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Alpine Resort Futures: Climate Change Vulnerability Assessment (Social and Economic)

Alpine Resort Futures/Land Governance/Land Management Policy
Energy, Environment and Climate Change
Department of Environment, Land, Water and Planning

Consultation Report: Final Report

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Introduction

This report includes the outcomes of consultation and stakeholder engagement conducted in support of the Alpine Resort Futures Climate Change Vulnerability Assessment (Social and Economic) Project.

The purpose of stakeholder engagement

The Climate Change Vulnerability Assessment (Social and Economic) Project is a sub-project of the Alpine Resorts Climate Adaptation Project, the objectives of which are to:

- Inform, consult and involve stakeholders in identifying and understanding the present current scientific research on the anticipated impacts of climate change for alpine environments, including Victorian alpine resorts
- Inform, consult and involve stakeholders in identifying and understanding the risks, vulnerabilities and capacities of the alpine resort sector within the context of a changing climate
- Provide stakeholders with formal opportunities to share their views, expertise and vision on alpine resorts climate adaptation
- Engage and collaborate with key stakeholders to build resilience within the alpine resort sector to the impacts of climate change, and
- Engage and collaborate with key stakeholders to manage the transition and transformation required to maintain sector sustainability in a changing climate.

The Climate Change Vulnerability Assessment (Social and Economic) Project builds towards these objectives by engaging with stakeholders to:

- Learn from the experiences and knowledge of the alpine resort sector
- Gather information to understand the alpine resort sector's vulnerabilities, and
- Identify information gaps to improve alpine resort sector's adaptive capacity.

The specific requirements of the stakeholder engagement component of the Climate Change Vulnerability Assessment (Social and Economic) Project were to conduct interviews with selected alpine resort sector stakeholders, including Traditional Owners, and tailor workshops to:

- Identify strengths, gather sector knowledge, practical experience and community input
- Listen to and note issues, concerns, and ideas
- Raise awareness and develop adaptive capacity, and
- Understand what stakeholder's value about the alpine resorts and their vision for the future.

Three streams of stakeholder engagement

To meet the project objectives and requirements, three streams of stakeholder engagement were established in the following sequence: targeted stakeholder interviews, meeting with traditional owners and sector focused workshops.

Structured and informal interviews were conducted with selected stakeholders to gain in-depth knowledge and perspective from those organisations with the closest and most influential relationships with the alpine resort sector.

At the same time engagement was commenced with Traditional Owner organisations that have land, country and cultural interests in or near the alpine resorts.

A key aim of Traditional Owner engagement is to build an ongoing partnership with the Department Environment Land Water and Planning (DELWP) and the alpine resort sector in climate change adaptation. As such, Traditional Owner engagement will need to be ongoing.

Twelve workshops were conducted across the Alpine region and also held in Melbourne. The workshops were designed to explore perceptions of the current economic, social and cultural values of the alpine resorts, and how these values are perceived to be vulnerable to climate change. The workshops also explored perceptions of the adaptive capacity of the alpine resort sector, in terms of the opportunities, strengths and weaknesses facing the sector as it prepares to adapt to climate change. A range of stakeholders from different backgrounds were invited to and participated in the workshops.

Structure of this report

This report has been prepared to provide input to support and inform the vulnerability assessment for the alpine resort sector.

The structure of the report complements the key initiatives explored with DELWP to facilitate engagement, provide information and encourage feedback from stakeholders. This report forms part of the resources developed to support this engagement.

This report is broken into the following specific sections to align to the purpose of the report:

- The big picture: over-arching analysis of stakeholder engagement outcomes
- A snapshot of key issues and differences at each resort
- What this means for the vulnerability assessment
- Interview findings
- Workshop findings

The big picture: an over-arching analysis of stakeholder engagement outcomes

Values & Vulnerabilities

Overall narrative

Broadly speaking and on balance, the economic value of the alpine resort sector is dominant in the minds of stakeholders. There is a shared recognition that economic contribution, visitation, infrastructure and the white season are vital economic values, and that these economic values are vulnerable to climate change.

Across all resorts, the economic values of the alpine resort sector were of primary importance from a business perspective. In the interviews this was highlighted as a common perspective and during the workshop round, expressions provided from a business perspective, were the most dominant. However, economic contribution, visitation and infrastructure were shared values that also drew strong expression from community, Alpine Resort Management Board (ARMB) and government perspectives as well. A stand out value uniquely expressed from a business perspective relates to the “green season” and its significance to support ongoing economic activity. On balance, from all perspectives, the shared economic values were considered to be moderately to majorly vulnerable to climate change.

This emphasis upon economic contribution as a key value is a reflection of the current setting in which the resorts are viewed to be important centres of commercial activity locally and regionally, particularly focussed upon the white season. Certain social and cultural values are also closely connected to this current setting, such as the social value of activity and the cultural value of snow culture. There is also a perspective that social and cultural values are underpinned by economic values. There is a sense that if current settings centred on the economic values are adversely affected by climate change, then the platform for many social and cultural values may be lost. This is a significantly expressed vulnerability.

Social values were most strongly expressed from a community perspective. The stand out area of shared value, expressed early from the interviews and further supported by workshops was related to the social value of the strength of the alpine community, which received relatively strong expression from both community and business perspectives.

Activity and well-being were two stand out social values uniquely expressed from a stakeholder and community perspective. The environment was expressed as a social value in its own right. As a platform for other social values the environment was a standout value uniquely expressed from an environmental perspective. On balance, from all perspectives, social values were considered to be moderately to majorly vulnerable to climate change.

Cultural values were also most strongly expressed from a community perspective. Expressions from this perspective were dominant. The stand out area of shared value was related to nature-based culture, which was recognised from community and environmental perspectives. The values of activity-based culture, snow culture and community culture were uniquely expressed from a community perspective. On balance, from all perspectives, cultural values were also considered to be vulnerable to climate change.

It is clear that there are many economic, social and cultural values that rely upon the current settings in the alpine resorts. There is also substantial recognition of social and cultural values that do not necessarily rely upon the current settings to the same degree. The environment as a social value in its own right and other social values like community, wellbeing and accessibility are all values that can be enjoyed to some degree regardless of the scale of existing commercial activity. These values appear to have emerged and established in conjunction with the historical development of each of the alpine resorts. The same can be said for cultural values like activity-based and nature-based culture.

Though there is a general sense that these kinds of values are also vulnerable to climate change, they are values that are able to be maintained and that are worth maintaining in their own right, regardless of the scale of commercial activity or the degree of climate change. As expressed through interviews and workshop engagements, many of these values existed well before the scaling up of commercial activity in the alpine resorts region.

Of course, it is broadly recognised that in the best case, a key part of adaptation planning will be to look at ways in which all economic, social and cultural values can directly reinforce each other. For example, the further diversification of commercial activity could help to promote a broader set of social and cultural values, and vice versa.

It is also recognised that there are some limits to the compatibility between the three streams of value. For example, if there was to be an intensification of the development of certain kinds of infrastructure at the resorts as a response to climate change and the desire to maintain white-season focussed commercial activity, this could impact adversely upon how place and culture are experienced. Adaptation planning will need to balance trade-offs between various value streams.

The overall sense is that values across the three streams are vulnerable to climate change, subject to whether or not certain opportunities for adaptation are available or taken up within specific timeframes. There is a keen awareness that the white season as a major driver of visitation to the resorts - and the other key economic values that rely on that – are particularly vulnerable.

Ideas about how vulnerabilities could be addressed through various opportunities are plentiful at all levels and these are explored under the discussion around Adaptive Capacity.

Overview of economic, social and cultural values across the sector

An overview of the most strongly expressed economic, social and cultural values is presented in Tables 1 to 3. These tables are drawn essentially from workshop results to show the most strongly expressed values in their ranking order, their perceived vulnerability to climate change, and whether they are relatively shared or unique.

Following each table are direct quotes taken from workshops and interviews to give a flavour of how values and vulnerabilities were expressed and the linkages between values.

