

RELIANCE TOWARDS RESILIENCE – A PARADIGM SHIFT TO INVOLVE COMMUNITY IN THE PLANNING PROCESS

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Abstract

New South Wales (NSW) communities have historically had limited involvement in the NSW State Emergency Service (NSW SES) hazard planning process. Current industry and national best practice (National Strategy for Disaster Resilience – 2011) recognises the necessity of including at-risk communities in this planning process to increase ownership and uptake of emergency management strategies for a sustainable and efficient emergency management system. The NSW SES is implementing a pilot project aimed to increase the involvement of NSW communities in the hazard planning process to enhance service and community capacity to prepare for, respond to and recover from floods through shared responsibility between government, communities, businesses and individuals. Multi-level and multi-medium strategies and methodologies will be evaluated for State and Local hazard specific emergency plans, including public exhibition and consultation, Community Led Planning (CLP) and participation procedures as well as identifying the role of community within the plans. This paper will unpack the planned methodologies, identify service positioning and call for industry discussion on how to move forward with this paradigm shift.

Introduction

Across Australia, managing emergencies is largely the responsibility of state and territory governments, with local governments playing a significant role. In NSW, NSW SES is the legislated combat agency for flood storm and tsunami (SES Act 1989). As a component of this combat role, NSW SES is responsible for emergency planning for these hazards (SES Act 1989). Emergency management plans are resilience-based which aims to build disaster resilience within communities over time (COAG, 2011). The emergency plans contain arrangements for prevention of, preparation for, response to and initiation of recovery from each hazard. All plans must be consistent with relevant legislation and policy, including the SERM Act 1989, NSW EMPLAN, and SES Act 1989. Historically, this has involved minimal input from communities, usually limited to representatives on an emergency planning committee – Local Emergency Management Committee (LEMC), for example.

Emergency management has long since evolved from a “response” aligned approach under the old State Emergency Services and Civil Defence Organisation Act 1972 to a proactive “risk management” approach involving disaster mitigation, prevention, preparedness and risk communication (Haines, 1996; DIPNR, 2005; O’Neill, 2004; Keys, 1999; Buckle, 1998). A review of the NSW SES in 1989 identified insufficient attention to prevention and preparedness for floods, resulting in a restructure of the service and the SES Act. It is also noted that it is “not feasible to expect that governments should maintain large standing armies of flood responders when severe and widespread flooding is unpredictable from year to year” (Wenger et al, 2013). Furthermore, the larger the flood, the more likely that the community will have to cope alone (Handmer and Dovers, 2007, pp26, 95; Comrie, 2011 p220).

Community education has been identified as an essential part of any flood warning system, with well-prepared communities responding better to emergency warnings (Gissing et al, 2010). This is echoed in the Victorian Bushfires Royal Commission's conclusion: "The success of specific bushfire warnings partly depends on the standard of the information and education provided to the community prior to its issue." (Victorian Bushfires Royal Commission, 2009, p 120). Nevertheless, it has been noted that the correlation between awareness and sustained behavioural change is weak (Boura, 1998; Lowe, 2008; Horlick-Jones et al, 2003), i.e. "We need to develop and embed new ways of doing things that enhance existing arrangements across and within governments, as well as among businesses, the not-for-profit sector, and the community more broadly" (NSDR 2011).

Increasing community resilience against natural disasters is the primary goal of emergency management (Gissing et al, 2010). This typically is addressed by emergency planning to reduce continuing risk that cannot be eliminated after floodplain risk management measures are implemented, for example evacuation plans for the residual risk from levee overtopping or failure beyond its design height. This effective emergency planning can result in increased public safety, reduced property damage and faster community recovery (Gissing et al, 2010), but does not necessarily facilitate community resilience.

Resilience is a measure of the capacity to recover (O'Neill, 2004; Buckle, 1995). A resilient community will often experience less flood impacts to its normal functioning (Dufty, 2008; O'Neill, 2004) and works together to understand and manage the risks that it confronts (COAG, 2011). Disaster resilience can often be measured through (Becker et al, 2011):

- Decreased recovery time post event
- Increased community self-reliance and reduced demands on emergency response and recovery resources
- Improved community response to warnings
- Reduced casualty numbers and associated costs
- Reduced built environment and property damage
- Increased number of businesses surviving after a disaster
- Reduced psychological problems such as trauma and stress
- Reduced overall economic costs of a disaster.

