

The influence of multilevel governance systems on the development and implementation of climate adaptation practices within organizations in Australia

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IVM Governance of Adaptation Symposium

Theme: "Action at what levels"

March, 2012

Abstract

To address the multi-scalar effects of climate change, strategic planning by Australian organizations must consider the socio-political, economic, institutional and regional context of their decisions. Interactions between organizations, “the social entities ...created to accomplish tasks” and institutions, the formal regulations and informal “cultural norms, values and accepted practices” (Matthews and Sydneysmith, 2010) that govern behaviour are of critical importance. The number of regulations and policies on climate change in Australia is limited. Uncertainty about the timing, structure and potential impact of proposed new legislations, such as a national carbon abatement scheme, is affecting forward planning across the country. To assist with operational and policy uncertainties, organizations embed themselves in networks that inform, structure and facilitate strategies. Organizational representatives also engage in policy forums consistent with the “ecology of games” paradigm - senior officers groups, inter-agency forums, industry task forces and ministerial advisory groups (Long, 1958, Lubell et al., 2010, Scholz et al., 2008). These constitute another institutional level influencing the system.

We examine patterns of relationships and associated emergent structures of these multilevel networks (Robins et al., 2010). The focus of this paper is on the forum level of organizational cooperation. A series of scoping interviews and focus groups were conducted in two study areas. This research identified anecdotal evidence about the importance of forums and organizational interactions on governance specifically on issues associated with the impacts of climate change on organizational activities and strategic planning. Our analysis of this scoping data confirms that forums play a key role in the every day business of the organizations and highlights some of the barriers for the development and implementation of climate adaptation practices. The nature and importance of these forums for two Australian regions will be discussed.

Key words

Adaptation, decision-making, organization, multilevel governance, forums, networks

Introduction:

The majority of social research about climate adaptation is focussed on individual behaviour with less emphasis on organizational readiness and response. However, organizations face considerable challenges in dealing with the anticipated impacts of climate change. Among these challenges is the need to develop appropriate plans that encompass broader issues of linked environmental, economic, societal and cultural sustainability. Planning requires attention to governance issues, essential to the achievement of collective and cooperative goals although there is much scholarly debate about the meaning of the term and derivatives like adaptive governance, network governance, adaptive co-management, collaborative management and policy networks. We align our interpretation of governance with that of Moser, encompassing decisions, processes, institutions, mechanisms, and the norms and authority underlying actions (Moser, 2009) and Folke et al where governance represents “the structures and processes by which people in societies make decisions and share power” (Folke et al., 2005, pp444).

When it comes to climate adaptation, “governance is ultimately concerned with creating the conditions for ordered rule and collective action” (Stoker, 1998 , pp17). These conditions must include the availability of appropriate decision making frameworks to assist organizations to effectively engage in processes that result in changed practices and a reduced vulnerability. Adaptive governance is purported to be an effective framework for managing complex environmental issues by dealing with convoluted human interactions evident in policy deliberations focussed on climate change (Gunderson and Light, 2006). The implementation of effective adaptive governance to deal with the ongoing impacts of climate change is essential especially as future impacts are uncertain.

Dietz et al suggests that the effective management of resources in complex systems requires an adaptive governance framework with access to: trustworthy information at the correct scale; a mechanism for dealing with conflict; the ability to induce institutional compliance (rules); the provision of infrastructure (physical, technical and institutional); and an ability to support and encourage change (Dietz et al., 2003).

There are advantages in combining adaptive governance systems with those that are multilevel. Multilevel governance systems are described by Reed and Bruyneel as “systems that are linked horizontally (across geographic space) as well as vertically (across levels of organizations)” (Reed and Bruyneel, 2010, pp648, see also, Betsill and Bulkeley, 2006). Armitage adds to the concept suggesting that such systems “may facilitate learning and adaptation in complex social-ecological circumstances,....connect community based management with regional/national government-level management, link scientific management and traditional management systems, encourage the sharing of knowledge and information, and promote collaboration and dialogue around goals and outcomes” (Armitage, 2008, pp7). Multilevel governance has received great attention in the European context where authority is moving between and within local, national, supranational levels but also dispersed across a variety of public and private sectors (Kern and Bulkeley, 2009). Two main archetypes have been proposed to refine the conceptual complexity of multi actor governance. One has a focus on hierarchy and shared authority through different levels, for example the tiers of government in Australia. The other concerns multiple overlapping and interconnected spheres of authority, less focussed on government and more on the relationships between state and non-state authorities (Hooghe and Marks, 2003).

