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Beyond Vulnerability: Developing Disaster Resilience Capacities to target household preparedness activities

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It is well understood that there are some members of the community that are overrepresented in disaster impacts statistics. However, agencies working in emergency management, when looking to prioritise support, have tended to look at structural vulnerabilities based largely upon demographics, e.g. age, ethnicity. Approaching targeted support in this way takes a one size fits all approach. This can then lead to poor targeting of services and support. For example, in assuming all people over 70 are vulnerable, ignores the fact that they may have good health, or be well off, or have good family support. It also means that people may be missed, as they do not meet a neat demographic category.

Based upon observed experience and the work of a number of researchers, Red Cross has identified four broad interlinked adaptive capacities, being (in no order of importance):

- wellbeing
- connection
- knowledge
- security.

Wellbeing relates to a person's health and wellbeing status, including their psychological coping ability.

Connection relates to the amount of support people can draw upon, referred to as social capital, to achieve goals or shared objectives. This can be through formal or informal links such as family, friends, local groups, and colleagues. It also relates to a connection to place.

Knowledge relates to having access to appropriate information, communal knowledge, and local wisdom relating to hazard risk profiles and risk mitigation strategies for a geographic area and the capacity to process this information, and act upon it, individually and collectively, in a meaningful (i.e., to anticipate in relation to prevailing hazard-scape and to cope, adapt, recover and learn from specific hazard experiences) way, and contribute to community competence.

Security relates to having adequate shelter, personal safety, and the capacity to maintain financial protection of a person's/household's assets and livelihoods.

This paper describes the theory behind these capacities and how Red Cross is looking to use them to target its preparedness work.

Keywords: Resilience, Vulnerability, Recovery, Preparedness, impacts, consequences, Wellbeing, Security, Knowledge, Connection

It is well understood that there are some members of the community that are more vulnerable to the consequences of emergencies. These consequences include death, loss of or damage to homes (and their contents), businesses, schools, jobs, as well as disruption to communities and people's routines and networks.

Emergency management agencies seek to prioritise their support towards those who need it most. Agencies have grappled with the concept of vulnerability, and have generally focused upon demographic factors as the cause of vulnerability (Bird et al 2012, Buckle 2006). This focus has emerged because there is strong evidence that a number of groups of people are more represented in the impacts of disasters, e.g. children, women, the aged, and people with a disability. Equally there are members of these groups that are also resilient.

Approaching targeted support through a focus on demographics has some limitations. While it may provide a good first pass at identifying people who may need support, it presupposes that all people in a demographic group are vulnerable to the effects of disaster, because some people are. The approach takes a one size fits all method, reliant upon easily accessible demographic data. This can then lead to poor targeting of services and support. For example, by assuming all people over 70 are vulnerable, ignores the fact that they may have good health, or be financially secure, or have good family support.

It also means that people may be missed, as they do not meet a neat demographic category, e.g. people new to an area, or a single parent.

Understanding vulnerability and resilience requires a good understanding of the complicated and sometime complex nature of the impacts of emergencies. It also means identifying those factors that offer protection from the impacts. These factors maybe people's strengths, and working with them to support their resilience to the impacts of emergencies, or it may be actions people can take to improve their preparedness for emergencies.

Aim of the paper

This paper suggests a number of disaster resilience capacities and the factors that contribute to them. These broad capacities have at their core an understanding of the impacts of emergencies. Through this broader understanding, risk reduction or mitigation actions can be identified.

These capacities will then act as foundational concepts for Red Cross' resource development, education development, advocacy work, and for targeting our assessment and engagement work.

3. Impacts of Emergencies

Understanding vulnerability and resilience in the emergency management context is assisted by understanding the complexity inherent in the consequences of losses and the severe disruption from emergency events. This understanding shines a light upon what individual lives, households, families, businesses, organisations, and community networks may be vulnerable to, or in fact resilient from.

