BUSINESS DRIVEN ENVIRONMENTAL ACTION IN AGRICULTURAL BASED TOURISM MICRO-CLUSTERS IN NORWAY AND AUSTRALIA

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STATEMENT OF ORIGINALITY

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This thesis is the result of several rewarding years of research and reflection in two countries, languages and cultures. Australia and Norway are intertwined in my personal and professional experience through marriage, residence and work and is the basis for my interest in gaining a deeper understanding of how two different contexts influence environmental behaviour and perceptions.

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ABSTRACT

The inherent complexity in finding consensus solutions to global environmental issues, such as climate change and loss of biodiversity has led groups of businesses and communities to self-organise and voluntarily pursue collective environmental action. While there is frustration over the slowness of the global decision-making process relating to the environment, there is a realisation that environmental effort will be based on pragmatic assessments of shorter-term value-adding benefits for businesses and the local community. Thus, environmental behaviour is expected to be influenced by contextual and institutional factors across countries and regions, leading to differences in how environmental sustainability is perceived, how businesses and communities pursue environmental action and how environmental actions and programs are assessed.

This research has examined two agricultural based tourism micro-clusters and their efforts towards addressing environmental sustainability: The Greening of Lovedale in the Hunter Valley wine area, NSW Australia; and the Vikebygd Landscape Park in the Hardanger fruit growing region of Norway. Both areas are located in prime tourism destinations, attracting tourists to an aesthetically beautiful landscape for the consumption and purchase of regional agricultural produce (grapes and wine, apples and cider).

The study used a combination of cluster theory, institutional theory and the natural resource based view of the firm to analyse contextual, institutional and value-adding factors that impact on small businesses' environmental behaviour within each case study region. Data was gathered using an identical mixed methods approach in the two regions and included a survey of small business owners and semi-structured interviews with key stakeholders who have direct and indirect links with the respective micro-clusters.

Differences in regulatory, social normative and cultural cognitive institutions in the two countries were shown to have had an impact on environmental attitudes and activities. In turn, this provided an understanding of the differences in barriers and drivers and value-adding perspectives for environmental action by the small businesses in the respective clusters.

Contributions of this study include the examination of businesses' and micro-clusters' environmental behaviour in different contexts. The research has provided applied and policy contributions in the area of environmental policy for small business and micro-clusters, suggesting that, while market based instruments are useful for large businesses, these rarely provide enough incentive for small businesses to effectively pursue environmental action. The concept of sustainable destinations where community,

businesses and local authorities collaborate to create a greener destination may be a model for developing supporting policies for environmentally committed clusters of small businesses. Through clustering and sharing resources and information, small businesses can overcome the barriers of knowledge and motivation that they face in incorporating sustainability programs into their business plans.

The limitations of the study are linked to the selection of the case studies, the micro industries and countries included, and the constraints imposed by a cross sectional study. Future research could examine the differences in internal and external pressures between small and large businesses in different industries, and undertake examinations that track industry actions through time. The future of environmental policy lies in triggering both the social normative and cultural cognitive pressures to pursue collective environmental action as well as providing value-adding incentives for small businesses to reduce their environmental impact.

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ABBREVIATIONS AND NORWEGIAN TERMS

AAA	Australian Automobile Association
ABC	Australian Broadcasting Corporation
ABS	Australian Bureau of Statistics
AGM	Annual General Meeting
AGWRC	Australian Grape and Wine Research Corporation
APVMA	Australian Pesticides and Veterinary Medicines Authority
AWBC	Australian Wine and Brandy Corporation
Bioforsk	Norwegian Institute for Agricultural and Environmental Research
CFI	Carbon Farming Initiative
CSG	coal seam gas
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEBIO	Official Organic Certification Organisation in Norway
DAFF	Commonwealth Department of Fisheries and Forestry
DCCEE	Commonwealth Department of Climate Change and Energy Efficiency
DIT	Commonwealth Department of Infrastructure and Transport
ENTWINE	Environmental Management System for Australian Grape-Growers and Wineries
FAO	Food and Agriculture Organisation
GREEN GLOBE	International Environmental Certification for Global Accommodation Providers
GLOBAL-GAP	Global - Good Agricultural Practice

HCR-CMA	Hunter Central Rivers Catchment Management Authority, NSW
HVPA	Hunter Valley Protection Alliance
HVWIA	Hunter Valley Wine Industry Association
ISO	International Standardisation Organisation
KLIF	The Climate and Pollution Agency, Norway
KRD	Ministry of Local Government and Regional Development, Norway
KSL Matmerk	Norwegian Agricultural Quality System and Food Branding Foundation
LMD	Ministry of Food and Agriculture, Norway
LCC	Lovedale Chamber of Commerce
LVA	Lovedale Vignerons Association
MD	Ministry of Environment, Norway
Miljøfyrtårn	Eco-lighthouse Certification Organisation, Norway
NABERS	National Australian Built Environment Rating System
NHD	Ministry of Trade and Industry, Norway
NCE	Tourism Norwegian Centre of Expertise, Fjord Tourism Cluster
NGI	Norwegian Geotechnical Institute
OECD	Organisation for Economic Co-operation and Development
OED	Ministry of Oil and Energy, Norway
OH&S	Occupational Health and Safety
OIV	International Wine Organisation (Organisation Internationale du Vin)
PID	Hunter Wine Country Private Irrigation District
R&D	Research and Development
SSB	Statistics Norway
Svanen	Stiftelsen Miljømerking - Nordic Ecolabel Foundation
UNCED	United Nations World Commission on Environment and Development
UNESCAP	United Nations Economic and Social Commission For Asia and the Pacific
UNWTO	United Nations World Tourism Organisation
VLP	Vikebygd Landscape Park
WBCSD	World Business Council for Sustainable Development
WFA	Winemakers Federation of Australia
WGGA	Wine Grape Growers' Australia
WRAA	Wine Restructuring Agenda

CHAPTER 1 INTRODUCTION

....."... the last 20 years, there has been a development towards a much wider perspective on what sustainability is, it is about both economic and ecological sustainability but also the sosio-cultural dimension....you have to take into account the people and their businesses. You need patience so that people can see for themselves how they can mobilise the common resources and benefits that exist in the natural environment and the identity of the area so that they don't exploit these but can make a living from them....." Lateral Actor, Norway

1.1 BACKGROUND

The well-known motto "Think Globally and Act Locally" was given renewed validity after the failure to produce a global treaty on climate change in Copenhagen in 2009. A realisation from the conference was that global environmental issues such as de-carbonisation will only be "achieved successfully as a benefit contingent upon other goals which are politically attractive and relentlessly pragmatic for businesses"(Prins, et al. 2010, p.5). Business owners make pragmatic decisions with regard to whether or not to undertake environmental action, and it is assummed that these are based on assessments of how this can provide short or long term monetary, social and environmental benefits. There are many examples of self-organised business driven environmental initiatives, yet less is known about what drives and hinders such action and how business owners and clusters of businesses percieve the value-adding of environmental behaviour (Hulme, 2010; Ostrom, 2010a; Prins et al., 2010; Vatn, 2008).

Ostrom (2010a) described how groups of businesses and communities self-organise, obtain knowledge, coordinate, collaborate and compete to pursue environmental action in so-called polycentric systems. Polycentric systems can be defined as complex systems with overlapping jurisdictions, where there are multiple drivers, barriers, institutions and organisations influencing processes towards improving the environmental sustainability of an area or an industry sector. Research on polycentric systems has often been focused on understanding the policies and incentives that drives environmental processes forward, while less has been done to understand the value-adding perspective taken by the businesses themselves and how this may differ between contexts.

Cluster analysis (Porter, 1998a, 2000) has been developed to examine value-adding and competitive advantage for the firm and the cluster. The value-adding-web analytical framework (Brown, Burgess, Festing, Royer et al., 2010) builds on cluster analysis examining how value-adding for the firm and the cluster can be influenced by locational, institutional, relational (networks) and physical aspects of the cluster. While clusters often comprise large geographic areas and specific industries, Michael

(2007a) has developed the concept of tourism micro-clusters where smaller clusters of businesses, and the communities they are embedded in, collaborate and compete to develop a destination of benefit to the individual business, the micro-cluster and the community. A tourism micro-cluster committed to environmental sustainability may act and meet exogenous economic and environmental challenges in different ways, creating new models of undertaking collective environmental action influenced by local contextual and institutional pressures (Hulme, 2011; Marquis & Battilana, 2009; Storper, 2005). Such self-organised collaborative environmental action can be seen as a polycentric systems and may be pursued by businesses for multiple and pragmatic reasons (Hulme, 2010; Marshall, 2005; Ostrom, 2010a; Prins, et al., 2010), combining value-adding, competitive advantage to pursue a collective environmental good such as the preservation of water and native vegetation, collective management of the natural environment and aesthetic of the landscape, and the environmental branding of an area.

While most of the research on business driven environmental action has focused on the efficiency gains and competitive advantage for larger companies, there is less knowledge about how collaborative environmental action by clusters of small businesses will add value to the firm and to the cluster as a whole (Brown et al., 2007; Hart, 1995). More knowledge is needed about how contextual and institutional differences in different cultures and communities influence environmental action by small business communities (Gjølberg, 2009; Halme, Roome, & Dobers, 2009). Frameworks have been developed to analyse institutional influences on collective environmental action (Ostrom, 2005, 2009), with a focus on understanding what type of institutional frameworks for collective environmental behaviour leads to rent dissipation or the overexploitation of a natural or common resource. The business oriented framework of the value adding web (Brown, Burgess, Festing, & Royer, 2010), is, on the other hand, focused on analysing value-adding or rent-seeking activities for the firm or for the cluster as a whole. Using the value-adding web to analyse what aspects of environmental behaviour leads to value-adding or rents for the firm or the micro-cluster is an approach that seeks to understand environmental behaviour from the single firm's or cluster's pragmatic perspective. As most environmental policies are implemented through market based instruments, gaining a more nuanced view of how these are perceived from the small business owner's perspective is useful for assessing whether environmental policies are to have the intended impact.

This study seeks to compare two agricultural based tourism micro-clusters, one in Norway and the other in Australia, committed to collaborative environmental action. The Australian micro-cluster, Lovedale, is located within the Hunter Valley wine region where the Lovedale Chamber of Commerce has initiated a greening process for the wine-tourism businesses within its area. The Norwegian micro-cluster, Vikebygd, is located in a fruit-production and apple cider area of Hardanger on the

west coast of Norway, and has established a landscape park where sustainable use of natural resources is the basis for the development of tourism ventures.

1.2 OBJECTIVES OF THE STUDY

From the above discussion there is a need to pursue comparative studies using identical methodology and concepts to better understand how contexts and institutional differences influence business clusters' environmental behaviour. The main objectives of the study are to:

- Improve the understanding of how contexts and institutions influence collective environmental action through comparing and contrasting a greening process in two similar micro-clusters located in two different countries.
- Assess the appropriateness of using cluster theory and the value-adding-web framework to examine these issues.

1.3 MOTIVATIONS FOR THE STUDY

This study is motivated by the urge to explore five interconnected areas of investigation.

First, environmental policies towards businesses in developed countries have, through the decades, gone from being primarily regulated towards polluter pays policies and the application of market based instruments (T. Andersson & Wolff, 1996). The current phase is primarily focused on market based instruments (good management, environmental levies/taxes, cost-reduction); however, countries have different levels of regulation and control. Market based instruments and incentive structures may also benefit some industries or businesses more than others. Norway and Australia are both wealthy well-functioning democracies, yet, while Norway is a coordinated Nordic economy with heavy state involvement in environmental reform (Dryzek, Hunold, Schlosberg, Downes, & Hernes, 2002; Østerud & Selle, 2006), Australia, being a liberal market economy, sees most environmental action implemented based on market based instruments and/or voluntary action (Higgins, Dibden, & Cocklin, 2010). The two selected cases, the two micro-clusters, are both involved in agricultural based tourism; thus, businesses in these micro-clusters are dependent on the continued availability of land and aesthetic features of the landscape. They are also both involved in a process towards improved environmental sustainability. The study aims to investigate how two different public institutional frameworks influence businesses and micro-clusters' environmental behaviour.

Second, the study seeks to investigate how different land tenure systems and market foci impact on the implementation of environmental programmes. Australia is a settler nation, where agricultural land is traded on the open property market and where the drivers for agricultural production are closely linked to produce being a commodity for and competitive in the global market. At the opposite extreme is Norwegian agriculture, with thousand year old allodial laws regulating inheritance of agricultural properties, and with the OECD's highest subsidies for agricultural production, environmental conditions linked with subsidies, and a large network of public support agencies to pursue environmentally sound agricultural production. The research attempts to gain a deeper understanding of how these two major differences impact on firms' environmental behaviour and the value-adding resulting from this behaviour.

Third, self-organised collective environmental action may be implemented for both pragmatic and normative reasons. Several researchers have pointed to the lack of focus on short-term business benefits for environmental action when solving complex global issues (such as climate change) (Hulme, 2010; Prins, et al., 2010), and have called for more research on the motivations for businesses to pursue environmental action. This study seeks to understand differences in businesses environmental behaviour using an identical mixed methods methodology (Teddlie & Tashakkori, 2009) in two different contexts (Johns, 2006), exploring whether there are different perceptions around what comprises environmental sustainability, what are the drivers and barriers, and how value-adding from environmental action (Hart, 1995) is perceived at the firm and micro-cluster level (Michael, 2007a).

Fourth, several researchers have pointed to the lack of understanding of how clusters and/or micro-clusters are formed (Brown, et al., 2007; Martin & Sunley, 2003), and the influence of contextual factors and path dependent processes (Peters, 2000; Platteau, 2008; Williamson, 2000) with regards to the decision to pursue a collective greening process. In cluster theory, businesses are the main focus, while in micro-cluster theory the community in which the micro-cluster is embedded is considered important both for business benefits and wealth distribution aspects within the micro-cluster (Michael, 2008). There is a need to gain a better understanding of the impact of a micro-cluster's embeddedness in the local community on collective environmental behaviour and value-adding.

Fifth, there is a lack of analytical tools for understanding clusters and their value-adding features at firm and cluster level. As described above, other frameworks focus on institutions' impact on collective environmental action; there are fewer frameworks that look at value-adding of collective environmental action. The use of a value-adding web framework (Brown, Burgess, Festing, Royer, et al., 2010) together with micro-cluster theories of competitive, locational and community advantages

may contribute to an improved understanding of firms' and clusters' pursuance of collective environmental action.

1.4 CONTRIBUTIONS OF THE STUDY

The contributions of the study has been the following:

1) It has examined how contextual and institutional differences influence the micro-cluster actor's view of value-adding with regards to collective environmental action, such as the preservation of agricultural land, landscape aesthetics and environmental branding.
2) The use of an embedded mixed methodology has provided insights into understanding collective environmental action in agricultural tourism clusters in different contexts.
3) It has developed a framework for examining individual and collective environmental action in agricultural micro-clusters.

1.5 DESCRIPTION OF THE STUDY

The overarching research question for this study is to gain a deeper understanding of how institutional and contextual factors influence owners of small businesses in a micro-cluster and their perception of sustainability, drivers, barriers, pressures for and value-adding of environmental action.

Five underlying research questions (RQ) for the study were derived from the conceptual framework below.

RQ 1. How are sustainability and environmental sustainability defined in the two micro-clusters?

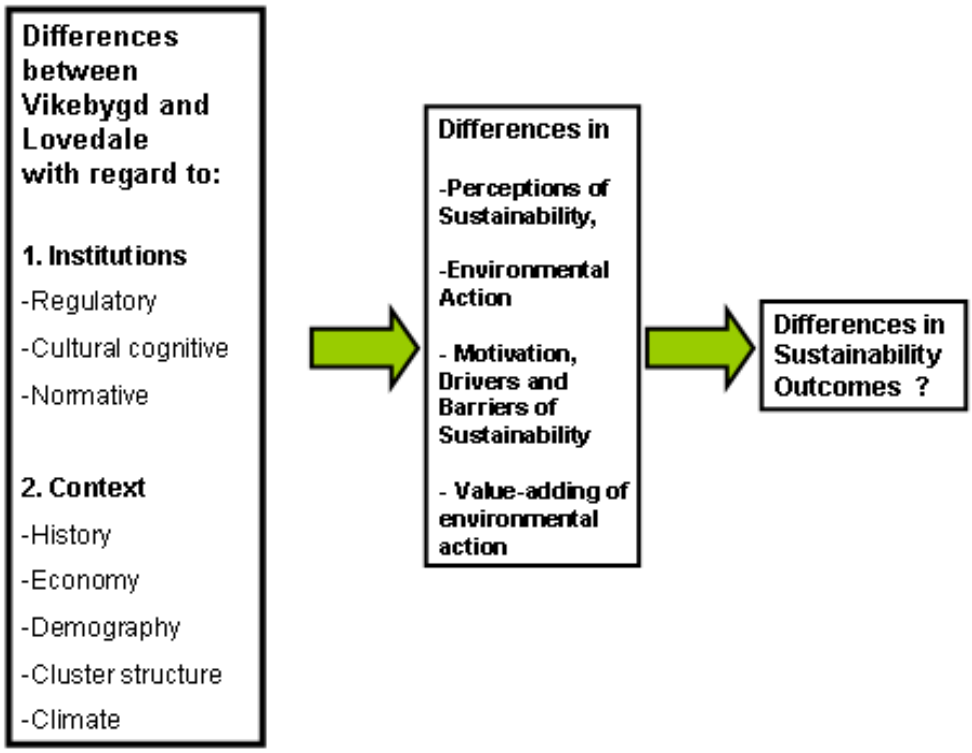
RQ 2. How do formal and informal institutions influence business-driven environmental actions?

RQ 3. How is business-driven environmental action supported by local and other stakeholders?

RQ 4. What are the drivers and barriers to environmental action in the two clusters?

RQ 5. How is environmental action perceived to add value to the business and the micro-cluster?

Figure 1-1 Conceptual framework for the study



1.6 RESEARCH APPROACH

The methodology selected is an embedded mixed methods approach, where information will be collected using qualitative data based on interviews and through a tested survey instrument developed by Collins, Roper, and Lawrence (2009). Research questions RQ 1 and RQ 3 will be the focus of the survey while all research questions RQ 1 to RQ5 will be included in the interviews. The unit of study will be two micro-clusters, Lovedale in Australia and Vikebygd in Norway, comprising horizontal actors in the same industry (agricultural production), diagonal actors (complementary businesses in the tourism sector), vertical actors (upstream and downstream businesses), and lateral actors (supporting institutions in knowledge and administration).The survey instrument was distributed among horizontal actors only, while qualitative data collection was undertaken through interviews of a sample of actors within and outside the micro-cluster.

1.7 ORGANISATION OF THE THESIS

The thesis is divided into eight chapters of which the first chapter is the introduction providing an overview of the objectives and the structure of the thesis. Figure 1.2 depicts the thesis framework.

Chapter 2 will be a review of extant literature in relation to the concepts of sustainability, resource based view and value-adding of natural resources, institutional theory and cluster theory. It also includes a discussion of different frameworks used to analyse the institutional impact on environmental behaviour at the firm and at micro-cluster level.

Chapter 3 gives a description of the methodology selected for the study, namely an embedded mixed methods research methodology.

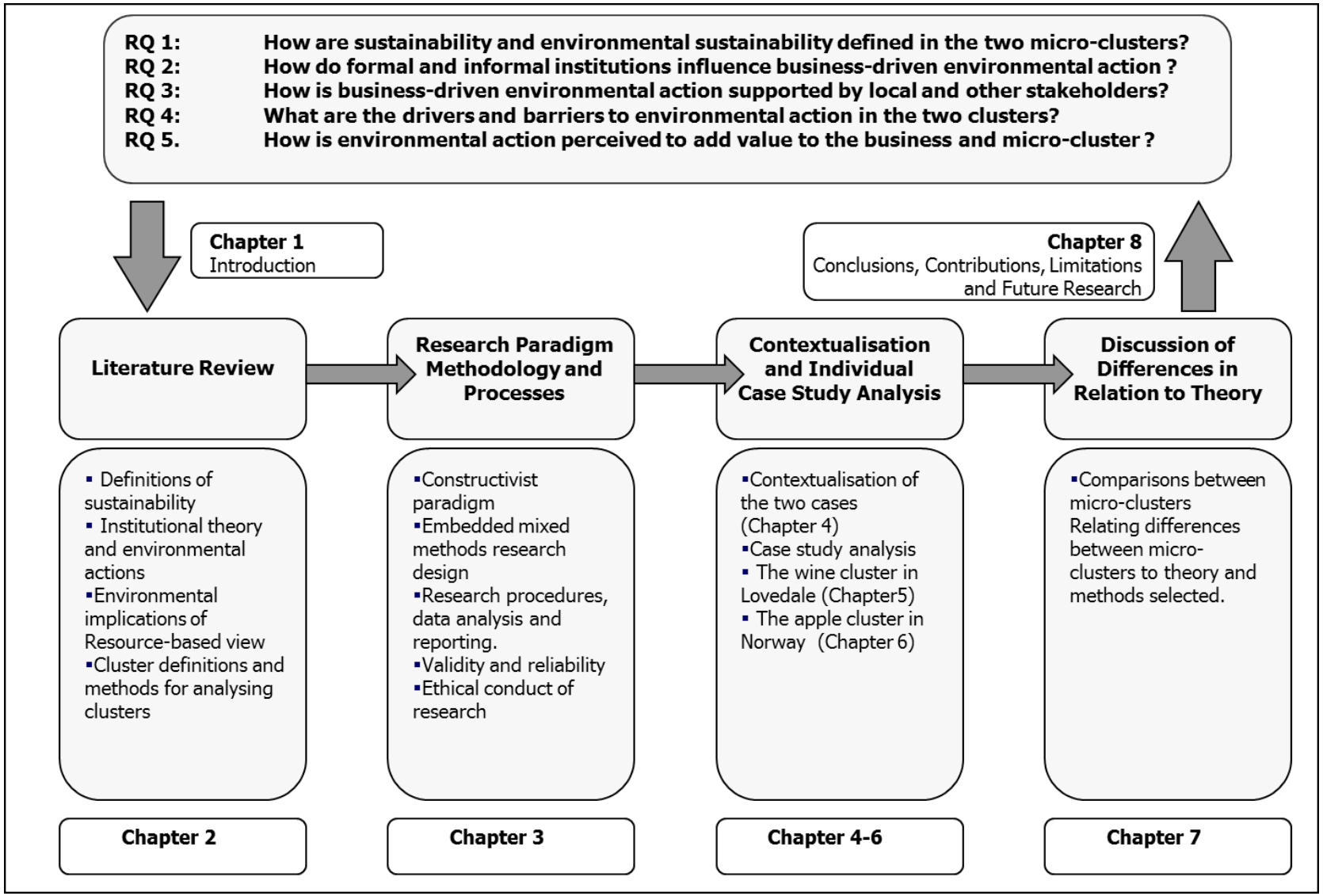
Chapter 4 presents contextual and path dependent factors for each micro-cluster that may determine inherent regulatory, cultural cognitive and normative institutional pressures on firms' and micro-clusters' environmental behaviour.

Chapters 5 and 6 present findings from both quantitative and qualitative data collection for each of the two micro-clusters.

Chapter 7 presents comparative data for the two micro-clusters and discusses the differences in relation to institutional and contextual factors identified in Chapter 4.

Chapter 8 summarises findings for each research question, presents areas of contribution in relation to new knowledge, methodology and policy application, discusses the limitations of the study and, lastly, outlines areas for future research.

Figure 1-2 Thesis framework



CHAPTER 2 LITERATURE REVIEW

2.1 INTRODUCTION

This literature review will examine theoretical approaches and empirical research that seek to explain drivers and barriers for environmental action in agriculture based tourism clusters. As documented by multiple researchers (Marshall, 2005; Ostrom, 2009, 2010a) communities and/or business clusters undertake collective environmental action without waiting for global treaties or policies to preserve or manage natural resources. However, it is not fully understood what drives these actions, and how and to what extent businesses undertaking collective environmental action gain value-adding and competitive advantages. This literature review will examine different theoretical frameworks to better understand the environmental behaviour of a micro-cluster.

The review will first examine the concept of sustainability (United Nations, 1987). It will discuss how environmental sustainability is perceived depending on institutional aspects, worldviews (Hulme, 2011)academic discipline, and ideology (Gray & Lawrence, 2005; Mebratu, 1998; Mundt, 2011). Perceptions of environmental sustainability are also decided by environmental discourses (Dryzek, 2005) and the mental models and knowledge base that are held by the person and community (de Vries & Petersen, 2009), as well as by the type of industry of which the business is a part (Aall, Klepp, Engeset, Skuland, & Støa, 2011; Cocklin & Dibden, 2005; Gray & Lawrence, 2005). The definition of sustainability is thus dependent on a community or society's values, mental models and economic outlook, which may function as an impetus or a driver for environmental action.

Second, the chapter will review literature that seeks to understand a business owner's motivation for improving environmental sustainability (Porter & Van der Linde, 2000); how it may be

influenced both by what is deemed beneficial to the business, but also by the owner's own values and beliefs and the pressures and values of the surrounding business environment (Anton, Deltas, & Khanna, 2004; Collins, et al., 2009; Prakash, 2000, 2001).

The justification for undertaking a comparative study between cases in two countries is to examine whether institutional and contextual factors will influence a business environmental behaviour. While firms respond to formal institutions such as regulatory institutions and incentives, they may also be influenced by informal institutions such as normative and cultural cognitive institutions (DiMaggio & Powell, 1991; House, Hanges, Javidan, Dorfman, & Gupta, 2004; North, 1991; Scott, 2008). Institutional theory will thus be reviewed in the third section to examine how it can assist in explaining businesses' environmental decisions and the potential differences between countries. It will also examine institutional approaches to cluster analysis, the concept of organisational fields (DiMaggio & Powell, 1991; Scott, 2008) and how these can be used to analyse the community in which a micro-cluster is embedded.

Fourth, in order to analyse the value-adding properties of environmental action the theory of the resource based view of the firm will be used. Dierickx and Cool (1989) and Peteraf (1993) suggest that firms obtain added value for the business through a variety of rents-seeking strategies. The theory is extended to look at how the natural environment and environmental action may lead to value-adding advantages for the business (Hart, 1995).

The fifth section of the literature review will examine cluster theory (Karlsson, 2008; Porter, 1998c, 2000) in relation to what and how clustering processes may influence environmental behaviour in a natural resource based cluster. It will look further at how to combine the framework for examining collective environmental action (Ostrom, 2010a) with the Value-Adding Web frameworks developed to examine value-adding and rent-seeking activity at the micro-cluster level (Brown, et al., 2007).

The last section of this chapter will summarise knowledge gaps revealed through the literature review and conclude in the research questions developed for the study.

2.2 SUSTAINABILITY

Sustainability is a central term and frequently used in a variety of contexts and activities, albeit mostly related to environmental issues. It is a term which has entered everyday vocabulary with a almost moral prerogative that sustainable is good, because anything unsustainable is bad; yet what the term means in a practical sense for a business or a community remains unclear and diffuse. This section will discuss the definitions of sustainability within varying frameworks; it will then review the two strands of radical and pragmatic sustainability (strong and weak sustainability) in relation to their significance for agriculture and tourism, and lastly, it will review how the term sustainable has been used in relation to clusters.

2.2.1 APPROACHES TO SUSTAINABILITY

The term sustainability has been used in relation to conservation movements, corporate citizenship, social justice, environmental management, ethics, and business initiatives (Visser, 2008). Mundt (2011, p. 24), suggests that a distinction be made between the term “sustainability”, which describes “an equilibrium either between the usage and the replenishment and accordingly the re-growth of natural source or the absorption of pollutants by natural or quasi-natural processes in a given period” and the term “sustainable development”, which he characterises as “the evolution of a productive system without violating the rules of sustainability”. He also points out that the term “sustainable development” often is used as a term for “development towards sustainability”, that is, a process and not an end goal in itself.

The most utilized definition for sustainable development is from the United Nations World Commission on Environment and Development (UNWCED) (1987, p. 8), where sustainable development is a "development which meets the needs of the present without compromising the ability of future generations to meet their own needs". It includes environmental, intergenerational and wealth-distributive aspects for sustainability, yet they are not given as precise goals. In general, sustainability includes both environmental, economic and social aspects (Khalili, 2011). Black (2005, p. 24) suggests that the ecological dimension of sustainability is concerned with restoring and preserving ecosystems, maintaining biodiversity, using renewable energy while not exceeding regeneration and resolving waste issues without exceeding assimilation capacities. The economic dimension indicates that the business should thrive in

perpetuity so that production, exchange and consumption can continue, satisfactory standards of living be upheld, the use of non-renewable resource does not exceed the rate of renewable substitutes developed, and resilience to ecological and demographic changes is maintained. The social dimension is concerned with the extent to which social identities, relationships and institutions are maintained and fulfill people's needs, individual identity and cultural diversity are valued and respected, and social institutions are resilient to fluctuating ecological and economic conditions.

Mebratu (1998) distinguishes between three representations of sustainability: the (global) institutional, the ideological and the academic versions, with each having different perspectives on what causes environmental crisis, what are the solutions and what are key instruments to obtains these solutions, namely through global governance and negotiations through community focus and empowerment, and through businesses pursuing eco-efficiencies. Table 2-1 depicts the three different sustainability representations and their corresponding worldview, solutions and key process towards sustainability.

The global governance and negotiation perspective can be exemplified by the process of UNWCED and the Kyoto Protocol to reduce green house gas emission. Here global governance and negotiated global consensus agreements are thought to be the only way to solve the problem, thus leaving the main impetus for action for governments and multinational institutions. The slow progress and result-poor Kyoto process on climate change exhibits the complexity and challenges of finding solutions to global environmental issues. As was seen in Copenhagen COP 15 in December 2010, consensus agreements are hard to achieve on pure environmental improvements when large emerging economies like China, Brazil and India demand wealth redistribution and small island nations seek to secure their survival (Charlton, 2011). There is growing popular resistance and skepticism towards global solutions for a climate change due to the issue being difficult to relate to, somewhat intangible, happening sometime in the far future and not something people can feel in their daily life. This popular resistance may also be a protest against elitist discussions and solutions, which are difficult for people to understand, and against solutions in which they don't have a say. There are also concerns as to the "western" derived solutions which have serious wealth distribution consequences for developing countries (Prins, et al., 2010) .

A different approach is where sustainable development is based on empowering the people or communities such that they are able to pursue environmental action that is ecologically, socially and economically sustainable. The International Institute for Environment and Development (IIED) is an example of this perspective, supporting large community based environmental management programmes world-wide. Even though empowerment of communities is essential, there may also be governance issues that require a more regulatory and less complex approach to environmental goals. More knowledge is needed about collective environmental action under different institutional systems.

The third approach is where the private sector and its business leaders provide solutions to sustainable development. At the global level, the World Business Council for Sustainable Development (WBCSD) is a proponent of this approach and instead of sustainability it uses the term eco-efficiency: "Eco-efficiency is achieved by the delivery of competitively-priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the earth's estimated carrying capacity. In short, it is concerned with creating more value with less impact" (World Business Council for Sustainable Development, 2000, p. 4). Environmental improvements will thus be based on cost-benefit calculations, in parallel with value-creation. Economic interests would be equally or more important than environmental action, and the degree of environmental action dependent on the business's short or long term profitability view.

Mebratu (1998) also analyses how environmental sustainability has been integrated into three ideological and three academic directions, described briefly below and in Table 2.1. Liberation theology is now eco-theology, radical feminism is eco-feminism and Marxism is eco-socialism. Similarly, In academia the economist, ecologist and sociologist respond in different ways to the environmental challenges. The goal for environmental economists would be "to turn the environment into a commodity that can be analysed just like other commodities" (Mebratu, 1998, p. 509), the problem being that the environment is undervalued and used free of charge, leading to degradation. If the environment was properly valued, it would be protected through conventional economic cost benefit analysis. For the deep ecologists, nature is in itself "a self-organising system that changes, responds, and evolves over time through a highly variable set of quasi-stable conditions" (Mebratu, 1998, p. 511). The social ecologist would not see themselves as a part of

nature, but in co-evolution with nature, and it is therefore essential that basic human needs are met and secured for the future within existing environmental limitations.

From the above it can be concluded that, from an institutional, ideological and academic point of view, there are significant differences in relation to the nature of the underlying crisis, prescribed solutions, institutional approaches and the recommended process for evaluation, understanding and action. The definition of sustainability and sustainable development, while globally accepted by the public and policy-makers, is, according to Visser (2008), " not a neutral, scientific or objective concept, but rather a normative or subjective concept. ..(and) .. always comprise implicit or explicit values..".The definition of sustainability, environmental policies, attitudes and behaviours may be determined by world views, values, beliefs, and culture that are portrayed in the environmental discourses of the time.

Table 2-1 Different perspectives of sustainability

Perspective	Institution (Examples)	Drivers	Source of Enviro-Crisis	Solution Epicenter	Solution Platform
Institutional	World Commission on Environment and Development WDEC, Kyoto Process	Political Consensus	Lack of global consensus	Sustainable Growth	Nation-State
	International Institute for Environment and Development (IIED)	Rural development	Lack of empowered people	Primary environmental care	Communities
	World Business Council for Sustainable Development WBCSD	Business interests	Lack of proper costing of environment	Eco-Efficiency	Business and industry
Academic	Academic discipline	Academic drivers	Source of Enviro Crisis	Solutions epicenter	Solutions platform
	Environmental Economics	Economic Reductionism	Undervaluing of ecological goods	Internalisation of externalities	Better econometric models in governance decisions
	Deep Ecology	Ecological reductionism	Human domination over nature	Reverence and respect for nature	GAIA Theory The world will self-regulate with or without humans.
	Social Ecology	Reductionist-holistic	Domination of people over nature	Co-evolution of nature and humanity	Co-habitation
Ideological	Ideology	Ideological drivers	Source of Enviro Crisis	Solutions epicenter	Solutions Platform
	Eco-Theology	Liberation theology	Disrespect to divine	Spiritual revival	Churches and congregations
	Eco-Feminism	Radical feminism	Male-centered society values)	Gynocentric value hierarchy	Women's movement
	Eco-Socialism	Radical Marxism	Capitalism	Social egalitarianism	Labour movement

Adapted from Mebratu (1998)

2.2.2 ENVIRONMENTAL DISCOURSES AND MENTAL MODELS

Dryzek states that "a discourse is a shared way of comprehending the world. Embedded in language ….it constructs meanings and relationship and puts them together into coherent stories or accounts" (2005, p. 9). Environmental discourses can be seen as the verbal expression of different underlying worldviews on sustainability and are symptomatic of underlying values and attitudes to environmental issues and will thereby guide behaviour. Dryzek (2005) divides environmental discourses into four main categories following two axes (see Table 2-2). The first axis relates to the approach chosen in relation to industrialism, a reformist or radical sustainability discourse, between those who commit to or reject the continued growth of products and services to increase material wellbeing. The second axis relates to the approach selected to solve sustainability issues, following either a prosaic or imaginative way. The former suggests that action is undertaken based on a continuous revision of policies, institutions and actions within the system; the latter seeks to redefine the perception of environmental issues, seeing them as new opportunities and a basis for the radical change of the individual and society.

Table 2-2 Environmental discourses

	Reformist discourse	**Radical discourse**
Prosaic	**Problem solving** 1. Leave it to the experts/elites Administrative rationalism 2. Leave it to the people Democratic pragmatism 3. Leave it to the market Economic Rationalism	**Survivalism** 1. Limits to growth Looming tragedy Anti-consumerism 2. Growth forever. Technology development as response to environmental crisis.
Imaginative	**Sustainability** 1. Environmentally benign growth Sustainable development 2. Beyond industrial society. Ecological modernization Cleanest and greenest.	**Green radicalism** 1. Changing people. Green consciousness 2. Changing society. Green politics

Adapted from Dryzek (2005)

Table 2-2 indicates that the prosaic reformist approach is primarily concerned with problem-solving as environmental issues emerge, yet discourses differ depending on whether the solution is seen as implementation by governments (leave it to the experts/elites), by people as they see problems arise, or by the market as environmental problems set limitations. These three discourses are related to Mebratu's (1998) three institutional worldviews as explained in the previous section and Table 2-1. A less rigid approach may be seen through the imaginative reformist discourse where sustainability is to be achieved through benign (green) growth or through transformation to the post-industrial/fossil-fuel society. This stance involves taking a more visionary and long-term view of environmental solutions, rather than day to day pragmatic stance. Yet they still involve environmental governance and implementation of a varied spectrum of means to promote environmental action. The radical prosaic discourse can be portrayed as being either fundamentally against or for industrialization, with the "Limits to growth" stance seeing materialism and consumption as the reason for environmental problems, and, therefore, environmental problems cannot be solved if consumption is not staggered. The opposite discourse sees industrialism with the technology and innovation it involves as the solution to environmental problems, and, thus, growth should be promoted to foster innovative solutions to environmental problems. Both of these radical stances can, in one sense, be seen as defeatist, in that these processes (consumption/industrialization) are difficult to steer through governance and will have a positive or negative outcome depending on the stance held. Both discourses will thus be seen as threatening to each other. The radical imaginative outlook seeks more of a green revolution through either an individual green awareness or through fundamental change of society with every aspect of society viewed in relation to the impact on the environment.

Different environmental discourses may also be pursued in accordance with the political environment and culture of a country. In a Nordic coordinated market economy where the state has an active role in environmental reform of society, it could be expected that environmental discourse and policies would follow an administrative rationalism discourse. However, in a more market liberal country like Australia, the environmental discourse would be more directed at economic rationalism and market-based instruments. Yet, both societies have inherent environmental policy contradictions specifically in the area of climate change due to the dependence on and vast wealth generation from fossil fuel extraction. At a societal level this makes a radical discourse of limits to growth difficult to pursue politically, and policies can be stated to be closer to a radical discourse of growth forever, with incessant belief in technological

solutions. However environmental discourses could also be analysed based on whether long-term solutions for the post-industrial society are based on an imaginative perspective of sustainable development or a fully fledged ecological modernization. When examining perceptions of sustainability among business owners in two countries, it would be expected that environmental discourses would reflect these overarching societal worldviews.

De Vries and Petersen (2009) examined how an individual's mental model of sustainability is based on the person's value orientations and knowledge. While economic considerations are important factors in determining environmental sustainability behaviours, other factors such as personal value orientations may be equally important. Individual's or community's environmental behaviour may be influenced by objective scientific facts about the environmental issue (objective positivist stance), and/or by value-laden stances based on incomplete knowledge just because "environmental action is the right thing to do" (values-based constructivist stance). So, even with vast amounts of environmental knowledge provided, people's reception of knowledge may be incomplete, controversial and value-laden when making environmental decisions. These cognitive maps (knowledge, values and beliefs about the environment) directly or indirectly guide action and are often based on context specific worldviews. In Australia, this could explain why droughts, floods and fires have changed the urban population's attitude to climate change and thus act on fear and emotion, while the rural population remain unconvinced as they perceive climatic cycles and hazards as being normal (Donnelly, Mercer, Dickson, & Wu, 2009). In Norway, the farmers' acceptance of mandatory environmental conditions, with environmental management plans having been accepted as "good agronomy", is an example of environmental thinking becoming institutionalised into the values of the farming community (Vedeld, Krogh, & Vatn, 2003).

The above descriptions of differences in worldviews or mental models when it comes to sustainability could also to a large extent be described as differences in social normative and cultural cognitive institutions for a community or country.

Recently, several researchers (Giddens, 2009; Hulme, 2011; Ostrom, 2010a; Prins, et al., 2010) have argued the necessity of reframing global environmental issues, such as climate change, into environmental actions that are meaningful both at a global, national, regional, local and individual level and, in the short-term, for the businesses and local communities implementing them. Hence,

developing an analytical framework that looks at the value-adding of environmental action from a business, micro-cluster and local community perspective would contribute to understanding how "doing the right thing" for the environment can also be beneficial to a business and a community.

2.2.3 SUSTAINABILITY IN AGRICULTURE AND TOURISM.

Defining sustainability for specific industries will, as have been discussed above, depend on the world-view to which the industry, the businesses and corresponding policies adheres. However, these might also be influenced by both institutional, contextual and discourse factors that may vary from one country to the other. The consequences of a reformist (soft/weak) and radical (strong/hard) sustainability stance for agriculture by Gray and Lawrence (2001) are described in Table 2-3.

According to the United Nations Food and Agriculture Organisation (FAO), sustainable agriculture is intertwined with rural development. Their definition, therefore, includes ensuring basic nutritional requirements for present and future generations (wealth distribution aspect), provision of employment, sufficient income and decent living and working conditions (economic and social sustainability aspects), maintaining and enhancing the productive capacity of natural resources (environmental sustainability), and fostering resilience and self-reliance against natural and socio-economic risks (social sustainability) (Food and Agriculture Organisation, 1995). The focus on the social, environmental and economic aspects of sustainability, intergenerational, and geographic wealth distribution would indicate that the FAO's definition may be defined as a radical sustainability stance.

Clear normative prerogatives for policy and business implementation can be derived from most of the "directives" under these approaches, yet it is most probable that environmental policies will appear as a mix of or within the continuum of the two approaches. Gray and Lawrence (2001) suggest that it is more useful to consider sustainability as a process, rather than a fixed goal.

Gray and Lawrence (2005) explain that agricultural development following a reformist approach would be short-term production oriented with little concern for the impact on the surrounding environment and ecosystems. For instance, it would be concerned with undertaking action to adapt to climate change, but not mitigate climate change; it would take action to reduce the cost-effective overuse of fertilisers, but not use organic fertiliser that cost more even though long term

effects on the environment would be positive. It would not plant native vegetation if it reduces profitability, even though long term impacts on micro-climate and water management would be beneficial for the business. The intergenerational focus would be based on short term rather than long term considerations and the precautionary principle when introducing new technology or chemicals would be less pronounced. Globalisation would be seen as an opportunity for increased profitability and less as a threat for producing in a sustainable way.

Table 2-3 Different approaches to sustainability

Reformist (soft/weak) sustainability	Radical (hard/strong) sustainability
Anthropocentric aim is to prevent human society suffering the consequences of environmental degradation (i.e. climate change adaptation)	Environment focused promotion of an economy and society in harmony with the environment (i.e. climate change mitigation)
Acceptance of reductionist science and modern technology	Questioning of reductionist science; prefers green technologies (in spite of costs)
Intergenerational distribution treated separately.	Intergenerational distribution integral to sustainability
Low environmental risk aversion (precautionary principle less important)	High environmental risk aversion (precautionary principle important)
Marginal changes to existing systems and institutions required	Shift to new systems and institutions including new ways of thinking.
Sustainability can be achieved alongside current processes of globalization.	Bioregionalism/localism is first step to sustainability: globalization need to be controlled

Summarized in Gray and Lawrence (2001, p. 153), adapted from Hodge and Dunn (1992) and Dryzek (1997).

Agricultural development within the framework of radical sustainability (Gray & Lawrence, 2005) would suggest that agricultural production be undertaken to not harm the surrounding natural environment, and environmental action would be undertaken beyond what would be profitable in the short-term in order to create a balance, for instance pursuing climate change mitigation and the restoration of adjacent ecosystems and waterways. The longer term intergenerational focus would focus on building up long term soil and plant resilience, increasing native vegetation and habitats within the agricultural property, and decreasing runoff to waterways. The precautionary principle would result in fewer new chemicals being introduced if there was a doubt about their impact on the environment. Shifting to organic farming with its strict clause of not using chemical fertilisers and pesticides would also be considered a result of a precautionary way of thinking. Globalisation would be considered only as having a short term profit focus to the detriment of longer term environmental improvements whereas a focus on

short-travelled food and local farmers markets as well as geographic protection could all be seen as movements to reduce globalisation.

The issue of sustainability in Australian agriculture remains a contested issue. For many researchers, environmental sustainability is seen as incompatible with an export market oriented agricultural policy (Cocklin & Dibden, 2005; Dibden, Potter, & Cocklin, 2009; Gray & Lawrence, 2005) where continuous efficiencies have to be found to remain competitive in a global market. Economic sustainability remains in the foreground, environmental and social sustainability is undermined, with a degradation of the soils, native forests and waters, an increase in waste and greenhouse gases per capita (Australian Bureau of Statistics (ABS), 2010), the depopulation of rural towns, and the dismantling of rural services (Gray & Lawrence, 2005; Lockie & Bourke, 2001).

Norwegian agriculture is almost entirely at the opposite end of the spectrum in relation to the globalisation of food production, having the highest level of subsidies in the OECD and only producing produce for the domestic market. The goal is that Norwegian agriculture should become environmentally sustainable while at the same time produce food that consumers demand (high quality and environmentally friendly produce) and maintain common goods such as sustainable communities, natural and cultural heritage and landscapes, and long term food production potential (Landbruksdepartementet, 2000). More recently there has also been a strong push for farmers to develop additional income earning strategies, such as small-scale tourism, on-farm manufacturing of produce and short travelled foods (Landbruks og Matdepartementet, 2011).

Bjørkhaug and Richards (2008, p. 98) compare “the market-oriented, liberalistic Australian agriculture and the market-protected small-scale Norwegian agriculture”. They discuss the two concepts of productivist and multi-functional agriculture and argue that “multifunctionality in Australia rates relatively weakly as an ideology or policy and even less as a discourse or practice.....In Norwegian agriculture, multifunctional agriculture has thrived within a protectionist setting with the support of the public, the state and agricultural actors. In this sense it is very clearly a policy, practice and discourse that aim to preserve and conserve rural spaces, the cultural landscape, and the farming way of life and food safety”. It could be stated that Australian agricultural policies, discourses and ideologies are associated with the reformist pragmatic

sustainability approach, while the Norwegian would be associated with the radical sustainability approach.

There are large differences in the economic importance of agriculture between Australia and Norway. The Norwegian agricultural sector only produces for domestic consumption and thus in itself is not globalised; the Australian agricultural sector is strongly focussed on globalisation and exporting produce. The Norwegian agricultural sector is, however, under constant threat of decreasing border protection and subsidies. The Australian agricultural sector, competing in the global market, has to continuously adapt to global market demands, fluctuating prices and currencies.

For tourism, sustainability can be seen as a contradiction between on the one hand developing sustainable destinations through technology, infrastructure improvements and reducing the impact on the natural environment, and on the other hand tourists arriving to the destination in unsustainable numbers, in unsustainable ways and sometimes undertaking unsustainable activities.

Sustainable tourism is defined by the World Tourist Organisation (WTO) as "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (United Nations World Tourism Organisation, na). It thus includes intergenerational aspects and environmental sustainability, while wealth distribution aspects are less pronounced referring only to the need of host communities. Using the framework distinguishing between a radical and a reformist sustainability approach in Table 2.3 a reformist approach would welcome cruise-tourism and global corporations if environmental considerations were adopted in their operations, while the radical sustainability approach would focus on small-scale tourism, benefitting local communities, based on local foods and experiences. A major problem in tourism is the issue of transport and the increasingly unsustainable mode of transport used for tourism (plane and cruise boats) and the consumptive cultures in more specialized outdoor and adventure tourism. A radical sustainability approach would seek to avoid global tourism, an example being the ecotourism certification in Norway, which obliges operators to market ecotourism in nearby markets (Europe) in order to avoid long-distance flights, and by promoting tourists to stay longer at each place and using public transport while there (Norsk økoturisme, 2008, pp. 22-23).

While the Norwegian agricultural and tourism policies are based on a multifunctional rural livelihood strategy, the Australian agricultural and tourism policies are based on achieving global competitive advantage and it would be expected that these different stances would result in different mental models of sustainability and different approaches to environmental behaviour in the two micro-clusters studied.

2.2.4 CLUSTER LIFE-CYCLES AND SUSTAINABILITY

The term sustainability is sometimes used in relation to clusters, but is primarily concerned with economic sustainability related to the growth, change or decline of the industry in which the cluster was originally based. It would as such be better to use the term cluster durability with relation to economic sustainability and/or cluster resilience when a combination of economic and social sustainability concerns are considered. The main factors contributing to economic sustainability and growth are available market and customer demands and benefits due to efficiency and innovation within the cluster. Karlsson (2008) points to clusters pursuing value-adding efficiencies and innovation along three trajectories: horizontal (upstream and downstream), vertical (cooperation and networks) and demand/markets. The value-adding benefit of the clustering process of small and medium scale businesses is mostly a result of generating economies of scale opportunities particularly through reducing geographical, labour and transportation costs (Karlsson, 2008). For tourism micro-clusters, the potential for value-adding is based on economies of scope in developing niches for especially interested tourists (Michael, 2008).

Efficiency and innovation factors are important for economic growth and durability in clusters. In addition, there are internal and external threats to cluster resilience. Internal threats are due to "structural rigidities" (tradition, customs, lack of innovation), such as the continued production of obsolete products, labour training, research and development (R&D) , formal or informal institutions, and regulatory inflexibilities (Porter, 1990a). External threats are listed as cyclical disturbances (following a cluster cycle of emergence, thrive, decline and die), fundamental technological changes that make products or processes non-marketable, large changes in external demand, for instance in quality or content of product or service supplied, changes in cluster competition basis, for instance infrastructure that will reduce transport costs, and, lastly, changes in economic and industrial policies (Porter, 1990a). For a micro-cluster which is seeking

economies of scope, lack of innovation, maintaining a traditional farmer's outlook on tourists and not being in tune with modern demands are examples of internal threats. External threats could be changing demand for the agricultural products, for instance when the Hunter Valley's signature grape, the Semillon, has become less fashionable or more difficult to grow due to climate change.