Disaster resilience is a local and long-term outcome, which will require long-term commitment. Achieving disaster resilience will require achieving sustainable behavioural change and ownership of informed decision making, the results of which should be seen across a number of years and political cycles – far further than usual 5 year plans.

Disaster resilience is based upon existing strengths and relationships. Individuals and communities are the starting point to build disaster resilience and the way to work with communities is to connect with what is already there. At a practical level this means working in partnership with the community, building relationships and strengthening existing networks, resources and strengths, identifying and supporting the development of community leaders, champions and ambassadors, as well as empowering the community to exercise choice and take responsibility. It means adopting flexible approaches in the way we communicate with, and within, communities. This concept requires decision makers to recognise the fundamental role of social capital and social resources in building disaster resilient communities (Dufty, 2008; Lowe, 2008).

Community education, awareness and engagement programs are intended to increase people's perception of their risk and generate behavioural changes to reduce their risk

(Gilbert, 2007). Nevertheless, these methodologies have been identified as the least practiced and most poorly funded mitigation measure in Australia (DTRS, 2004).

The advent of resilience based planning and a community safety approach to emergency management has driven the NSW SES to redefine planning processes in the areas of flood, storm and tsunami. It now aims to include National Strategy for Disaster Resilience (COAG, 2011) principles of shared responsibility, community participation and community engagement. This is achieved through the involvement of communities in the flood planning process (both in a state and local context). The fundamental change is that achieving increased disaster resilience is not solely the domain of emergency management agencies; rather, it is a shared responsibility across the whole of society (MPES, 2012; COAG, 2011).

The current view is that emergency risk management and emergency planning is best achieved at the local level in collaboration with the communities involved, rather than directing the change process in a “top-down” manner (COAG, 2011; Paton, 2006; Dufty, 2008; Lewis, 1999; Lowe, 2008). Participation is acknowledged as “essential to building people’s abilities and empowering learners to take action for change toward sustainability” (Tilbury and Wortman, 2004). It also avoids the common problem that plans are created, become emergency service shelf documents, forgotten and not exercised.

By engaging with local communities the project aims to make NSW more resilient to flooding. Specifically it addresses innovative approaches to emergency management which incorporate a coordinated and cooperative (or co-creative) approach to enhance the capacity to prepare for, respond to and recover from floods through shared responsibility between government, communities, businesses and individuals.

The development of this area is a key priority across the Emergency Management Sector, where “Building community resilience is not about us. It is about Community Led Planning and us creating enabling environments for communities” (Dent, 2015). To do this “We have to first learn how to let go and then learn how to enable. That’s the real challenge” (Dent, 2015).

Literature Review

The concept of self-reliance has been explored in previous literature (O’Neill, 2004), which test the traditional education approach of public awareness programs (referred in the SES Act 1989 s12 (3) under Planning and Preparation as “collation, assessment and public dissemination of information relating to floods, storms and tsunami”). NSW SES and councils traditionally form partnerships to establish and maintain active education campaigns to provide a substitute for experience (Haines, 1996). However, this approach is usually one-way, one-size-fits-all and one-off communication, informing passive residents of the best actions to take to protect themselves and their property (Macdonald, 1998). However, empowering individuals and communities to be disaster resilient involves more than information provision, it should involve the community collaboratively developing local knowledge and expertise of risk and how to treat and mitigate it (COAG, 2011).

Other jurisdictions, health belief models (Institute of Medicine, 2002), Social Cognitive Theory, the Theory of Reasoned Action (O’Neill, 2004) and Arnstein’s (1969) audience segmentation (based primarily on demographics, psychological traits and degree of personal hazard experience), provide further evidence on engaging with communities and public empowerment through this process.

Failed evacuations lead to the need for operations involving typical response techniques such as flood rescue and resupply, placing the community and emergency personnel at risk. One of the many reasons an evacuation may be unsuccessful is the unwillingness of the community to listen to emergency services. For example, in the Grafton 2001 flood, where floodwater was within centimetres of overtopping the town levee, less than 10% of the population proceeded to evacuate even when there was an Evacuation Order. In exploring reasons for this result, it was concluded that community education (or engagement) was one of the key points to improve the success of the operation (Pfister, 2001) in addressing issues such as ignoring warnings, taking warnings as a challenge or having an aversion to following authority (Handmer, 2000).

