions’* (United Nations, 2009).

Measures to improve resilience can be broken into four categories:

1. **Preparedness:** including proactive physical, psychological and social preparation for a disaster, such as planning and undertaking property maintenance prior to a disaster
2. **Prevention:** including physical mitigation measures aimed to stop the disaster (or its consequences) from occurring, such as burying power lines in bushfire-prone areas to reduce the risk of the lines sparking a fire
3. **Response:** measures aimed at reducing the adverse impacts of disaster as they occur, for example, evacuating individuals from a flood risk area in the case of a flood
4. **Recovery:** where individuals and communities are offered help to recuperate from the physical and psychological damage of a disaster, for example, providing survivors with Psychological First Aid.

Community engagement programs are largely preparedness measures aimed at stopping the longer-term effects of disasters. However, it is important to note that response and recovery measures allow communities to continually improve and increase their resilience, thereby preparing them for future events.

## 4. Building resilience: the case for community awareness, education and engagement programs

### 4.1.1 Building community resilience in Australia

The need for disaster mitigation funding to include 'soft mitigation' such as community awareness, education and engagement programs was recognised and emphasised in the Productivity Commission's inquiry into current natural disaster funding arrangements (2015). The Commission noted:

*"Soft mitigation, like community education and other preparedness measures, can yield significant benefits over time where it modifies behaviour and results in the avoidance of disaster risk."*

In 2011, Australia adopted the National Strategy for Disaster Resilience (NSDR). The strategy provides high-level direction and guidance on how to achieve disaster-resilient communities for all levels of government, businesses, community leaders and the not-for-profit sector.

The NSDR recognises four characteristics of disaster-resilient communities:

1. Functioning well under stress
2. Successful adaptation
3. Self-reliance
4. Social capacity.

Following the NSDR, emergency management plans at the state-level are undergoing reform. In Victoria, work is underway to develop a Modern Emergency Management System focused on building resilience in the community in a way that is tailored to the community's unique networks, connections and structures (Emergency Management Victoria, 2015). This involves focusing on the strength and sustainability of a community's infrastructure and institutions, as well as building and strengthening the links between people and the services, systems and structures that support the functioning of the community. It will also work towards integrating emergency services to advance beyond the traditional categories of prevention, preparedness, response and recovery processes.

Additional research and data collection is required to fully understand the complexities of building resilience in communities and the best practice tools and pathways with which to facilitate this. Researchers funded by the Bushfire and Natural Hazards Co-operative Research Centre are currently working on developing an Australian Natural Disaster Resilience Index which measures the level of resilience in a community through a system of indicators based on the four NSDR characteristics. This index will facilitate assessment, evaluation, reporting and planning for natural hazard resilience under the NSDR.

#### Box 6: Community-based recovery

The benefits of community-based recovery services are demonstrated through those provided by the Dungog Shire Community Centre (DSCC) following the Dungog floods of April 2015. Dungog, a NSW town with a population of just over 2,000, was hit by a flash flood in April 2015. Three people died and 82 houses were destroyed or damaged. In the immediate aftermath, the DSCC provided assistance with housing, food and clothing, mental health services and coordinated volunteer operations. But recovery is a long journey and the DSCC recognised that people needed continued support and connections with the community. The DSCC initiated Project Bounce Forward to provide information, referrals, decision-making and emotional support.

Under the *State Emergency and Rescue Management Act 1989* (NSW), local governments are required to establish a Local Emergency Management Committee (LEMC). These include representatives from the local council, Police Service, Fire and Rescue, Ambulance Service and State Emergency Service (SES). Other states have similar provisions. While the plan advocates a principle of subsidiary where emergency management is conducted at the lowest effective level, in practice local community resources risk not being used effectively. There is no requirement for the LEMC to engage with community organisations and, frequently, they do not. An independent review of the Dungog floods found that the Dungog LEMC was largely unaware of the considerable capabilities of the DSCC.

Communication and coordination between existing community-based organisations and local government are essential in recovery efforts, as well as in preparedness and prevention activities.

Source: Consultation with Sarah U'Brien, DSCC Manager; ABC News (2015b).

## 4. Building resilience: the case for community awareness, education and engagement programs

### 4.2 Examples of community resilience programs

Building resilience is a shared responsibility between government, businesses, communities (including not-for-profit groups and agencies) and individuals.