Table 1 The most strongly expressed economic values & vulnerabilities – overview

Value in ranking order	Perceived vulnerability	Shared by which perspectives	Unique by which perspective
Economic contribution of value to local, regional and / or state economy	Moderate to major	Business Community Government	-
Visitation including tourism, as the primary driver of economic activity	Moderate to major	Business, Community ARMB	-
Infrastructure as providing the platform for supporting economic activity	Moderate to major	Business Community ARMB	-
White season as the primary season for visitation and economic activity	Moderate to major	Business ARMB	-
Jobs local and regional, as a direct benefit of economic activity	Moderate	Business Community	-
Investment as a facilitator of economic development and activity	Moderate to major	Business Community	-
Governance as a facilitator of economic development activity	Major	Business & ARMB	-
Green season as a significant season for supporting economic activity	Moderate to major	-	Business

Some direct quotes expressing views about economic values and vulnerability are:

> *“Economic sustainability is the base of social and cultural values”* – Community – Bright Workshop
>
> *“Government needs to look at overall value to the community – not just $”* – Government – Baw Baw Workshop
>
> *“No snow no income”* – Business – Lake Mountain Workshop
>
> *“Winter should not be paying for summer”* – Government - Melbourne workshop
>
> *“Tourism is a major driver to the regional economy”* – Mt Hotham ARMB – Face to face interview
>
> *“Largest employer in the area during the winter months”* – Buller Ski lifting company – Face to face interview
>
> *“With climate change our mountain needs more water storage and more water dams so the mountain can run”* – Business – Mt Buller workshop
>
> *“Mansfield community is reliant on winter tourism”* – Community – Mansfield workshop
>
> *“Not keeping up with change”* – Environment – Lake Mountain workshop

"You cannot use carbon polluting technologies to enhance snowmaking in response to climate change" – ARMB – Melbourne workshop

"Decrease in snow resulting in a time when the value proposition becomes something else" – Mt Buller Ski Lifts – Face to face interview

Table 2 The most strongly expressed social values & vulnerabilities – overview

Value in ranking order	Perceived vulnerability	Shared by which perspectives	Unique by which perspective
Environment as a social value in its own right and as a platform for other social values	Moderate to major	-	Environmental
Community recognising shared relationships and qualities amongst diverse stakeholders	Moderate to major	Community Business	-
Activity summer and winter activities, often physical, as a key value underpinning health, wellbeing and community	Moderate	-	Community
Wellbeing as a primary value resulting from engaging with the alpine resorts and the alpine environment more broadly	Moderate	-	Community
Infrastructure social infrastructure such as education, health and public amenities as a platform for wellbeing	Moderate to major	-	-
Education as a primary value offered by and associated with interacting with the alpine resorts and alpine environment more generally	Moderate to major	-	-
Accessibility with reference to maintaining or enhancing the ability of diverse socio-economic backgrounds to access the alpine resorts and alpine environment more generally	Moderate to major	-	-

Some direct quotes expressing views about social values and vulnerability are:

"Personal well-being in ever busy time" – ARMB - Mt Buller Workshop

"Alpine areas provide space for people to feel connected with nature" – Community – Falls Creek Workshop

"Access opportunities for all people"- Community – Bright Workshop

"A place for future generations to enjoy" – Environment – Mt Baw Baw Workshop

"Mountains are my happy place" – Community – Melbourne Workshop

> *"Unique and valued place year-round"* – DELWP Hume Region – Face to face interview
>
> *"Resorts add to the robustness of local communities"* – Falls Creek ARMB – Face to face interview
>
> *"Economic hardship causing stress and breakdown of community"* – ARMB – Bright workshop
>
> *"Maintaining people connection to the natural environment*" – Community – Melbourne workshop
>
> *"Community infrastructure capable of withstanding effects of climate change?"* – Government – Melbourne workshop
>
> *"Family engagement spanning generations in snow sports"* – Community – Melbourne workshop
>
> *"Loss of resort quality having flow on effects"* – DELWP Hume Region – Face to face workshop

Table 3 The most strongly expressed cultural values & vulnerabilities - overview

Value in ranking order	Perceived vulnerability	Shared by which perspectives	Unique by which perspective
Activity-based culture the sharing of participation in a broad range of activities in the alpine resorts and alpine environment generally	Moderate	-	Community
Snow culture the sharing of participation in activities directly associated with snow	Moderate to major	-	Community
Nature-based culture the sharing of participation in activities directly associated with the general enjoyment of nature and the environment	Moderate	Community Environmental	-
Community culture the sharing of participation in community generally	Moderate	-	Community
Heritage a shared appreciation of the post-settlement heritage and history of the alpine resorts and the alpine region generally	Minor to moderate	-	-

Some direct quotes about cultural values and vulnerabilities are:

> *"I love the ski culture because it brings people with the same passion together"* – Community – Mansfield Workshop
>
> *"Recognise different cultures and shifts over time"* – Community – Bright Workshop

"Management needs to walk the line between profit and cultural experience" – ARMB – Mt Baw Baw Workshop

"Spiritual and cultural connection to the landscape" – Community – Melbourne workshop

"Change culture - Biking is the new hiking" – Environment – Warragul workshop

"Resort often described as an odd duck pond catering for all walks of life and lifestyles" Falls Creek ARMB – Face to face interview

"Cultural values include long association with visitation to the mountains, this includes traditional owners" – Southern ARMB – Face to face interview

"How to maintain ski culture with less snow?" – Community – Mt Buller workshop

"Mountain biking – low vulnerability to climate change" Community – Warragul workshop

"Beautiful and unique sub-alpine environment – need to protect from bushfire" – Environment – Lake Mountain workshop

"Custodians of significant landscapes ……once lost ………..it's lost forever" – Government – Melbourne workshop

"Resort is an ever-changing environment with managing risk as a significant cultural value" – Falls Creek ARMB – Face to face interview

Adaptive Capacity

Overall narrative

The overall impression of the adaptive capacity of the resorts to climate change is that there are some fundamental weaknesses that will need to be overcome or managed to support successful adaptation. This weakness exists despite a broad range of opportunities available for further adaptation, and a number of significant strengths that can support the taking up of those opportunities.

Opportunities for the future are of keen interest to all stakeholders. Ideas for maintaining and enhancing visitation focus on diversifying what the resorts can offer visitors throughout the year.

Increasing the range of activities that the resorts offer is an immediate to short term opportunity, and at most resorts there are efforts towards implementing identified opportunities already under way. Related to visitation, an increased range of outdoor activities, that can either operate year-round or be seasonally specific but complementary, as well as closer integration with drivers of general tourism in the region (such as events, food and beverage and wellbeing visitation) are seen as other areas of immediate to short term opportunity. Green and shoulder season activities like road cycling, mountain biking, hiking, adventure rides and trails, festivals and other events are also frequently mentioned as opportunities.

There is broad recognition that, as under current settings, infrastructure will be a key platform upon which many opportunities for adaptation will depend. Making more use of existing infrastructure (for example, by using lifts throughout the year) is seen as vital. Investment in new infrastructure to support more diverse activities is also recognised as an opportunity. Some examples include building new walking trails, adding more interpretive signage and key new attractions like toboggan slides.

Recognising and responding to more diverse and changing interests around white season activities is also mentioned as an opportunity, such as building more capacity for general snow play, and increasing opportunities for trail skiing. Absolutely vital to these opportunities are ongoing efforts to maintain and enhance snow cover on the resorts, through continuing to invest in and apply traditional and emerging snow-making technologies. Stakeholders from business and ARMB perspectives share a sense of the ongoing importance of this opportunity.

Improved governance to support effective adaptation planning and resort management is also seen as an important opportunity, with a shared interest in this between community, business, government and ARMB perspectives.

From a community perspective, there is a particularly strong expression of opportunities around visitation and the need to support ongoing community development.

Notably, there is a strong focus across all stakeholder perspectives upon opportunities for adaptation in the immediate to short term. Judging by the comments made by all stakeholders, this seems to either reflect previous experiences, a sense of urgency of the need for resorts to continue to adapt to changing conditions generally or the relative ease of reach of opportunities mentioned.

There are very few expressions of longer term opportunity other than those related to governance. The broad consensus is around maintaining and enhancing the values of the resorts through ongoing adaptation across a broad range of fronts in contrast to a singular transformational step.

Stakeholders see a number of key strengths available to the resorts in support of adaptation, and in general these strengths are of significance.

The community, its established track record in adaptability and the commercial experience of operators, are expressed as foundational strengths that already hold the resorts in good stead despite the challenges of various changing conditions.

The comparatively high quality and uniqueness of the environment is also seen as a foundational strength, a view shared particularly between community and environmental perspectives. Current levels of visitation and the current stock of public and private infrastructure are also recognised strengths upon which the resorts can build.

In the face of these opportunities and strengths are a range of significant weaknesses, which can be seen as expressions of the real vulnerability of the sector.

Notably, many of the most significant weaknesses expressed reflect underlying structural difficulties currently facing the resorts. The overall sense is that climate change impacts may exacerbate these structural issues over time (as opposed to being the root cause of them).