The complexity of community engagement in emergency management arises from the ability/inability to influence or convince the public of the low-probability high consequence of disasters, particularly as the community rely on emergency agencies to respond (risk transference) and that people perceive and prioritise risk differently, and often underestimate risks (Sandman, 1994; O'Neill, 2004). This complexity is exacerbated with the change in demographics across Australia which requires emergency management agencies to adapt community engagement approaches to diverse and dynamic communities (Gissing et al, 2010; COAG, 2011). Potentially the largest problem faced in community-based planning (*for* the whole community and *with* the whole community) is determining how to effectively engage the community in the planning process. This problem may be built on the misconception of the community's interest in participating or failure to jointly and adequately define the community's role in the process itself (FEMA, 2010).

Engaging with (and involving) the community increases the likelihood that people follow protective action measures during a disaster. Key components of a successful program include understanding the community (the hazards, population and capabilities), identifying the communities to engage and partnering with community leaders to establish trust (FEMA, 2010). The National Strategy for Disaster Resilience Community Engagement Framework (2013) also states this understanding (capacity, strengths and priorities) and partnership process as key components to successful community engagement, as well as the recognition of complexity that exists in communities.

The Australian Emergency Management Manual 43 (2004) on Emergency Planning (page 9 and 13) identifies emergency management should involve a two-way conversation with all stakeholders to contribute to the decision making process, including the community. This also means there is a larger pool of information, expertise, solutions and ownership. This is echoed throughout the NSW State Emergency Management Plan 2012, formed under the SERM Act 1989, which also references the notion of shared responsibility, input from the community and the inclusion of the role for community.

A holistic community safety program would therefore consist of community participation, understanding audience's needs and perceptions and integrate a sequence of approaches to cater for different segments of the population (O'Neill, 2004).

Increased community trust and effective participation and collaboration can be achieved through appropriate community engagement. This enables empowerment, increased capability to live with hazards and improved social interactions among individuals involved (Dufty, 2008; Lowe, 2008, Emergency Management Australia, 2010).

With the high social and economic impacts of disasters in Australia, Deloitte (2013) identifies the need for a more sustainable and comprehensive approach to making communities safer and more resilient. Although it is not prescriptive, it provides emphasis on community preparedness and prevention.

Benefits of planning and preparation include helping the population to be aware of their risk and disaster arrangements, informing purchase decisions, reducing damages and risks to life and is relatively low cost. However, changing behaviour is challenging ongoing commitment to the program is required to maintain knowledge (Wenger et al, 2013).

Methodology

Case Studies

An examination of available case studies within the NSW SES was undertaken to investigate tested methodologies and their outcomes. A summary of this is included within the results of the current paper.

There are also a number of examples from outside of the NSW SES and outside of emergency management which utilise a range of methodologies. These also inform the processes being developed by the NSW SES.

Stakeholder Engagement

The current pilot project methodology entailed investigating ways of increased stakeholder engagement on the State Level Hazard plans under review. The plans were updated to reflect contemporary agency responsibilities and community expectations. They also included a community role within the plan, as mentioned in the EMPLAN (2012) and National Strategy for Disaster Resilience (COAG, 2011). The State Flood Plan was placed on the NSW Have your say website for consultation in December 2014 for public exhibition. The consultation was based around the community role and risk information within the State level plans.

Community Involvement in Planning

In 2014 the NSW SES submitted an application for funding to the State Emergency Management Projects (SEMP) grants to pilot a project which investigates developing strategies and methodologies for the inclusion of community members in the planning process for the Service.

Pilot areas for community led strategies will be determined to support the Local Flood Plan planning process. The development of the new Local Flood Plans for these selected LGA's will be supported with communication strategies developed locally for community review and consultation of plans. The strategies will be based on risk and at-risk communities and will focus on involvement and participation of communities in the planning process, including:

- Community Led Planning
- Community Based Planning

- Community connectedness, history (engagement and flood) and preparedness levels (can utilise pre-project research findings)

The strategies will be evaluated to determine a state-wide framework for local flood planning and incorporate this with the Local Flood Plan review timeframes. Evaluation criteria will include:

