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Opinion leaders and complex sustainability issues

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Abstract: Identifying mechanisms to ensure appropriate and timely societal responses to complex global sustainability issues such as climate change presents a challenge to contemporary policy makers and researchers. Case studies of adaptive management of natural resources, sustainability studies, and research on social capital have cited leadership, in particular, as an important component of social change. This paper describes an innovative approach to understanding the role of informal leadership and its utility in influencing societal attitudes and practice. The approach builds on the Diffusion of Innovations Model in which learning about new ideas, practices or technologies occurs through interpersonal communication with informal opinion leaders. The approach also analyses linkages between the concepts of response capacity to climate change and the strategies of opinion leaders for influencing societal change through informal social networks.

Introduction and context for study

Research related to social change in response to climate change has focused predominantly on the need for reform at the public policy and institutional level, and at the other extreme, on individual behaviour change. Social change occurs at all levels and attempts to understand it in different contexts is crucial for responding to complex problems such as climate change. As observed by Tompkins and Adger (2005), "the capacity of an individual, group or institution (at any scale) to learn and modify its response to climate change is important in generating sustainable outcomes," (p. 563).

Faced with escalating human contributions to climate change though the emission of greenhouse gases, important questions about responding to predicted impacts arise. For example, how do we get from collective *capacity* for response to climate change to *response* ?(Burch and Robinson, 2007); and how do we get from individual values and attitudes toward climate change to behaviour change? (Kollmus and Agyeman, 2002; Lieserowitz et al., 2006; Lorenzoni and Pidgeon ,2006).

One avenue for connecting complex global sustainability issues to local level social systems is through attention to the flow of information and influence through social networks. Leadership is identified as a focal point for the communication of innovative ideas and practices in social networks in the fields of community health (Kelly et al., 1991; Rogers, 2003; Dearing, 2008), sustainable practices in agriculture (Feder and Savastano, 2006) and sustainable technologies (Moser and Mosler, 2008).

The overarching research question guiding this paper is what is the potential role of opinion leaders at the local level in the process of responding to complex, global issues? Understanding more about the process of individual influence on social-ecological systems change is the exploratory aim.

Theoretical framework

An interdisciplinary approach is taken for this study. Concepts emergent in the literature of climate change adaptation, adaptive and collaborative resources management, social capital, attitudes and behaviour change and the diffusion of innovations are used to guide an exploration of strategies for change utilised in local level social networks. Core concepts of the theoretical framework are described in this section.

Response capacity

Following from concerns about the projected impacts of global warming, the UN Framework Convention on Climate Change calls for two responses to climate change: mitigation, or actions aimed at reducing greenhouse gas emissions and enhancing sinks, and adaptation to the changes caused by climate change (Klein et al., 2005).

Adaptive capacity has been explained in short as the social context in which adaptation decisions are made (Yohe, 2001; Tompkins and Adger, 2005; Burch and Robinson, 2007). According to Yohe (2001), the concept emerged from the recognition by climate researchers of the diversity and context specific nature of human responses to the impacts of climate change. Building on the concept of adaptive capacity, Yohe (2001) later proposed mitigative capacity as the 'mirror image' of adaptive capacity, defined by a similar inventory of biophysical and social resource determinants, summarised in Figure 1, below. The concept of response capacity represents a synthesis of adaptive and mitigative capacity, recognising that social-ecological systems have the capacity to respond to stressors in many different ways, and that access to resources and political power can prevail over other determinants in the choice of response (Burch and Robinson 2007). Importantly, response capacity involves the ability to change collective behaviour in a social system (Tompkins and Adger 2005, p.566; Burch and Robinson, 2007).