While some researchers (Tichy, 1998) believe that clusters go through a life-cycle of formation, growth, maturity, and petrification, others believe that the deterministic decline of clusters is not a given, rather cluster renaissance/revival can depend on local change agents able to lead clusters or communities in a new direction, the availability of diverse and flexible support functions and R&D, and the facilitation of new knowledge distribution and communication (Bergman, 2008). Karlsson (2008, p. 14) shows that internal and external threats could lead to a "de-clustering processes", which, in some cases, "can lead to new cluster equilibria, where smaller clusters can still be competitive". An example of a de-clustering process is the division of the Hunter Valley Wine area into smaller wine areas, like Pokolbin, Lovedale and Broke, which each pursue a differentiated marketing strategy.

Trippl and Todtling (2008) discuss how old industrial regions can change according to three trajectories: i) incremental change (revitalisation) where the main business activity is modified through innovation; ii) diversification, where new business types are established within established industries/clusters; and iii) radical change, where the cluster undergoes a major leap towards a high technology knowledge intensive cluster. Changing an old agricultural district into a sustainable and environmentally friendly tourist destination could involve both a revitalisation of the traditional agricultural industry, but also necessarily a diversification as new tourism ventures are developed within the old. To a lesser extent, the process towards tourism may be classified as a radical change, even though tourism businesses demand substantially different knowledge, skills and services than agricultural production in areas such as e-marketing and customer services.

The influence of environmental issues on cluster durability and resilience is linked to the natural resource dependency of agriculture based tourism. Environmental and economic sustainability for the cluster would thus be dependent on maintaining the environmental and landscape assets and the continued innovation in relation to environmentally friendly products, production

methods//processes and services. Cluster durability may, therefore, also be linked with environmental branding and innovation in relation to environmental products and services.

Cluster resilience is also dependent on factors linked with social sustainability, such as the availability of infrastructure and services (health, education and communication) and processes of new knowledge transfer to cluster businesses and community. This demands the availability of "infrastructure for interaction", which includes the built environment, networks of transportation and communication and arenas for meetings, negotiations, education, and training (Kobayashi, 1995). Changes in infrastructure can lead to extensions of the cluster, reduce travel/transport costs or thereby change competitive advantages between clusters. Atherton and Johnston (2008) show that not only spatial proximity, but also relational proximity (closeness of firms in terms of culture, i.e. shared formal and informal institutions) are important for both the formation and resilience of the cluster. They identify that clusters emerge when firms share the identification of issues and opportunities that demand collaboration be resolved. The relational proximity leads to better conditions of collaboration and reduced transaction costs, and is developed through increased familiarity and trust. It would be expected that a different relational proximity would be created in a Norwegian micro-cluster where farms have been handed through generations for centuries to that in the Lovedale context where vineyards are traded on the property market.

Cluster durability has primarily been related to economic sustainability and more particularly economic growth. However, cluster durability and resilience is not only depenedent on economic growth but also on the social sustainability, innovation and relational proximity of the community in which they are located. The issue of environmental sustainability in relation to agriculture based clusters has not been examined. This may be due to the natural resource base being seen as a permanent, non-movable resource which lacks value-adding opportunities, yet, as will be discussed later, a value-adding and competitive advantage based on environmental action and intangible natural and cultural resources can potentially better be achieved within a cluster framework. The contribution of this research will be to extend sustainability both conceptually and practically, to analyse and understand agricultural based clusters and to discuss the impact of context on sustainability practices through the comparison of agriculture based clusters in two countries.

2.3 UNDERSTANDING BUSINESS DRIVEN ENVIRONMENTAL ACTION

Business driven environmental action can be seen as the result of the last 40 to 50 years of environmental policy-making, going from strict and detailed regulatory measures through to more market-based systems, until today where there is now a mix of policy measures targeted to make businesses implement best environmental practice. While each country may have different approaches in relation to sustainability as described above, this section will review theoretical and empirical research to gain a greater understanding of how businesses respond to environmental policies and, more specifically, incentives and motivations for business driven environmental action.

2.3.1 EVOLUTION OF ENVIRONMENTAL POLICIES TOWARDS BUSINESSES

Environmental control over business activities in western democracies has been through different stages since environmental legislation was introduced in the 1970s (T. Andersson & Wolff, 1996). The seventies often saw the establishment of environmental ministries and legislation to control pollution through a system of sanctions. Adequate follow-up of these laws became increasingly difficult as effective sanctioning at municipal and regional level was subject to local sensitivities and biases. The 1980ss saw a new approach based on the paradigm that market forces would be better suited to achieve the best and most economically rational environmental solutions for businesses. The focus changed to the polluter pays principle, with the introduction of environmental taxes, which would force businesses to reduce input use and polluting emissions. Environmental taxation, however, was seen to have inequitable social consequences as all actors did not pay for using “free resources” such as air and water. While in both the 1970s and 1980s it was assumed that companies were reluctant and unwilling to respond to ecological demands, this changed in the late 1990s towards a third phase of “business driven ecological decision-making". The thinking was that businesses would take the lead towards a more ecologically balanced economy based on a longer term economic and societal justification.

From an institutional perspective, these policy approaches are based in different views of how institutions contribute to business’ environmental behaviour. An emphasis on regulatory institutions, would drive businesses towardsenvironmental behaviour through threats of fines and sanctions, while under market based policies companies would pursue profit maximization and

self-interest as a response to environmental price incentives (taxes, levies, increased demand/prices for environmentally friendly products). In thelatest stage emphasis is on business driven environmental action, a complex mix of policy-instruments have been implemented that assumes that businesses are part of society and, as such, share the same concerns for the environment and are influenced by the same regulatory, normative and cultural cognitive institutions as every citizen (Scott, 2008). This stage also takes into consideration the fact that businesses often have better technological knowledge on best practice and also sees the competitive advantage in finding new resource-saving processes and technologies.

In the current stage of business driven environmental action, Ostrom (2009) and Dolsak and Ostrom (2003) point to examples of individuals, businesses and communities investing both time and energy in order to pursue better management of both private and common natural resources of both tangible and intangible value to their business and the community. Yet, it would be expected that in Norway, which has a more coordinated market economy, there may be more regulatory focus, while in Australia a more market-based focus of environmental policies may be prevalent. How these differences in environmental policies impact on micro-cluster's greening process is a focus of this study.

2.3.2 MOTIVATIONS FOR BUSINESS DRIVEN ENVIRONMENTAL ACTION

Prakash and Kollmann (2004) argue that there are five environmental policy instruments that create incentives for firms' environmental compliance: 1) command and control; 2) market based; 3) mandatory information disclosures; 4) business-government partnerships; and 5) private voluntary codes. With respect to private voluntary codes, or self-regulation, which is most favoured by business, Anton, Deltas and Khanna (2004) found that total quality environmental management and environmental reporting (for instance, environmental certification and assurance schemes) are principally motivated by perceived competitive advantage in the marketplace. On the other hand internal environmental policy, corporate environmental standards and environmental auditing were predominantly influenced by the degree of regulatory standards in place. This literature further suggests that businesses participate in voluntary environmental initiatives to: reduce costs or increase efficiency; avoid or delay regulatory action; gain a competitive advantage; enhance or reinforce a positive image in the marketplace as a good corporate citizen; comply to pressures imposed by banks, insurers, clients, and suppliers who do

not wish to inherit environmental liabilities; conform to pressures from community groups, environmental organisations and industry members; and encourage employee productivity through improved corporate culture and employee pride.

As a norm, the business sector prefers environmental self-regulation and market-based instruments (Prakash & Kollman, 2004). An example is the establishment of the ISO 14001 certification of environmental management system standards in 1995 (International Standardisation Organisation, 2009) based on self-reported environmental management plans and third party auditing. However, while the implementation of environmental standards has been delegated to businesses' voluntary self-regulation (through ISO standards, self-reporting and other mechanisms that reducing costs for the public sector), there remain big questions as to whether this is enough to reduce environmental degradation and pollution and whether additional control by public authorities is needed (Jermier & Forbes, 2003). Several researchers report that the ISO standardisation process does not necessarily lead to an improved environment, as it does not reduce production/consumption and may not address the main environmental problems for business. The considerable transaction costs to undertake ISO certification may be prohibitive for smaller firms (Aragón-Correa & Rubio-López, 2007; Newton & Harte, 1997; Steger, 2000).

Competitive greening is widely promoted as a way to make businesses invest in environmental action. According to Porter and Van der Linde (1995), if it pays to be green then competitive advantage will lead to implementation of green programs. However, Jermier and Forbes (2003) state that the logic of business implies that you go beyond compliance only if you see business (financial) benefits of this action, not if there is only an ecological advantage. Thus, environmental improvements will be implemented based on calculations of cost-reduction, return on investment, repayment rate of investment, and, often. with a shorter term horizon than ecological concerns might demand. The main concern will be on economic sustainability and not ecological sustainability, and implementation will be based on financially feasible incremental improvements, not fundamental changes. A focus on technological rationality may postpone important decisions as it is believed that technology will be able to solve any ecological problem at a later time. Counter to this view is the belief that businesses will pursue environmental action based on societal norms and expectations, and that they will have a long-term view of creating a green brand.

Environmental regulations are a way for governments to ensure compliance with basic minimum environmental standards. However, businesses respond to these with compliance or non-compliance based on internal or external calculated factors, which may make regulations less effective and unfair (Jermier & Forbes, 2003). Some may pursue a calculated non-compliance if control mechanisms are not in place, or the cost of environmental compliance is higher than the cost of non-compliance (fines). While some researchers see stringent environmental regulation (command and control) as enhancing competitive advantage and creating an incentive for innovation and new technical solutions (Porter & Van der Linde, 2000, p. 104), others see regulation as hindering innovation and competitiveness through high and non-selective compliance costs (Walley & Whitehead, 2000). The intention of environmental regulation is to create a level playing field for all businesses, but these regulations may accommodate large businesses better than small businesses and those businesses seeking a more radical ecological transformation. For instance, large businesses would be given preference in public incentive schemes to promote specific environmental improvements because this gives more environmental benefit for the incentives (Jermier & Forbes, 2003). Regulators may also have less knowledge than the industries themselves due to the complexities of technologies involved making minimum technical standards outdated and thereby acting as false achievements (Jermier & Forbes, 2003).

Larsson, Olsson-Tjärnemo, Plogner, and Östlund (1996) found in their study that the more production-oriented the firm, the more effective environmental legislation will be in leading to environmental improvement within the firm, while the more customer-oriented the firm, the more effective green market demand will be in achieving more ecologically sustainable solutions. They claim that externally oriented firms are more receptive to market-driven responses than internally production-oriented firms. Agriculture based tourism can be defined as being both production oriented (the agricultural side) and customer focused (the tourism side) and, thus, there may be differences as to how these two types of industries relate to environmental issues.

A firm's environmental action can also be defined according to the business owner's strategy or attitude to environmental issues and action, whether it is reactive, defensive, accommodative or proactive (Dunphy, Griffiths, & Benn, 2007; Hunt & Auster, 1990; Roome, 1992; Wartick & Cochran, 1985). Dunphy, Griffiths and Benn (2007) describe how a firm may start by being in opposition or ignorant, but with higher environmental awareness, a higher awareness of environmental risks and costs is also generated leading to increased environmental action in order

to mitigate these risks The next stage is when the firm sees environmental sustainability as a competitive advantage and the last stage occurs when a firm transforms into a business that sees sustainability as a main purpose for the business. The assumption of the phased approach is that firms have the means, skills and choice to move towards a higher state of environmental performance. The staged model is, therefore, highly dependent on the availability of environmental knowledge and the environmental awareness of the business owner. Schaefer and Harvey (1998) suggest, that since firms are strongly influenced by external and internal pressures, the staged model may not offer the best theoretical basis for classifying environmental awareness/action. They considered the stages should be more linked to institutional pressures and bounded rationality when taking decisions. The business will then develop an environmental strategy as an incremental process emerging from past practice and with limited or best available information (bounded rationality), and due to systemic pressures determined by cultural constructs and an environmental behaviour which is culturally expected of managers (Schaefer & Harvey, 1998). The staged model may thus be as much of an indication of the business owners' own values, attitudes and knowledge, as the pressures of the market. Within a group that pursues collaborative environmental action, it would be assumed that businesses would be at different stages of environmental awareness, yet it would be important that some businesses "lead the way" in exemplifying that environmental action can be undertaken.

Several studies show that businesses environmental behaviour is influenced by societal norms and institutions. In a case study on Scandinavian Airlines concerning the motivations for environmental commitment in the airline industry, the three main motivators for going green were; firstly, achieving eco-efficiencies (whether they be eco-efficient technologies, improving brand image or shareholder value); secondly, conforming to Scandinavian (national) culture on the environment; and, thirdly, internal environmental leadership by management (Lynes & Dredge, 2006). Scott Marshall, Cordano and Silverman (2005) studied how individual and institutional level drivers influence the early stages of environmental transformation in the US wine industry. Proactive environmental behaviour varied in relevance and relative importance depending on which stage the industry/firm is in, managerial attitudes and norms, existing regulations, employee welfare and competitive pressures: these were all strong drivers of proactive environmental behaviour. In New Zealand, a longitudinal study on sustainability practices among small businesses found that values and beliefs of management were paramount as drivers for the adoption of environmental actions, followed by concerns over reputation and

brand. The biggest barriers for the adoption of sustainability practices were costs, time and knowledge (Collins, et al., 2009).

Ceremonial greening, also called "greenwashing" (Greer & Bruno, 1996; Tokar, 1997) is a company's way of giving an impression of being environmentally sound through managing public appearance, creating a green ceremonial facade, focusing attention on a small number of highly visible green actions and neglecting more substantial others. The business is perceived as green while actually doing very little to improve environmental performance (Jermier & Forbes, 2003).

As has been described above, businesses are influenced by policies and regulations; their perception of environmental action being a competitive advantage, business owners own their environmental awareness and knowledge and the normative or cultural cognitive pressure under which the business is operating. It could be expected that, with increasing self-regulation among small businesses, drivers would be skewed more towards a market based mechanism and competitive greening, as well as normative or cultural cognitive institutions. While regulatory and market-based measures are recommended, implemented and studied, less focus is given to how social systems, efficiently self-organise, solve ecological problems and pursue additional value-adding activities based on a sustainable use of environmental resources (Dolsak & Ostrom, 2003). More theorising is required around the links between the natural environment, business organisations and competitive advantage, as well as more comparative research analysing how businesses deal with environmental issues within different contexts and different national institutional frameworks. What institutional factors are important when a business community or cluster is influenced to take environmental action? Why do business driven sustainability initiatives evolve? How do business organisations cooperate and how are they supported by the surrounding community? Again, these issues and gaps in the literature will be examined in this research.

Institutional theory may be used as a framework to examine what and how institutional differences may lead to diverse environmental behaviour between countries, micro-clusters and firms. The next section will review the theoretical foundation of institutional theory and how it relates to the environmental action of the firm and the micro-cluster.

2.4 INSTITUTIONAL THEORY AND ENVIRONMENTAL SUSTAINABILITY

2.4.1 INSTITUTIONAL THEORY

Institutional theory provides frameworks for examining differences between countries, industries, organisations, communities, businesses, and people, for the purpose of understanding human behavior. The “forces” leading to certain human behaviours are collectively named institutions; however, there are three main strands of thought in institutional theory (Hall & Taylor, 1996; Peters, 2000): i) the classical institutionalism or the normative approach, where humans are influenced by what is the “right thing to do” (the logic of appropriateness); ii) the new institutionalism, where humans are influenced by rational choice (the logic of consequences) and; iii) historical or evolutionary institutionalism where what humans do is influenced by a historical path dependent process.

Veblen (1919), the founding father of classical institutionalism, defined institutions as “settled habits of thought common to the generality of man”. Accordingly, institutions are established through an interactive process, where institutions define what is collectively accepted and rational, while in a reciprocal way, humans define through their actions what are to be the institutions for their group, organisation or society. Expectations of behaviour are influenced by what is expected from humans in the professional (lawyer, plumber, etc.) or the societal roles (parent, child, mother, father, etc.) that they perform. One may state that this approach takes a social constructivist perspective, in that institutions influence human behaviour as a result of how humans perceive reality and how they define what is acceptable in that reality. Institutions can thus change based on perceptions and depending on the human, group or society in which they have developed (Vatn, 2005a).

According to new institutional theory, institutions are defined as "humanly devised constraints that structure political, economic and social interaction”(North, 1991, p. 97). While classical institutionalists state that the institutional context shapes what is considered rational and accepted action for humans in a given group, the neoclassical institutional perspective claims that society comprises individuals whose main concern is rational self-interest. In this framework institutions act as “rules of the game” that guide behavior; however, benefit maximisation is considered the core and rational way to act in society. Institutions are mainly external to humans, they do not

change human core behaviour, but set boundaries for the individual and, thus, reduce transaction costs for human interaction and action in a society (Vatn, 2005a).

North (1991) stated that institutions consist of both informal constraints (sanctions, taboos, customs, traditions, codes of conduct) and formal rules (constitutions, laws, property rights). Individuals are guided by these institutions through rational choice (benefit maximisation), duty (through cultural or other social pressures/expectations) or out of habits/lack of conceiving an alternative to the chosen action. According to neo-institutionalists, even when a human behaviour is based on duty, this can still be based in rational self-interest, as the social costs may be considered too high when expectations are not met.

Scott (2008, p. 50) examined institutions influence on organisations and suggested that "institutions impose restrictions (on organisations) by defining legal, moral and cultural boundaries, defining what are legitimate and illegitimate activities". He describes how there are three types of institutions that influence behaviour in organisations, based on different modes of compliance, mechanisms, indicators, affects, and legitimacy (Table 2-4).

Table 2-4 exhibits how regulatory, normative and cultural cognitive institutions influences the behaviour of an organization. It would be expected that these institutional processes would also take place in relation to the environmental behaviour of an organistion, and may be based both on regulatory institutions and social expectations or common beliefs of what is right or wrong environmental behaviour. Prakash (2001) and Collins et al. (2009) showed that both in large companies and small businesses respectively, business leaders' own values and beliefs were important for pursuing beyond compliance environmental action in the business. Values and beliefs with regards to environmental action are influenced by what is considered right and wrong in a society, for a business or a human, and are thereby influenced by normative and cultural cognitive institutions.

Table 2-4 How do institutions guide behaviour?

	Regulative Formal rules and incentives constructed by the state or empowered agent for collective good.	**Normative** Informal rules based on values and explicit moral commitments	**Cultural Cognitive** Abstract rules based on cognitive distinctions of taken for granted understandings
Basis of compliance	Expedience	Social obligation	Taken for Granted
Basis of order	Regulative rules	Binding expectations	Constitutive schema
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules, Laws, Sanctions	Certification, Accreditation	Common beliefs, Shared logic of action
Affect	Fear guilt/ Innocence	Shame/ Honour	Certainty / Confusion
Basis of legitimacy	Legally sanctioned	Morally Governed	Culturally supported

Adapted from Scott (2008, p. 51)

For the evolutionary approach, according to Platteau (2008, pp. 460-461), path dependent institutions may emerge as a result of "small initial differences, but causing distinct differences in societal histories,….. depending on where they start up and which players happen to meet". Typical path dependent institutions may be where large initial investments made in an area or industry commit the area to a certain industry and organizational framework; this in turn would establish path dependent learning and coordination systems concerned with the initial physical investment. One might assume that differences in the physical structures of one micro-cluster as opposed to another may result in differences in attitude to change and environmental innovation.

More knowledge is needed about how regulatory, normative and cultural cognitive institutions may influence individual and collective environmental behaviour and in what regard historical path dependency influences environmental behaviour within a micro-cluster.

2.4.2 INSTITUTIONAL THEORY AND CULTURAL VALUES

As can be seen from the above framework, cultural cognitive institutions are considered to be path dependent and taken for granted within the cultural setting of a particular community. These cultural cognitive institutions are the societal values and norms which are adopted unconsciously

and, thus, influence businesses or business owners without them knowing it. Koen (2005) examined the differences between the cultural values approach and institutional theory and found that, while institutional theory points to cultural cognitive institutions, there is little explanation as to what comprises these values and norms, why and how they differ from country to country and how changes in institutions occur. According to the cultural values approach, cultural values will consciously or unconsciously influence human behaviour within a group, ethnicity, organisation or nation, and are defined as "the coherent, learned and shared view of a group of people that ranks what is important, furnishes attitudes about what is appropriate and dictates behaviour (Beamer & Varner, 2008). Cultural values are the basis for human practices and, therefore, provide a measure for predicting human behaviour that remains relatively stable over time (House, et al., 2004; Triandis, 1995; Triandis & Gelfand, 1998).

The GLOBE study used a framework of nine universal values and practices (based on previous research by Hofstede (1980, 2001), Kirkman, Lowe and Gibson (2006), Schwartz (1992) and Trompenaar and Hampden-Turner (2005) to distinguish between ten cultural clusters. Their findings indicate that organisational cultures strongly reflect the societies in which they are embedded and that differences in values and practices are larger between societies than between organisations (House, et al., 2004). Norway belongs to the Nordic cultural cluster and Australia belongs to the Anglo-Saxon cultural cluster. The Anglo-Saxon countries show a high score for permitting a high degree of individual competitiveness, while this only receives mid-score in the Nordic countries. Nordic countries also obtained a low score on assertiveness indicating that it is not considered culturally acceptable to confront and be aggressive and competitive in relationships with others. Nordic countries have a high score on future orientation, whereas Anglo-Saxons obtained a mid-score, indicating that, in the Nordic countries, there is a longer term view of development and change, such that there is a propensity to delay immediate gratification and rather develop longer term plans for the future. Nordic countries show a high score for societal collectivism, which indicates that they encourage and reward a high degree of collective distribution of resources (for instance, tax redistribution) and collective action (for instance, an acceptance of the state as an agent for reformative environmental action), whereas for Anglo-Saxon cultures these values only received a mid-score. Power distance is low in Nordic countries, but receives a mid-score in Anglo-Saxon countries, indicating that egalitarian values may be stronger in Nordic countries than in Anglo-Saxon cultures. The Nordic countries receive a high score for Uncertainty Avoidance, and will, therefore, rely on many formal and informal rules to

alleviate unpredictability, while the mid-score received for Anglo-Saxon countries indicates a higher risk propensity (Gupta & Hanges, 2004; Javidan, House, & Dorfman, 2004). Waldman et al. (2006) used the GLOBE model, relating cultural values with the corporate social responsibility of top management in 15 countries. His findings conclude that, in societies with a high score of societal collectivism, there was a significant positive relationship with corporate social responsibility, which includes environmental concerns. This suggests that, in countries with a high degree of societal collectivism (such as Norway), cultural cognitive pressures contribute to dictate that environmental concerns are an important underlying value in society and organizations and that business would, therefore, perform environmental action in the societal best interest.

Hall and Soskice (2001) divide western developed countries into varieties of capitalism, distinguishing between the coordinated market economy prevalent in northern Europe, including Scandinavia and Germany, and a liberal market economy prevalent in the Anglo Saxon countries including Australia. Koen (2005) and Ferner and Quintanilla (1998) summarized how these two firm-centric economic models for analysing institutional pressures have organisational implications. The institutions in Anglo-Saxon and in northern European and Nordic cultures, reflect in part differences in informal institutions (trust-regimes, collaboration, degree of consensus, traditions) and in part formal institutions (constitutions, educational system, IR system, property rights). In the Nordic cluster, societal collectivism, future orientation and uncertainty avoidance lead to a high degree of coordination, trust and long-term commitment between businesses and organisations within an industry. It also leads to a labour market that is strongly regulated with unions playing a major part in decision making. In the Anglo Saxon cluster, a liberal market economy is underpinned by strong competitive individualist and assertive values, a higher flexibility and mobility in society, less trust between actors, less regulation of the labour market and weaker unions, and, lastly, much less coordination within industry sectors. When faced with serious environmental issues, it could be expected that the way/mode and means a business, a business cluster or society respond to environmental challenges will differ according to the country's formal and informal institutions.

Several questions remain, both whether environmental action is dealt with in a different manner within the two countries' institutional frameworks, and to what degree institutional theory and

cultural values are linked to businesses' environmental action and relationship with the natural environment.

2.4.3 INSTITUTIONS, ORGANISATIONAL FIELDS AND CLUSTERS

Institutions and institutional processes that shape organisations and businesses are most often studied within the organisational field in which they are embedded. DiMaggio and Powell (1983) define organisational fields as those organisations that, in aggregate, constitute a recognised part of institutional life, key suppliers, resource and product consumers, regulatory agencies, and other organisations that may influence the way organisations do things.

When investigating environmental issues, Jennings and Zandbergen (1995) also found that organisational fields were often grounded in a particular geographical area or locale, and that it would be important to center on those communities and organisations that are most involved in the environmental issue or share the same values. Therefore, the local community, trade associations and environmentalist organisations have a role in consensus making around environmental awareness and action. The organisational fields are the basis for the diffusion of innovation or new environmental practices across different actors. These innovations can be adopted due to coercive pressure/isomorphism (formal and informal pressures by other organisations on which the organisation is dependent), mimetic isomorphism (wanting to do what others are doing due to uncertainty –risk avoidance) and normative isomorphism based on the accepted norms (DiMaggio & Powell, 1983).

According to Fligstein (2001), organisational fields are influenced by institutions in three ways: i) by the societal practices/regulatory institutions which may influence the construction of the field through laws regulations and infrastructure/technology; ii) by embedded power relations between groups, which is adhered to according to local knowledge; and iii) actors within the field that have cognitive structures that utilise cultural frames to analyse the meanings of the actions of others. Institutional theory and organisational fields can, therefore, be used to examine "how organisational, societal and local actors build consensus around the meaning of emerging issues, such as what can be considered 'environmentally sound', and thus lead to these practices being accepted" (Scott Marshall, Cordano, & Silverman, 2005, p. 95).

Marquis and Battilana (2009) suggest that, because organisations are simultaneously embedded in geographic communities and organisational fields and by accounting for both of these areas, a better understanding of small business (environmental) behaviour may be obtained. Zukin and DiMaggio (2001) point to how economic actors, such as a small business, are embedded both in economic, political, social, and cultural structures, which may shape the business' economic strategies and goals, limit the availability and exchange of knowledge and be based more on collective understandings and norms than "rational" self-interested economic action.

One way to understand how such normative and cultural cognitive institutions may influence economic behaviour and innovation in a cluster is to examine how connections or social networks among individuals in a community influence economic development (Putnam, 2000). Granovetter (1973, 1985) and later Uzzi (1996, 1999) showed how strong bonds (cultural embeddness) may lead to high voluntary participation and civic engagement, and is stronger in more homogenous societies and emerges through long historical processes, leading to dense interpersonal networks. They form the basis for groups of people's identity, business interests and professional associations and networks, and, thereby, contribute to economic development. Embeddedness may be positive for economic development up to a certain point where it may become limited due to cultural institutions reducing innovation and risk propensity, adapting to cultural norms and maintaining social relations and reputation more than innovation and economic profitability. On the other hand, with a low degree of embeddedness in local social structures, this may lead to isolation, lack of trust and knowledge-sharing and a pure profit oriented approach. While Granovetter (1973) pointed to weak social ties leading to a strength in innovation and development (less embeddedness), Uzzi (1996, 1999) points to an optimal degree of embeddedness with a balance between business benefits fromweak ties leads to innovation and development while strong social ties leads to security, support and open knowledge-sharing.

Piloting environmental action may be easier spread through networks of weak ties of business acquaintances as these are less responsible or controlling towards each other, and as such they operate as bridges across social distances rather than bonds between homogenous groups. To examine to what degree cultural embeddedness of the small businesses impacts on the pursuance of environmental sustainability and the degree of support from local stakeholders will be part of this study.

2.4.4 INSTITUTIONS, ENVIRONMENTAL ISSUES AND THE NATURAL ENVIRONMENT

Institutions provide stability and meaning to social behaviour, and are developed through cultures, structures and routines (Scott, 2008). With regards to processes aimed at environmental sustainability, the three types of regulatory, social normative and cultural cognitive institutions would be expected to be interrelated and internally consistent (Scott, 2008). For example, the introduction of an environmental legislature (regulatory) is likely to create an understanding and a shared body of knowledge among people about environmental issues (cognitive), as well as a set of beliefs and values related to environmental protection (normative).

The time it takes for institutions to change and how they change will also influence environmental behaviour. Williamson (2000) developed a four level framework for analysing institutions, suggesting that informal institutions such as traditions, customs, norms and religion change at a very slow rate (over centuries) whereas formal institutions, such as regulatory institutions (property laws, judiciary and bureaucracy) change over decades. Implementation and response to regulatory institutions (governance) changes within years, whereas a business will be positioning itself continuously in relation to resources such as market and employment situations.

According to Jennings and Zandbergen (1995) environmental crises may lead to deinstitutionalization; an environmental crisis can undermine the faith in the current system/institutions such as the paradigm of limitless resources, technological solutions and human intentions. On the contrary, the impact individual actors can make to environmental innovation (positioning oneelf in relation to markets and regulations) and thereby to institutional change in the area of environmental improvement may also be important, as shown in Scott Marshall et al's research on the US wine sector (2005).

When using institutional theory to study the agricultural sector several characteristics are unique compared to other industries due to the sector's dependence on a fixed natural resource base and climate fluctuations, leading to additional and high levels of uncertainty. Agriculture often operates in unique political and regulatory environments which are manifested in property rights, land ownership and incentive structures. "Agriculture is often viewed as a 'special' sector, not only because food is a basic human need but also because the independent farmer often a highly romanticized caricature is usually viewed as an essential element of a nation's character" (Cook, Klein, & Iliopoulos, 2008, p. 292). Agriculture is therefore governed not only by societies'

regulatory institutions but also cultural cognitive and social normative institutions regarding the value of agriculture in a cultural and nation-building context. The introduction of new environmental regulations and technologies may necessitate new ways of undertaking agricultural production and lead to institutional changes. The introduction of tourism as an added income, may feel threatening for farmers, their way of living and identity as food-producers. It is expected that two agricultural sectors as different as the Norwegian and the Australian would exhibit different institutional pressures for environmental action.

Vatn (2005b) discusses the problem of reducing environmental behaviour to individualistic rational choice, ie of maximizing individual utility. For a small business owner, environmental behavior based on individualistic rational choice would limit actions to reducing costs and adding value to the business. Experimental econometrics have shown that additional normative institutions which could be called "emotional" costs (shame for doing the wrong thing) and benefits (pride for doing the right thing) also strongly influence behavior and are dependent on both genetic/individual (different capacities to be observant and build trustworthiness) as well as institutional/cultural factors (variations in how a person within a culture is raised) ((Gintis (2000), and Crawford and Ostrom, (1995), in Vatn, (2009)). However, even these emotional costs/benefits cannot adequately explain why previously charitable actions, such as blood donations, decrease when a symbolic incentive payment is incorporated (Titmuss (1971) in (Vatn, 2009)). Vatn proposes that there seems to be a shift from the logic of voluntarily supporting the community by "doing the right thing" (a cooperative rationality), towards calculating what is best for the individual (an individual rationality). With small incentive payments, the effort is not worth the money, thus the individual rational choice will be to do less (Vatn, 2009, p. 305). If environmental action is seen as part of a cooperative rational behaviour which is done because it is the right thing to do, small incentive payments will not succeed in increasing the propensity to undertake these actions.

Vatn (2009) further discusses how the process of separation/division of responsibilities and interest to more individual and less cooperative or social institutions may have a detrimental impact on the natural environment needing more collective solutions. Vatn (2008, 2009) like Ostrom (2009, 2010a) point to the need for more collective ownership and/or management of resources and businesses that are important to people and the environment. The emergence of self-organising clusters and micro-clusters involved in greening processes could be described as a

process in the opposite direction, from that of an individual headed towards a cooperative rationality. The two cases selected for this study are expected to exhibit different degrees of embeddedness in cooperative social institutions, and thus may provide further theorisation as to how embeddedness influences environmental action.

While institutional theory can provide a framework to understand why institutions provide pressures for a small business or micro-cluster to pursue environmental action, the next section will review the use of the resource based view (RBV) as a theoretical framework to analyse how environmental action may be perceived as adding value or as a competitive advantage for the business.

2.5 RESOURCE BASED VIEW AND ENVIRONMENTAL SUSTAINABILITY

As was reviewed in the last section, environmental behaviour among businesses, can be seen as the result of institutional pressures through regulatory, social normative and cultural cognitive institutions, but could also be due to "competitive pull", with the firm pursuing environmental behaviour in order to gain competitive advantage. This section will review the theory of the resource based view in relation to environmental action and the natural environment.

2.5.1 RESOURCE BASED VIEW OF THE FIRM

The resource based view can be seen as a model to explain and describe how and why a firm can obtain value-adding and gain a competitive advantage. The model has been developed by several researchers (J. Barney, 1991; Barney, 1986; Dierickx & Cool, 1989; Margaret A Peteraf, 1993; Wernerfelt, 1984, 1989), and describes the roles of the firm's external environment, its internal resources and capabilities for value-adding. It proposes four factors that contribute to competitive advantage through rent-production/value-adding; 1) resource heterogeneity, 2) imperfect limits to mobility 3) ex ante limits to competition and 4) ex-post limits to competition. For firms to obtain sustained competitiveness they needs to have resources that are different (heterogeneous) to other businesses and that cannot be easily replicated or transferred to other firms (immobile or imperfectly mobile resources). These could be location specific resources vital for agriculture or tourism, such as access to water, good soils and an aesthetically beautiful location with rare flora and fauna. Other value-adding drivers are the limits to competition before (ex-ante) production of

a product/service, so that the firm obtains a first mover advantage (ie low price) when investing in infrastructure or property in the area. When the competition increases, prices of location assets will increase, reducing margins and leading to less profitable/sustainable business operations (Margaret A Peteraf, 1993). Last, limits to competition after the product/service is produced (ex-post) so that customers will prefer your product over others (whether this is due to service, product quality, special agreements or loyalty) may also give added value to your business. This could for instance be through environmental certification, which makes produce or services exclusive and may increase prices for produce or services you provide.

In order for resources to lead to competitive advantage, they need to be valuable (rent-producing) and non-substitutable/immobile (Dierickx & Cool, 1989). If resources are mobile, they can be easily traded and therefore acquired by other firms. Immobile resources cannot be easily traded, for instance a unique landscape or natural beauty. If resources are imperfectly mobile, they can be traded, however they are worth more to the firm that currently employs them than to other firms. Key characteristics of such resources are that they are tacit (causally ambiguous), have developed over time within an organization and therefore are not easily transferred to another firm or to other people, they are socially complex, rare and firm-specific (Hart, 1995). Within a firm such resources could be bundles of physical and financial assets and employees' skills and organizational processes established over time giving the firm a competitive advantage. While physical and financial assets can be easily replicated or acquired by new competitors, tacit resources are not easily substitutable, these are skills based and people intensive. These resources are often a result of a particular path through history which is not easily recreated, and are dependent on preceding levels of learning, investments, asset stocks and development activity (Dierickx & Cool, 1989). It is through the firm's possession of valuable and non-substitutable resources that rent (profit) can be achieved. The next section examines how the competitive advantage of a firm also can be based in environmental action and the natural environment.

2.5.2 RESOURCE BASED VIEW AND THE NATURAL ENVIRONMENT

Hart (1995) points to an obvious weakness in the resource based theory; the omission of constraints imposed and opportunities arising from the biophysical (natural) environment, and its consequent lack of emphasis on competing for future sustainable business. Future businesses will be constrained by and dependent upon ecosystems, and natural, social and historical resources

creating unprecedented challenges to running businesses optimally. He contends that the means of gaining competitive advantage will be based increasingly on such socially complex and tacit capabilities as waste minimization, renewable energy, green product design and technology cooperation, and introduces a conceptual framework for integrating the natural environment into the resource based theory of competitive advantage (see Figure 2-1). The framework is based on analyzing competitive advantage using three interconnected and path dependent strategies of pollution prevention, product stewardship and sustainable development. For the strategies to be competitive, the resources and capabilities they comprise must be valuable, non substitutable, developed as tacitly socially complex and rare resources. Hart (1995) points out that external legitimacy and reputation may influence the competitive advantage of natural resources; thus competitive advantage based on natural resources may be dependent on more cooperative action and transparency than competition. A micro-cluster pursuing a greening process would thus need to be more cooperative and transparent in order to obtain the competitive advantages that joint environmental action may give each firm.

Figure 2-1 Natural Resource Based View of a Wine/Apple Tourism Business

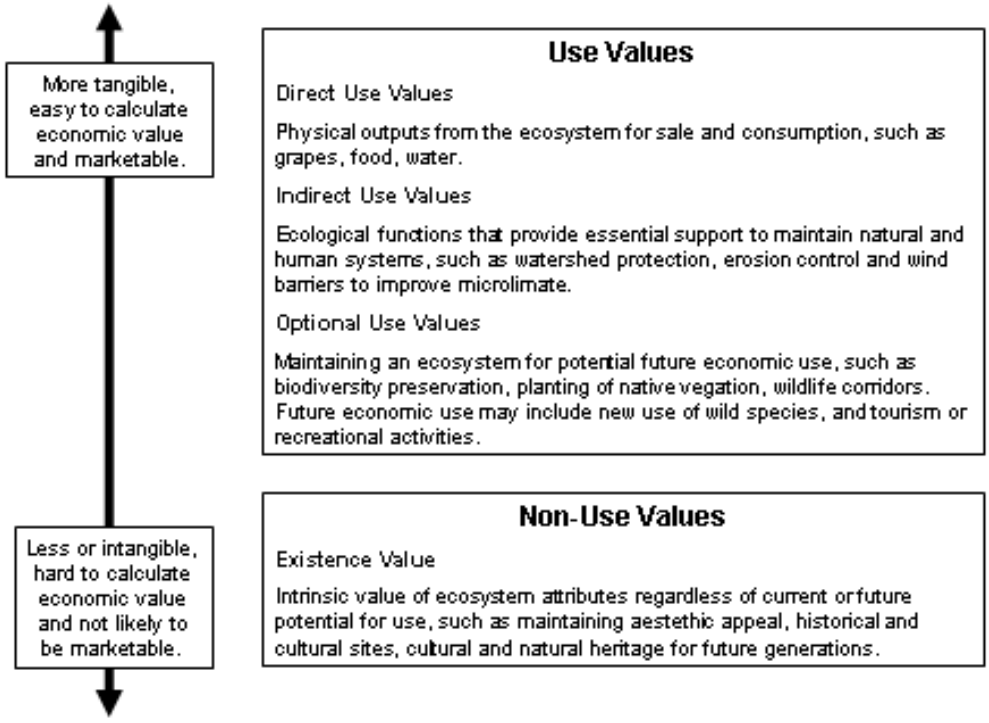
Strategic Capability	Environmental Driver	Key Organisational Process	Competitive Advantage
Pollution Prevention	Minimize resource use. Minimize emissions effluent and waste.	Continuous improvement Environmental management	Lower costs Increased profitability.
Product stewardship	Minimize life-cycle costs of products. Re-use of waste and water, renewable energy sources, packaging, reduced transport	Stakeholder integration Resources in value chain assessed. Environmental certification and standards.	Preempt competitors through exclusive access and/or environmental barriers
Sustainable Development	Minimize environmental burden of firm growth and development.	Shared vision Environmental Strategy	Securing future position.

(Adapted from Hart (1995)).

Hart's (1995) model focuses on technological and resource planning efficiencies in order togain competitive advantage from pollution prevention and product stewardship strategies. It is less developed with relation to how a firm's sustainable development strategy may be based in intangible human and natural resources and features which are shared and specific location. These

common resources may be rare, complex, unsubstitutable and developed over time by businesses and communities. Barbier (1994) and the World Business Council for Sustainable Development (2009) suggested a matrix for classifying ecosystems in use and non use values of more or less marketable resources. While the directly valued ecosystems/natural resources are tangible and easily substitutable, with clear property rights others may be classified as indirect values and options values which have less defined property rights around them and can be classified as tacit or resources which are causally ambiguous, ie they are worth more to some firms than others. Other types of natural resources can be classified as non-use values which are deemed not marketable for a business, yet these offer maybe the least tangible, yet the most inimitable resources as seen from a competitiveness point of view (see Figure 2-2).

Figure 2-2 The Economic Value of Eco-Systems



Adapted from Barbier (1994) and (World Business Council for Sustainable Development, 2009)

For agriculture based tourism businesses, the most tangible eco-system assets would be access to water and soil, whereas for tourism purposes the intangible assets of aesthetically pleasing

landscape, historical and cultural sites and the presence of rare flora and fauna would provide an ex-ante competitive advantage. The more valuable the intangible assets are as assessed by customers and competitors, the higher this resource will be valued. For instance, in the Hunter Valley, the landscape aesthetics of the vineyards combined with the proximity to Sydney, combined with the high demand for lifestyle blocks, led to increases in real estate prices of vineyards, making them unaffordable for the local population.

As can be seen, there are tangible and intangible resources that can provide a firm with added value from environmental action and the natural environment. What follows is a discussion of how some of these features may also provide added-value at a micro-cluster level.

2.5.3 RESOURCE BASED VIEW OF A MICRO-CLUSTER

Brown et al. (2007; 2010) has suggested using the resource based view to analyse the competitive advantage of clusters, through identifying strategic and contextual resources. Contextual resources can be divided into regional resources (type of area, natural resources, and infrastructure), industry related resources (competition, threat of substitutes and entry barriers) and institutional resources (regulatory, normative and cultural cognitive). Thus Brown et al. (2010) suggest that a competitive advantage for the cluster is the based on the availability of tangible, intangible and human resources.

Tangible resources at a cluster level could for instance be land, buildings, technical equipment, financial assets and others (for instance water rights, grazing rights, availability of renewable energy, infrastructure)**. Intangible resources** could be image (green destination), reputation (being a friendly destination), patents, environmental certification, knowledge (technical solutions to reduce environmental problems), architectural (knowledge about how to obtain environmental grants and best deals) and others. **Human resources** would be the availability of qualified and engaged employees (that can provide pressure for environmental improvements), or the innovative and supportive spirit of people within the cluster.

For a micro-cluster to obtain rents from a resource, it needs to: be physically unique (for instance a particular landscape/ecosystem, or historical features) , be path dependent (for instance strong community spirit, acquired rights to hydropower development or development of geographic identity based on histories or landscape features that cannot be replicated elsewhere), have causal

ambiguity (it is unclear how and why a certain resource creates value, ex one cellar door's good wine sales could be due to good quality wine, social personality of winemaker or rustic interior of cellardoor) and have large economic barriers to exploiting the resource (the market for organic produce is so little that it deters competitors, or excellent organic extension services exists in one region making organic cultivation more risky in other less supported regions).

The resource based view is a useful model to assess what types of environmental action may contribute to a firm's or a micro-cluster's competitive advantage. While this can give indications as to what would be potentially value-adding actions for the firm, it is not a given that value-adding or cost-reduction is the driver for the small business. Other institutional influences (than pure economic rational choice) may contribute to the business owner undertaking environmental action. Further discussion on how the resource based view will be used as a framework for micro-cluster analysis is given in Section 2.6 below.

2.6 CLUSTER THEORY AND ENVIRONMENTAL SUSTAINABILITY

This section will review cluster concepts and theories with the view to establishing how micro-cluster theory can be used to examine the development of collaborative environmental action in agricultural micro clusters.

2.6.1 CLUSTERS, MICRO-CLUSTERS AND COMMUNITIES

Cluster theory has evolved as a separate area of study, based primarily on Porter's (1990a, 1998b, 2000, 2003) work on clusters and regional competitiveness, developed from decades of economic geography research on specialized industrial districts and regional development. The novelty of Porter's work is that it integrates a competitiveness aspect based on innovation with spatial agglomeration, and thus develops a business strategy terminology to describe clusters and their importance for development and growth of businesses, regions and nations in a global and competitive context (Martin & Sunley, 2003). Geographers would focus more on development aspects of regions, such as employment, public service delivery and infrastructure, as well as business competitiveness.

Porter (1998b) defined clusters as: “geographic concentrations of interconnected companies and institutions in a particular field”. A cluster includes both suppliers of inputs, services and knowledge (universities, training), and downstream businesses and customers that both compete and collaborate. A cluster includes the same elements as an organizational field as described by DiMaggio and Powell (1983) in Section 2.4 above, the difference being that in a cluster, the focus is on competitive advantage and value-adding of business activities, whereas an organizational field is an analytical tool for examining organisations within an institutional framework.

Several researchers have concluded that the concept of clusters lacks a precise definition with regards to the spatial extent of the clusters and what industry or which firms belongs to the cluster, concluding that it can virtually include any agglomeration of “any type of business” (Brown, et al., 2007; Martin & Sunley, 2003). Indeed, Porter’s (Porter, 2000; 2004) delineation of clusters often included vast areas of related businesses pursuing global markets, yet with little distinction between smaller specialized clusters pursuing smaller and/or domestic market niches. Thus there is a case for distinguishing clusters into smaller areas which to a larger extent have shared market interests and scope (Henderson & Burgess, 2010).

Another criticism of the cluster theory has been the tendency to discard the influence of the local environment and community on the organisations, in the belief that organisations focusing on global markets would become increasingly geography independent (Powell & DiMaggio, 1991).Yet, even Porter (1998b, p. 78), states that the “enduring competitive advantage….. lies increasingly in local things, knowledge, relationships, and motivation, that distant rivals cannot match”. Recently a growing stream of research focuses on how local environments and communities influence organisations and the economic activity they perform (Freeman & Audia, 2006; Marquis & Battilana, 2009; Storper, 2005).

In order to analyse the competitive advantage of small tourism destinations, integrating both cluster theory and community development, Michael (2007a, p. 1) developed the concept of micro-clusters; defined as "small concentrations of firms in close geographic proximity bound by a single community of social and economic interest". These micro-clusters do not follow administrative or geographical borders, but rather operate as a “cluster of complementary firms that collectively delivers a bundle of attributes to make up a specialized regional product”

(Michael, 2003, p. 1). These micro-clusters are therefore"simultaneously embedded in geographic communities and organisational fields" (Marquis & Battilana, 2009, p. 1).

Michael (2003) suggests that when communities self-organise and micro-clusters emerge, it leads communities to retain control over their own development process. Different (types of) communities will have different strength and weaknesses, with inbuilt social and cultural institutions important in determining the economic prospects for the micro-cluster. Liepins (2000), when examining communities in rural Australia, found that the contexts of the community, ie the temporal, locational, political and discursive description of the community, can act as a framework to understand how the community influences the business activities.

Little research has been done on the formation of clusters (Lorenzen, 2005), but Atherton and Johnston (2008) examined the emergence of clusters from the bottom-up as a self-selection process, following three patterns;

a) **Physical or spatial proximity** - co-location in the same area leads to economies of scale and reduced transaction costs. Formation is based on the availability of key natural resources (land, water and landscape), infrastructure (roads and transport), proximity to key markets (cities), and investment in key industry facilities.

b) **Transactional proximity** - when intense trading and collaboration has developed trust and an increased level of mutual interdependency, reduced transaction costs is the result. This formation process built on long term relationship emerged between different actors in the cluster ensuring trust and long-term agreements negotiated between producers and buyers and strong cooperation around industry facilities.

c) **Relational proximity** - where the cluster emerges out of knowledge flows and dissemination of new know-how among similar firms or professionals. This formation process would be based on close connection with knowledge providers. Knowledge institutions would provide new ideas for specialization and diversification based on new knowledge and technology.

Ostrom (2009), points to the occurrence of communities or groups of businesses that self-organise in order to maintain natural resources or develop new, innovative and value-adding approaches to environmental challenges. These groups could also be seen as clusters. Within these communities, each business owner may have a variety of different drivers and barriers to

undertaking environmental action, influenced by a mixture of regulatory, normative and social cognitive institutions as well as the pursuit of business interests

Thus there are indications that there are knowledge gaps regarding how to define the spatial delineation of a cluster and how the community and businesses are embedded in influencing cluster operations. When businesses are part of a community, they will share the same concerns for the environment, and will be influenced by the same regulatory, normative and cultural cognitive institutions as every organization, business and individual within that community. How does the community influence the clusters' action on environmental concerns, and will this new green focus also influence the community? Clusters are predominantly linked with international competition and innovation, but can you have clusters that do not compete at an international level, yet remain competitive and innovative at a local and regional level? Can clusters be called "clusters" even though their value adding process happens more as a collective effort of a community, creating jobs and employment locally and regionally? And what about the competitive advantage of the green clusters, will they be supported or hindered by cluster policies?