Given that adaptation to climate change involves international politics, national and local governments, firms, non-governmental organizations and households (Paavola, 2008) it is not surprising that multilevel governance is an important and necessary framework in which to consider and address such issues. Bulkeley and Moser highlight the need to have varied and numerous actors involved in climate change governance, but acknowledge that diversification can lead to issues around responsibility and accountability. They further suggest that the involvement of many participants in complex problem solving exercises can be time consuming with delayed resolution and difficulties in reaching consensus (Bulkeley and Moser, 2007).

Multilevel adaptive governance systems support coordination among and between organizations that are usually self organising. Collections of inter-organizational relationships may be represented as networks displaying structural characteristics associated with for example, the strength of connections between organizations, interaction patterns and shared goals. Organizations often formalise their relationships with others in their network through collaborations, partnerships or joint venture arrangements (Cropper et al., 2008). Overall, networks not only facilitate the conduct of an organizations' business but may also contribute to collective action and the enforcement of institutions (Schneider et al., 2003, Sabatier et al., 2005, Dietz and Henry, 2008). This is not to say that relationships cannot sometimes be conflicted, displaying "acrimony, power determination, disagreement over problems and aims, impossibility in reaching agreement, and lack of implementation ability" (McGuire and Agranoff, 2011, pp2). While networks offer workarounds and opportunities for coalition formation their effectiveness in resolving conflicts is dependent on network structure (Carlsson and Sandstrom, 2008). However, it is important to consider these barriers when trying to understand the role of process and outcome, venue and actors on network performance (McGuire and Agranoff, op cit). An effective adaptive governance framework as characterised by Dietz (Dietz et al., op cit), is precisely what is needed by organizations as they attempt to formulate their approach to climate change.

While networks represent one form of inter-organizational collaboration, forums constitute another avenue for organizations "to solve complex mutual problems, to stay attuned with what their competitors are doing and/or influence their industry to undertake a particular course of action or inaction" (Bates et al., 2011, pp8). Staff representing their organizations develop and maintain relationships with those from other entities operating either in the same sector or in related spheres of economic or sectoral activity. Professional forums or meetings held on a regular or semi regular basis represent the primary mechanism through which these relationships are forged and maintained. Informal associations facilitated by the forums provide additional opportunities for interaction and may influence organizational perceptions of threats and opportunities associated with climate change.

Over time these relationships become stronger and fulfil many functions like advice seeking, consensus building, normative guidance, lobbying, protocol formation, reinforcement and promotion. This is consistent with the Ecology of Games paradigm described by Long and utilised by others in the investigation of resource management issues (Scholz et al., op cit, Long, op cit, Lubell et al., op cit). Forums are often considered in conjunction with arenas of interaction where arenas represent different domains of actor activity such as organizations, regions, level of governance (national, state, local) (Koppenjan and Klijn, 2004). The boundaries of arenas may overlap, with the same actor participating in multiple forums / arenas. The participant is influenced by the norms and institutions of each arena he belongs to. This can be a source of ambivalence or accommodation.

Equivocation is a common organizational response in the face of climate change pressure. This circumspection may be understandable given the level of uncertainty and lack of guidelines in Australia on how public and private organizations might best deal with climate change. Organizations need to deal with uncertainty about the potential impact of climate change as well as the likely impact of policies targeting emissions through the imposition of new taxes. Many organizations, particularly small to medium size enterprises tend to concentrate on daily activities (Studer et al., 2008) and focus constrained resources on core business concerns (Biondi et al., 2000). Brammer suggests that small companies perceive few benefits from engaging with environmental issues (Brammer et al., 2011). Given the increasing costs of doing business, this may translate to inaction on pre-planning or strategic restructuring to better position individual organizations in a competitive local, regional and global environment. However, Easterling suggests that a “wait and see” attitude has the potential to be very costly, and is an unsatisfactory response to coping with the sometimes irreversible impacts of climate change, the possibility of inappropriate development decisions and legacies of long term infrastructure investments that are expensive to modify because of the impacts of long term climate change (Easterling et al., 2004).

Although this call for action is no doubt warranted, the operating environment within which organizations operate is very complex. There is a need to manage multiple interactions within and between their socio-political, economic, institutional and regional environmental setting. Overall, it is likely that when confronted with multiple uncertainties some of which are impossible to identify, adaptation can be achieved more easily “in a socioeconomic setting that is more flexible and organically responsive to change” (Dobes, 2012). In these situations managers and decision makers use their knowledge about relationships between organizations as a reference point to inform their position or stance. Factors influencing their decisions may include their understanding about interdependencies, rules (both informal and formal) and trust relations (Klijn, 2007).

