

What is the Goal? Framing the Climate Change Adaptation Question through a Problem-Oriented Approach

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ABSTRACT

A problem-oriented and interdisciplinary approach was employed at Alpine Shire, in northeast Victoria, Australia, to explore its tourism sector's contextual vulnerability and adaptability to stressors that include but are not limited to climatic change. Using a policy sciences approach, the objective was to identify factors that influence existing vulnerabilities and that might consequently act as barriers to effective adaptation. To do this, a particular focus was placed on identifying the underlying values embedded in social and decision processes and their role in shaping preferred adaptation outcomes. Analyses of social processes suggest that many threats, including the effects climate change, compete for the resources, strategy, and direction of local tourism management bodies. Many complex and interacting factors define the vulnerability and adaptive capacity of the shire's tourism sector to the challenges of global change, including local socioeconomic issues as well as exposure to external factors of macroscale. These issues represent more immediate concerns than future climate change scenarios, revealing an approximation of the common interest in working toward adaptation and sustainability.

1. Introduction

Research on adaptation strategies is said to focus largely on characterizing vulnerability to likely impacts of future climate change (Kelly and Adger 2000; Adger 2006; Adger et al. 2009; Patt et al. 2009; Schipper and Burton 2008). Vulnerability, in this instance, is depicted as the degree to which a system is susceptible to adverse effects (of climate change), where descriptions of stressors, exposure, sensitivity, and adaptive capacity define its character (see Adger 2006). These types of vulnerability assessments use scenarios or "end point" approaches whereby projections of future emissions trends form the basis of the assessment, leading to characterization of biophysical impacts and thence to the identification of possible adaptive measures (Kelly and Adger 2000; Birkmann 2005, 2006). These approaches are said to reflect the inherent linear disposition of the scientific

method for the management of problems (Lynch et al. 2008c; Brunner 1991a, 2001; Brunner and Steelman 2003; Brunner and Lynch 2010).

However, it is widely recognized that vulnerability does not exist in isolation of other processes of change (Adger 2006), raising concerns regarding the usefulness in assessing climate change impacts solely through end-point approaches as inputs for informing strategy, policy, and planning (Berkhout et al. 2006; Brooks 2003; Füssel and Klein 2006; Klein and Maciver 1999; Klein et al. 2007; Lynch et al. 2008c; O'Brien et al. 2007; Ford et al. 2010; Belliveau et al. 2006). Three shortcomings emerge. First, as Clark (2002) clarifies, when the management of environmental issues such as climate change is viewed only through scientific constructs of the problem, a misperception is created that only scientific knowledge in its conventional sense is required to solve problems. Second, scientific knowledge is not without uncertainties and limitations that inherently restrict the identification of solutions within those bounds (Brunner and Lynch 2010; Dessai and Hulme 2004; Dessai et al. 2009; Tol et al. 2004). Third, there are many nonclimatic processes that play a pivotal role in the development of

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adaptation strategies including economic, political, regulatory, and behavioral factors, which are not amenable to detailed prediction of end points (Dessai et al. 2009).

Despite this risk, there are relatively few case studies that illustrate exemplars of “start point” or contextual vulnerability (O’Brien et al. 2007; Schröter et al. 2005), whereby social and biophysical systems (including climate change) are characterized in context (O’Brien et al. 2007; Patt et al. 2009). In this instance, vulnerability is a phenomenon of susceptibility to stressors that is place and context specific as well as dynamic and differential across scales (e.g., temporal, geographic, unit, etc.) (Adger 2006; Moser 2009; Smit and Wandel 2006; Ziervogel et al. 2006). Incorporating geopolitical and socioeconomic context into these assessments, they are described as more saline approaches for the advancement of concrete actions that tackle imperatives such as adaptation to processes of change more generally (Brooks 2003; O’Brien et al. 2007). Besides, decision makers are often disinclined to make judgments in the absence of a specific context (Lynch et al. 2008c). Studies on successful adaptations have shown that minimizing vulnerability to climate change is one of many competing community interests and that integrating these concerns is necessary for the implementation of adaptation strategies and actions (Lynch and Brunner 2007).

However, as Adger (2006) argues, it is these opposing research objectives (i.e., start-point approaches versus end-point approaches) that often confuse policy makers in discerning vulnerability assessments, given the lack of explicit delineation on whether vulnerability is defined as a linear outcome or in context among a number of other issues. In our experience, reframing the issue of vulnerability through problem-oriented approaches facilitates a much more effective means of integrating natural and social sciences by focusing on the development goals of those concerned, rather than their specific vulnerabilities or resilience, even though these form an integral part of that assessment (see also Lynch et al. 2008c; Roman 2010; Roman et al. 2010).

These contextual approaches require active interaction and collaboration between natural scientists and various types of stakeholders as part of the assessment (Lynch et al. 2008c), an approach that is characteristic of participatory research, which is also referred to as “bottom up” or community-based approaches (Reed et al. 2006; Schreurs 2008; Smit and Wandel 2006; van Aalst et al. 2008). However, as Lynch et al. (2008c) reflect, citing Dessai et al. (2004), the natural scientist often faces profound practical and theoretical difficulties in “combining expressed human preferences, with all the attendant

cultural, emotional, institutional and intellectual frameworks” (Dessai et al. 2004, p. 19), potentially restricting the capacity of the research itself to answer questions of societal relevance (see also Roman 2010). In this paper, we seek to share our experiences in applying the policy sciences as a problem-oriented approach to describe issues of contextual vulnerability. More specifically, we seek to focus on goal clarification, after Lasswell (1971), to explore and structure issues of concern with respect to the researchers’ own interest in climate change adaptation. The case study used to illustrate this research centers on the tourism sector in Alpine Shire, a local government area in northeast Victoria, Australia.