2.6.2 CLUSTERS AND THE NATURAL ENVIRONMENT

Agriculturally based clusters are inextricably linked to the land on which crops are grown, and are often located in more or less remote regions. Rural agricultural areas battle with many obstacles in order to improve local prosperity (Organisation for Economic Co-operation and Development, 2006): such as; competing with alternative high-salaried extractive sectors, declining markets; lack of tourist knowledge and infrastructure, weather restrictions ; emmigration of the young and educated. Rural businesses are often family based and the close-knit community provides social norms that may have detrimental impacts on business operations, education, capital, economic structures, entrepreneurship and political decisions. The positive aspects of agricultural regions are the close-knit communities, the remoteness and the undisturbed wilderness.

The cluster approach of developing competitive rural areas based on the valorization of local assets, away from single firm policies towards more regional and cluster support can be seen both in OECD's New Regional Policy Paradigm (Organisation for Economic Co-operation and Development, 2006), as well as in national sector policies in agriculture, tourism and the

environment. The OECD has suggested that three areas need support to strengthen clusters; 1) incentives to engage cluster actors, 2) provision of collective services and infrastructure; and 3) support for R&D collaborative and commercialisation efforts (Organisation for Economic Co-operation and Development, 2007). An example of commersialisation is the Geographic Identification/Protection schemes for food and wine in Europe, where the regional and local identity of agricultural products become a source of competition (Winebiz.com, 2010), in the tourism sector as micro-clusters develop destination brands or identities (Michael, 2007a). The Norwegian landscape parks, are efforts to engage actors in developing value-adding based on the uniqueness of local landscapes and culture (Fylkesmannen i Hordaland, 2006).

Only a few cluster studies have examined agricultural industries, and often the geographic demarcation has been too large to provide relevant knowledge about competitive advantage for single firms or smaller sub-regions within the area (Henderson & Burgess, 2010). In Porter's study of The Californian wine industry (1998b), the lack of division of sub regions into different types of wine-producers and markets, between bulkwine producers and boutique wineries, made the study less relevant for understanding cluster dynamics and differences in competitive advantages within the cluster. Henderson and Burgess (2010) noted that in Porter and Bond's (2004) study of the Australian wine industry,both southern and eastern Australia were included in the same cluster, and area which comprises both huge wine-corporations making wine for the export market, but also smaller areas like the Hunter Valley which is classified more as a food, wine and tourism cluster. An analysis of competitive advantage for this huge region would not detect the variety of business strategies and niche markets of smaller sub regions.

Aylward (2004) researched the Australian wine industry, and described a cultural divide between wine sub regions at different stages of business maturity and market focus. While the South Australian wine industry is a mature and export oriented industry, the wine industries in Victoria and NSW are embryonic, with a larger focus on local cellar-door sales, food, tourism, and other value adding aspects of the wine business. These embryonic wine areas proved to be more interlinked with other complementary local businesses, as well as supporting local government agencies and local vocational training and education organisations. The more mature South Australian wine cluster has a tighter connection between similar businesses and collaboration to the overarching, national wine industry research and marketing bodies, as well as close links with R&D at university level. The consequences of these substantial differences between wine regions

in Australia, led Aylward and Clements (2008) to conclude that the lack of regional differentiation in national wine strategic documents, is at odds with users and consumers who were willing to pay more for regionally identified products. Thus there is a case for analyzing wine tourism clusters at a smaller scale than what Porter initially has done for Australia.

In northern Europe the concept of landscape economies, there exists a mutual dependence between an aesthetically pleasing and environmentally biodiverse landscape and economic activity by the single firms within this landscape. The landscape establishes the basis for value-adding for the business, while the landscape changes due to value-adding activities by the firm. In areas where local identity is strong and linked with the landscape, agriculture based tourism clusters evolve through the integration of environmental protection, preservation of landscape and cultural heritage and regional development (Haukeland, 2010). According to Haukeland (2010), in landscape economies, value adding will occur both at the single firm level, and at the social, environmental and cultural level and would require innovation in the private, public, non-profit and knowledge sector.

Finding mechanisms that would support traditional agriculture based clusters to evolve and change focus, is supported by Porter (1998b, p. 89) who states that “a traditional cluster such as agriculture should not be abandoned, it should be upgraded”. As such one could see the emergence of both tourism and other nature or environmentally based industries (such as sustainable energy production) as a natural upgrading of traditional clusters. Little research has been undertaken on the emergence of environmentally or eco-efficiency focused agriculture clusters.

Several researchers have suggested that with regards to environmental awareness, fresh perceptions on environmental action, may be introduced to an area/cluster through “green” (immigrants due to environmental values) or amenity based migration (lifestyle immigrants) (N Argent, Tonts, Jones, & Holmes, 2010; Jones, Fly, Talley, & Cordell, 2003). Knowledge about the socio-demographic characteristics may be the key to understanding differences with relations to several indicators of environmentalism.

In accordance with the review of literature above it can be concluded that it is useful to analyse the two greening processes using a cluster approach where value-adding, social dynamics and environmental action are examined together.

2.6.3 MICRO-CLUSTER THEORY

Michael (2003, 2007a) introduces the concept of tourism micro-clusters as a way to apply Porter's concepts of clusters to small location based industries. The micro clustering approach focuses on the development of complementary products and services to create a unique mix of segmented local products and services that interested and targeted consumers can enjoy as a single entity. The micro-cluster approach is, therefore, relevant for examining the local competitive advantage of tourism based industries, where the focus is on delivering a bundle of attributes based in a special regionalized product or destination. In a wine tourism area, it would thus answer the tourist's demand for a package of experiences, such as wine, food, pampering, and adventure. This demand warrants a different type of cluster organisation and set of activities than the production focus and concentration that is typical of the wine cluster of South Australia. Micro-cluster analysis can thus be a model to assess whether smaller less known tourism destinations can add value through environmental branding.

The basis for Michael's (2003, 2007a) concept of tourism micro-clusters is that there needs to be an optimal clustering of similar businesses (horizontal clustering), upstream and downstream businesses (vertical clustering) and lateral supporting agencies (government or other supportive organisations) which are then complemented by businesses that support and add value to the overall business community in the region (diagonal or symbiotic clustering). In contrast to Porter's cluster theory, Michael's micro-clusters gain competitive advantage through economies of scope, that is, through expanding the market size and creating new niche markets and/or profitability by attracting new types of tourists when products or services in a location become more diverse, bundled or specialised. Successful clustering in small economic communities is based on the benefits (profits, cost saving and welfare benefits) being returned to the enterprises and community in the micro-cluster. Competitive and community advantage is determined by the level of cooperation, trust and synergies between the members, and, therefore, is reliant on the members sharing the same values (Michael Hall, Lynch, Michael, & Mitchell, 2007).

Successful micro-clustering is based on competitive and community advantage through expansion and diversifying markets for products and services provided locally, and less on competition between businesses to reduce prices on products offered. The community will often seek advantages other than business profits, such as keeping jobs, people and rural infrastructure in the

community. A greening process within a community of small businesses, could potentially contribute to micro-clustering effects and offer a competitive advantage if the goals of the process are based on shared values and trust.

2.7 COMPARING MICRO-CLUSTERS' ENVIRONMENTAL BEHAVIOUR

The previous sections in this chapter have reviewed different approaches and models to gain a deeper understanding of the link between small business environmental behaviour and value-adding. The review of institutional theory examined how institutions influence environmental behaviour by the single firm and clusters, whereas the natural resource based view seeks to explain how a business can gain a value-adding or competitive advantage from environmental action; this was then extended to theories on how clusters develop competitive advantage. The complexity of comparing two micro-clusters' environmental behaviour is thus based in the need to both assess the value-adding aspects of the environmental behaviour as well as understanding how contextual factors specific for each country, region and industry influence environmental action in the two clusters. In the following two distinct frameworks, the polycentric approach and the value-adding web are presented as modes for analysing collaborative environmental action in a micro-cluster.

The polycentric approach

The polycentric system for collaborative environmental management seeks to understand that environmental action is performed by self-organised groups in parallel and through many centres of decision making that are formally independent of each other (K. Andersson & Ostrom, 2008; Marshall, 2005; Ostrom, 2010a). The polycentric system is described as a multilayered system where each unit is "nested" within a larger whole, each complementing the others' collective environmental behaviour. Ostrom (2010a) suggests that when individuals or groups are well informed about an environmental problem and about which other organisations/agencies are involved, they are able to organize into groups where trust and reciprocity can emerge and grow, and where substantial environmental action is implemented without waiting for an external authority to impose it. The polycentric approach promotes experimentation by multiple actors and in different settings, it examines local governance and underlying incentive structures, has a territorial focus where scope, fit and environmental outcomes are studied and, as such, can

provide critical knowledge about how environmental action is pursued in different contextual and institutional settings. Ostrom (2010a), Hulme (2011) and Prins et al. (2010) suggest a reframing of the approach to global environmental action and, rather, focus on local eco-efficiency actions even though they do not provide the full solution. The focus on local environmental and economic benefits will create an impetus for further action through positive feedback from the surrounding environment and actors.

The basis for studying polycentric systems for collaborative environmental behaviour is institutional theory focusing on governance issues. Marshall (2005)suggested assessment criteria in the area of process (transparency, fairness, goals and vision, participative, linkages to other groups, decision-making procedures), environmental outcome criteria (improved habitat, soil and water quality, changed land management practices, biological diversity) and socio-economic outcome criteria (relationship built and strengthened, improved trust, increased knowledge, increased employment and changes in existing institutions). While these focus on the efficiency of governance in the organisation, and environmental and social sustainability pursued through the collective environmental action, there are no criteria of value-adding benefits for each business or resource user from collaborative action. As such, this model may not register the value-adding benefits of collective environmental action for the indvidual business.

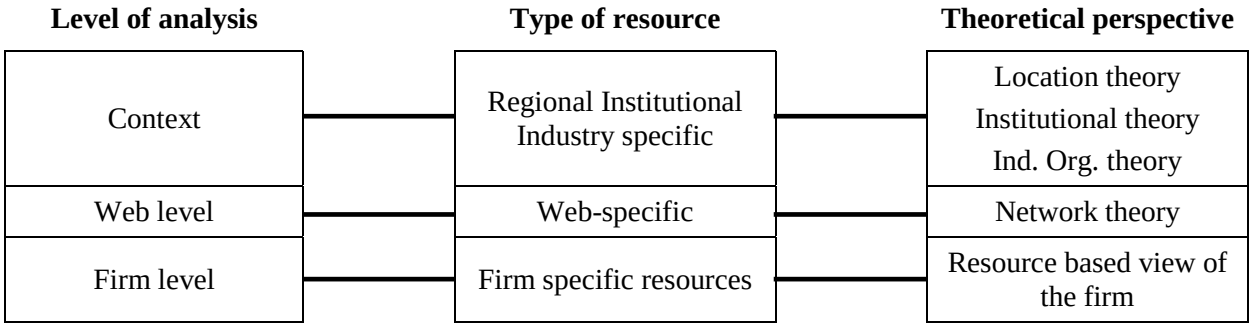
For smaller groups or micro-clusters, collective environmental behaviour is often undertaken based on a variety of institutional pressures and as a business-enhancing strategy. The study of collective environmental action needs a stronger focus on the value-adding benefits for business. The Value-Adding-Web framework focuses both on institutional pressures and on benefits for each firm and for the micro-cluster as a whole, and could thus be a useful framework for analysing collaborative environmental behaviour among business groups.

The Value Adding Web (VAW) framework

Brown et al. (2007; 2010) have developed a multi-level theoretical framework (Figure 2-3) for analysing resources and the competitive advantage of clusters. This approach suggests that a cluster should be viewed as a value-adding web (VAW) of businesses that compete, collaborate and add value to the individual firm, but also to the whole cluster based on available tangible and intangible resources. Competitive advantage is analysed using the resource based view for the

whole cluster through identifying strategic resources at different levels of the web at the firm level, the relational (web) level and at the contextual level.

Figure 2-3 The Value Adding Web



(Brown, et al., 2007).

Brown et al.'s (2010) framework uses a resource based view to analyse context-specific factors that influence value adding (contextual rents) for the single firm and the cluster as a whole. And has been reviewed above, Hart's (1995) natural resource based view provides a way to examine value-adding and competitive advantage of environmental behaviour for the firm. Combining this with the VAW would be useful for also examining how the value–adding of environmental behaviour can be obtained at a micro-cluster level. According to Brown et al. (2010), contextual factors can be location or industry specific or influenced by social, cultural and regulatory institutional factors. Location factors refer to location advantages in the form of type of area, natural resources, climate and others. Industry factors are the factors connected to competition within and with other industries, understanding of the market structure and the threat of alternative products, the barriers for competitors to enter the market, as well as consumer and supplier bargaining power in relation to products or services. Institutional factors are based on country-or location-specific formal or informal norms which have the ability to affect the value-creation potential of the firms in the area. Contextual rents can be assessed and examined based on what are rare and valuable resources at a cluster level, and whether these factors have the potential to generate locational competitive advantage.

While the polycentric framework primarily analyses institutional pressures and outcomes, the VAW suggests using different theoretical frameworks at different levels to understand how the cluster pursues collaborative value-adding action benefitting both the individual firm and the

cluster as a whole. By using the VAW framework to analyse a micro-cluster's greening process, not only the "push" factors (institutional pressures at the context level of analysis) to pursue environmental action will be analysed, but also the "pull" factors of value-adding benefits from environmental action (using the resource based view to analyse the benefits for the firm) will be examined. Network theory can be used to detect how and who, within the value-adding web supports, complements or undermines collective environmental action. A micro-cluster could thus be seen as a nested unit within a larger cluster; for instance the Lovedale wine area is a nested wine area within the Hunter Valley wine region, while Vikebygd is a nested apple farming community within the larger Hardanger fruit growing region. An analysis of the networks that operate within and outside the nested unit of the micro-cluster would provide a larger picture of the support or complementarity of actors and activities in environmental action.

In an agriculture based tourism micro-cluster, the web-level would be the actors that are involved in the two industries (agriculture and tourism), and as such the web specific resources would be the horizontal actors (grape/fruit producers), diagonal actors (tourism, accommodation, catering, adventure-providers), vertical actors (supply and purchasing businesses or customers/guests) and lateral actors (supporting public agencies and services, non-profit organisation and educational institutions). Even though this study will not study the networking aspects of clusters, the classification of actors into categories based on their role in the cluster offers a way to select representative interviewees with a varied perspective on the collaborative environmental action performed by the micro-cluster.

The VAW perspective also provides a framework to analyse and isolate what type of locational resources may be considered rare and valuable, depending on whether they are physically unique (eg. the natural landscape is unique in the world or similar to the neighbouring village), path dependent (eg. community is tightly knit together and developed over generations of collaboration), causal ambigious (eg. a combination of an open minded community and the young and educated heirs of business creates innovation beyond other communities' abilities), economically deterring (eg. the fruit produce in Norway has a limited market as it is only for domestic consumption) and other intrinsic properties.

The VAW suggests using institutional theory for analysing contextual and locational factors that influence how clusters emerge, act and gain a competitive advantage.

Formal institutions that influence a cluster's economic and environmental behaviour include regulations (defining property rights, rules and regulations) and the particular governance regime (policies and regulations) in which incentives to pursue a specific direction are promoted by policy-makers (Williamson, 2000). Informal institutions (traditions, norms, culture) are institutions that are embedded in communities' values and norms about how things are done. Porter (1998b) stated that governments at both national and local level are vital for promotion of successful clusters. These should ensure the supply of well qualified and empowered citizens, first by appropriate infrastructure; second by setting rules for competition and for protecting intellectual property; and third by building and promoting institutions that can support cluster formation and strengthening. He stresses however, that the formation of the cluster must be a process that occurs from the bottom up, not from the top down; they must build on a location's, community's or industry's uniqueness.

Brown et al. (2010) have developed a model based on Hood and Margetts' (2007) framework of tools of government, where policy instruments are divided into voluntary, incentive or mandatory, in a continuum from recommended yet voluntary policies to instructive policies. These policies can be targeted to different levels, the single firm, the cluster, the region, industry or nationally. Andersen (2006) and Brown et al. (2010, p. 32) have described different cluster policies as : 1) broker policies; 2) demand side policies; 3) training policies; 4) international linkages; 5) framework policies. Broker policies can be defined as policies which promote collaboration, information and communication between actors (developing a network of micro-clusters concerned with greening and support for marketing). Demand side policies can be defined as policies that assist the cluster in active market involvement (increasing demand for environmentally certified produce). Training policies are the establishment of learning opportunities for cluster actors, while international linkages would assist in establishing opportunities for international relations (such as training in environmental certification for global export), while framework policies assist in developing overarching social and economic infrastructure. This classification of policies may be useful for analysing how collaborative environmental action is supported by the different actors in the value-adding web.

With regards to environmental regulation, the trend is to promote environmental action through market based instruments as has been discussed in Section 2.2. Yet Porter and Van der Linde (2000) stated that the appropriate environmental regulation is paramount to gaining a green competitive advantage in the next millennium. Tougher environmental standards will enhance competitiveness by pushing companies and clusters to use recourses more productively. Regulations will: 1) create pressure to motivate firms to innovate, 2) improve environmental quality in cases where innovation and improvements do not completely offset the cost of compliance, 3) alert and educate companies about likely resource inefficiencies, 4) raise the likelihood for product and process innovations to be environmentally friendly, 5) create demand for environmental improvement, and 6) create a level playing field during the transition period to innovation based environmental solutions. Bad regulation damages competitiveness, while good regulation enhances competition through creating flexibility and opportunity for innovation by letting industries discover how to solve their own problems, it may thus be an indicator of overall competitiveness (Porter & Van der Linde, 2000; Walley & Whitehead, 2000). Examining how environmental regulations impact on a micro-cluster's greening process, may give indications as to how regulations influence innovation and value-adding. The study of normative and culturally cognitive institutions influencing environmental action will be partly done through the review of literature around contextual differences and cultural values and through the findings from the qualitative data gathering in the two micro-clusters.

2.8 STATEMENT OF RESEARCH QUESTIONS

This literature review has examined different theories to explain what influences businesses or clusters of businesses to pursue environmental behaviour. The issue of a firm's environmental behaviour has previously been examined from a sustainability perspective, a resource based view and an institutionalist perspective, yet few have looked at the environmental behaviour of groups of businesses in clusters.

The call for a reframing of environmental action in relation to solving global environmental problems, focusing more on plurality of modes that promote local eco-efficiencies, has led several researchers (Hulme, 2011; Ostrom, 2010b) to suggest that studying the local initiatives of collective environmental action is important for developing new knowledge about ways to deal with environmental issues. Few studies have assessed how sustainability action affects firms' or

clusters' competitiveness and how each natural environment is linked, as a part of their everyday activities,to the actions of the firms it houses (Gladwin, Kennelly, & Krause, 1995; Kallio & Nordberg, 2006). There has also been a little done to compare contexts and local formal and informal institutions when examining business-driven environmental action (Gjølberg, 2009; Halme, et al., 2009; Hart, 1995). It is therefore justifiable to undertake comparative studies using similar methodologies and concepts, in order to obtain knowledge about differences in business clusters' environmental behaviour under different contexts and institutional frameworks.

The literature review has, on this basis, first reviewed different approaches to sustainability dependent on institutional framework, worldview and environmental discourse (de Vries & Petersen, 2009; Dryzek, 2005; Mebratu, 1998), and within industries (Aall, et al., 2011; Gray & Lawrence, 2005). Due to differences in agricultural and environmental policies in the two countries (Bjørkhaug & Richards, 2008) it is believed that there may be differences in the way small businesses perceive the concept of environmental sustainability. Little comparative research has been done on the perceptions of sustainability in different contextual settings, and this research may provide further understanding of whether this is a useful concept in understanding collaborative environmental behaviour.

Empirical research into business driven environmental action portrays businesses as primarily being concerned with measures that reduces costs or increases profit in a short term horizon (Anton, et al., 2004; Prakash, 2001). Yet, research on small businesses increasingly suggests that small business owners feel normative and cultural-cognitive pressures from society to do the right thing (Collins, et al., 2009; Scott Marshall, et al., 2005), while at the same time seeing the value-adding potentials of their environmental effort (de Oliveira Wilk & Fensterseifer, 2003). More knowledge is required on what and how external and internal pressures, drivers and barriers to environmental action affects small business owners' environmental decisions. Further, the usefulness of cultural values theories in explaining cultural cognitive institutional pressures to undertake environmental action will be explored.

Different contextual and institutional frameworks will according to theory create different networks of stakeholders and supporting actors for environmental action (de Vries & Petersen, 2009; Dryzek, et al., 2002). According to path dependency theory, institutional frameworks evolve over time in relation to the businesses that fall within the cluster's needs as well as in line

with cluster formation, change and potential decline (Arbuthnott, Eriksson, & Wincent, 2010; Atherton & Johnston, 2008; Peters, 2000; Platteau, 2008). A comparative study would thus be able to develop a theory on the how business driven environmental action is supported and perceived by local stakeholders, as well as how these stakeholders have emerged and changed depending on the needs of the businesses involved.

When companies self-organise in spatially limited communities based on similar and complementary businesses, such as agriculture based tourism, it could be defined as a cluster. To analyse environmental action using a cluster framework may produce interesting findings as to how collaboration and competition between businesses in the area of environmental action may add value and prosperity to the whole micro-cluster and the single firm.

Several models of analysis of collective environmental action have been proposed (de Vries & Petersen, 2009; Ostrom, 2009, 2010b), yet many of these have focussed only on achieving environmental outcomes and less on eco-efficiency within a business needing economic sustainability. A cluster approach (Porter, 1998a, 2000), with its basic view to analyse competitive advantage for a region or area based on agglomeration and economies of scale, could provide a different perspective with which to analyse collective environmental action, as well as allowing the researcher to see environmental action in relation to economic sustainability. Recently, more research has been done using cluster theory on tourism destinations (Jackson & Murphy, 2002) and a new model of micro-clusters in relation to tourism has evolved (Michael, 2007b; Michael Hall, Lynch, Michael, & Mitchell, 2007). The micro-cluster theory is based on groups of small businesses promoting a unique destination and businesses and communities benefitting through economies of scope rather than scale. A further extension of the cluster theory is to view a cluster as a value-adding-web (VAW), where value-adding can materialise due to contextual, network and local resources (Brown, et al., 2007; Brown, Burgess, Festing, Royer, et al., 2010). Using the value-adding web as a framework to analyse natural resources based micro-clusters could provide a new way to analyse micro-clusters' environmental behaviour.

From the above review of the literature, several knowledge gaps emerge:

- What are their perceptions of environmental sustainability and environmental action (Section 2.1)? Why do businesses implement environmental action (Section 2.2)? What do they see as important in order for the natural environment and business to mutually benefit

each other? How do they pursue environmental action? How do they organize, and what are the (short and long-term) consequences for the environment and the local community?

- How do businesses deal with environmental issues within different contexts and different national institutional frameworks (see Section 2.3)?
- What are the links between the natural environment, business organisations and competitive advantage (see Section 2.4)?
- May cluster theories and frameworks be useful for understanding the competitive advantage of agriculture based tourism clusters, cluster formation and institutional pressures that act as barriers or drivers for increased environmental action (see Sections 2.5 and 2.6)?

Based on the identified knowledge gaps in the literature review the overarching research question for this study is to gain a deeper understanding of how institutional and contextual factors influence owners of small businesses in a micro-cluster and their perception of sustainability, drivers, barriers, pressures for and value-adding of environmental action. Five underlying research questions were derived from the overarching question;

1. **How are sustainability and environmental sustainability defined in the two micro-clusters?**
2. **How do formal and informal institutions influence business-driven environmental actions?**
3. **How is business-driven environmental action supported by local and other stakeholders?**
4. **What are the drivers and barriers to environmental action in the two clusters?**
5. **How is environmental action perceived to add value to the business and the micro-cluster?**

These research questions point to the need for analyzing or comparing two cases in a different contextual or institutional setting using a similar methodology in order to identify differences. It also calls for undertaking a thorough review of contextual factors that may affect businesses' environmental behaviour in the different cases. And last, the use of cluster and value-adding-web frameworks in the analysis of micro-cluster's environmental behaviour is expected to reveal how small businesses pursue both environmental action and rent-seeking, based on the natural resource base. It will also assess whether this approach is useful for assessing collective environmental behaviour.

The next chapter, Chapter 3, suggests a research methodology, design and procedures to address the above research question in two micro-clusters, one in Norway and one in Australia.

CHAPTER 3 METHODOLOGY, DESIGN AND PROCEDURES

3.1 INTRODUCTION

The previous chapter identified knowledge gaps and relevant research questions for a study of environmental behaviour by small business owners in two agriculture based tourism clusters in Norway and Australia. This chapter locates the study within the appropriate research paradigm, and justifies the selection of methodology, design and procedures for the research. Both quantitative and qualitative data are useful to understand what motivates, drives and hinders small businesses' environmental behavior. After an overview of research paradigms (Teddlie & Tashakkori, 2009) the selection of the pragmatic paradigm and the interpretive mixed methods approach is discussed (Howe, 2011). The chapter further posits that a study of institutional and contextual influences warrants a case study approach (Beckmann & Padmanabhan, 2009) with an embedded mixed method design. The conceptual framework for the study is presented, where quantitative and qualitative data will jointly provide rich and complementary information for theory development. The criteria for and selection of the units of analysis, the two micro-clusters (Michael, 2008), is discussed and described.

A description of the survey design and the guideline for the semi-structured interviews is followed by a section on implementation procedures. The subsequent section on analysis describes how the quantitative and qualitative analysis was undertaken, and how the two types of data were used in academic reports, and when reporting back to community. The last section discusses issues of validity and reliability, finalized with a description of how the ethical conduct of research was ensured.

3.2 THE RESEARCH PARADIGM AND PROCESS

Research can be described as a systematic inquiry, whereby data are assembled, analysed and interpreted in order to understand, describe, predict or control a phenomenon, or to empower individuals or communities (Mackenzie & Knipe, 2006). While the primary objective for a research process is to increase knowledge, the type and validity of knowledge claims from the study depends on the theoretical framework and philosophical stance - research paradigm - that

the research methodology is based on. Research paradigms are distinguished by "how researchers make claims about what knowledge is (ontology), how researchers obtain knowledge (epistemology), what values go into it (axiology), how we write about it (rhetoric) and the process for studying it (methodology)" (Creswell, 2003, p. 6). Today research done under different research paradigms is seen as a valuable and important contribution to knowledge-generation in society; and forms part of a continuous evolution of research methodology based on centuries of philosophical thought and empirical processes of knowledge-generation. The following brief account of the emergence of the mixed methods research paradigm is based on Stigen (1986a, 1986b) and Teddlie and Tashakkori (2009).

3.2.1 EMERGENCE OF THE MIXED METHODS PARADIGM

In the Greek and Roman empires of antiquity (500 BC to 500 AD), the cradles of western civilization, philosophers were seen to create knowledge through deduction from theory about what happens in the physical world, while humans were located in the realm between religion/mythology and the physical world. (Teddlie & Tashakkori, 2009) With the emergence of Christianity during the Middle Ages (500 to 1500 AD), knowledge was instead deduced from religious scriptures and the human condition was seen a result of divine planning (Stigen, 1986b). With the Renaissance (15th century), a paradigm shift occurred, with a new belief in the ability of mankind to improve life on earth, leading to innovations (books, the compass, gunpowder), extensive travel and trade, and new political thoughts.

The Enlightenment (end of 18th century) was based on the fundamental belief that all humans are universally equal and strictly rational, and research having the objective of being performed for the betterment of humankind. Opposed to this was a view that humans' perceptions and decisions may depend on differences in knowledge bases and values according to gender, cultures and individual differences (Abercrombie, Hill, & Turner, 2000; Teddlie & Tashakkori, 2009). These opposing views led to the division between the quantitative - positivist stance and qualitative - constructivist stance in social science research; **the positivist stance,** or "scientific method", creates knowledge through reducing a phenomenon to a measurable research problem, and with the objective of verifying or rejecting a hypothesis with the use of research instruments that measure causality using statistical methods between phenomena. Data should be obtained in an unobtrusive way by an objective researcher (Creswell, 2003; Mackenzie & Knipe, 2006; Teddlie

& Tashakkori, 2009); **the constructivist stance** creates knowledge through understanding how humans perceive reality. Humans will react or behave according to their subjective and circumstantial perception of the reality around them. The researcher thus creates knowledge, theory and meaning from subjective descriptions of a phenomenon (Creswell, 2003; Mackenzie & Knipe, 2006; Tribe, 2001).

As new disciplines in the social and behavioural sciences emerged (sociology, political theory, psychology, anthropology, and education) throughout the 19th century, each discipline developed cultures of dominant research paradigms within them. Often there was a split within disciplines, between the soft humanist practitioners prone to using qualitative methods, and the hard experimental scientific researchers (Abercrombie, et al., 2000; Teddlie & Tashakkori, 2009). The strengthening of social sciences led to innovation and quality improvement in constructivist research methods. Grounded theory, a systematic analysis of narratives in order to develop theories was developed in the mid 60s (Glaser & Strauss, 1967), followed by the concept of thick descriptions - procedures for conducting ethnographic research in the 70s and 80s (Geertz, 1973) and supported by the development of software for analyzing qualitative data (T. J. Richards & Richards, 1994). Researchers also suggested using different methods to cross-validate findings (Denzin, 1978; Jick, 1979) to reduce the bias inherent in any particular source, investigator or method, and force the researcher to analyse a larger variety of explanations of the observed phenomena. Denzin (1978) further defined four types of triangulation; 1) Data triangulation, where different types of data sources are used in the study; 2) Investigator triangulation, involving more than one researcher in a single study; 3) Theory triangulation, using multiple perspectives to interpret a single set of data and 4) Methodological triangulation, the use of multiple methods to study a single problem.

Another direction of social sciences constructivist paradigms was critical theory, (emerging from the Frankfurt school of critical sociology in the 70s) which aimed at analyzing society and problems with a specific perspective of (self-) emancipation from domination. The focus of a minority's perspective, led to feminist, queer, race, and critical education theory, with the researcher's primary objective being to emancipate or transform the people being researched. Studies using critical theory often use action-research methodology, where the role of the researcher is to create awareness and change among people, the minorities or communities being studied (Abercrombie, et al., 2000; Teddlie & Burke Johnson, 2009).

By the end of the 1980's,s the research paradigm wars had calmed down and more dialogue between different methods emerged with a mixed methods paradigm seen as occupying the middle ground between post-positivist and constructionist research paradigms. Based on the pragmatic American philosophies of John Dewey, Charles S. Peirce and William James, it views knowledge as being both constructed and based on the physical world. The objective is to test theories according to workability and applicability. While inquiry is viewed as a way to find solutions to problems, it prefers action to philosophizing and endorses practical theory, it takes a value-oriented approach and endorses democracy, freedom, equality and progress (Johnson & Onwuegbuzie, 2004). This has been criticized as being based on a typical Anglo-Saxon and western individualist culture, focused on solving short-term quantifiable problems and failing to include critical inquiry around long term, societal and social justice issues (Denzin, 2010; Howe, 2004; Kvale, 2008).Yet it is also described as a new hybrid form of research that views the two research paradigms as compatible (Howe, 1988, 2009b); and as being "a bold, innovative, energizing and disruptive discourse" (Denzin, 2010, p. 425).

While mixed methods research (MMR) emerged in the US, primarily in the education and evaluation disciplines, MMR has spread to Europe, and to disciplines such as management, health, nursing, psychology and sociology. MMR studies are less common in the area of environmental behaviour, yet Collins, Roper and Lawrence (2009), in their longitudinal study of small businesses' sustainability practices, used a sequential mixed method methodology, where a national survey, was consequently enriched through focus group interviews.

Table 3-1 shows a summary of the different research paradigms, epistemology, research and researcher approach, strategy of inquiry, strategy of researcher and methods divided into the four main research paradigms.

Table 3-1 Research paradigms and strategies for inquiry

Research Paradigm	Epistemology - Philosophical assumptions on what constitutes knowledge -	Research/ Researcher Approach	Strategy of Inquiry	Strategy of Researcher	Method of Data Collection
Post-Positivist Positivist Determination Empiricists Scientific Method	Knowledge is: Positive data, ie facts that can be measured, verified and replicated. Assumes that science can objectively measure the world. Theory is tested through measurement and deduction.	Quantitative "Measurer/ Verifier"	Reductionist in that it reduces the ideas into small sets that can be tested against theory.	Researcher is a objective/neutral observer. Events happen uninterrupted by researcher.	Surveys Experiments Predetermined instruments Statistical analysis
Constructivist Multiple meanings. Social and Historical construction Theory Generation	Knowledge is: Understanding socially or historically constructed meanings of reality by individuals or groups. Assumes that science can uncover constructed meaning through observation and induced understanding/theory.	Qualitative "Observer/ Meaning-making"	Inductive process, theory is generated "afterwards" out of the data collected in the field.	Researcher is subjectively involved with stakeholders to achieve a good understanding of their world.	Ethnographies Grounded theory Case studies Phenomenology Narrative Research
Advocacy/Participative Critical theory Political Transformative Empowerment Issue-oriented Collaborative Change-oriented	Knowledge is: Uncovering injustice and suggesting actions that would lead to social empowerment. Often focused on feminist, racial, queer and disability.	Qualitative "Emancipator/Action – oriented"	Inquiry is part of a political agenda and should suggest action to improve the situation. Inquiry is practical, collaborative and emancipatory.	Researchers and participants are actively involved in creating awareness and implementing alternatives.	Action research Historical contextualization.
Pragmatism/ Transformative Paradigm Consequences of actions Problem-centered Pluralistic Real-world practice oriented	Knowledge is: A combination of facts and words/meanings in order to solve problems. Combining inductive and deductive thinking, measuring, observing and developing new meanings.	Mixed Methods "Pragmatic problem-solver"	Inquiry is practical and pragmatic in that it uses the paradigms and methods that seem to best fit the problem researched.	Researchers are pragmatic, uses many methods to seek convergence or divergence of analysis outcomes.	Triangulation. Sequential procedures May use both positivist & interpretivist methods, interviews, surveys, Text analysis

Compiled by Sidsel Grimstad from Guo and Sheffield (2008),Creswell and Plano Clark (2007), Creswell (2003), Tribe (2001) and Mackenzie and Knipe (2006).

The explosion in mixed methods theory development in the last five years (with dedicated journal and textbooks) has led to different directions within MMR (Creswell & Plano Clark, 2007; Mertens, 2009; Teddlie & Tashakkori, 2009). MMR may be a situational and flexible choice researchers make in relation to the phenomenon studied (Creswell & Plano Clark, 2007; Teddlie & Tashakkori, 2009) and not linked to a particular mixed methods research paradigm. It may also be closely linked with the pragmatist philosophy, focused on finding solutions through evaluating and measuring what works. This pragmatist mixed methods paradigm can be divided into two strands, the mixed methods experimentalism, where the quantitative dimension is dominating, and where research is performed from an outsider's perspective used for evaluation and solution-finding. Alternatively, the pragmatic paradigm can also be developed from a view of understanding relationships from an insider's perspective, "mixed methods interpretivism" (Howe, 2004, 2011). Quantitative methods would have an auxiliary role; with the emphasis on understanding people on their own terms and in their own social setting. Mixed methods interpretivism, based on democratic involvement, seeks inclusion and dialogue with a variety of actors to ensure all relevant voices are heard (Howe, 2004, p. 54)

Mertens (2007) developed the transformative mixed methods approach which provides a framework for addressing and understanding power issues, social justice and cultural complexity, throughout the research process. The qualitative dimension is needed to gather community perspectives, while the quantitative data provides opportunities to demonstrate outcomes that have credibility for community members and scholars. It builds trust and interactive relationships between the researcher and the community to promote sustainable change in the community.

Table 3-2 deconstructs the mixed methods paradigm into four different strands, based on the strategy of inquiry and researcher. While in the first two strands, flexible social inquiry and pragmatist mixed methods experimentalism, the researcher takes a more neutral outsiders view, in the last two, mixed methods interpretivist and transformative mixed methods, the researcher enters into collaboration with the people or community being studied. While the mixed methods interpretivism has a democratic stance as a basis for involvement (ie as many voices as possible should be heard) the transformative stance has a clear emancipatory and social justice purpose, with the researcher taking the side of the "oppressed" minority. This study will be located in the interpretive mixed methods research strand and the following section will seek to justify this selection of research paradigm and methodology.

Table 3-2 Different strands of the Mixed Methods Research Paradigm

Mixed Method Research Strands	Epistemology - Philosophical assumptions on what constitutes knowledge -	Research and Researcher Approach	Strategy of Inquiry	Strategy of Researcher	Method of Data Collection
Flexible Mixed Method	Knowledge is: A combinination of inductive and deductive thinking, measuring, observing and developing new meanings.	Mixed Methods. "Meaning maker"	Sequential design, where each may be based on different paradigms.	Researcher as neutral knowledge gatherer. Uses many methods to seek convergence or divergence of analysis outcomes and obtain new knowledge and understanding.	Triangulation. Sequential procedures. May use both positivist & interpretivist methods, interviews, surveys, text analysis
Pragmatism **Evaluative or Experimental Mixed Methods**	Knowledge is: A combination of facts and words/meanings in order to solve problems. With a focus on the quantitative study.	"Mixed Methods. External Evaluator/ problem-solver".	Parallel design, Concurrent design to use triangulation to verify solution to problems.	Researcher as outsider, pragmatic, uses different methods to evaluate a process or community and find objectively what works.	Triangulation. Sequential procedures. May use both positivist & constructivist methods, interviews, surveys, text analysis.
Pragmatism **Mixed Methods Interpretivism**	Knowledge is: A combination of facts and words/meanings in order to solve problems. With the main focus on the qualitative study.	"Mixed methods. Democratically inclined, "bottom up" inquirer and inspirer".	Parallel design, Concurrent design to use triangulation to verify solution to problems.	Researcher trying to see the issue more as an insider, through democratic involvement and obtaining all relevant voices in the study. Uses different methods, and through inclusion and dialogues seeks mutual benefit of research.	Triangulation. Sequential or parallel procedures. May use both positivist & interpretivist methods, interviews, surveys, text analysis, case studies.
Transformative Social Justice Mixed Methods	Knowledge is: A combination of facts and meanings in order to uncover injustice and suggest actions and social empowerment. Often focused on feminist, racial, queer and disability.	Mixed Methods. "Transformer".	Mixes quantitative and qualititative methods depending on purpose and audience to assist in transformation process.	Researcher is subjectively involved with stakeholders to achieve a good understanding of their world and assist in empowering them to change it. Participants are involved in methods decisions.	Ethnographies. Grounded theory. Case studies. Narrative Research Triangulation with quantitative methods. sequential procedures.

Compiled by Sidsel Grimstad, based on Creswell (2009), Greene (2008b), Mertens (2007), Denzin (2010), Teddlie and Tashakkori (2009), and Howe (2004).

3.2.2 SELECTION OF RESEARCH PARADIGM AND METHODOLOGY

Environmental degradation and climate change has become part of the global, national and local focus of politicians, businesses and communitiesand individuals. While much research has being done in the area of technology and policies to solve environmental problems, more research is needed on what influences environmental behaviour. Whether it is influenced by how small businesses define sustainability, the pressures they experience to undertake individual and collective environmental action or whether it is influenced by environmental action adding value to the business. Drivers and barriers for environmental action have primarily been studied using quantitative methods, whereas qualitative methods have been used to study the motivations of business owners to pursue environmental action. A mixed methods study that examines environmental action and sustainability from both a positivist and constructionist standpoint may lead to a deeper understanding on how institutions and contexts influence sustainability decisions. The use of the cluster framework, provides a structure that ensures multiple views from both within and outside a micro-cluster, and ensures that the researcher is a democratically inclined inquirer aiming for mutual benefit in the research.

Epistemology is, according to Webster's New World Dictionary, the study or theory of the origin, nature, methods and limits of knowledge (Guralnik, 1984). Mixed methods epistemology views that the use of both a constructivist approach of meaning-making and a post-positivist approach of reductionist measurement can obtain complementary, deeper and more meaningful knowledge than with one method alone. Studying the same phenomena using two different methods installs a cycle of inductive-deductive research processes and may reveal divergence or corroboration of data, contradictions and paradoxes which could provide surprising new knowledge (Greene, Caracelli, & Graham, 1989; Teddlie & Tashakkori, 2009). MMR leads to data and method triangulation (Denzin, 1978) improving the validity of results while increasing the understanding and subtleties of the context in which people or groups of people find themselves.

The study is located within the mixed methods interpretivist research strand, where the quantitative methods plays an auxiliary role in a predominantly interpretivist-qualitative study (Howe, 2004). The lack of knowledge around these issues warrants quantitative methods in order to get a "situational picture" of the current state. The quantitative method is deemed the best way to answer questions that ask "what is there", measuring relationships between dependent and independent variables in real-life settings for a larger sample of people and with limited interference by the researcher (Tharenou, Donohue, & Cooper, 2007). Qualitative methods would contribute to answering why and how environmental action is triggered and reveal differences in business owners' perceptions around and

motivations, drivers and barriers for pursuing environmental action , and what contextual factors influence these behaviours (Miles & Huberman, 1994). Replicating the same methodology in two countries adds complexity, the richness of comparative data and the mirroring of subjective views revealed in two contextually different realities. According to Creswell and Plano Clark (2007), MMR methods are useful for assessing whether there are converging or diverging views from the different data collection strategies and through this process new inferences can be made. In this study, there is a need to both identify broader trends in a community warranting a survey design and to generate theory from qualitative methods warranting qualitative data gathering and a mixed methods design (Creswell & Plano Clark, 2007, p. 32; Howe, 2004).

Ontology is concerned about the nature of existence, reality and being. Constructivists consider that there are many constructed realities, which change depending on who you ask, whereas positivists regard there to be one single reality, the physical, and that this can be perceived or measured as a single "true" reality (Teddlie & Tashakkori, 2009). The mixed methods interpretivist has a "democratic" approach to ontology in research, suggesting that for research to be valid and meaningful there is a need to obtain as many voices on the issue or phenomena as possible. This implies that the ontology for mixed methods interpretivism is constructivist, where perceptions of the world will change depending on who you ask and when you ask. To obtain a full and deep understanding, you need to understand many realities. The mixed methods paradigm, also sees the importance of obtaining survey data, according to positivist thinking, to obtain "situational facts about physical realities" to inform the researcher as to how constructed realities are formed by different voices.

Axiology is defined as the role of values in inquiry. The constructivist considers all inquiry to be value-bound, while the positivist will conclude that it is value free or value neutral. MMR interpretivist axiology suggests that the researcher assumes more of an insider's perspective to fully understand the issues being studied. This involves both a level of inclusion and dialogue with the people and communities being studied, and ensuring that different views and voices become part of the study. The selection of interviewees is done in a manner designed to obtain the maximum diversity of viewpoints, "multiple ways of making sense of the social world, and multiple standpoints on what is important and to be valued and cherished" Greene (2008a, p. 20).

The mixed methods interpretivist approach has as an objective that the research program should pursue research of mutual gain to the businesses/people/communities being studied as well as knowledge creation. Mutual benefit of the research is sought through reporting results back to

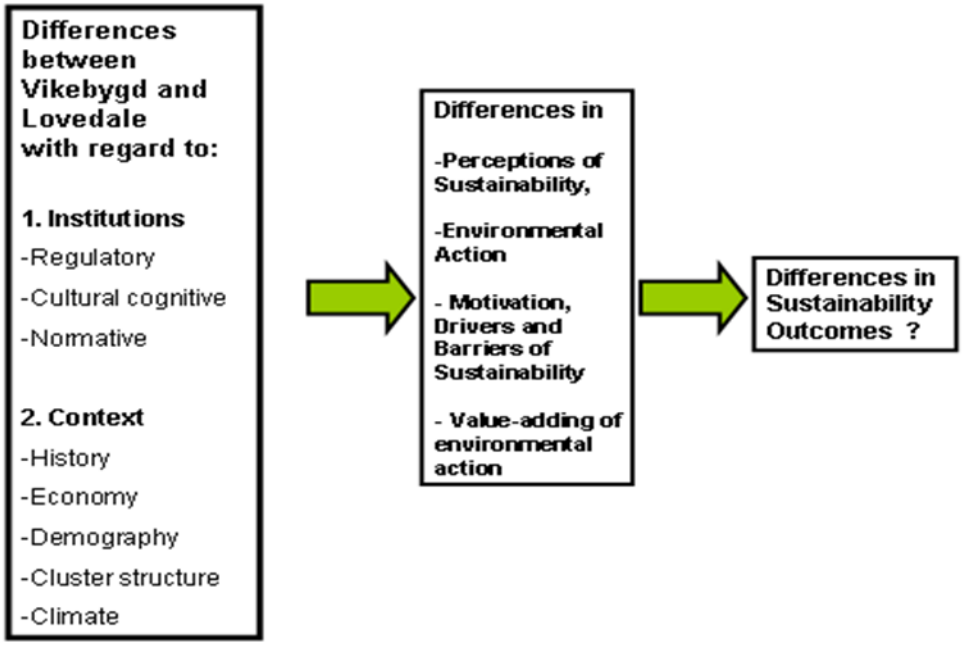
communities, discussing comparative statistical figures and the reasons for differences in environmental concern and behavior.

3.2.3 CONCEPTUAL FRAMEWORK

The overarching idea of this mixed methods study is that institutional and contextual factors in which the businesses are immersed will influence: (1) the way the business owners perceive the concept of sustainability and environmental sustainability, (2) what external and internal pressures are felt by the business owners to pursue environmental action, (3) what drivers and barriers exist for undertaking environmental action and(4) what is perceived as value-adding environmental action.

The conceptual framework below (Figure 3.1) shows the connections between institutional, contextual factors and impacts on business owner's perceptions. In both the quantitative survey and in the semi-structured interviews the same issues and phenomena are studied. While the physical sustainability outcome is not measured or quantified in this study, quantitative and qualitative data on what type of environmental action businesses undertake will be collected.

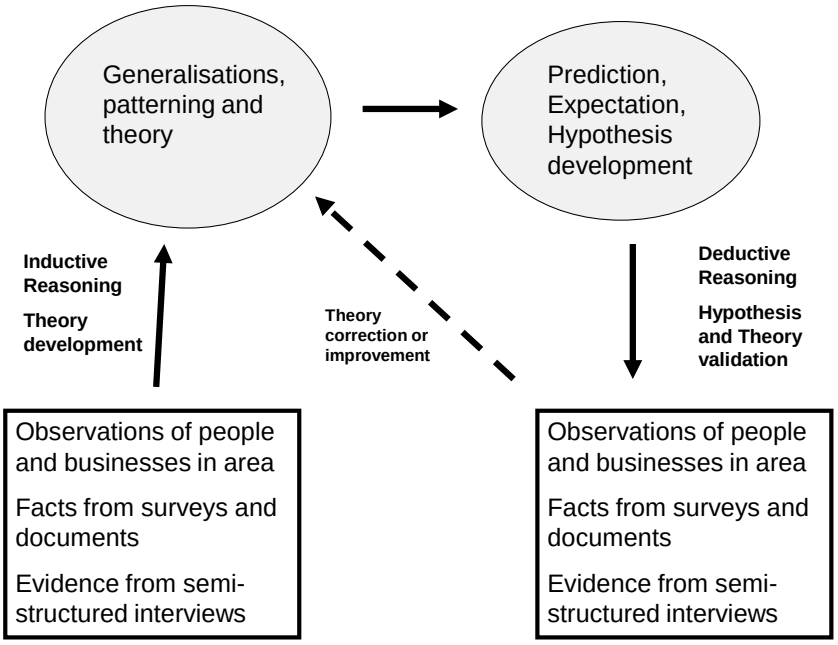
Figure 3-1 Conceptual framework for the study



The development of theory is accomplished through a process of induction and deduction as described by Teddlie and Tashakkori (2009). As can be seen from the Figure 3-2, observations about the area and people, combined with facts (from surveys and documents) as well as evidence from interviews, are used to induce theory, patterns, themes and generalizations. These theories are then used for

predictions or hypothesis development which can form the basis for studies which will reject or accept the predicted behaviour or theory. A feedback loop happens when the theory is not rejected or fully accepted, but needs correction or improvement.

Figure 3-2 The Inductive –Deductive Research Cycle of Mixed Methods Theory Development



Adapted from Teddlie and Tashakkori (2009).

In a Mixed Methods Design, this inductive-deductive research cycle occurs within the project, while in a pure quantitative or qualitative study the focus would be either on inductive (qualitative) or deductive (quantitative) research processes. For this study, it can be deduced from institutional and cultural values theory that there will be statistically significant differences between the survey results from the two locations due to contextual and institutional variations, while the qualitative findings from interviews and contextual studies, can be used to induce theories regarding how these contextual differences may influence businesses' environmental behaviour. It is vital that the two methods are studying the same phenomenon, so that the findings can triangulate or complement each other. The quantitative and qualitative study will be undertaken in parallel as both are considered to obtain situational facts or subjective descriptions and thus should not influence each other. Through performing these two types of studies in parallel, simultaneously and interactively, Greene et al. (1989) suggest that the best interpretability of findings is obtained.