Impacts might include disruption to lives caused by loss of or change in:

- significant loved ones
- health and wellbeing
- a sense of security
- hope and initiative
- faith and trust in others
- dignity
- social networks and institutions
- social routines
- access to services and other resources
- infrastructure
- property (including homes and businesses), material goods
- pets
- prospects of a livelihood
- place and landscapes
- support networks.

Australian Psychology Society and Australian Red Cross (2013)

The ways emergencies are depicted tend to be in tangibles. Reporting relating to emergencies tends to focus upon “losses”; e.g. numbers of people killed (not survived), numbers of homes lost (not protected), number of grants handed out (as opposed to not handed out). The complexity of emergencies comes from the intangible impacts, and the interrelated nature of all impacts.

These impacts of disaster can be described as psychosocial impacts because they have an impact on people’s psychological wellbeing, as well as their social wellbeing. The psychological dimension being the internal, emotional and thought processes of a person – his or her feelings and reactions; and the social dimension being relationships, family and community networks, social values and cultural practices. To this end, all impacts of emergencies are psychosocial in nature to some extent (IFRC 2007).

By understanding the effects of emergencies in this more complex fashion, we can see how viewing resilience and vulnerability through only basic demographic factors such as age and gender are limited.

Understanding the impacts

It is important to delve further into some areas that help understand what these impacts mean for individuals. These areas include:

- increasing incidence of physical, mental health and wellbeing issues
- fragmenting of communities.
- financial pressures
- family unit disruption
- intangible impacts.

Health, wellbeing and quality of life status

Well-being includes the presence of positive emotions and moods, the absence of negative emotions, satisfaction with life, fulfillment and positive functioning. In simple terms, well-being can be described as judging life positively and feeling good (Frey and Stutzer 2002).

Good quality of life generally leads people to having good coping capacity. Recovery is described as a long, complex and exhausting process; and good quality of life will help an individual cope with the physical stresses of recovery.

Some of the quality of life issues that have arisen in the past 20 years and may have an impact on people's disaster resilience include:

- people working longer;
- the increase of commuting time in urban areas; and
- the increase in time spent on work and household chores. (Goodwin, 2011, IBM, 2010, ABS 2009)

The impacts of an emergency on a person's physical and mental health and wellbeing are well documented in disaster literature. Emergencies can:

- cause direct injury or illness from the impact of the hazard or its consequences
- exacerbate existing health conditions from impact of the hazard, through impact of the hazard or its consequences e.g. unsafe living conditions
- cause indirect illness, through a reduction in health and wellbeing status
- reduce access to health care services.

Fragmenting of communities: the role of networks and relationships

Networks and relationships are important before, during and after emergencies. The connections people have with other people are enablers for many actions in their lives. In many cases, people are more often than not rescued or supported by their neighbours during an emergency (Shaw et al 2012). To help understand connections within a community, the concept of social capital and its application within the disaster context must be grasped. Social capital is an individual asset that can also be seen as a community asset. It can be drawn upon when needed, to enable participants to act together more effectively to achieve shared objectives (Putnam 2003, Field 2004). Within that asset, people trust each other, and can rely upon, in the main, other local people to help out without obligation when help is needed. In the more formal or transactional relationships with local services and institutions, these agencies are well regarded and trusted, communicate well with community members, and can be relied upon to provide support (Putnam 2000).

Communities with strong social capital are generally represented by ones that have well supported local organisations (Putnam 2000). This capacity can be enhanced by the nature of the social and functional transactions that occur at local services and businesses, and the ease of informal meetings and transactions. These groups and their capacities often emerge post disaster (Dynes 1970).

Family unit fragmentation: personal safety

Interpersonal violence, particularly family violence towards women and children, increases in post disaster environments. Research indicates that the increase in family violence can be attributed to a number of factors, including:

- Increases in the prevalence and severity of pre-existing violence
- Increase in new incidences of violence
- Changes to living conditions and housing availability
- Reduced access to formal and informal supports (Parkinson and Zara 2013).