2. Reframing adaptation research

a. The policy sciences as a problem-oriented approach

Problem-oriented approaches are said to reflect philosophical underpinnings in pragmatism, a discourse characterized as an extension of critical theory and referring specifically to the usefulness, workability, and practicality of ideas, policies, and proposals as criteria of their own merit, even though it is not necessarily committed to any one philosophy or reality (Creswell 2007; de Leon 1994; de Leon and Vogenbeck 2007). Instead of focusing meticulously on methods alone, the important aspect of research in pragmatism is the problem being studied and the questions asked about this problem (Creswell 2007). A fundamental point of difference that differentiates pragmatism from other philosophical stances is the ethical dimension that is embraced (Brunner 2006). In pragmatism, “change” is treated as an inevitable condition of life, so pragmatist approaches seek for ways in which change can be directed for individual and social benefit, both in the present and for the future (Brunner 2006; Clark et al. 2000). Its distinguishable notions of community, dialogue, and democracy have significant implications for and application “in a world characterized by uncertainty, change, and instability” (Hyttén 1994, p. 1). It represents a philosophical stance that is trans-disciplinary, whereby ethical considerations define the purpose for present and future actions “as if people matter” (Max-Neef 2005, p. 8).

In policy, problems are seen as human constructions of how a situation is perceived versus a preferred outcome (Lasswell 1971; Morss 2005). However, given how uniquely perspectives are shaped by values, a problem can therefore yield many definitions among the individuals concerned thus influencing whether a problem should (or should not) be addressed (Morss 2005). The policy sciences approach offers a means to analyze and evaluate

these complex contexts wherein people derive meaning and perspective and the outcomes that result when interacting with others (Clark et al. 2000; Lasswell and McDougal 1992). This is not to imply that addressing complexity necessarily translates to a complete analysis, given the inherent human limitations that inhibit complete examination of all details in any given situation. Instead, the policy sciences offer procedures that bring relevant content to the focus of attention through selectivity and comprehensiveness (Lasswell and McDougal 1992).

b. Goal clarification

The term “policy science” was first coined in the 1950s by Harold D. Lasswell, who with Myres S. McDougal developed a framework to understand and solve problems (Policy Sciences Center 2007). The framework is based on three principles (Lasswell 1971). The first is “contextuality,” recognizing that decisions are made within a larger social process that is also largely value based. The second is the aforementioned “problem orientation,” which focuses inquiry on the goals of the participants rather than an external factor such as a climate end-point projection. Third is “diversity” in the methods, quantitative and qualitative, employed to collect and analyze the empirical evidence that clarifies the problem and its context. Figure 1 illustrates in general terms how these relate in the analysis of a problem, where a comprehensive mapping of the social and decision-making processes (the context) provides the information required to inform perceived discrepancies between the status quo and identified goals (the problem).

The policy sciences approach has been applied widely across many disciplines, with a number of studies that have explored problems of environmental policy, including climate change (see Table 1). The significance of the approach is that it places emphasis on the goals and values of all participants with valid interests. This provides for a flexible and powerful tool for analysis.

c. Mapping social processes

Mapping the social process as outlined by Lasswell (1971) is characterized by the ways in which actors seek to maximize desired outcomes and indulge values, through institutions or other means, for an effect on their situation (Lasswell 1971). The premise for this framing is the “maximization postulate,” which stipulates that people complete acts in ways that are perceived by the actor to leave him or her better off than if he or she had completed the act differently. Any choice has social and political consequences for the many interests at stake in climate change adaptation policies. Successful navigation of these

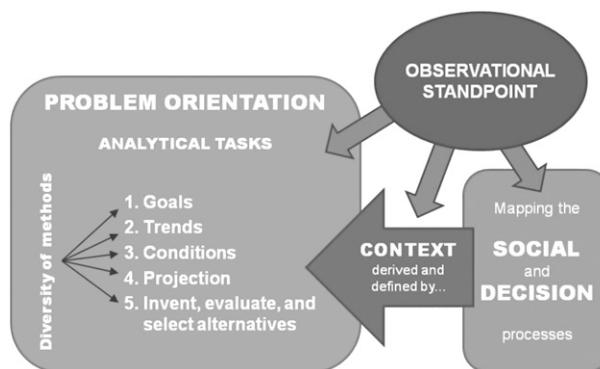


FIG. 1. Analyzing problems in context through policy sciences principles (adapted from Clark 2002; Lasswell 1971).

interests can be promoted through a value commitment to serve the common interest of the community at hand (Brunner and Lynch 2010). We define the common interest according to Brunner et al. (2002) as those interests that are supported by most members of the community and are likely to benefit the community as a whole. The common interest must be constructed in each community on the basis of actor interests that are both appropriate (consistent with basic community values) and valid (consistent with the evidence available).

Mapping the social context enables clarification of the community goals in the common interest through values. According to O’Brien (2009), acknowledging and responding to a broad spectrum of values—including how these may change over time—constitute important considerations for adaptability in any given context. It should be noted that caution is warranted when identifying values, because these influence special interests as well as the common interest; after all, whose values matter and by what or whose measure? Special interests, by definition, only benefit part of the community and often mask their claims as common interests (Clark 2002; Heffron 2000).

3. Case study

Adaptation to unavoidable climate change is a significant strategic issue for regions that rely on tourism as a principal economic activity (Becken and Hay 2007; Dubois and Ceron 2006; Dwyer et al. 2009; Hall 2008; UNWTO 2008), yet more emphasis appears to have been placed on issues of mitigation rather than adaptation (Scott et al. 2008). In addition to this deficit, much of the focus in studies conducted in Australian mountain regions has largely been on vulnerability to potential impacts of future climate change scenarios using end-point approaches (Roman et al. 2010), hence catalyzing our interest and motivation to look at adaptation through a human dimension and start-point context.

TABLE 1. Application of the policy sciences in coupled human–biophysical contexts.