3.3 RESEARCH DESIGN

The research design selected for this study is a comparative case study using an embedded mixed methods design to examine the same phenomenon; the environmental behavior of small business in two contextually and institutionally different locations.

3.3.1 COMPARATIVE CASE STUDY OF TWO MICRO-CLUSTERS

Yin (2003, p. 13) describes the comparative case study design as "an empirical inquiry that investigates a contemporary phenomenon within a real-life context, …when the boundaries between phenomenon and context are not clear". Using a case study approach is recommended for analyzing complex institutional contexts and processes in the area of sustainability, agriculture and environment (Alston, 2008; Beckmann & Padmanabhan, 2009). Beckmann and Padmanabhan (2009, p. 363) specifically point to the fact that "they offer a large degree of freedom for paying attention to the deliberation of actors, the ways in which they perceive both information and other actors, build perceptions about the future, or formulate arguments to convince others. Case studies, so far as they focus on limited numbers of units - are very flexible with regard to the number of actors considered and the sources of information and data that can be utilised. The precise analysis of discourses, intentions, arguments of actors is only possible via a case study approach".

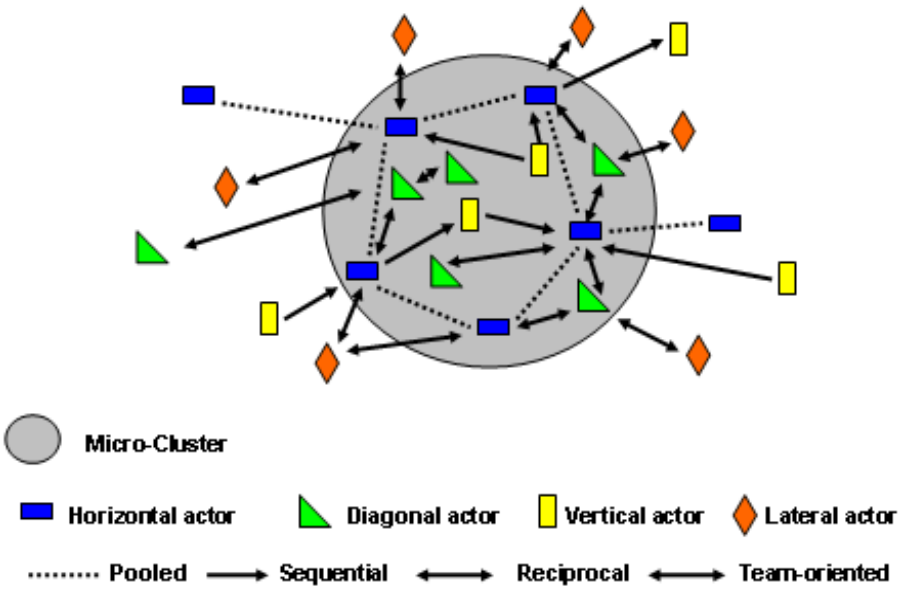
Yin (2003) and Eisenhardt and Graebner (2007) recommend having more than one case study as these will serve to replicate, contrast or extend theory development. This study has two cases located in two substantially different contexts (a recently established micro-cluster in Australia versus a1000 year old traditional micro-cluster in Norway) and institutional frameworks (low versus high government involvement in environmental action) and can be defined as a comparative study of "polar types". Eisenhardt and Graebner (2007) suggest that with sample extremes it is easier to observe contrasting patterns of constructs and relationships increasing theoretical insights and theory development.

Rousseau and Fried (2001) described the importance of focusing on the same phenomena and describing this in detail in each case, in order to identify common or different features. This study focuses on a specific issue, environmental behaviour among small businesses, using identical multiple methods in both cases. The description of the contextual features (Chapter 4) of the two cases follows identical headings and literature reviews to further reveal differences between cases in a systematic manner.

The units of analysis in this study are two spatially defined micro-clusters, Lovedale in Australia and Vikebygd in Norway, comprising small businesses involved with agriculture and/or tourism. Michael's (2007a) framework for tourism micro-clusters identifies four types of actors – horizontal, vertical, diagonal and lateral, as will be described in more detail in Sections 3.4.4).

Brown et al. (2007) defines a cluster as a value adding web (VAW) where actors compete, collaborate or provide each other with products or services. As such, their relationships can be described as either competing for the same resources (pooled), dependent on each other's resources (sequential), mutually dependent on resources (reciprocal) or dependent on collective efforts to obtain resources (team-oriented). As both Vikebygd and Lovedale are small micro-clusters nested within bigger clusters, namely the Hardanger fruit and tourism region and the Hunter Valley wine tourism region, most lateral and vertical actors are located outside the micro-cluster (see Figure 3-3 below).

Figure 3-3 Value-Adding Web of Micro-Clusters



Adapted from Brown et al. (2007)

The model shows that in order to examine the issue of environmental behaviour among small businesses inside the micro-cluster, it would be necessary to obtain the views of actors both internal and external to the micro-cluster.

3.3.2 SELECTION OF CASES

When faced with global and local environmental issues, it would be expected that the way/mode and means by which a business, a business cluster or society will respond to the environmental challenge will differ according to the country's formal and informal institutions. The problems and concerns of environmental degradation are expected to be more poignant in agricultural-based tourism areas where the natural environment and landscape comprise the basis for both production and tourism. The selection of cases in this study was made using the assumption of commonality in size and purpose, while still having institutional and contextual differences as listed below. These are expected to provide adequate contrasting elements to develop theory (Eisenhardt & Graebner, 2007; Yin, 2003).

Commonalities between cases:

- Equal number of businesses (between 60 - 80)
- Same type of businesses, agriculture based tourism businesses
- Self-organised geographical delineation of micro-cluster
- An established “micro-cluster” organisation (Lovedale Chamber of Commerce and Vikebygd Landscape Park)
- An on-going sustainability process (Greening of Lovedale and Vikebygd Landscape Park).
- Micro-cluster located within a larger agricultural district.
- Both Australia and Norway are resource rich wealthy western democracies.

Differences between cases:

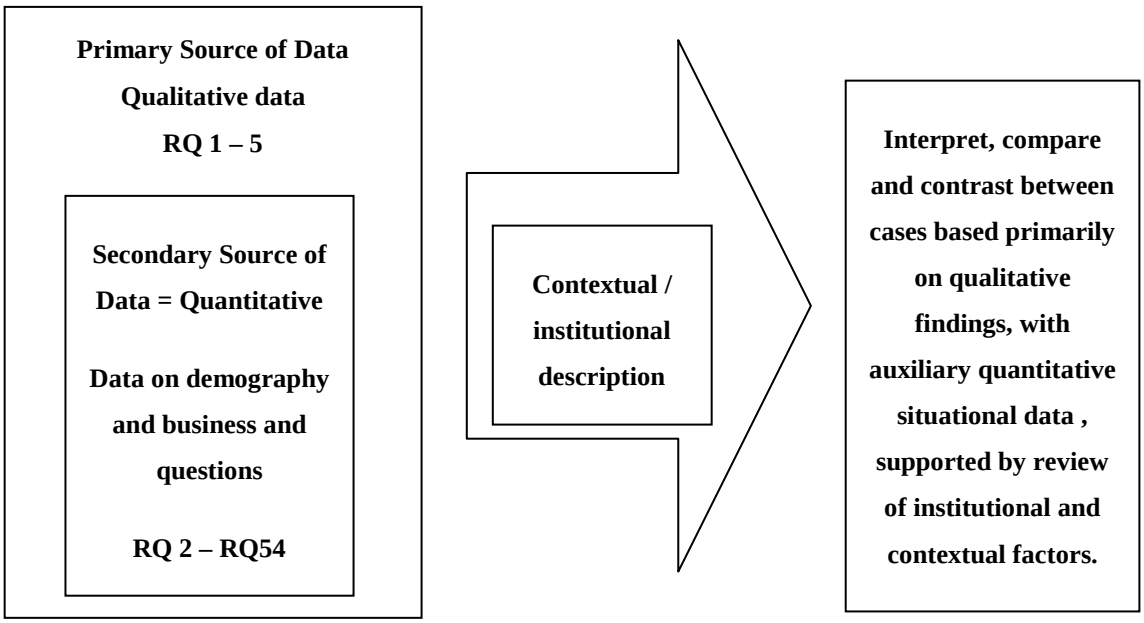
- Contextual differences, such as demography, economy, geographic infrastructure
- The climate in the two micro-clusters are of two extreme opposites
- Institutional differences, Norway being a coordinated market economy, while Australia has a liberal market economy. Norwegian farmers are amongst the highest subsidy beneficiaries in the world, while Australia has among the lowest subsidy levels.
- Norwegain agriculture produces for a domestic market, while Australian is export-oriented.
- Norway has been a global and national leader on environmental issues, and has substantial public involvement in environmental reform. In Australia, environmental action has been viewed as an arena for volunteer and business driven action, while environmental policy decisions regarding climate change have been stifled in political adversarial debate.

3.3.3 EMBEDDED MIXED METHODS DESIGN

The study can be described as a complementary and embedded mixed-method study, where the qualitative and quantitative methods are used to measure overlapping, different and complementary data on the same topic. Through this process, theory development will be supported, as contradictions, convergence and differences will be identified. (Creswell & Plano Clark, 2007). Greene (2008a) suggests that a degree of interdependency between the different methods should be sought through the conceptual design and implementation of the mixed methods project. There should also be a clear statement as whether one method has priority over the other, and whether the methods are implemented sequentially or in parallel. In contrast to triangulation, where the research intent is to find convergence or divergence about the same issue using two different methods, the research intent of complementary mixed methods is to examine similar issues but different aspects of these issues using a variety of methods. In an embedded mixed methods study, one method has more importance than the other, with auxiliary methods being embedded in the other (Creswell & Plano Clark, 2007).

As the population for this study was a small micro-cluster of around 70 businesses, the sample size is not large enough to make quantitative data statistically significant for a larger area, and can only provide descriptive statistical information about the micro-cluster. The interviews were held with actors both from within and outside the cluster to obtain a varied and complementary view of the selected phenomena. The emphasis for this study is therefore on the qualitative data from the semi-structured interviews and document analysis. In this research, the quantitative study is embedded in the qualitative study to gather background quantifiable data from more respondents than would be possible through semi-structured qualitative interviews. To obtain rich and overlapping data (see Figure 3-4), different methods are used for the same research questions in the study.

Figure 3-4 Embedded mixed methods design



(Adapted from Creswell and Plano Clark, (2007, p. 68)

RQ 1. How are sustainability and environmental sustainability defined in the two micro-clusters?

RQ 2. How do formal and informal institutions influence business-driven environmental actions?

RQ 3. How is business-driven environmental action supported by local and other stakeholders?

RQ 4. What are the drivers and barriers to environmental action in the two clusters?

RQ 5. How is environmental action perceived to add value to the business and the micro-cluster?

The figure above shows how the survey will include questions pertaining to RQ2, RQ3 and RQ4, in addition to factual information such as type and structure of businesses, environmental concern and action, environmental knowledge providers and demographic data. The qualitative interviews will include semi-structured questioning with an objective to obtain information pertaining to research questions (RQ1 to RQ5). In this embedded mixed methods study, the same research questions will be examined using both quantitative and qualitative methods and then mirrored with descriptions from the literature review of contextual and institutional differences.

3.3.4 SURVEY QUESTIONNAIRE

The focus of the survey was to gather information regarding the extent of and pressures to perform environmental action undertaken by small agriculture based tourism businesses within each of the two micro-clusters. More specifically, the questions would include, background information on the

business and business owner, concerns over environmental issues, what types of environmental action had been pursued, perceived external and internal pressures, drivers and barriers for adopting sustainability practices and from where environmental knowledge was obtained.

To increase internal construct validity, the survey instrument was based on an instrument that had been well-tested and used for the Longitudinal National Study of Small Business' Sustainability Practices in New Zealand in 2003 and 2006 (Collins, et al., 2009). It was developed at the Waikato Management School in 2003, tested among the New Zealand Sustainable Business Network and had been streamlined into a short concise instrument devoid of jargon. While Collins et al.'s (2009) instrument included both environmental and social sustainability issues (i.e. human resources and employment relations) this study focused on environmental sustainability.

For Vikebygd, the survey instrument was translated into Norwegian by the researcher, subsequentlythe Norwegian language was checked and back-translated by an English-Norwegian editor, Karl Kerner, Agro-Lingua, specialist in agricultural and environmental academic language. The use of words and Norwegian agricultural jargon was also checked with Norwegian officials from both agricultural and environmental authorities.

In order to improve the questionnaire, pilot tests of the English and Norwegian questionnaire were performed with two small business owners in each cluster, as well as with senior academics in quantitative research. The surveys were amended, according to feedback, making them suitable for the type of business and environmental issues relevant for the two areas. Questions regarding business owners were moved to the end of the questionnaire where the survey respondent felt more comfortable with the survey. In accordance with the mixed methods interpretive paradigm, the researcher discussed with the cluster organisations how the questionnaire could be extended to obtain information useful for them. Accordingly, some additional questions were included regarding the environmental efforts the cluster organisation should be concentrating on and how to best communicate with members. The two survey questionnaires used in Australia and Norway are found in Appendices 1 and 2.

3.3.5 SEMI-STRUCTURED INTERVIEWS

The interviews were conducted as semi-structured interviews which, according to Lee (1999), have an overall topic, general themes, targeted issues and specific questions. The justification for undertaking interviews and not focus groups was in order to obtain as many divergent views as possible (Tharenou, et al., 2007). The researcher anticipated that environmental action and issues

might be a contentious topic especially in the Australian case, due to the study area being located in an area with substantial coal mines and coal-fired powerstations and where Coal Seam Gas extraction is being planned. It was therefore assummed that talking one on one would provide interviewees more opportunity to speak their minds without being guarded towards a neighbour working in the mines or a business competitor. For consistency reasons this approach was also adhered to in the Norwegian case.

An interview guide was developed from the selected research questions and then extended into relevant interview questions as suggested by Kvale (2002). He states that it is more important to ask questions in interviews starting with “how” and “what” to obtain spontaneous descriptions from the interviewee. If asking “why” questions, you will obtain the interviewee’s own rationale for certain behaviours, however this may lead to an intellectualization of the interview. Kvale (2002) stresses, that it is first and foremost the researcher’s task to find out why something has happened. The original interview guides in English and Norwegian are displayed in Appendices 3 and 4. The interview guide also include reminder notes on the ethical conduct of the interview, such as the handing out of an information statement on the study, the presentation of the rights of the interviewee, and the signing of a participant consent form.

A pilot interview in English was held with key informants in Lovedale, in order to detect and rectify potential problems. Two adjustments were based on experiences from the pilot interviews: 1) Initiate interviews with questions that will promote a relationship to create a more open atmosphere and ease the interviewee’s transition into the more difficult questions such as perceptions on sustainability. Unlike the strategy for quantitative questions, where personal questions were left to the end, in the interviews questions around personal life, environmental action and business experience were made into initial questions. The interviewer found that through showing an interest in the interviewee’s background and life experiences, as well as concrete environmental improvements, a good atmosphere for asking deeper questions about drivers and barriers for sustainability actions was achieved. 2) Obtain information about concrete environmental action done by the interviewee early in the interview. Even though questions on environmental action were not initially included in the interview guide, the researcher found that through asking more technical questions on environmental action, a good overview was compiled as to how committed and knowledgeable the interviewee was, and whether they had obtained external assistance towards undertaking these actions. Through this, very good qualitative data was obtained, leading naturally into the core questions about drivers and barriers for environmental action.

Since data gathering was initiated in the Australian case, experience from this work was integrated into the field work procedures in the Norwegian case. Undertaking the same interview in two different contexts and languages offered challenges unforeseen to the researcher. The context and demographic characteristics of the interviewees were so different that keeping strictly to the interview guide became difficult. In the Lovedale context, business owners were often retired corporate professionals with business and market acumen, whereas in the Vikebygd context, business owners were primarily farmers delivering their produce to fruit co-operatives. This poses mixed challenges when trying to explain the purpose, theory and concepts of the study so that both Australian and Norwegian non-academics could understand and relate to it. The phrasing of questions was developed through experience, to avoid misunderstandings and avoid leading and overly philosophical questions.

3.3.6 DOCUMENT AND WEBSITE ANALYSIS, AND OPPORTUNISTIC DATA COLLECTION

The study of documents is seen as unobtrusive and non-reactive for the subject or phenomena researched (Tharenou, et al., 2007) and provides triangulation of results from the two data collection methods. Eisenhardt (1989) states the importance of having a process of continuous data-analysis and data gathering when using case studies for theory-development. Several scheduled visits during the PhD period would seek to ensure continuous data-gathering and observation of the two areas. Visits would also made it possible to assemble documents and be informed of issues particularly related to the context of the two micro-clusters being researched, such as accounts of history of the area or industry, and agricultural and environmental policies, as well as demographic data and surveys in the area. These documents and websites will be reviewed and referenced when writing Chapter 4 on context.

3.4 RESEARCH PROCEDURES

Johns (2001) discusses the importance of being aware of context when describing research procedures. Based on suggestions by Rousseau and Fried (2001, p. 6), contextual factors that may influence the motivation and role of the researcher, access to the selected sites, selection of respondents and interviewees and language is discussed below.

3.4.1 MOTIVATION AND ROLE OF THE RESEARCHER

Kayrooz and Trevitt (2005) suggests that funding arrangements may influence the purpose, design and impact of a research study; whether it is curiosity driven or needs to comply with sponsors

requirements. The degree of controversiality in subject matter is may influence funding possibilities and research procedures. In this study, all work and travel expenses were covered by the PhD scholarship research funds from the University of Newcastle. The motivation for the study must be said to be pure knowledge gathering and not driven by a sponsor. However, the research agenda is influenced by the researcher being a Norwegian national, having worked for 2 decades in the area of environmental policymaking and sustainability research both in Norway and internationally. While environmental policies may be a contentious issue at a national level, particularly in Australia, it was never felt that interviewees were reticent in talking about what environmental actions they were doing or not doing and why and what problems they encountered.

Kayrooz and Trevitt (2005) suggest that the background, values and role of the researcher is important for understanding how the researcher relates to the subject matter and people studied. My educational and professional background, having a tertiary degree in agriculture, and worked for 2 decades on environmental issues in relation to agriculture, gave me substantial confidence on the technical side to approach these issues. In addition, a Master of Business Administration from 2005 provided a good understanding of business managers' ways of strategic thinking. Combined, this made it easier for interviewees in both agriculture and tourism businesses to relate to me as I "knew what they were talking about", and it helped in gaining trust and entering into conversation about relevant issues with interviewees in both communities.

According to the values of the researcher described in the mixed methods interpretive design, the researcher should establish mutual benefit for the study. While the communities did not pay me, they would give of their time and effort, thus I would try to make the research useful in some way for the communities and "give back" in ways that would not compromise my role as an independent researcher.

3.4.2 ENSURING ACCESS TO RESEARCH SITES

The selection of the two sites was a result of the researcher's good fortune and networks in two countries. Through a Norwegian network of previous work colleagues in the agricultural and environmental sectors, information about the establishment of landscape parks in Norway was obtained. It also came to my attention that there was to be an inaugural conference on the landscape parks in Stalheim, Norway, in May 2009. Upon application, the Tom Farrell Institute at the University of Newcastle made it possible for me to participate in this conference which provided an excellent introduction to the philosophy behind the landscape parks, and subsequently led to the first visit to Vikebygd.

Through an international cluster research group where both Professor John Burgess and Dr. Jennifer Waterhouse were members, I was informed about the environmental efforts of the Lovedale Chamber of Commerce, and the idea to compare these two processes gradually materialized. Through Dr. Jenny Waterhouse, who owns a vineyard in the Lovedale area, the Lovedale Chamber of Commerce was contacted about the possibility of undertaking a study in their area.

3.4.3 SELECTION OF RESPONDENTS AND IMPLEMENTATION OF SURVEYS

The purpose of the survey was to obtain "situational facts" about sustainability issues and practices among businesses that were within the micro-cluster and active in the micro-cluster organization, the Lovedale Chamber of Commerce and the Vikebygd Landskaps-park shareholding company. Yet, there were substantial differences between the two micro-cluster organisations, as will be described below.

The Lovedale Chamber of Commerce is a membership organization with fee-paying business members (67 members at end November 2009) located within the defined Lovedale area. The survey questionnaires were distributed to all the 67 members of Lovedale Chamber of Commerce, either directly during the Annual General Meeting (AGM) held on Monday 9th November 2009, or through post with prepaid return envelopes enclosed. Twenty two members (33% of the members) received the questionnaire at the AGM in 2009. Of these, 20 members returned the completed questionnaires on the evening. Of the 67 businesses members, 31 questionnaires were returned, amounting to a response rate of 46%.

The Vikebygd Landskapspark was established and registered in the National Business Register as a separate shareholding company on 26th March 2009. In total, 274 shares valued at 1000 NOK each were sold to 72 shareholders. Of the 72 individual shareholders, 52 were located inside Vikebygd, while the remaining shareholders were individuals, businesses, authorities or non-profit organisations located adjacent to Vikebygd or with a relationship to Vikebygd. The two largest shareholders (50 shares each) were Ullensvang Council and the wholesaler T.L. Måkestad which is supplied by the Nå fruit co-operative. The Vikebygd Shareholding Company is thus primarily owned by Vikebygd farmers. This is confirmed by figures established by Måge (2008) who reported around 50 farms and around 24 small and medium sized other businesses in the Vikebygd area. It is expected that not all Vikebygd farmers are shareholders in the landscape park. This landscape park shareholding company is different to the Lovedale Chamber of Commerce in that individuals, non-profit organisations, associations and authorities can also be shareholders, and no annual membership fee is charged. Both have a goal to develop the area as a sustainable destination.

Around 50 questionnaires were distributed at the AGMheld at Nå Bygdehall on the 20th March, 2009. While the meeting was an open community meeting, only Vikebygd shareholders were requested to fill in the survey questionnaire. During the AGM, 17 completed questionnaires were received. Fifteen questionnaires and pre-paid return envelopes were hand-delivered to the mailboxes of shareholders absent from the AGM, of these only 4 responses were received in the mail. Thus, 21 survey responses were returned, resulting in a response rate of 40% (Table 3-3).

Table 3-3 Survey response rate for Lovedale and Vikebygd micro-clusters

	Lovedale	**Vikebygd**
Total surveys distributed	67	52
Surveys returned @ AGM	20	17
Surveys returned by mail	11	4
Total returned	31	21
Response Rate	**46%**	**40%**

The survey questionnaire comprised two double-sided sheets of paper, taking approximately15-20 minutes to complete. The survey is based on implied consent; which presupposes that when respondents fill in the questionnaire (which is voluntary) they have given consent to participate.

3.4.4 SELECTION OF INTERVIEWEES AND UNDERTAKING THE INTERVIEWS

The selection of candidates for the semi-structured interview was based on the classification of actors in value-adding-webs according to Brown et al. (2007) and actors in tourism micro-clusters (Michael Hall, et al., 2007): 1) horizontal actors - businesses are within the same business (apple or grapegrowers) and therefore competing for same resources, 2) vertical actors are suppliers or buyers of produce/products/services (winemakers, viticulturalists, suppliers of inputs), 3) lateral actors are service or knowledge providers to the businesses in the cluster (public agencies or authorities, agricultural extension, research, education, business associations, tourism organisation etc.) and 4) diagonal or complementary actors (Michael, 2007a) are businesses that complement the main business in a tourism destination.

In both micro-clusters, agriculture is considered the main business, and complementary actors would typically be businesses in accommodation, adventures/tourism experiences, food and services. In Vikebygd these would also comprise non-profit organisations such as museums. The selection of candidates for interviews was purposefully undertaken according to the following criteria:

- Ensure a diversity of horizontal, diagonal, vertical and lateral actors
- Ensure a variety of actors within and outside micro-cluster

- Ensure a variety of business sizes and gender of business owners
- Ensure as many lateral actors as possible who are active in the promotion of environmental sustainability and agriculture-based tourism.

In Lovedale, a substantial number of volunteers came forward during the AGM. In order to avoid a bias, the researcher made additional contact with actors who did not volunteer at the AGM following a snowball sampling (networking) method asking interviewees to recommend other candidates with similar or dissimilar views, different business types or sizes etc.

While the original intention was to include only horizontal and diagonal actors within the geographical boundary of the micro-cluster, as the study merged, it became apparent that it would be important to also obtain an "outsiders" view from "competitors" of the micro-cluster activities, so a few external horizontal and diagonal actors were therefore included. While all quantitative data in Lovedale was from actors within the micro-cluster, for the 27 interviews, 52% (14) of the interviews were performed with actors inside the micro-cluster, while the other 48% (13) were performed with different actors outside the micro-cluster. In Vikebygd, no volunteers came forward during the AGM, however, when contacting each actor directly, the researcher was met with a positive response every time. Again a snowballing method was used to extend the number and diversity of responses. Of all the 24 interviews, 46% (11) were performed with actors inside the cluster, while 54% (13) with actors outside the micro-cluster.

The selection of interviewees from both the vertical and lateral category was done according to the facilitating or services role they had vis-à-vis the business micro-cluster even if they were located outside the geographical area. Most of these lateral and vertical actors were identified during interviews with horizontal actors. However, some were also identified by the researcher according to expected responsibilities for policy implementation (council, state/county departments, and other agencies involved in environmental policy/incentives etc) or the potential or role they would have in influencing the micro-cluster businesses towards more environmentally firendly practices. In Norway this would for instance be with the fruit co-operatives and extension services, while in Australia, due to the lack of governmental agencies, interviews were held with private viticulturalists and entrepreneurial environmental entrepreneurs in the area of grapegrowing and wine manufacturing, (ecopreneurs) (Schaper, 2010). This selection process is classified as purposive sampling, (Punch, 2003, p. 193).

The duration of each interview was between 45 and 90 minutes. Often respondents were keen to show some of the environmental action they had undertaken, so the interview would be followed by a tour of the property. These tours would often provide valuable information about practical problems

and innovations, which led to a deeper understanding of the issues researched. The researcher did not receive any rejections of requests for interviews. No complaints about interview procedures were received by the researcher or supervisors and no request for transcript.

Appendices 5 and 6 comprise an overview of attributes of Australian and Norwegian interviewees and the interview implementation schedule. As can be seen from both cases, actors often had multiple income streams, making it difficult to classify these small businesses into one specific category of actor.

Language is a factor of power that influences the interview situation, and an interviewee who does not speak their mother tongue is at a linguistic disadvantage and may withdraw or withhold information which again may influence the validity of respondents (Marschan-Piekkari & Reis, 2004). In order to mitigate such a power imbalance, all relevant material for the study was made available in both Norwegian and English; this included the survey questionnaire, the consent and information forms, as well as the interview guide for the semi-structured interviews. The researcher is herself bilingual in English/Norwegian and translated the English documents to Norwegian, verified by an external consultant. The interviews were thus conducted by the researcher in Norwegian or English, thus avoiding the need for translation.

The interviews were recorded on a digital recorder and transcribed verbatim. The majority of transcriptions were performed by the researcher herself, while 10 of the Lovedale interviews and 9 of the Vikebygd interviews were performed by external transcribers. The transcriptions were corrected and checked by the researcher before the coding and content analysis of the transcriptions was undertaken, partly using NVIVO software and partly manually by the researcher.

3.4.5 OTHER DATA COLLECTION METHODS OBSERVATION AND CONTACT WITH COMMUNITY

Eisenhardt (1989) states the importance of having a process of continuous data-analysis and data gathering when using case studies for theory-development. Since the initial data-collection started in March 2009, there has been many opportunities to obtain observational data and gain insights into the contexts in which the two clusters operate. In addition to the survey and interviews, observational data and social media were found to be useful for gaining insights into the contexts of the two clusters. These could be open or closed, formal or informal meetings that the researcher was invited to attend as well as conferences in the area about themes of interest to the cluster (See Appendix 7 for the log trail of visits). After each encounter, notes and reflections on the community and the role of people

were made. The log trail also exhibits that less time was spent in Vikebygd for obvious geographical reasons, which meant fewer impressions of everyday life and a reduced experience of community dynamics. However, through reading online newspapers and joining social media sites/groups, the researcher kept in contact with issues of concern to Vikebygd and in the landscape park networks. Facebook sites have been developed for many of the small businesses in the landscape parks, for a variety of preservation projects in Vikebygd as well as the Hardanger Museum at Aga.

Due to Lovedale being in the vicinity of the researcher's home, day trips and access to local newspaper articles and other media coverage were relatively easy. Interestingly, the Lovedale community was slower than Vikebygd to start using social media, however in late 2011 Lovedale established a facebook page which has since been a good source of information on events, business matters and environmental action and discussions. Vikebygd residents on the other hand were quite slow to answer emails, while the opposite may be said about Lovedale residents, who for the most part promptly answered emails.

3.5 DATA ANALYSIS AND REPORTING

3.5.1 SURVEY ANALYSIS

The survey analysis was initiated by entering the data from both the Norwegian and Australian case into SPSS. Some amendments were made to the Norwegian survey questionnaire based on experience from the Australian survey. These included more open questions in order to identify which organisations were important with regards to environmental knowledge, drivers and barriers for the business. In addition, the secretary of Vikebygd Landscape Park suggested I use the survey to obtain more data about what environmental issues should be targeted and how the landscape park should work and communicate with the community.

There were also some areas of investigation that made using the same questions and responses difficult, due to differences in legal systems. As far as possible, all options within each question for both countries were maintained, yet in a few instances this led to confusion for some respondents in Norway. An example of this is the question about "Type of Business". In Norway, a farm or agricultural property is always classified as a sole trader, in Australia a vineyard could be classified as sole trader, family business (family trust), private or public company. Another issue was that the systems and requirements of environmental planning and certification labels were different in the two countries due to different legal and policy frameworks.

Minor corrections were made to obvious mistakes on the questionnaire before entering data into SPSS, however major differences due to legal and policy variations are discussed in the comparative chapter.

With embedded mixed methods design, the quantitative part of the study is auxiliary to the qualitative part. The survey questionnaire was primarily used for descriptive statistical analysis, in order to obtain a "situational picture" regarding demography, business types, environmental action, external and internal pressures and driver and barriers for environmental action. The quantitative method is deemed the best way to answer questions that find out "what is there?", measuring relationships between dependent and independent variables in real-life settings for a larger sample of people and with limited interference by the researcher (Tharenou, et al., 2007).

Descriptive statistics involved summarizing numeric data from from each case from yes/no questions or Likert scale questions and recording them into easily interpretable tables, graphs or percentages (Teddlie & Tashakkori, 2009). The design of the questionnaire, with nominal or ordinal scales, small sample sizes (n=31 and 21) and response rates (46% and 40%) did not allow inferential statistics to be performed. Hence, only the frequency distribution of single variables and cross-tabulations of multiple variables were obtained. The survey did not intend to examine causal relationships, but to obtain a situational picture of the micro-clusters and investigate possible relationships between variables of interest.

Frequency distribution is the count of responses associated with different values of a variable. For the reporting of frequency distributions, the following depictions were used: tables of frequency counts and percentages and cumulative percentages for the values associated with that variable. Percentages were indicated in valid percent, in order to give an indication of missing values (Malhotra, Hall, Shaw, & Oppenheim, 2002, p. 468). Appendix 8 presents survey findings from both Vikebygd and Lovedale.

Cross-tabulations is the "merging of the frequency distribution of two or more variables in a single table" (Malhotra, et al., 2002, p. 476) and a series of cross tabulations will often provide more clarity of interpretation and greater insights into the complex phenomenon. For the different series of cross-tabulations used in the comparative analysis, the two micro-clusters were considered the independent variable and therefore show as different columns on the histograms (see comparative figures in Chapter 7). Vikebygd and Lovedale therefore appear in the key for the graph with the frequency of dependent variables shown as counts of responses and/or percentages.

To examine whether differences in responses between the two cases were statistically significant, cross-tabulations with Pearson's Chi-Square tests (Pearson, 1900), Monte Carlo Simulation or Fischer's Exacts tests (Fischer, 1922) were used depending on whether the assumptions for the Chi-Square tests were met or not. These tests assisted in determining whether there is a systematic association between two variables. By comparing the observed frequency with the expected frequency one can determine if there are differences between cases (Field, 2009, p. 688). A null hypothesis for the tests would occur if there was no association between cases and the counts of responses for the variables observed. The test of association was found to be the difference between the expected frequencies and observed frequencies, where the null hypothesis is rejected when the tests shows a P-value less than 0.05. A rejection of the null hypothesis indicates that there are statistically significant differences between the two cases with regard to the proportion of the variable observed.

For Pearsons Chi-Square tests, significant association was met with the following assumptions: the P-value <0.05, no more than 20% of cells with expected count less than 5, and no expected count less than 1. The Monte Carlo Simulation 2 sided test was used when there were multiple variables (such as Likert scales), and when the P-value < 0.05, while when figures for adjusted residual larger than 2 would indicate which cells drive the significant difference. For cross-tabulation where the number of dependent and independent variables equals 2, an Exact test was performed. A significant result using the Exact test is deemed to occur when P-value < 0.05.

The selection of a P-value < 0.05 indicates that the null hypothesis is rejected no more than 5% of the time (Tharenou, et al., 2007). An error of up to 5% is, by convention, deemed acceptable in social science research, due to the bias of human behavior, feelings and emotions. Appendix 9 presents results from the association tests performed for the comparative statistical analysis for Chapter 7.

With these descriptive and association tests, relevant quantitative data were found to obtain not only a situational picture in each case, but also to give indications of statistically significant differences between cases and thereby provide the basis for discussions on possible inferences between the area's institutions, context and influence on sustainability practices.

3.5.2 INTERVIEW ANALYSIS

The qualitative analysis of the interviews was undertaken in different ways and at different times through a series of note taking and coding to detect patterns of congruence or contradictions, as recommended by Richards (2009).

The researcher took notes after each interview, reflecting on the process, contentious issues and where contradictions or convergences were found. Annotations were written and stored in NVIVO after having read through the transcription for the first time, structuring thoughts into themes and areas of interest, as well as the researchers own associations or reactions to the information revealed in the interview.

Based on the research questions and emerging patterns from reading the transcriptions and notes, a coding dictionary was developed (Appendix 10). The coding dictionary became the core framework for the first coding process using NVIVO software. While using NVIVO to transcribe and code the Australian interviews, the researcher found that the software although excellent for coding did not provide an adequate "overview of the data", making it difficult to identify overarching themes and patterns. NVIVO was therefore not used to code the Norwegian interviews, but instead the framework of themes established in NVIVO was used when coding hardcopies of Norwegian transcripts. Through the process of becoming aware of patterns and one's own reactions, a deeper understanding of the two micro-clusters and the dynamics within them was achieved. These thoughts were then written down as short memos with points for a possible conclusion. By thinking about ways to conclude early in the project, the continued reading and coding through each transcription became a test of whether this conclusion was valid or not. Thus, a testing of preliminary conclusions and fits with theory was done on a continual basis (L. Richards, 2009).

Based on the first qualitative analysis of the data using NVIVO, as well as an awareness of patterns and emerging themes, a second round of "meta-coding" was completed using the following themes;

- Emergence of micro-cluster, history, processes and social structure
- Perceptions regarding sustainability
- Community spirit, formal, informal institutions
- Environmental action and institutional pressures
- Competitive advantage of environmental action
- Relationship between business and the natural environment and landscape.

Even though the researcher moved away from using NVIVO for the final analysis of data, the NVIVO coding helped to see patterns for analyzing the quantitative and qualitative data together, and thus the potential for linking the theories to the findings. The themes from the meta-coding became the structure of the two chapters of findings for each case.

The last stages of integration of ideas, patterns, theories and data, is described as being harrowing and having doubts such as “did the explanation find you or did you, in desperation, impose it on the data?” (L. Richards, 2009, p. 188). Through writing memos trying to relate or discard theories to findings, continuous integration of findings with theory was sought. When the findings had been analysed and the first drafts of the case chapters (Chapters 5 and 6) had been written, the researcher went back to the literature review to revise both the selection and the emphasis of theories. The findings revealed new areas for theory development and indicated that other areas would not be useful. The literature review was therefore considerably revised in order to include theories more relevant for the findings. A similar process was followed for the chapter on context (Chapter 4). The first draft of this chapter on the context of the two locations had been done purely on document analysis and the literature review. After the findings, a new understanding of context emerged, and new documents on the contextual differences were added to obtain a better understanding of the communities involved in the project. The process of integrating quantitative and qualitative data and analysing findings against each other would continuously triangulate results.

3.5.3 REPORTING BACK TO THE COMMUNITY

The findings from the survey and the main conclusions from the interviews were reported back to the Lovedale Chamber of Commerce during the AGM in November 2010, and to the Vikebygd Landscape Park Chairman of the Board and the General Manager in Bergen on 4th January 2012. The results for Vikebygd, were later presented by the Chairman of the Board, Amund Måge, to the Board. During both meetings, no corrections of the findings were received. Feedback was generally very positive, with both micro-clusters finding the comparisons between two very different contexts doing similar business activities interesting and inspiring. In Norway, the presentation was later made into a newspaper article (Bleken, 2012).

The reports from the comparative survey results presented in attractive tables and power-points indicated that they were met with great interest and would function as starting points for more in-depth discussions pertaining to what influences environmental action. This confirms what Mertens (2007, p. 212), found in that the “quantitative dimension of a mixed methods research provides the opportunity to demonstrate outcomes that have credibility for community members and scholars”.

3.5.4 REPORTING MIXED METHODS RESEARCH

A difficulty when writing up a mixed methods study is choosing the appropriate representation of the results, as one does not only mix methods, ways of inquiry and reporting formats, there are also quite

strict codes of reporting linked with both the quantitative and qualitative inquiry. While the quantitative results are written in formal and very neutral and objective language, qualitative research is often written in more informal language and with the researcher's own voice more audible in the reports (Creswell & Plano Clark 2007).

Greene (2012) states that mixed methods studies must communicate in a way that can compel and attract both qualitative and quantitative readers. Sandelowski (2003) talks about the fact that the text must be written in such a way that it will appeal and persuade readers from diverse academic communities and describes it as a "crisis of representation" as one has to establish what type of presentation style would produce the most convincing texts (p. 322).

To arrive at a way to present the quantitative and qualitative findings, the continuous revision of findings against theory and coding of interviews led to an emergence of a logical structure linked with themes found in both the qualitative and quantitative data. This structure was then used for the three chapters on findings, (Chapters 5, 6 and 7) and became the best way to compare and contrast data from two methods and also to extend descriptive statistics with richer descriptions from qualitative findings. While the comparative chapter (Chapter 7) had the same structure as Chapters 5 and 6, the main focus was to analyse and discuss differences and similarities between micro-clusters in relation to theory.

3.6 VALIDITY AND RELIABILITY

When assessing the quality of research using case studies, there are, according to Yin (2003), four areas that need to be addressed: construct validity, internal validity, external validity (also called replicability or generalisability) and reliability. Denzin (1978) suggested four types of triangulation (data, investigator, theory and methodological triangulation) in order to increase the validity and reliability of research findings. This study has elements of all four of these triangulations. Through using data from both a survey, semi structured interviews and document analysis, data and method triangulation is achieved. This involves the researcher, supervisors and senior academics, as well as the two communities in developing survey instruments, as well as presenting results and receiving feedback achieves investigator triangulation. Theory triangulation is achieved through the continuous process of testing findings with theory as described in the previous section. Methodological triangulation is inherent in the study's mixed methods design. A more detailed discussion of how these triangulations impact on validity and reliability is listed below.

3.6.1 CONSTRUCT VALIDITY

Construct validity is the extent to which the researcher is using the correct constructs to examine the phenomena studied, therefore establishing the correct operational measures for the concepts being studied is important Yin (2003, p. 34). As Yin suggests, construct validity has been secured through the use of multiple methods and sources of evidence to measure and examine the same constructs. The use of a quantitative survey, with multiple opportunities for the respondents to answer open ended questions in their own words, provides thicker descriptions and more information about the constructs used in the questionnaire. When these data are complemented with in depth semi-structured interviews around the same issues, the reliability of constructs used is strengthened.

The extensive study of the demographic, economic, and institutional context of the two locations gives additional understanding of how constructs are perceived within the social, normative, regulatory and economic contexts they occur. The cluster framework, which ensures diverse selection of interviewees within and outside the micro-cluster, increases construct validity. The use of public documents as well as national statistical data to triangulate information given in surveys and interviews also improves and ensures construct validity within the case. While the PhD supervisors would be the key persons for the review of constructs used in the Australian case, for the Norwegian case, Norwegian academics were used to review the chapter. In addition, feedback was given on preliminary results on two research seminars held in Norway in November 2011 and January 2012 (Telemark Research Institute and NORAGRIC, Centre for Environmental and Development Studies).

The issue of construct validity in the survey has been sought reduced as much as possible through basing the instrument on Collin's (2009) questionnaire of sustainability. An issue that became apparent when using the translated Norwegian questionnaire in Vikebygd, was that the term "sustainability", which in Norwegian is "bærekraft", was considered a bit dated. Daugstad, Rønningen and Skar (2006) described a change in rural development perspective over the past twenty years in Norway, whereby the term "sustainable development" has been replaced by more business , tourism related and cultural heritage orientated concepts. Even though this does not reduce the validity of the construct used in the survey, it shows that changing contextual factors can influence comparative analysis.

The biggest issue concerning construct validity is the issue of whether the same constructs mean the same thing in two different contexts, across two languages and climatic/cultural settings. This has been mitigated as far as possible through including a question on how the construct sustainability and

environmental sustainability is perceived by the interviewee and forms part of the exploratory aspect of the study.

3.6.2 EXTERNAL VALIDITY

External validity (generalisability or replicability) is the extent to which the findings from one case can be said to represent or be generalized to apply to other groups or populations. For case studies however, generalisability, or external validity is not achieved by extrapolating the findings directly, but rather through theory developed from data gathered in the case (Yin 2003).

The two cases exhibit overall similarities, two micro-clusters involved in sustainable agro-tourism initiatives, yet they are located in such different institutional settings and contexts, that replicability will be limited. Instead, case study research relies on analytical generalization (Yin, 2003), yet with the comparative framework, important connections and contrasts can be explained through theory.

The sample size and response rate of 40% and 46% is too small to generalize results for a larger population or sample. When used in conjunction with qualitative data these response rates are adequate to "investigate contemporary phenomenons within its real-life context, when the boundaries between phenomenon and context are not clearly evident" (Yin, 2003, p. 13). The quantitative data were not used to generalise findings but rather to uncover contextual differences and similarities between the two cases. The quantitative data were also used to compare with similar data from national statistics in each country. The discussion of quantitative data focuses on analysis rather on statistical significance and generalisation.

3.6.3 INTERNAL VALIDITY

Internal validity is the extent to which the correct cause and effect relationships are being established. Yin (2003) suggests that internal validity is only of concern in explanatory and causal case studies, where the researcher is examining and establishing causal relationship between particular events or factors. When using an exploratory case study (as this one is) the research questions are not occupied with finding causal relationship, but rather finding potential causal relationships revealed through the thick description of contextual and institutional differences.

Internal validity was improved through substantial research into contextual and institutional differences, the reassessing of theories in relation to findings, and the attempts to explain phenomenon in relation to policy documents. Internal validity was also improved by selecting interviewees among

different actors, business sizes and demographies, thus providing multiple perspectives on the same issues. The cluster actor framework therefore provides an additional triangulation of internal validity.

3.6.4 RELIABILITY

Reliability refers to the extent to which the data can be duplicated if collected at another time or through other means (Yin, 2003).

Reliability has been ensured through the following of a strict case study protocol, in order to limit the errors and biases in the study. There may be a potential weakness in that the researcher is from Norway and as such will have a more or less conscious bias towards one or the other case. The use of certified translators when translating the questions into Norwegian would mitigate potential bias. Similarly, when translating Norwegian quotes back to English, external assistance was sought to improve reliability in translations.

Having reliable results ensures that the findings from your case are actually accurate, and not biased from either single sources of information or by the researchers own bias. In this study, reliability in the quantitative survey was assessed using tests to determine whether quantitative differences found between cases for selected variables were statistically significant (described in Section 3.5.1).

To address reliability in the semi-structured interviews the researcher developed a coding dictionary (Appendix 10) used as a basis for coding transcripts. Further, other researchers were involved in the interpretation of qualitative statements in interviews, providing corrective measures and fine-tuning the process of theory development.

The reliability of research findings was ensured through the thorough process of contextualization of the two cases. This process involved the analysis of multiple sources of information such as policy and academic sources, current news items, oral accounts from multiple stakeholders, and notes from unobstructed observation of actors in the micro-clusters were used to ensure that constructs were analysed in different ways and from different perspectives.

3.6.5 ETHICAL CONSIDERATIONS

The project was approved by the Human Research Ethics Committee (HREC) at University of Newcastle on 14th October 2009 (Reference No: H-2009-0254) ensuring that the project and procedures described complied with the provisions in the National Statement on Ethical Conduct in

Human Research. (Appendix 11 exhibits the Human Ethics Approval obtained from the Newcastle University Human Ethics Committee).

Procedures for protecting participant's rights and identities were followed as required for conducting ethical research. Participation in the survey was voluntary and with implied consent. Survey respondents were anonymous. Participation in interviews was based on informed consent and each interviewee had to sign a consent form before the interview. (Appendices 12,13, 14 and 15 comprise Information statements about the project and consent forms for the Australian and Norwegian study). Interviewees were informed about their rights before the interview and the options of halting the interview, listening to the audio or reading the transcript for approval. They were also informed about the complaints procedures and contacts. No interviewee requested a review of the transcripts nor was any complaint received.

Publication of findings from interviews may be in the form of quotes, however pseudonyms will be used and identifiers will be omitted. According to ethical requirements, data and identities will be stored in password protected computers or locked cabinets and retained for five years after which the data will be destroyed.

3.7 CONCLUSION

This chapter locates the study within the appropriate research paradigm and justifies and describes the selection of methodology, design and procedures for the research. It discusses and justifies the selection of cases and participants, discusses issues of language, analysis and reporting, and finally assesses validity, reliability, ethical consideration of the method and data selected.

After reviewing different research paradigms, the study is located within the Mixed Methods Research Paradigm (Teddlie & Tashakkori, 2009), considered the best approach to obtain a comprehensive understanding of what motivates, drives and hinders environmental behavior in two different locations, where contexts and institutions are substantially different. The nature of the research questions, creating more knowledge around how contexts and institutions influence environmental action, justifies a case study design (Beckmann & Padmanabhan, 2009) within an interpretive mixed methods approach (Howe, 2011). Through the mixing of methods, the study will both obtain situational facts from business owners as well as rich qualitative data around their perceptions. The complexity of a comparative study in two countries necessitated that a strict research protocol be followed, where the same research procedures, questionnaires and interview guides would be used and followed.

The unit of analysis will be two agriculture based tourism micro-clusters, as defined by Michael (2007a, 2008), where Vikebygd is located in Hardanger, Norway, and Lovedale is located in the Hunter Valley in Australia. The interpretive mixed methods approach seeks a democratic approach to data collection where many voices are heard about a phenomenon. While quantitative data were obtained within the micro-cluster, qualitative semi structured interviews were gathered from all four types of actors, both inside and outside the micro-cluster, which could potentially influence environmental action in agriculture and tourism in the area. In addition, document analysis and observations was used to contextualize findings from the two micro-clusters.

Construct validity has been ensured through the use of an already tested instrument for the quantitative part of the study. Research procedures for the qualitative study were designed and implemented following protocols and coding manuals developed in conjunction with senior academics and textbooks (Denzin, 1978; Kayrooz & Trevitt, 2005; L. Richards, 2009; Yin, 2003).

As the sample size and response rate of the survey were not intended to obtain generalisable data, the analysis of quantitative data was primarily descriptive of situational facts, but included cross-tabulation analysis to assess whether statistically significant differences were found in the two clusters. Analysis of qualitative data was performed using coding software and pattern recognition methods. The first round of the coding of the data led to the emergence of meta-themes, which became the structure for the reporting of quantitative and qualitative data in the findings chapters (Chapters 5, 6 and 7). This created a new structure and method for jointly analysing the qual-quant data, which provided deeper understanding and basis for theory development.

Issues of internal and construct validity were dealt with through the use of previously tested instruments, translation and back-translation of questionnaire and interview guides in Norwegian and tested through obtaining feedback from participants in community meetings and among academics. External validity is not possible in a case study design; however, through theory development generalizations can be made. The study followed national standards for ethical research code of conduct. While the survey questionnaire is considered an unobtrusive and non-identifiable way of collecting data, interviewees were informed of their rights, and complaints procedures and quotes from interviews have been anonymised to ensure the ethical conduct of the research.

Through contextualization and triangulation of methods, data and theory, a high degree of construct validity and internal validity is being sought. The next three chapters will present the findings from each of the cases, followed by a comparative chapter where the two cases are compared and analysed.