Financial pressures

It is well recognised that within daily lives financial stress can have negative consequences, including increased depression and anxiety, poorer health, and relationship stress (Davis and Mantler 2004). Household preparedness increases with socio-economic status (Emergency Management Queensland 2012). Individuals and households on lower income are generally less well prepared, as they do not have the financial resources available to them to undertake preparedness activities (Boon 2013, Boon et al, 2012).

Preparedness activities also come at a financial cost to an individual, be it through purchase of emergency kit items, undertaking retrofitting of property, or protection of assets and livelihoods through insurance. The ability to respond to disaster is also affected by the available financial resources.

Post disaster financial impacts can be marked; through loss of housing/ possessions, loss of earning capacity, or the loss of productivity through disruption to a person's normal routines.

Intangible impacts: attachment to places and objects

Another consideration in understanding the complexity of the impacts of emergencies is the importance of objects and places and the profound effects that their loss can have on people. The loss of material items and damage or destruction of landscapes and cultural relics is often underestimated and can be seen as purely sentimental, when in fact they are important links for people to their past and define their identity (Read 1996).

Objects can shape people's identity e.g. clothing and music project who we are; gifts and mementoes from times gone past bring back good memories; and our houses become homes. These losses can also slow recovery from an emergency, as people need to rebuild not only practical things like houses and jobs, but turn those houses into homes again and build a new identity

Places form mental maps which provide individuals with a sense of identity and anchor points that make their world familiar. More deeply, Aboriginal and Torres Strait Islanders have a strong connection to country, forming part of their spiritual world view. Damage to landscapes and landmarks can disorient people and remove familiar reference points that inform where they are (Little 1999, Proudley 2012).

Attachment to place can actually influence people's preparedness. In a Tasmanian study Paton, *et al.*, (2008) identified that attachment to place can influence the level of preparedness undertaken by householders living in high bushfire risk areas. A high attachment to place generally leads to higher levels of preparedness. According to the study, the emotional investment that residents have with their interior (home/garden) and exterior (neighbours, the landscape and the wider community) can potentially motivate them to enhance their safety.

4. Influencing concepts: Resilience, adaptive capacity, and strengths.

Resilience can be defined in many different ways. For the purpose of Red Cross' emergencies program, a slightly modified definition of resilience from the International Federation of Red Cross and Red Crescent Societies' is useful. Resilience is:

the ability of individuals, communities, or organisations, exposed to disasters and crises and underlying vulnerabilities to:

- *anticipate,*
- *reduce the impact of,*
- *cope with,*
- *adapt to,*
- *and recover from*

the effects of adversity without compromising their long term prospects (IFRC 2012).

The modification to the Federation's definition recognises that adaptation to a new set of circumstances, including the effects of adversity, is an important part of the processes that underpin resilience.

The words 'ability and capacity' are key to understanding resilience. Ability is capacity or capability based on different human, psychological, social, financial, physical, natural or political assets. Each of these actions, anticipate, cope, adapt and recover, are different and draw on respectively different sets of competencies, knowledge and relationships. The resilience approach acknowledges that there is always capacity in people or communities; resilience can be strengthened by both reinforcing individual and community capacity and addressing vulnerabilities (IFRC 2012).

A person's capacity increases the likelihood of responding (versus reacting) to uncertain, specific events and circumstances. This is an important but seemingly subtle difference. Responding to an event entails planning for the event to occur, and taking actions to reduce the impacts. Reacting to the event is being caught unaware and unprepared (Paton and McClure 2013).

It is also important to recognise that resilience is not a static state of being. It is a dynamic process. The dynamism of resilience is captured by Norris et al's (2008) term *adaptive capacities*. Resilience rests on both the resources themselves and the dynamic attributes of those resources (robustness, redundancy, rapidity). The term "adaptive capacities" is used to capture this combination. Recognising resilience as a dynamic process is critical as circumstances change.