Problem area	Examples of references from the literature
Climate change, weather-related natural hazards, and extreme events	Brunner (1991a,b), Brunner and Klein (1999), Brunner and Lynch (2010), Lynch and Brunner (2007), Lynch et al. (2008a,b,c), Morss (2005), Morss et al. (2005), Pielke (1997), Tryhorn and Lynch (2009)
Endangered species conservation	Bennett et al. (1995), Clark et al. (2008), Clark and Wallace (1998), Clark and Brunner (2002), Clark et al. (1992), Mattson and Chambers (2009), Mattson et al. (2006), Rutherford et al. (2009)
Natural resource management	Ascher and Steelman (2006), Brunner and Steelman (2003), Martin and Steelman (2004), Steelman and Wallace (2001), Steelman and Ascher (1997)
Environmental policy and sustainable development	ARTB (2006), Ascher (1999), Auer (2007), Auer (2000), Dietz et al. (2003), Mattson and Chambers (2009), Swaffield (1998), Wijkman (1999)

Alpine Shire, a local government area in Victoria, Australia (see Fig. 2), was incorporated in 1994 through an amalgamation of the shires of Myrtleford and Held in Bright along with parts of three other shires in a rationalization process driven by the state government of the time. It covers 4397 km², of which 92% is public land,

and has a resident population of 12 988 (DPCD 2007). Today, the shire’s economy is based on tourism, forestry and agriculture (DPCD 2007), with tourism generating up to \$300 million (Australian dollars) to the local economy each year (Buchan Consulting 2003) and employing 1375 annual equivalent jobs (Dredge and Thomas 2009).

The formation of local skiing clubs in the 1880s was the first opportunity to promote the region as a destination (Webb and Adams 1998), followed by sporting, cultural, and musical events initiated by the mining community that had established itself in the region when gold was discovered in 1852 (ARTB 2009; Bate 1988; Lloyd 1982; Webb and Adams 1998). Over the years, much of the tourism development in the region has been attributed to improvements in infrastructure such as rail and sealed roads, allowing visitors access from major urban centers (Waugh 2004; Webb and Adams 1998).

At present, tourism in the Alpine Shire is characterized by a year-round diverse range of products, experiences and services that peak in the summer and autumn months and include food and wine, festivals and events, sports, sightseeing, nature- and adventure-based activities, touring and off-road driving, and historical attractions (ARTB 2006, 2007, 2009). Various actors coalesce to facilitate tourism in the region, including government at various scales: federal, state and local, tourism operators, service providers, regional tourism organizations

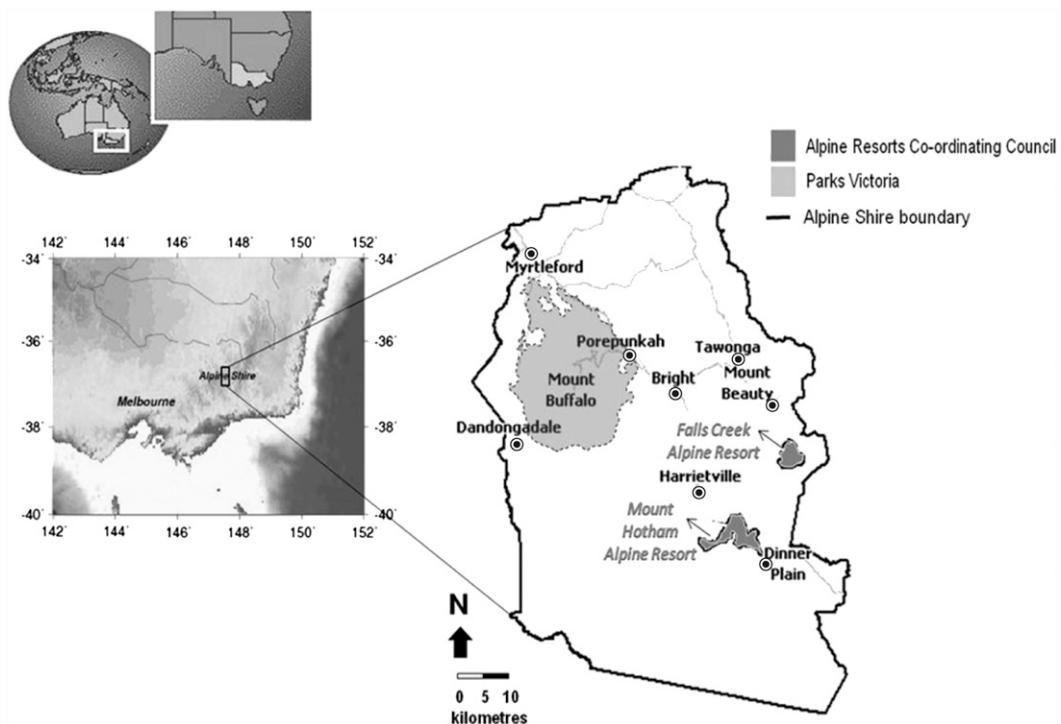


FIG. 2. Location of Alpine Shire, Victoria, Australia.

(RTOs), chambers of commerce, and neighboring alpine resorts and national parks.

4. Methodology

We based our analysis on primary and secondary sources of data to construct our definition of the social processes at work in the tourism sector in Alpine Shire. For the purposes of goal clarification, primary data were sourced from a series of open-ended and semistructured interviews conducted with 25 respondents, between May and September of 2007 and between August and September of 2008. Their voluntary participation was sought using snowball sampling methods (Atkinson and Flint 2001). Our interview approach was specifically designed to allow for issues to emerge from respondents rather than prescribing the course of inquiry and risk influencing interviewees' responses. Thus, for example, climate change was not specifically mentioned at the outset and end-point scenarios were not presented. Although the case study is centered on tourism in Alpine Shire, it is not necessarily bounded by its jurisdiction because there are valid interests that are nonresident (e.g., neighboring alpine resorts, national parks) and invalid ones within the shire itself. For these reasons, input was sought from a diverse set of actors, including tourism operators and service providers operating in the shire, shire councilors, council officers, chamber of commerce representatives, national park rangers, and alpine resort operators. Identification of themes and issues of concern were checked and validated through peer triangulation among the research team as well as a focus-group session held in August 2008, with a select group of respondents.