There is a strong view that governance is also a major weakness, although anxiety and uncertainty about governance was anticipated and experienced because of the Alpine Resort Futures Governance Reform Project (currently in progress). Recalling that improved governance is also regarded as an opportunity for supporting adaptation, there are different perspectives about which aspects of governance are the weakest and need improving. Capturing the overriding themes relating to adaptation revolve mainly around uncertainty, a lack of strategic direction, lack of communication and process inefficiencies.

A number of perceived weaknesses also revolve around the recognised foundations of economic value in the resorts – an increasing lack of investment (public and private), limits upon the capacity of existing infrastructure, entrenched seasonality (reliance upon white season) and increasing costs (for users and operators).

Of note is the observation that the environment is expressed as a significant weakness, either because of the limits of it to absorb increased activity and development without losing some of its quality, or the established processes associated with regulating and managing environmental impacts.

Here are a sample of direct quotes reflecting perspectives about the adaptive capacity of the resorts.

> *“Rethinking strategic approach to the resorts” DELWP Hume – Face to face interview*
>
> *“After being engaged in a 10-year adaptation strategy there is no silver bullet that replicates the value of snow” Mt Buller Ski Lifts – Face to face interview*
>
> *“Greater tourism sector alignment with points of differentiation” Falls Creek ARMB – Face to face interview*
>
> *“No single solution- as resorts are all different” Mt Hotham ARMB – Face to face interview*
>
> *“Opportunities include green season to support the growth of Melbourne” Southern ARMB – Face to face interview*
>
> *“A community of passionate, motivated doers who will adapt and not fight change but will see the positives” – Community – Mansfield workshop*
>
> *“Desire to grow summer and spread the costs” – Business – Falls Creek Workshop*
>
> *“Willingness in Government, academics and peak community groups to work together” – Environment – Melbourne workshop*
>
> *“Ability to promote cross generational changes” – Community – Melbourne workshop*
>
> *“Strong awareness and acceptance that change is needed at Baw Baw” – Community – Melbourne workshop*
>
> *“Because of strong cultural and social role of the resort there is a great deal of private willingness to invest in actions to adapt” – Community – Melbourne workshop*

Opportunities, strengths and weaknesses across the sector

An overview of the most strongly expressed opportunities, strengths and weaknesses are presented in Tables 4 to 6. Opportunities are expressed in terms of the timeframe to realise them. Strengths and weaknesses are expressed in terms of their level of significance. Areas of shared and unique value are also captured.

Table 4 The most significantly expressed opportunities – overview

Opportunity in ranking order	Timeframe to realise	Shared by which perspectives	Unique by which perspective
Visitation a broad range of ideas and suggestions for maintaining and enhancing visitation generally	Immediate / short term	-	Community
Outdoor activities expressions of a range specific outdoor activities that could be established in any season	Short to medium term	Business Community	-
Governance ideas and suggestions for improving governance to support adaptation planning and resort management generally	Immediate / short term	Community Government ARMB	-
Tourism a range of ideas and suggestions that directly mention connection into broader / more diverse tourism activities or the tourism industry generally	Immediate / short term	-	-
Infrastructure a range of ideas and suggestions for maintaining and enhancing infrastructure generally	Immediate / short term	Community ARMB	-
Snow a range of ideas and suggestions for specifically maintaining and enhancing snow and snow-related activities, including snow-making and management	Immediate / short term	Business ARMB	-

Table 5 The most significantly expressed strengths – overview

Strength in ranking order	Significance	Shared by which perspectives	Unique by which perspective
Community as both a platform and a resource for adaptation, based on a sense of shared values and proven cohesiveness over the long term	Major	-	Community
The environment generally as the primary opportunity providing the platform for all other opportunities in the alpine resorts and the alpine region	Major	Community Environmental	-
Location as either proximity to larger population catchments or uniqueness compared to other locations	Moderate to major	-	-
Adaptability as a proven quality of the alpine resort sector and community generally in response to continually changing conditions	Moderate to major	Business ARMB	-
Commercial knowledge of and experience in operating commercially in variable and sometimes challenging conditions	Moderate to major	-	Business
Visitation generally, as a key strength upon which other strengths depend, with a sense that this is already diversifying	Moderate to major	-	Community
Infrastructure the current stock of public and private infrastructure as a platform for maintaining and enhancing the sector	Major	Business Community	-

Table 6 The most significantly expressed weaknesses – overview

Weakness in ranking order	Significance	Shared by which perspectives	Unique by which perspective
Governance the direction and management of the sector and / or individual alpine resorts, with emphases upon lack of strategy, lack of process efficiency, lack of adequate representation of diverse interests	Major	Business Community Government ARMB	-
Investment a lack of investment and / or various constraints upon attracting new investment	Major	Business ARMB	-
Infrastructure constraints upon / limits to the capacity of existing infrastructure, and lack of investment in renewal or extension in infrastructure generally	Major	-	Community
Seasonality the strong reliance upon white season for economic, social and cultural value and a lack of diversity / depth / commercial investment & opportunity in green season	Major	Community ARMB	-
Costs the increasing costs of investing in and operating in the alpine resorts, and / or the increasing costs of accessing and using the alpine resorts	Moderate to major	-	Community
The Environment either the limits on the capacity of the environment to support activity and development in the alpine resorts or frustrations with regulatory processes involved in managing the environment	Major	Business Community Environmental	-
Community either a lack of breadth / depth in the community and / or the fragility of community in the face of diverging interests as the sector adapts	Moderate	-	Community

A snapshot of key issues and differences at the resort level

There are a number of key issues and differences at the resort level that influence community perceptions of values, vulnerabilities, and adaptive capacity.

Mt Hotham

Mt Hotham benefits from its direct road links to both the Gippsland and Hume regions, which places it well to become more integrated with regional tourism markets. However, at workshops in the nearby off mountain towns there was a perception that there is a lack of integration, particularly around employment and business opportunities.

The Mt Hotham ARMB is planning a consolidation of the village centre as a step towards improving the amenity, services and focus of the village. This may be a vital step towards further improving the visitor experience of the resort and supporting more diverse activities and increased year-round visitation.

There has also been a large private investment in snow making on Mt Hotham and here too this as seen as a continuing opportunity and major strength of the resort.

There is a stronger perception of bushfire risks in the green season. There has been substantial investment in and around bushfire mitigation. Bushfire management policies impact on the resort and can keep visitors away in the warmer months. This is seen as a potential limit to the amount of green season visitation that can be developed on the mountain as climate change effects and bushfire risk increase.

Falls Creek

The village at Falls Creek is the most village-like resort, and this is reflected in the substantial size of the on-mountain community, particularly during white season. Access to social infrastructure and services is considered to be an important platform for both building the residential community and supporting seasonal visitation.

There is also a large private investment in snow-making and broader snow management at Falls Creek. Larger rain events experienced at the resort - and the wash out effects on snow cover associated with this - have led to increasing investment in drainage systems.

There has also been investment in bushfire mitigation at Falls Creek, as recent bushfire events have increased. There is a similar perception that bushfire mitigation and management policy is a necessary part of the landscape but that it can affect the opportunity for developing a substantial green season visitation base.

There is already an increasing green season investment at Falls Creek as part of the general strategy to broaden the resort’s year-round offer. For example, from the interview with the Falls Creek ARMB the move into the green season is being supported through making 3,000 beds available in that season.

The resort is also at the early stages of exploring other industries, such as a move into the telecommunications industry (for example, establishing a server farm to take advantage of cool climate conditions).

Mt Buller

Mt Buller has relatively strong connections off-resort, and this tends to increase the perception of Mt Buller's contribution to the local and regional economy. For example, stakeholders at both the Mt Buller and Mansfield workshops mentioned employment and business connections between the resort and the local off-mountain community. This perception was further backed up in the interview with Buller Ski Lifts.

There is a strong focus on snow-making at Mt Buller, where large private investments have been made in traditional and emerging snow-making technology. There was a significant focus of discussion at the Mt Buller workshop around snow-making as a continuing opportunity and strength of the resort as climate change effects increase. However, there are also some recognised weaknesses. Water and power supplies – essential inputs for snow-making are at or close to their existing capacity. The observation was made during interviews that there has been no government investment in water supply, capture or storage since 1993. The potential for power supply upgrades at the resort is limited due to a lack of year-round demand.

Mt Buller has also experienced capacity constraints with other key infrastructure such as road access, car parking and other public facilities during high day visitation periods. The resort has observed a shifting market for snow recreation, with a growing proportion of day visits. Day visitation has now become a target market for the resort, but may need further investment in the development of more capacity in key infrastructure.

