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Assessing a community's capacity to manage change: A resilience approach to social assessment

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Executive Summary

Australia is currently undergoing a process of water management reform, where the ways in which water is used across the country are being re-evaluated. It is anticipated that rural communities will be affected by this process as allocation systems are changed and refined. It is essential that the potential impacts on rural communities are understood, monitored and evaluated as these changes are developed and implemented. A robust social assessment approach is required to understand and assist with change in rural areas that may be affected by changes in water access.

Social resilience

The resilience approach identifies the resources and adaptive capacity that a community can utilise to overcome the problems that may result from change. The approach builds upon the inherent capacities of a community, rather than only relying on external interventions to overcome vulnerabilities.

Social assessment

Social assessment is a process of collecting, organising and analysing information about a community gathered through processes of stakeholder engagement. This document provides the conceptual basis for a social assessment framework that, if implemented, will assist in identifying areas of priority for government intervention at a regional or national scale.

A conceptual framework

This document discusses the relationships between vulnerabilities (the components which may weaken a community's ability to respond adaptively to a change), adaptive capacity (the resources and ability of a community to cope with change) and social resilience (the ability of a community to *adaptively* respond to change rather than simply returning to a pre-existing state). The framework points to measures of resilience that identify the capacity of communities and industries to adapt to changes in the availability, access or allocation of water. These social and economic measures of resilience can be integrated with biophysical information to identify communities and industries that are less *resilient* to changes in water availability.

The approach recognises that partnerships between governments and communities are the most effective means of implementing the social assessment process. The implementation of the approach will promote an understanding of resilience at the local level and enhance the skills of land-holders, community groups, other industry groups and governments to contribute to sustainable management of resources. Any social assessment is strengthened when it is approached as an ongoing process rather than as a one-off assessment. Governments and communities working together during a period of change can ensure that uncertainty, conflict and resistance are minimised, while maximising the chances of success of the reform process itself.

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1. Introduction

One of the far reaching policy issues that Australia faces is water re-allocation. Rural communities will be affected through this process. In some cases, rural communities dependent on irrigation may no longer have full access to water needed for irrigation-based agriculture to continue. These changes have significant social consequences, and it is important that management of these changes takes into account the surrounding environmental, political, economic, cultural and social factors (Burdge and Vanclay 1995). Communities' response to these changes will depend on their resilience: their resources, vulnerabilities and adaptive capacities. As water re-allocations are revised and implemented it is essential that the impact on rural communities is understood, monitored and evaluated. A resilience approach to social assessment provides a tool for communities to work in partnership with governments to understand these changes and their impacts. This report provides a rationale for how this could be done.

The method presented in this report utilises a resilience approach, which has at its heart a focus on the inherent capacities of a community. The resilience perspective embraces the dynamic character of communities and human-ecosystem interactions and sees multiple potential pathways within them. It provides a powerful way of understanding how a community's positive response to change can be strengthened and supported. This report applies the resilience approach to the social assessment process, which provides a tool for governments and communities to assess the likely impact and process of change. The importance of this process being conducted in partnership between communities and the governments is emphasised. This collaboration ensures that the community's resources and adaptive capacities are recognised, and that they are built upon to ensure the community's resilience and ultimately, the success of the reform.

Box 1: What is 'community'?

'Community' has been defined in many different ways from many different disciplinary perspectives (Kumar 2005). A community can be a group of people coming together in physical, environmental, economic, relational, political or social ways (Kumar 2005). People belong to many different communities, depending on the current context. For the purposes of this report, 'community' is defined in three ways: those who live in a similar region; those who have similar characteristics and relate to each other as a community; and those who come together in response to an issue. In relation to environmental and social change, each of these types of community can

display similar processes. When thinking about changes in access to water resources, there are a number of communities at each of these scales that may be affected.

Community of Place

A community can be defined in physical or environmental terms as a group of people living in the same area ('geographic community') (Kelly 2000). In terms of water management reform, this could be a town or region that relies on a particular source of water or upon a water-dependent industry.

Community of Interest

A community can be defined as a group of people who have similar characteristics. In relation to access to water resources, this might be a group of irrigators who use the same water source for irrigation. It could also include locals as well as visitors who use a given river or lake for recreational activities. A community of interest can also arise in response to shared values about water (Stenekes *et al.* 2008). This may include the values of particular indigenous groups or environmental groups. Kelly (2000) distinguishes communities of interest from geographical communities: "while territorial communities emphasise people's attachment to place, relational communities describe the social cohesion that manifests through social ties and networks that bind people together".

Emerging Communities

A 'community' may emerge (from where there was previously no cohesive and organised community) in response to a number of issues, for example an environmental or social change – or in response to regulatory reform. Communities are made up of different sub-groups. Social psychological research provides an understanding of the conditions under which people see themselves as a member of a group, and are motivated to act for the benefit of that group, rather than as individuals (Eggins *et al.* 2004). It is important to look at the relationships and shared histories between those sub-groups, to understand how different groups within a community may respond to change. However we may define them, communities are complex and dynamic. Kelly (2000) argues that: "modern communities are not fixed, and tend to develop on an ad hoc basis according to the needs, desires and goals of [their] members…".

2. The Resilience Approach

The social resilience approach is a way of understanding dynamic systems of interaction between people and the environment (Folke 2006). It is a useful perspective for understanding natural resource management decisions and changes, particularly the changes arising in a community as a result of changing access to water resources. The resilience approach has been used to understand how communities can co-exist with natural hazards such as volcanoes and bushfires (Paton and Johnston 2006), to explore the social dimensions of climate change in the Great Barrier Reef (Fenton *et al.* 2007) and to understand issues around resource dependency (Marshall *et al.* 2007). A resilience perspective recognises that communities are diverse and have ecological, social and psychological dimensions.