Secondary data were sourced from published literature as well as publicly available government and council documents, reports, media, workshop and seminar transcripts, and other printed material. This secondary data were used to complement and validate our initial analyses based on responses, as well as to supplement our description of the context. Qualitative data were analyzed using NVivo version 8, a computer aided qualitative data analysis software tool (Kelle et al. 1995; Lewins 1996; Lewins and Silver 2007; Lewins and Silver 2009).

The residents of Alpine Shire documented their aspirations for their community's future to 2030 (Alpine Shire Council 2005) in a report titled "Alpine Shire: 2030 community vision." Adopted in 2005, it outlines eight key directions that the community has identified as desirable for the shire, which include the following (from Alpine Shire Council 2005, p. 6):

- 1) unspoilt natural environment;
- 2) sympathetic and balanced development;

- 3) economic prosperity;
- 4) identity and character of our towns, villages and rural communities;
- 5) services and facilities (health, wellbeing and lifestyle);
- 6) linkages between communities;
- 7) strong and safe communities; and
- 8) sustaining the vision.

These aspirations represent shared values of well being, wealth, affection, and respect (after Lasswell 1971; Lasswell and McDougal 1992), also influencing the type of destination that would be offered to tourists visiting the region. This formed the basic framing of our initial consultation with tourism actors at Alpine Shire. The aim was to identify their main issues of concern—the problem—particularly with respect to potential and actual barriers to these aspirations. Of interest to us as researchers was to identify the extent that climate change figured in these concerns and how.

5. Vulnerability in context

A number of themes and issues of concern were identified (see Table 2) and checked for. Via this bottom-up approach, we identified widely shared and ongoing issues of concern. The following subsections further explore each of these issues in more detail.

a. Representation and leadership

Tourism Australia is the statutory authority of the Australian government, which promotes Australia as a tourism destination primarily to the international market, and reporting to the cognizant cabinet minister. Tourism Victoria is the state government agency whose primary activity is to coordinate resources for marketing Victoria as a tourism destination both domestically and internationally. Alpine Shire belongs to an area of strategic branding and marketing within Tourism Victoria, known as the High Country (Tourism Victoria 2006). One of the main issues of concern with regard to this structure of representation is that respondents felt detached from Tourism Victoria's branding practices, consequently affecting branding and marketing efforts locally and across the region. The perception is that branding the region as High Country has connotations that favor the promotion of alpine resorts rather than the identity and character of the valleys, towns and villages. Consequently, as noted by one participant, it is

...not a strong brand being used by tourism operators here...which ultimately causes confusion because all operators are using various things. Then the message gets

TABLE 2. Issues of concern raised by respondents.

Issue of concern	Description of the issue	Secondary data supporting findings
Representation and leadership	State-level approach to strategic tourism development difficult to engage with locally, consequently affecting branding and marketing efforts as the local scale, functions of the ARTB	ARTB (2006, 2009), Parliament of Victoria (2008), Regional Development Company (2007)
Stakeholder relationships	Sociopolitical barriers evident among major town centers in the shire, as well as conflicting interests for tourism development with external stakeholders such as local alpine resorts	ARTB (2006), Regional Development Company (2007)
Data and statistics	Lack of consistency in tourist-related data gathering and reporting	ARTB (2006, 2008, 2009), Parliament of Victoria (2008)
Seasonality and weather variability	Season-specific tourism offer, drought conditions resulting in water restrictions, observed extremes and shifts in weather patterns and its variability (e.g., bushfire conditions, onset of frosts in autumn)	ARTB (2006), Cioccio and Michael (2007)
Natural disaster management	Post-disaster recovery and access to support for rebuilding, as well as the media's role in the recovery process	ARTB (2006), Ministerial Taskforce on Bushfire Recovery (2003, 2007), Parliament of Victoria (2008), Regional Development Company (2007)
Business capacity	Skills shortage, employability, and lack of adequate business skills	ARTB (2006), Parliament of Victoria (2008), Regional Development Company (2007)
Infrastructure and transport	Closure of Buffalo Chalet, road signage and tourist attraction signage, touring and public transport options	ARTB (2009), Parliament of Victoria (2008), Regional Development Company (2007)
Exposure to external factors of macroscale	Fluctuations in economic indicators such as the value of the Australian dollar, interest rates, inflation, GDP growth, and fuel prices	ARTB (2006), Parliament of Victoria (2008), Regional Development Company (2007)

lost...trying to search on the internet for Alpine High Country, they can't find us... (interview, held in Bright, 8 July 2008).

Alpine Region Tourism (ART) is the regional tourism organization for Alpine Shire and is headed by the ART Board (ARTB) under the auspices of the council. Its main activity is in representing the tourism sector at the local government level, consolidating branding and marketing efforts, as well as forging linkages with other regional, state, and federal networks to facilitate tourism development. This committee has found itself facing some challenges in the recent past, most notably in relationships with the tourism operators themselves. There was dissatisfaction voiced by some operators on the committee's performance, stating, for instance, that

...the information that you would've expected to have come out of the shire tourism department...none of that information gets passed through to the tourism community; so, in terms of its ability to plan, its ability to resource the times when they need to resource and the times that they don't, it's always been fairly casual, fairly ad hoc, fairly structureless, fairly missed... (interview, held in Bright, 23 May 2007)

This sentiment was recognized and shared by some of the ARBT committee members themselves, but in the context of recent improvements:

...12 months ago we had a situation where the committee wasn't functioning very well, we had a spillover of positions and we contacted people and that has worked, we got a new mix of a committee and that has been a major improvement but we're not there yet... (interview, held in Myrtleford, 22 May 2007)

Much of the funding for investment in tourism-related infrastructure, branding and marketing in Alpine Shire is through a special rate or property tax charged to all registered businesses located and operating in the shire. This, according to some in the ART, is one of the fundamental reasons for the dissatisfaction and criticism voiced at them by operators, who suggest that they pay this special rate but are not getting value for money. Members of the ARTB characterize operators as undermining their efforts to serve as an effective and efficient committee, one that is supported and trusted by those whom it seeks to represent. This remains a source of ongoing conflict.