In this paper we begin by describing the Australian political context outlining the background and nature of impending policy changes that will impact on organizations and their operations in the future. For some this will represent a business opportunity while others will perceive it more as a threat. We will then introduce the two case study areas where we investigate how regional climate adaptation strategies are influenced by multilevel governance systems. We then proceed to discuss the mode and nature of organizational responses to climate change based on our investigations. We anticipate that organizational responses to climate change and efforts aimed at adapting to climate will be influenced by their active involvement / participation in professional forums such as conferences, meetings and sector forums. Our analysis will draw on results of an empirical study consisting of focus groups with local government representatives and informal interviews with 25 representatives of organizations located in either the Swan Canning region of Western Australia or the Hunter / Central Rivers region of New South Wales.

Political context

Australia has been considering the introduction of legislation aimed at controlling carbon emissions since 2004 when a working group including representatives from every State and Territory in Australia was established to develop a model for a national emissions trading scheme (National Emissions Trading Taskforce, 2006). Their final report, issued in 2007 recommended the introduction of a domestic emissions trading scheme based on a ‘cap and trade model’ that restricts the total emissions from a range of sectors covered by the scheme (Prime Ministerial Task Group on Emissions Trading, 2007).

The 2007 Federal election saw a change of government, from the incumbent Liberal-National Parties coalition to the Australian Labor Party (ALP). The election focused heavily on environmental issues, especially climate change and actions (mostly mitigation actions) Australia could take to address climate change. The ALP did not win a majority in the upper house, though, and delayed introducing legislation to enact an emissions trading scheme because it would be defeated in the Senate.

Later in 2007, the Commonwealth, State and Territory Governments commissioned Professor Ross Garnaut to conduct an independent study on the impacts of climate change on the Australian economy. The report recommended a number of policies ranging from short to long term, appropriate emission targets under different climate scenarios and suggested that a carbon tax would be preferable to a compromised emissions trading scheme (Garnaut, 2008). Since the release of the original Garnaut report a series of committees have investigated and reported on aspects of the Carbon Pollution Reduction Scheme as it became known. The scheme was rejected on two occasions by the Parliament in 2010 and then re-introduced with amendments later the same year. Garnaut was asked to conduct a review of his report and provide an update that indicated whether there were any significant changes that would impact on the findings of the 2008 report. The updated report, released in 2011, confirmed the need for Australia to act, particularly since advances in climate science indicated that the impacts of climate change were likely to occur earlier and be more harmful than previously anticipated (Garnaut, 2011). A Carbon Price Framework emerged early in 2011, followed by Treasury modelling of the amended scheme and release of the final Clean Energy Plan, including a Carbon pricing mechanism in July, 2011. In November 2011 the Clean Energy Future legislation was ratified and scheduled for implementation from July 2012.

Australian businesses and the wider community have expressed concern and apprehension about the impact of the legislation on their companies, households and the competitiveness of the Australian economy. While the legislation took more than six years to pass into law, many organizations remain unprepared.

An effective regulatory framework may be a necessary but not sufficient condition for achieving the goals of legislation. Scholz and Wang, in an empirical analysis of water pollution policies found that local partnerships and decentralised policy networks play a role in compliance with regulatory provisions by favouring local interests, in part by providing more strategic choices. They suggest that there is a need to better understand the role of local policy networks, and informal and formal collaborative mechanisms (networks) and how they may be coopted to enhance the effectiveness of regulatory policies formulated at the national level (Scholz and Wang, 2006).

In Australia, the politics of climate change risk is not confined to the formal political system. Instead a wide network of organizations, institutions and individuals are involved in negotiations to define and contest liability, obligations and responsibility. Attention has focussed primarily on mitigation initiatives rather than adaptation. Smith, Thomsen, Keys et al (2011) indicate that historically Australia limited its climate adaptation approach by framing it in an economic rationalist paradigm. After detailing approaches undertaken by the Australian government over the last decade; they turn to the future and suggest that Australia can benefit by changing how climate adaptation is addressed. For example by focussing on trans-disciplinary and emerging fields of scientific research, favouring quality

over quantity and by continuing to include all tiers of government, industry, and communities of place and interest (Smith et al., 2011).