A person's coping ability may be influenced by major life or health events, their financial capacity influenced by whether they have a secure livelihood etc. It is also important to note that to indicate that a person is resilient does not mean there will be no distress or dysfunction after an emergency. It is a function of how quickly this distress subsides and the dysfunction or disruption resolves, as well as how they adapt to different circumstances.

Strengths based approaches underpin community services practice. The principles and concepts though also have good application to emergency preparedness activities, as well as recovery. A strengths based approach innately recognises that people have resilience..

Saint Jacques et al (2009) outlines six key principles relating to strengths based approaches;

- Every individual, family, group and community has strengths, and the focus is on these strengths
- rather than pathology;
- The community is a rich source of resources;
- Interventions are based on client self-determination;
- Collaboration is central with the practitioner-client relationship as primary and essential;
- Outreach is employed as a preferred mode of intervention; and
- All people have the inherent capacity to learn, grow and change.

Some of these are common sense and the key shift in thinking for emergency management is to move away from pathology or deficits.

A benefit of this approach allows us to recognise the strengths of some groups deemed vulnerable; e.g. older adults have life experience and many have lived through adversity, many community and linguistically diverse communities are close knit and can draw upon resources internally, some Aboriginal and Torres Strait Islander people have a good traditional understanding of weather and hazards and strong connections to country.

By framing our approach as supporting or building resilience through a strengths approach, we are adopting a positive starting point and working forward.

5. Four Disaster Resilience Capacities

As a result of the understanding of the impacts of emergencies on people, both through observed experience, and the work of a number of researchers, four broad *interlinked* adaptive capacities are suggested, being (in no order of importance):

- wellbeing
- connection
- knowledge
- security.

These headings act as a way to broadly describe resilience in individuals and each of them have a number of elements that can be grouped together. Each of these elements will potentially have an influence on other elements both within the capacity and in other capacities, for example good connections may increase a person's access to knowledge. Possessing elements of these capacities can minimise the disruption of people's lives from the impacts of the emergency. The more of these elements that a person possesses or can prepare for, then the more resilient they are likely to be to the impacts of emergencies.

Each of these capacities contributes to a person's resilience to the impacts of disaster. Some of these factors that contribute to these capacities may be innate, for example their genetic makeup influencing their health status. Others may be a result of people's circumstances. From an emergency management perspective, some capacities can be improved through household preparedness activities.

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Understanding each of these capacities, and the elements that contribute to them, will help target household preparedness programs, and other strengths-focused social resilience building programs.

Wellbeing

Wellbeing, as a disaster resilience capacity, relates to a person's health and quality of life status and how this supports preparing for and coping with an emergency.

What do we mean?

Having good health (physical and emotional) and quality of life can assist an individual to develop positive risk beliefs and enact them in preparedness activities, cope with, adapt to and recover from disruption. It also includes their psychological coping ability (John Hopkins and IFRC 2008). It can also assist with their ability to contribute to the community around them.

Specifically the focus in this capacity is upon the elements of resilience relating to:

- physical health,
- quality of life, and
- mental health.

Physical health relates to death, injury and illness relating to the impacts of the emergency and the steps that can be taken to reduce the impacts. Quality of life focuses upon people's coping capacity, the work life balance. Mental health recognises both the potential for exacerbation of existing conditions, as well as the development of emergency related mental health conditions as a result of exposure or stressors from the emergency.

Appendix A indicates in more detail the resilience elements relating to wellbeing, the consequences of an emergency on that factor, what contributes to resilience, what reduces resilience, and actions an individual may take to build or support resilience.

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Connection

Connection, as a disaster resilience capacity, relates to how well people are connected to others within their community (geographic or virtual), access to services, participation in civic life, and their sense of belonging to a place.

What do we mean?

Many of the impacts of emergencies are geographically focused. Hence communities, their makeup, and their level of diversity are important to understand. Connection to people's places, their spaces, and their community, in the disaster context, are important intangible factors in understanding disaster impacts.

Within this capacity the following elements support people's connection to each other and their place:

- Personal Networks
- Participation
- Access
- Attachment to place.