b. Stakeholder relationships

One legacy of the amalgamation of smaller townships and jurisdictions has been the difficulties in bringing the socially and geographically dispersed shire communities to work together, particularly with respect to resource use and values. This was described by a respondent, stating that

...[we] come from a generation where there were three distinct administrations [and] two unique valleys. . .there was a change in government which consolidated 3 unique municipalities, they became one and to this day people still tend to manage uniquely. . .you will still get communities of people [who] lobby for what they believe. . . (interview, held in Bright, 22 May 2007)

A local operator attributed this fragmented community as a hindrance for tourism development and promotion, stating that

...the Alpine Shire has a disadvantage because it has three major centers and it makes it difficult not only for people in the tourism industry but makes it difficult for the council itself because it has to support three major centers. . .most shires are dominated by a major center, [but here they need to] provide services in three distinct localities which are 30-odd kilometers apart. . . (interview, held in Myrtleford, 22 May 2007)

A key change to tourism in recent years resulted from the extensive development of accommodation and services at the alpine resorts. This meant that visitors coming to the region for skiing holidays in winter no longer need to stay in the valleys. This has affected the shire quite negatively, as one council officer recounts:

...Whilst most of our towns were established to support the growing ski industry, the emergence of on mountain accommodation significantly affected their viability and required extensive marketing to sell the area [i.e. Alpine Shire] during other seasons. . . (interview, held in Bright, 22 May 2007)

Consequently, this situation has resulted in some resentment by local shire operators of the alpine resorts, undermining efforts to rebuild the relationship between valley and alpine resort stakeholders.

However, this is not a concern shared by all. Some operators see the neighboring alpine resorts as an opportunity to capitalize on efforts to support a vibrant tourism industry, as one Mount Beauty operator confirms:

...it's a big plus for Mount Beauty to have Mount Bogong and Falls Creek in snow, it makes the town. . .if we didn't have a winter the restaurants would definitely suffer. . .if we didn't have snow, to draw the crowd, I don't know what you would do in the high country over the winter period. . . (interview, held in Mount Beauty, 20 September 2007)

This level of partnering fostered through relationship building can potentially lead to what Woodhouse (2006) describes as an increase in social capital, a key ingredient for a successful local economy. However, a lack of empirical evidence for this at Mount Beauty means that this general assertion remains anecdotal in this case.

c. *Data and statistics*

Some of the concerns raised by interviewees relate to the level of inconsistency in tourism data types, gathering, quality, and reporting both from external agencies such as Australian Bureau of Statistics, Tourism Australia, and Tourism Victoria and internally from within the shire and its operators. Data and statistics that inform on numbers and types of tourists visiting the region, as well their activities and motivations for choosing Alpine Shire for their holidays, are crucial tools for operators and the council to conduct their planning, business development, and strategy. One of the biggest concerns centers on data specific to the shire. As one council officer explains,

Other than saying it's a trend, you shouldn't be using the data any more than that. . .A shire like ours, for example, we can't justify buying a \$20,000 software package which isn't going to drill down more than a trend. . .Fabulous for bigger population centers, lousy for small population centers and corridors like ours. They're just not appropriate. . . (interview, held in Bright, 22 May 2007).

A further problem has been the inconsistent manner in which data have been regionally aggregated with neighboring jurisdictions, such as adjoining alpine resorts. As a council officer pointed out,

...previously we used to be consolidated with the resorts, and that was difficult and certainly added to the frustration or debate about, how much does one influence the other? And who is more important than the other? So around 2004, 2005 that's been excised. . . (interview, held in Bright, 5 August 2008)

However, because of the newly segregated data, it is now difficult to determine trends over time, particularly pre and post amalgamation (see Fig. 3). This has prevented more effective appraisal of past policies and strategies for tourism in the region. The issue has also been further compounded by deficient data gathering practices within the shire, with evident conflict on the issue coming from two different perspectives, operators and shire officials. For some operators, the cause is attributed to poor management at the council level:

...what's really annoying is after spending in fact millions of dollars resourcing the tourism decision of the shire, they don't have any numbers as to how many tourists come here. . .I asked them again just the beginning of this year, how many people actually drive on the Great Alpine Road, this Great Alpine Road which again it's been millions and millions of dollars of campaign but the people involved in it don't actually know how many tourists they have. . .it doesn't have any data. . . (interview, held in Bright, 23 May 2007)

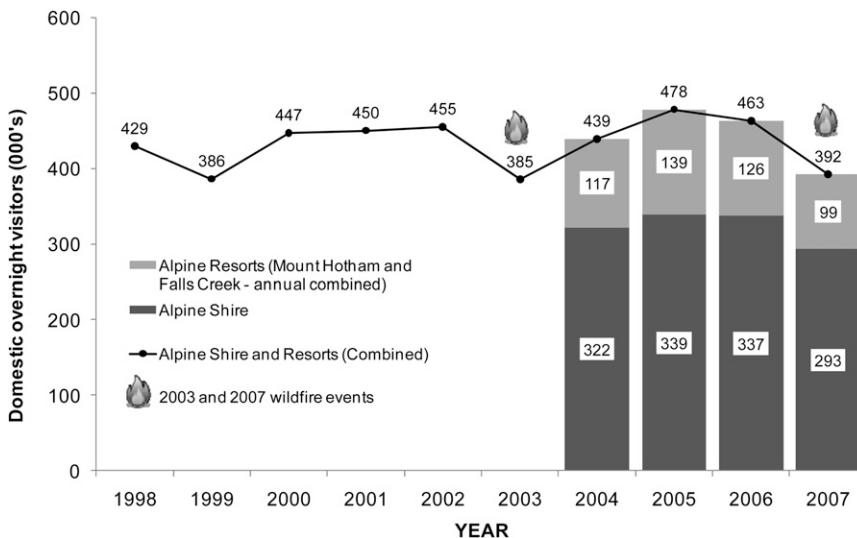


FIG. 3. Trends in tourism data—annual domestic overnight visitors—Alpine Shire and resorts (Roman 2010).