Regional context

Two regions were selected as case studies for our research, the Hunter Central rivers region of New South Wales (hereafter referred to as the Hunter region) and the Swan Canning region of Western Australia (hereafter referred to as the Swan region). The Hunter region is located on the east coast of Australia. It covers an area of just over 39,000 km² and has a population of approximately 1 million people. Though there are numerous towns scattered across the region the major population centres are located on the coast including Newcastle, the second largest city in the state. Important estuarine and coastal lake systems are found in the region along with large areas of temperate forest and rainforest. Most employment is in the manufacturing, retail trade and health care / social assistance sectors. However, coal mining represents an important economic activity along with power generation, tourism, health, education, and defence and aerospace industries (McDonald, 2008, HCCREMS, 2010, Australian Government Bureau of Statistics, 2010). The low lying coastal flats portion of the area is particularly vulnerable to inundation (storm surges) and sea level rise.

The Swan Canning catchment is located on the west coast of Australia and covers an area of 2,126 km². The region is part of the much larger Swan Avon system with a total area in excess of 141,000 km². The area covered by the Swan / Canning river system has a population of 1.7 million people and includes Perth, the state capital (ibid, 2010). The Swan region is of significant environmental, cultural and recreational importance, with groundwater resources that provide potable water for the city of Perth and support many wetland ecosystems. Apart from the metropolitan areas, major land uses include conservation areas and natural environment, dryland agriculture and grazing. Tourism plays an important role in the area (Australian Government Bureau of Meteorology, 2012). The South West region of the state adjoining the Swan has been identified as a biodiversity hot spot and an area vulnerable to the likely impacts of climate change.

These two regions were selected because they represent regions of major significance in their respective states. They each have a range of settlement types including urban, peri-urban and agricultural / rural and a diverse base of industrial activity. There is a significant degree of contestation in resource use and ongoing population growth with a diffuse settlement pattern. Significant investment in infrastructure is a feature of both regions. Climate projections for indicate a likely decrease in rainfall and increase in temperature of about one degree in the short term with escalating impacts into the future both for the Swan and Hunter regions (National Economics, 2007-08).

Despite similarities the regions are facing different climate challenges, particularly in regard to state government policies. The main disparities from an organizational perspective are that Perth, as the State capital, has the headquarters of multiple resource companies with interests elsewhere in the state along with the State government departments that feature in investment decisions and infrastructure negotiations. A further distinction is the region's isolation with a distance of at least 3,000 kilometres from the national government. In contrast, the Hunter region is located relatively close to both the state capital, Sydney (160 kilometres) and the national capital, Canberra (437 kilometres).

Research focus and aims

The current research will provide a better understanding of the role of public agencies, private companies and other stakeholder representatives in networks and forum like bodies

in stimulating the development of climate change strategies among organizations, supporting their implementation and shaping the outcomes. This is a question as much about capacities, coordination and leadership as it is about the fundamental importance of trust and good will; about moving beyond intention and aspiration to consensus on the need to be involved in sound, well resourced and effective actions to manage the likely impacts of climate change.

Multilevel governance is a key focus of our research into the regional climate adaptation responses of organizations. Applying Matthews and Sydneysmith's definition, we include a sample of private and public companies, not for profit organizations, large multinational companies, local government and state and federal government agencies with a presence in our case study region as "social entities...created to accomplish tasks" and consequently participants in the study (Matthews and Sydneysmith, op cit). We identify and investigate the dynamics of networks and forums in effect between participants as we believe they play a significant role in stimulating and shaping what is done (and not done) on climate adaption by organizations . Finally our interest is centred at the regional level as this is an appropriate scale to assess the 'think global, act local' dimension of climate adaptation.

This research considered climate adaptation efforts in two significant groups; local government and businesses. Local governments are of particular interest given their jurisdiction; regional and local areas and significant power in relation to development approvals. These bodies are not recognised as a separate tier of government in the Australian constitution. The states and territories have constitutional responsibility for local government and provide the legal framework for council operations. Under this arrangement, State and territory legislation impose few limitations on what services local government can provide and local government have wide-ranging powers to carry out almost all functions (Australian Centre of Excellence for Local Government, 2011). However the reality is that local government cannot act independently in most circumstances although they often enact decisions made at higher levels. For example, they are potentially liable for their interpretation and implementation of state ratified planning decisions related to sea level rise. Abel et al discuss the importance of multilevel governance and the principle of subsidiarity in managing the challenge of planned retreat in response to sea level rise (Abel et al., in press).

Other organizations including commercial businesses are of interest given their role in the Australian community. The research will assess their awareness of the need to embrace change, recognise the consequences of their operations and identify potential risks, adopt more climate friendly practices and manage imposts of new regulatory mechanisms. Some may contribute significantly to carbon emissions.

Specifically, the research aimed to identify the climate related concerns of local government and business, any actions they are taking in relation to climate adaptation or mitigation, and the roles of networks and forums in supporting these activities.