*“Disaster resilience is the collective responsibility of all sectors of society, including all levels of government, business, the non-government sector and individuals.” (COAG National Disaster Resilience Statement, 7 December 2009)*

There is widespread acceptance of the need to work with members of the community in the emergency management process. Governments, community organisations and industry have made considerable efforts over the years to engage the public in this emerging area.

*“Community engagement... is the process of stakeholders working together to build resilience through collaborative action, shared capacity building and the development of strong relationships built on mutual trust and respect.” (National Strategy for Disaster Resilience Community Engagement Framework, 2013)*

#### 4.2.1 Australian programs

A number of community awareness, education and engagement programs in Australia aim to foster individual and community resilience.

##### 4.2.1.1 The Australian Red Cross's RediPlan

The Australian Red Cross's RediPlan is a general, all hazard preparedness guide to help individuals and the community to prepare, respond and recover from natural disasters. Resources are provided for seniors, people with a disability and their carers, people from culturally and linguistically diverse (CALD) backgrounds, and children. Emphasis is placed on both physical and psychological preparedness. The program costs \$990,000 per annum, with funds managed on a state-by-state basis.

In 2013 the Torrens Resilience Institute evaluated RediPlan. Key findings included:

- The RediPlan community education program accessed the more difficult-to-reach members of the community, who may not have attended other emergency service public education sessions.
- The findings from the surveys of those who attended RediPlan sessions showed that, immediately following the education session, there was an increase in knowledge about environmental risks, the sources of real-time emergency information and the need to have a plan. The findings from surveys two and nine months after the sessions showed a broader range of risks were identified and their knowledge appeared to have been retained over time.

A 2014 review of the program recommended greater face-to-face engagement, leading to the development of a Preparedness Engagement and Education framework, which will be finalised by June 2016.

##### 4.2.1.2 Stormsafe NSW

StormSafe NSW is a program developed by the NSW SES and IAG, through the NRMA Insurance brand, to build awareness of storm risk and provide practical information to individuals to work together to prepare for and reduce the impact of storms. The program has three main components: a state-wide message campaign, including TV, radio, and social media content; education activities to teach people how to physically prepare their homes; and local community engagement.

Community education activities include workshops, NRMA Insurance in-store displays, and conversations about local risks with the public at key community events. Community engagement strategies include the identification of local champions as influencers in their own networks, establishing local reference groups to look at local hazards and promote learning through emergency planning.

The program costs almost \$990,000 per annum. This figure does not include the contribution of volunteer hours.

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The StormSafe website is the program's main source of safety information. Website visitors increased by 70% during the 2014-15 campaign, compared to the previous year.

A survey of people exposed to StormSafe's 2014 campaign found that all had taken some kind of action in the previous three months to prepare for storms. The program also led to an 8% increase in the number of people in NSW who felt more prepared for storm activity than they did in 2012.

Other NSW SES community awareness, education and engagement programs include FloodSafe and TsunamiSafe. These programs also promote learning at a community and individual level.

Currently the NSW SES is investigating more effective strategies in community engagement for their FloodSafe program. Initiatives include:

- **Community-led planning:** Community members from Uki on the north coast of NSW asked how they could establish a local emergency management committee. The enquiry came from witnessing NSW SES processes in nearby Tumbulgum. In partnership with the SES, Uki residents established the Uki Emergency Management Committee to determine local impacts, preparation, response and recovery needs and solutions.

- **Agency-initiated but community-led planning:**

The NSW SES held gatherings at Uranquinty, south of Wagga Wagga, to look at the significant risk that they could not adequately respond to local floods. Discussions were held with community members about meeting this gap locally through identifying the risks as well as capacity issues. From these discussions, a group was formed to develop local response plans which included identifying high needs residents, establishing local phone trees and even determining a better evacuation centre for the town. A drill of the response plan was undertaken by the community of Uranquinty in 2015. Similar plans have also been implemented by caravan parks on the north coast of NSW and other communities in the NSW SES Murrumbidgee area.

- **Flood Reference Groups:** On the mid-north coast of NSW, flood reference groups were set up to help the NSW SES to identify and investigate local issues. They looked at flood impacts for a range of communities and provided linkages back to the community for information exchange and discussion. Local at-risk residents, business owners, rural property owners and other groups were involved.