People with strong personal networks can draw upon their social capital to support the achievement of goals or shared preparedness, response or recovery objectives within their community (actual or virtual) (Australian Red Cross 2013). Connection to place is also important as it embodies a sense of belonging to a community. Participating in civic life, be it through actively engaging with local organisations or in local issues, strengthens community links and resilience (Tuan 1977). Access to services is important for people to be able to use a range of services and businesses to help them achieve their goals. Connection to the land/environment is important as it brings a cultural and spiritual dimension for some people, e.g. Aboriginal and Torres Strait Islanders.

Knowledge

Knowledge, as a disaster resilience capacity, relates to having access to appropriate information and communal knowledge, regarding local hazard risk profiles and risk mitigation and management strategies for a geographic area. It also relates to knowledge about the impact of an emergency and understanding all of the consequences of an emergency.

What do we mean?

Within this capacity the following elements support developing people's knowledge base through understanding:

- hazard risk profiles,
- local emergency plans, and
- recovery.

Knowledge of hazards, their impacts and local arrangements can encourage behavioural change and lead to people making informed decisions before, during and after disasters. This can then potentially reduce the impacts of the disaster and their subsequent distress. Knowledge also includes the capacity to process this information and a willingness to act upon it, individually and collectively, in a meaningful way (i.e., to anticipate in relation to prevailing hazard-scape and to cope, adapt, recover and learn from specific hazard experiences). It also includes having a good understanding of the long term consequences of emergencies to enable people to plan and be fully informed for the hazards in their area.

Having this knowledge also contributes to community competence. Where a community is able to collaborate effectively in identifying the problems and needs of the community, they can achieve a working consensus on goals and priorities, agree on ways and means to implement the goals, and can collaborate effectively in the required actions (Norris et al 2008).

This resilience capacity may also include a strong moral belief system or well developed world view, which may help with making meaning of events and circumstances. It also contributes to the individual and community narrative (Chamlee-Wright and Storr 2010), how people see themselves and their community, which can be very important in determining how the course of recovery may run.

Appendix A indicates in more detail the resilience elements relating to knowledge, the consequences of an emergency on that factor, what contributes to resilience, what reduces resilience, and actions an individual may take to build or support resilience.

Security

Security, as a resilience capacity, relates to the ability to maintain personal safety within their household and neighbourhood. It also refers to maintaining a livelihood despite the impact of the hazard, and the capacity to provide financial protection of a person's household's assets and livelihoods. It also means being able to shelter safely during the hazard impact (Handmer 2003).

What do we mean?

Three elements are identified within this capacity. The first relates to a person's personal safety within a home and their community. This requires strong personal relationships with members of the family/household.

It also refers to a safe neighbourhood where people can walk about safely and there are low rates of crime.

The second element relates to whether the person's home is considered to be disaster resilient, that it is built to appropriate codes, or not within hazard identified areas.

The third element relates to whether the person has the financial capacity to undertake preparedness activities in the first place and manage the financial consequences of an emergency, including dealing with the health and social consequences, reinstatement of their assets, and potential disruption to incomes.

Appendix A indicates in more detail the resilience elements relating to security, the consequences of an emergency on that factor, what contributes to resilience, what reduces resilience, and actions an individual may take to build or support resilience

6. Conclusions

The importance of these capacities and the factors that contribute to them lies in the targeting of a range of activities relating to resilience. For preparedness, it can help form an assessment of a person's resilience to the consequences of an emergency. This assessment then allows the targeting of specific information or activities or engagement to support building of resilience. For example, someone new to an area may have a deficit in their knowledge capacity, not understanding the hazard profile, the plans in place or where to get assistance.

Understanding this would require targeting people with information from the hazard management agencies as a priority. Also some network building activities would also be important to connect this individual to the community.

Most of these factors lead back to some of the demographic categories first mentioned at the beginning of the paper. What this approach allows us to do, however, is to understand why people in a particular category are vulnerable to the consequences of emergencies, and what elements of resilience may need to be supported.