Method

Data on organizational responses to climate change and associated forums was collected via two focus groups and 25 semi structured interviews. Two case study areas, the Hunter/Central Rivers region of New South Wales and the Swan/Canning region of Western Australia, were selected at the beginning of the Climate Adaptation Flagship (CAF) Regional Case Studies project, as described above.

Focus groups

The overall aim of the focus groups was to enhance local capacity for adaptation by working through climate change issues of importance to local governments with guidance from a climate change communication expert. Two focus groups were held, one in the Hunter and the other in the Swan. Only local government representatives working on climate change and associated issues were invited to participate. All local governments in the regions were contacted via telephone and appropriate representatives invited to attend. In total 24 participants attended the focus groups, 12 in each region, representing six different councils from the Hunter and 12 from the Swan.

The agenda for the focus groups included a series of lecture style presentations followed by group work on issues nominated by participants. Given the focus on communication, many of the complex relationships surrounding climate adaptation were uncovered and discussed. Discussions were recorded and supplementary notes taken by members of the project team. Materials used by participants, such as butchers paper and other notes, were collected at the end of the focus group to add to the transcript data, with participants permission. Data from the group discussions was sorted according to prevalent issues and was separated from the lecturing and instruction material.

Semi-structured interviews

Semi-structured interviews were conducted with representatives from a range of organizations in each region to gain insight into organizational responses to climate change. A comprehensive database of organizations was created for each region representing broad categories of organizational types. These included: Agriculture, Forestry & Fishing; Mining; Construction; Manufacturing; Transportation, Communications, Electric, Gas and Sanitary services; Wholesale trade; Finance, Insurance, Real Estate; Services; Public Administration and Government and with a mixture of large, small, public and private organizations. A purposeful sampling strategy was employed with individual team members making an initial selection of candidates followed by compilation by the research group of a short list of potential participant organizations. Organizations were then contacted via telephone with the recruiter asking to speak with the most senior person responsible for climate change or environmental management activities. Once that person had been identified they were informed of the project and invited to participate in an interview at their convenience.

Of the 25 interviews conducted, 13 were conducted in the Hunter and 12 in the Swan. Table 1 shows the number of participants from each type of organization sampled. Interviews were conducted face to face, with the exception of a few telephone interviews, and generally lasted for an hour. Participants were invited to discuss a range of topics including regional identity; the impact of climate variability on their organization; familiarity with and use of terms associated with a changing climate like adaptation, mitigation, adaptive capacity; governance arrangements; strategic planning and approaches to risk, uncertainty and decision making; and participation in formal or informal forums or industry discussion groups. All interviews were recorded and notes taken by either the interviewer or in some instances by another project team member. Transcripts were created and each given a unique code to ensure participant anonymity. A thematic analysis of transcripts took place with broad question headings used as guides. A summary document was created and sent back to participants to ensure the researchers had correctly interpreted and reported on interview data.

Table 1: Organizational types and participants involved in semi-structured interviews

Hunter/Central Rivers Region (n=13)		Swan/Canning Region (n=12)	
Agriculture	1	Agriculture	1
Construction	1	Communication	1
Local Government	1	Construction	1
Manufacturing	1	Fisheries	1
Mining	2	Insurance	1
Retail	2	Mining	1
Services	3	Retail	2
Transportation	1	Services	2
Utilities	1	Transportation	2

Results and analysis

Local Government perspectives

At the beginning of the focus groups, participants were asked to nominate the most important climate issue or adaptation challenge they were facing. Table 2 outlines the climate change impacts and adaptation challenges nominated by participants.

Table 2: Climate change impacts/adaptation challenges for local government (LG)

Hunter	Swan
<p>Community and creating awareness</p> <ul style="list-style-type: none"> - Climate change adaptation policy and planning. - Balance between 'Duty of Care' and maintaining existing 'lifestyles'. <p>Sea Level Rise</p> <ul style="list-style-type: none"> - Coastal Adaptation. - Sea level rise. - Need for decisions now for communities affected by sea level rise. - Sea Level Rise → Flooding impact. <p>Extreme events/natural hazards/environment</p> <ul style="list-style-type: none"> - Impacts on natural environment. - Extreme events causing heat and flooding. 	<p>Transportation</p> <ul style="list-style-type: none"> - Transport routes during emergency events. - Impacts on river foreshore – erosion, infrastructure damage, impacts on recreation. - Car dominance: investigating other transport options and behaviour change. <p>Water/Drought</p> <ul style="list-style-type: none"> - Drying climate, less rainfall. - Drought. Sinking groundwater tables. - Maintaining parks and reserves with reduced water availability and communicating with residents about necessary changes to these areas. <p>Internal Collaboration/Communication</p> <ul style="list-style-type: none"> - Compiling specific Adaptation Plans at local level. - Difficulty communicating climate adaptation needs of the LG sector (e.g. policies, guidelines, funding). <p>Sea Level Rise</p> <ul style="list-style-type: none"> - Limited coastal geomorphology (rock/sand) data/info, affecting ability to determine sea level rise and coastal impacts. - Sea level rise and Canning River. - Rising sea levels & loss of coastal infrastructure.