CHAPTER 4 INSTITUTIONAL CONTEXT

4.1 INTRODUCTION

In Chapter 2, the literature review, different theories to explain how and why business communities pursue environmental behaviour were presented. It concluded that the contextual and institutional framework around a business and a business community would influence a business owner's environmental decision making. Chapter 3 described the methodology for obtaining empirical data for examining and comparing environmental behaviour in two micro-clusters. This chapter will present contextual and institutional factors that may influence business owner's environmental behaviour in the two study areas. It will first suggest a structure for examining contexts and a second review of the contextual factors that contribute to environmental behaviour in each of the two micro-clusters, and will summarise the main contextual differences between them. Through the contextualisation of the study, it may be shown that locational, economic, path dependent, and institutional contexts may impact on the individual business owner's environmental decisions.

4.1.1 CONTEXT IS EVERYTHING!

Hunold and Dryzek (2002, p. 36) state that, when undertaking comparative studies of environmental policies and behaviour, "context is everything!....as we now have a history of three and a half decades of environmental concern and political response. Moreover, there is not just one history, there are many histories, as environmental challenges have been met (or ignored or scorned) in very different ways in different societies and polities". The two micro-clusters selected in Norway and Australia are expected to have distinctly different contexts and institutional frameworks with regards to environmental management.

The issue of how communities influence business behaviour and collective environmental action has been emphasised in recent research (Marquis & Battilana, 2009; Ostrom, 2009; Sorge, 2005), finding that, while the global economy and environmental issues are "boundary less", local communities (and micro-clusters) may act and meet these "exogenous challenges (economic or environmental) in different ways, adapting to global pressures, yet creating new and hybrid standards acceptable to the local community" (Storper, 2005, p. 34).

Communities' ability to develop competitive advantages through clustering and environmental action depend on the strength of relational ties, where weak ties across social and geographical distances and groups are beneficial to innovation and business networking (Granovetter, 1973). Communities with

strong ties have a larger ability to act jointly and forcefully (Granovetter, 1985; Uzzi, 1996, 1997). Thus, the demography of the community, the structure of organisational networks and the mobility of people would have a major importance in innovation diffusion and innovative environmental action. This would also assist in gaining a better understanding of the role of life-style tree-changers or "green migrants" in rural environmentalism (Jones, et al., 2003)

The process of contextualisation is defined as "the linking of observations to a set of relevant facts, events, or points of views that make possible research and theory that form part of a larger whole" (Rousseau & Fried, 2001, p. 1). Contextualisation is important when researchers use scientific constructs, concepts and research methodologies across borders and makes theoretical models more accurate and the interpretation of results more robust (Rousseau & Fried, 2001).

Context factors can explain anomalous organisational phenomena, constraints and opportunities for behavior, and attitudes in organisational settings (Johns, 2001, 2006). They may include important situational or environmental features of those being described (demography, economic, infrastructure and geographic features) ; they can involve strong or weak ties where the individual is more or less constrained by societal norms (normative and cultural cognitive institutions). Context can be seen as a bundle of stimuli (institutional pressures) and can be affected by important events in the organisational or community setting (historical context or path dependency), and is a constant for the organisation or community involved; it is the reality as they perceive it (Johns, 2006).

4.1.2 DESCRIBING CONTEXT AS AN INSTITUTIONAL INFLUENCE

Contextualisation can be perceived as a description of the organisational field that surrounds a business and its owners, including how and what institutions influence a business owner's decisions. Marquis and Battilana (2009) examined how local communities influence businesses' behaviour in a global economy, and found that organisations were embedded in both geographic communities and organisational fields. They suggested analysing how local communities influence business behaviour based on Scott's (2008) framework of three institutional pillars examining: 1) market pressures; 2) regulatory institutions; 3) social normative institutions; and 4) cultural-cognitive institutions.

The degree of influence that regulatory institutions have on organisations depend on a) the decentralisation of policies and regulations; b) the actual design of policies, regulations and incentives; and c) the degree of coordination and interaction among policy-implementers at a local level (Marquis & Battilana, 2009). Social-normative institutions, defined as "how local relational systems shape different standards of appropriateness across communities" (Marquis & Battilana,

2009, p. 290), are influenced by: a) social structures; and b) local organisational networks and interaction which influence how businesses operate. Cultural cognitive institutions influence business behaviour through: a) the influence of location, geography and infrastructure; b) the influence of historical events on current norms and local frameworks (path dependency); c) variations in business behaviour (markets and globalisation, openness to innovation and immigration, collaboration, globalisation, structure of supply and demand of goods and services); and d) variations in local frames of reference such as local identity, stereotypes, and connection to land and nature.

When studying institutional change, Williamson (2000) suggested that informal institutions (such as social normative and cultural cognitive institutions) are more stable and change over a longer time than formal (regulatory) institutions. The structure of each micro-cluster contextualisation section will give a description of the current locational and economic context, before a review of the underlying cultural-cognitive and social normative institutions. It will then review regulatory institutions that influence environmental behaviour in the agricultural and tourism sectors in the two respective countries, before summarising contextual features for each micro-cluster. At the end of the chapter, contextual differences between the two micro-clusters is contrasted and discussed. This chapter will provide a basis for the next three chapters in analysing the quantitative and qualitative findings for the two micro-clusters.

4.2 LOVEDALE MICRO-CLUSTER, HUNTER VALLEY, NSW, AUSTRALIA

Lovedale is a micro-cluster of wine tourism businesses located in Cessnock City Council, NSW, Australia. It is part of the Hunter Valley wine region, famous for its Semillon and Shiraz wines, serene vineyard landscapes with picturesque kangaroos, exclusive accommodation, and gourmet food.

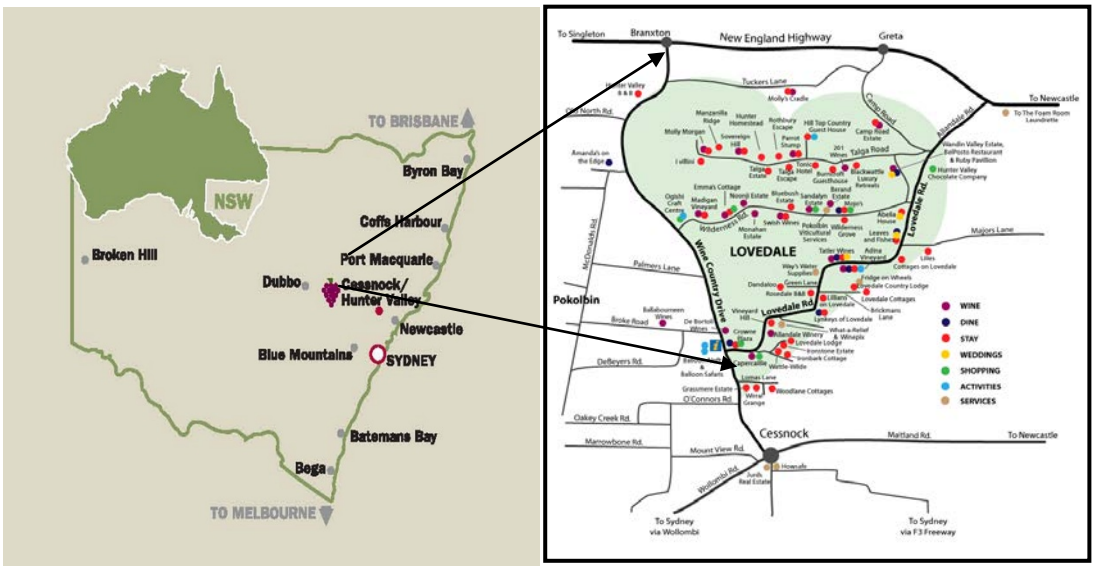
4.2.1 LOCATION, INFRASTRUCTURE AND DEMOGRAPHY

The geographical extent of the Lovedale wine area, as defined by the Lovedale Chamber of Commerce, is within the triangle of three roads: Lovedale road, Wine Country Drive and Talga Road in the north (

Figure 4-1). Therein are around 75 businesses in wine, accommodation and food, with 65 of these being members of the Lovedale Chamber of Commerce (15 wineries, 40 accommodation and 8 catering, adventure and tourism support providers) (Lovedale Chamber of Commerce, 2010a).

Proximity to Sydney's 4.5 million people is around 2.5 hours by car, and to Newcastle's 1 million people around 1 hour's drive. A new feeder road from the F3 highway between Sydney and Brisbane to the Hunter Valley will further reduce travel time (Department of Infrastructure and Transport, 2010). The upgrade of Newcastle Williamstown airport has improved access to the Hunter Valley from other state capitals of Australia.

Figure 4-1 Location of Lovedale in the Hunter Valley, New South Wales, Australia



(Permission granted from LCC President Robyn Gill)

A typical vineyard is shown in Figure 4-2. Most wineries are also members of the Lovedale Vignerons Association. The largest hotel in the Hunter Valley, the Hunter Crowne Plaza (400 beds), is in Lovedale. No schools, grocery shops or other general services are located in Lovedale and there are no physical barriers between Lovedale and the surrounding wine areas, and thus comes across as being more remote than neighbouring Pokolbin. There are few known historic sites in Lovedale, with one exception being Rothbury Cemetery where ancestors of old Hunter wine families (Drayton) are buried.

Until the 60s,s the Cessnock population was primarily linked with underground mines and agriculture. The closing of the Lower Hunter mines resulted in a decline in Cessnock City Council's economy and its current population of 52,000 exhibits a high unemployment rate (8.5% versus 5.9% NSW average), a low rate of people with tertiary education (5.5% versus 16.4% NSW average), and low housing prices. Today, food, accommodation and agriculture employs 11.9% of Cessnock's working population, while mining only employs 7.9% (Cessnock City Council, 2009). From 2001, Cessnock

has experienced population growth in two of demographics: lower income families searching for affordable housing and high income “tree-changers”, primarily from Sydney, seeking a new lifestyle. The Hunter received around 10,000 people between 2001 and 2006, and is one of the nation’s top ten sinks of migration to rural areas (Productivity Commission, 2011). The lifestyle migrants often come with capital, knowledge and business acumen, purchasing businesses linked with wine tourism (Cessnock City Council, 2009; Hartig & Holmes, 2000; Holmes, Hartig, & Bell, 2002); and the process described as amenity-led gentrification may play a role in driving environmental change (N Argent, et al., 2010)

Figure 4-2 Lovedale vineyards

(Source: Sidsel Grimstad February 2010)

4.2.2 ECONOMY AND MARKETS

The Hunter Valley Wine Region has more than 120 wineries, 65 restaurants and 180 accommodation providers. It has been rated as the 6th most popular wine destination in the world (HotelsCombined.com, 2011). While only 2% of Australia’s wines are produced in the Hunter Valley, they are exported to more than 50 countries and have a sales value exceeding $270 million per year, with estimated flow-on effects of $230 million (Hunter Valley Protection Alliance and Hunter Valley Wine Industry Association, 2012). While the Australian wine industry is highly centralised, with the 13 largest winemakers crushing 72% of the total crush, averaging 89.000 tonnes each (Australian

Bureau of Statistics, 2010), the wineries in the Hunter are mostly medium or small, crushing less than 100 tonnes each, and with a total of 15,000 tonnes of grapes being crushed annually (Henderson & Burgess, 2010; Hunter Valley Protection Alliance and Hunter Valley Wine Industry Association, 2012). It is this high concentration of small boutique wineries that distinguishes the Hunter from other wine tourism destinations.

The wine industry grew in numbers of wineries, exports and acreage until 2006 (Wine Australia, 2007), after which the strong Australian dollar, coupled with the global financial crisis, made Australian wine less competitive on the world market. By 2009, Australia's wine exports had fallen 21% in value since its peak in 2007. With wine exporters struggling to sell their wine, prices decreased to unviable levels, flooding domestic markets with cheap wine and competing alongside imported wines from Europe where wine-producers receive more government support/subsidies than in Australia. The Australian Wine Makers Federation (AWMF) suggested that 17% of all vineyards were unprofitable and called for a 20% reduction in acreage under vines (Winemakers Federation of Australia, 2009). By March 2010, a 13% reduction in acreage was recorded (Winemakers Federation of Australia - Australian Wine and Brandy Corporation - Wine Grape Growers Australia, 2010).

Tourism provides one tenth of Australia's export earnings, employing around half a million people. For the Hunter, tourism is a profitable income earner made possible by the proximity to Sydney which acts both as a major domestic market and the first call of entry for overseas visitors. Although there has been a 6% reduction in domestic tourism since 2009, due to the strong Australian dollar and cheaper international flights (Department of Resources Energy and Tourism, 2010), Hunter tourist numbers have continued to increase due to successful marketing and the continuous reinventing of the Hunter as a trendy domestic tourism destination (Graham, 2011). In the year ending September 2010, the Hunter received 7.4 million visitors, 5.2 million on daytrips and 7.7 million tourist nights registered, leaving behind around 1.5 billion AUD. Domestic tourism in the Hunter is mainly leisure group tourism, attracted by food and wine (95%), relaxation and rejuvenation (92%) and spending quality time with partners and friends (91%). Lovedale is one of three preferred stops for both daytrip and overnight visitors (Tourism Research Australia, 2007).

4.2.3 CULTURAL COGNITIVE INSTITUTIONS

4.2.3.1 HISTORICAL CONTEXT

The wine industry in the Hunter has gone through cycles of boom and bust according to changing demands in the domestic and global market, and is typical for agricultural commodities in settler

societies (Belich, 2009). The Hunter was first settled in 1813, primarily by convicts. However, from the 1820ss free British migrants were given the opportunity to occupy larger landholdings (47% were larger than 1000 acres) on the alluvial river flats along the Hunter, Paterson and Williams rivers. Grape seedlings and viticulture techniques from Europe were introduced to the Hunter in the early 1800s by James Busby, Gregory Blaxland (and others) (Driscoll, 1969; Lake, 1979; McIntyre, 2012). The first vineyards were recorded in the Lower Hunter in 1832 (Driscoll, 1969) and, with the completion of the inland road from the Hunter to Sydney in 1836 (Putty Road), direct trade with Sydney and overseas export markets was facilitated (Lake, 1979).

The formation of the Hunter River Vineyard Association in 1847 became a major force in improving wine quality for export and sale to sophisticated Sydney consumers (Driscoll, 1969). By mid 1800, acreage was around 500 and several of the now famous Hunter Valley wine families (Wyndhams, Draytons, Tyrrells, Wilkonsons, and Lindemans) were established in the Cessnock area (Driscoll, 1969; McIntyre, 2012; Wine Country Tourism, 2010). Fuelled by a change in the Land Act in 1860 that allowed for subdivision into smaller properties for grape growing (McIntyre, 2012), the Hunter Valley experienced its first golden era from 1860 to 1890, with a doubling of acreage and a 500% increase in wines produced and exported. The Hunter produced quality wines, exemplified by Allandale winery in Rothbury which received over 70 awards worldwide in 1891. From 1900 to the 1930ss the Depression and First World War, coupled with consumer tastes shifting towards fortified wines from overseas, led many wineries to close (Lake, 1979).

In the 1950 and 1960ss renewed interest in fine wine among Australian consumers led to a spectacular expansion in the Hunter. The 70ss wine-boom also paved the way for the first Sydney vignerons in the Hunter. Professionals, fuelled by tax benefits and the prestige of owning a winery, invested in smaller boutique wineries. Their lack of agricultural knowledge created a market for the provision of viticulture, farm manager and winemaker services (Lake, 1979; Wine Country Tourism, 2010). The wine boom, coupled with financial deregulation, led to over-investment, leading to a crash in the late 80s, forcing the Hunter Valley wine industry to go through a huge restructuring process. The late 1980s had also seen the introduction of laws against alcohol while driving, creating a demand for organised transport and accommodation for wine tourists. The cellar doors were complemented by tourism facilities for the high end tourist wanting to experience the Hunter Valley wine country. This can be described as a cluster renewal and diversification process, where a cluster renewal of an old industrial region (grapes/wine) occurs as a downscaling of properties into smaller boutique wineries and is complemented by other types of businesses (tourism) (Trippl & Todtling, 2008). Today, the Hunter Valley can be portrayed as a gastronomic landscape (O'Neill & Whatmore, 2000).

A highly successful collaborative effort was the finalisation of the Hunter Valley Private Irrigation District (PID) in 2000, providing affordable and secure water in an equitable (all growers of all sizes could acquire water) and non-profit oriented manner. The scheme ensures that water rights and fees follow the property, not the owner of the property, securing PID income in perpetuity, and is the largest of its kind and unique in Australia (Hunter Wine Country Private Irrigation District, 2000).

The first vineyard in the Lovedale area was established by John Wright in 1855, close to today's Capercaillie and Allandale wineries along Lovedale Road. It was sold to James Love in 1868 and, when bought by Reginald Bancroft in 1923, was named after the Love family and Yorkshiredale from where Reginald originally came; thus, Lovedale. The original vineyard was pulled up in the1930s (Lovedale Chamber of Commerce, 2010b).

The Lovedale wine area re-emerged around 25 years ago when Pokolbin became too expensive and crowded for lifestyle buyers and investors. Blocks were a minimum of 40 hectares and developed from agricultural pastures or vegetable land into a mix of small family owned wineries, accommodation and catering businesses. Most of the established Lovedale wineries, such as Allandale, Wandin Valley, Sandalyn, and Capercallie, started in the 70s, and do not belong to the old Hunter Valley family wineries. However, the Lovedale name has international acclaim due to the multiple international award-winning Lovedale Semillon produced by the McWilliams Mt Pleasant Winery (from 1877) from a vineyard within the Lovedale area (McWilliams Wine Group, 2010). Many of the Lovedale wineries also produce very highly awarded wines (Allandale, Capercaillie, Swish, and others).

Through clever and professional marketing efforts a distinct identity for Lovedale has been developed, with the Lovedale business community focusing on a high quality wines, produce and tourist services, and by promoting that it is a different, quieter and less commercial destination. The need to market the more remote Lovedale area was the impetus for seven wineries organising the first "Lovedale Long Lunch" in 1993, offering wine, gourmet food and live music at the cellar door of each Lovedale winery. The event led to the establishment of the Lovedale Vignerons association in 1994, which has organised the event every year since, receiving 25,000 guests in 2011 alone. With the Lovedale wineries organised in a separate entity, the accommodation and tourism providers felt the need to organise and subsequently established the Lovedale Chamber of Commerce in October 2000 in order to promote tourism in the Lovedale area.

In 2008 there was a general call from the Hunter Regional Tourism Association to increase environmental awareness in the tourism sector. While the regional association did not pursue this

objective, representatives from the Lovedale Chamber of Commerce (LCC) initiated a process called the Greening of Lovedale with a mission "To actively encourage the businesses and residences of Lovedale to participate in the Greening of Lovedale program." (Lovedale Chamber of Commerce, 2010a). On 27th April 2009, the inaugural meeting of “Greening of Lovedale” (see logo in

Figure 4-3) was held in Cessnock. An environmental committee was launched, which later organised several motivational environmental events (environmental technology expo, clean up Australia day, E-waste drop-off).

Figure 4-3 Greening of Lovedale logo

(Permission granted from LCC President Robyn Gill)

In 2009, it received funding from the NSW Department of Industry and Investment to publish a “Green Business Directory” which would provide environmental knowledge, inspirational stories about greening, and lists of all the businesses in the area. In 2010, the Green Business Directory listed 26 green businesses (of 64 listed) based on self-reporting that the owner made efforts to reduce CO2 emissions, reuse grey water and recycle waste. Throughout 2010 an effort was made to make the environmental rating system more objective; and, in November 2010, the LCC Evironmental Committee presented an Environmental Assessment Form, which was to be used for businesses who wanted to be marked as green on the Lovedale Chamber of Commerce website (Appendix 16 exhibits the Environmental Assessment Form).

4.2.3.2 LOCAL FRAMES OF REFERENCE AND EMBEDDEDNESS

Granovetter (1973) suggested that innovations flourish better in business environments with weaker ties, that is, where business owners are less embedded in strong traditional networks and communities. The lifestyle vignerons are embedded in only a small way in the local Cessnock community and are more connected and open to innovations and impulses from the Sydney business environment. This

may also be the reason why joint environmental action is easier to initiate in Lovedale where business development is innovative and collaborative. The Cessnock population having low income levels do not use the attractions and tourism opportunities in the local Hunter Valley wine region; it is not primarily for the locals.

While there is a dichotomy between the local Cessnock population and the wine tourism businesses, there are also differences within the wine industry between old family and newcomer wine businesses, and between tourism and wine businesses. The old wine families, having lived in the area for generations have a deep understanding for the locals' need for employment in both the wine and mining industries. While the wine industry always provided unskilled labour opportunities (particularly for local women and young people), the more recent tourism industry has demanded skilled hospitality employees. The lifestyle vignerons have a shorter time-horizon for their business venture in the Hunter, and are said, anecdotally, to only last in the area between 5-10 years. This lack of continuity and connection with the local community may reduce their understanding of local issues and norms.

The lack of embeddedness may be an explanation for the lack of support the tree-changers have received locally for some of their initiatives. On the other hand, their considerable investment capital, business acumen and energy have led to increased innovation in the region, including in the area of environmental action. Typically, it is in these small lifestyle communities (Lovedale and Broke/Wollombi) where environmental action has been launched, with the Lovedale Chamber of Commerce launching the Greening of Lovedale Process, and in Broke/Wollombi the Hunter Valley Protection Alliance against coal seam gas (CSG) has been formed. While the campaign against CSG in the Hunter was initially an agenda for the lifestyle vignerons, this is now changing with the active involvement of the Hunter's old family wineries (Tyrrell, McWilliams, Drayton, and others) through their strong and active voice in the HVWIA that is now becoming the uniting force against CSG in the Hunter. Interestingly, it is acceptable to be against the CSG, whereas it is seen as less of a problem to have coal mining in the Hunter Valley. This could be due to the wine industry having survived alongside the coal industry since its naissance (Hunter Valley Protection Alliance and Hunter Valley Wine Industry Association, 2012).

The farmers' attitude to the natural environment in settler societies such as Australia is said to be influenced by agriculture being perceived as a pure economic activity while produce and land are perceived as any other commodity. In this framework, farming cannot be combined with responsibilities for the non-profitable maintenance of rural landscapes and biodiversity. There is, thus, a strict distinction between land for profitable cultivation and land for preservation in settler societies,

with pure wilderness of an un-farmed nature being more valued than the cultured landscape; this results in environmental conservation meaning the restraint of agricultural activity (Bjørkhaug & Richards, 2008; Dibden & Cocklin, 2009). For the 85% urban population, agriculture is therefore detrimental to the land, with farmers being destroyers not stewards of the land (Hamblin, 2009). Saltzman, Head and Stenseke (2011) suggest that this is due to the short agricultural history of Australia where farming is positioned as a contrast to nature, and where Australia's nature is defined as exclusively pre-settlement biotopes, thus implying that agriculture is bad for nature. This has meant that the sustainable use of natural habitats for agricultural purposes and the preservation of rural landscapes are not a priority for the agricultural or environmental authorities. The view that agricultural land is a tradeable commodity has further resulted in little protection of agricultural resources, versus, for instance extractive industries. In fact, agriculture and extractive industries are both classified in the same planning zone as both have a substantial impact on nature.

4.2.3.3 LOCAL VARIATIONS IN BUSINESS BEHAVIOUR

As discussed above, the wine industry has always been connected to Sydney, both as a market of wine-consumers and tourists, as well as a trade route to overseas markets and as a source of lifestyle migrants to the Hunter Valley vineyards. This close connection to Sydney influences the way business is done in the Hunter. The gastronomic landscape of Hunter, with its provision of high quality wine food, produce, adventures, and accommodation is a result of servicing a demanding and sophisticated urban Sydney population and export market. The proximity to the Sydney population of five million provides huge business potential, but the Hunter wine tourism providers need to continuously reinvent themselves to attract repeat visitors. The influx of lifestyle vignerons from Sydney provides not only business networks and contacts, but also residents with a finger on the Sydney pulse. Many of the small wineries sell their wine through cellar doors or direct to Sydney restaurants, and are "forced" to produce quality wines for a choosy public. Recent initiatives are revamping the image of the Hunter as an old wine region through new ways of marketing, launching young winemakers and establishing Hunter Valley wine-bars in the Sydney CBD (Graham, 2011). The recent expansion of the Newcastle airport has increased the number of flights and of wine tourists from other major cities, such as Melbourne and Brisbane.

4.2.4 SOCIAL NORMATIVE INSTITUTIONS

Socio-normative institutions at a community level relate to "how local relational systems shape different standards of appropriateness across communities" (Marquis & Battilana, 2009, p. 290). They

suggest that the communities' social structures and local organisational networks and interaction create normative systems that influence business operations.

4.2.4.1 SOCIAL STRUCTURES

Since the first settlement of the Hunter Valley, farms and mines have been co-located and have learned to live with each other's use of the landscape. Brett (2011) discusses how the identity and self-image of the "Aussie farmer" has changed as urbanisation has increased, environmental degradation continued and the rural population are seen as being less representative of the multicultural Australian society. From the 1980s, support both financially and morally from the urban majority to the rural areas has diminished. Yet new alliances are being formed and for the first time there are indications that farmers organisations and the environmental movements can join forces to preserve land from extractive industries, with farmers being part of the solution in climate change and carbon sequestration (NSW Farmers' Association, 2012).

In this context, the Hunter Valley vignerons are a bit of an anomaly compared to the iconic Aussie farmer in remote regions. Except for the traditional first family wineries, most of the vineyard and winery owners originate from Sydney, having arrived in more recent times. Brett (2011) states that the lifestyle communities of tree changers in areas such as the Hunter have not led to a new understanding of the rural farmers' situation, but, rather, they remain city-focused with many living off the proceeds of their years of work in the city. Most of the small wine tourism operations are small-scale family run tree-changer businesses, while labour for vineyard work and hospitality services are sourced locally. In addition, experts such as farm-managers, viticulturalists and winemakers are hired to make wine business decisions. There are also absentee vineyard owners using their properties as holiday retreats.

This dichotomy of people working in the wine tourism industry, between the rich urban Sydney-based owners and the local low-income workforce, is reflected in the priorities of the Cessnock City Council. While they see that the wine tourism industry is valuable for their area, they also acknowledge that, for the majority of their residents, and considering the urban sprawl they are experiencing, service delivery in more densely populated areas is prioritised. The Greening of Lovedale process by the Cessnock Council is considered an inspiration, but does not represent the average population's views or aspirations.

4.2.4.2 LOCAL ORGANISATIONAL NETWORKS INFLUENCING BUSINESS BEHAVIOUR

The Lovedale business owners are a tightly knit group which has formal and regular meetings in the two Lovedale organisations the Lovedale Chamber of Commerce (LCC), and the Lovedale Vignerons Association (LVA). Both have the main objective of promoting and marketing Lovedale as a specific area within the Hunter Wine District. In addition, business owners may come together at informal gatherings, such as the street drinks meeting organised monthly at the different tourism providers' venues on a rotating basis and at the Friday drinks at one of the local cellar-doors. These informal meetings are important for information exchange on business issues (markets, prices, practical knowledge and support), and for planning environmental initiatives. These types of gatherings are probably particularly important for the in-migrated tree-changers, who are less embedded in social networks in the Hunter.

The Hunter Valley Wine Industry Association (HVWIA) is the largest coordinating organisation for the wine industry operators in the valley; in addition Lovedale, Broke and Upper Hunter have their own vigneron associations. Most grape growers and wineries are members of the HVWIA, and this provides them with relevant knowledge on issues of interest to their members. The joint effort between the HVWIA and the Hunter Valley Protection Alliance against the Coal Seam Gas has led to strong community mobilisation (Hunter Valley Protection Alliance and Hunter Valley Wine Industry Association, 2012).

The regional organization for tourism, Wine Country Tourism (WCT), however, does not provide a similar interest in the future development of the Hunter as it primarily focuses on marketing and increasing tourist numbers. Yet, many businesses in the Hunter Valley see that a better coordination of WCT and HVWIA could have contributed to a concerted sustainability strategy benefitting the region. Coordination is seen by other businesses, particularly the smaller businesses, as a way for wineries to obtain marketing funds to promote their wines and not the destination.

4.2.5 REGULATORY INSTITUTIONS

According to Scott (2008, p. 52) regulatory institutions comprise "processes which involve the capacity to establish rules, inspect and review others' conformity to them, and, as necessary, manipulate sanctions rewards or punishment …to influence future behaviour". Regulatory pressures are implemented through rules, laws and sanctions coercing the organisation/individual to comply (Scott, 2008). Marquis and Battilana (2009) suggest that regulatory influences at the local level are determined by three factors: 1) the level of decentralisation of power and resources at the local

(municipal) level; 2) the types of public policies, regulations, incentives and administrative bodies; and 3) the degree of coordination between public actors at different levels.

4.2.5.1 LEVEL OF DECENTRALISATION OF POWER AND RESOURCES

Municipalities in Australia have a limited range of functions to perform, with responsibilities for local planning and zoning, waste management, infrastructure maintenance and the provision of recreational areas and activities. The local government derives the bulk of its revenue from rates on property;therefore, services and infrastructure investments must balance with the income from land rates (United Nations Economic and Social Commission for Asia and the Pacific, 2002). Of total Australian government revenues and expenditures in 2011, only 5.9% and 4.8% respectively were accounted at municipal level (OECD, 2011a). Cessnock City Council has a particularly pressed economy as, not only does the population have a low income,, but there are also high infrastructure expenditures demands due to population increases through urban scrawl, with people moving in from Central Coast and Sydney.

McKenzie and Pini (2007) found that the most environmentally conscientious local councils were located in areas that had many divergent and active business interests, and where the natural environment was considered an added value to the local tourism industries. In these councils, pressure from active business chambers made the council become more environmentally aware, more environmental expertise was recruited and they were more active in community consultation on environmental issues. The Cessnock City Council is quite concerned with keeping the rural feel of the vineyards through restricting development. Lately, it has also made a stance towards preventing coal seam gas into the area (ABC News, 2012a).

Marquis and Battilana (2009) further suggested that local authorities may be active in mobilising cluster development and business innovation, such as incentives that promote inter firm co-operation and the marketing of tourism destinations, as well as promoting the involvement of knowledge institutions, such as universities or research institutions to assist and provide innovation, ideas and collaborative spaces. Cessnock City Council representatives are members of most business associations in the area, but do not promote or coordinate clustering activities.

Policies, regulations, market instruments, and voluntary incentives

Environmental governance in Australia follows a hybrid model mixing regulatory control measures, market instruments and participatory/voluntary structures (Higgins, et al., 2010; Lockie & Higgins, 2007).

Regulations and hierarchical control functions are implemented by local councils in the area of basic environmental legislation, (such as control of sewage treatment, waste collection and recycling, winery waste and water disposal), food safety (safe handling of food), and occupational health and safety measures in tourism ventures.

Market instruments are thought to be a flexible way of motivating businesses/individuals to pursue environmental action through solutions that best suit the business based on an efficiency/cost-benefit calculation (Higgins, et al., 2010). They comprise environmental taxes and levies, environmental management systems, environmental certification and payments for ecosystem services (Dibden & Cocklin, 2005), with benefits secured through economic coercion/costs or rewards/incentives for environmental action.

Environmental certification standards and codes of practice are audited by a third party and have an element of control and regulation. Environmental incentives are mostly granted on cost-benefit calculations audited through rigorous application processes. Voluntary and participatory schemes are increasingly directed more through the individual landowner's implementation and benefits. A brief review of regulatory institutions implemented by the grape and wine industry, the tourism industry and by the environmental authorities follows.

Policies influencing environmental action in the wine industry

Since the late 70s Australian agricultural policy has adhered to a market liberal policy, supported by the National Farmers Federation, with the goal of making the farming industries competitive on the world market with minimal support. This would be achieved through improved business management, voluntary adjustments and farm consolidation through the "survival of the fittest" (Bjørkhaug & Richards, 2008; Botterill, 2005; Dibden, et al., 2009). Subsidy levels in Australian agriculture are the second lowest in the world with only 4% producer support of gross farm receipts (OECD, 2010), of which most is for exit grants for less efficient farms or climate mitigation grants (Department of Agriculture Fisheries and Forestry, 2010a, 2010b; Lockie & Higgins, 2007).

Global competitiveness is also the focus for the Wine Makers Federation Australia (WMFA) and the Wine Grape Growers Federation (WGGF). The "Wine Restructuring Agenda", released by WMFA in 2010, is a strategy to tackle the current wine glut via a 20% voluntary reduction of vine acreage based on individual assessment of environmentally and economically unsustainable vineyards. It also proposes to improve environmental, climate change and water management, to emphasise the regional and grape varieties of Australian wines rather than individual brands, and to increase exports to Asia

in order to regain global competitiveness (Russell & Battaglene, 2007; Winemakers Federation of Australia - Australian Wine and Brandy Corporation - Wine Grape Growers Australia, 2010).

Australian wines have been portrayed as clean and green since they were first exported due to modern viticulture techniques requiring less pesticides and fertiliser than in the more traditional Europe. However, in recent years, many competing wine exporters (such as South Africa, New Zealand and California, with France and Chile following suit) have introduced national environmental assurance schemes for wines. In addition, large retailers in Europe and USA are increasingly demanding environmental certification and carbon labelling for imported foods and wines. There is also an increasing demand for certified organic and biodynamic wines (Russell & Battaglene, 2007; Wine Makers Federation of Australia, 2007).

The Australian wine industry's environmental strategy response, therefore, focuses on improving the environmental credentials of the industry (Russell & Battaglene, 2007; Wine Makers Federation of Australia, 2007). In 2010, the WMFA introduced a voluntary national environmental assurance scheme "EntWine", to ensure latest environmental technology and practices, improve international marketing opportunities, and provide a recognised environmental label such as ISO 14001 or the Freshcare Certification (Winemakers Federation of Australia, 2010). It also offers a carbon calculator to assess a winery's carbon footprint. Carbon labelling prospects has increased the impetus for promoting light weight bottles, energy saving technologies and reducing transport emissions. The wine industry seems to be in the forefront with regards to environmental concerns in Australia due to its exposure to the more environmentally demanding European markets and the fierce competition offered by other new world wine countries who are pursuing environmental credentials.

The Australian Pesticide and Veterinary Chemicals Authority is responsible for regulating the use of pesticides in grape and wine production. Correct pesticide use is ensured through the legally binding instructions on the label, which, if complied with, will ensure that pesticides are below Minimum Residue Levels (MRL) for chemicals in foods, environment and humans (Australian Pesticides and Veterinary Medicines Authority, 2012). However, if wine is exported, pesticide use in grape and wine production must comply with the (often stricter or different) standards set by the importing country.

In 2010-2011, The Hunter Valley Wine Industry Association received a grant from the Hunter Catchment Authority for a pilot programme to train vignerons and promote the use of the EntWine system on 25 wine properties. The Hunter Valley wine industry was also one of the first in Australia to produce a report on the impact of climate change on grape-production in the Hunter and to suggest mitigation measures to counter the adverse effects (Blackmore & Goodwin, 2009). It has also piloted

lean and green bottles weighing 30% less than normal glass bottles (Gartelman, 2012). In the Hunter Valley five wineries (or 4%) are certified organic and/or biodynamic (Hunter Valley Wine Industry Association, 2011).

The Hunter is defined as a Geographic Indication Region (Winebiz.com, 2010) and 85% of grapes must be from the region to be labeled a Hunter Valley wine. The current bilateral trade agreement between Australia and the EU pushes for a stronger emphasis on protected geographic areas and names (Department of Agriculture Fisheries and Forestry, 2008). This increasing focus on regions and grape varieties may be a mechanism which pushes producers towards higher quality and environmental concerns (Josling, 2006). In addition, local and short-travelled wine may become more important in relation to future carbon labeling in the domestic market. Although the Hunter is famous for specific wines and grapes (Semillon and Shiraz), the larger companies have always blended grapes from different regions in order to achieve consistent quality at a reasonable price, to fashion-proof wines and to secure an adequate supply of quality grapes. There is and has been significant resistance to appellation controls in the Hunter (McIntyre, 2011). This is changing, examplified in the establishment of the association of Australia's First Families of Wine, priding itself on being historically connected to a location producing a particular wine (Lofts, 2010), as well as more single paddock wines coming on the market.

Policies influencing environmental action in the tourism industry

In the NSW long term strategy (2009) for tourism, the main focus is on the upgrade of skills and marketing efforts of the sector. With regards to environmental issues, its emphasis is on adaptation to the impact of climate change (extreme weather incidences) and supporting service providers to enhance Australia's status as a green destination (Department of Resources Energy and Tourism, 2009, p. 10). The Australian tourism industry thus seems to be not especially concerned with promoting environmental issues in the industry.

Several environmental certification systems are available for tourism providers in Australia; depending on the type and size of business. These range from "Eco Tourism Certification", mostly for smaller nature based tourism providers (Eco Tourism Australia, 2012), to "Eco-Friendly Green STAR rating", for tourism providers through the Australian Automobile Association Tourism (AAA Tourism, 2012), "Green Globe Certification", a global certification system developed for larger tourism providers, such as hotels, airports, conference venues, and the like, (Green Globe, 2012) and ISO Standardisation for either Environmental Management Systems and Lifecycle Assessments (ISO

14001 and 14040) (International Standardisation Organisation, 2009). Energy rating systems for existing buildings is initiated by the NSW Office of Heritage and Environment (NABERS, 2012).

In the Hunter, Wine Country Tourism promotes environmental action through annual awards for ecotourism and excellence in sustainability. Of the more than 250 accommodation and catering businesses in the Hunter, a websearch found less than ten providers (4%) having any kind of environmental certification (Eco-Tourism, Eco-Friendly Green Star Rating or Green Globe)(Wine Country Tourism, 2012).

Environmental policies

In the early 90s Australia chose a markedly different environmental policy than other OECD countries; this was based on market based mechanisms and a large-scale voluntary scheme, the National Land Care Programme, which was implemented jointly by the National Farmers Federation and the Australian Conservation Foundation. This encouraged farmers and communities to collectively address land restoration and water protection issues. By 1998 around 66% of all farmers were involved in Landcare groups (Aplin et al., 1999), with 91% reporting change in land management practices (Lockie & Higgins, 2007); however, less emphasis was noted on improving water quality in targeted catchments (Commonwealth Scientific and Industrial Research Organisation (CSIRO), 2003). The latest national statistics reveal continued degradation of the soils, native forests and waters, and an increase in waste and greenhouse gases per capita (Australian Bureau of Statistics (ABS), 2010).

The Landcare scheme was primarily rolled out in rural areas, and, typically, there are no Landcare groups in Lovedale. Instead, there are initiatives like the Catchment Authorities' funding of private landowners willing to set aside some of their property for land restoration and native revegetation purposes (Hunter-Central Rivers Catchment Management Authority, 2007). Funding is granted through a competitive process based on achieving the best environmental outcomes that focus on expanding existing wildlife corridors in the agricultural landscape. Financial assistance depends on how long land is set aside, from minimum five years to perpetuity (Hunter-Central Rivers Catchment Management Authority, 2010).

The Carbon Farming Initiative (CFI), introduced in 2011, gives farmers the opportunity to engage in carbon farming (increasing carbon sequestration in vegetation cover and soils) in order to obtain tradeable carbon credits. The dissemination of knowledge about these opportunities has started through regionally held workshops throughout Australia (Department of Agriculture Fisheries and

Forestry, 2011; Department of Climate Change and Energy Efficiency, 2012), with some winemakers making their wine and winery carbon neutral (Tromp, 2012).

Several rebate programmes have been implemented to primarily reduce energy use for small to medium sized businesses. These include rebates of up to $5,000 for energy efficiency investments, subsidised energy audits, energy efficiency training, and business resource management. Only energy efficiency or renewable energy investments with a payback period of less than two years are eligible for rebates; thus, solar panels are not included (NSW Department of Industry and Investment, 2010). A time-limited rebate scheme for solar-panels was implemented by the Federal Government during 2009, and several Lovedale businesses obtained the solar panel rebate. While many businesses received the subsidised energy audit, few received rebates for energy efficiency investments as they had already been implemented by the environmentally aware owner. Table 4-1 gives an overview of the different regulatory institutions that would influence the Lovedale wine tourism area.

4.2.5.2 DEGREE OF COORDINATION BETWEEN ENVIRONMENTAL POLICY ACTORS

The hybrid system of environmental policies based on individual voluntary initiatives and market based approaches is not easily coordinated so as to achieve regional objectives. It is also made complex by the strong state and territory governments and their legislative powers (Papadakis & Grant, 2003): while the Commonwealth introduces new legislation, the States follow up with regulative measures, leading to differences in regulative, market based and voluntary measures between the states and between the State and Federal level. There are also issues of an inherent lack of trust between the environmental groups, the government and industry, leading to adversarial relations and a less than constructive basis for compromises for the way forward (Papadakis & Grant, 2003). Lack of coordination has been seen in the area of incentives to reduce energy consumption, where both state and federal level governments have implemented similar schemes at the same time. This is not only confusing for small businesses, but often involves bureaucratic procedures to obtain incentives.

Large federally funded schemes, such as Caring for Country and the Carbon Farming Initiative, are implemented and monitored centrally, yet often coordinated and implemented locally through industry organisations and catchment authorities. In the Hunter, the HVWIA has received funding from the regional Hunter-Central Rivers Catchment Authority (H-CR CMA) for the pilot implementation of EntWine. The native revegetation scheme is also done through H-CR CMA in collaboration with private owners. Critics of the “Caring for Country Scheme” argue that it is too centralised, is narrowly focussed and requires too much reporting. It widens the gap between regional

bodies and local groups, and undermines well functioning regional authorities, that is, water catchment authorities (Robins & Kanowski, 2011).

Collective marketing, export initiatives, management, and plant health research are implemented by the Australian Wine and Brandy Corporation (AWBC), the Australian Grape and Wine Research Corporation (AGWRC) and the Australian Plant Health (APH), with funding from government and through three levies charged from all commercial grape growers and wine producers: the grape research levy, the wine export charge and the wine grapes levy (Department of Agriculture Fisheries and Forestry, 2010c). Environmental research has centred on improving plant health, reducing pesticides and reducing carbon in the packaging and distribution of wine. Yet no industry research centre is located in the Hunter and this, thus, reduces contact between growers and researchers.

The Cessnock City Council implements its waste collection and recycling in collaboration with three neighbouring councils. Their role as local planning authority is to ensure that zones for rural and environmental purposes are incorporated in local environmental plans. Maintaining the rural feel of the vineyards is dependent on maintaining rural areas as agricultural land and not responding to developers' demands for subdivision into tourism facilities.

The establishment of the Hunter Valley Private Irrigation District (PID) in 2000 is a unique example of a coordinated and collective community initiative to secure water for around 400 vineyard and private properties in the Lower Hunter in an equitable and non-profit oriented, yet market based manner (Hunter Wine Country Private Irrigation District, 2000). The project received regional development funds from three levels of government, including authorities, utilities and commercial companies, and was successfully delivered on budget and on time. It has been an important unifying factor in the Hunter, is the largest in Australia, and considered an example of good governance for the sustainable use of a common water resource (Stewart & Jones, 2003).

Table 4-1 Regulatory institutions influencing environmental behaviour in Lovedale

Policies	Regulations (implementor)	Market instruments (implementor)	Voluntary/Incentives (implementor)
Agriculture/Wine "Australian agriculture must remain globally competitive and sustainable."	Winery waste and water management (Local Council) Pesticide spray prevention (Local Council) Pesticide use compliance (Australian Pesticide and Veterinary Medicine Authority)	Environmental certification Organic (7 certification agencies) EntWine to ISO standards (Commercial certification organisation) Global Gap, Carbon labelling (Retailer driven by Tesco, Woolworth etc) Geographic indication (WMFA) Tradeable Carbon Credits (DECCWA)	Caring for Country (WMFA) EntWine Environmental assurance Carbon Calculator Landcare groups (Hunter Catchment Authority)
Tourism "to improve industry understanding of the impact of climate change, and to prepare the Australian tourism industry for a carbon-constrained future."	Waste and water management (Local Council) Food safety (Local Council) OH&S (Local Council)	Environmental certification Eco-Tourism (Non-profit org) Green Triple AAA Certification (Triple A) Green Globe Certification (Commercial certification org) ISO Standards (Commercial)	Solar Energy rebate schemes (State and Federal schemes) Subsidised energy audit (NSW DECCWA) Sustainability advantage for larger tourism providers (NSW DECCWA) Tourism Environmental Awards (Hunter Tourism)
Environmental policies	Green and rural zones in Planning (Local Council)	Carbon farming (DAFF)	Incentives for native revegetation (Hunter Catchment Authority)

4.2.6 SUMMARY OF CONTEXTUAL FACTORS IN LOVEDALE

Table 4-2 below summarises the contextual factors that influence Lovedale businesses environmental and value-adding behaviour.

Table 4-2 Contextual factors influencing Lovedale Businesses

Contextual factors		**Contextual factors influencing Lovedale Micro-cluster**
Locational context		Proximity to large market in Sydney. Poor roads and council services. Threatened by extractive industries expansion.
Economic context		Wine glut leads to low profitability in grape-growing, tourism is increasing. Small family wineries dependant on cellar door tourism sales and complementary tourism businesses.
Cultural cognitive institutions	Historical context	Boom and bust industry, with some continuous wine families. Lovedale wineries 25 years old, Lovedale microcluster 15-20 years old.
	Local frames of reference Relationship with nature	Dichotomy between low income residents and high-end wine tourism operators and owners. Old wine families are more embedded in local community than new lifestyle vignerons. Less importance on preserving cultural landscape. Now changed due to threat of CSG, joining all wine tourism operators in effort against CSG expansion.
	Business behaviour	Sophisticated and innovative, linked with Sydney markets, little focus on local market. Local community has low-income and does not use Hunter Valley tourism facilities, but provides labour for wine industry.
Social Normative institutions	Community structure	Lovedale micro-cluster not embedded in local community. It does not have local community centre or services. Old wine families more embedded in community.
	Community interaction	Good interaction within the wine and grape-growing community through Hunter Valley Wine Industry Association. Less within tourism businesses.
Regulatory Institutions	Decentrali-sation	Low. Local council few responsibilities; planning, waste management, infrastructure and recreation. Lovedale has little connection with council.
	Policies and Regulations	Few of the market based instruments and incentives are relevant or practical for influencing environmental action in small wine tourism businesses. Most useful for large businesses.
	Coordination	Good coordination inside micro-cluster based on marketing advantages and lifestyle values. Good coordination within the grape and wine industry, less in the tourism industry. Council has little coordination responsibility. Lack of coordination of environmental incentives between state and federal authorities.

4.3 VIKEBYGD MICRO-CLUSTER, HARDANGER, HORDALAND, NORWAY

Vikebygd is a micro-cluster of apple tourism ventures in Ullensvang Local Council, Hordaland County, in western Norway. It is located on the western side of Sørfjorden, in the Hardanger region, the most arctic commercial fruit producing district and is famous for apple-blossoms mirrored in fjords surrounded by snow-capped and glacier-wrapped mountains (see Figure 4-4).

Figure 4-4 Vikebygd fruitfarms

(Source: Sidsel Grimstad, May, 2009)

4.3.1 LOCATION, INFRASTRUCTURE AND DEMOGRAPHY

Vikebygd comprises a series of small farm communities on the western side of Sørfjorden within the postal code of 5776 Nå (see Figure 4-5). From olden times this delineation was based on physical barriers of winter avalanches, making Vikebygd inaccessible by car (Måge, 2008). The last major avalanche occurred in Bleie in 1994 (southern end). Avalanche diversion structures were built in 2003 to keep the road open year round.

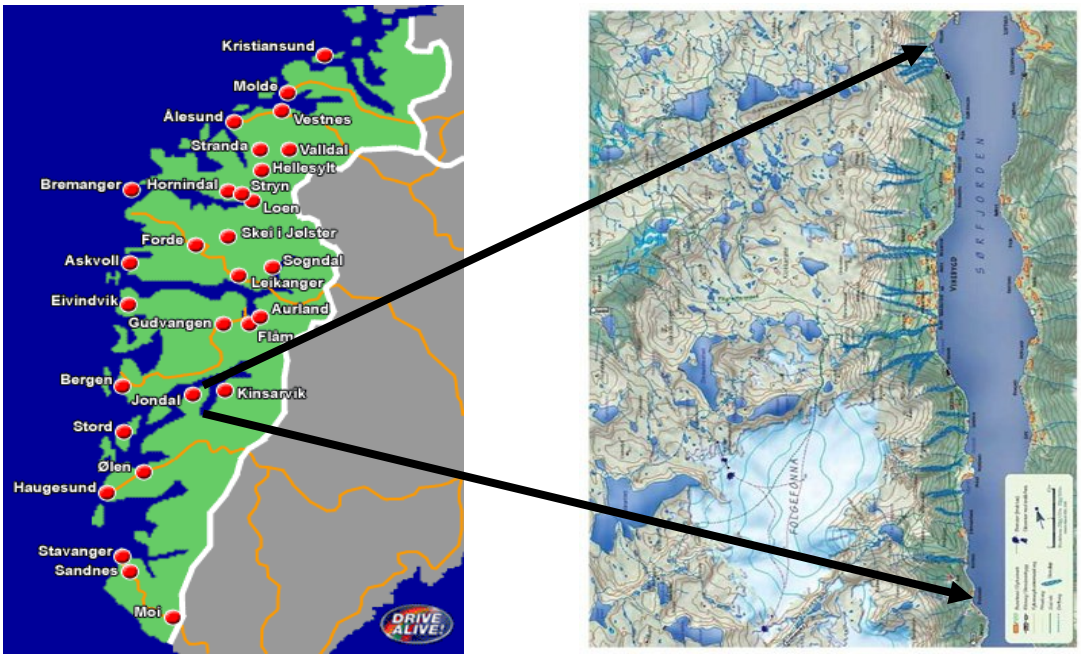
Vikebygd has a population of around 1300 inhabitants (Ullensvang Herad, 2009), with around 75 farms of which around 65 are fruit farms (apples, pears, plums and cherries) (Måge, 2008). The Hardanger farms are amongst the smallest in Norway averaging 3 hectares (Hegrenes, Knutsen, Haukås, Solberg, & Olsen, 2009), yet ownership remains remarkably stable, with less farms closing

down than elsewhere in Norway (Måge, 2008). There are also around 65 registered businesses in tourism, services and construction industries in Vikebygd (Brønnøysundregistrene, 2010); however, most of these are owned by people with farms. The high number of residents is because Vikebygd is a rural community that includes people working as salaried staff elsewhere (public sector, other businesses), in industry in Odda, or not working (retired, on welfare). Vikebygd has a grocery shop, a petrol station, two cafes, a library, three primary schools, two pre-schools, a community hall, one fruit co-op, a sports association, hunters associations, and a plethora of community organisations. The road through Vikebygd is identified as a national tourist road and has numerous historical sites, such as rock carvings (1500 BC), Agatunet Eco-museum that has 30 national heritage farm buildings, and the oldest legal document in Norway (Bleie-dokumentet), as well as farms offering farm visits and guided tours.