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Appendix A: Elements of disaster resilience.

Wellbeing

Resilience elements	Consequences of hazard impact	Factors contributing to resilience	Factors that may reduce resilience	Actions that support resilience
Physical health	<p>Death from exacerbation of existing health conditions.</p> <p>Exacerbation of existing health conditions requiring health care.</p> <p>Injuries received from the impacts of the hazard, requiring treatment.</p> <p>Physical illness developing from the stress of the impact/recovery processes.</p> <p>Physical exhaustion from disruption to daily household routines as well as wellbeing routines.</p> <p>Nutrition may be affected by lack of adequate food supply</p>	<p>People are physically fit and in good health.</p> <p>People with acute or chronic health conditions have appropriate support to enable them to live in the community.</p> <p>Nutritious food and water are available.</p>	<p>Acute or chronic physical illness or injury that may affect mobility, or their coping skills.</p> <p>Level of independent living, i.e. are they dependent on family members or services.</p> <p>Support services not available or stretched.</p>	<p>Maintaining a healthy lifestyle.</p> <p>Treatment/management of pre-existing illness prior to emergency.</p> <p>First aid training and having a first aid kit to reduce injury and illness.</p> <p>Developing a Personal Care Network for older adults and people with a disability.</p> <p>Food and water plans.</p>

	or stress-affected decision making.			
Quality of life	<p>Stress/distress developed from the impact of the hazard, and the subsequent recovery process.</p> <p>Grief at loss of home, pets, items of importance, community</p> <p>Loss of confidence in self.</p> <p>Social/emotional isolation from friends and family members due to different experiences of, and responses to, the emergency.</p> <p>Relationship stress and domestic violence</p>	<p>People are generally happy and have low levels of stress.</p> <p>People are emotionally secure and have a positive outlook on life.</p> <p>People have good coping skills.</p>	<p>Changes in life circumstances, e.g. relationship stress or breakup, death in the family, changes in employment circumstances.</p> <p>Stressful life circumstances.</p>	<p>Developing a plan and getting an emergency kit - reducing stress.</p> <p>Wills or power of attorney that enables people's estates are managed with a minimum of stress.</p> <p>Psychological preparedness, to reduce stress when under duress.</p> <p>Good work life balance,</p>
Mental Health	<p>Exposure to trauma (near death, death of family, pets).</p> <p>Exacerbation of existing health conditions requiring health care.</p>	<p>People have the capacity to deal with heightened levels of physical or socio-emotional stress, for short or long periods.</p> <p>People have access to good</p>	<p>People suffer from acute or chronic mental illness or injury that may affect their coping skills.</p> <p>Absence of, or inadequate social support.</p>	<p>Developing a Personal Care Network for people with a chronic mental illness.</p> <p>Recovery programs are implemented.</p>

		social support.	People are personally exposed to a significantly traumatic situation (numbers of deaths, injuries, mutilation of bodies, deaths of children).	Support services with good business continuity planning to be able to continue operating post impact.
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Connection

Resilience elements	Consequences of hazard impact	Factors contributing to resilience	Factors that may reduce resilience	Actions that support resilience
Personal networks	<p>Disruption to personal networks, routines and the social fabric of a community.</p> <p>Feelings of disconnection or mistrust can reduce informal support and prolong recovery.</p> <p>Stress of the emergency may reduce people's capacity to help themselves or others.</p>	<p>The proximity and availability of family and friends to the individual.</p> <p>Length of time a person lived in an area.</p> <p>How well do people know people in the community, e.g. neighbours, local business owners, service providers, or community group members</p>	<p>Stressed family relationships.</p> <p>Migration from intra and inter-state, as well as overseas.</p> <p>People recently moving to an area.</p> <p>Poorly designed houses and neighbourhoods that do not facilitate informal exchanges.</p> <p>Poorly designed services that do not promote informal</p>	<p>Activities to promote community connections, getting to know neighbours etc.</p> <p>Involvement in local activities/organisations to understand who can be relied upon, and has good skills.</p> <p>Building trust through sharing of neighbourhood resources.</p> <p>Business continuity planning for local organisations and businesses.</p>