Social resilience is the capacity of a community to cope with disturbances or changes and to maintain adaptive behaviour. Social resilience has economic, political, spatial, institutional and social dimensions (Adger 2000). A resilient community is able to respond to changes or stress in a positive way, and is able to maintain its core functions as a community despite those stresses. A particular change may have vastly different consequences in different communities, and different communities will demonstrate different degrees of resilience to the change (Kelly 2004).

Resilience has been studied across a range of disciplines, and there is no clear and widely agreed-upon definition of social resilience. Box 2 provides an overview of the origins and different perspectives of resilience.

Box 2: Understanding Social Resilience

The term ‘resilience’ was first used by engineers to refer to the ability of a material to return to a pre-existing state after being stressed (e.g. Pimm 1984). Resilience has also been studied for many decades within psychology, in the context of individuals coping with trauma and major life events (e.g. Bonanno 2005).

The concept of resilience was also applied within ecology, when Holling (1973) used it to describe the ability of an ecosystem to absorb and adapt to change and maintain its existing state of functioning. In the late 1980s, the ecological concept of resilience was applied to understand interactions between people and the environment (Janssen and Ostrom 2006). In this context, the resilience concept was used to recognise the complexity of community-environment interactions, and the complexity of change. More recently, work on resilience has also included the social dimensions of change (Janssen and Ostrom 2006).

Social resilience differs from 'individual resilience' in that it takes into account the economic, institutional and social dimensions of a community. It extends the ecological perspective of resilience to recognise the ability of people to organise themselves.

Recent perspectives on resilience can be summarised into three major views - a common aspect in all perspectives is the ability to withstand and respond positively to stress or change:

1. Resilience as stability: Buffer capacity
2. Resilience as recovery: Bouncing back
3. Resilience as transformation: Creativity

(Adger 2000; Folke 2006; Maguire and Hagan 2007)

Resilience as stability

The stability view of resilience, developed from early ecological studies, defines resilience as the ability to return to a pre-existing state. This view of resilience is measured as the amount of disturbance a system can tolerate ('absorb') before it shifts to another state (Holling, 2003 in Folke, 2006, p.254). Some researchers describe a threshold beyond which a community is unable to return to its functional state. A resilient community has a high threshold – it is able to absorb considerable stress before it breaches its threshold.

Resilience as recovery

The recovery view of resilience relates to a community's ability to 'bounce back' from a change or stressor to return to its original state. Resilience here is measured as the time taken for a community to recover from a change (Maguire and Hagan 2007; Pimm 1984). A resilient community is able to return to its pre-existing state relatively quickly, whereas a less resilient community may take longer or not be able to recover at all.

The stability and recovery views of resilience have a deterministic understanding of resilience in that they see a community (or an individual, or an ecological system) is seen as having an inherent character which enables it (or does not enable it) to cope with a stressor. This view implies that a community as a whole either *is* or *is not* resilient. It fails to take into account the dynamic nature of change and communities, which is recognised in the third view: resilience as transformation.

Resilience as transformation

This more recent view considers social resilience to be the capacity of a community to respond to a change *adaptively*. Rather than simply returning to a pre-existing state, this can mean changing to a

new state that is more sustainable in the current environment. For example, an agriculturally-based rural community may develop different economic activities (e.g. tourism) or innovative farming practices that better suit the current environment. The transformation view of resilience is concerned with concepts of renewal, regeneration and re-organisation (Folke 2006). Folke (2006) argues that "in a resilient social-ecological system, disturbance has the potential to create opportunity for doing new things, for innovation and for development". A resilient community is able to use the experience of change to continually develop and to reach a higher state of functioning. Rather than simply 'surviving' the stressor or change, a resilient community may respond in creative ways that fundamentally transform the basis of the community. This perspective recognises that given the dynamic character of communities, they are unlikely to return to a pre-existing state, but will transform in an adaptive way to external change.

The transformation view of resilience is particularly useful for understanding how a community can respond positively to change. It accepts that change is inevitable, rather than seeing change as a 'stressor' from which a community needs to recover to its original state. The view of resilience as transformation embraces the dynamic character of communities and human-ecosystem interactions and sees multiple potential pathways within them. Deterministic views of resilience which see resilience as a community simply returning to a pre-existing state are unable to incorporate this complexity. Viewing resilience as transformation also draws the focus to the adaptive capacities of a community – the characteristics which enable it to develop and innovate in response to a change – rather than its vulnerabilities. It is here that the difference between social resilience and ecological resilience becomes clear. Social resilience recognises the powerful capacity of people to learn from their experiences and to consciously incorporate this learning into their interactions with the social and physical environment. This view of resilience is important because it acknowledges that people themselves are able to shape the 'trajectory of change' (Herreria *et al.* 2006) and play a central role in the degree and type of impact caused by the change.

2.2 Vulnerability, Adaptive Capacity and Social Resilience

In order to understand how a resilience approach can make a contribution to the social assessment process, it is the relationship with vulnerability and adaptive capacity that needs to be explored. The concepts of vulnerability and adaptive capacity have been used in different ways and for different purposes, but both are closely related to the concept of social resilience. A community's vulnerability, resilience and adaptive capacity will be determined in part by residents' attitudes towards the process of change. A community's assessment of the problem and their preparedness

for change will demonstrate how different groups within the community 'cope with' the process of change (Fenton *et al.* 2007).