- Reduced number of RFAs for flood assistance
- Community feedback
- Ratings
- Satisfaction
- Knowledge
- Awareness
- Behaviour
- Participation numbers and depth across community representation
- Increased rates of evacuations
- Endorsed Plans from this process
- Increased dissemination processes through engaged community participation
- Local integrated flood plans
- Practiced Local Flood Plans

Preliminary Results

Case Studies

An initial study of community based emergency planning (Gissing et al, 2007) provided a case study in Eugowra NSW. In this study it was noted that emergency service personnel and the community were not familiar with the emergency plan, which led to poor response to evacuation warnings and community disquiet with the NSW SES handling of flood operations in November 2005. Subsequently a community based emergency planning committee was formed (with seven community representatives) to review the plan. Standard Operating Procedures were developed to ensure the plan was workable and consistent with the NSW SES policy and best practice. Changes were made to the plan based on the recommendations made by the committee. It was concluded that the community had ownership over the plan and reflected the likely behaviour of the plan and improve flood response for future events, which proved to be the case when flooding impacted the town in 2010 and the community responded in line with their collaborative plan.

In 2005, flood response between Lismore and Byron Bay was compared. In Lismore there was community awareness of warnings and Byron Bay there was not. Not surprisingly, the conclusion was that communities who were aware of their risk and exposed to more frequent flooding were more likely to be more aware of flooding issues. Nevertheless, as there was poor response to evacuation warnings in both communities, it was emphasised that communities need to be prepared to respond appropriately as well as be aware of their risks. This was acknowledged in 2006, where prior to an extensive flood education program 71% of the community surveyed were not very concerned or not at all concerned about flooding in Maitland (Hyde et al., 2008).

In 2006, the NSW SES and then Hunter Catchment Management Authority developed a joint project which employed a Community Education Officer to develop a Flood Education Strategy for Maitland. The project canvassed representatives from a range of local community sectors to form the Flood Education Advisory Committee and

worked on local solutions to raise awareness and knowledge of flood risks in the area. (Hunter Central Rivers Catchment Management Authority, 2006). A range of baseline research was undertaken to establish measurement and evaluation parameters and recommendations (including actions, delivery process and priority) from the committee were developed. The project developed into an engagement process utilising delivery of recommendations locally, through local ambassadors and champions. Currently, there is a range of existing engagement processes active from the initial recommendations including local flood walks run by local residents.

The NSW SES established Flood Reference Groups on the Mid North Coast of NSW in areas where local information on risk and community preparedness was limited. The role of these groups is to help disseminate and feedback information on flood threat, risks, behaviour and community activity (Community Liaison role in the Public Information Unit of AIIMS IV). Predominantly these groups would be highly active during a flood however, they have also helped build local social capital (networks and connections) which take on board a range of prevention and preparedness functions inherently (building resilience). Incorporating local solutions facilitated by the NSW SES through these Flood Reference Groups, has aided to add local community and flood intelligence into the Greater Taree and Port Macquarie Local Flood Plans, giving it substance and ownership (buy in) by the local community. Included in this area is a project working collaboratively with local dairy farmers to build flood resilience, based on the same principles as the Flood Reference Groups.

In the Tweed Local Government Area, there are 33 caravan parks, of these 14 are located within high risk flood prone areas. Research suggests these parks contain vulnerable people, who are often unaware of their risks and have poor, or no plans on how to deal with emergency situations. The floods in Tweed Shire in 2012 and 2013 demonstrated these problems with poor planning and communication issues within the Parks. Similar situations are evident within all flood prone caravan parks across the State. The high risk Caravan Parks were targeted to reduce the burden placed on emergency service agencies during times of disaster by improving the level of resilience of managers and residents in high risk caravan parks (Pettit, 2015). A pre-emergency preparedness questionnaire was undertaken, emergency information notice boards and brochures for Caravan Park residents were developed and flood wardens established. The project also involved providing a Flood Emergency Management Plan for park managers to complete, involving them in preparedness activities and ensuring emergency plans are appropriate and communicated effectively. A review of the community engagement in Uki and Tumbulgum following Ex Tropical Cyclone Marcia in 2015 identified a number of improvements in flood response and resilience within the community. Further work is still being progressed.