Proximity to Bergen, with 300,000 people and an international airport is a 2.5 hour drive, but includes a ferry, while the distances to Stavanger and Haugesund are around three hours. It is a five hour drive to Oslo over the mountains, which often closes during winter. The Ullensvang Local Government area is located on either side of the Sørfjorden, with Vikebygd on the western side, and the administrative centre, Kinsarvik, on the eastern side. On the southern end of Sørfjorden lies Odda, a different council. This disjointed structure leads to continuous debate over which side is being advantaged in relation to funds, infrastructure and services. In 2008, construction of the Hardanger Bridge was initiated, making the eastern side of Sørfjorden ferry-free and Bergen able to be reached in two hours. A tunnel is being built under the Folgefonna glacier from Odda to Haugesund, marginalising Vikebygd from all main east-west traffic routes.

In Ullensvang Herad (population of 3417) (Statistisk Sentralbyrå (SSB), 2011a) agriculture is the main occupation and, in 2007, it had 233 fruit farms, accounting for 15% of total employment and around 318 full time positions (Vangdal, 2010). Ullensvang has not experienced population decline typical for the region, due to returning farm heirs and to immigration (Ullensvang Herad, 2010a). Continuous campaigns to attract newcomers to the area include support for business development and excellent council services (housing, cultural events, pre-school, and primary schools). Unemployment is at 1.8% and income distribution better than the country average, while tertiary education levels are slightly lower than the national average (19.7% versus 21.1% for Norway) (Hordaland Fylkeskommune, 2010; Statistisk Sentralbyrå (SSB), 2010a, 2012).

Figure 4-5 Location of Vikebygd, Ullensvang Herad, Hordaland, Norway



(Permission granted from Terje Johnsbråten, Manager of Vikebygd Landskapspark)

4.3.2 ECONOMY AND MARKETS

Ullensvang is the biggest fruit-producing council in Hordaland accounting for 81% of the value-adding of fruit-production, and 20% of all fruit-farms in Norway. In 2007, the value-adding of fruit production in Ullensvang amounted to 55 million NOK or approximately 9.7 million. In 2007, around 50% of all farms had additional non-farm income earning activity, such as hire cropping for other farms, tourism, rental accommodation and on-farm food manufacturing (Vangdal, 2010). The highest returns were in tourism ventures, averaging an average annual profit of 100.000NOK or around 20,000 AUD, and not a full-time annual income.

The west coast fjords of Norway are an iconic destination and in both 2004 and 2009 Fjord Norway was awarded National Geographic Traveller Magazine Prize for the world's best tourist destination based on tourism stewardship and sustainable tourism criteria (Mofett, 2009). In 2010, tourism accounted for around 79 billion NKr or 4.3% of the total GDP in Norway. (Visit Norway, 2010). An estimated 24 billion NOK is left by international tourists in the Fjord Tourism Region (NCE Tourism - Fjord Norway, 2009). The tourism income declined nationally by 5% in 2009 (Statistisk Sentralbyrå (SSB), 2010b) due to a strong Norwegian Kroner and the GFC, but remained stable in Hardanger. Tourism accounts for 4% of employment in the Hardanger region (Hordaland Fylkeskommune, 2010).

Poor weather is a major deterrent for nature-based tourism on the west coast. The Hardanger region accommodated around 400,000 people in 2009, but occupancy rates are very low at 38.5%, compared to 54.4% in the Fjord Region and 50.7% for Norway as a whole. The majority of occupants (76%) being tourists (i.e. few corporate customers) indicates the issue of achieving economic sustainability during the short and intense summer season and the lack of a domestic market. Most tourists come to Hardanger for the "Nature and Landscape" (85%), and "the Fjords" (60%). Suggested improvements are better and more local food, and improved public transport and signage for trekking and bicycling tourists (Hordaland Fylkeskommune, 2009). There are no available figures for tourist numbers or income for Vikebygd or Ullensvang Herad. Almost 10.000 visitors passed through the Odda tourist information office in 2009 between May to mid August. Of these, around 15% were Norwegians; the rest were foreigners, primarily of German (30%) and Dutch (16%) origin (Nøstdahl, 2009).

4.3.3 CULTURAL COGNITIVE INSTITUTIONS

4.3.3.1 HISTORICAL CONTEXT

The earliest settlement of farm clusters in Vikebygd dates back to 500 AD (Brekke, Bakke, Indrelid, Haaland, & Aarseth, 2008). Traces of the harvesting of wild growing apples have been found in Norway from around 800 to 1100 AD, while cultivation of apples was introduced by Cistercian monks from York, England at the end of the 12th century (Grønsnes & Eitrheim, 2002); and, by 1277, apple-cultivation was so widespread in Hardanger that the Catholic church decreed that the tithe should be paid in apples (Helle, Grepstad, Lillehammer, & Tryti, 2007). With the reformation of Norway in 1537, the catholic monks left and fruit cultivation declined. It was reinvigorated through the active promotion by Protestant priests in the 17th century, and, in 1770, the first Horticulture School was established in Ulvik Hardanger and flourishing apple trade with Bergen and Stavanger merchants (Grønsnes & Eitrheim, 2002). The first commercially grown apples were the type Tormod, named after Tormod Aga from Aga in Vikebygd. A new era in commercial apple-growing followed the introduction of the Gravenstein apple, first planted at Aga in 1792. Being versatile and responding well to fertilisation, they are a cornerstone in apple production today (Grønsnes & Eitrheim, 2002).

The need for knowledge and extension services led to the first privately owned horticultural school established in early 1900, and, by 1936, the Hjeltnes horticultural school was taken over by the state. In 1949, the Fruit Farmers Association established a research station in Lofthus, Ullensvang, to improve cultivation techniques and test new types of fruit (Grønsnes & Eitrheim, 2002). Today, this research station is part of the national agricultural R&D institute under the Ministry for Agriculture and Food - Bioforsk (Bioforsk, 2010).

With the introduction of regular boats to Bergen, the farmers in the 1950s established a membership based Fruit Co-operative, Hardanger Fruktsamsal, with a governing board and employed day to day management. As the Fruit Co-operatives became wealthier, fruit storage and cooling rooms were constructed throughout Hardanger, and fruit deliveries were organised on boat or trucks to merchants in the bigger towns (Grønsnes & Eitrheim, 2002).

Cider production of apples was documented by a priest describing how, in1744, the farmer Knut Jåstad (from Jåstad in Vikebygd) had refined his cider producing techniques. Between 1890 and 1920 there were five cider factories throughout Hardanger of which one was in Aga. In 1920, stricter alcohol laws led to the closing of the factories. In the 1990s as part of general liberalisation of Norwegian society, more liberal alcohol laws were introduced making cider-production legal if they sold it to licenced restaurants. Sale of a product of an alcohol content of over 5.5% alcohol to individuals can only take place through the state owned alcohol monopoly, Vinmonopolet, and all advertising of alcohol-containing products is illegal. Currently, there are three Norwegian ciders sold through Vinmonopolet, of which two are produced with apples from Hardanger (Landbruks og Matdepartementet, 2009a). In Vikebygd, there is one commercial cider-making facility, Hardanger Cideri located at Jåstad, and some farmers send apple juice to Bergen for commercial cider-production. Most farmers also produce ciders for their own consumption in ancient cider cellars on the farm.

Norwegian fjord tourism has a more than 150 year history, initially attracting salmon fishers and wildlife hunters from the British and German upper classes. Transportion to the west coast was by cruise ships and included a visit to Sørfjorden to observe the spectacular Tysse Waterfalls in Odda, with the glaciers on either side. While the nature was wild and impressive, the peasant population was looked down as being poor and rather primitive (Lees, 1882).With Norway's independence from Sweden in 1905, the focus turned to nation-building through industrialisation. The fjords became highly attractive sites for foreign investors establishing a new industry that was dependent on large quantities of electricity. In 1908, a large dam put the Tysse Waterfalls into pipes to produce hydropower electricity for the world's largest carbide factory in Odda, effectively ending tourism in Sørfjorden. The intensive industry took its toll, and in the early 70s Sørfjorden was ranked the world's most polluted fjord, with high levels of carcinogens found in the fjord and surrounding soils. After 30 years of improvements, there is still a ban on eating fatty fish from Sørfjorden Today, the Odda and Tyssedal industrial complex is one of the best examples of early industrialisation in Europe and has been proposed as a UNESCO heritage site (Riksantikvaren, 2009).

The industry in Odda has always provided much needed jobs in the area, and many farmers worked and still work in the industry today, combining this with fruit farming today. The continued existence of industry jobs in the close vicinity may thus contribute to maintaining the small farms in Vikebygd.

Vikebygd as a separate identity or micro-cluster is a result of landscape barriers and the self-reliance it installed in the people. Until last century, the area was only accessible by boat, which explains why Vikebygd belongs to Ullensvang Council, even though the community centre is across the fjord.

Vikebygd has always been a tightly knit fruit farming community shown, for example, in 1992, when Norwegian apple-farmers felt threatened by the WTO (World Trade Organization) when it ordered a softening of the import restrictions of foreign apples; in response, the farmers erected an obelisk to commemorate the bicentennial for the first Gravenstein appletree planted in Norway in Aga. In 1994, when a large avalanche hit the southern end of Vikebygd, (Norges Geologiske Oppmåling, na), an upsurge of community spirit to rebuild the area was channelled through a project called “Up with Vikebygd”. While this has put Vikebygd and Hardanger on the map as a tourist destination for the larger population, the construction of the Hardanger bridge and the Folgefonna tunnel contribute to making the “detour” around the Folgefonna peninsula only for the knowledgable and specifically interested.

In 2010, the Government initiated the upgrade of the national power grid across Hardanger in order to follow up the Bipartisan Climate Consensus of 2008, obliging Norway to become carbon neutral by 2030. The upgrade will secure electricity provision to Bergen, provide hydropower energy to the North Sea oil installations and will connect the phletora of small hydropower plants being constructed onto the grid, as well as continue the free trade of electricity onto the European market (Miljøverndepartementet, 2008). While many environmentalists are positive about the impact on CO2 emission reductions from the grid upgrade, the aesthetic impact of huge electricity masts traversing Hardanger’s iconic scenery has mobilised all the seven Hardanger municipalities and their inhabitants (Dagsland Holgersen & Akerhaug, 2010; Kristjánsson, 2010). The decision is seen by many locals seen as a abuse of power by the Central Oslo Government against local democracy and Norway’s cultural heritage, and has been followed up with civil disobedience actions (Hardangeraksjonen, 2010).

Figure 4-6 Vikebygd Landskapspark logo

(Permission granted from Vikebygd Landskapspark manager Terje Johnsbråten)

The Vikebygd Landscape Park can be seen as a continuation of activities based on an established positive community spirit. While both “Up With Vikebygd” and the “Centenary Inaugural Event” held in 2005 were primarily community strengthening processes, the landscape park is a model for rural development, where self-organised communities create new employment and value-adding through the sustainable use of landscape, nature and culture in the area (Fylkesmannen i Hordaland, 2006). Through a series of community consultations in 2005-2006, available funding for seven pilot programmes was made available, with the goal of establishing a self-financing organisation in each landscape park after the initial phase. Vikebygd Landscape Park was selected and received a small project management fund from 2006 to 2008 and a second tranch in 2009-2011(Fylkesmannen i Hordaland, 2009).

In 2009, Vikebygd Landscape Park decided to establish a private shareholding company independent from public funding, selling 278 shares valued at 1000 NOK each, with shareholders being both individuals, small and large businesses, as well as the Ullensvang Council and Chamber of Commerce. The funds have been used to create venues for tourism operations, enhance marketing, run websites, and to establish walking tracks in the cultural landscape, tourist information signs and a small business centre. New initiatives include developing packaged events, where walking or skiing over the Folgefonna glacier is combined with having a traditional Hardanger meal in one of the farmhouses. Other small tourism projects have also budded around the landscape park, such as guided tours in the apple orchards, and storytelling about the avalanches. There are several rental properties for tourists being developed as well as a camping ground. Other value-adding activities include the construction of mini-hydropower plants, often as a joint initiative between several farms with

waterfall rights. Yet, the value-adding and job creation from nature and cultural assets has been a more difficult process than that of enhancing the community.

While the sustainable use of nature and culture is the main objective for the landscape park, the underlying motivation is to create an attractive dynamic community to encourage people and farm heirs to return home. Community events have been held, such as the Vikebygd Landscape Park Open Day 2010 where all small tourism related businesses kept their house open for visitors. At the beginning of June 2012, the Vikebygd community held a "Return Home" weekend with cultural events by local and "home-comers", a mountain race and local food. In some ways, it could be stated that the Vikebygd Landscape Park is primarily for the locals.

4.3.3.2 LOCAL FRAMES OF REFERENCE AND EMBEDDEDNESS

TheVikebygd farmers can trace centuries of embeddedness in the area, which hashas implications for how the apple farmers see themselves and their role in relation to society and the environment. It is also important to understand the centre-periphery (urban-rural) relations which have been vital for the development of modern Norway's identity and nation-building process.

When Norway gained independence from Sweden in 1905, the process of nation-building led to a divide between the civil servants and commercial elites in the major cities which were seen as representatives of colonial power, while national liberal forces strong in the rural areas wereperceived as strongholds of national identity and culture where foreign rule had made little impact. This led to a cultivation of the periphery which is still manifested in: "Norway's regional and agricultural policies, the temporal migration of Norwegians during vacations and weekends to their cabins in the mountains and along fjords, Norwegians scepticism of the European Union, and anti-urbanism" (Strømsnes, Selle, & Grendstad, 2009, p. 398). Norway's national identity is thus closely linked to the rural and less to the cities' cultural elites, which can be seen in society's willingness to subsidise and support rural areas through wealth redistribution between urban and rural areas (Gulbrandsen & Engelstad, 2005). Additionally, farmers are comfortable in their role as defenders of cultural heritage and identity, perceiving that there is general support among consumers for this (Daugstad, et al., 2006).

This can also be seen in the strong devolution of power down to the Council level discussed in Section 4.3.5.

This rural-urban contract gives farmers, especially the Hardanger farmers, the "licence" to perceive themselves as carriers of Norwegian culture and identity. Their focus on the cultural heritage sites and preservation of buildings and agricultural land may be influenced by this. It can also be seen in the

national sentiment around the construction of the Hardanger “Monstermasts”. During these protests both farmers in folk costumes and urban cultural elites have committed civil disobedience to stop construction (Kristjánsson, 2010).

The current push to encourage farmers towards more tourism and other value-adding activities is thought to change the role of farmers to tourist operators and business managers (Rønningen, Fjeldavli, & Flø, 2005). However, while some farmers are reluctant, there are indications that these tourism ventures lead to a “re-peasantization” - a reconnection with traditional farming, and the development of a stronger cultural identity as farmers resurrect old traditions and activities. Concerns that Norwegian farmers will lose their rural farm identities may therefore seem unwarranted (Brandth & Haugen, 2010).

Environmentalism in Norway is described as being fundamentally different to Anglosaxon assumptions of environmentalism (Strømsnes, et al., 2009). The strong power and symbolic importance of the rural landowner as the holder of national identity (Østerud, 2005; Witoszek, 1997), leads to a view of the natural landscape as being not sacred or romantic (as the Anglo-saxon view), but more pragmatically viewed as a “task-scape”(Witoszek, 1997), a nature that will deliver, where people can harvest and make a living as long as it is maintained within its carrying capacity (Strømsnes, et al., 2009). Where the Europeans have a romantic view of the unspoilt and unused nature, in Norway, importance was given to egalitarian ideals and struggles against serfdoms - values of the Enlightenment - creating a particular Norwegian version of “Pastoral Enlightenment” (Witoszek, 2011, p. 214). For the Norwegian, both urban and rural, the farmer is a caretaker of nature, not a destroyer (Bjørkhaug & Richards, 2008). The establishment of the landscape parks thus follows a historic continuum which sees rural livelihoods being based on the sustainable use of the natural landscape.

4.3.3.3 LOCAL VARIATIONS IN BUSINESS BEHAVIOUR

As has been seen above, cultural cognitive institutions influence the way Norwegians and farmers perceive nature, agriculture and environmental action. Three areas are thought to have a specific impact on Vikebygd apple-tourism business behaviour, the allodial law, farm incomes and subsidies, and the restrictions on alcohol sales.

The vast majority of farms in Norway are inherited. Two laws, protected by the Norwegian Constituion of 1814, regulate the inheritance of agricultural properties in Norway, the more than 1000 year old allodial law (Odelsloven) and the inheritance law (Åsetesloven) (Landbruks og

Matdepartementet, 2011). The Odelslov ensures that descendants have the first option to inherit agricultural land and property before sale on the open market. The Åseteslov ensures that the property is inherited as one unit (not divided) and valued according to a State regulated pricing code. Active farms, defined as more than 2.5hectares of agricultural land and 10hectares of forests, are rarely sold on the market. Heirs must farm the land for a minimum of ten years and reside on the farm for at least five years after taking it over (Landbruks og Matdepartementet, 2009b). The sense of duty that descendants feel to take over tiny farms remains very strong (Heggem & Bjørkhaug, 2005).

The Odelslaw has secured farm succession and the stability of the number of fruit farms in Hardanger, even though they are the smallest in Norway. It has led to resourceful people returning to the family farm after tertiary education, with the skills and motivation to pursue additional activities. In parallel, several farmhouses have been turned into leisure cabins after descendants have stayed on the farm the mandatory years, with the land leased to neighbours. The resulting large stock of old beautiful farmhouses in need of restoration and which cannot be bought by outsiders is a paradox in Ullensvang where there is little opportunity for new developments due to topography.

On the west coast, mass voluntary associations, such as the farmers and smallholders unions, the temperance movement, New Norwegian Movement (promoting dialect language), and Christian lay movements have all had a strong impact on public policy (Østerud, 2005). Farmers are organised in two very active unions, the farmers union (Bondelaget) (62,000 members) and the smallholders union (Norsk Bonde og Småbrukarlag) (7000 members). Bondelaget has been more conservative, wanting to maintain fulltime farmers, whereas Småbrukarlaget is pursuing multifunctional farm models which it perceives as being more environmentally sound. Farmers' income and welfare arrangements are agreed upon through a unique arrangement, where the farmers unions have direct annual negotiations with the government (Hegtun, 2012). This arrangement is the basis for the high subsidy levels that attempt to improve income and welfare for farmers, and has been vital for reorienting farmers towards producing societal goods and taking on natural resource management responsibilities.

The well-functioning membership based fruit co-operatives in Hardanger are based on strong traditions of mass movements. Through strong collective efforts, the Hardanger farmers managed to restructure their fruit co-operatives in order to position themselves better for increased competition and retail power; this was followed by an increase in per unit price back to the farmer and gives an indication of the strength and unity of the farm identity.

Anttila and Sulkunen (2001) found that the rural-urban dimension can explain local varieties of alcohol regulations with stricter enforcement in the western parts of Norway where Temperance and

Christian lay movements have been prominent. The current strong restrictions on the sale and marketing of alcohol, including the establishment of the State owned Wine Monopoly in 1922, is an example of the influence of the temperance movements, although they are now maintained more for public health and taxation reasons. Cider with alcohol content above 4.75% can only be purchased from the Wine Monopoly which is only located in larger towns. This has resulted in a very difficult business proposition for farmers producing cider, as cellar door sales are currently illegal. All alcohol advertisement is illegal in Norway, limiting information about alcohol-containing drinks to product catalogues of the Vinmonopolet. In addition, a recent softening of alcohol laws has allowed the private and direct importation of wine, whereas the purchase of cider from a neighbour is still illegal. The limitations this creates for on-farm profitability from cider production in Hardanger is continuously debated (Venstre og Senterpartiet, 2010) .

4.3.4 SOCIAL-NORMATIVE INSTITUTIONS

4.3.4.1 SOCIAL STRUCTURES

In most European countries the trends towards multifunctional farms producing both food, environmental and societal goods, with less productivist orientation (Neil Argent, 2002; Holmes, 2006), has led to depopulation and a greater heterogeneity of the rural landowners. In Norway, the allodial law, combined with a relative improvement in farmers' income, has slowed this process. Rural areas are subject to a low mobility and turnover of property, even though total farm income is increasingly gained from off-farm activities. In 2007, 51% of farmers in Hordaland had additional income other than agriculture. Even though there has been an almost 40% reduction in farming units in Hordaland during the last decade (1998-2008), most agricultural land is still being farmed through complex arrangements of formal and informal lease and rental agreements between neighbours and inheritors of land (Bakkebø, 2010; Hegrenes, et al., 2009). On average, only 20% of total farm income (including both adults in farm household) on Norwegian farms comes from agricultural activity (Landbruks og Matdepartementet, 2011).

The small fruit-farms in Vikebygd, as is the case with small vineyards, can easily be combined with seasonal or even fulltime employment elsewhere. Many employees in agriculture related positions in Ullensvang, such as extension, research, co-ops, and manufacturers thus have a fruit-farm in addition to their job. Alternatively, the male farmer is primarily responsible for the farm often leasing additional orchards from neighbours, while spouses may have jobs elsewhere. The availability of local jobs in public sector and shift jobs in industry (Odda), or the off-shore industry, thus contributes to secure the rural population.

Since commercial fruit farming started, farmers have hired external help during harvesting times. The fruit co-operative currently hires most of their seasonal staff from East Europe.

4.3.4.2 LOCAL ORGANISATIONAL NETWORKS THAT INFLUENCE BUSINESS BEHAVIOUR

Vikebygd is a well-organised micro-cosm with almost all societal needs covered within the geographic barriers created by avalanches; it has pre-schools, schools, shops, libraries, community halls, petrol stations and mechanics. Yet, much of the Vikebygd community organisations and networks revolve around agriculture, and agricultural issues are also discussed even during leisure activities.

Yet, there are also contacts or networks outside the community, particularly in relation to trade and the export of fruit. Farmers, through the support of the fruit co-operative, certify their cherries according to European retailers' demand (GLOBAL GAP) for export to Europe when demand is saturated in Norway. Cider produced commercially is primarily sold locally to hotels or to gourmet restaurants in Bergen.

The mutual dependency between the fruit co-operatives, the large juice manufacturer and the farmers is vulnerable to the current trend and promotion of more on-farm manufacturing of products. This could be detrimental for the whole industry as recent modernisation of the fruit co-operatives makes them dependent on a certain revenue-level and obliged to meet negotiated retailer contracts. The emerging lucrative business of the on-farm manufacturing of cider and fruit juices threatens not only to undermine the co-operatives needed supply of fruit and their members' profitability, but also the collective and solidarity attitude of standing united against the global threat of imports.

When it comes to tourism, most coordination efforts are in information and marketing efforts; there is less in the area of tourism business development. Vikebygd Landscape Park is the only organisation on the western side of the Sørfjorden.

4.3.5 REGULATORY INSTITUTIONS

The Norwegian version of capitalism is characterised by a stronger state involvement in the economy than in other Nordic countries, while being controlled by strong norms of popular legitimisation. It is the nation state, rather than markets, religious institutions and voluntary associations, that leads and enacts economic and social reform; and as long as long mass movements can influence and control state power, Norwegian citizens view the state as benign (Østerud & Selle, 2006). This is contrary to the more Anglo-saxon view where democracy is when citizens are protected from interference by the

state, and democratic rights are equal to reduced exercise of state power (Held, 1996) in (Østerud & Selle, 2006). The Norwegian coordinated market economy (Hall & Soskice, 2001; Noorderhaven & Koen, 2005) also influences devolution of power, agriculture, tourism, and environmental policies.

4.3.5.1 LEVEL OF DECENTRALISATION OF POWER AND RESOURCES

Norway has a three levels of government, municipal, county and state levels. Norway's 429 councils (Statistisk Sentralbyrå (SSB), 2011b) have a considerable level of autonomy and enjoy a considerable level of devolution of power and resources forged by strong links that extend directly to national level authorities (Tranvik & Selle, 2005). The county level mostly now has coordination functions in the areas of regional planning and health and education issues.

Councils have been delegated substantial responsibilities for both hard (infrastructure, waste management, planning) and soft tasks (pre-schools, primary education, primary health care, immigration support, and aged care) in the local community. In addition the municipal authorities can take upon themselves any task that the State has not explicitly defined as belonging to higher levels of authority (Tranvik & Selle, 2005). Small rural councils are also a significant provider of jobs important for educated farm spouses. In 2000, councils employed 20% of the total labour force, and 70% of all public sector employees (Tranvik & Selle, 2005). Recent figures indicate an increase in overall public employment to 29.3%, while in Australia public employment is 15.8% (OECD, 2011a, 2011b).

In 2009, local councils in Norway received 15.2% in revenue and used 32.6% in expenditures, figures that are substantially higher than the 5.9% revenue and 4.8% expenditures that were recorded for Australian councils (OECD, 2011a, 2011b). Income is derived from income tax (the majority), property tax and transfers from the state, with the latter being increasingly earmarked for specific and monitored local service delivery (Tranvik & Selle, 2005). The level of economic autonomy is also strengthened by around 56 % of all hydropower electricity plants being owned by councils (Olje og energidepartmentet, 2008). The annual income from electricity sales for Ullensvang is around 30 million NOK, (Ullensvang Herad, 2010a) which they use for maintaining high standards of local service provision.

Ullensvang is serviced by a regional waste management company, which even on narrow and icy roads along Sørfjorden provide state of the art waste collection for every household, including sorting, recycling and energy-production from organic waste (Indre Hordaland Miljøverk, 2010). With relation to planning issues they have prepared a highly praised coastal plan, which will constrain

development of the coastal area and ensure public access. They have yet to prepare a compulsory plan for Climate Change and Biodiversity.

4.3.5.2 PUBLIC POLICIES, REGULATIONS AND INCENTIVES

Norwegian environmental policies have been characterised by Dryzek, Hunold, Schlosberg, Downes, and Hernes (2002) as an actively inclusive ecological modernisation strategy, with all stakeholders actively participating in policymaking and the mainstreaming of environmental consideration into sector policies. Through this, Norway has succeeded in reducing pollution and biodiversity loss and has improved energy-efficiency through active state involvement in the regulation and provision of incentives (Dryzek, et al., 2002). Increasing concerns, however, have been raised with regards to individual consumption patterns (Lafferty, Knudsen, & Mosvold Larsen, 2007). This confirms the state as environmental reformer and with citizens accepting these based on cultural values such as societal collectivism and long-term view (House, et al., 2004). These processes are strongly reflected in both agricultural and tourism policies.

Policies influencing environmental action in fruit-farming industries

The overarching paradigm for Norwegian agricultural policies since the Second World War has been to provide domestic food security and self-sufficiency through providing farmers with acceptable incomes that are supported by the state. This would be done through a complex system of subsidies, as well as import protection (Almås, 1994; Bjørkhaug & Richards, 2008). As a response to acute agricultural pollution, the contamination of drinking water and fish deaths in the 80s, environmental authorities issued a series of environmental regulations on farming. Inputs subsidies were eliminated and replaced by environmental taxes (Dahle, Strandli, & Grimstad, 1989). The 90s comprised a shift towards a more multifunctional role for agriculture (Alstadheim, 1991), with the agricultural sector being responsible for food security and for providing environmental preservation, biodiversity and rural settlement (Bjørkhaug & Richards, 2008). Environmental considerations have thus been mainstreamed into agricultural policies and implemented by the agricultural sector. And, while farm numbers have decreased by 75% since 1959 and farm sizes increased from 5 to 20ha, most of Norway's arable land (3 %) is still intact (Det Kongelige Landbruksdepartement, 2000).

The current agricultural policy (Landbruks og Matdepartementet, 2011) suggests increasing self-sufficiency according to the 1% annual increase in population through skewing production methods towards increased use of Norway's bountiful natural resources (mountain pastures) instead of imported fodder. There is also a strong emphasis on value-adding regional programmes into local

foods, tourism, bio-energy and reforestation. A continued focus will be on environmental process and products standards, geographic protection and labeling, and pursuing a goal of 15% organic production by 2020 (Landbruks og Matdepartementet, 2011).

All farmers receiving subsidies have to be part of the national environmental assurance scheme (Kvalitets-system for Landbruket KSL) which includes environmental management, animal welfare and occupational health and safety (OH&S). In addition, there are several product standards and geographic labels that seek to promote improved quality and regional specialities and each have detailed guidelines for production (KSL Matmerk, 2010). There is a separate national organic certification agency, Debio, responsible for the certification of both produce and farms. By 2011 only 5.6% of Norway's produce was organic (Debio, 2012).

Hardanger fruit-farmers have adapted to these changes in the agricultural policy. The largest change came in 1994 when the USA reported Norway to the WTO tribunal for import protection, resulting in a softening of border protection for apples. In particular, import of apples would be allowed year round, yet prices would be similar to Norwegian fruit prices when Norwegian apples were in season. In the early 2000s, this external threat led the Hardanger apple farmers to restructure and modernise the fruit co-operatives. Ten small co-operatives were merged into three with state of the art packaging and labelling facilities, close monitoring of product quality and the alignment of prices with quality, thus positioning them for increased competition (Rogdaberg, 2008). These three co-operatives have negotiated agreements with different retailers, yet support each other with supply and demand issues, and have succeeded in giving increased returns per unit fruit delivered for the farmers.

The Hardanger fruit farmer may obtain three types of subsidies: a) a production based subsidy in accordance with the quality of fruit and total lack of pesticide residues (Landbruks og Mat Departementet, 2002); b) an acreage based subsidy for environmentally friendly farming methods in steep and difficult terrain; and c) targeted environmental subsidies for specific farming methods to preserve biodiversity, heritage farming techniques or cultural landscape features (Landbruks- og Matdepartement, 2004). There are also subsidies paid during conversion years for farmers going organic (Landbruks og Mat Departementet, 2005). For a farmer to receive subsidies he/she is required to have an environmental management plan (environmental assurance scheme) (Kvalitetssikring i landbruket KSL) (Landbruks og Mat Departementet, 2003). Random controls of the environmental plans are implemented on around 10% of the farms every year by third party auditors.

The fruit co-operatives have been given the role of controlling pesticides residues, and are also required to limit the sale of pesticides to be in accordance with the farm's environmental management

plan. They also promote and provide labels for geographic speciality and organic produce, guiding farmers to pursue profitable organic plum production. Hardanger fruit is primarily sold domestically, yet Hardanger cherries have been air freighted to Europe and Asia when the Norwegian market is saturated. Due to European retailers demanding that imported fruit is Global GAP certified (conforms to ISO 14001 certification), the fruit co-op assists farms to achieve this (Hardanger Fjordfrukt BA, 2009).

Hardanger plums, apples, cherries and pears and Hardanger Apple Juice and Hardanger Cider have received Geographic Protection under KSL Matmerk (KSL Matmerk, 2010). Cider from Hardanger, has three accredited producers and is so far the only geographically protected product containing alcohol (Landbruks og Matdepartementet, 2009a).

Norwegian farmers receive the highest subsidy levels in the OECD, with 61% producer support as a percentage of gross farm receipts (OECD, 2010). In spite of this, support for maintaining agriculture (86%) and subsidies (75%) remains high in the general population (Norsk Landbrukssamvirke, 2011) and among political, cultural and church elites (Gulbrandsen & Engelstad, 2005). The main reasons for this are maintaining the production of food of high (Norwegian) quality (40%), avoiding rural depopulation (26%) and upholding the cultural landscape (15%) (Norsk Landbrukssamvirke, 2011).

Policies influencing environmental action in the tourism industry

Environmental sustainability in tourism is somewhat of an anomaly as environmental improvements made at the destination may be neutralised by increases in tourist numbers using more polluting travel modes. Tourist arrivals to Norway increased by 72% between 1985 to 2005, but the increase in tourists arriving via the most polluting mode (air and cruise ship) was 192% and 449% respectively (Gøssling et al., 2011). Aall et al. (2011) show that the increased environmental impact of Norwegians domestic leisure activities is attributed to increasing the sizes and comfort levels of cabins and an increased materialisation of leisure activities.

The 2007 national policy on tourism aims to make Norway a sustainable destination “with Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (Nærings og Handelsdepartementet, 2007). This is to be achieved through improved productivity and innovation, creating more fulltime jobs in rural areas, and by reducing greenhouse gas emissions. At the same time, an annual increase of one million international tourists is targeted. Consultations with the tourism industry produced a consensus document in 2010 which included specific targets for voluntary environmental certification of tourism ventures by 2015, 90% of nature or culture-based

tourism ventures and 80% of government supported tourist attractions. Family and activity based attractions must reduce their CO2 emissions by 50% by 2020. Environmentally certified accommodations providers will be given preference by public authorities' bookings (Innovasjon Norge, 2010).

Environmental certification options for tourism are: a) Norwegian eco-tourism for smaller nature based tourism providers (Thist is the "strictest" environmental certification, including not only actions at destinations but also on travel; marketing only towards short travel tourists (Europe) and discouraging travel-intensive holidays - promoting longer stays at same place.) (Norsk økoturisme, 2008); b) the Eco-Lighthouse for small and medium private and public enterprises, which focuses on energy efficiencies, sustainable transport and waste reduction of operations and events (Miljøfyrtårn, 2011). c) The Swan, which is the Nordic Environmental Certification for products, services and hotels (Svanen - Stiftelsen Miljømerking, 2012); d) ISO Standardisation 14001 Environmental Management Systems and ISO 14040 Lifecycle Assessments (International Standardisation Organisation, 2009) for tourism enterprises.

A pilot project is currently establishing criteria for the Certification of Sustainable Destinations, where the local community, tourism providers and local authorities (councils) collaborate in integrating sustainability concerns into both the local council planning process and into each business (Sørnes, 2012).

Environmental policies

In 2008, a Bipartisan Agreement on Action on Climate Change committed Norway to become carbon neutral by 2030, with two thirds of the emission reduction to be undertaken domestically (Miljøverndepartementet, 2008). In 2010, the largest emissions came from transport (32%), followed by off-shore industries (26%), land based industries (23%), and buildings (5%). Total CO2 emissions for Norway have increased substantially due to increases in consumption and economic growth (Smith, 2010).While almost 98% of the electricity used in Norway is renewable hydropower, there has been a decline in the percentage of renewable energy sources from 53% in 1990 to 41% in 2005 due to the use of natural gas for offshore petroleum and gas extraction (Buan, Eikeland, & Inderberg, 2010).

The Government's Climate Change Policy, released in May 2012, mandates that off shore emissions will be curbed through the provision of hydropower electricity, and a considerable upgrade of the electricity power grid throughout the country, as well as an upgrade of public transport and the formulation of low-emission transport alternatives, and the continued development of mini

hydropower plants (Miljøverndepartementet, 2012). Agriculture's role in climate change will be through the production of bio-energy, the sequestering of CO2 in forests, the innovative use of wood for constructions, and reducing emissions from fertiliser use and methane from animals. For the tourism sector, more public transport and reducing emissions from buildings was targeted (Miljøverndepartmentet, 2007).

The upgrade of the national electricity grid, involving large electricity masts through Hardanger, is required both to connect the small energy-producers onto the grid as well as for transferring large amounts of hydropoweredelectricity to off-shore locations. While the upgrade has been applauded by several national environmental movements as a fast-track solution to reducing national emissions, the localsand more conservation focussed environmental movement have condemned the grid due to its damage to unspoilt nature and tourism potential.

The push for mini-hydropower plants provides farmers with a profitable value-adding opportunity. While, before this, farmers' waterfall rights were purchased cheaply by public utilities, the privatization of electricity production (in the 1980s) meant that farmers with waterfall rights could produce and sell electricity at market rates. This number of mini-hydropower plants may lead to a loss of biodiversity, as well as create tension within communities between those who have waterfall rights and those who do not (Gravdal Elton, 2009). In practice, however, mini hydropower plants are still constructed as a collaborative project among farmers around the same stream. In Vikebygd, there are several small plants up and running, while several others have been applied for.

The review of agriculture, tourism and environmental policies reveal that, to a large extent, environmental considerations have been mainstreamed into other department's policies, actions and incentives structures. Agricultural subsidies and labelling are conditional of farms having environmental management systems. The fruit co-ops ensure the correct use and sales of pesticides, and the fruit research station develops integrated pest management. In tourism, there are goals for what percentage should become environmentally certified.

In conclusion, environmental action is promoted through active state involvement in policy setting and through regulations, subsidies, purchasing behavior, and consensus agreements.

Table 4-3 gives an overview of the different regulatory institutions that would influence environmental behaviour in the Vikebygd area.

4.3.5.3 DEGREE OF COORDINATION BETWEEN ENVIRONMENTAL POLICY ACTORS

There are several examples of interaction and streamlining to maximise coordination and value-adding in the agricultural sector, both with regards to the restructuring of the fruit co-operatives and their role in quality assurance, but also the close connection between research, extension, fruit co-operatives, and large manufacturer and retailers. The role of the membership and democratically run fruit co-operatives is particularly important for changing farmers' ways and introducing new certification standards. While previously there were latent tensions between the co-operatives, globalization pressures have led to a restructuring and collaboration across the fjord, and, not least, unity against the importation of fruit.

There are also close relationships between the fruit growers and the Norwegian Research Station for Fruit Farming (Bioforsk) located in Lofthus. The research station provides new knowledge regarding fruit varieties, value-adding technologies, organic fruit-farming, new varieties/improved methods and quality assurance in cider production. They received State funding to support the Geographic Protection of Hardanger Cider, and provided support through long-term collaboration with a French cider expert from Normandie. The research station is collocated with the extension service (Norsk Fruktrådgiving Hardanger) providing its 400 members (virtually all fruit farmers in the region) with on-farm horticulture advice (Norsk Fruktrådgivning Hardanger, 2011).

In 2004 a number of public agencies (Regional development, Industry, Agriculture and Fisheries Ministries) were merged into a one-stop shop, Innovasjon Norge, for business development and innovation in each municipality, named Innovasjon Norge AS (Innovasjon Norge AS, 2010). They provide funds for the planning and development of value-adding tourism and on-farm manufacturing ventures, as well as for training, marketing and networking (Fylkesmannen i Hordaland, 2009).

Substantial efforts and several initiatives by different agencies and departments have been working on a coordinated regional strategy for tourism and local development on the west Coast. But these initiatives are hampered by the lack of coordination between the authorities initiating projects top-down. The pilot programme of landscape parks launched in Hordaland in 2006 was a first effort to support emerging tourism micro-clusters bottom up, based on the principles of geo tourism. Other areas developed larger Regional Parks comprising several local councils collaborating for future development and coordination benefits in health and infrastructure investments. In 2009, all landscape

Table 4-3 Regulatory institutions influencing environmental behaviour in Vikebygd

Policies	Regulations (implementor)	Market instruments	Voluntary
Agriculture/Wine Norwegian agriculture must: contribute to food security providing high quality food according to consumer demand, contribute to securing rural population, increase value-adding through networking and innovation, ensure sustainable production methods and being part of climate change solution.	Pesticide sales only with pesticide licence and according to environmental plan (Fruit Coop) Waste collection and recycling and water quality control (Local Council). Farms receiving subsidies (all above 2.5 ha) required to have Environmental Management Plans (Local Council) Any food label, based on origin, culture or tradition is required to have an environmental management plan.	Environmental certification Organic (1 agency Debio) Retailer driven (GLOBAL GAP commercial agency, assisted by local Fruit Co-op) All farmers wanting food labels must have environmental assurance scheme (KSL Matmerk) Sale of renewable energy from mini-hydropower plants on farms.	Subsidies for preserving particular farming features or fields to secure biodiversity.
Tourism on environment Norway should become a sustainable destination.	Must follow local council regulations with regards to waste water, waste management, food safety and OH&S.	Environmental certification Eco-Tourism (Non-profit) Svanen (Non-profit Nordic) Miljøfyrtårn (Non-profit) ISO Standards (Commercial intl) Environmentally certified tourism providers first choice for public use (conferences etc)	Consensus document between all tourism industry providers to quantifiable goals in relation to environmental certification.
Environmental policies	Precautionary principles and climate action in local council planning. Mandatory building codes.	Energy rebates for all households and businesses for polluting energy sources. (ENOVA). Energy rating of all buildings	

parks and regional parks established a park network as a way of working towards new ways of viewing regional development linked with local resources and tourism. In addition, in 2012, they received additional funding to further support the establishment of landscape or regional parks (Bjørnstad, 2011).

Tourism marketing is done through the national web-portal, Visit Norway (Visit Norway, 2010), and the regional net portal, Destination Hardangerfjord (Hardanger Fjord Destination, 2010). The regional office in Norheimsund is in charge of the website and marketing of the Hardanger region in Norway and abroad and is funded by membership businesses and contributions from the seven Hardanger councils. Ullensvang has a separate tourism website, Visit Ullensvang (Ullensvang Herad, 2010b), and three summer-only tourist information offices run by the Ullensvang Næringsforum (Chamber of Commerce) funded by membership fees and contributions from Ullensvang Council (Dugstad, 2010). Yet there is some doubt as to how effective this organisation is for promoting businesses on both sides of the fjord.

4.3.6 SUMMARY OF CONTEXTUAL FACTORS IN VIKEBYGD

In 2009, Innovasjon Norge, the Ministry of Business Development and the Norwegian Research Council funded the establishment of eight Norwegian Centres of Expertise (NCE) including the NCE Fjord Tourism located in Bergen (Innovasjon Norge AS, 2009). This will act as a cluster facilitator for the four counties of the west coast, to develop the west coast fjord region into a world leader in theme based tourism. This will be done through the support of tourism service providers, developing new marketing tools, and a coordinated approach to reach new high end tourist groups. They will focus on tourists with particular interests developing marketing and sales IT tools to promote market pull rather than push for outdoor adventure, trekking, culture, and skiing. (NCE Tourism - Fjord Norway, 2012). Vikebygd Landscape Park has not been directly connected with the NCE in Bergen, however, through NCE efforts, national standards for signage of trekking and skiing routes have been developed which are being used in all landscape parks, including Vikebygd.Summary of contextual factors in Vikebygd.

Table 4-4 summarises the contextual factors that influence Vikebygd businesses' environmental and value-adding behaviour.

Table 4-4 Contextual factors influencing Vikebygd businesses.

Contextual factors		Contextual factors influencing Vikebygd Microcluster
Locational context		Proximity to small domestic market, with Bergen the gateway to the fjords for international visitors. Short tourist season and difficult logistics in winter. Good council services. Major threat is depopulation and lack of new people.
Economic context		United efforts through fruit co-ops have increased profitability and quality. More individual on farm manufacturing. Major issue is lack of cider-sale options. Tourism is emerging but not prominent in Vikebygd.
Cultural cognitive institutions	Historical context	Millenium old habitation in Vikebygd, with farms handed down through generations following allodial law. Commercial apple farming introduced 200 years ago. Tourism was big in 18th century, then industrialisation, tourism back again since 1980s.
	Local frames of reference Relationship with nature	Most farmers have other additional income, yet the community is distinctly agricultural. Open-minded to newcomers, yet prefers locals that stay for longer. Tourism is a new business, and more risky than paid work. Farmers see themselves as bearers of the national cultural identity.Farmers are carers of nature. Subsidies provide an incentive to maintain fruit-farming and cultural landscape,the most famous attraction in Hardanger.
	Business behaviour	While Vikebygd is in danger of being depopulated, the allodial law makes it difficult for new entrants into the community due to the lack of farms for sale. While subsidies are high, the Norwegian population is in favour of continued support for farmers. New business development in cider-production is made difficult due to alcohol laws.
Normative institutions	Community structure	Vikebygd is a community and comprises almost half of the Ullensvang Council. It is self-sufficient in services and structures.
	Community interaction	Very tightly knit local community, with many farmers being members of same agricultural and informal leisure associations.
Regulatory Institutions	Decentrali-sation	High. Local councils have both hard and soft tasks. Responsibility for monitoring subsidies to farmers. Funds and promotes tourism. Residents and council are closely connected through strong local democracy.
	Policies and Regulations	Most environmental regulations in agriculture are mandatory enforced either through subsidy payments or as quality assurance labelling requirement and is valid for all farms above 2.5 ha. Clear goals for environmental improvements for both agriculture and tourism sectors. Some market based process standards and retailer-driven standards exist, but most labelling is controlled by the State.
	Coordination	Good coordination within the agricultural sector and regional development of fruit industry. Tourism sector is fast becoming more coordinated through the NCE Fjord Tourism. The park concept is nationally becoming a movement with a park network established and funded. Most business development support is funded through one-stop shop at council level. Environmental incentives are streamlined and coordinated through council or special agencies.

The Vikebygd micro-cluster comprises businesses within a fully functioning community based on fruit-farming. While most farm households obtain substantial income from outside the farm, the community is distinctly agricultural. The community is tightly knit with a large number of agricultural

and informal leisure associations linking most people together. The agricultural side of the community is well connected and coordinated and innovative in the way it responds to new challenges such as competition and retail power. In the area of tourism, new income opportunities are slowly emerging, yet are not coordinated and may be more risky than available paid employment. Most environmental requirements in the agricultural sector are mandatory and linked to subsidy payments and quality assurance labeling, while policies in the tourism sector are more market based through product and process standards. Farmers have accepted their role as carers for cultural landscape and the natural environment. The allodial law and the alcohol laws restrict new entrants in the community and cellardoor sales of alcohol.

CONCLUSIONS

This chapter has set out to describe and analyse contextual and institutional factors that may influence environmental behaviour and value-adding in the selected micro-clusters, Lovedale and Vikebygd. In concluding, locational, economic, historical, and institutional factors in the area will be briefly described, finishing with a table of a summary comparison of the main contextual factors influencing business and environmental behaviour in the micro-clusters.

Even though both the Norwegian and Australian cases are located in wealthy western democracies, the contextual differences between them reflect the societal models and policies within which they operate. Australia and Norway have followed very different trajectories in relation to agricultural and environmental policies. This is partly based on very different potential for agricultural production, where Australia's agriculture has always been an export oriented industry, and where activity is market driven. In Norway, on the other hand, agricultural production is marginal, with only 3% being arable land and policies being geared at food safety and national self-sufficiency. Australia's export oriented farming sector led to a market liberal/productivist stance with agricultural subsidies only 4%, among the lowest in the OECD countries. In Norway, agricultural policy was primarily aimed at providing self-sufficiency in food, farmers' welfare and environmental and social sustainability, leading to what can be described as a multifunctional agriculture, with subsidies at 61% of gross farm income, the highest subsidy levels of the OECD countries.

These different stances result in different implementation modes for environmental action for agriculture based tourism operators. Environmental policies in Australia are implemented through voluntary and market based instruments based on the business owner's own cost benefit calculations. In Norway, environmental action is mandatory, controlled and conditional on subsidy payments and food quality labelling systems. In both countries, tourism operations are deemed as a potential value-

adding activity specifically for small agriculture based businesses, as in both places agricultural activity is somewhat threatened due to the wine glut and extractive industries in Australia, and the threat of depopulation and reduced import protection and subsidies in Norway.

The two clusters are both located in regions, Hunter Valley and Hardanger, where grape and fruit-growing have been commercial businesses for 150-200 years, but where tourism emerged in the 1970s when people had more leisure time. While the main markets for both produce and tourists is in the neighbouring cities which are around two to three hours drive away, Sydney with its four million people and international entry point is substantial compared to the less than one million living within two to three hours of Hardanger. While the Hunter Valley is a high end tourist destination targeting demanding wine and gourmet foods customers, Hardanger is a destination for the nature and culturally interested, as well as outdoor activity tourists. The lack of public transport access to both places makes environmentally friendly travel difficult.