Vulnerability

Vulnerability has been studied across a wide range of disciplines and is often considered more difficult to define than resilience (Schoon 2005). Traditionally it has been studied in the field of geography in relation to natural hazards and poverty, and more recently in relation to climate change and adaptation. There are a number of ways to categorise approaches to the study of vulnerability (e.g. Fenton *et al.* 2007). These can be summarised as:

1. Vulnerability to a hazard
2. Vulnerability as a 'state'
3. Vulnerabilities as components of a community

Brooks (2003) distinguishes between vulnerability to physical threats as defined in the hazards literature and research which applies vulnerability as a 'state'.

1. Vulnerability to a hazard

Within the study of natural hazards, a community's vulnerability arises from the physical aspects of the threat itself. A community's vulnerability is defined by the frequency, magnitude, timing, and intensity of the hazard (Fenton *et al.* 2007), with a focus on broad-scale impacts. Human and social elements are usually considered as secondary to the biophysical impacts (Eakin and Lynd Luers 2006; O'Brien *et al.* 2004). From this perspective, vulnerability is defined as an outcome of a hazardous event, and does not include the characteristics of the community which shapes its response to a hazard or other changes.

2. Vulnerability as a 'state'

Vulnerability as a 'state' is used to describe a community as inherently vulnerable or not. This view of vulnerability considers the components of the community which make it vulnerable (e.g. socio-economic factors such as poverty, inequality, housing quality and access to services), rather than focusing on the characteristics of a hazard or change. However, when vulnerability is viewed as a 'state', these characteristics are used to label a whole community (or subsections of a community) as intrinsically vulnerable and, by extension, less able to cope with stressors, shocks and change (Brooks 2003).

While both the hazards and 'state' approaches recognise that vulnerability cannot be considered independently of the local context (of a change, stressor, or hazard) (Brooks 2003), both have been criticised for a number of reasons. Both approaches take a 'deficit' view of the ability of communities to manage or cope with change. This has been used to identify (and 'label') vulnerable groups within a community, or to compare levels of vulnerability between communities, leading to differential inputs – positive or negative – into those communities. Both the natural hazards approach to vulnerability and the application of vulnerability as a 'state' fail to acknowledge the importance of the resources and capacities of a community which enable them to overcome these vulnerabilities and to cope with changes (Brooks 2003).

3. Vulnerabilities as components of a community

The resilience approach taken in this report acknowledges that communities and other systems such as families, individuals and ecosystems, have aspects or components which may be vulnerable to specific changes (e.g. reduced access to water). However, this approach also takes into account the resources and adaptive capacities of communities (or these other systems) which enable those vulnerabilities to be overcome. From this perspective, vulnerability is not a deterministic 'state', and vulnerable characteristics are only one part of a whole system that shapes a community's response to a change.

In general, there is much debate about the relationship between resilience and vulnerability. Some authors suggest that they are opposites (with a reduction in vulnerability, resilience increases), while others argue that the relationship is more complex (Brooks 2003). This report sees vulnerability as only one component of a community which determines its resilience. This perspective incorporates the idea that a community (and its vulnerabilities, resources and adaptive capacities) is dynamic and multifaceted. Resilience does not necessarily mean that a community is *in*vulnerable (Fenton *et al.* 2007) – a community can be resilient and vulnerable at the same time. For example, a community might include groups who are vulnerable to a reduction in water availability because of their reliance on that water for irrigation. However, the same community may have the social resources and adaptive capacity to build another economic base (e.g. ecotourism) that does not depend on water availability. Different communities are also vulnerable and resilient to different challenges (e.g. Gallopin 2006).

Adaptive Capacity

Adaptive capacity is a concept closely related to both resilience and vulnerability. While it has also been described as having a number of different definitions, there appears to be a greater level of

consensus between different authors, particularly as the concept has been most extensively studied in terms of climate change. Adaptive capacity is defined as:

> …the ability or capability of a system to modify or change its characteristics or behaviour to cope better with actual or anticipated stresses" (Brooks 2003, p.8).

Adaptive capacity is closely related to the concept of adaptation. Adaptation is understood as the "adjustments in a system's behaviour and characteristics that enhance its ability to cope with external stresses" (Brooks 2003, p.8). Adaptation is a response to a stressor, in contrast to mitigation, which involves pre-empting a challenge and taking steps to avoid that threat (Schoon 2005) (e.g. mitigating climate change by reducing emissions, or mitigating floods by building levees). Adaptation includes actions taken to reduce vulnerabilities and to increase resilience (Smit and Wandel 2006), and adaptive capacity is the ability to take those actions. In this sense, both adaptation and adaptive capacity may be seen as relating to the reduction of vulnerability. Brooks (2003) suggests that "we may view reductions in social vulnerability as arising from the realisation of adaptive capacity as adaptation". This definition means that the effectiveness of adaptation will be difficult to assess or measure until *after* a change (hazard, policy change, or other event) has occurred. Adaptation can only be measured as a community's actual response to a change. A community's adaptive capacity (capacity for adaptation), on the other hand, can be assessed through the use of indicators (such as the presence of local leadership, communication channels in place in the community, and the community's ability to organise itself). It is important to explore the factors and processes which enable adaptive capacity to be translated into adaptation (Brooks 2003). This is the essence of resilience – being able to utilise community resources to transform and respond to change in an adaptive way. A resilient community is able to employ its resources and its adaptive capacities in a proactive and pre-emptive way, whereas a less resilient community may only be able to take action after the change has had an impact (or not at all). A crucial component of the ability to translate adaptive capacity into actual adaptation is the presence of redundancy in the system. A resilient community has the flexibility and creativity to develop and embrace new and alternative ways of doing things (Resilience Alliance 2007). It is through this flexibility and redundancy that a community can translate its resources and adaptive capacity into adaptation and thereby demonstrate resilience.