For the local governments represented, building relationships and communication was strongly connected to adaptation planning and policy. For Swan participants this manifested mostly in terms of connecting with state government. Group discussions also revealed that participants wanted to understand the importance of the networks in which they were already embedded and establish avenues to further utilise these connections with other tiers of government. In order to effectively communicate with those outside their local government sector, participants suggested that relevant government departments and their key players needed to first be identified, and then an effort made to get to know these key players by inviting them to specific events aimed at collaboration and discussion around climate change issues, planning and policy.

Rather than waiting for these multilevel interactions to take place, participants suggested that they needed to be strategic and prioritise collaboration. It was suggested that local government should initiate collaborations and work to continually improve relationships. Hunter participants suggested that to foster climate change awareness it was important to invite business and community to engage with local government through frequent interactions with the aim of protecting the local economy, jobs and provide innovation. However, as noted by one participant, initiating and maintaining these connections was difficult as councils have a responsibility to share information but they don't necessarily know how to share it and respond.

The complexity of multilevel governance arrangements, particularly in relation to topical issues such as the impact of sea level rise in coastal communities, was a common issue for both regions. Primarily both groups were concerned with delivering a message about potential negative impacts of sea level rise to a mixed audience. Both groups suggested that involving many different stakeholders was one possible way to help improve communication and establish working relationships. For example Swan participants wanted to identify target audiences and develop specific programs with them over time, with the involvement of a scientist to help with technical questions. Hunter participants focussed on the need to preserve community values, suggesting that linking with community leaders and children could help inform their actions.

The consequences of difficult and conflicted power sharing relationships were put forward by Swan participants in relation to shared authority for a sustainable transport system. Specifically they identified friction between groups, particularly aligning political and community goals; conflicts of worldviews and priorities; and lack of trust as pertinent issues. Whilst it has been recognised in the literature that effective adaptive governance frameworks need a mechanism for managing conflict (Dietz et al., op cit) many of those involved may not know the extent of their capability for problem solving. The focus group discussions helped participants to go through this process and a variety of creative ideas were suggested by the sustainable transport group such as building relationships with involved parties separately to begin with, then bringing them together in a non-threatening environment.

As well as recognising the importance of external relationships, understanding the internal structure of local government was vital for addressing many climate related issues. For example participants described how coping with drought required attention to both internal and external relationships – internally all members of council needed to be aware of circumstances, particularly the parks and gardens workers. Externally contact with industry organizations was paramount to change and careful engagement with community members was necessary to guard against erroneous perceptions such as feelings that the park was less green due to local government (council) not doing its job. This demonstrates that it is not just the relationships between organizations that are important for climate adaptation but also the relationships between organizations and individuals/community.

Business enterprise / organisational perspective:

The majority of organizations interviewed were small to medium sized enterprises, although several had 1000 or more employees and another was quite a large public company. While some organizations found it difficult to place themselves in a regional context, most identified an area within a radius of up to 100 kilometres and larger companies said their focus was national or international. A very positive characteristic especially for efforts to

develop and institute an organizational culture attentive to climate adaptation issues and action was that most respondents demonstrated a high level of awareness of company policies regarding governance and organizational values. Clarity about individual roles and reporting lines was very evident, with a clear understanding of the business model and focus of the company.

However, in general, concern for climate change issues was overshadowed by imposts from energy. Climate issues were most frequently framed around sustainability, with most actions centred on environmental issues including waste management, re-cycling, fuel efficiency, asset replacement and infrastructure management. At the time of the interviews (late 2011) many companies expressed concern and uncertainty about the likely impact of the new Clean Energy Future legislation that had just been ratified by the Federal government. In addition respondents made the oft repeated observation that there was a lack of guidance from state and federal government on the interpretation of climate change policy, how it might be implemented and the potential impact on business operations and financial liability. This was identified as a significant barrier in the conceptualisation of strategies to address potential impacts and take advantage of opportunities. When taken together these findings suggest that a substantive amount of work is required to provide organizations with the assistance necessary for them to engage in climate adaptation discourse. Although terms like climate adaptation, mitigation, adaptive capacity and others common in scientific and policy discussion were not seen as relevant or appropriate for everyday use within organizations, this need not act as a barrier if plausible and practical steps to address climate adaptation are communicated to organizations. Forums and networks offer a practical avenue for conveying these ideas.