Local children learn from NSW SES members how to safely rescue people from floodwater using a throw bag. This technique allows the rescuer to remain on the shore during the rescue, thereby reducing their exposure to risk (NSW SES)



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- **Disaster scenario testing workshops:** These develop scenarios that realistically present information to community members about local impacts, through video, audio and mapping resources. Participants are run through a local flood progression and asked to provide actions and develop scenarios. Learning is based on group decision-making and discussions, while local social capital is built through connections and networking. An awareness of risk is established through the use of actual local flood risk information. Education is achieved through knowledge of warnings and discussions about appropriate actions. These workshops have been run in coastal NSW with diverse groups including local residents, business owners and aged care facilities. Participants could also expand to other high-risk groups, including Culturally and Linguistically Diverse (CALD) communities, newly arrived residents, caravan parks, flood prone housing estates, Indigenous communities and people living with a disability.
- **Community involvement in planning:** The NSW SES is investigating ways to involve community members in the review and development of Local Flood Plans (LFP). Part of this project is to research current best practice in community emergency management planning, establish local reference groups to develop processes and deliver engagement activities. A strategy is being developed which outlines a framework for including community members in these LFP reviews. The project will also map the current capacity of the NSW SES to achieve best practice in this area.

### 4.2.1.3 Business Roundtable EXTEND

Business Roundtable EXTEND was established in 2011 to help businesses prepare and connect to be more resilient in the face of disaster. The primary purpose was to assist small and medium-sized businesses to identify the risks a natural disaster might pose for a business, develop a preparedness plan, and encourage them to build networks to foster community resilience. Each roundtable is tailored to the issues and interests of local businesses.

### 4.2.1.4 Community Fireguard

The Community Fireguard program was established in the early 1990s by the Victorian Country Fire Authority (CFA) to promote fire safety and community resilience. The program seeks to build on the capacity of the local community, and to build resilience in residents whose lives may be directly impacted by a disaster.

Community Fireguard groups are encouraged to form themselves and usually comprise of 10-12 neighbouring households in high bushfire-risk areas. The groups are given information about living in a high risk environment, personal safety and resilience, and psychological preparedness. A CFA facilitator helps them develop bushfire behaviour and response strategies that suit their level of risk, lifestyle, environment and values. Implementation of preparation plans is led by local neighbourhood groups, with ongoing communication via meetings, newsletters, email (McGee, 2011).

A study of the program (Gibbs et al., 2015a) showed the average cost per Community Fireguard Group was \$10,884 (in 2012 Australian dollars). In the event of a major bushfire, each group was predicted to save \$732,747 by reducing property loss, and \$1.4 million by reducing fatalities. Based on a major bushfire event in the region of one in 100 years, the estimated cost savings in a 100-year period would be \$217,116 per group (not including psychosocial impacts).

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### 4.2.2 International programs

Quantitative evidence from international community awareness, education and engagement programs highlights the importance of initiatives that involve the entire community.

#### 4.2.2.1 Earthquake safety education in Japan

In Japan, community education about earthquake safety and evacuation plans is routine. Awareness programs are ingrained in the school curriculum, beginning in kindergarten. Schools and businesses conduct regular earthquake evacuation drills, and emergency services, such as the police, practise the movement of emergency vehicles.<sup>3</sup> Since 2011, annual national drills have been held on 1 September on Disaster Prevention Day with 2.3 million individuals taking part in 2014.

Repetition of emergency drills has been shown to encourage rote learning of emergency procedures. This can create challenges due to their inherent lack of flexibility when dealing with dynamic disaster scenarios. For example during an earthquake in Nepal, students who were taught to 'drop and cover' remained in buildings that were structurally unstable rather than moving outside to areas of less threat (Paci-Green et al. 2015).