At Mansfield, much was made of the differences between Mt Buller and Mt Stirling as alpine destinations. Mt Stirling caters to a more traditional / less commercially focussed set of activities and these have value to the local and regional community as well.

Mt Baw Baw

A major factor in favour of Mt Baw Baw compared to the northern resorts is its proximity to Melbourne and south eastern growth areas. This notionally places the resort in a good positon to take more advantage of the white season day visitor market, although there is another perception that there is some resistance from older generations of a shift towards this market and away from the resort's traditional base of lodge and club accommodation, where overnight and long stay visits have been significant but are now declining.

However, a major vulnerability for Mt Baw Baw is that snow cover there is likely to be impacted by climate change much sooner and more significantly compared to the northern resorts. This makes long term strategic choices about whether and how to invest in white season development difficult for both the private and public sectors.

Mt Baw Baw has ageing snow-making and lift infrastructure, and limited public facilities. This is impacting adversely upon the visitor experience at the resort and limiting the potential of the white season. While there is discussion through the Southern ARMB about planning to address this situation, the view was also expressed that the resort is not attractive to larger scale private investments. There is a perception that public investment in the white season is both necessary and desirable.

There is limited connection between Mt Baw Baw and the surrounding towns and region, although building this connection is considered to be a major opportunity, particularly to support the development of a stronger green season. Developing better road access options to the resort through improved linkages is seen as a key opportunity for enhancing visitation and connection to the region.

Lake Mountain

Lake Mountain is notable as the resort that serves only a day visitation market – there is no on-mountain accommodation at the resort. Lake Mountain also enjoys close proximity to Melbourne, and this clearly drives substantial levels of day visitation. On peak days, the resort has difficulty meeting demand, and on these days the mountain can be temporarily closed to additional visitors, as a tactic for managing the pressure on the resort's facilities.

The resort is also relatively close to Marysville, and though there is a fairly vibrant level of economic and social connection between the resort and the town as a result of passing traffic in winter, there seems to be some need for a higher level of strategic connection through which the two places can cross-support each other in ways that maximise the visitation and tourism potential of both in all seasons. There is plenty of recognised opportunity for doing that through improved coordination between the two destinations.

The resort is also notable for the limited terrain available for snow recreation. Snow-making infrastructure is available, but there is no lift infrastructure. Visitor experience can be adversely affected by high slope density although this is managed safely and well. Visitor experience could be enhanced by the addition of some small-scale lift infrastructure and a modest increase in terrain.

What does this mean for the vulnerability assessment?

The climate change vulnerability assessment framework considers the exposure, sensitivity, adaptive capacity and overall vulnerability of the sector and individual resorts to climate change. We can interpret overall stakeholder perceptions of values, vulnerabilities and adaptive capacity over time to inform the assessment at the sector and individual resort levels.

At the sector level

Stakeholders perceive that current economic values will almost certainly be exposed to climate change over time, and that they are sensitive to climate change impacts. This is particularly true for snow-related economic values. Perceptions are that even non-snow related economic values are likely to be exposed to and impacted by climate change over time. These perceptions reflect the recognised strong connection between current economic values, the environment, and visitation driven by snow and non-snow related outdoor activities.

However, stakeholders also perceive that the sector has significant adaptive capacity around economic values, demonstrated by a broad range of suggested opportunities available for adapting to climate change. These opportunities are particularly focussed upon how resort visitation can be maintained and enhanced, through a combination of managing snow and snow-related opportunities in the short to medium term, and diversifying what the resorts offer visitors all year round as part of a longer-term transition. Stakeholders also perceive a range of existing strengths and weaknesses that will influence the effectiveness of adaptation.

In terms of overall vulnerability, perceptions are that current economic values face moderate to manageable impacts in the short term but significant impacts over the medium to longer term, particularly if perceptions of key weaknesses around governance and resourcing are not addressed. Impacts are thought likely to become major over time if adaptation is not managed effectively.

For the current social and cultural values, perceptions are that these are also likely to be exposed to and will be impacted by climate change. This perception is particularly true of social and cultural values that are directly related to snow and snow-related activities. In terms of adaptive capacity around social and cultural values, there is some perception that there is a background level of social and cultural values - both on and off mountain - that emerged before the scaling up of the resorts sector, and that these values could be maintained at some level despite the impacts of climate change.

In terms of overall vulnerability, perceptions are that impacts on social and cultural values not directly dependent upon snow are manageable, subject to the effectiveness of adaptation. There is an understanding, however, that social values involving on mountain access to social infrastructure and services are more vulnerable because these are generally more reliant upon higher levels of visitation.

At the resort level

There some observable differences between resorts around perceptions of exposure, sensitivity, adaptive capacity and the overall vulnerability of economic, social and cultural values.

For Mt Hotham, Falls Creek and Mt Buller (the northern resorts), perceptions are that economic values will almost certainly be exposed to and will be impacted by climate change, and that social and cultural values are likely to be exposed to and will be impacted by climate change. Perceptions of adaptive capacity for Mt Hotham and Falls Creek are very similar, focussed around there being significant adaptive capacity for economic values, and effective adaptive capacity for social and cultural values (both on and off mountain). For Mt Buller, adaptive capacity around snow-related economic values is perceived to be more limited, primarily because of already known limitations on snow-making capacity. This in turn limits adaptive capacity around on-mountain social and cultural values at Mt Buller.

Perceptions of the overall vulnerability of the northern resorts are that, at Mt Hotham and Falls Creek impacts on all values are expected to be moderate to manageable over the short to medium term, while at Mt Buller economic values and on-mountain social and cultural values are expected to be subject to significant impacts. These perceptions seem to reflect expectations that Mt Hotham and Falls Creek have relatively good prospects for maintaining and enhancing snow and non-snow visitation through adaptation, while Mt Buller faces certain constraints, particularly in relation to additional capacity for snow-making. At Mt Buller, as compared to Mt Hotham and Falls Creek, snow-related values are more vulnerable sooner.

For Mt Baw Baw and Lake Mountain (the southern resorts), there is a different picture. At Mt Baw Baw, the perception is that most values are almost certainly exposed to and will be subject to major impacts from climate change in the short to medium term. Adaptive capacity is limited in relation to snow and all values related to snow, including on mountain social / community and cultural values. There is, however, a perception of significant adaptive capacity for all non-snow related values including off-mountain social and cultural values. At Lake Mountain, there is a perception that all values are almost certainly exposed to and will be subject to major impacts from climate change in the short to medium. There is a perception that there is limited adaptive capacity for snow-related and on-mountain values, but significant adaptive capacity around off-mountain social and cultural values. The proximity of the southern resorts to Melbourne and opportunities for leveraging this to support visitation throughout the year are perceived to be a significant asset for adaptive capacity.

Perceptions of the overall vulnerability of the southern resorts are that these resorts will experience more significant to major climate change impacts sooner than the northern resorts. Views on the adaptive capacity of the southern resorts vary, particularly in relation to the retention of snow-related values. Some perceive that it will be difficult to retain these values over the medium term without substantial investment. Most agree, however, that the placing of more attention on the green season is a prudent adaptive step regardless, and efforts are already underway to do this.

Interview Findings

Approach

Stakeholder interviews were conducted as the first part of consultation and engagement.

The respondents identified for initial engagement through an interview process that represented a broad cross section of the alpine resort sector including current Chairs, CEOs, General Managers and Directors of Resort Management Boards, Resort Management, Lifting companies, Government and Regional stakeholders.

Each respondent has a distinct personal and/or professional relationship, in, and with the alpine resort sector and the region. This includes experience at one or more resorts. In most cases the interviewees have a relationship to the alpine resorts that varies between 20 and 40 years while others interviewed were relatively new to the alpine resort sector.

The interviews were generally one hour in duration and were guided by a series of fifteen questions relating to exploring perceptions around values and adaptation capacity.

The objectives of the interviews were to:

- Identify economic, social, cultural and environmental values in the alpine resort sector
- Understand relationships within and across the alpine resort sector
- Gain perspective on the impact of climate change on the alpine resort sector
- Understand the alpine resort sector role in adaptation to climate change
- Identify barriers, limitations, strengths and opportunities in adaptation to climate change
- Identify drivers of adaptation and collaboration in the alpine resort sector, and
- Identify leads to further data and information of usefulness and relevance to this project.

Responses were collated into an online Google form system to enable analysis and to form part of project reference resources.

The findings of the interview round represent a key resource to this project as part of the ongoing engagement with the sector. They, like the workshop outcomes offer an opportunity for further interrogation, as needed, to inform and support further sector engagement.

Attachment 1 provides the guiding questionnaire used for the interviews.