There are large differences between the councils in which the two micro-clusters are located. While Ullensvang is considered a small rural council, with its 3417 people, the Cessnock City Council with its 52,610 people is a semi-urban council. Both councils have struggled with depopulation, yet Cessnock and the Lower Hunter are experiencing an urban sprawl from two demographic groups, the majority being low income households due to reasonable housing prices in Cessnock and the resourceful lifestyle tree-changers linked with the wine-tourism businesses. The lifestyle vignerons primarily come from Sydney, bringing with them capital, business skills and networks linked to Sydney. They also have a much higher turnover, staying between five to ten years, than the majority of the population in Cessnock. Cessnock City Council also has a high unemployment (8.5%) and lower percentage of tertiary educated people (5.5%) than the neighbouring councils**.** Ullensvang Council is a reasonably wealthy council, having little unemployment (1.8%) and a wealth distribution better than overall national figures and a percentage with tertiary education similar to average in the county (19.7%). Devolution of responsibilities and resources to the councils is much larger in Norway than in Australia, even with small councils like Ullensvang, they are responsible not only for planning and waste management, but also all primary health care, education and aged care. Farm succession is regulated by the 1000 year old allodial law in Ullensvang, making the farming community extremely stable with little sale of farms.

In Table 4-5 the locational, economic and historical features of the two micro-clusters are summarised and compared.

Table 4-5 Comparison of location, economic and historic contextual differences.

Microcluster features	**Lovedale**	**Vikebygd**
Location	In centre of Hunter Valley Wine Region No distinct village within micro cluster	Village comprising small farm clusters and community services (shops, schools, etc.)
Council services	Poor roads and waste management.	Good roads and waste management.
Micro-cluster community	Homogenous (urban) Diluted urban fringe.	Homogenous (rural) Rural traditional.
Stability of population	Mobile and new within last decades	Stable - multiple generations
Local connection	Not embedded in local community	Embedded in local community
Business activity	**Lovedale**	**Vikebygd**
Main focus	Primary focus is tourism.	Primary focus is agriculture.
Type of farming	Productivist/combination with tourism	Multifunctional, agriculture, societal goods plus of farm income.
Average farm sizes in micro-cluster	Small lifestyle blocks (Minimum 40ha)	Smallest farms in Norway, (average 3 ha)
Proximity to market	2 hours by road to Sydney (4 million) No public transport available but well-organised coaches.	2-3 hours to Bergen/ Stavanger/Haugesund. Limited public transport, not adequate for tourism.
Major threats to agriculture based tourism	Domestic wine glut Coal mining Coal Seam Gas Extraction Other employment more profitable.	Reduced support to agriculture (subsidies) lack of tourist market. Depopulation. Other employment more profitable.
Historical context	**Lovedale**	**Vikebygd**
Micro-cluster existence	Approximately 25 years	Centuries
Self-organising event of micro-cluster	Tourism event (Lovedale Long Lunch) created need to get organised. Stance against dense development and branding of rustic area to increase tourism.	Longstanding self-reliance due to avalanches; the last in 1994 created community spirit and collaboration to promote the area.
Self-organising event of Greening process	Greening of Lovedale is both a branding strategy and a genuine lifestyle interest among members.	Landscape park to improve social sustainability, increase employment.

Lovedale as a separate wine area was established around 25 years ago, while the Vikebygd area has been a self-sustained community located between avalanche prone areas for centuries where the Vikebygd farmers are deeply embedded in the local community. The two greening processes in the two micro-clusters evolve out of significantly different historical processes and needs. Lovedale, populated with lifestyle vignerons, pursues environmental action both as a genuine interest in lifestyle

improvements, but is also seen as a market differentiation strategy, more so than the commercial areas of the Hunter Valley. For Vikebygd, agriculture-based tourism is a new income earning strategy. The landscape park is primarily seen as a way to increase social sustainability and employment options in the area to reduce depopulation. The low unemployment figures also indicate that jobs are available, and, thus, developing risky tourism projects may be less attractive when better paid jobs are available in the industry or in the public sector.

The Lovedale business community, although being tightly knit, is not fully embedded in the local community. There does seem to be a more coordinated and general positive approach towards pursuing environmental issues in the Hunter wine-industry, while in the tourism industry, there are few strategies to pursue a more environmentally friendly tourism provision for the Hunter Valley Region. The protest against CSG in the Hunter has, for the first time, united all small and large wineries, farmers associations, Greenies and the Cessnock Council. The socio-normative and cultural cognitive institutional pressures for the Lovedale businesses must be viewed in relation to the lack of embeddedness many of these new residents in the Cessnock area exhibit.

Environmental governance in Australia has been implemented through a hybrid system of voluntary environmental management of farm resources, market instruments such as product and process standards (environmental certification) that will provide the business with added value in the market. There are therefore few clear goals for environmental outcomes. Environmental governance in Norway has followed a very different paradigm, where a farmer would have both production and societal responsibilities in return for subsidies. Environmental management plans and action are compulsory for obtaining subsidies and quality food labels, and is valid for all farms (over 2.5ha)eligible for subsidies. Both in agriculture and tourism policies, clear targets for environmental achievements are set. While the system functions in a very egalitarian way, there may be high bureaucratic costs. Table 4.6 below shows the institutional differences between the Lovedale and Vikebygd micro-clusters.

Table 4.6 Institutional differences between Lovedale and Vikebygd micro-clusters

Institutional Pressures		Lovedale	Vikebygd
Cultural cognitive institutions	Local identities	Lovedale business owners are primarily in the tourism business. They are resourceful with business skills and acumen, capital and networks, and strongly linked with big market in Sydney. They can be classified as distinctly urban.	Vikebygd business owners are primarily agricultural businesses, even though most farmers have other additional income. Open-minded to newcomers, yet prefers locals that stay for longer. Tourism is a new business, and more risky than paid work. Farmers see themselves as bearers of the national cultural identity.
	Relationship with nature	Lovedale residents being distinctly urban and with more focus on tourism, have more sympathy to environmental cause and thus considers farming as negative or destructive to nature.	Farmers are carers of nature and are being paid to maintain the cultural landscape.
	Business behaviour	Urban sophisticated and innovative. Linked to demanding Sydney consumers, little focus on local market (such as Newcastle). Local community has low-income and does not use Hunter Valley tourism facilities, but provides labour for the businesses. Alcohol and driving restrictions solved through individualised transport offerings.	While Vikebygd is in danger of being depopulated, the allodial law makes new entrants into the community difficult due to the lack of farms for sale. Even with high subsidies, the Norwegian population continues support for farmers. New business development in cider-production is made difficult due to alcohol laws.
Normative institutions	Community structure	Homogenous within micro-cluster, yet different from Cessnock population. Lovedale wealthy and resourceful tree changers, Cessnock population low income population. No community services or centre.	Homogenous and distinctly agricultural. Vikebygd is self-sufficient in community services and structures. Vikebygd has same wealth distribution and education level than council and county.
	Community interaction	Tightly knit community within Lovedale, less embedded with Cessnock community.	Very tightly knit local community, with many farmers being members of same agricultural and informal leisure associations.
Regulatory Institutions	Decentrali-sation	Low. The local council has few responsibilities and has a very heterogeneous population. The Lovedale micro-cluster is a pocket of resourceful treec hangers less connected to council.	High. Local council has many responsibilities also in tourism business development and environmental monitoring of farmers. Residents and council connected through strong local democracy.
	Policies and Regulations	Environmental regulation and policies are based on market instruments and voluntary action. Few of more important incentives for tourism are considered appropriate or helpful for small business. Environmental action is better coordinated and implemented in agriculture than tourism. No clear environmental goals for agriculture or tourism.	Most environmental regulations in agriculture are mandatory, enforced either through subsidy payments or as quality assurance labelling requirement for all farms above 2.5ha. Clear goals for environmental improvements both in agriculture and tourism sectors.
	Coordination	Agriculture side well coordinated both in industry and cluster level (Hunter Valley Wine Industry Association). Tourism side lacks coordination. Micro-cluster level well-coordinated both formally and informally. Support for environmental action is not coordinated and is based on voluntary initiative and knowledge among business owners. Less support for small business.	Good coordination within the agricultural sector and regional development of fruit industry. Tourism sector is fast becoming more coordinated through the NCE Fjord Tourism. Vikebygd Landscape Park is evolving slowly. The landscape park movement has established a network. Business development support is funded through one-stop shop at council level.

CHAPTER 5 ENVIRONMENTAL ACTION IN LOVEDALE

5.1 INTRODUCTION

The previous chapter examined the contextual factors that might influence environmental behaviour in Lovedale. The purpose of this chapter is to present and discuss the quantitative and qualitative findings obtained in Lovedale to gain a deeper understanding of what motivates this group of small businesses to initiate a greening process.

It will first present demographic and business characteristics of the micro-cluster. Next, follows a description of what environmental concerns, issues and actions the business owners have or perform in Lovedale. After this, the qualitative findings around the business owners' own perception of sustainability are presented and discussed.

The chapter then examines business owners' perceived pressures, drivers and barriers for environmental action, followed by an analysis of where environmental knowledge is derived from and whether and which environmental knowledge-providers or networks assist with improving environmental sustainability. The last section deals with issues of value-adding and the competitive advantage of environmental action.

The 31 survey responses that were obtained in Lovedale represent 46% of the 67 members of the Lovedale Chamber of Commerce (as of 1st November 2009). Detailed results from the Lovedale survey are presented in Appendix 8. While the quantitative data was gathered only within the micro-cluster, the 27 interviews were undertaken with a variety of actors both within (52% - 14 interviewees) and outside (48% - 13 interviewees) of the Lovedale micro-cluster (see Appendix 5 for the attributes of Australian interviewees). The analysis and discussion will focus on the quantitative and qualitative data collected inside the micro-cluster, while qualitative data collected from outside the micro-cluster will be used to mirror, triangulate and gain a deeper understanding of perceptions from inside the cluster. Further details on methodology are in Chapter 3.

5.2 LOVEDALE MICRO-CLUSTER CHARACTERISTICS

5.2.1 THE OWNERS OF LOVEDALE BUSINESSES

The data obtained from the interviews and the survey questionnaires confirm that most of the members of the Lovedale Chamber of Commerce (LCC) are from Sydney, are lifestyle tree-changers, being in an age group close to retirement or already retired and having recently moved to the area.

Of the fourteen interviewees from within the micro-cluster, only one was born and had lived most his/her life in Lovedale. Ten were from Sydney, one was from another rural town, and two were from out of state. The majority (12 respondents - 85) belonged to the age group 50-65 years old or above.

The survey results exhibited a similar trend. Of the 31 respondents, 23 respondents (85%) were older than 50 years. In comparison, in the 2006 survey of Small Business Owners by the Australian Bureau of Statistics (2008), only 33% of small business owners were older than 50 years old. This thus supports the notion that LCC businesses are, for many, early retirement and/or mature aged lifestyle choices.

The Lovedale business owners are relatively recent residents of the Hunter with the majority coming from Sydney. Nineteen respondents (62%) have lived in Lovedale less than 10 years, 12 respondents (39%) less than 5 years and 4 respondents (16%) less than 1 year. This is markedly more mobile than is exhibited by the majority population in the Cessnock City Council area, where 32% of the population have moved within the last 5 years, and only 16 % have moved from outside of the Cessnock Municipality (Cessnock City Council, 2009).

The members of LCC have a relatively high level of education, with 15 respondents (48%) having a university degree. Only 7 respondents (23%) had HSC qualifications or less, while 9 respondents (29%) had TAFE and/or vocational training. When compared with average education levels for of the Cessnock LGA, where only 5.5% of the population has a bachelor or higher degree (Cessnock City Council, 2009), it becomes clear that LCC members are a resource-rich group of people in Cessnock. From the interviews, a similarity in backgrounds and lifestyle among the LCC members was confirmed:

> *"We are all like-minded people in that we like a party. Everybody's got wine and the food is good. And we are all probably of a similar age group. Many have had similar experiences in the corporate life and are glad to be out of it. We have businesses to run, but it is not like these businesses take up 40 hours a week. So there is plenty of time to get involved in other things." Chris, Vigneron*

The notion of the area being inhabited mostly by recent tree-changers is confirmed in the interviews. Most business owners settling in Lovedale stated that they wanted a combination of lifestyle change, property size (not too big), proximity to Sydney, and the close-knit community. They are often of pre-retirement age, with a large corporate life behind them and have sufficient capital to maintain a residence in the city from which they came. They often have income from other businesses or employment in addition to their wine tourism business. There are some exceptions, with a few locals

pursuing a lifelong career in wine-businesses, while some have moved to Lovedale as an opportunistic career move into hospitality. The fact that they have chosen to live and work in Lovedale for lifestyle reasons, indicates that they are concerned about well-being, wanting to live in a different way within a community and in contact with the agricultural land and with values other than the corporate "rat-race". They are sophisticated and urban, yet with little formal agricultural training.

5.2.2 LOVEDALE BUSINESS CHARACTERISTICS

Of the survey respondents, 58% (18 businesses) of the businesses were family owned businesses or family trusts, while 23 % (7 businesses) were sole traders and 22 % (7 businesses) established as Australian private companies. Of all 31 businesses included in the survey, 16 businesses or 52 % performed only one business activity (i.e. accommodation, grape sales, wine sales, or catering), while 15 businesses or 48 % had multiple business activities (both accommodation and wine making, catering and accommodation, etc.). However, these figures must be taken with caution, as they do not give the full picture of how Lovedale business owners derive their income. Qualitative data revealed that most of the businesses have additional income from one or both spouses/partners outside the wine-tourism venture. Some respondents may have indicated this outside income generation as an "other activity", while some may not have considered this as relevant to the survey and not reported it.

The majority of Lovedale businesses, 30 businesses (97%), are classified as small businesses employing less than 20 employees (Australian Bureau of Statistics (ABS), 2008), with around half (16 businesses 52) employing between 1 to 4 people. The duration of business operations is short, with 40% being less than 5 years old and 60% less than 10 years old. These figures are confirmed in the interviews where business turnover was described as being between 5-10 years.

The Lovedale vignerons employ large numbers of casual workers during harvest and pruning, while accommodation providers need employees for cleaning and hospitality work on a more regular, year-round basis. The majority of casual vineyards workers are local women, supporting family income through seasonal work. Tractor drivers and equipment handlers are local men, while vineyard managers often are from other states (South Australia). Vineyards workers were traditionally people who did not get work in the mines, yet there is a change in attitude among young people, with the hospitality and wine industries seen more and more as providing worthwhile careers, greatly assisted by courses in viticulture and hospitality offered at the Kurri Kurri TAFE.

Of the 13 wine-making businesses (42%), all had multiple ways of selling their produce. The most common outlets were direct from the property (cellar door or direct) (42% - 6 businesses) and through

other local cellar doors or restaurants (36% - 5 businesses). Wine was sold nationally by 4 businesses (33%), often organized through special networks of distributors. 3 businesses (26%) reported selling interstate or to (23%) to international markets. The interviewees also confirmed that the sale of wine is primarily on a direct basis to tourists through the cellar doors, wine clubs, internet or local restaurants, and is a vital way to retain margins that would otherwise go to retailers. During the current wine glut, these margins are vital for maintaining the profitability of the business. Larger wineries use regional distributors and participate in international tender contracts to export wine.

> *Our wine customers are: "Visitors to the Hunter. …. I would say 70 % from Sydney and 20 % from Brisbane and the rest from other areas." Lucy, Vigneron*

Among the 18 accommodation providers (58%), 12 businesses (65%) responded that most guests come from Sydney. Nine businesses (48%) stated that they also had regional guests from Newcastle or Central Coast, while 5 businesses (29%) also had guests from overseas. Only 1 business (5%) stated that it received local guests, which gives a strong indication that Cessnock locals are not users of the Hunter Valley wineries. The interviews also confirmed that most guests came from Sydney. Second largest were regional guests primarily from the Central Coast and increasingly from Newcastle. An increase in numbers had been recorded from interstate, due to cheaper and direct flights to Newcastle. The recent upgrade of the Williamtown airport in Newcastle has been a good thing for tourism in the Hunter:

> *"You have 5 million people down the road in Sydney. That's just 2 hours away… We are seeing a lot more pleasure or social groups, a reunion of family or friends meeting up here." William, Manager, Large Accommodation*

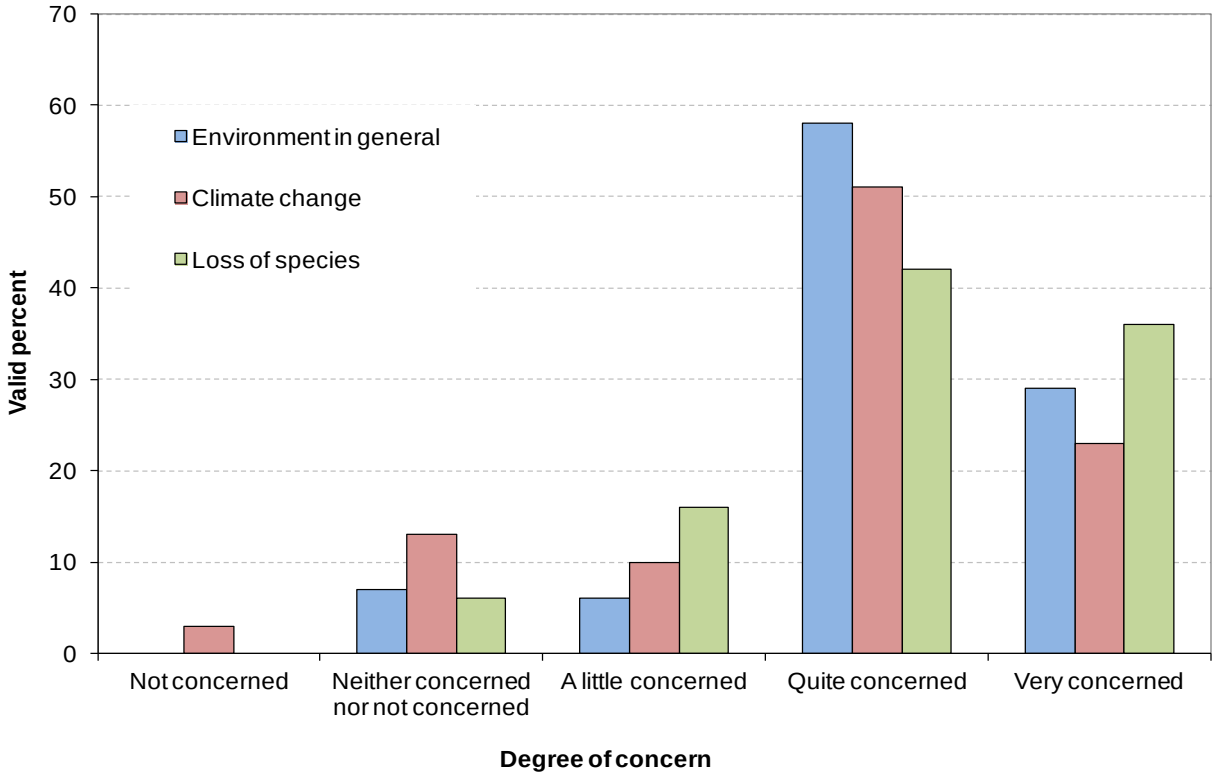
The proximity to Sydney ensures a steady stream of visitors to the Hunter Valley. While the GFC led to a decrease in conferences, primarily affecting larger accommodation providers, the opposite is true for leisure and social groups tourism, for example, friends or families meeting up for weekends is on the increase. This type of tourism benefits all types of accommodation providers and is on the increase.

5.3 ENVIRONMENTAL CONCERNS, ISSUES AND ACTIONS IN LOVEDALE

The Lovedale respondents were asked to state their concern for the environment, climate change and loss of biodiversity using a five point Likert scale. As can be seen from the chart in Figure 5-1, an overwhelming majority of respondents are a little, quite or very concerned about the environment,

climate change or the loss of biodiversity. Ninety-three percent of the Lovedale sample was concerned to some degree about the environment in general, 84% concerned to some degree about climate change and 94% concerned to some degree about the loss of species.

Figure 5-1 Concern for environment, climate change and loss of species (n= 31)



Survey findings about environmental concerns in the NSW population (NSW Department of Environment Climate Change and Water, 2010), found that 78% were concerned to some degree with environmental problems. The LCC members thus seem to have a higher than average concern for the environment, climate change and loss of species. The same survey found that 38% of NSW residents could be classified as environmentally "committed", exhibiting a high degree of environmental behaviour both at a household level and as citizens. This group was more likely to be university graduates, live in rural areas, have a high concern for the environment, a moderate level of knowledge, strong support for environmental protection, and have a higher expectation for strict environmental regulation. It also found that environmental concern and behaviour increases with age and gender, with women being more concerned and more environmentally active. Men were found to be more knowledgable. (NSW Department of Environment Climate Change and Water, 2010). Many of the LCC members would fall into the "environmentally committed" segment of the NSW population.

The survey also found that in Sydney, 81 % of residents believed that climate change was happening, while in rural NSW only 61 % believed in climate change (NSW Department of Environment Climate Change and Water, 2010). In another survey about climate change attitudes among primary producers and urban dwellers, Donnely, Mercer, Dickson, and Wu (2009) found that 58 % of urban dwellers believed that human induced climate change was happening, while only 27 % of these were primary producers. The high concern around climate change among Lovedale business owners is closer to an urban attitude than for rural agriculturalists.

The respondents were asked to rate what were the most important issues for improving sustainability in Lovedale. The most significant local environmental issues mentioned, in order of importance (response rate = 80%) were: 1) Water efficiency (36%); 2) Change of attitudes and education (16%); 3) Sustainable agricultural practices (12%) and waste management and recycling (12%); 4) Affordable renewable energy (8%) and profitability (8%); and 5) Soil quality (4%) and energy efficiency (4%).

The responses reflect a general concern for both water and energy efficiency, but also point to the necessity to economise with water and recycle waste from household and business due to the lack of public water and waste services. The lack of basic infrastructure, such as waste collection, paved roads and public transport, makes pursuing environmental action more difficult, on the other hand it also leads to innovation in order to minimise resource use while at the same time maintaining a high quality of Lovedale tourism providers, seeking to maintain its brand as a high-end tourist destination, makes accommodation providers feel obliged to have good water saving and waste management practices as well as maintaining an aesthetic appeal of the area; the demanding tourist requires good environmental solutions. Yet, the high end tourist also demands luxury and comfort, and providers see the need to educate tourists to make them aware of the energy use of air conditioners and the water use in pools. Sixty-eight percent (21 respondents) thought that their industry was medium, quite or very aware of environmental issues, while 76% (24 respondents) thought that environmental issues would be more or much more important for their business in 5 years. Lovedale respondents see environmental issues becoming more important in the future.

Of the 31 respondents in the survey, 30 (98%) were saving water; 28 (90%) were recycling waste; 25 (82%) were reducing their use of pesticides; 18 (58%) were reducing their energy use; 15 (50%) were controlling erosion; 9 (29%) would reduce their transport needs; 6 (19%) used renewable energy; and 5 (16%) undertook measures to preserve biodiversity. Water saving and waste recycling are necessities as no business in Lovedale is connected to public water and sewage, and for properties along unsealed roads (Wilderness Road) there is no public waste collection. Reducing the use of

pesticides and fertilizer is something that concurs with good viticulture practice, but is also implemented among accommodation providers. There was a relatively high percentage using renewable energy (almost 20%), compared to the state average of 6% renewable energy used in NSW (NSW Department of Trade and Investment, 2012). No significant association between business type and environmental action was found when using the Monte Carlo Test (P-values exceeded 0.05).

The survey findings were confirmed in the interviews, where all stated that water saving and waste management were done out of necessity. Other cost saving actions such as replacing light bulbs with low energy lighting and using solar hot water were common among accommodation providers. Renewable energy was either accessed through the installation of solar panels, solar hot water or by paying for green energy. Improved viticulture techniques and technology had led to reduced use inputs, while council regulations had led to onsite recycling of wine waste and waste water.

> *"…. we use less pesticides and nutrients, and erosion is being tackled through not ploughing between the rows. The vineyards are quite sustainable and have undergone a big change in how they are run. There is a move towards Minimum Residue Levels (MRL) of chemicals, with technology development in biological pest control. We had big issues with the waste water from the wineries, until the Council made a regulation that waste water from the winery could not leave the property, so now we treat it and it gets put back on the lawn. But this was fair for all." John, Vigneron*

Some businesses go further in their efforts to become green and carbon neutral. This was typical for new businesses; where efforts at the planning and design stage it was possible to achieve a high environmental standard. Environmental retrofitting in existing buildings was considered more expensive and difficult.

> *"We built cottages from scratch,…off-site in modules, as we assumed it would be better environmentally to build them in one place… We used material that was better for the environment, bamboo from plantations, photovoltaic solar panels, iron roof, passive design with cross-ventilating louvers…insulation in roof, floor and walls, watertanks. It didn't cost more than other cabins, but it took time and lots of research… ." Susan, Combined Business owner*

From the responses regarding environmental concerns and action there seems to be a good correlation between what Lovedale businesses are concerned about and what they are doing about the issues. Some actions may be out of necessity (water and waste). Environmental action in the vineyards and wineries are partly driven by regulation and technological improvement towards MRL levels;

environmental action in the accommodation industry is more associated with immediate cost-saving actions (and not regulations). The more expensive investments, such as solar panels, are considered beyond the economic scope of most accommodation providers, but are easier to integrate when building from scratch. Larger companies, on the other hand, can benefit from economies of scale for waste solutions and cost-saving initiatives and also have the power to pressure suppliers to provide more environmentally friendly products. It thus becomes clear that large businesses undertake different types of environmental action which is based on other considerations than the small businesses.

5.4 PERSPECTIVES ON SUSTAINABILITY

Sustainability, or sustainable development has been defined by the World Commission on Environment and Development (Brundtland, 1987, p. 8) as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs". However, the understanding and implication of this concept is evolving and dependent on the context within which it occurs. This section examines how the concept of sustainability is understood among actors within and outside the micro-cluster. This was considered important to gain a better understanding of the underlying reasons/motivations for pursuing environmental actions.

Sustainability is normally defined as including environmental, social and economic elements (Collins, et al., 2009; Mebratu, 1998); however, this study focuses on perceptions of sustainability and environmental sustainability, with economic and social sustainability initially considered as being outside the scope of this study. The semi-structured interviews were initiated with a question on how the interviewee defined sustainability, followed by a question on how he/she would define environmental sustainability. Interviewees would, however, often include perceptions on both economic and social sustainability, and the sustainability of the micro-cluster/region and industry.

5.4.1 THE AMBIGUITY OF SUSTAINABILITY

The question, “How would you define sustainability?”, was often met with a big sigh among interviewees. Thus, it seemed difficult to describe or put in words what the concept means. However often, after having thought about it, quite succinct definitions were delivered:

> *“The first word that comes to my mind is: ‘thrive’. Whether it be environmental sustainability, business, family relationship sustainability. Thrive. That’s the end result.” Nina, Accommodation Owner*

"We are all businesses so, ideally to me, sustainability is having respect for the land and the environment. Doing what you can to improve it, getting a quality product from it and maintaining a profit." Winemaker, Lovedale

Most interviewees suggest that sustainability is about the ability to pursue in perpetuity their business and the life and relationships they are experiencing. While it is about not depleting resources and reducing the ecological footprint, there is an overall view that sustainability is about achieving both ecological and economical sustainability. The sustainability concept might be about leaving the area you live in improved or changed as little as possible, but only if this is done while also being economically sustainable. This perception of sustainability is similar to how the private sector sees sustainability, exemplified by WCSBD's eco-efficiency, that is, creating more value with less impact (Mebratu, 1998), and could thus be stated to be a pragmatic or weak sustainability approach, where it is believed to be possible to achieve sustainability without changing the "system" (Gray & Lawrence, 2001).

There was also a perception that the concept of sustainability was ambiguous, changing continuously:

"I also think ……10 years ago, the land and the environment was probably the only real focus around sustainability, whereas now we all understand that sustainability has to involve the economic and social environment." Winemaker, Lovedale

"Sustainability…it is clouded by what you're doing (through your environmental actions) …you're defining what sustainability is. For all of us it's different. From a home point of view, (as compared) to your business practice, it's completely different what sustainability is to you. …" William, Large Accommodation

"Sustainability is a movable feast.…But if you can afford to do it and you don't, well then, I think you should then do better. I think people who ignore it are being selfish." Barry, Vigneron, Lovedale

The responses indicate that sustainability as a concept has changed over time: where previously it was only considered to be about environmental issues, it now also includes economic and social issues. Sustainability also depends on the context of your business and lifestyle, and your personal ability and income, indicating that it is not only economic considerations that influence a decision to pursue sustainability, but also normative pressures, "doing the right thing". Sustainability, according to one interviewee, changes over time and is being defined while you are pursuing environmental action.

Through the action of pursuing environmental sustainability you continuously define and redefine what sustainability is.

> *"Wine, it's just a leisure drink… it is hard to justify what we are doing for the sake of a product which is also damaging to your health. But working in the vineyard is a beautiful way to experience life and I love doing it. But basically it is not sustainable, it is ridiculous to grow a product that nobody wants, nobody wants grapes - to waste the carbon emissions." Susan, Combined Business*

Environmental sustainability is easier to determine and pursue for businesses, as environmental targets are defined more on pure economic assessments (repayment period, cost benefit analysis, environmental branding, and customer demand), while in the private sphere sustainability is also determined by social pressures and norms. There was also a clear notion that what is considered sustainable depended on size of business (bigger businesses do more damage, yet can often afford to do more), and the economic position that the business is in. For smaller businesses struggling to make ends meet, environmental action may be too costly. For some Lovedale vignerons, it is a hard and contradictory realization that their lifestyle choice of growing grapes may be economically and environmentally unsustainable.

Sustainability, some claimed, would be defined differently depending on whether you are from the city or from rural areas, where your livelihood depends on the land. This suggests that primary producers are more concerned about maintaining long term sustainable use of the land. This divergent view on sustainability may be the reason for the underlying tensions between larger commercial vineyards/wineries and small lifestyle vineyards. The larger family wine companies are dependent solely on produce from the land (less tourism focus and income) and thus more focused on maintaining the long term sustainability of the land. Lifestyle vignerons, on the other hand, have a shorter time-horizon for their investments and often have income from other sources.

There are also issues of "greenwashing", where the term sustainability is used as a "buzz word" without clear meaning. The lack of clarity of what it means in practice, may lead to the use of the concept more for a business than an environmental benefit.

> *"So, yeah, I think sustainability gets used way too often and people love to say it and use it without actually knowing what they are saying. It is a buzz word without meaning. And it is so easy for people to use it in the wrong context for their own benefit." Winemaker, Pokolbin*

This is also clearly seen in the responses from local and planning authorities stating that it was a difficult task to regulate a process towards sustainability without a clear definition of what it means and without clear targets. These also pointed to a trend, where new "environmental vocabulary and processes" cannot be distinguished from the previous or the next ones. In a planning sense, sustainability is used to prevent liability issues of pesticide drift, and to try to maintain a rural landscape. These agencies stressed that it was positive that activist communities kept authorities focused on sustainable development.

5.4.2 PERSPECTIVES ON ENVIRONMENTAL SUSTAINABILITY

As a follow up on the question on sustainability, the interviewees were asked to define environmental sustainability. Gray and Lawrence (2001) distinguished between weak or pragmatic sustainability and strong or radical sustainability (Chapter 2, Table 2.3), where the pragmatic approach is anthropocentric, whereas the radical approach demands a balance between society, economy and environment. In the pragmatic approach, intergenerational distribution is not seen as part of the sustainability issue (short-term view), whereas in the radical approach it is (long-term view). Another major differentiation between the two approaches is whether environmental sustainability is possible in a globalised economy (pragmatists would assume this stance), whereas the radical approach seeks to reduce global trade and, rather, build stronger local and regional identities. Pragmatists would seek to adapt to environmental changes like climate change, whereas the radical sustainability approach would be to try to avoid the environmental change (preventing climate change).

The larger wine industry interviewees exhibited quite a radical approach to sustainability, where intergenerational concerns are important (long-term historic view), and the precautionary principle is important to protect good soils and vines. Yet, there is no indication that these representatives considered environmental sustainability as contradictory to globalization or export-oriented production. They identified environmental sustainability as being able to avert a range of environmental threats, such as destruction of ecosystems, climate change, soil erosion, water limitations, or pollution affecting their local area or business:

> *"… the wine industry in the Hunter is an iconic industry in the region, but it is also one of the agricultural industries that is most in danger from climate change." Industry Representative, Hunter Valley*

> *"We like to think that we're proactively remaining sustainable because we are farmers basically. We work the land; we have to preserve the land that we have got. When you have*

vineyards that are 130 years old, you have to maintain not just the quality of that vineyard, but you also maintain the legacy, for want of a better word, that the fruit gives us." Big Family Winery, Pokolbin

For tourism businesses, a more pragmatic sustainability approach is taken, with economic viability being just as important as environmental improvements and investments.

"Environmental sustainability is to see best business practice adopted to reduce energy use, water use and recycling of waste." Nina, Accommodation, Lovedale

The most pressing issue mentioned was climate change both for accommodation providers and vineyards. But while climate change for the accommodation industry is an issue of energy efficiency and using renewable energy, the wine industry is more concerned about weather-proofing the vines to be able to sustain the impact of climate change. So while accommodation providers are concerned about preventing climate change, the vineyards first priority is to adapt to climate change. These findings exhibit that the wine industry is less skeptical about humanly induced climate change than has been found for primary producers in general (Donnely et al., 2009). The large wineries have a "historical" view of their business, which involves a longer-term horizon than the average tree-changer in relation to environmental sustainability of business and the soils, water and vines on which they are dependent.

5.4.3 PERSPECTIVES ON ECONOMIC SUSTAINABILITY

The issue of economic sustainability was not a question in the study, yet it was mentioned in most interviews, specifically when discussing the impact of the wine glut and the global financial crisis. Black (2005) suggests that the economic aspects of sustainability include the notion that a business should be able to thrive in perpetuity without depleting the natural and social resources it depends on, thus, developing resilience in times of hardship.

Leisure tourism is strongly impacted by people's income, being something which is prioritized when times are good and one can afford the luxury of holidays. When times are more uncertain, leisure expenses are the first to be reduced. For the Lovedale accommodation businesses, the GFC had led to a drop in conference bookings, while leisure visits increased due to people taking shorter holidays to close by destinations instead of trips overseas. Holiday tourists were also reported to come more during mid-week, when prices were lower, resulting in an overall improvment in business.

"I think the midweek (occupancy) started, I reckon I saw that change about a year ago. It coincided with the Global Financial thing, and then our rates are much cheaper in the week. A lot of people, I think, instead of going to Bali for a week, they just say let's just get away for a few days. But we haven't seen a big change in the weekend business at all." Joan, Accommodation

For the wine industry, economic sustainability has been difficult to maintain due to the strong dollar, leading to less exporting of Australian wine and the increased importing of cheap wines, resulting in both Australian and imported wines overflowing the domestic market. This situation has different impacts on wineries and grape growers depending on the quality of grapes, the presence of long term contracts and business strategy. Largely, the wine glut has made the sale of winegrapes a buyer's market. Smaller wine businesses have sought to decrease costs by undertaking more of the vineyard work themselves, or, in some instances, not picking the grapes at all. This is a short-term solution to an acute economic problem, and leads to a steady decline of vineyard sustainability as plant and soil health declines due to the lack of proper care.

"It's very hard for the owners of these vineyards, because the price for fruit we're getting is not sustainable. So they (small grape growers) cut corners and do a lot of the work themselves, and then the vineyards don't get managed properly.….it's all very well to save a few dollars on doing some work yourself, but if that's causing your yields to decline, that makes it less sustainable again." Viticulturalist, Lovedale

Larger wine businesses with both larger investments and markets would respond to the wine glut by seeking to maintain their market share through more intense branding and increased focus on producing higher quality (better margin) wines and responding to consumers' demands for both more environmental and more social responsibility for wine. The wine glut has also provided an opportunity for supermarket retail chains to produce generic blended wine under their retail brand labels, thus dictating prices and undermining already well-established wine brands. The retail chains pursue a globalisation strategy, the opposite to regionalization and local produce, in their generic branding strategy.

"It is very much an oversupply issue in Australia within the industry. It is very difficult to remain competitive at certain price points in the export market and we obviously have a lot of people flooding the market unsustainably. The way we have to combat that is with having a superior product, having a product that people appreciate and there is less risk in buying because they know they are getting value for money." Big Family Winery, Pokolbin.

A major and contentious issue is whether small lifestyle wine-tourism businesses are operating in a financially and environmentally sustainable way due to their more short-term view and their domestic market focus. Many of the small wine businesses in Lovedale may not be economically sustainable, and many have income from employment elsewhere.

5.4.4 PERSPECTIVES ON SOCIAL SUSTAINABILITY

Although social sustainability was not directly addressed in the research design, elements that described Lovedale in terms of social sustainability were mentioned in several interviews. Social sustainability has been defined by Black (2005) as the extent to which social identities, relationships and institutions are maintained and respected, and the resilience they exhibit to economic and ecological fluctuations. It includes how people manage and collaborate to deal with environmental, social and economic challenges.

Within the Lovedale micro-cluster community, respondents emphasised the social cohesion and community as a reason for moving to the area:

> *"The reason we ended up in Lovedale is that we realized that Lovedale residents are a closely knit community. ……..in Lovedale everybody seems to work together." Donna, Accommodation*

The Lovedale community helps each other through the exchange of vital business information during formal Lovedale Chamber of Commerce meetings, and through weekly or monthly informal gatherings. For wine businesses, vital information includes the current prices for grapes, where and to whom to sell grapes or wine, and which channels are open for sale of new wine. There is also a general push to sell Lovedale wines for any kind of event organized in the area. The Lovedale Vignerons Association also organizes a Tour de Lovedale, where customers buying wine at three wineries in the Lovedale area have a chance to win a dozen Lovedale wines. Among the Lovedale accommodation providers, a list of availability is updated and circulated every Monday, and, through this people can recommend other Lovedale providers if they are already booked. Thus, through social networks, efforts are made in both the wine and tourism businesses to keep tourists within the area, improving resilience and economic sustainability. It may also have an environmental impact if tourists stay in one area rather than travel long distances.

Social sustainability at a regional level in the Hunter Valley has been exhibited through the establishment of the Private Irrigation District organization (PID) a decade ago in the Lower Hunter. The PID is the largest, privately operated irrigation system in Australia and was legislated under the

NSW Private Irrigation Districts Act in 1999 (Hunter Wine Country Private Irrigation District, 2000). The PID is a membership based organization that assigns water quotas to properties (not business owners) in the catchment, based on the size of each property and its need, and is a great example of a system that promotes social cohesion, fairness and collaboration;

> *"You see there is a bit of a community feeling. At one stage, we had somebody saying to us, that you should make your PID members take more water, because then they would buy more water and pay more, and the PID would be able to pay back the loan quicker. But we said it doesn't work that way. People are not going to order water so that they can sit and watch it evaporate." Chris, Vigneron*

When it comes to the production of grapes, the Hunter comprises around 120 wineries, but many more grape growers. Most of the wineries are dependent on buying grapes from surrounding growers, or importing grape juice from other regions. The purchase of grapes for wine-making happens through direct agreements between the grape grower and the winemaker of the winery. In other instances, grape growers subcontract a winemaker to make wine from their grapes through renting a winemaking facility. While some of these arrangements are based on long-term contracts and business relationships, most are made on a case by case basis based on the quality of grapes, and is at the mercy of the winemaker's viticulture decisions (when to irrigate, pick and fertilize). However, if the grapes are damaged (rain, frost, drought, pests) the grape grower will not be able to sell the grapes and will bear the full cost of the failed crop. In the current wine glut, grape growers without long-term contracts are likely to find themselves in a buyer's market; particularly vulnerable are new lifestyle growers who have not yet developed relationships and long term contracts with a bigger winery. Large family wineries have long term contracts with specific growers, paying a premium to smaller producers to ensure both their economic sustainability and the social sustainability of the area.

> *"We work closely with the growers we buy fruit from and we help them drive their business in a sustainable manner if we want to continue buying their grapes. We work closely with the ones we have long term contracts with and the growers that supply us with our highest quality fruit." Big Family Winery, Pokolbin*

Social embeddedness and long-term relationships (social sustainability) are thus vital for the resilience and economic and environmental sustainability of the grape-growing and wine-making in the area. The turnover of lifestyle vineyard owners may be vulnerable in this scenario.

At a societal level, the Hunter wine tourism sector has taken action to mitigate some of the negative impacts of alcohol through providing information on quantities that can be consumed in order to

drive, and a good commercial transport system of coaches and cars for customized wine tours and transport to and from major events. Some of the larger wineries also offer low-alcohol wines for people, seeing this as their social responsibility, as well as a niche market for the more health and societal conscious consumers.

5.4.5 PERSPECTIVES ON CLUSTER SUSTAINABILITY

Several interviewees were worried about the sustainability of the cluster, however, there were different threats to the maintaining the Hunter Valley as a wine tourism region. Three processes were mentioned as threatening the current status of the region. First, the detrimental impact the domestic wine glut has had, especially on the small vineyards; second, overdevelopment of the valley and the loss of its rural feel due to the urban sprawl or development into a pure tourism destination; and, third, the looming prospect of agricultural land becoming coal mines and coal seam gas (Hunter Valley Protection Alliance, 2010; Kerr, 2011)

The wine glut creates different problems for small and large grape and wine businesses. The smaller vineyard owners are confronted with the problem of how to reduce their losses from unsustainable vineyards, while being squeezed on price from buyers, which results in both a social and an aesthetic impact in the area. Several of the small Lovedale vineyards had been up for sale the last three years, and some had been left unattended serving as cow pastures. Yet from the larger wineries point of view, the closing down of unsustainable vineyards is seen as a good thing if these do not produce the high quality grapes required for maintaining the reputation of a high quality wine region. To close these vineyards down is seen as a benefit to the overall financial sustainability of the industry.

> *"I do think diversity is a good thing. But if there is going to be people moving into this industry for their own lifestyle reasons and they are going to drag down the image of the region or the industry as a whole,…by potentially producing bad wine, by planting vineyards that are going to be unsustainable. (They) …try and get a winery going….and then just walk away from it as they find they are losing far too much money. That creates a bio-security issue…" Big Family Winery, Pokolbin*

However, this stance is in contradiction with a concern for maintaining the agricultural feel of the Hunter. Reducing the number of local grape-growers might give short term economic benefit, but, in the long term, it would seem better to nurture local producers to maintain the rural landscape and focus on the geographic protection of the Hunter Valley wine denomination. Instead, large companies have been more concerned with brand quality to secure high-end margins than geographic

denomination. Smaller grape and wine producers tend to be more focused on the advantages of the geographic protection of their Hunter Valley wines in order to obtain good cellar-door prices. While the wine glut leads to market restructuring, including shedding the less serious winemakers from the industry, it is also seen as providing the potential for innovation in niche production (organic wine, low alcohol wine) in order to increase profitability.

Among the wineries there is genuine concern about protecting the agricultural feel of the Hunter Valley, not only both so wine will still be produced, but also in acknowledgement that the vineyards are one of the major attractions for tourists in the Hunter. The new trend of all-season music events has led to increased streams of tourists; yet, while most of these benefit the accommodation and catering businesses, only some (linked with the type of music) benefit wine-cellars and sales.

> *"The Hunter Valley Wine Country, it always has to feel of country, and if it doesn't feel like country then we have lost our purpose, we will have lost our economic viability. Some wine critics write that this region has lost its focus on wine. But it has never lost its focus on wine, there are 120 wine businesses here, and we work very hard to maintain it as a wine region and we have some very talented wine makers in the area. I keep saying that we have a natural balance between wine and infrastructure here, and we do have millions of people coming through here." Ecopreneur, Pokolbin*

The authorities are well aware of the complexities of population increases and the divergent interests of the tourism and wine industries, and are seeking to preserve the "rural feel" of the Hunter Valley through planning processes. When it comes to cluster sustainability and the prospect of overdevelopment, council planning and zoning issues have been a contentious issue, partly based on previous development schemes which have been overturned by the Lovedale residents. There is less of a concern for overdevelopment among tourism providers than in the wine industry. For the Lovedale businesses, the lack of infrastructure and development is considered a competitive advantage for tourists wanting a quieter and more "authentic" wine experience where you are most likely to speak with the family winemaker.

There is also deep frustration that the State Government has taken planning powers away from local councils, as this is thought to result in less protection from extractive industries that provide substantial income for the state. Both wine and tourism businesses are united in the view that increased mining and coal seam gas extraction will be detrimental to the Hunter wine tourism cluster. A development towards extractive industries can be classified as a radical change (Trippl & Todtling,

2008), as it will transform the landscape, reduce the attraction for tourists, increase pollution, divert water to mining, and distort the local labour market through offering higher salaries.

> *"Tourism is one of the greatest imposts on the environment, but, as a business owner, we can certainly do things. The wine industry also has quite a large effect on the environment. But mining and the environment do not go together." Nina, Accommodation, Lovedale.*

While open cut coal mining is not an acute problem in the Lovedale area, coal seam gas exploration permits have been issued for most of the Hunter Valley, including Lovedale, by the NSW State Government. To date, nobody in Lovedale has accepted coal seam gas exploration companies onto their land, and the LCC is an active member of the "Lock the gate" movement and the Hunter Protection Alliance against coal seam gas exploration. Both organisations have resourceful people from the Sydney business world, the wine and agricultural industries and environmentalist organisations, creating a new alliance against mining (Kelly, 2012a) and obtaining significant attention from the newly elected liberal NSW State Government (Kerr, 2011) (Kelly, 2012b) (ABC News, 2012b). In December 2011, the Australian Gas Limited was expelled from HVWIA (ABC News, 2011), while Cessnock City Council wants a ban on Coals Seam Gas (ABC News, 2012a). The fronts are hardening to protect the agricultural and tourism industries in the area.

> *"Our industry has been in the Hunter for nearly 200 years, we are a fully sustainable industry that can prosper for another 200 years and beyond. The coal seam gas operators will be gone inside 50 years and no one knows how big a mess they will leave behind. Viticulture, tourism and CSG are not compatible land uses and they never will be. " Bruce Tyrrell, Tyrrell's Wines, 2012 (Hunter Valley Protection Alliance and Hunter Valley Wine Industry Association, 2012, pp. 1-2).*

When examining these three threats to the Hunter Valley wine tourism cluster, the wine glut, overdevelopment and extractive industries in relation to sustainability, it could be stated that neither the wine glut nor increased tourism development may necessarily have a long-term detrimental impact on the sustainability of the wine tourism cluster as long as a certain balance is kept and the core of the larger wineries can keep the reputation of the Hunter Valley wine qualities intact. On the contrary, the wine glut has made them more focused on quality and consumer demands, as well as strengthening the heritage and innovative aspects of the Hunter. As such, they provide a new impetus to change and improve in the area of environmental sustainability. The introduction of extractive industries will result in a completely different social, economic and environmental basis for development in the Hunter Valley.

5.5 PRESSURES AND DRIVERS FOR ENVIRONMENTAL ACTION

While the previous section presented perceptions regarding sustainability in the Hunter, the next sections will examine the findings regarding pressures and drivers in Lovedale, following a structure used in a longitudinal study on business sustainability practices in New Zealand (Collins, et al., 2009). The first section deals with internal pressures to pursue environmental action, the second deals with external pressures (i.e. regulatory or economic pressures from the market, society or government), and the last section examines drivers or motivational factors (not considered internal or external pressures) that influence the business owner to pursue environmental action. Further depth and triangulation of these findings is developed through comparing quantitative results with findings from interviews with both small and large wine tourism actors, and both within and outside the Lovedale micro cluster. Last, opinions from lateral actors, public authorities and industry organisations were gathered to obtain a view from outside.

5.5.1 INTERNAL PRESSURES TO UNDERTAKE ENVIRONMENTAL ACTION

The survey questionnaire comprised three questions about internal pressures to undertake environmental action. The first question was about whether or not the respondent felt internal pressure to undertake environmental action. In the second question, respondents feeling internal pressure were asked to describe this type of internal pressure. As the respondent could tick several responses, the figures are counts in percentages rather than respondents. In the third question, respondents were asked to rate the highest and second highest internal pressures.

Less than half of the respondents (15 respondents - 48% (n=31)) felt internal pressure to pursue environmental action. Of these, a majority (59 % - 9 respondents) felt that “Own values and beliefs” was felt as internal pressure, while 5 respondents (35%) stated “Pressure coming from owners of the company”. Only 3 respondents (23%) felt that “Own knowledge about environmental issues” provided internal pressure, and only one respondent (6%) stated that shareholders or employees provided internal pressure.

When rating the importance of internal pressure, “Own values and beliefs” received the most responses (13 respondents - 87%), while “Increased knowledge about environmental problems” received the second most responses with 11 respondents (71%).

The interviews confirm these findings with many Lovedale businesses undertaking environmental action as a result of owners’ values and increased knowledge.