Role of forums and networks in organizational awareness of climate adaptation

Involvement in forums or industry groups was seen as essential by most participants in the semi-structured interviews as a source of trusted information, to stay in touch with the activities and business practices of their competitors; to maintain up to date knowledge of standards and other applicable regulations and guidelines; and to share learnings across the sector. The value of these gatherings was considered high regardless of whether they were formal or informal, internal or external. The number of participants who did not take part in forums on behalf of their organization was very low, with most actively seeking involvement, some holding official, elected positions and establishing internal committees to pass on knowledge. For those who lacked these opportunities there was reflection and recognition that it would be beneficial to work on improving connections. Some noted that such forums had existed but had been disbanded due to lack of tangible goals and difficulty in maintaining member participation.

Over 50 forums were identified by participants involved in the semi-structured interviews and while very few focussed specifically on climate issues alone, many industry groups spent time discussing climate change and its relevance and impact on the sector. For example some were connected to formal government schemes such as the NSW state government sustainability advantage program. For others it was a matter of informally linking up with others in similar roles. Many participants stated that they did not participate in any climate change related forums but then went on to discuss various disaster management and sustainability focussed forums they were involved with, indicating some degree of integration of issues. Others noted the importance of internal working groups and the internet in preparing them for their work. Some took part in international forums with specific focus on sustainability, change management and knowledge transfer, either privately or on behalf of their organization.

Local governments appeared to have many forums in which climate change issues were discussed, including some specifically focused on climate adaptation. In particular the Regional Organization of Councils (ROCs) that were present in both regions seemed to provide an avenue for climate focused activity. ROCs are mostly comprised of the following features: voluntary membership by local councils in bordering geographic areas; a board or some governing body; a memorandum of understanding between councils; agreed objectives; and in-kind contributions from councils (Gooding, 2012). As regional strategic planning and collaboration are the main goals of the formation of ROCs it is no surprise that they provide important avenues for the development of climate change related initiatives. A demonstration of the role of these groups is provided by the Western Suburbs Regional Organization of Councils (WESROC), a collaboration of seven local councils in Perth, Western Australia. As a result of a study commissioned by WESROC a Climate Change Risk Assessment and Adaptation Plan was developed (Coastal Zone Management, 2010). In partial fulfilment of the plan, an adaptation workshop was held where over 30 adaptation options were identified and assignment of responsibilities agreed to either WESROC or individual council departments.

Despite the mixture of different local councils present at the focus groups there appeared to be similarity in the types of climate change related issues they were facing. As a consequence, the focus group convenor suggested that the expertise and experience represented by the attendees should be utilised in additional local government forums. The benefits of bringing together diverse councils meant that despite a similarity in issues, responses were varied with opportunities for shared learning about alternative, tried and tested approaches. Feedback from participants indicated that these opportunities were highly regarded and appreciated. This is consistent with the ideas of social learning or observational learning utilised in substantive research on collective approaches to complex environmental management (Kilvington, 2007, Steyaert and Jiggins, 2007, Berkes, 2009). The interaction of researchers and organizational stakeholders in the form of workshops, in a very real sense, represented an intervention. It supported the formation of relationships (networks) with the potential for forum initiation. It will be interesting to assess the robustness of these linkages and follow their progress as the research progresses.

Our research indicates that forums provide opportunities to address a range of issues including climate change. They offer the requisite social infrastructure for successful meetings such as venue, established networks and membership making them an attractive mechanism to air concerns related to the likely impacts of climate change in a safe and familiar environment. Several respondents noted that they appreciated the scheduling of meetings dedicated to climate change issues at forums that they attended because generally experts gave presentations that were focussed on the industry and offered practical advice, and were available to respond to questions. In addition forums with mixed agendas offer opportunities for participants to listen to a broad range of ideas which may help them in determining their own position with regard to issues. Forums differ from networks in the provision of venues where participants can observe strategic interactions between other participants which may help them understand the reasons behind particular decisions and provide insight into tactical strategies sometimes employed by industry or government.