While it is difficult to isolate the direct effects of these programs and exercises from those of broader resilience programs, it is likely they have affected the behaviour of the public response to disasters. It has been suggested that a result of these education programs is the notably calm and organised manner in which everyday citizens deal with earthquakes (Foster, 2011). Fraser, Matsuo and Leonard (2012) attributed this to improved survival rates in a study of the Great East Japan Earthquake and Tsunami in March 2011:

*"Overall there was a 96% survival rate of those living in the inundated area of the municipalities visited. This can be attributed to mostly effective education and evacuation procedures."*

3. <http://www.telegraph.co.uk/news/worldnews/asia/japan/8734690/Japan-holds-annual-earthquake-drill-first-since-March-disaster.html>

#### 4.2.2.2 Bushfire mitigation and preparedness in Canada and the US

McGee (2011) examined bushfire (or 'wildfire') mitigation programs implemented at the neighbourhood level in North America and Australia. The study noted that interactive approaches involving two-way communication and partnerships between homeowners and organisations/government increased homeowners' knowledge and support of fire management. The study evaluated three wildfire mitigation programs that adopted a collaborative approach where residents were actively involved in their neighbourhoods: Firewise Communities/USA in the US, Firesmart-Forestwise in Canada, and Community Fireguard in Australia.

These programs join groups of residents to learn about the local bushfire risk, and collectively develop strategies for reducing the risk. The study found that participants demonstrated a willingness to engage in bushfire mitigation and preparedness activities at both the individual and neighbourhood level. There is evidence that these programs help build closer social ties between residents, which helps to engender a sense of community responsibility for fire safety.

*'In addition to activities aimed at protecting themselves and their own property, residents spent time and considerable effort to help neighbours and to protect their neighbourhood.'* (McGee, 2011)

The study found that communication between neighbours and also between neighbours and government agencies was important in encouraging participation. It also noted that government support was crucial in all three programs to encourage resident involvement. Literature suggests that a strong relationship between the community and government motivates residents to attend information campaigns (Vaske et al., 2007) and support mitigation efforts (Olsen & Shindler, 2010).

McGee concluded that residents were interested in participating in neighbourhood-level bushfire mitigation programs when they had a desire to protect themselves and their families, have experienced hazard events, and where there was encouragement and support from government. However, it is important to note that these conclusions were drawn from a small sample of qualitative interviews with participants.

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### 4.2.2.3 Organisational resilience in New Zealand after the Canterbury earthquakes

A report by Resilient New Zealand (2015) noted that the average cost to New Zealand of natural hazards is about NZ\$1.6 billion per year and large disasters such as the Canterbury earthquakes in 2010 and 2011 are estimated to cost over NZ\$40 billion.

The report, which focused on the role of business in improving resilience and recovery following the Canterbury earthquakes, found that:

*'... local governments need to increase their focus on community resilience in their planning and work with businesses to unlock the contribution they can make. Businesses need to actively engage with local government in this.'*

A National Public Education Programme is part of New Zealand's National Civil Defence and Emergency Management Strategy (CDEM, 2015). The program aims to 'effectively build public awareness and understanding by individuals and communities of hazards in New Zealand'. The program consists of a national media campaign with supporting resources – *Get Ready Get Thru* – and a school-based education program – *What's The Plan Stan?* – with ongoing monitoring and evaluation. 'Research in 2014 indicates that the preparedness messages are continuing to have an impact with increased awareness of hazards and growing numbers of people who are prepared.' (National Progress Report, 2015).

The *Get Ready Get Thru* program is evaluated each year. Approximately 60% of New Zealand residents are aware of the campaign. In 2014, 63% of individuals exposed to the ad campaign "took some action" because of the ad. However, the nature of these actions can vary significantly between respondents, and they do not indicate the level of risk mitigated.

### 4.2.2.4 Bangladesh's Cyclone Preparedness Programme

Bangladesh's Cyclone Preparedness Programme (CPP) draws strongly on community networks to help mitigate the impact of catastrophic cyclones that frequently hit Bangladesh's coast. It is comparable to Australian programs designed to promote community understanding and involvement in the dissemination of disaster information and warnings (such as community flood wardens), and to activities in other developed countries.

The CPP is a joint program of the Government of Bangladesh and Bangladesh Red Crescent Society (BDRCS). It ensures the rapid dissemination of official Bangladesh Meteorological Department cyclone warnings to communities, trained volunteers and officers. Warning messages are transmitted by radio then spread through local villages by volunteers using megaphones, signal flags and sirens.<sup>4</sup>

The United Nations Environment Programme (UNEP) report published in December 2015, *Collaborating for Resilience*, found that:

*'The success of the CPP was demonstrated during the 1997 cyclone, an event of a similar scale to the 1970 cyclone, which killed 500,000 people. The effective response of volunteers and communities enabled the evacuation of one million people to cyclone shelters, reducing the death toll to 193.'*

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4. [http://www.iawe.org/WRDRR\\_Bangladesh/Preprints/S4CPP.pdf](http://www.iawe.org/WRDRR_Bangladesh/Preprints/S4CPP.pdf)

## 4. Building resilience: the case for community awareness, education and engagement programs

### 4.3 Key considerations for community resilience programs

The qualitative evidence shows there is a need to build the resilience of communities in order to cope and adapt after natural disasters. Australian and international experiences have shown a number of key factors in the effectiveness of community awareness, education and engagement programs.