Schoon (2005) distinguishes between two views of the relationship between resilience and adaptive capacity. The first view (e.g. Smithers and Smit, 1997, in Schoon, 2005) postulates that adaptive capacity "is the antithesis of resilience with the former equated with change and the latter with entrenchment" (Schoon 2005). This conceptualisation of resilience as 'entrenchment' is likely to have arisen from the view of resilience as simply returning to a pre-existing state (see definitions on page 5). The second view of the relationship between resilience and adaptive capacity is put

forward by system scientists such as Walker, Holling et al. (2004 cited(in Schoon 2005): “who use the phrase adaptive capacity to be a means of improving the resilience of a system. The latter view of the relationship between the two concepts is in harmony with the perspective of resilience taken in this report. Resilience is more than the ability to adapt to a change – resilience involves transformation, encompassing the capacity for learning, innovation, renewal, re-organisation (Folke 2006) and attainment of a state that is sustainable in the current (social, political, biophysical) environment. As Paton (2006) suggests, “social resilience is more than merely returning to a previous state, it includes the capacity of people and communities to learn and/or to recognise and benefit from the new possibilities that change brings”.

2.3 The relationships between vulnerability, social resilience and adaptive capacity

While the three concepts of (social) vulnerability, resilience and adaptive capacity have developed in isolation and within different disciplinary fields, they have begun to converge. However, there remains no clear consensus on the relationship between the three concepts other than agreement that they are indeed closely related.

In order to understand the contribution that the resilience approach can make to a social assessment process Figure 1 provides a conceptualisation of the relationship between vulnerability, adaptive capacity and resistance.

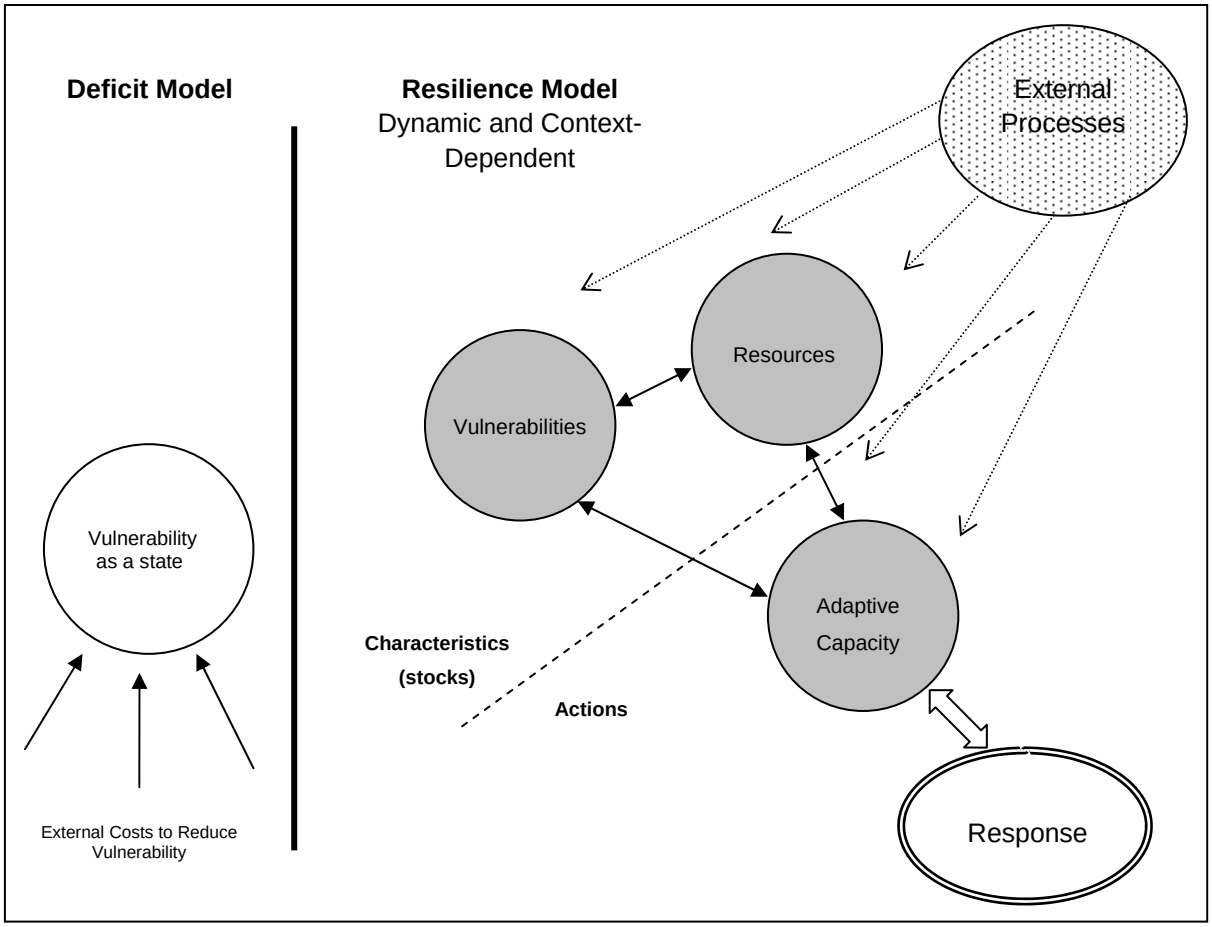

Figure 1: Conceptual Framework of Resilience, Vulnerability and Adaptive Capacity