Figure 1. Elements of Social Response to Complex Sustainability Issues
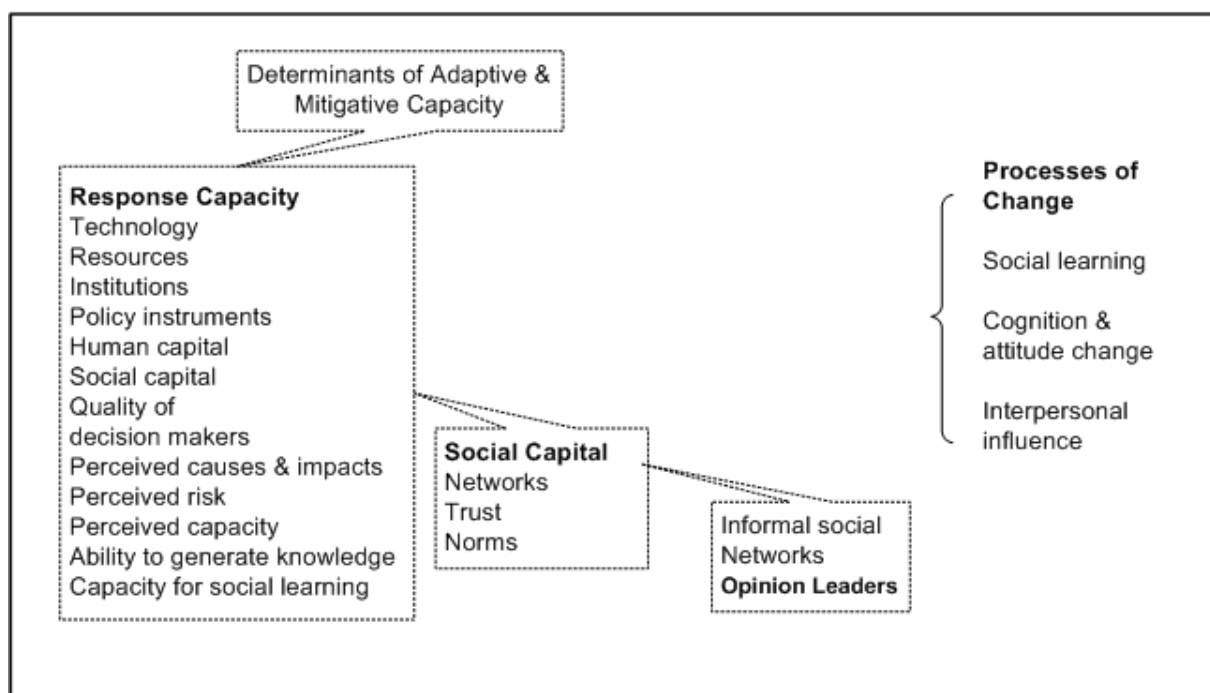
Social capital

Social capital, one of the determinants of response capacity, is considered a valuable concept in many social disciplines because it deals with the fundamental components of civil society (Onyx and Bullen, 2000). Within the concept of social capital, the notion of interpersonal networks represents a mechanism for the transfer of information, and other exchanges.

In the literature, the benefits attributed to social capital include: increasing public participation and access to information, the provision of a social safety net for support and taking risk, and efficient communication and economic exchanges (Brooks 2007, p.232).

The theory of social capital contributes many powerful concepts to the consideration of response capacity, including bonding and bridging relationships for the sharing of information and knowledge resources, and for the management of risk (Adger, 2003). Bonding social capital refers to exchanges between people who know each other within homogeneous groups such as kinship groups or school classes, while bridging social capital refers to communications between people or dissimilar groups who previously did not know each other (Putnam, 1995; 2000).

Adger (2003) cites the case of a marine protected area in Trinidad and Tobago documented by Tompkins et al. (2002) where the development of trust between stakeholders and government decision

makers resulted in a dense network of exchange connecting the local resource management area with external institutions. Social capital, networks and institutional change are shown to be critical for sustainable transitions in response to climate change.

If collective action and institutional change are necessary for response capacity to climate change, then political participation to support institutional and policy action could be equally important. The engagement with political ideas and activities has been investigated as a component of social capital. Research shows the amount and quality of political discussion within social networks (La Due Lake and Huckfeldt, 1998) and involvement in civil organisations (Booth and Richard, 1998) is associated with higher levels of political participation, e.g. in election campaigns.

Learning

The need for new approaches to sustainably manage natural resources is stressed in recent literature on adaptive and collaborative resources management. These studies generally focus on the determinants of response capacity, rather than the processes of how capacity is translated into response. However, social learning has been discussed for achieving institutional and policy change (Fabricius et al. 2007, p.5).

Social learning is considered essential for sustainability because the management of social-ecological systems represents a complex problem which requires participation and negotiation between different actors and interests to reach collective decisions (Muro and Jeffrey, 2008; Mostert et al., 2007; Beratan, 2007). In addition, there is a need for innovative approaches to problems not solved by new technology or market mechanisms alone (Muro and Jeffrey, 2008; Broderick, 2008).

Most empirical studies report changes in knowledge, shifts in attitude and improvements in trust and relations between stakeholders, and some document actual changes in policy or institutions. In cases which do document changes in behaviour, perceived power differences between individuals may be responsible for outcomes (McCullum et al., 2004 cited in Muro and Jeffrey 2008).

Leaders

Many discussions about achieving change through adaptive management processes emphasise the importance of leadership and social networks, in conjunction with social learning (Walker et al., 2006; Olsson et al., 2006; Folke et al., 2005; Armitage, 2005; Fabricius et al., 2007; Adger et al., 2005). Leadership is important within organisations, in external policy support, and in facilitating links between the two. It also helps develop knowledge and motivation for change.