Conversely, some councilors felt that there was lack of appreciation for the need for collaborative action:

...the business operators don't see that they have to be a partner in this...and I think we have made gross assumptions based on trend data and that has satisfied their level of interest so it's been enough to give them the basis for a business plan...but of course it is not enough to do really strategic thinking about resource management or service delivery across 3 or 5 years or infrastructure or...you actually need more meat to it than that... (interview, held in Bright, 22 May 2007)

d. Seasonality and weather variability

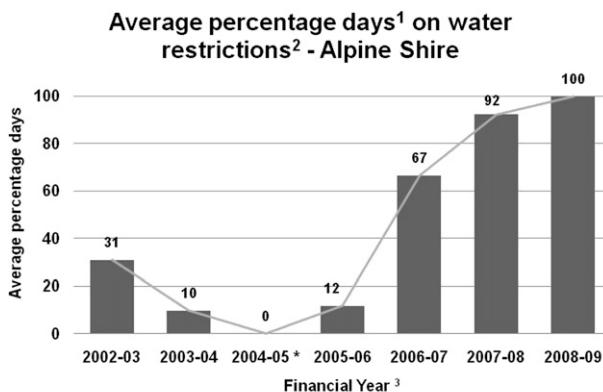
The lack of broader tourism product diversification across all seasons was a concern for all actors: the shire valleys relying on summer and autumn and the alpine resorts relying on the winter season. Problems arise when weather variability affects the characteristics of a season-specific tourism offer, either through extreme events such as bushfires and flooding or cumulative effects such as drought. This situation has left a number of tourism operators feeling vulnerable to economic losses from a season that would otherwise “cushion” their operations for the remainder of the year. Respondents made reference to these issues through their experiences during the summer months of 2003 and again from December 2006 into January and February 2007, when prolonged dry periods saw enforceable water restrictions introduced for the first time (see Fig. 4) as well as extensive bushfires that affected the region (see Fig. 5).

Some operators felt the bushfires served their interests in keeping tourists away because insufficient

water was available for amenity in what would otherwise be their busiest time of year. A council officer notes,

I mean, we were on stage 4 water restrictions here in the Ovens Valley...I mean, in a lot of ways the bushfires were a blessing because we wouldn't have been able to, our water supplies, wouldn't have been able to sustain that influx of tourists over Christmas had the fires not come... (interview, held in Bright, 22 May 2007)

A similar remark was made by a respondent at Mount Buffalo National Park, a popular destination in the region in summer:



1 Figure derived from "percentage numbers of days" averaged across five towns across Alpine Shire.
 2 Water restrictions are characterised by Permanent Water Savings Plans (least stringent), Stage 1-Mild, Stage 2 -Medium, Stage 3 -High, and Stage 4 -Critical (most stringent).
 3 A 'Financial Year' spans from the 1st of July in any given year through to the 30th of June of the following year.
 * Restrictions were not invoked in 2004-05

FIG. 4. Trends of invoked water restrictions in Alpine Shire (North East Water 2009).

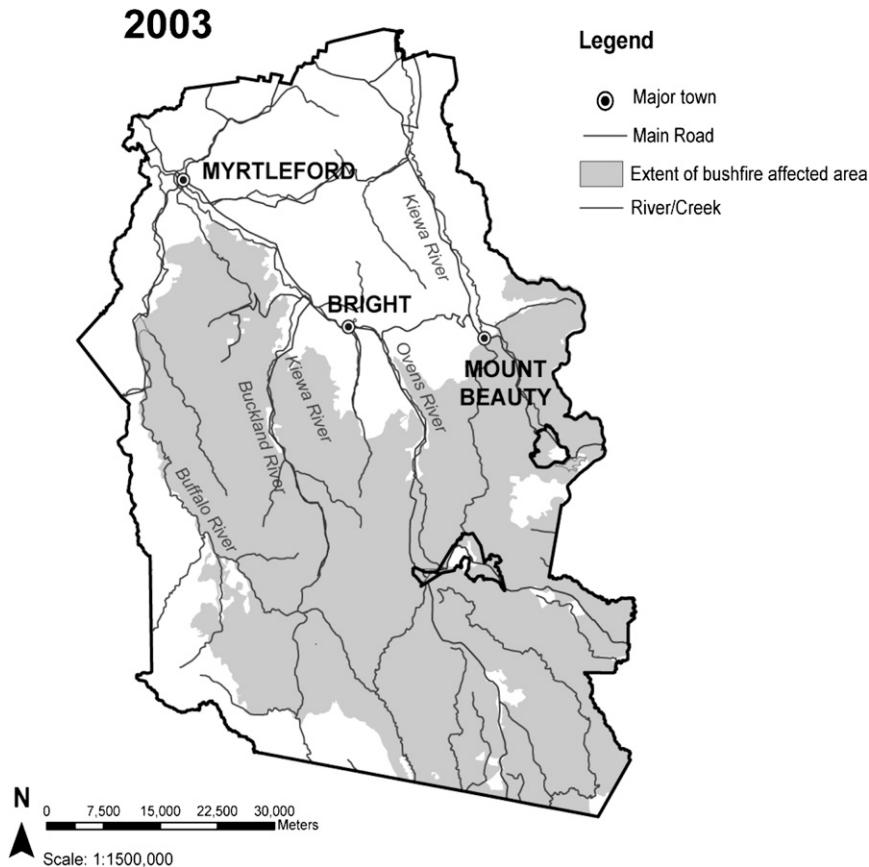


FIG. 5. Extent of bushfire-affected areas over Alpine Shire in 2003 (adapted from Lynch et al. 2006).