The **deficit model** on the left hand side of this diagram is outcome oriented in that it focuses on research questions such as who is vulnerable, and what are they vulnerable to? This approach sees vulnerability as a deterministic state (where a community is assessed as 'more vulnerable' or 'less vulnerable'). External interventions (which are costly) are then applied to attempt to reduce this vulnerability.

The components of the resilience conceptual framework on the right hand side of the diagram are defined as follows:

- **Resilience** is the ability of a community to respond to a change *adaptively*. Rather than simply returning to a pre-existing state, this can mean transforming to a new state that is more sustainable in the current environment. A community's resilience is shaped by its vulnerabilities, resources and adaptive capacities.
- **Vulnerabilities** are the components of a community which may weaken its ability to respond adaptively to a change. Vulnerabilities are only one part of a community's characteristics (stocks) which drive its response to change.

- **Resources** are the strengths and abilities of a community which enable it to overcome its vulnerabilities and to respond adaptively to change. Resources make up one part of a community's characteristics (stocks) which drive its response to change.
- **Adaptive capacity** is "the ability or capability of a system to modify or change its characteristics or behaviour to cope better with actual or anticipated stresses" (Brooks 2003, p.8).
- The **response** that a community demonstrates to a change has a certain degree of resilience, and is driven by its ability to build on its resources and adaptive capacity, and to translate these into adaptation.
- **External processes** such as the broader political, economic, and physical environment influence a community's response to change, as well as its internal vulnerabilities and resources, and the way in which these are translated into adaptive action.

The resilience model is **dynamic and context-dependent**: the ways in which these processes occur will vary between communities and within the same community in response to different types of change (Brooks 2003).

The social assessment process provides communities and governments with a tool to assess each of these components of a community. When the process utilises principles of public participation, community engagement and procedural fairness, it can also increase a community's resilience.

3. Community Resilience and Social Assessment

Increasing water shortages across Australia will give rise to environmental, legislative, regulation, economic and social changes, which will have impacts on many communities across the country. It is essential that stakeholder groups are able to understand the potential impact of and outcomes of change, and how to enhance the general resilience of these communities. The social assessment process provides a tool for identifying the risks relating to policy goals and outcomes (such as water re-allocation). Communities and governments can then work in partnership to understand and minimise the impact of these changes. The social assessment process has been used both in conjunction with environmental assessments and as a discrete process. Social assessment has been used as part of town planning (Shantz 2001), to understand social changes in the fishing sector (Schirmer and Casey 2005) and to develop management strategies for Australia's native forests (Coakes and Fenton 2001).

Social assessment is a process of collecting, organising and analysing information about a community. A resilience approach to social assessment can be used to understand a community's vulnerabilities, resources and adaptive capacities that drive its response to change. The social assessment process ensures that social issues are considered in the implementation of a new policy or other change (Rietbergen-McCracken and Narayan 1998). A social assessment is conducted using social analysis, evaluation and monitoring through processes of stakeholder engagement (Taylor *et al.* 1995). Public involvement and community engagement are integral parts of social assessment, and are essential for its success. In conducting a social assessment, information is collected on the community's social characteristics, how the community is organised, the relationships between different groups within the community and how those different groups make decisions. To understand these community characteristics, a social assessment usually collects information on population characteristics, social organisation, community history, lifestyles, community resources, and attitudes, beliefs and values (Burdge and Vanclay 1995).

The social assessment process has not traditionally been approached from a resilience perspective, but instead has been applied in a way which has parallels with the 'vulnerability approach' described in Section 2. The traditional approach to social assessment is focused on labelling those communities which are likely to be negatively affected by a change as more or less 'vulnerable'. The process focuses on identifying weaknesses and then imposing measures to overcome them. Often these strategies involve some form of external intervention (e.g. compensation or external agents brought in to manage the change). These interventions are inevitably costly (in terms of

money, people and time), and risk failure. Social assessment researchers and authors recognise that the traditional vulnerability and predictive-based approaches to social assessment are limited because of their inability to fully capture, understand and control all possible changes and threats that may confront a community. Because social reality is dynamic and constantly changing, it is impossible to predict all potential outcomes (Kelly 2000; Walker *et al.* 2002).

While social assessment (and social impact assessment[1]) practitioners have identified a range of 'indicators' that can be used to identify areas of likely problems, these indicators are generally focused on the negative or weak aspects of a community. However, communities and their characteristics and systems are dynamic and are made up of many interrelated processes, and therefore, social changes are particularly difficult to capture through vulnerability-based indices (Burdge and Vanclay 1995). Instead of attempting to predict specific changes, a resilience approach accepts that change is inevitable and unpredictable. Rather than focusing on the potential points of weakness, the resilience approach identifies the resources and adaptive capacities that a community can utilise to overcome any problems that may result from change. A crucial difference is that rather than relying on external interventions to overcome vulnerabilities, a resilience approach builds upon the capacities (resources, flexibility) already established within a community.