Effective leadership engages with key individuals in different sectors, facilitates links between social networks of different scales and interests, reconceptualises issues, generates and integrates diverse ideas, viewpoints and solutions and promotes novelty (Olsson et al., 2006). Leaders provide innovation, build trust, help develop understanding and knowledge and motivate support for change. They provide horizontal and vertical links with outside expertise and authority (Bebbington, 1997 and Tompkins et al., 2002, cited in Folke et al., 2005). Some additional functions attributed to leaders include changing the opinions and values of a critical mass of people to move towards system transformation, and recognising opportunities to, among other things, connect political interest to problem perception (Folke et al., 2005).

The effect of influential individuals in collective decisions described in adaptive management research suggests an opportunity to learn how influential individuals perceive their decision making environment, assess information about complex environmental issues in relation to their own priorities for response, and in turn influence others. I

## Individual attitudes and behaviour change

Difficulty in predicting environmental behaviours based on attitudes, especially specific behaviours from general attitudes is well documented (Ajzen and Fishbein, 1980 cited in Ajzen, 2000; Kollmus and Agyeman, 2002).

A methodological weakness in many attitude-behaviour studies as reviewed by Kollmus and Agyeman (2002) is the restricted focus on direct behaviour changes and excluding educational or political actions, thereby centreing the burden of environmental responsibility on the individual and the household. In addition, it can be argued that indirect actions have a potentially wider, more effective impact on environmental problems than the aggregation of many small individual actions (Stern, 2000; Courtenay-Hall and Rogers, 2002; Lubell, 2007). Clover (2002) contends that the focus on individual behaviour change in response to environmental problems is disempowering precisely because it ignores the powerful structures and policies "at the heart of environmental destruction" (p.315).

Individual decisions to respond to environmental problems are also influenced significantly by relationships with social groups or networks. Jaegar et al. (1993) compared the influence of three factors on individual responses to climate change: knowledge about climate change, socio-demographic characteristics, and social norms and networks. The authors report that social norm variables were significantly better than either knowledge or socio-demographic factors for influencing climate change actions. These results are supported by experiments in group identity by White et al. (2002) which demonstrate that students are more likely to behave in a manner consistent with their attitudes when they receive positive reinforcement from their social group. Fielding et al. (2008) also found that the group norms of farmers had a significant effect on their intentions to carry out a sustainable management practice.

Social diffusion

The final concept in this theoretical framework goes some way to linking macro level views of social change in institutions, and factors affecting individual decisions to change behaviour in their social-ecological context. In the social diffusion model, attention focuses on interactions between individuals and the process of change in social networks, where discourse and learning leads to new norms of appropriate behaviour, and behaviour change spreads within and between groups (Valente and Davis, 1999; Rogers, 2003; Hornik, 2002). According to the model, as new practices are adopted at different times by individuals in a social system, the adoption rate forms an S-shaped curve. The shape of the diffusion curve results from individuals who are early adopters of an innovation influencing others, and causing an exponential increase in the rate of adoption (Rogers 2003, p.300) until most of the population have adopted the new practice. An idealised representation is illustrated below.

Figure 2. Diffusion of innovations

Adapted from Rogers 2003
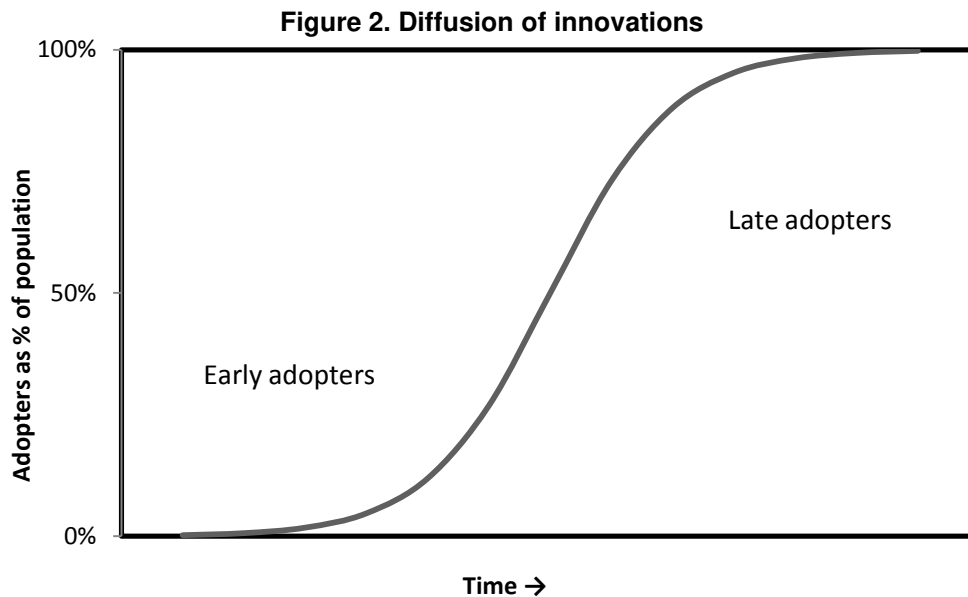
Within the early adopter group are influential individuals, known as 'opinion leaders' who act as role models for others in the social system. Through their greater than average interpersonal contacts, research shows the activities of opinion leaders can be important factors in "rapid and sustained behavior change," (Valente and Davis 1999, p.57).