Key findings

The following represents a summary of the key findings from the interviews.

The information obtained during this process established context for, and also informed, the ongoing consultation process.

As identified the interview information represents a substantial project resource that assisted in identifying perceptions of values, vulnerability and adaptive capacity.

The perceptions expressed through interviews were further explored through the vulnerability assessment process.

Changes in the alpine resorts

Respondents were specifically asked about the changes they had observed in the alpine resorts during their association with the resorts to identify and better understand the nature of development within the resorts over time.

Respondents described resort physical growth, accommodation changes, expansion of resort infrastructure, increasing demands of environmental management, key economic changes, changes in levels of and the nature of visitation and the influence of strategic planning within the resorts. These influence the particular economic, social and cultural values at each resort as well as the alpine sector more generally.

Respondents all said that there has been significant physical and spatial change in the resorts relating to snow and green season infrastructure development. With those physical changes in the resorts it was highlighted that there was also diversification in the accommodation mix for resorts from the traditional styled lodge accommodation to self-contained apartments. This change was specifically identified by ARMBs for Mt Hotham, Falls Creek and Mt Buller resorts. These ARMBs indicated that this change in accommodation mix matches changes in private investment over time across those resorts. Apart from new development all respondents said that there has also been redevelopment of existing accommodation within all resort areas.

Respondents said the physical development of the resort areas resulted in the need and pressure to expand resort infrastructure such as water and reticulated sewerage. There have also been changes in the standard of road access to many of the resorts and delivery of other municipal services.

ARMBs and ski lifting companies said that accompanying resort physical development have been higher resource demands across the sector in resort environmental management with a specific focus on biodiversity and bushfire.

Ski lift companies and Falls Creek ARMB said that apart from the impacts of spatial changes in the resorts there have been impacts of what was described as “non-change” in the resorts including economic conditions such as the Global Financial Crisis (GFC). This has influenced and changed private investment decision in the resorts.

All respondents indicated the broad recognition of the change in visitation patterns, demographics and the contribution that the resorts make, and continue to make to the local and regional economy.

Respondents highlighted that the resorts and parts of the sector have experienced different levels of change over time. The direction of this change has been influenced by the historical levels of on resort investment and development, varying engagement in strategic planning, the location of the resorts (e.g. proximity to Melbourne) and the physical characteristics of the resorts.

Economic values

Respondents were asked to describe the contribution that the resorts made to the regional economy to assist in identifying shared economic values. All respondents said that the alpine resorts make a positive contribution to local, regional and state economies.

Regional stakeholders indicated that the value of this contribution is part of the wider regional economy which includes a range of other major economic activities e.g. food production, agriculture and transport.

Shared economic values identified by the respondents were tourism and employment.

All respondents said that tourism is a major driver from the alpine resorts to the regional economy. There is a direct relationship between ARMBs to state and regional tourism bodies and regional tourism activities. This relationship varies and the level of engagement is heavily influenced by the location of resorts. For example, the involvement of the resorts in regional tourism in the North East region differs to the Gippsland region.

Respondents said that the alpine resort sector is one of the largest winter season employers across local areas and the regions. Respondents said the benefits to local communities are the flow on effects of the resorts as an employment generator. Ski Lift companies said that the alpine resorts provide a local and regional employment “off-set” during winter by supporting local employment activity.

Respondents said the alpine resorts have a role in employment generation and also have a role stimulating economic activity. Falls Creek ARMB said that the alpine resorts rely heavily on the “off mountain” supply of goods and services from adjoining local communities. This was highlighted by the location, physical isolation of the resorts, limitations of access and distance from local and regional communities involved in the production of goods and supply of services.

Social values

Respondents were asked to describe how the resorts contributed socially to the region and to identify any groups or communities that are considered to be vulnerable. The responses identified that resorts contributed socially in the areas of education, training and skills development, well-being, liveability and social diversity.

Regional stakeholders said that vulnerable groups or communities were identified to include schools and those local communities adjacent to the alpine resorts.

The respondents all acknowledged that social values in the resorts are also moving away from only being related to snow.

Respondents said that the role of education as a social value was described as the connection of people to the Alpine environment and this connection occurs at a number of levels being active (e.g. schools and outdoor education) and passive (environmental education).

Mt Hotham and Falls Creek ARMBs expressed the view that the educational value of the resorts is as an important social value both on and off resort. The influence of education on the interactions between alpine resorts and younger people is highlighted as a significant social contribution to local areas and the region more broadly.

Respondents said that training and skills development activities are on-resort as well as in the wider community with a particular focus on training opportunities for young people. These activities include training and skill based apprenticeships within the ski industry including for example operational areas, food and beverage and customer service.

ARMBs and Regional stakeholders said that the alpine resorts have a strategic role in maintaining health and well-being in the wider community. This was seen as a key value which is heavily influenced by the interaction between levels of activity, accessibility and cost. Levels of activity refer to the relationship between the alpine environment and healthy lifestyles. Accessibility is described as the role of the alpine resorts to offer access to specific groups including schools and sporting related organisations. Costs include the discounting of pricing to targeted groups.

Regional stakeholders said liveability is described broadly as a value around the role of the sector supporting regional lifestyle choices associated with living or having access to the alpine region and employment. Alpine activities as well as outdoor education initiatives contributed to liveability.

Ski Lift companies and ARMBs said there is a value based on the contribution of the resort sector to the social diversity of local communities through employment of seasonal workers and emerging visitor profiles. Diversity is described as the exposure of local communities to a variety of cultural backgrounds.

Falls Creek ARMB made reference to the contribution to social values made by the alpine resorts is directly related to the influence of the broader regions. This reference is based around resorts adjoining established local communities that retain their own social values and the alpine resorts are integrated into the wider community.

Cultural values

Respondents were asked to describe the cultural value of the resorts and to describe the cultural diversity in the resorts.

The respondents said that the cultural value of the resorts is best expressed through the relationship between the wider community, the alpine report sector and the Alpine areas. Cultural values are described as being diverse however this diversity is not wholly contained within the alpine resorts and are reflective of relationships to traditional owners, community, snow sports and history of the alpine areas.

ARMBs and Ski lifting companies highlighted that the relationship to traditional owners is not well developed and the level of engagement with traditional owners varies across the sector and resort areas.

Respondents said that the relationship to the community is referred to as part of the cultural diversity that captures all genders, ages, demographics and cultures – local, regional and wider that associate with the alpine resort sector.

The Southern ARMB said the terms “cold community” and “ski culture” are used to describe the relationship associated with skiing and related snow sports. Ski lifting companies identified that there is also a family and intergenerational link between this relationship and historical relationships to the resorts.

All respondents said that there is a long history associated with the alpine areas. This relationship is represented through long personal associations or related directly to the history of the Alpine areas e.g. early ski development and grazing.

Importantly these cultural values are experienced differently within each part of the sector and each resort area reflecting the history of the resort or management focus. For example, all ARMBs acknowledge the importance of the role of traditional owner engagement in land management activities. However, only one resort, Falls Creek, expressed a cultural value based on the historic links to the hydro electric industry.

Environmental values

Respondents were asked to identify how environmental values of the resort underpin identified economic, social and cultural values. Respondents said that environmental values in which the alpine resort sector operates are widely known and this knowledge has emerged through research and response to the demands of environmental management activities within the resorts. Respondents acknowledge that ecosystem services within the resort areas are a critical asset and highlight a number of key issues associated with environmental values having regard to economic, social and cultural values.

All respondents said that environmental values are well known and understood. This reflects the changing demands for environmental management, understanding the environmental impacts of bushfires and ongoing regeneration of vegetation within the resort areas. Ski lifting companies said the challenge of environmental values highlighting many of these are not visible (e.g. threatened species) and quantifying these values at a micro level is difficult to the wider community.

Regional stakeholders and ski lifting companies said that the resort environment contrasts greatly with the natural environment and setting reflecting that the resorts are commercially based propositions. Regional stakeholders however emphasised that the resort areas are still very significant small areas.

Ski lifting companies said that there are key landscape and scenic values associated with the alpine resorts which are not well reflected in social and cultural values.

Respondents had differing views of how environmental values underpin economic, social and cultural values within the alpine resort sector.

The ski lifting companies said that the resort areas form only a small part of a larger alpine environment and environmental values across the Alpine region are considered to be less sensitive at a regional scale. Contrasting this is the Government's perspective highlighting the significance of the resort areas themselves and the key ecological communities, habitats and endemic species that exist within the resorts. In contrast to both perspectives Regional stakeholders identified that while maintaining principles for environmental management resort areas are in fact commercially based propositions based around a return on investment.