#### 4.3.1 Implementing appropriate incentives

Until recently, governments placed a heavy focus on recovery measures, often in the form of disaster assistance payments to assist rebuilding. The former Minister for Emergency Management, Robert McClelland (2013), argues this focus has led to a moral hazard: individuals have no incentive to undertake disaster preparedness measures since the cost of recovery will in part be borne by the government.

*'Part of the problem is that governments have contributed to the development of a culture of entitlement rather than a culture of prevention. This has occurred because the emphasis of government has been on being seen to provide assistance to individuals after they fall victims to a natural disaster rather than on developing strategies and working with communities to prevent those communities from falling victim to disaster in the first place.'*  
(Robert McClelland, 2013)

The Productivity Commission (2015) noted that this current reimbursement model of recovery funding reduces incentives to implement appropriate and cost-effective options for disaster preparedness and recovery. Proper incentives need to be put in place to not only increase uptake of preventative measures, but also to encourage learning and modification of behaviour.

Research examining the types of incentives that could be used include:

- **Implementing targets on the social impacts of natural disasters** such as reducing the number of disaster-related deaths and reducing the economic cost of social impacts
- **Incorporating both the direct and indirect, tangible and intangible costs of natural disasters** when building the case for investment in community resilience programs
- **Linking the amount of disaster recovery funding to the level of hazard reduction or resilience measures adopted** by communities or individuals
- **Using insurance premiums as a financial incentive** to implement pre-disaster measures that reduce damage
- **Providing competition-based incentives to promote innovation and resilience.** For example, Rebuild by Design is a US Department of Housing and Urban Development competition that is intended to spur redevelopment of resilient communities affected by Hurricane Sandy. The competition brings together designers, businesses and policy makers to ensure the area's resilience and environmental sustainability.

#### 4.3.2 Awareness versus learning and behaviour modification

Government, industry and community groups all have a role in developing individual and community resilience. Motivating individuals and communities to take preventative measures, however, has proven difficult, despite the relatively low effort required compared to the potential cost of natural disasters. This could be due to the moral hazard problem outlined by McClelland or possibly behavioural biases in individuals which distort personal risk assessments, as well as a number of other factors.

Mass market, broadly targeted awareness programs that seek to inform individuals of disaster prevention procedures do not by themselves effectively motivate learning and modification of behaviour.

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*“There is not a strong and causal link between receiving information and acting appropriately for hazards.” (Dufty, 2011)*

These programs can be a necessary initial step in raising awareness and providing basic information on prevention practices, but must be followed by interactive community engagement (as opposed to merely delivering to communities) to fully motivate individuals to undertake prevention measures (Toman & Shindler, 2011).

There is a substantial amount of literature on effective education and communication measures on disasters and other risks (Miletti et al., 1999), but it is often assumed that simply providing information on hazards or risk will precipitate the adoption of preventive measures. The information–action link assumes that recipients automatically assimilate, comprehend and use information in forming and following action plans but, in practice, this is rarely the case.

Kieffer (1984), and Paton and Bishop (1996) describe community engagement strategies as enhancing both real and perceived control, facilitating community identification of problems, and developing strategies to solve or contain problems in ways consistent with local needs, systems and values. A consensus approach to decision-making is recommended to enhance community ownership of the plan. Participation in identifying shared problems, and developing and implementing solutions, creates a better sense of community. A focus on actively dealing with salient issues helps to foster individual and collective efficacy.

### 4.3.3 Need for emotional preparedness

Even where preparedness programs are effective in motivating learning and behaviour modification, there are indications they may not sufficiently prepare individuals for the emotional toll of disasters.