In 2013, flooding impacted the town of Tumbulgum on the North Coast of NSW. Due to a lack of capacity of NSW SES to respond, members of this community approached the NSW SES to determine what could be done locally to prepare the town locally (previous reliance mentality moving towards resilience). A local community emergency management group was formed to look at local warning processes, preparation, response and recovery driven by the community members themselves. The neighbouring town of Uki experienced this local movement and approached the NSW SES for information and support to develop their own local planning and response capabilities.

In 2014, the small community of Uranquinty, south of Wagga Wagga, approached the NSW SES for assistance in building local solutions given that local capability to assist was limited due to the nature of flood events in this area. The community developed an emergency plan with the expert guidance of the NSW SES Murrumbidgee and Murray Region Staff incorporating prevention, preparedness, response and recovery. The plan was exercised with the community with the assistance of NSW SES. As a

consequence, the NSW SES Region Controller has acknowledged the project's success and is currently implementing the strategy across the Murrumbidgee Region and the community plan will be incorporated into the Wagga Wagga City Local Flood Plan.

Pilot Project Preliminary Results

From the online consultation pilot, almost all respondents (92% of a total 24 respondents and 329 unique visitors) agreed with the community responsibilities in the draft State Flood Plan and indicated they did not require further information on their flood risk. The online engagement was found to be easy to manage, with a clear correlation between media and the number of responses. However, there was limited demographic diversity, with the majority of respondents from within the NSW SES.

The Community Involvement in Planning Project has only recently commenced and there are no current preliminary results for this component of the research.

Discussion

The online engagement on NSW Have Your Say and establishment of the NSW SES Your Say consultation platform was found to be easy to manage, with a clear correlation between media and the number of responses. It was concluded that increased media and response time is required for future consultations. This technique is being currently utilised for a number of other consultations, including for a survey for the Maitland area, linking in with the 60 year anniversary of the 1955 floods.

There is a large amount of rhetoric surrounding community engagement, resilience, disaster risk reduction, community safety, etc. in the emergency management sector. Notions of what these mean and how to implement these range as the understandings of these processes have varied interpretations across multiple levels of emergency management. There needs to be collaboration across the sector to guide the future positioning of what these mean and how we deliver them with our communities.

A review of available case studies identified a number of methodologies had been utilised within the NSW SES to date, and are in agreement with the current literature. Although there are a wide range of initiatives and literature identifying community engagement techniques (Community Places, 2014), it is apparent that there are some limiting factors in appropriately selecting techniques to utilise and in providing complete faith in the community to identify appropriate emergency risk management treatments. Limiting factors may include:

- The level of awareness drops as memories dim with time (Haines, 1996).
- Individuals will not have experienced the full range of floods (if any at all) (law of randomness) (Haines, 1996).
- Communities often believe that a flood will not exceed the previous flood of record (availability/normalisation bias).
- Not all individuals and communities will understand emergency risk management principles and the complex treatment options across PPRR.
- Some people are not risk averse and may only want to take note in the response or recovery phase (response efficacy) (Handmer, 2000).
- The common misconception that mitigation structures such as levee protection can create invulnerability in a community (levee bias) (Keys and Campbell, 1991; O'Brien and Payne, 1997).

- The capacity and ability of different stakeholders to participate.
- Hard to reach groups such as older people, rurally isolated and minority groups.
- Contested or divided communities.
- Literacy and numeracy levels and dominance of oral culture.
- Gaps in information.

Conclusion

Initial pilot projects for community participation in planning have identified a number of benefits and lessons learned. Although a wide range of initiatives exist (e.g. Gilbert, 2007) and a few have been piloted to date in the NSW SES, further research into community engagement techniques suitable for adoption in NSW SES is currently sought through an SEMP grant funded series of pilot projects.

More discussion on the complex nature of community engagement also needs to occur within and across agencies to adequately define the parameters. Some considerations to frame this discussion include:

- Community engagement is a process with outcomes (learnings, capacity, resilience) being more important than outputs.
- The positioning of community engagement on the emergency plans within floodplain risk management process.
- Process is not one-directional but organic and includes learning from unsuccessful ventures as well as success.
- Moving away from the rhetoric (and the multiple definitions and understandings) and talking about the content and substance within our services and with communities to form a co-creative shared understanding.
- Acknowledging that changing a response focussed culture is a time related process and that "letting go of control" (Dent 2015) is a major issue.
Community engagement takes time, more than political or plan (hazard and organisational) cycles.

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