Sector relationships

Respondents were asked how their organisation is connected to others in the Alpine sector and surrounding communities. Their responses indicated that there is a wide range of complex internal and external relationships that are maintained within and across the alpine resort sector as well as communities.

Respondents said the relationships identified by the responses can be grouped by purpose and function generally being regulatory, policy and partnerships.

Government and AMRBs said regulatory relationships include the broad legislative frameworks that the Alpine sector operates within including environmental and emergency management. This extends to the land management functions within the resort areas.

Government and ski lifting companies said policy includes the direct relationship of the Alpine sector to government.

Respondents said the linkages and connections to customers; stakeholder and industry associations are best described as partnerships. These linkages and connections are complex and reflect their differing purposes. For example, business linkages to traders within and outside the resort are different in purpose to industry association linkages to those traders.

ARMBs and ski lifting companies said that there are strong internal relationships within most the resorts that have developed through the exposure of the resort areas and resort communities to shocks. This is evident from the influence and impact of major bushfire events on the resorts as well as the loss of stakeholders within the resort communities.

Regional stakeholders said that there were comparisons in the levels of resilience within the alpine resorts to other changes affecting regional and rural communities including those adjoining the resort areas.

Sector response to climate change

Respondents were asked a series of questions relating to climate change including an indication of their experiences with climate change in the alpine resort environment, the impact of climate change on economic, social and cultural values, actions taken in preparation for climate change and what is needed to make those changes.

All respondents acknowledged that climate change will have some form of impact on the function and future of the alpine resorts and there will need to be move away from being wholly reliant on snow based economic activity.

ARMBs said that anecdotal evidence of changes had been experienced in the alpine resorts includes larger rainfall events, lack of snow retention and higher frequency of bushfires impacting on resort and surrounding landscapes. Other changes reflected levels of climate variability and normal seasonal fluctuations.

ARMBs and ski lift companies highlighted that climate change was one of a number of factors such as investment and economic conditions that are all major influences on the alpine resort sector.

Respondents highlighted that climate change may result in a decrease in natural snow, a potential loss in resort quality, a shift in the sector market and need for diversification, changes to environmental management specifically targeting bushfire, an increased focus on technology, short term investment in sector capacity to support transition and changing cost structures.

Responses from ski lifting companies to climate change include substantial investment in snow making technology and supporting activities (e.g. summer grooming) while other respondents said there was the need for investment in green season activities and infrastructure – this includes support for these activities (e.g. accommodation, services and facilities).

Other respondents specifically the ARMBs highlighted opportunities such as research, strategic and master planning associated with climate change “awareness creation”, finding efficiencies and working more effectively, marketing and economic research, bushfire and emergency management, targeted facility and asset replacement, development and protection and specific project initiatives (e.g. water supply, green energy, alternative industries and education facilities).

All respondents said to make these changes resources are needed. These resources include public and private financial investment, personnel, skills development and government support.

Respondents highlighted that specifically, for operators and communities in the sector to support these changes there will need to be clarity around resort futures, a response to changing consumer demands, clear identification of economic drivers, support for alternative activities, a change in perspectives of resorts being snow focused and understanding how to shift that focus and understanding the shift in traditional visitor markets These are key parts of the framework essential to respond to climate change.

Barriers and limits to change

Respondents were asked to identify the barriers and limits to making changes and how could those barriers be overcome. Their responses highlighted governance, investment, infrastructure and location as being both barriers and limitations as well as identifying how these could be overcome.

The respondents highlighted that barriers and limitations related to governance included overcoming legacy issues, lack of clear decision making frameworks, lack of leadership, government policy, political and bureaucratic interference, lack of understanding of sector value and failure to make changes to land tenure.

All respondents considered the loss of confidence in the alpine resort sector, financial borrowing restrictions, no public-private sector partnerships, lack of government funding, failure to recognise key stakeholder generational shifts, need to develop business cases for facility change and increasing resort and business costs all impact on the investment in the alpine resort sector.

Ski lifting companies and ARMBs said that infrastructure issues highlighted the lack of support for key resort infrastructure development and water supply.

All respondents said that locational limitations include spatial barriers of resort location, effects on year-round customer base and ability to insure future around climate change.

Falls Creek ARMB said that there are “generational” issues that highlight resistance to change by various stakeholders. This was described through a hierarchy of three types/levels of stakeholders (generations) all with a differing position in the alpine resort sector.

The first level of stakeholders represents those who have long term invested engagement in the resort, who have seen demonstrated vulnerability and variation in the way resorts have been managed and the seasonal challenges. These stakeholders are more resistant to change, or more resilient.

The second level refers to those highly engaged stakeholders who have embraced adaptation and have businesses that are focusing on all season opportunities.

The third level refers to new entrants, stakeholders who believe there are opportunities for product differentiation and who are prepared to invest despite the significant constraints imposed through regulation and leasehold structures within resorts.

Impacts of adaptation

Respondents were asked to identify the extent of internal and external impacts associated with adaptation activities. Internal impacts were described as how the adaptation activities undertaken by others would affect the respondent’s organisation. External impacts were described as how the activities undertaken by the respondent’s organisation would affect others. This included those activities being experiencing now and continue to be experienced in the future. These are summarised in Table 7.

Table 7 Summary of internal and external impacts of adaptation

Internal impacts	External impacts
The types of response needed to issues such as emergency management, maintenance of infrastructure and other related changes supporting adaptation	The need for better communication between the alpine sector and government
The need for upfront planning rather than relying on trade offs	Recognising that other external factors influence the sector as opposed just climate change
The levels of financial investment needed	Understanding the changing level of demands for Alpine experiences
Changes to communication and levels of information	Recognising the role of tourism and associated regional and state tourism bodies
Changes in leadership roles	Understanding that decisions by others influence resort activities and events
Adjusting to seasonal changes	Acknowledging the pressure to change the nature of the business to year-round focus
Ability to orientate to new visitor markets based on previous experiences	Activities in other sectors around adaptation could benefit the alpine resort sector and provide other catalysts for investment
Different role in demonstrating adaptation initiatives and supporting ongoing investment	Recognising that other sectors including water, energy, health and agribusiness are adapting to change more quickly including risk management and mitigation in a changing environment
Shifts in employment structures	Recognising the value and application of other business models to the sector

The ARMBs said that external impacts of adaptation are in fact limited as the alpine resort sector is situated in a relatively closed loop. This is also reflected in comments that due to the specific nature of the alpine resorts the perception is that the ARMB is, and will remain, the key leader and driver of adaptation. This is also reflected in the responses to identifying key drivers of collaboration.

Opportunities for adaptation

The respondents were asked to identify the opportunities that adaptation planning for climate change might provide. Respondents identified that opportunities for adaptation were expressed through building on current sector activities however opportunities are not simple outcomes, particularly the shift to a year-round sector. Their responses highlight concerns with the economic realities of achieving this change and the financial impacts of competition providing similar activities off-resort. Their responses also acknowledged that a shift to green season has advantages to the alpine resort sector however this is not seen as the only solution.

ARMBs said advantages of the shift to investment in the green season include an opportunity to target different (single focus experience and family based experience) and larger (south east Melbourne) visitor markets providing for recreational (e.g. mountain biking, bushwalking), education (e.g. outdoor with supporting facilities) and well-being needs (e.g. alpine wellness centres) of the wider community, changing community perceptions that resorts are winter only and influencing a change in “beach culture” and moving accommodation off-resort and linking to local communities.

Respondents said opportunities include resorts providing research opportunities to better understand climate change, working toward challenges of changing carbon footprint of resorts and changing infrastructure delivery to improve physical connection, road access and services such as telecommunications. Other broad opportunities identified include amalgamating resort areas and improvements to public transport.

Drivers of collaboration and shared ownership

Respondents were asked to identify their perceptions were around what would drive regional collaboration and shared ownership of adaptation planning and pathways. Their responses were focused mainly around the broad areas of governance, communication, planning and engagement.

ARMBs and Regional Stakeholders said that collaboration might need to occur at local and regional scales recognising relationships within these areas. All respondents highlighted the need for government to engage and the differing responses to shared ownership identify the context of this engagement.

Table 8 highlights the drivers of collaboration and shared ownership. While these have been identified separately there are obvious overlaps between the drivers.