A landmark case study by Kelly et al. (1991) demonstrated that the risk of contracting HIV could be substantially reduced by engaging popularly nominated opinion leaders in gay men's social networks to promulgate safe-sex behaviours among their peers. Kelly et al. (1991) noted a key finding from their initial field test was that knowledge about AIDS risk behaviour was high, even before the intervention, indicating the importance of social acceptability in inducing behaviour changes.

The potential contribution of a social diffusion framework is, in part, its capacity to address many of the concerns raised in the preceding discussion of research concerned with social and environmental change. That is, the capacity of individuals and social groups to respond to new information in social contexts outside of organized management processes; recognition of the influence of social networks, discourse, opinion leaders, norms and trust; a process for understanding individual involvement in collective change; and a process for exerting collective pressure on institutions and policy makers for change.

Methodology

Because climate change is a complex issue with responses and projected impacts affecting a broad range of social, environmental, economic, and personal issues, it can be argued that everyone is a stakeholder. Therefore, any opinion leader has potential influence with regard to responding to climate change within their social network. Unlike most diffusion studies which are retrospective (documenting the process of adoption after it has occurred), this study takes a prospective approach, illustrated is Figure 3.

Figure 3. Early diffusion stage
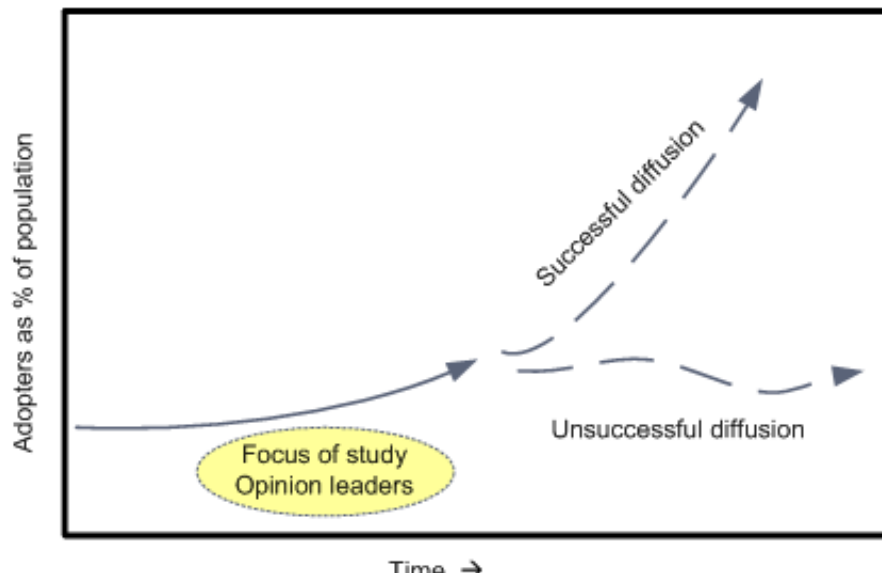
A case study focused on opinion leaders in the Sunshine Coast Region of Queensland, Australia is proposed. The Sunshine Coast Region is a local government area with over 200 kilometres of coastline extending from Noosa in the north, through Maroochydore, to Caloundra in the south. It also includes the hinterland communities of the Blackall Range. The regional population of approximately 300,000 is growing by about 200 new residents per week (Sunshine Coast Regional Council, 2008). An additional 2.7 million tourists over the year add to the local population. Extensive coastal development, reliance on tourism and an aging population present particular vulnerabilities to climate change.

Extended interviews with a sample of opinion leaders (identified through a combination of resident survey, analysis of local newspapers and interviews with elected regional councillors), will explore research questions related to information sources, strategies for influencing others in relation to opinion leaders' areas of interest, views of change in communities, and views and activities in relation to climate change. Interviews will be analysed for narrative features as well as emergent themes to gain understanding of opinion leaders' views of change around them.

Implications of findings

Insights gained from this study will have implications for understanding how processes of influence and change at the interpersonal and local levels relate to capacity for collective responses to complex, global sustainability issues, such as climate change. It brings together powerful ideas from several fields of social research concerned with how transitions to more sustainable futures might be achieved. At the practical level, future interventions planned by institutions with responsibility for supporting social change in sustainable directions might consider starting with mechanisms and processes already in operation at the level of communities and informal social networks.

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