This focus on resources and capacities does not ignore the components of a community which may be vulnerable to a particular change. The resilience approach is balanced in that it includes both the vulnerabilities *within* a community (rather than labelling an entire community as 'vulnerable') as well as the resources and adaptive capacities which enable the community to overcome these vulnerabilities and manage change in a positive way. A resilience perspective enables an adaptive form of governance, which encourages the use of environmental and social resources in a sustainable way (Folke 2006).

A resilience based social assessment recognises the inherent complexities and interactions between a community's resilience, vulnerability and adaptive capacity, and therefore should not be used as a one-off assessment. "An assessment of resilience is never complete. It must be revisited regularly as system dynamics change and as understanding grows. [It is] a process, rather than… a final product." (Resilience Alliance 2007, p.6).

[1] Social Impact Assessment (SIA) is a specific type of social assessment which focuses on the potential outcomes of a change. While social assessments more broadly may evaluate and monitor the impacts of a change, SIA has a narrower application and focuses on the prediction of (usually negative) impacts of a proposed project on people and their communities (Taylor, Bryan et al. 1995). Some suggest that social assessment is the first step of a more focused SIA (e.g. Schirmer and Casey 2005).

Summary

A social resilience approach generates a richer and more useful social assessment in three ways:

- a resilience perspective is able to capture and contend with the complexity inherent in human-environment systems and social changes in those systems
- instead of attempting to control change, the resilience perspective recognises that change and uncertainty are inevitable, and that communities are dynamic
- the resilience perspective provides a way of assessing the resources and adaptive capacities of a community rather than just its vulnerabilities. In this way, it provides a core set of capabilities upon which to build adaptation strategies

A resilience approach to social assessment enables us to:

- understanding of the community's social characteristics
- understanding the broader political and governance conditions and changes that are occurring, and their impact on the community's ability to manage change
- identification of the different groups within a community, including those who are most likely to be affected by a change, and understand the relationships between those groups
- identification of the vulnerabilities within a community which may reduce its resilience to adapt to change
- identification of a community's resources and adaptive capacities which increase its resilience to change
- development of scenarios to understand how a change might impact on the community, and how that community might utilise its resources and adaptive capacities to respond in an adaptive way
- identification of practical strategies to strengthen the community's resources and capacities
- monitoring and evaluation of changes as they occur to identify expected and unexpected social impacts
- explore a community's values, attitudes and beliefs, how these are influenced by the process of change, and how they may influence a community's response (Stenekes *et al.* 2008)
- Understanding what impact external (social, political, governance) conditions have on a community's response to change (Brooks 2003).

(Burdge and Vanclay 1995, p.32; Schirmer and Casey 2005)

Social assessment provides a valuable tool for communities and government to understand the potential consequences of water management reform for Australian communities. A rigorous social assessment that incorporates the principles of public engagement can help increase the success of policy changes and projects (Burdge and Vanclay 1995).

4. The Social Assessment Process: A Partnership between Government and Community

4.1 Stakeholder engagement and a participatory approach to social assessment

In order for a social assessment process to effectively assist in understanding and promoting a community's resilience and adaptive capacity, it is crucial that every step of this process is conducted in *partnership* between the community and the agency that is implementing the change (Arnstein 1969). A participatory approach to social assessment is conducted through group negotiation, collaboration and cooperation (Stenekes *et al.* 2008). If the community is involved in the process of change from the first stages, the level of uncertainty may be reduced and the community's resilience to the change as a whole can be greatly enhanced. Community involvement in the social assessment process can foster community participation with other stakeholder groups. However, if community members are excluded from participating in the process of change, uncertainty about the change will develop. In an uncertain environment, community groups will make their own assessments about the likely impacts on their livelihoods (Gray and Lawrence 2001). Uncertainty about a change process can also create conflict between different groups in a community. It is important that a change process includes participation and acknowledges and understands the histories and relationships between different groups within the community. The ability of people to adapt to change is dependent on their understanding of the issues and the impact the changes will bring. It is essential that the community is included and involved in the process and that communication is open and informative. If not, a community may respond in ways that undermine its capacity to cope with change.

Stakeholder engagement has long been considered essential in the process of social assessment, and is even more important in a resilience-based social assessment given that community members themselves are able to provide the best understanding of the communities and its vulnerabilities, resources and adaptive capacities. The rationale behind stakeholder engagement is that expertise does not lie solely within a central figure (e.g. the government or scientists) – instead it resides in different groups with different and related interests. Different stakeholder groups can offer important insights, and their involvement is essential in each phase (planning, implementation and evaluation). Procedures can be put in place to involve the community in assessing the characteristics and needs of different groups within their community. This involves engaging with community members not just as individuals but as members of groups, and recognising their

group-based interests and responses (Reynolds, 2008, personal communication). It is impossible to develop an approach to prepare for and manage a policy change that will have an effective response with all groups, so the assessment needs to include diverse groups from within the community in all stages of the process (Fenton *et al.* 2007).

4.2 Procedural Fairness

The importance of community and government partnerships has been explored comprehensively in the literature on procedural fairness. Social psychological research on procedural fairness has shown that people are more likely to cooperate with an authority (such as government) when they perceive the government as legitimate (Tyler 1997). An authority that is perceived as legitimate is seen to be appropriate, proper and just (within a particular context) (Tyler 2006). Early studies on legitimacy and fairness indicated that perceptions of legitimacy depend on fair outcomes. However, Tyler and his colleagues suggest that in making legitimacy judgements, people are more concerned about the fairness of decision making procedures (how they are treated) than about the actual decisions (their outcomes). Research shows that when a process is fair, people are more likely to accept 'negative' outcomes (e.g. Tyler 2001). While the effects of distributive and procedural fairness concerns cannot be clearly disentangled, the idea that perceptions of legitimacy and fairness depend on both the procedures used and the outcomes of the process, has received much support across a wide range of contexts. This work highlights the importance of developing a cohesive relationship between a community and the agency enacting a change. To maximise community support for outcomes such as reduced water allocations, the process of fair decision-making procedures cannot be overstated.