Table 8 Drivers of collaboration and shared ownership

Collaboration	Shared ownership
Major tourism/sporting events at a regional scale supported by joint marketing are identified as an opportunity to link current activities within the alpine resorts.	Changing people and community attitudes to encourage “win-win” situations
Strategic and master planning with “future looking” and agreement on the planning horizon at a regional level connected the alpine resorts to the regions.	Investors in the resorts “having a seat at the table” supporting a decision framework that involves industry
Working with local government and local communities	Government leadership and restructuring to eliminate overlapping roles and responsibilities
Communication and ongoing engagement of stakeholders	Support for ongoing resort development and “buy” in from government to increase levels of confidence
The need to respond to natural resource management and the option to initiate water and resource management partnerships also provided a driver for collaboration.	Shared values and purpose
Changes in government policy and financial investment in the resort sector at the other end.	
Natural disasters to drive collaboration	

Workshop Findings

This section provides an overview of the compiled findings across the completed workshop round. Workshops formed the third level of engagement with stakeholders within the alpine sector.

Workshop-specific findings will be made available via the Engage Victoria platform.

The workshop specific findings represent a key resource to the stakeholders, this project and ongoing engagement with the sector. They offer an opportunity for further interrogation as needed to inform and support these further engagements. As the adaptation planning process progresses the information collected in the workshops will be available to inform and guide this process.

Approach

The design of this phase of consultation involved twelve workshops involving a targeted selection of stakeholders from within the sector held across the alpine region (one at each resort and in four nearby communities), and in Melbourne (one targeting Victorian Government agencies and two that were open to Melbourne-based stakeholders). These workshops were completed within a short and compact timeframe.

The workshops were structured around two key themes of exploration:

- Perceptions of the current economic, social and cultural values of the sector and the relative vulnerability of these to climate change
- Perceptions of the current adaptive capacity of the sector in terms of opportunities for adaptation over indicative timeframes, and the relative strengths and weaknesses of the sector in the pursuit of adaptation

Before exploring these themes, the workshop participants were provided with information about the expected effects of climate change on the alpine environment. They were also taken through an overview of climate change adaptation concepts, and why understanding values, vulnerabilities and adaptive capacities is an important first step towards adaptation planning.

When participants were asked to explore economic, social and cultural values, they were given examples of these, asked to consider and nominate what they value, and to provide a view about the relative vulnerability of their value to climate change (minor, moderate or major).

When participants were asked to explore opportunities in relation to adaptive capacity, they were given examples and asked to provide a view about the relative timeframe within which they think an opportunity could be realised (short, medium, long term).

When exploring strengths and weaknesses in relation to adaptive capacity, participants were asked to consider the relative significance of any strength or weakness they nominated (minor, moderate, major).

Perceptions were tracked according to a general classification of stakeholder perspectives:

- Alpine Resort Management

- Business
- Community
- Environmental
- Government

Participants were invited to express their perceptions according to these stakeholder perspectives, noting that they could choose to express themselves from more than one perspective.

Participation

The rates of expression discussed below should be read with an understanding of who participated in the workshops. .

There were 158 participants across all workshops. Of these:

- 39% participated as a general community member
- 24% as someone directly involved with an ARMB
- 22% as someone representing a business or from an industry group
- 16% as someone involved with state or local government

Interpretive analysis of expression

An interpretive analysis of expressions across all workshops, using theming has been completed.

All expressions have been grouped into general categories that reflect their primary theme, and results have been organised according to relative rates of expression.

The general grouping of expressions into categories is an interpretive (qualitative) exercise that supports the overall findings of this report.

The interpretative analysis is not designed or intended to be statistically valid. Rather, it has been used as a way of organising expressions and making sense of them, particularly around the strength and depth of expression. This is reflected back in the summary of the detail supporting each of the analyses which seeks to define some of the perspectives behind the expression.

Values & vulnerabilities

Economic

Table 9 Economic values & vulnerabilities: proportional rate of expression

	Significance				
Values	**Minor**	**Moderate**	**Moderate to Major**	**Major**	**Grand Total**
Economic contribution	26%	24%	0%	21%	**22%**
Visitation	26%	18%	0%	20%	**20%**
Infrastructure	5%	20%	50%	16%	**17%**
White season	5%	8%	0%	9%	**8%**
Jobs	16%	10%	0%	5%	**8%**
Investment	5%	5%	50%	8%	**7%**
Governance	5%	4%	0%	9%	**7%**
Green season	5%	2%	0%	4%	**3%**
Land	0%	3%	0%	3%	**3%**
Energy	5%	0%	0%	2%	**2%**
Water	0%	0%	0%	2%	**1%**
Viability	0%	2%	0%	0%	**1%**
Liveability	0%	2%	0%	0%	**1%**
Partnerships	0%	1%	0%	0%	**0%**
Grand Total	100%	100%	100%	100%	**100%**

Table 9 ranks the highest proportional rate of expression of economic value as well as the most strongly expressed perceptions of vulnerability.

Stakeholders said that economic contribution, expressed as value of the alpine resort sector to local, regional and state economies, ranked highest at 22%. This was followed by visitation (20%), infrastructure (17%), white season (8%), jobs (8%), investment (7%) and governance (7%).

Visitation, including tourism, was said to be a primary driver of economic activity. Stakeholders said there was a strong inter-relationship between infrastructure to support visitation and white season being the main purpose of visiting the Alpine region. Stakeholders expressed a perception that visitation and infrastructure were considered to rank highly on the scale of vulnerability.

Stakeholders said that local and regional jobs were a direct benefit of economic activity within the alpine resorts and investment and governance were both considered to influence economic development activity.

Social

Table 10 Social values & vulnerabilities: proportional rate of expression

	Significance					
Values	**Minor**	**Minor to Moderate**	**Moderate**	**Moderate to Major**	**Major**	**Grand Total**
Environment	20%	50%	16%	0%	16%	**17%**
Community	10%	0%	13%	0%	21%	**16%**
Activity	20%	50%	15%	0%	9%	**13%**
Wellbeing	20%	0%	9%	0%	4%	**8%**
Infrastructure	5%	0%	8%	0%	9%	**8%**
Education	5%	0%	7%	0%	9%	**7%**
Accessibility	0%	0%	8%	0%	6%	**6%**
Jobs	0%	0%	5%	0%	4%	**4%**
Services	5%	0%	1%	100%	4%	**4%**
Housing	0%	0%	3%	0%	6%	**4%**
Family	5%	0%	5%	0%	0%	**3%**
Diversity	0%	0%	3%	0%	3%	**2%**
Economy	0%	0%	1%	0%	3%	**2%**
Governance	5%	0%	1%	0%	1%	**2%**
Resilience	0%	0%	1%	0%	1%	**1%**
Sustainability	0%	0%	1%	0%	1%	**1%**
Governance	5%	0%	0%	0%	0%	**1%**
Views	0%	0%	1%	0%	0%	**1%**
Grand Total	100%	100%	100%	100%	100%	**100%**

Table 10 ranks the highest proportional rate of expression of social value as well as the most strongly expressed perceptions of vulnerability.

Stakeholders said that the environment, expressed as the intrinsic qualities of the resorts and Alpine region, ranked highest at 17%. This was followed by community (16%), activity (13%), wellbeing (8%), infrastructure (8%), education (7%) and accessibility (7%).

Stakeholders expressed a perspective that the environment is the main value that underpins all other values. Community, which recognises building relationships, connectivity and communication was said to be a primary driver of social capital. Stakeholders said there was a strong relationship between activities – both summer and winter, wellbeing and the infrastructure necessary to support both. Stakeholders expressed a perception that the environment and community were considered to rank highly on the scale of vulnerability.

Stakeholders said that education was related to people's different interactions with the natural environment. Accessibility was highlighted as maintaining or enhancing access to the resort areas and region with particular reference to affordability and equity regardless of socio economic background.

Cultural

Table 11 Cultural values & vulnerabilities: proportional rate of expression

	Significance			
Values	**Minor**	**Moderate**	**Major**	**Grand Total**
Activity-based culture	27%	20%	26%	**24%**
Snow culture	10%	22%	37%	**24%**
Nature-based culture	20%	12%	13%	**15%**
Community	10%	14%	3%	**9%**
Heritage	10%	4%	5%	**6%**
Diversity	0%	6%	5%	**4%**
Families	3%	4%	0%	**3%**
Hiking culture	0%	4%	0%	**2%**
Views / aesthetic	3%	2%	0%	**2%**
Events	3%	2%	0%	**2%**
Governance	0%	2%	3%	**2%**
Mountain biking culture	0%	0%	3%	**1%**
Traditional culture	0%	2%	0%	**1%**
Lodge culture	0%	2%	0%	**1%**
Indigenous	3%	0%	0%	**1%**
Development culture	3%	0%	0%	**1%**
Independence	0%	0%	3%	**1%**
Biking & hiking culture	3%	0%	0%	**1%**
Education	0%	0%	3%	**1%**
Friendly culture	0%	2%	0%	**1%**
Economy	3%	0%	0%	**1%**
Grand Total	100%	100%	100%	**100%**

Table 11 ranks the highest proportional rate of expression of cultural value as well as the most strongly expressed perceptions of vulnerability.