For example, research into preparedness for the Adelaide Hills bushfires of January 2015 (Every et al., 2016) found that concern about bushfires was high and a significant majority of people had undertaken pre-fire preparation actions (such as cleaning gutters and removing hazards and vegetation around their home). However, people were poorly emotionally prepared and struggled with the emotional strain the fire caused. Lack of emotional preparation led people to change their bushfire plans at the last minute. For example, as the fire approached, fear began to increase and people decided to leave their property although they had originally planned to stay. Some attempted to return to their property. Following the release of this report, the South Australia Country Fire Service acknowledged that more emphasis needed to be placed on emotional preparation in their community education programs (ABC 2015).

Given the high costs associated with the psychological impacts of natural disasters, it is important that community awareness, education and engagement programs adequately prepare individuals for the emotional toll that disasters may have on them.

#### **Box 7: Targeted children and youth preparedness programs**

Children, and households with children, are particularly vulnerable to both the physical and psychosocial risks of natural disasters. Research has shown that children can play a key role in promoting resilience in a household by encouraging their family to discuss and prepare for risks.

In 2014, Michelle Webb and Professor Kevin Ronan conducted a study of 20 youths from low socio-economic backgrounds who undertook interactive hazard education programs outside the school context. After the program, their parents reported carrying out an average of six additional home based activities to prepare for potential natural disasters.

A number of factors influence how effective these education programs are. According to Professor Ronan’s research, school based preparedness programs are most effective when repeated regularly, provide realistic perceptions of the risks, and encourage children to talk to their parents about disasters.

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### 4.3.4 Localised solutions for local problems

It is essential that community awareness, education and engagement programs take into account the context affecting resilience. Just as individuals within communities may experience trauma and grief differently, no community is the same in how it experiences disasters.

*'... disasters don't happen in a vacuum. Any group of people who identify as a community will have some shared values, common goals and aspirations, local leaders, networks and relationships, things about their community they are proud of, issues about which they disagree – all those ideas, opinions and connections that contribute to the fabric of community life. What's more, communities are generally autonomous and self-determining; they have the skills, experience and capacity to manage their facilities and infrastructure, govern their community organisations and to run their businesses and industries... Rather than taking a 'Ground Zero' approach and assuming that none of this capacity and resilience has survived the impact (or worse still, that it never existed in the first place), we can do our best work in recovery by listening, asking questions and trying to understand how the community functioned in the period before the disaster.' (Anne Leadbeater, on the Australian Emergency Management Knowledge Hub<sup>5</sup> blog)*

It is important that communities have consultation, collaboration and development processes in place to empower them to develop local solutions to local problems. There is no one program that meets all the needs of a community, so a suite of programs tailored to individual needs should be developed.

Importantly, such programs need to find ways to generate active and equitable participation of local residents in the full spectrum of planning, mitigation, preparation, and response and recovery activities. These approaches seek to utilise local knowledge and expertise and, frequently, existing formal and informal community networks. Through these strategies, programs and activities are anticipated to contribute to increased community resilience, community efficacy, local and cost-effective mitigation, and integrated, inclusive community preparation

and response. Notwithstanding these challenges, further consideration should be given to the design of community engagement, education and awareness programs at all levels but in particular the local level.

### 4.3.5 Better evaluation of community resilience programs

An examination of existing Australian disaster mitigation programs suggests that some may have had success in encouraging greater take-up of community resilience initiatives. However, limited quantitative analysis and robust evaluation means it is difficult to measure the degree to which these programs are effective and the factors that enable or hinder positive resilience outcomes.

Evidence from overseas jurisdictions suggests that effective programs are those that involve the community as a whole – from learning about the risks, to implementing mitigation strategies. However, these have been hampered by a lack of data and do not have evaluation embedded as part of their program design.

There is a need to design better measures as part of this monitoring and evaluation process to capture resilience. Traditional ways of measuring success focus on outputs such as number of people reached, or number of buildings restored. It is necessary to shift this focus towards outcomes such as improvement in community resilience, which is a key factor in how well a community recovers from, post-disaster trauma.

Robust evaluation is critical to continuous improvement, and with an issue as important as natural disaster resilience, we must continue to improve. Increasing both the soft and hard resilience of the community through these programs, and developing the infrastructure required to carefully evaluate which programs are having the largest impact and scaling them nationally, will be critical in reducing both the tangible and intangible costs of natural disasters.

5. <http://emknowledgeblog.com/2015/02/04/black-saturday-reflections-on-recovery/>