...we've been running out of water...if the Chalet had been open over summer, we probably would've failed in water capacity because for the first time we actually, there was not enough stream flow in the major stream that feeds the Chalet...then the fires happened and of course we then went through a lot of water as we had fire fighters permanently stationed at the Chalet wetting down around the Chalet... (interview, held in Mount Buffalo National Park, 24 May 2007)

Unlike in the valleys, the summer months are not a priority for the alpine resorts in terms of capitalizing and increasing their share of the tourist market year-round. As a resort manager mentioned,

...The reality is it [summer] doesn't affect us that much because we don't make any money through visits in summer. Our operators may, but we don't because we don't charge gate entry [in summer] and that's our only visitor price point ever, even in winter...we don't sell anything or do anything else other than provide gate entry which is a cost recovery service anyway... (interview, held in Mount Hotham, 6 August 2008)

This arrangement to collect entry fees only in winter is expected to have implications for the management boards at alpine resorts that seek to expand and diversify their tourism product across all seasons, as a way of adapting to drier and less reliable snow cover in winter (DSE 2004). This strategy will likely have implications for stakeholder relations in the region, particularly with neighboring valleys and towns whose share of the tourism market peaks in the summer months.

The majority of those interviewed felt that climate change, if raised, is an important issue in principle. However, it can be perceived as overwhelmingly complex (Kempton 1991; Stern 1992), as one operator expressed,

...[climate change] is just way too complex for little old me...most people sit back and say "oh, I can't do a lot about it myself, I can adapt to whatever comes along"...people around here are just scrapping...they're on survival mode...people are worried about how much they're taking for that week and their lack of customers because of fires and droughts. (interview, held in Myrtleford, 22 May 2007)

Similarly, when discussing the likelihood of future climate change, the response was largely brought back to recent experiences of the disruptive nature of extreme weather events rather than concerns over adaptation to conditions in 20, let alone 50, years ahead. One council officer mentioned,

...they [tourism operators] really focus on what's happening rather than talk about what would happen if it doesn't come...that is systemic of the tourism industry... it's about get through this next season... (interview, held in Bright, 22 May 2007).

Indeed, climate change is one of many concerns that compete for the limited resources, including attention, of local tourism management bodies, and in practical terms it takes a low priority. Climate variability as it affects short-term seasonality—both in the valleys and in alpine resorts—is of greater relevance. Given that adaptation to climate change is mostly enacted at the local scale (Abler et al. 2000; Acosta-Michlik et al. 2008; Adger et al. 2005; Berkhout et al. 2006; Burch and Robinson 2007; Füssel 2007; Parry et al. 2007), this suggests that the type of information that is relevant and useful at this scale will be framed in terms of expected weather rather than climate averages over long periods of time.

e. Natural disaster management

Natural disasters such as bushfires have had a substantial impact in this region and in many cases have been compounded by difficulties experienced in the recovery phase. Many of those interviewed spoke of their experiences with reference to the most recent bushfires during the summers of 2003 and again in 2006–07. As one council officer recalled,

If you take the 2003 bushfires, we had a real issue with tourism just stopping, and that meant we had a lot of work to do there, just in changing perceptions and getting people back to the region because it is such an important part of our economy... (interview, held in Bright, 22 May 2007)

The scenario repeated in 2007, as a council officer explained,

...obviously our Christmas and January were totally devastated and our figures were just pretty much non-existent...while we didn't have any fires directly affecting our areas, we had smoke in from our Gippsland fires so the whole town was blanketed in smoke so it was just not a good situation... (interview, held in Bright, 22 May 2007)

Some of the most resounding concerns were with respect to the media coverage that these bushfire events attracted, with many remarking at the level of “sensationalism” with which the fires were portrayed in printed

and broadcast media. This situation hampered already-stretched resources applied to new marketing campaigns for months after the immediate danger had passed (Ministerial Taskforce on Bushfire Recovery 2003, 2007).

Another problem raised was the difficulties many of these operators faced in accessing disaster relief funds from state and federal governments. As one council officer explains,

...our businesses would've been able to tap into that assistance, if they could demonstrate what they lost...most of them are not registered businesses...none of them had adequate, bookkeeping of profit and loss statements and inventories...and so when there was assistance available, they had discounted themselves because they are not good business people...and they don't have business plans... (interview, held in Bright, 22 May 2007)

As noted earlier, registered businesses are required to pay a special rate, which serves as a disincentive for registration.

Cioccio and Michael (2007) found that, although much has been done to enhance the ability of communities and governments to respond to events such as major bushfires, much less consideration has been given to the recovery of small businesses “caught up in a regional calamity.” Cioccio and Michael (2007) also concluded that a large gap still exists between disaster management theory and the realities faced by small-scale operators who are most affected, as we were able to observe at Alpine Shire. Many of these small operators lack the incentives, skills, and resources that would otherwise be needed to have effective preparedness strategies (Beeton 2006; Cioccio and Michael 2007).

f. Business capacity

The type of business operation that characterizes the Alpine Shire tourism sector is the small to medium sized enterprise (SME), often referred to by interview respondents as a “mum and dad” business. As previously noted, SMEs have limited resources to respond to disasters but furthermore are limited in the capacity to run strategically salient businesses (Beeton 2006). Broader participation for the benefit of the industry through engagement with tourism bodies and industry associations is an even greater challenge. Business culture in the shire is highly fluid. As one councilor explains,

...some of them have never run businesses before, some of them had no idea of the support they need and no idea that they should seek it...they've come up here very successful professionals and then buy themselves a bed-n-breakfast and ask people to serve their own beer...because they just have no idea what being in the service industry involves...for some it wouldn't even

occur to them that they should seek help, they're used being independent and making their own decisions... (interview, held in Bright, 22 May 2007)

Furthermore, there are a number of operators that do not run as registered businesses and therefore are excluded from networking opportunities. As noted by Becken and Hay (2007), the small and smallest businesses working independently tend to risk operating suboptimally, particularly where the flow of information and representation is likely to be inadequate. This disconnection is at the root of many of the conflicting perspectives documented here, including the potential for common interest activities to allow pooled benefits to accrue at the individual level.

g. Infrastructure and transport

A number of infrastructure and transport issues were raised, with many referring to the closure of the Mount Buffalo Chalet at Mount Buffalo National Park early in 2007. The closure was due to a number of issues, most notably expiring lease arrangements and lack of resources for maintenance and upkeep, compounded further by the bushfires of 2003. As one business owner in the shire recounts,