Stakeholders said that the activity based culture, expressed as being the overarching “sense of adventure and fun”, ranked highest at 24%. This was followed by snow culture (24%), nature based culture (15%), community (9%), and heritage (6%).

Stakeholders expressed a perspective that the activity based culture is the primary value that represents and encourages summer and winter activities including events. Stakeholders said that snow culture, including skiing and snow related activities, ranked equally with activity based culture recognising the overlapping cultural snow elements.

Stakeholders said there was a strong relationship between activity based culture and nature based culture particularly around the need to expand nature based opportunities across winter and summer. Stakeholders expressed a perception that the activity based culture and snow culture were considered to rank highly on the scale of vulnerability. Stakeholders said that community was related to participation in resort identity and a “culture of custodianship” with the resorts and Alpine region. Heritage included the built, historic and significant features of the resorts and Alpine region.

Adaptive capacity

Opportunities & timeframe

Table 12 Opportunities & timeframe to realise: proportional rate of expression

`	Timeframe					
Opportunities	**Short**	**Short to Medium**	**Medium**	**Medium to Long**	**Long**	**Grand Total**
Visitation	20%	40%	18%	0%	7%	**18%**
Outdoor activities	13%	0%	24%	0%	11%	**16%**
Governance	12%	20%	5%	0%	30%	**12%**
Tourism	9%	0%	10%	0%	11%	**9%**
Infrastructure	10%	0%	6%	0%	4%	**8%**
Snow	5%	20%	2%	100%	4%	**5%**
Green season	4%	0%	5%	0%	4%	**4%**
Education market	3%	20%	3%	0%	4%	**3%**
Energy	3%	0%	5%	0%	4%	**3%**
Altitude training	3%	0%	5%	0%	0%	**3%**
Community development	2%	0%	2%	0%	7%	**3%**
Events market	4%	0%	0%	0%	0%	**3%**
White season	4%	0%	0%	0%	0%	**2%**
Investment	2%	0%	0%	0%	4%	**2%**
Commercial	1%	0%	3%	0%	0%	**1%**
Nature-based tourism	1%	0%	0%	0%	7%	**1%**
Water	1%	0%	2%	0%	0%	**1%**
Services	0%	0%	3%	0%	0%	**1%**
Sustainability	0%	0%	2%	0%	0%	**0%**
Training generally	0%	0%	2%	0%	0%	**0%**
Relationships	0%	0%	2%	0%	0%	**0%**
Waste Management	0%	0%	2%	0%	0%	**0%**
Snow play market	1%	0%	0%	0%	0%	**0%**
Marketing	1%	0%	0%	0%	0%	**0%**
Lift operations	0%	0%	2%	0%	0%	**0%**
Food and wine market	0%	0%	0%	0%	4%	**0%**
Roads	1%	0%	0%	0%	0%	**0%**
Grand Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 12 ranks the highest proportional rate of expression of opportunities as well as the timeframe to realise those opportunities.

Stakeholders said that visitation, expressed as ideas that diversify offer to year-round visitation, ranked highest at 18%. This was followed by outdoor activities (16%), governance (12%), tourism (9%), and infrastructure (6%).

Stakeholders expressed a perspective that visitation, in conjunction with diversifying to a year-round offer, to the alpine region as a whole, needs to become a destination. Visitation as an opportunity was ranked as a short to medium term outcome. Stakeholders said that outdoor activities ranked second to visitation representing the need for more, and a broader range of, diversity in winter and summer activities.

Stakeholders said that governance was a mechanism to encourage co-operation rather than competition between resorts as well as to strategise. This is reflected in the ranking of governance as a long-term outcome as well as in the short to medium term.

Stakeholders said that tourism provided opportunities to build enterprises that could adapt to changing environments. Stakeholders said that infrastructure was a key opportunity to build resilience in the alpine resorts in the short term and included perspectives around better utilisation of existing infrastructure.

Strengths & significance

Table 13 ranks the highest proportional rate of expression of strengths.

Table 13 Strengths & significance: proportional rate of expression

	Significance			
Strengths	**Minor**	**Moderate**	**Major**	**Grand Total**
Community	15%	13%	24%	**20%**
Environment	15%	8%	13%	**12%**
Adaptability	8%	15%	7%	**9%**
Location	0%	10%	10%	**9%**
Commercial	0%	13%	7%	**8%**
Visitation	8%	13%	5%	**7%**
Infrastructure	0%	8%	8%	**7%**
Governance	15%	5%	5%	**6%**
Outdoor activities	0%	8%	3%	**4%**
Snow making	8%	0%	5%	**4%**
Relationships	8%	0%	3%	**3%**
White season	8%	3%	2%	**3%**
Tourism	0%	0%	5%	**3%**
Land	8%	3%	0%	**1%**
Green Season	0%	3%	0%	**1%**
Financial capacity	8%	0%	0%	**1%**
Services	0%	0%	1%	**1%**
Leadership	0%	0%	1%	**1%**
Information	0%	0%	1%	**1%**
Grand Total	100%	100%	100%	**100%**

Stakeholders said that community, expressed as the investment in the environment and described as being strong, ranked highest at 20%. This was followed by environment (12%), adaptability (9%), location (9%) and commercial (8%).

Stakeholders expressed a perspective that community represented the passion, enthusiasm, knowledge and skills needed to respond to change. This included addressing cross generational changes between specific groups. Community was ranked highly as a major strength.

Stakeholders said that environment ranked second to community as a major strength and second overall. Stakeholders said the environment was a strength as it was unique landscape that had capacity to cater for a range of activities and opportunities. Stakeholders said that adaptability was the existing ability of the community to respond, adapt and manage change at various levels. This is reflected in the ranking of adaptability as a moderate strength.

Stakeholders said that location in the resorts included proximity to natural environment and resources, such as water, and by proximity to major urban based populations. Stakeholders said that commercial was a moderate strength that reflected the innovation and resilience of existing business investment in the alpine resorts.

Weaknesses & significance

Table 14 (below) ranks the highest proportional rate of expression of weaknesses.

Stakeholders said that governance, expressed as the lack of government awareness, support and communication, ranked highest at 24%. This was followed by investment (15%), infrastructure (10%), seasonality (9%) and costs (8%).

Stakeholders expressed a perspective that governance represented a lack of vision, over regulation and a lack of collaboration. Governance was ranked highly as a moderate to major weakness. Stakeholders said that investment ranked second to governance as a major weakness and second overall. Stakeholders said that investment was a weakness as it was represented by a lack of confidence in the alpine resorts and the uncertainty of the business investment environment.

Stakeholders said that infrastructure described weaknesses in existing infrastructure as well as the need for new infrastructure to support investment – e.g. telecommunications and power. Stakeholders said the lack of funding for “resource infrastructure” including roads and water supply highlights this as a key weakness.

Stakeholders said that seasonality in the resorts was a weakness due to the reliance on the winter season and the lack of summer activities. Stakeholders said this highlights the disconnection between winter and summer stakeholders and the transient nature of resort populations. Stakeholders said that cost was a moderate weakness that reflected the high cost of operating in the resorts including accommodation, rates, leasing and service costs.

Table 14 Weaknesses & significance: proportional rate of expression

	Significance			
Weaknesses	**Minor**	**Moderate**	**Major**	**Grand Total**
Governance	6%	27%	25%	**24%**
Investment	6%	12%	17%	**15%**
Infrastructure	19%	10%	9%	**10%**
Seasonality	19%	8%	8%	**9%**
Costs	0%	12%	7%	**8%**
Environment	6%	6%	6%	**6%**
Community	6%	12%	2%	**5%**
Services	0%	2%	5%	**4%**
Location	13%	4%	2%	**3%**
Visitation	0%	0%	4%	**3%**
Relationships	6%	4%	2%	**3%**
Commercial	6%	2%	2%	**2%**
Economy	6%	0%	2%	**2%**
Water	0%	0%	2%	**2%**
Water & Energy	0%	0%	2%	**2%**
Staff	6%	0%	2%	**2%**
Land	0%	2%	1%	**1%**
Quantity over quality	0%	0%	1%	**1%**
Adaptability	0%	0%	1%	**1%**
Connection	0%	2%	0%	**1%**
Grand Total	100%	100%	100%	**100%**