Research suggests that front-line managers develop the strategic initiatives from which executives select, while top executives set the environment that governs tone and culture. Rosenkopf examines the role of technical committee membership in creating conditions whereby opportunities for inter-organizational alliances are nurtured. Associational forums

represented by technical committees and other forums or industry events enable organizations to learn more about each other both in a formal and informal setting. Repeated interaction encourages sharing of common understandings of industry challenges, discussion of technological advances, reduction of uncertainty as a result of repeated exposure to strategising and negotiation enabling consensus and opportunities for alliance formation (Rosenkopf et al., 2001).

A final benefit of forums regardless of whether they are specifically focussed on climate change is the opportunity to develop strategic plans which are characterised by mainstreaming policy, creating functional linkages between related issues which have the potential to increase the efficiency and effectiveness of policies (Kok and de Coninck, 2007). Some of the larger multi national organizations included in our research demonstrated this approach to strategic planning

The insights from these interviews indicate that there are numerous existing and potential avenues in which to address climate change issues. Interestingly it was not just the researchers reflection that opportunities to discuss climate change could arise out of existing forums. Participants also suggested potential pathways; in particular it was thought that industry association discussions would soon include climate change. The leadership demonstrated by these participants supports the contention that “the system vulnerabilities created by climate change can turn into “systems opportunities” for businesses to develop novel partnerships with government, other players in the supply chain, and even traditional competitors, for example in preparing the infrastructure needed for disaster recovery” (Schwartz, 2007, pp4).

Our results reveal that regional organizations possess latent capacities and resources that are invaluable in developing and implementing climate adaptation strategies. There are active personal and professional networks built up by repeated interactions over many years. Organizational representatives are involved in multiple forums with members that account for a diverse set of organizations and that possess a range of skills, experience, resources, motivations and aspirations. These capacities represent collective assets that could be utilised in coordinated and well articulated climate adaptation initiatives. A further benefit of such strategies is the potential for inter and intra organizational learning and mainstreaming.

Whilst numerous forums were being utilised, an important next step is to gain an understanding of the effectiveness of forums for addressing climate change issues. Importantly the mention of disbanded sustainability forums during interviews provides some initial insight into unsuccessful forums. More investigation into what makes forums successful or unsuccessful is particularly important if existing avenues are to be utilised for discussing and addressing climate change issues.

Climate adaptation requires a high level of strategic planning to ensure that institutional and legal structures are in place to support adaptive practices (Blanco et al., 2009, Bedsworth and Hanak, 2010). This planning needs to occur at multiple levels of governance to ensure that it is effective and opportunities to nest short term decisions on infrastructure for example into longer term frameworks should be encouraged (Stafford-Smith et al., 2011). The respondents in the semi structured interview component asserted that it was difficult for their organization to undertake strategic planning for climate change due to the pressures of operating in a highly competitive environment characterised by narrow margins and uncertainty. The cross scale and cross level dynamics (Cash and Moser, 2000, Cash et al.,

2006) are exemplified by interaction between different arenas for example participants involvement in national industry standards committees as well as international forums looking at sustainability and climate change adaptation issues in developing nations. The networks developed through these interactions span regional national and global levels.

Many organizations struggle to comply with the multilevel implications of decisions made at organizational head offices. These were seen to cascade down to affect local offices with little autonomy. Thus many processes interact and play out across scales of relevance to organizations. Underdal suggests that an appropriate governance system supporting the role of forums and networks is one that combines the flexibility, diversity and learning capacity of an adaptive governance model with the focus and sustained commitment of a collective action model, and that is decentralised enough to provide opportunities for local initiatives and those operating at higher levels. (Underdal, 2010). This synergy needs to occur at the regional level to empower local action and support the development of collective thinking

Conclusion

In this study the operation of multilevel networks both facilitated and impeded the development and implementation of climate adaptation strategies. For example some networks and forums reinforced a norm of not responding in a proactive way to impending policy changes with a preference to “wait and see”. In contrast other networks actively encouraged risk assessments and adoption of climate adaptation actions because they served the business well and offered some protection from severe impacts of climate change. This may be due to structural properties of the networks, an area we will investigate further to determine how structural features constrain or enable effective climate change action.

The findings of this study suggest that while many organizations prefer to take a risk management approach to climate change, uncertainty remains pervasive. Regardless, the concerted adoption of climate adaptation practices is imperative and overdue. At this stage adaptive actions by, organizations and other agents in multilevel governance regimes in Australia are in most cases ad hoc and uncoordinated. However, initiatives promoted and supported by local government, appear to be the exception. Addressing the implications of climate change is clearly a collective action issue. The role of collaborative practice among organizations exemplified by networks and forums both formal and informal is largely undocumented, but we believe that these are likely to play a significant role in organizational awareness, perception and response to climate change issues at the local to regional level.

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