The closure of Mount Buffalo... absolutely massive thing that has affected the general tourism flow... because it has been an icon for 100 years. When you cut that icon off, suddenly one of the features that they come to the area for is not accessible in a proper way... (interview, held in Bright, 7 August 2008)

Other issues centered on road signage, network links, and public transport, as one business owner commented,

...there is a bit of infrastructure ageing happening in this region, which needs to be addressed... also transport issues. I mean that comes up time and time again... public transport options between towns are very poor... (interview, held in Bright, 7 August 2008)

These concerns over infrastructure are an issue for operators, who see this as a hindrance in their ability to market and offer a more equitable tourism experience, range of activities, and products.

h. Exposure to external factors of macroscale

Although most concerns raised were in the context of specific events that had occurred in the shire, there was also some identification of external macroscale influences, particularly fluctuations in the Australian dollar, interest rates, inflation, GDP growth, and fuel prices. Topical for the region at the time of these interviews was the sharp rise in fuel prices. One business owner in the shire noted,

...there's no doubt that the change from \$1 to \$1.50 in petrol prices, which happened in early 2008, has had a huge impact everywhere on tourism, because people don't want to travel as far... those figures are coming through for other regions already... (interview, held in Bright, 7 August 2008).

Fluctuations in economic indicators and economic cycles have been closely associated with expected and actual growth in tourism yields particularly in regional rural centers (Dwyer et al. 2009). Times of economic downturn are a common vulnerability in the context of limited reserves and redundancies. This is particularly true of the tourism industry in general, given the voluntary and hedonic nature of travel and holidays (Josephides 1993).

i. Appraising findings against a common goal

In the previous sections, a number of issues of concern were raised by respondents. However, the question remains how to legitimize those that address the common interest, if that interest can be constructed. To be excluded are special interests that are not consistent with the common interest: for example, those who felt the fires protected them from running out of water. Also to be excluded are preconceived solutions that masquerade as problems: that is, when "people see a condition as problematic only because it is the mirror image of a solution they already believe in" (Bardach 1981, p. 164). According to Bardach (1981, p. 165), the "definition of the problem should be as sparse and noncommittal as possible" by removing causal and prescriptive qualifiers of the problem and instead focusing on identifying the feelings of discontent, effectively describing the perspectives and myths entrenched in them.

From a policy perspective, myth is akin to a stance or worldview (Lasswell 1971); in this case, an analysis of myths operating in Alpine Shire elucidates the interests operating by those involved in tourism there (see Table 3). It is apparent from this analysis that there are a range of competing interests but that these can be grouped broadly into council members, operators in the Ovens and Kiewa valleys. Comparable to findings in Mattson et al. (2006) and Clark et al. (2008), this analysis suggests a problem that is embedded in unclear strategic directions, uncertain information, and diverse and strongly felt perspectives among actors.

6. Conclusions

The significance of the Alpine Shire case study goes beyond the identification of this community's goals (Lynch and Brunner 2007). We argue that sound policy making to reduce the vulnerability of small communities

TABLE 3. Example of contradicting problem definitions and perspectives prevalent in the Alpine Shire tourism sector and components associated with their myths (adapted from Clark et al. 2008).

Perspective	Myth		
	Doctrine	Formulas	Miranda
Council managers: “...the business operators don't see that they have to be a partner in this...”	Initiative and acumen is required from operators for a collective common good: council is underresourced	Facilitate business skills training by the economic development officer and appointment of new ARTB	New ARTB—new direction and guidance for tourism—run by business people for business people
Ovens Valley operator: “...after spending in fact millions of dollars resourcing the tourism decision of the shire, they don't have any numbers as to how many tourists come here...”	Increase accountability, transparency, and “say” regarding use of their resource to serve their needs	Critical of the current decision process for tourism	Special rates, increasing but not delivering on their individual expectations on how it should be spent.
Kiewa Valley operator: “...I believe we have a very good relationship with the Alpine Shire and we get very good value for dollar from the council...Alpine Regional Tourism (ART) I believe is the best thing since sliced bread, for what they can do, what they can offer the whole region...”	Core values based on rectitude: a duty to the community; self-sufficiency and cooperative attributes	Good appraisal of current decision process, seeking to create synergies within the region (i.e., neighboring resorts)	Good value received from special rates paid for council services

to losses from climate change impacts must incorporate the profound uncertainties, the multiple values of the community at stake, and the resources available. This implies a procedurally rational decision process, one capable of monitoring and evaluating policies as events unfold, terminating mistaken policies, and building upon the successes (Brunner 1999).

Although climate- and weather-related events were raised in conversation during the interviews, there were other issues that were consistently and often more prominently brought to our attention in the tourism development agenda. However, this is not to imply that assessing issues and impacts pertaining to climate change are not important; rather, interactions between, and the scale dependence of, the issues raised has resulted in a complex picture of contextual vulnerability. In this context, experiences with climatic change were found to deepen or condition already existing unresolved problems and/or issues on the ground.

Finding common ground has been difficult, however, we suggest that an approximation to the common interest centers on active engagement to raise the business capacity of all tourism operators in the shire. This would

- provide an incentive to register as a business to access services;
- allow existing registered businesses to see a concrete return on their special rate;
- allow the council to better facilitate relations with state authorities to mobilize resources; and

- make the sector more resilient in the face of shocks ranging from fire to drought to increased fuel costs, all potential manifestations of climate change.

It is clear from the competing formula espoused by actors in the Alpine Shire tourism sector that a problem can be defined by the mismatch between desired outcomes and current policies. Based on our identification of an approximation to the common interest in the Alpine Shire tourism sector, further work involved the presentation of these issues of concern to study participants for correction and refinement and for the development of a comprehensive set of creative policy alternatives that might be explored to resolve the problem (Roman 2010).

From a methodology perspective, the policy sciences and in this case goal clarification provided us with a useful framework for structuring and understanding the results obtained. It has revealed many complex and interacting issues for the shire's tourism sector to the challenges of the current era. These issues represent immediate concerns for addressing adaptive capacity and direct attention to the types of policies that would streamline paths for action toward adaptation and sustainability.

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