Through the application of a participatory approach incorporating principles of stakeholder engagement and procedural fairness, the community and agency are able to work together in partnership to promote community resilience.

4.3 A resilience based social assessment

This sub-section introduces a tool for a community to understand its own vulnerabilities, resources and adaptive capacities that will shape its response to a particular change (such as water re-allocation). This process also enables an agency to understand how it can help the community build on its own resources and capacities to respond adaptively. An assessment conducted in this way provides a basis upon which the resilience of that community can be enhanced and developed to

ensure that the implemented change has beneficial outcomes for both the community and government.

Below is a suggested six step process for a resilience based social assessment. This process is not comprehensive but provides examples of what might be explored in an assessment process. A more in-depth strategy would need to be conducted for a rigorous, comprehensive and useful assessment; and especially to take into account the unique aspects of communities (resilience, vulnerabilities, resources and adaptive capacities) and related to the particular change that is occurring (see Appendix 1).

This step process has generally been adopted from the Scientists and Practitioners' workbooks developed by the Resilience Alliance (Resilience Alliance 2007), unless otherwise noted.

1. Defining the issue

A resilience based social assessment recognises the complexity inherent in both communities and in change. This process therefore emphasises the whole system to which the social assessment is based. The focus of the assessment needs to be carefully defined. The community and government agency should work together to identify:

- Who is included in the 'community'? Is the community geographically based or is the community made up of people with similar characteristics? Has the community come together in response to a particular issue?
- What is the process of change that is likely to take place?
- What will be the issues arising from this change process for the community?
- What values and attitudes does the community have towards this change and the change process?
- What levels of government are important in this context?
- Which of the water resources are likely to be affected by the change (e.g. rivers, lakes, groundwater)?

2. The internal community structure

In order to understand a community's capacity to respond to change, the community and government together can ask:

- Who are the key social groups who are likely to be impacted by the proposed change?

- What are the relationships within and between social groups (e.g. patterns of trust)?
- What are the informal systems of governance in place in the community (e.g. are there community groups who are influential in deciding which issues are taken to local government)?
- How much of the community is reliant on the water resource (e.g. what proportion of the community uses water for irrigation (Herreria *et al.* 2006))?
- What are the levels of livelihood reliance on water resources in the community? (E.g. the impacts will not just affect those who depend on water for employment, but also those who provide services to agricultural workers).
- What are the values, attitudes and beliefs held by different groups in the community? Do different groups within the community have different values about water (Stenekes *et al.* 2008)? Do different groups have different attitudes towards change?

3. Community history

The community can look at how it has responded to change in the past, and work together with government to ensure that the community is able to respond adaptively to the current change.

- Have there been major events which have shaped the community (e.g. an influx of farming families, past droughts and booms)?
- Are there particular influences which continue to impact how the community functions and responds to events (e.g. relationships between different groups within the community)?
- Has there been any history of conflict and relationships between social groups within the community?
- What is the community's history of reliance on water (e.g. have there been major changes in the water demand or supply for the community – such as the building of a dam, or the establishment of a major industrial user)?

4. Community vulnerabilities

Communities and governments can identify vulnerable components within a community, but it is important that these are understood in conjunction with the resources and adaptive capacities which enable the community to overcome these vulnerabilities.

- Are there high levels of unemployment in the community?

- Does the community have a high degree of reliance on one industry (e.g. irrigation farming)? Does the community have a large amount of financial investment in a particular industry, or personal investment in the community's history as a strong agricultural producer?
- Is the community geographically isolated?
- Does the community have limited access to services (e.g. medical, financial, counselling services)?
- Do people in the community have high levels of debt? Is there a high ratio of debt to equity?
- Do people in the community have poor mental health resources? (e.g. scales such as the SF36 can be used to assess individual mental health as well as physical health[2]).
- Are there low levels of connectedness between community members?

5. Community resources

Resources are the aspects of a community that a traditional social assessment often fails to address. It is difficult to categorise these without considering a specific community, and only through a thorough process of exploration in partnership between the community and governments can a community's resources and strengths be identified, and their influence on adaptive capacity and resilience understood.

- Does the community have groups or community leaders who play an important leadership role in change (e.g. is there a particular community member who is respected and followed by others)? How can we incorporate these leaders into the decision making process?
- Where does the 'real power' lie within the community? This may not necessarily be within the traditional governance structure, but may be within a particularly strong or vocal group (e.g. grazier lobby groups) or within a large voting majority. Power can be in the form of monetary resources for funding, lobbying, advertising or voting.
- Does the community have strong social capital (i.e. strong networks, trust and relationships between people and community groups (e.g. Adger 2000)? How many people belong to and tap into community networks and support groups (e.g. the number of people who participate through volunteer work)?

[2] http://www.sf-36.org/tools/sf36.shtml

- Does the community have high social vitality and social inclusion (e.g. how many women are in full-time work, and how many young people are in full-time education (Herreria *et al.* 2006))?
- Does the community have high skills and education levels?
- Do community members have a good quality of life? (e.g. individual quality of life can be measured through generic measures of quality of life such as the Assessment of Quality of Life Instrument (AQoL,)[3].