			exchange. Service attitudes that are purely functional, and do not promote informal exchange.	Children attending the local school.
Participation	<p>Damage to or disruption of community facilities, e.g. sporting clubs, schools.</p> <p>Festivals/activities cancelled as a result of the impacts.</p> <p>Recovery processes do not allow for participation.</p> <p>Groundswell of community bonding and activity in the early stages of recovery, this is generally difficult to sustain over the course of recovery.</p>	<p>Strength of sporting and recreation clubs, schools, kindergartens etc.</p> <p>Local businesses or places that serve as an informal community hub (e.g. school, post office, café).</p> <p>Local festivals or community activities e.g. landcare, are vibrant and well attended.</p> <p>Local issues are debated.</p>	<p>Demographic changes that reduce the viability of clubs or community group.</p> <p>Local schools not able to meet student and parent needs, meaning students need to travel.</p> <p>People with busy lives, long commutes that reduce time available for meeting others.</p> <p>Economic disadvantage, health or safety issues potentially reducing people's capacity or ability to participate in local community events or activities.</p> <p>Living in areas characterised by low political influence.</p> <p>Goodwill overwhelms the</p>	Participation in local activities: schools, festivals, sporting and recreational activities.

			community.	
Access	<p>Damage to services or transport modes may cause suspension or closure of services and make it difficult for people to access services/businesses.</p> <p>Reduced community confidence leading to uncertainty in the future of the community (partly economic but also social).</p> <p>Displacement from the homes potentially:</p> <ul style="list-style-type: none"> • increases travel times and access to services. • reduce the critical mass needed for businesses and services, so that they close, or take longer to reopen. 	Location of services close to where people live, and transport is readily available.	<p>Transport services not being available to link people to service centres.</p> <p>People not able to physically access premises.</p> <p>Demographic changes, particularly in rural and regional areas, that lead to services and businesses no longer being viable.</p> <p>Alternatively, with sea/tree change locations with an influx of retirees requiring services that haven't traditionally been offered?</p>	<p>Customers encourage business and services to undertake business continuity planning.</p> <p>Household emergency plans aim to keep people in their homes (food, water, energy supplies), rather than move elsewhere.</p>
Attachment to place	Damage to landscapes can affect people's points of reference and their sense of belonging.	Landscape and/or historical) values (urban and natural) promoting strong personal attachments.	<p>Changed or denuded landscapes.</p> <p>Length of time resident in an</p>	Identification of icons and landscapes of community importance.

	Lack of access to traditional lands can affect health and wellbeing, as well as cultural and spiritual rituals.	Heritage values recognised	area.	
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Knowledge

Resilience Element	Consequences of hazard impact	Factors contributing to resilience	Factors that may reduce resilience	Actions that support resilience
Hazard profile	Increased risk of death and injury, loss of homes, livelihoods as a result of not understanding the hazard profile of the area and their consequences.	<p>Awareness and understanding of the hazard risk profile of the geographic area including:</p> <ul style="list-style-type: none"> • where to get formal and informal information relating to current and threatened emergencies, and the ability to process this information. • Knowledge of the historical disasters in the area 	<p>Being newly arrived in an area (Boon et al 2012).</p> <p>Having time available to learn about hazards, competing demands (Paton 2003, Paton et al 2005).</p> <p>Having the motivation to understand the issues and their impacts (Paton et al 2005).</p> <p>Cognitive and sensory barriers.</p> <p>Cultural and language barriers.</p>	<p>Information about hazard risks and local agencies in an accessible format that meets the need to individuals and not agencies.</p> <p>Information that conveys not only the risks relating to hazards but the long term consequences of those hazard impacts.</p> <p>Information in a readily accessible (legible, literate,</p>

			<p>Lack of access to information.</p> <p>Lack of technological aptitude (ie. Do not know how to access information through newer technologies such as apps, social media etc).</p> <p>Overconfidence from previous survival or near misses.</p>	<p>and culturally appropriate) format for different audiences</p> <p>Talking to long time locals who can describe the impacts of previous disasters (wisdom).</p> <p>Building a culture of preparedness through local schools, child care centres, sports groups, businesses etc.</p> <p>Residents discuss different communication plans within their community (phone trees etc).</p>
Local plans		<p>Awareness of local community plans, and roles and responsibilities of emergency management agencies.</p> <p>Trust in local agencies who have good engagement practices.</p>	<p>Poor reputation of local agencies and a lack of trust toward agencies/information suppliers.</p> <p>Conflicting/competing information sources.</p> <p>Lack of understanding of or agreement about shared</p>	<p>Good community engagement from local hazard leader agencies.</p> <p>Participation in local community groups to promote community competence.</p>

		Well supported local Emergency Services Organisations.	responsibility within a community.	
Understanding Recovery	Increased recovery times, complexity of recovery if the consequences of emergencies are not fully understood and planned for.	A good understanding of the impacts of those hazards.		Provision of information about impacts as part of the preparedness programs.

Security

Resilience Capacity	Consequences of hazard impact	Factors contributing to resilience	Factors that may reduce resilience	Actions that support resilience
Shelter	<p>Death, injury or near death experience from inadequate shelter.</p> <p>Displacement (temporary or permanent) from homes as a result of:</p> <ul style="list-style-type: none"> • damage to homes and neighbourhoods, • loss of essential services for a period of time • Lack of food and water. 	<p>Housing that is:</p> <ul style="list-style-type: none"> • built to the relevant disaster resilience code, or • constructed from materials that are resistant to the impacts of hazards or is • located out of hazard prone areas • well prepared to deal with the appropriate hazard. (Handmer 2003) 	<p>Ageing or poorly maintained infrastructure of essential services.</p> <p>Poorly constructed housing.</p>	<p>Well prepared housing, retrofitted for disaster resilience measures.</p> <p>Household plans that aim to minimize displacement from homes through actions such as maintenance of a supply of food and water, and the ability to prepare them, and lighting and warmth/cooling.</p>

		<p>Ability to be self-sustaining for a period of time.</p> <p>Essential services that do not fail when the hazard impacts.</p> <p>Access to food and water to enable people to shelter in place.</p>		
Personal Safety	<p>Increased marital and family stress, including potential domestic violence.</p> <p>Violence/increased risk taking within the community.</p> <p>Theft and destruction of property.</p> <p>Loss of trust in those that are supposed to protect (individual and institutional).</p>	Strong, well balanced, interpersonal relationships within a family/household.	<p>High incidence of crime/ lack of safety in local area.</p> <p>Stress on family relationships.</p>	Well-designed communities.
Financial Security	<p>Prolonged recovery due to loss of financial resources and/or loss of income.</p> <p>Reduced financial capacity may have a negative impact</p>	<p>Good levels of household income with high levels disposable income.</p> <p>Assets and livelihoods are financially well protected</p>	<p>Reliance on a single industry as employer.</p> <p>Low income or disposable income leading to not being able to afford soft and hard</p>	<p>Full house and contents insurance checked on an annual basis.</p> <p>Income protection insurance to maintain a stream of</p>

	<p>on help seeking therefore exacerbating health concerns.</p> <p>.</p>	<p>through insurance and other instruments (e.g. savings).</p> <p>Strong diverse local economy providing a range of employment options.</p>	<p>mitigation measures (e.g. insurance or housing retrofitting)</p> <p>Reduced household income due to unemployment or down turn in business.</p>	<p>income.</p> <p>Life insurance to assist with financial support in the event of death or disability.</p> <p>Copies of important documents and insurance information in an emergency kit.</p>
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