6. Adaptive capacities

In assessing a community's adaptive capacity, the community and government can examine the community's ability to take action, that is, to mobilise its resources for adaptation. Flexibility and redundancy in the system which will enables the community to respond adaptively to a change also needs to be included. In terms of a water-dependent community, these might include:

- How diverse is the local economy? If one (water-dependent) industry suffers decline due to changes in access to water resources, are there other sectors within the community that will not be affected by reduced water access, or is there the opportunity for new industries to be developed?
- Is the community able to effectively organise itself?
- Are there leaders (individuals or groups) in the community who can mobilise awareness and resources to manage the process?
- Can the community learn from change?
- Does the community seek creative solutions to change?
- How long does it take the community to respond to changes?
- Are there strong communication channels within the community?

The selection of indicators and the type of data collected under each of these six steps will depend on the constraints and opportunities surrounding the particular assessment. Constraints include the type of information needed, availability of data, funding and time constraints (Schirmer and Casey 2005).

[3] e.g. http://www.psychiatry.unimelb.edu.au/qol/aqol/use_aqol.html

It is essential that a social assessment process incorporating a resilience perspective is not a one-off task. It needs to be an ongoing process, as described by the Resilience Alliance's (2007) practitioner's workbook (p.6):

> An assessment of resilience is never complete. It must be revisited regularly as system dynamics change and as understanding grows. [These] activities are intended to further a process, rather than produce a final product.

Conclusion

This report has presented a rationale for a social assessment method which enables governments and communities to work in partnership to ensure that policy changes such as water management reforms are successful. This success depends on communities' acceptance of the change process and on the fostering of their resilience, resources and adaptive capacity.

A community's response to change is determined by its resilience: its resources, its vulnerabilities and adaptive capacity, as well as by the impact of the external legislative and governance environment. A resilient response to change is enhanced when those enacting a change are able to work together with a community to utilise and develop existing resources and adaptive capacities, in the process of navigating the change.

The resilience approach strengthens and develops the process of social assessment because it can capture and contend with the complexity inherent in social change and the relationship between people and the natural environment. Rather than attempting to control change, the resilience perspective accepts that change and uncertainty are inevitable. It provides a way of assessing the capacity of a community in the context of change, rather than just its vulnerabilities. In this way, it identifies a core set of capabilities upon which to build strategies.

A social assessment process incorporating the resilience approach considers the following aspects of a community:

- The community and the process of change
- The internal community structure
- Community history
- Community vulnerabilities
- Community resources
- Adaptive capacity

It is essential that this process of social assessment utilises a participatory approach and is done in cooperation and partnership with the community itself. The people living within a community are able to provide the best understanding of that community, and how its resilience to change may be enhanced. Social assessment is strengthened when it is approached as an ongoing process rather than as a one-off assessment. Working together with a community over a period of change can ensure that uncertainty, conflict and resistance are minimised.

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Appendix 1

Social assessment at a regional scale: Measuring the social resilience of communities with reduced water access

This project has provided the conceptual basis for a social assessment framework that, if developed, can assist in identifying areas of priority for government intervention at a regional or national scale. The framework points to measures of resilience that identify the capacity of communities and industries to adapt to changes in the availability, access or allocation of water. These social and economic measures of resilience can be integrated with biophysical information to identify communities and industries that are less *resilient* to changes in water availability.

The approach recognises that partnerships between governments and communities will be the most effective means of implementing the assessment process by promoting an understanding of resilience at the local level and enhancing the skills of land-holders, community groups and other industry groups to contribute to sustainable management of resources. These processes can contribute to the transparency of decision-making through the provision of benchmarking social information and can help generate public acceptance of the policy changes.

The benefits derived from the approach are:

- wider applicability to any community facing a natural resource crisis
- outcomes delivered at a landscape scale (i.e. regional, basin, state)
- integration of social, economic and biophysical information
- provides multiple benefits by addressing environmental and production values for water.

The following sections scope the key activities in 3 phases to be undertaken in applying this social assessment framework:

Phase 1: Scoping and profiling

a) using the social assessment framework as a conceptual basis, refine tools and processes for integrating social, economic and biophysical assessment of resilience
b) convene a steering committee (including DAFF, DEWHA, MDBC, NWC, CSIRO etc)
c) undertake a stakeholder analysis of key concerns
d) identify broad scale or area of interest (e.g. region, basin or state) and identify social and biophysical ‘sub-catchments’ (e.g. towns or farming areas)
e) develop pilot measures of resilience to changes in water availability, access or allocation including: age distribution, employment, economic base, water usage, water dependence, social capital, biophysical measures (e.g. rainfall history/predictions, water availability)
f) profile communities and key industries in the whole region (overlay social and economic resilience with biophysical information)

g) select case studies to pilot the measures and approaches, including participatory workshops with communities for validation/'groundtruthing'.

Phase 2: Application of framework across region

h) develop case study selection criteria and select representative or priority communities and industries using matrix (i.e. high/low, social/economic/biophysical, vulnerability/resilience)
i) work with key stakeholders in regions to carry out data collection and assessment
j) provide benchmarking data set.

Phase 3: Reporting

k) final report containing recommendations for policy (and depending on timing, assistance with ongoing policy development)
l) presentation of key findings and recommendations to stakeholders and regions.