"I also have family and grandchildren, and I would like to reduce the footprint of every person….so I have to do my bit." Nina, Accommodation, Lovedale

"Once you start looking into the issues of climate change and waste. You can't go back. If you are educated, it's easy to do the better option, and spend money on photovoltaic cells instead of a swimming pool...it is basically knowledge that motivates me." Susan, Combined Business, Lovedale

These results indicate that, for small wine tourism businesses, the primary internal pressure would be felt from the owner's values, beliefs and knowledge. Considering that these businesses are mostly small family businesses it is not surprising that shareholders and pressure from other owners do not appear as external pressure (only 1 respondent - 6% each). The surprisingly low pressure from employees (1 respondent - 6%), even though 81% of Lovedale businesses employ between 1 and 20 people, could be an indication of employees being casuals and not feeling the responsibility or having the ability to suggest environmental action, or it may indicate a low level of environmental awareness among employees on these issues.

In interview, a large accommodation provider stated that there were strong organisational pressures from owners, shareholders and employees to pursue environmental improvements:

"We have a lot of internal company pressure driving the environmental agenda. First, our hotel is benchmarked against other hotels within the chain through XXX...(environmental) programme. So every month we submit data and none of us likes to be at the bottom. We all have to….be part of the international environmental....certification system and then there is a name and shame file if we don't do something about it. We also have pressure from owners of the company and especially the investors from the superannuation funds.... they want to be doing the right thing… And last, I get measured both on revenue, not just the bottom line (profit) but also the top line (shareholder value), which necessitates being a responsible business and doing something for the community and environment. So if I am not out there supporting initiatives the company would be upset and I would get a bad performance review." William, Large Accommodation

There are pronounced differences in internal pressure to pursue environmental action between a large global accommodation provider and a small family based business. While the large provider is driven by shareholders and internal quality assurance processes, the small business will feel pressured by own values and beliefs as well as knowledge.

5.5.2 EXTERNAL PRESSURES TO UNDERTAKE ENVIRONMENTAL ACTION

The survey questionnaire comprised three questions about the external pressures to undertake environmental action. In the first, respondents were asked whether they felt external pressure or not. In the second question, respondents were asked to describe what type of external pressure was felt. The respondent could tick as many responses as they wanted, and add others, thus percentages are counts for each type of pressure not respondents. The third question asked respondents to rate the first and second most important external pressures.

Slightly over half the respondents (17 respondents - 55% (n=31)) felt external pressure to undertake environmental action. The main external pressures were felt from the "Lovedale Chamber of Commerce" with 10 respondents (58%); followed by "Neighbourhood and community" with 8 respondents (46 %); then 6 respondents each (37 %) felt pressure from "Other business associations" and "Customers/Guests". Only 3 respondents (16%) felt pressure from tourism organisations. These findings indicate how normative pressures from business organisations and local community are important for small businesses environmental action. It also indicates the strong pressure felt from the Lovedale Chamber of Commerce greening process and the community in Lovedale to pursue environmental action.

A surprising result is the lack of pressure from government agencies; only 4 respondents (26%) felt pressure from the state and federal governments to undertake environmental action, and only 1 respondent (5%) felt pressure from local government on environmental issues. There was a substantial difference between types of business experiencing pressure from governmental agencies. While 3 respondents (43 %) among agricultural producers and 3 respondents (50 %) from the manufacturers felt pressures from the Federal Government, only 1 respondent (9 %) of accommodation providers felt the same. This confirms that there are stronger regulatory institutions in grape and wine production as presented in Chapter 4 on context. This corresponds with a survey among NSW population, where the majority believed that environmental regulation in tourism was "about right", but too strict for farming (NSW Department of Environment Climate Change and Water, 2010). The Lovedale findings confirm that environmental regulation is more pronounced in the agricultural/ wine businesses than in the tourism businesses.

Few respondents felt pressure from "Competitors pursuing environmental action" (3 respondents - 16%) and "Physical environment forcing change" (3 respondents - 16%). Only one respondent (5%) felt pressure from local environmental groups.

When rating external pressures, "Customers and guests" were considered the most important external pressures for 6 respondents (35%), with "Neighbourhood and Local Community" second most important for 3 respondents (17%). This response is surprising, yet gives some indication that market pressures (Customers and guests) are a stronger impetus for environmental action than other external pressures.

Fourteen respondents or slightly less than half of the Lovedale sample (42%) did not perceive any type of external pressure to pursue environmental action. This is also confirmed in the interviews with small businesses owners stating;

> *"No, nobody regulates me to do anything. There is no mandatory thing." Karl, Combined business, Lovedale*

The interviews found that large accommodation providers feel considerable external pressure both from corporate and individual customers and financial institutions (investors). Large corporate customers demanded environmental credentials before booking conferences. Individual customers on large hotels also exerted direct pressure towards management, and through internet blogging such as Tripadvisor.

> *"The corporate customers that come here for conferences also exert pressure; they have to show that they are socially and environmentally responsible. ….. you don't want to be the guy in the shame file for bad environmental practices. …We get a lot of guests commenting on our environmental practices…Whereas other guests complain about environmental practices and say that they are on holiday and want to be spoilt!" William, Large Accommodation*

The interviews confirm that grape and wine businesses feel more external pressure from regulators than tourism businesses. There are also significant differences in external pressures between small and large accommodation providers, and between accommodation and wine industry businesses.

5.5.3 DRIVERS OF ENVIRONMENTAL ACTION

The quantitative examination of drivers of environmental action comprised first a multi-response question where respondents were asked to identify drivers for environmental action, and, second, a rating of which of these drivers was most important. The multi-response question included 15 options and an open option. Respondents could tick multiple drivers and were asked to specify an organisation's name if being a driver.

The most important drivers for the Lovedale businesses (n=31) ticked by almost half the respondents, were “Fear of consequences” (15 respondents - 48%) and “Increased knowledge” (14 respondents - 45%). Subsequent to this were economic and business related drivers, such as “Cost reduction” (12 respondents - 39%), “Risk Management” (10 respondents - 32 %) and “Environmental branding” (9 respondents - 29%). This was followed by more normative drivers such as “Pressure from business associations” (9 respondents - 29 %), “The Right Thing To Do” (6 respondents - 20 %) and “Support from Environmental Organisations” (4 respondents - 13%). Regulatory drivers such “Environmental Conditions linked with Government Grants” (4 respondents - 13 %) and “Government Regulations” (1 respondents - 3%) provide little motivation for environmental action among Lovedale businesses. Some business owners were concerned about business improvement and protection and motivated by “Fear of bad reputation” or “Being an attractive workplace for employees” (3 respondents - 10% each).

The drivers that were rated most important were “Cost Management and Reduction” (7 respondents - 28%), “Fear of Long-Term Consequences” (6 respondents - 24%) and “The Right Thing to Do” (5 respondents - 20%).

In conclusion, the quantitative findings indicate that the Lovedale small business owners are strongly motivated by both cost-reduction and the business owner’s knowledge and values concerning environmental action, especially economic and cultural cognitive institutions, while normative and regulatory institutions have less of an impact on the business owner’s pursuit of environmental action. These results are similar to findings among the NSW population who stated that cost reduction and environmental awareness (values and knowledge) were the most important factors for instigating environmental action (NSW Department of Environment Climate Change and Water, 2010).

The interviews also provided indications that drivers for environmental action would vary depending on type, size and branding of business. Responses from the small tourism providers and combined businesses show that values-driven drivers such as “Doing the right thing” and ”Increased knowledge” are strong drivers with which to pursue the environmental lifestyle they are seeking in Lovedale:

> *“It was my personal motivation to make my house sustainable. I have always been interested in the environment and the cost of inputs, and we have to look for alternatives to oil and coal. I have the luxury of time and space, so why not?” Chris, Vigneron*

Cost reduction is also a strong driver for undertaking environmental action and, business savvy owners undertook a careful calculation of the payback period for environmental investments before action was taken.

> *"For me as a small business owner, the key driver is how I can reduce my costs. Solar hot water was an obvious one...But solar power panels…it has got to be cost competitive; if it was plus minus 10 years payback I would have done it...I looked at a payback of 25-30 years...also this is new technology and…I just don't want to be the early adopter." Karl, Combined Business*

For some, the lack of infrastructure created a large monetary incentive to install solar voltaics instead of upgrading a transformer. While a few businesses obtained government rebates to install solar panels, their impact is limited due to the often limited time during which they are available and the lack of general knowledge about them. Obtaining solar panel rebates is perceived more as a lucky dip than a policy-based incentive.

On the other hand, the environmental branding of the area through the Greening of Lovedale project and the business was considered an important driver in interviews. It created a vision for future development of Lovedale and was supported by most business owners.

> *"Yes, it is marketed as a green tourism destination. Yes, it was marketing as well as genuine interest (to initiate the Greening of Lovedale project). You have to, because you have to consider the economics of it. Otherwise people wouldn't be interested in it." Nina, Accommodation*

As has been discussed in Section 5.5.1, large accommodation providers have different drivers for environmental action, needing to comply with internal and external pressures for environmental performance to remain globally competitive and attract corporate customers. They have strong pressures from shareholders and public investors to comply with mandatory environmental certifications. However, in spite of high internal and external pressures, environmental improvements are still only undertaken after careful cost considerations and repayment rates have been scrutinised by the company board.

For Lovedale wine businesses, drivers are different than for the tourism businesses. Foremost is the level of council and AWRI regulations that affect their handling of winery waste, waste water and pesticide use. Industry organisations are also actively promoting knowledge about new methods and technologies and are drivers of change. There are also reputation and liability issues relating to the

drift of sprays in tourism areas such as Lovedale. For exporting wineries, there are strict standards and controls set by each importing country's authorities regulating how and what sprays can be used. Thus, exporting wine requires a high level of pesticide awareness of each importing country's requirements. This would further suggest that there may be less restrictions and control on wine for domestic cellar door sales.

Interviews with larger wine industry actors outside Lovedale point to the wine glut as an impetus for improving environmental credentials and/or environmental certifications to target niche markets where higher margins can be obtained. This pressure is prominent for exporters of wine where global retailers in grapes and wine are increasingly requiring some kind of environmental certification, such as ISO 14001, in order to purchase products; and domestic retailers are also increasing the pressure for environmental credentials.

> *"Big customers, like Woolworths and Coles are going to demand this (environmental certification) from us. It is only a matter of time." Wine industry Representative*

Drivers to convert to certified organic or biodynamic wines seem to be a combination of a deep concern for long-term human and soil health, but also the increased availability of improved technology and knowledge of low-input agriculture and natural sprays. While domestically the market for organic wines is increasing slowly, global consumer demand for organic wines is expanding rapidly in Europe, USA and Asia. Thus, being fully organically certified is also a strong economic driver.

When interviewing authorities about their incentives for environmental action, the focus was on initiatives that will give the most environmental benefit, while at the same time saving costs for the business and creating job satisfaction. This can be classified as a pure eco-efficiency rationale, seeking maximum environmental return for tax-payer's money. The omission of small businesses with high environmental commitment from incentive schemes may be economically rational, but a more collective and micro-cluster approach to delivering environmental incentives could maybe have motivated them to perform even more prominent environmental actions.

5.6 BARRIERS TO ENVIRONMENTAL ACTION

To obtain business owners' opinions on what were barriers to environmental action, the survey included a multi-response question with eight options, including an open option. Respondents were

also asked to rate what was considered the most important barriers for environmental action. All respondents in the sample filled in this question (n=31).

Not surprisingly, the two major barriers to environmental action were “Cost Implications” (24 respondents -78%) and “Lack of time” (14 respondents - 48%). This was followed by “Lack of knowledge” (12 respondents - 40%) and “Other priorities more important” (9 respondents - 30%). For some, environmental investments were considered too risky (5 respondents - 15%) or technology was not considered appropriate (3 respondents - 11 %). Two respondents (7%) stated that another barrier was that “Competitors were not pursuing environmental action”. Two respondents had added “Rebates too Bureaucratic” and “Too much administration to get financial support” as barriers against environmental action. These findings were reiterated when respondents were asked to rate the two most important barriers, with “Cost Implications” (16 respondents) and “Lack of Time” (7 respondents) receiving the highest number of respondents.

That cost implications are the biggest constraints is not surprising, especially for small businesses during wine glut times. However, interviews reveal that perceptions around what is deemed too costly or affordable depend on type, stage and size of businesses.

For the tourism providers, the main environmental action involves water and energy efficiency and investments in renewable energy. However, while water and energy efficiency is cost saving, investing in renewable energy is not considered financially viable due to the long repayment period and the lack of benefits (increased number of tourists). In addition, small tourism providers do not ususally benefit from government incentive schemes.

> *“The principle issue with relation to barriers to do more is cost-effectiveness. Not motivation or desire. If you start from scratch it is easier to think about various aspects of the whole environmental thing. Retrofitting is a real challenge, it is not cheap and it is much harder to do.” Karl, Combined Business*

For the grape and wine businesses, the financial situation caused by the wine glut is the main barrier to undertaking environmental action. For small vineyard owners, long-term environmental improvements are not seen as a viable option when grapes are sold at unsustainable prices. In addition, there is no correlation between environmental action and grape or wine prices. Wine prices are a result of wine critics and awards and are based on quality, fashion and consumer demands.

"There is no correlation in the market place. Between the price and the viticulture practices, there is no correlation whatsoever. The price has to do with the wine making, with the accolades from objective wine critics…" Ecopreneur, Pokolbin

That "Lack of time" is a prominent barrier was initially somewhat surprising, as most Lovedale business owners made a lifestyle choice (i.e., less busy life) when moving to the Hunter. Yet, interviews revealed that many of the businesses do not provide adequate income and many business owners have external paid employment. "Lack of knowledge" was not considered a major barrier to environmental action in the interviews. Instead, the Lovedale business owners came across as resourceful and knowledgeable, highly motivated by each other's environmental knowledge, yet not willing to invest "too much" in their lifestyle business.

A general reflection amongst both wine and tourism businesses was their attitudinal barriers against environmental action. Lateral actors in the wine industry and regional suppliers noted that it was generally harder to convince older growers about environmentally friendly methods due to their conviction that the Hunter Valley climate demanded certain measures.

"The old businesses are harder to convert to using a softer approach. You have to work harder to make them change their mind. They've been in the game for a long time. It is all back to the mindset, they think you can't do it in the Hunter. Well you can." Regional Input Supplier

Even though attitudes may be a problem in the wine industry, it seems to be changing and is now more aware and forward looking than the tourism industry. When organising courses for viticulturalists and farm managers on improved ways to grow grapes, softer approaches and organic methods have generally been well received, and fuelled by a necessity to obtain new niche markets and build environmental brands. This new environmental brand awareness has also created conditions for the green washing of produce and, with increasing focus on climate change, non-audited carbon neutral labeling of wine may become an element of value-adding without substantial environmental action being undertaken.

Many in the tourism businesses discussed the need to move away from the negative stigma around being green and enter a period where environmental action is considered a mainstream activity.

"This whole green thing has to get out of this do-good thing and avant-garde flag-waving people, down to Joe Blog and his wife and what they can do. Because the Australian

population will respond to guidance…but make it easy and practical." Karl, Combined Business

The lack of a more regional and unified strategy for pursuing sustainability in the Hunter Valley was mentioned by several businesses as a barrier to achieving substantial improvements.

"One of the biggest barriers for doing something substantial is the lack of an overall sustainability policy for the whole of the Hunter Valley. We should be pooling together and agreeing on a bigger initiative moving forward…When everyone makes their own environmental policies there are too many different messages...(greening) has got a big driver at the moment, greening is everything and it is not going away." William, Large Accommodation

Yet, while there are calls from both the accommodation and wine businesses for a coherent regional strategy,little initiative is found in the hands-off approach chosen by both the NSW State and Regional Tourism policies. Increased environmental action will only happen through the voluntary action of the service providers.

The lack of environmental regulation and the inadequacy of financial support to undertake environmental action were mentioned during interviews with tourism providers. For the few energy-efficiency rebates available, the paper work was considered too much and too confusing to be worth it. The survey and interviews both reveal that the processes to obtain rebates or to implement mandatory environmental action are too bureaucratic.

Almost all the tourism providers interviewed in Lovedale mentioned the lack of appropriate infrastructure such as roads and waste collection as a barrier for running a professional tourism business, and leading to less environmentally optimal solutions.

Several public agencies were questioned about barriers to environmental sustainability in the Hunter Valley. The local council confirmed the business owners' statements that a large barrier was the limited funds they had to invest in infrastructure and waste collection in less densely populated areas. With regards to the promotion of environmental incentive schemes, they did not see it as their task to inform schemes - that task is implemented by State agencies - but focused rather on voluntary action and community awareness campaigns. Thus, it is confirmed that their presence and involvement in pursuing environmental improvements for Lovedale businesses is limited.

From the NSW state agencies, the perception is that barriers for environmental sustainability comprise a lack of awareness of programs and the paucity of time and resources of small businesses to pursue

non core business activities. While each agency confirmed that there may be some bureaucratic burdens when pursuing different programmes for small businesses, there was less awareness of the confusion created when different agencies at State and Federal level promoted similar programs with separate administrative procedures and different time-limited rebates. The lack of both interest and mutual information exchanged between federal, state and local councils does not promote a simple inroad for small businesses to obtain support for environmental action.

In conclusion, the barriers for pursuing environmental action for Lovedale businesses vary according to type and size of business. The main barriers are the cost implications of environmental improvement. While cost saving energy and water efficiency measures are being implemented voluntarily as they make good business sense, larger investments in renewable energy or labour intensive environmentally friendly grape-growing methods are considered too costly and time-consuming for lifestyle business owners. For all businesses in the Lovedale area, the low levels of infrastructure and waste collection are a barrier to further investment in businesses and environmental action. There are also attitudinal issues, which involve the local community and business owners being skeptical about new more sustainable technology and the "greenie" stigma associated with pursuing environmental initiatives. While incentives for environmental investments are available from Federal and State authorities, the dissemination of information and the parallel systems are confusing. Small businesses are mostly not eligible for support due to a low cost benefit ratio and, in addition, laborious application processes put them off.

5.7 COMPETITIVE ADVANTAGE OF ENVIRONMENTAL ACTION

In order to examine how and what types of environmental actions may lead to value-adding and competitive advantage for Lovedale wine tourism businesses, Hart's (1995) natural resource based view framework is used. This suggests that businesses can gain a competitive advantage and value-adding from three different strategic capabilities: pollution prevention; product stewardship and sustainable development, with the corresponding organisational processes being continuous improvement and environmental management; environmental certification and standards; and through developing a shared long-term environmental vision for the area. The competitive advantage is developed through cost-reduction/increased profitability, pre-empting competitors through environmental certification or branding, and through developing an environmental vision for an area to secure future position in the market.

Both the survey and the interviews included questions which could give indications as to the prevalence of pollution control (cost-reduction and environmental management), product stewardship

(environmental certification and branding) and sustainable development (perceived value-adding of environmental strategy for the area). The blending of responses from both surveys and interviews will therefore be presented below to assess how the competitive advantage of the natural resource is perceived by the business owners in the Lovedale micro-cluster.

5.7.1 VALUE-ADDING FROM ENVIRONMENTAL MANAGEMENT AND POLLUTION CONTROL

Details about the Lovedale businesses' environmental action were discussed in Section 5.3. It reveals that most have implemented cost-reducing environmental improvements: 98% save water, 90% recycle waste, 82% reduce pesticides, while 58% have reduced energy consumption, 50% have controlled erosion, and 29% have reduced transport needs. While some of these were undertaken out of necessity (water and waste management), energy saving and reducing the environmental impact from agriculture would be classified as gradual environmental improvements and cost-reduction.

For wineries, the council regulation requiring them to recycle and handle their winery waste and waste water on the property are also strong pollution prevention measures. However, since these regulations are implemented on all wineries they do not, as such, provide a competitive advantage for one business over the other.

The survey also included a question as to what degree the businesses had an environmental management system, a written environmental managementplan or a plan for environmental training of staff and environmental assessment of suppliers.The question was posed as a list of options with increasing environmental accountability. While the first question asked if the respondent had a general idea or a strategy on what environmental actions to undertake, the next level was whether this strategy was in writing, whether they included measurable targets, staff training and an assessment of suppliers. While all these types of initiatives would be self-initiated and voluntary, they would be classified according to Hart's model as continuous environmental improvements to reduce costs and prevent pollution. These would not be classified as environmental certification, which requires third-party accreditation or auditing.

Of the 31 respondents in the survey 19 (61%) stated that they had general ideas or strategies to address environmental issues. Of these, 12 respondents (39%) had a general environmental plan in writing, but only 3 respondents (10%) had a plan with measurable targets. Five respondents (27%) had a plan that involved staff training, and 3 respondents (10%) had a plan that involved an assessment of suppliers. It appears that the majority of Lovedale businesses have general ideas and plans for what environmental improvements they would like to implement, however, less have

developed a more committed approach, including plans in writing, with declared targets and assessment of suppliers and training of staff.

The interviews gave a more nuanced understanding of how the value-adding of environmental improvements was perceived. While water saving and waste recycling was done out of necessity due to the lack of public services, energy efficiency measures were deemed to be a good cost-reducing business practice and were often accompanied by information to guests about how to save energy.

Around half the businesses were making efforts to reduce pollution from agricultural activity. Cost-reduction through reduced inputs would also be more attractive in wine glut times when prices for grapes are often financially unsustainable. However, the level of inputs would often be determined by wine-makers and viticulturalists in order to produce quality grapes. Substantial energy and water savings can be made in the wineries, but many of these involve significant investment in insulation and technology, and are more achievable and profitable for more capital rich medium and large wineries.

5.7.2 VALUE-ADDING FROM PRODUCT STEWARDSHIP AND ENVIRONMENTAL CERTIFICATION

Product stewardship provides a competitive advantage by pre-empting competitors through exclusive access or developing specific environmental market barriers. It is a process where individual businesses pursue environmental certifications in order to become a specific niche product/service, or gain access to specific nice markets. The survey asked if the business had any kind of environmental certification, audited by an external third party. Only 2 Lovedale respondents (6%) had pursued environmental certification audited by external auditors (Eco-tourism and Green Triple AAA).

Through the interviews, it is revealed that most small tourism businesses have not experienced or did not see the added value in environmental certification, as there was little customer demand for this. One of the small accommodation providers had pursued environmental certification, primarily based on the grounds of "doing the right thing", however she was also hoping it would pay in the long run:

> *"But so far (October 09) we have only one guest that booked deliberately because of our environmental policy. And we thought YES…But hopefully that will change, and unless …we change it nothing will happen." Susan, Combined Business*

One accommodation provider opted out of formal environmental accreditation, finding that administration costs were too high. Instead, the owner pursued all required environmental

improvements and described them on the business website. Thus, due to the margins and income from a small accommodation provider, the annual fee for certification was found to be too expensive.

The situation is very different for the large accommodation provider, where income and marketability are directly related to environmental credentials and branding. For these businesses, the added value of pursuing environmental certification was considered essential both for internal ratings and the shareholder value of the global brand:

> *"For us, the environmental action and credentials are vital for both the corporate customers and the owners of our company. We risk losing big customers if we don't take environmental concerns seriously. We also risk losing big superannuation fund investors' money if we are not good environmental citizens...We are very conscious of environmental certification, our company has …XXX level international certification as a mandatory starting point and then (we) work towards (higher environmental) status. Within the company we have an (environmental) best practice and performance evaluation system, which pushes us forward. And, last, we demand from our suppliers that they need environmental certification or credentials to be able to supply us." William, Large Accomodation,*

Interestingly, environmental certification of wine was seen by some as reducing value, stating that there was a negative stigma linked with organic certification.

> *"There is a stigma around organic and biodynamic farming. And that makes it harder to sell the environmental message because people believe they have to be a "wacko" or they are not environmental. So, in some way, it undermines the middle ground." John, Vigneron*

There was also an opinion that organic cultivation practices were not pragmatic or flexible enough to ensure quality crops under the difficult climatic conditions in the Hunter. Yet, for the smaller lifestyle grape growers, suppliers revealed that the stigma was less of a problem, indicating that there was an increasing interest in what was termed "the softer approach" by suppliers, especially among small and new grape growers. The softer approach involved using more environmentally friendly sprays, often sprays allowed in organically certified production, yet by using the term "softer approach" one avoids the stigma of organic and biodynamic farming.

> *"…there is a big interest (for the softer approach) now compared to just say 5 and 10 years ago. They are mostly small businesses, and both new and old. The newer ones are little bit easier to "convert" than the old ones…it is quite easy for (the small ones) to change over, because they haven't got the scale...plus (they are interested) just from the users point of*

view, because a lot of the stuff we use now is a lot more friendly than the stuff that has been used in the past. (They also do it) because they are looking for a niche market to obtain a guarantee for a long-term market (contract). Because (in these tough wine glut times) there are no new contracts getting written as far as I know." Supplier, Hunter Valley

For larger wineries, certification can clearly add value in the form of higher margins and the opening up of less competitive export markets. However, this process is not automatic, as wine prices are, to a large extent, dependent on customer's fashion-influenced wine tastes.

"In the lower price ranges we can get a margin if the wine is certified organic…in fact, there is more value in the international market for being organic than there is in the Australian market for being organic. Asia thinks very highly of organic...We won a large contract in XXXX country because the wine was organic. They discriminated in favour of us." Ecopreneur, Pokolbin.

For other large wineries, environmental certification and standards are seen as extensions to the many quality enhancing processes that they are implementing to enter foreign markets. Strategically, they see that environmental certification may be the next step to entering the European market, due to restrictions enforced by the big retail chains.

"Environmental certification has become a bit in the background because there is such a hard competition. We have a quality management system called HACCP in place, implemented by most large wine companies around Australia, purely because Tesco in the UK demand that their suppliers have accreditation." Big Family Winery, Pokolbin

A competitive advantage from product stewardship such as environmental certification seems more important for larger accommodation and wine businesses experiencing external pressures for environmental certification from shareholders, retailers and corporate customers. Even though there is an increasing demand for organic produce, there is still reticence among traditional growers for complying with the strict guidelines of organic certification for grapes and wine. For small tourism businesses, the administration and auditing fees can negate the value-added, making environmental certification a loss-making proposition. For small grape growers, environmental certification is seen as a possibility for long-term contracts, in addition to the health and environmental impacts it provides.

5.7.3 VALUE-ADDING FROM SUSTAINABLE DEVELOPMENT STRATEGIES

According to Hart (1995), the value-adding from a Sustainable Development Strategy is obtained when opportunities arising from the natural environment lead to a competitive advantage. It requires the minimization of present and future environmental burdens and a shared vision for securing a future position in the market for the business or the business cluster.

From the survey results, around 20% of Lovedale businesses used renewable energy and 16% undertook measures to preserve biodiversity, both of which are actions that can be classified as minimizing future environmental burden and securing the sustainable development of the individual business for the future.

The Greening of Lovedale process initiated by the Lovedale Chamber of Commerce could also be defined as a process towards a shared environmental strategy for the micro-cluster, related to the natural environmental, aesthetic beauty and specific environmental credentials developed for the businesses involved.

As an example of the shared credentials, the greening process committee has developed their own green rating system of both wine and tourism businesses. For a business to be allowed to label themselves a green business on the Lovedale Chamber of Commerce website they have to achieve 75% of possible points (see Appendix 16). The rating system differentiates points according to the type of business and the environmental effort and impact that the businesses have implemented. This can be classified as a self-organised and peer-monitored environmental certification system for a destination or a tourism micro-cluster. While there are no external auditors of this certification, the business community is so close that it would be closely reviewed by neighbouring businesses who are both collaborators and competitors. The advantages of a locally organised environmental certification system for small businesses are the savings in administration, costs and time. In addition, peer monitoring may be more efficient than the occasional external audit. Yet, a weakness of a self-organised system may be that less external input or technology transfer happens through external auditors.

For the small tourism operators, there were serious doubts as to whether the greening process would add monetary benefits, yet, environmental action was seen as “the right thing to do”, making guests feel good and, so, increaseing value for the guests.

> *“I don’t think we will ever see that people will come to Lovedale and spend money at the businesses as a result of this (environmental) initiative...I imagine if we are known as the*

green accommodation vineyard in Australia, there would be some portion of the population that would think that was good. I can't imagine it would be very big. But it is a bonus if the guests feel good. " Karl,Combined Business

An indicator of the value-adding of a natural environment, or aesthetic beauty of a place, is the property value in the market. While property prices for vineyards have been known to be very high, the current wine glut and threat of coal seam gas exploration has led to a decline in property prices and to difficulties in selling.

During interviews, most business owners mentioned that tourists come to the Hunter Valley for wine and food, but also to be in an aesthetically pleasing landscape. For guests arriving to Lovedale, some are surprised how quiet it is:

"You know it is wine-tourism, which is about going to a winery and seeing Rob Thomas swinging away up on stage and drinking great wine and staying in a groovy location, and having a romantic lunch the next day….Australians love that whole concept of the European, they feel they are in Tuscany, they are living the Dolce Vita." Lucy, Vigneron, Lovedale

"Guests comment when they come here is that they never knew this place existed. It's so peaceful around here. So I do think that the natural environment affects their choice. It is quiet, it is clean and it is what people are craving for when they go away. To go somewhere that is peaceful." Nina, Accommodation, Lovedale

Most Lovedale businesses are aware of the aesthetic impression necessary to attract high end tourists, and substantial effort goes into maintaining beautiful gardens, vineyards and surrounds. Cabins are located with balconies facing sunset views over the vineyards, with kangaroos hopping through vineyards being an important part of the attraction of the area. Many have also set aside substantial areas for native vegetation and bush regeneration along the creeks to create corridors for native wildlife, also improving biodiversity in the area.

The images of the Hunter vineyards and the cultural landscape feature prominently in the marketing of the area and are definitely in the minds of tourism operators as attractions for tourists. However, Lovedale, being less developedand lacking council services, has developed into a more rustic and quiet part of the Lower Hunter and this is now perceived as a competitive advantage compared to the more developed areas.

In summary, most businesses have utilized much of the potential for value-adding due to pollution control and cost-reduction, out of necessity due to lack of council services. The added value of

product stewardship is more substantial and important for large businesses than for the small businesses. The added value of the environmental branding of an area is regarded as important both for small and large tourism operators. For wine businesses, there are retail driven certification requirements which are increasingly being enforced, but these will mostly affect larger wine businesses. For smaller wine businesses, there is some value-adding via organic certification, however, since wine prices are determined more on awards and consumer tastes and fashion, the margin for organic wines is not secure in the domestic market. For the export market, however, organic wines gain added value and have a competitive advantage. Yet, this again would be more relevant for larger wineries than small wine businesses.

5.7.4 THE USE OF ENVIRONMENTAL ISSUES IN MARKETING

The survey questionnaire contained a question asking to what degree environmental issues were used in the marketing of the business, using a 5 point Likert scale. Fifteen respondents (48%) did not use environmental issues in their marketing. Four respondents (1 %) used environmental issues a little, 6 respondents (19%) some, and 5 respondents (16%) used environmental issues a lot in the marketing of their business. No respondents stated that they had environmental issues as their main focus in the marketing. This indicates that around half of the respondents (16 respondents - 52%) use environmental issues in the marketing of their business, even though only two have been environmentally certified through the external auditing process. Environmental branding was mentioned as a driver for environmental action by 28% of the respondents.

When asked about their use of environment issues in their marketing, several interviewees stated that they saw some positive impacts of this, while others remained cautious with regards to the benefits of environmental issues in marketing. The issue of marketing products and services that are not truly environmental, "green-washing", was thought to have reduced commercial gain from environmental action as it led to increased suspicion. For others, it was important to stress that being environmentally friendly does not have to mean you need to go without comfort and luxury:

> *"I use environmental policies and certification actively in my marketing. I also have my environmental policy up on our website and I state in our welcome letter that we are part of a wave of accommodation providers looking at the impact on the environment. But I try to put it in a positive sense, that it is a wonderful thing, that you don't have to go without things, but you can be part of some action that in addition gives some environmental plusses. I also market through special green marketing channels on different websites." Susan, Combined Business*

Again, for the large accommodation provider, independent environmental credentials are an important part of their brand and are used in marketing:

> *"We use it in marketing. The incentive is that you can go out to businesses and say that we have got independent certifications in addition to our own. And if you don't have your environmental credentials in order they won't do business with you." William, Large Accomodation*

There is, however, praise for the impact that the Greening of Lovedale process can have for Lovedale as a destination and ultimately for the businesses in Lovedale. Marketing a destination as green is seen as being more commercially beneficial than marketing individual businesses, as this will make the tourist stay longer at the green destination.

> *"I think it would matter to market the Greening of Lovedale, maybe not immediately, but ultimately, whether it's 3, 5 or 10 years, but it will make a big difference. There's no doubt in my mind that people will make decisions to go or not to go to a particular place because of that place's particular environmental policy." Barry, Vigneron*

However, there is a passive attitude from the regional tourism organisations in relation to the marketing of sustainable destinations through official channels. These initiatives seem to have to come from below.

For the small wine businesses, environmental issues were not used in marketing, which was also confirmed in the interviews. While, for many of the larger wineries outside Lovedale, environmental initiatives are both described and used in their marketing.

5.8 ENVIRONMENTAL KNOWLEDGE AND NETWORKS

This section first discusses the results from the quantitative survey concerning how and where Lovedale businesses obtain environmental knowledge. Second, it will analyse, based on the qualitative data and contextual factors, the role the micro-cluster organisation has on environmental action.

5.8.1 SOURCES OF ENVIRONMENTAL KNOWLEDGE

The survey questionnaire included a multi-response question asking what were the respondents' sources of environmental knowledge. There were 6 options, and respondents could also add others.

Respondents were asked to specify the industry or business association that was their source of knowledge. The response rate for this question was 31.

More than half of the business owners (16 respondents or 53%) obtained their information about environmental issues from business associations, with 8 respondents (27%) specifically naming the Lovedale Chamber of Commerce as a primary source of information. Of other industry associations, one respondent mentioned the Lovedale Vignerons Association. Neither the Hunter Valley Wine Industry Association nor the Hunter Wine Country Tourism was specified in the responses. The second most important source of knowledge was through own research on the web (9 respondents/30%); 8 respondents (27%) received environmental knowledge through their memberships in voluntary environmental activities and 6 respondents (20 %) through environmental networks (20%). None of these environmental organisations or networks was named specifically. Only 2 respondents (7%) received their information about environmental issues through formal courses, and 2 respondents (7%) reported to have received their knowledge through discussion with friends and neighbours. One respondent (3%) stated they knew enough about environmental issues.

The NSW Survey (NSW Department of Environment Climate Change and Water, 2010) found that, while university graduates were more likely to gather information about environmental issues from scientists and government agencies, rural residents and retirees would rely more on information from friends and family, businesses, and religious leaders. Sydneysiders were more likely to rely on environmental knowledge from government and environmental organisations, and less from business and local councils.

The results from Lovedale show an unusual pattern of obtaining environmental knowledge compared to the NSW statistics, in that the reliance on business associations (including the Lovedale Chamber of Commerce) and own research is so high. This may be due to the fact that the Lovedale businesses are less embedded in the surrounding Cessnock community, and may be more directly linked with the Lovedale Chamber of Commerce. It may also be caused by the greening process initiated by the Lovedale Chamber of Commerce, where a major focus has been information dissemination. When own research is rated high, this is similar to university graduates' mode of knowledge-gathering.

The very low response rate for environmental knowledge being obtained through more formal paid courses may indicate that these courses are not considered to be their responsibility (not vineyard managers) or to be necessary for their business.

The survey findings are confirmed in the interviews. For tourism providers, the Lovedale Chamber of Commerce alongside own research is at the core of environmental knowledge among members.

"Just reading, newspapers, and anything really. And what the (Lovedale) chamber puts out is always interesting. And last year there was an environmental exhibition here in the Crowne Plaza, with all the suppliers of solar panels etc." Donna, Accommodation, Lovedale

The small wineries and grapegrowers in Lovedale employ both farm managers and viticulturalists and winemakers to make cultivation decisions. Many interviewees point to consulting viticulturalists and winemakers in the Hunter as providers and gatekeepers of environmentally sound viticulture practices. Yet, these were not mentioned in the survey, maybe due to the fact that knowledge from HVWIA, the viticulturalists and winemakers does not necessarily reach the business owners, but goes directly to the employed managers and workers in the vineyards. All of the larger wine companies have their own viticulturalist, while small grape-growers pay independent viticulturalists for advice. Each of these has a portfolio of vineyards that they look after:

"I am an independent viticulturalist consultant and have between 20-30 vineyards to monitor and advise on management. I visit them at least once a week. I give recommendations based on best practice which I get from a fantastic Australian wine industry which spends a lot of money on research and development. To my mind, it is this dissemination of information which is the most important thing I can do. So I give knowledge about what is happening in the big world. And then I get clues from other people and between vineyards. Also, it is reassuring for people if they have got a particular problem or something has happened in their vineyard I can tell them it is happening elsewhere as well." Viticulturalist, Lower Hunter

It is evident that these meshes of highly knowledgeable and updated experts who crisscross the Hunter Valley vineyards perform an important role in improving sustainability in the wine industry. Two regional membership organisations were mentioned by the interviewees in relation to their role on environmental issues the Hunter Valley Wine Industry Association (HVWIA) and the Hunter Valley Wine Country Tourism. For the wine businesses, the Hunter Valley Wine Industry Association was clearly the hub for information on environmental issues. Being a knowledge-based and industry focussed organisation, it promotes wine and grape-growing interests throughout the Hunter Valley. It organises courses in Environmental Management Systems, improved pesticide use, technology for reduced erosion and climate change adaptation. It is also very vocally opposed to the coal seam gas industry in the Hunter Valley. While the HVWIA is, therefore, an important organization both technically and strategically in relation to environmental issues, this is less so with the Hunter Wine Country Tourism:

"Then there is Hunter Wine Country Tourism, being dragged along in the wake (of doing something in the environmental issue)." Joan, Accommodation, Lovedale

Larger businesses have access to other sources of environmental knowledge and support both of them through more resources to do their own research within their own company, and also through access to national knowledge providers, such as the Australian Wine Research Institute and the Australian Wine and Brandy Corporation.

5.8.2 THE ROLE OF THE MICRO-CLUSTER ORGANISATION IN ENVIRONMENTAL ACTION

As has been examined above, the Lovedale Chamber of Commerce is a vital source of environmental information for the smaller wine based tourism businesses. The next section will examine how formal and informal networking influences environmental action. As described in Chapter 4 on context, there are no community services, buildings or halls for meetings within the Lovedale area. However, many of the wine tourism businesses have venues that can be used for formal or informal meetings. The Hunter Crowne Plaza has also provided venues for AGMs and larger meetings, and has been the venue for a green expo organised by the Lovedale Chamber of Commerce.

5.8.2.1 LOVEDALE MICRO-CLUSTER - FORMAL NETWORKS

The Lovedale micro-cluster has two formal organisations within its geographical limits: the Lovedale Chamber of Commerce (LCC) and the Lovedale Vigneron Association (LVA). The two organisations have similar objectives, to market Lovedale the destination and promote the businesses of Lovedale; but the LCC is open for all types of businesses (approximately 70), while the LVA is only for wineries with cellardoors (13 wineries). Most LVA members are also members of the LCC. The LCC is organised into three subgroups: marketing, greening and events. While the Greening of Lovedale is an initiative of the LCC, it is supported and pursued in activities organised by the LVA.

The LCC operate a professional marketing website, with descriptions and weblinks to all member businesses. It also includes information on the Greening of Lovedale initiative as well as information about Lovedale and other events in the Hunter Valley. The LCC organises activities and events with the objective of keeping tourists within the Lovedale area. To support this, the LCC organises tours of the Lovedale tourism facilities and wineries for the business owners in Lovedale to keep each other updated and informed about what is available within Lovedale and to be able to give guestsaccurate information about services in Lovedale. During these tours, a focus has been on showing each other environmental improvements and solutions. All these initiatives indicate that there is a quite a level of

transparency and collaboration within the Lovedale community, which also assists in inspiring one another to pursue environmental improvements.

The LCC has had put turbulent period behind them, when previous events left the chamber indebted, and a trademark issue over the Lovedale name was settled. During this period, the trust and the collaborative spirit within the LCC was damaged. It seems as if the LCC, through a collective effort with the launch of the "Greening of Lovedale Process" in 2008, has managed create a focus and common objective for marketing campaigns, enhanced a community spirit towards a common goal, and has, thus, changed the brand of Lovedale. It has also led to more awareness and peer pressure to perform within the community:

> *"Since we started the Greening of Lovedale, I am quite sure that people are starting to become more aware. And some are certainly changing in the last couple of years....Now that we are starting to market the whole place better…we need to keep an eye on what people load on the website. If someone puts onto it that they have organic wine and they're not certified, that would compromise the greening programme and the Chamber of Commerce website." Nina, Accommodation, Lovedale*

The LVA has as its main objective to market Lovedale wines. This is done through the implementation of events, with the Lovedale Long Lunch having especially succeeded in putting Lovedale on the map as a separate destination within the Hunter Valley Wine Region.

While the two organisation work side by side and most vignerons are members of both organisations, there are questions raised as to how effective the LCC is in raising more fundamental issues concerning infrastructure and council services fundamental to further investment in businesses in the area.

> *"We all know each other in Lovedale, and we are all very friendly and we are all nice and open people. And if we can help each other out, we will. So it is a community that's right, but that doesn't make it a well organised community that will have good infrastructure and economic sustainability…" Lucy, Vigneron, Lovedale*

From outside, the dichotomy of these two organisations seems to reflect a similar situation at the regional level between the Hunter Valley Wine Industry Association and the regional tourism association Hunter Wine Country, where the former is concerned with infrastructure development, maintenance of land and water resources and long term sustainability issues, while the latter has more short term objectives and is at the mercy of its members' willingness to take on difficult issues. For

boutique tourism, the infrastructure issue may be less of a problem as it adds to the rustic and exclusive feel of the place.

5.8.2.2 LOVEDALE MICRO-CLUSTER INFORMAL NETWORKS

As was described in section 4.2.4.2, the Lovedale community has two regular informal gatherings: Street-drinks and Friday drinks, where information is shared and community issues are discussed and debated. Both can be stated as important in relation to environmental action. Street-drinks started as a protest against a large development in north Rothbury. Initially, this informal network comprised people from Talga and Wilderness Road, and succeeded in halting the development.

> *"We don't want suburbia, we want rural environment. We rely on the vineyards and the farms for a living. So we managed to stop the development, but the monthly get-togethers were such a good idea that it continued. But it started a long time ago, 15 years or so." Chris, Vigneron, Lovedale*

The street drink gatherings are well organised with business owners from Talga and Wilderness Road as rotating hosts and monthly email invitations sent to a dedicated list. While there is a certain exclusivity around these meetings, they function as important community gatherings for the exchange of information:

> *"We talk about all kind of things. This was something we realized even before we bought our property up here, we picked up useful hints about how to run an accommodation business over drinks. It is always useful." Donna, Accommodation, Lovedale*

> *"At street drinks we talk about community issues and environmental issues such as Clean up Australia day. That involves all residents, so that is a good place to talk about that sort of thing." Nina, Accommodation, Lovedale*

The last two years of Street-drinks have been vital for the organisation of LCC's protest against Coal Seam Gas, such as the organisation of buses to Sydney, division of tasks and the signing of petitions.

Friday drinks is a more loose weekly gathering of locals in one of the cellar-doors in Lovedale, and functions as a networking gathering where you can get updated on business issues and opportunities:

> *"But most of the time these people wouldn't socialise together...I would say it is a networking place....we do talk about business at Friday drinks. It is a bit like "How's your*

bookings going?" And "gees it's been quiet". And it is actually quite nice to know that you are not the only one to struggle." Nina, Accommodation, Lovedale

"I think it is useful for business, as we talk about prices for grapes and give each other ideas about how and where to get rid of your grapes. We also give each other moral support..." Susan, Combined Business, Lovedale

The survey indicated that environmental knowledge to a small degree is obtained from friends or neighbours, however, the interviews give more depth to this statement:

"You know, of course, we get it (environmental knowledge and motivation) from each other. But more and more now people are talking about it, at any social events...Everyone is fundamentally motivated to do the right thing, by the environment, because we want our places to look good and also to leave the place better than we found it." Joan, Accommodation Provider

The informal networks provide important sources of business and community information exchange across the wine - tourism divide and they have been important for the sharing of environmental information and for developing strategies for further action.

However, even though the people of Lovedale are resourceful, there is sometimes a lack of knowledge about the local area and connection with people and events in the surrounding area.

"We don't acknowledge what goes on in other areas that are close by. For instance, a lot of the restaurants in the area don't stock a great deal of Hunter Valley wines. You know the Hunter Valley is known throughout the world to produce the best Semillon, but nobody local really knows about it. Well there's a lot of Cessnock people, for example, who've never been out here, coal mining people. Most of the people coming here are from Sydney, Newcastle and Central Coast." Liz, Vigneron, Lovedale

"Newcastle is economically a critical factor to the NSW Government, somehow we are not linked enough to them,we don't see ourselves as a natural extension of Newcastle business." Lucy, Vigneron, Lovedale

The importance of the informal networks for discussing and disseminating knowledge, ideas and for peer pressure to pursue and keep in line with environmental action is clearly seen from the interviews. The informal gatherings are also vital for organising and providing support for environmental action. The demographic homogeneity of the Lovedale business community and the common business

interest promotes a utilitarian and solutions oriented focus, which is effective not only for good business practice but also for effective organisation of environmental action. While this community is tightly knit in a business sense, they do not categorise each other as friends. The disconnection between the tightly knit Lovedale business community and the Cessnock population, as well as the regional centre of Newcastle, is once again confirmed, as the Lovedale residents have more of a connection with Sydney.

5.8.2.3 THE LOVEDALE MICRO-CLUSTER IMPACT ON ENVIRONMENTAL ACTION

The Lovedale community has an aspiration to become a green destination and inspire the surrounding community and businesses in a more sustainable direction.

> *"The Greening of Lovedale is an incipient movement. .....I hope it will show Lovedale as a leader in something that will increasingly become an awareness thing among the population at large. And people will be interested in talking about it. And that it will gather pace." Karl, Combined Business, Lovedale*

While small vignerons are not the main players in the region, the small grape-growers' interest in a softer approach with concern to viticulture is being noticed, with suppliers increasing the demand for more environmentally friendly cultivation methods.

While LCC members were mostly quite negative about the support they have received from the council on environmental action, they also consider that their push for better solutions provides a voice for more environmental action in the area. The council initiates community campaigns for increased environmental action and has an environmentally sustainable development strategy since 2003. In the recent community survey, infrastructure was noted as needing most attention, whereas, in the area of environment and waste, the council received reasonable acknowledgement. There, thus, seems to be a disparity between the general view in Cessnock and how the Lovedale business community sees environmental action by the council. Yet the council is inspired by the Greening of Lovedale process.

> *"Part of what has inspired us establishing an Environmental Committee in Council is certainly the actions that have been taken by the Lovedale Chamber of Commerce.....I think the most valuable contribution the LCC can make to sustainable development in the area is to make their greening initiative a success. And they need to have a good understanding of local issues and happenings. So that they can align themselves and be*

informed about what's likely to happen. You have to really protect what you've got." Council

Even though the Lovedale Business community is perceived as a resource-rich group of lifestyle vignerons, their efforts in the Greening of Lovedale is seen as inspirational for the council. Yet the lack of embeddedness of Lovedale businesses may be an advantage in pursuing innovative greening strategies, due to business owners not being subdued by social normative and cultural cognitive institutional pressures. On the other hand, this may also be barrier for uptake among the wider less resourced community in the area. This is also a problem for the council, which has more pressing environmental issues to solve due to the urban sprawl they are experiencing. The self-organised environmental rating system is also a valuable pilot for micro-clusters wanting to develop a greener destination.

5.9 CONCLUSION

Lovedale is located in one of Australia's top tourist destinations, the Hunter Valley wine region. Even though only 2% of all of Australia's wines are produced on the 120 primarily small family run wineries, its proximity to the four million population of Sydney ensures large numbers of both domestic and overseas tourists. The Lovedale wine area began to rapidly develop around 25 years ago in the outskirts of the core wine area Pokolbin, and now has around 14 wineries, and around 70 accommodation, catering and craft/event businesses. This research is based on a survey undertaken among the Lovedale Chamber of Commerce members (46% response rate n=67) and 26 interviews held with actors within and outside the Lovedale area. The integration of survey results with findings from interviews ensured triangulation of data and information.

Lovedale is not a community centre lacking in community services (shops, post-office and other services), but is still a tightly knit and collaborative community held together by two formal organisations, the Lovedale Chamber of Commerce and the Lovedale Vigneron Association. Community cohesion and business operations are also greatly helped by several informal social gatherings and networks where business and environmental action is discussed.

The demographic characteristics of the sample indicate that Lovedale business owners are mostly more than 50 years old and close to retirement age. The majority have tertiary degrees, distinguishing them from the average low-income demographic profile for Cessnock LGA. They are mostly from Sydney and are a strong and resourceful group of people, often with corporate careers behind them, who for lifestyle reasons have settled in Lovedale to own a vineyard and live the dream. They are also

financially resourceful and have substantial business skills and networks. Their concern for environmental issues is high, reflecting a view on environmental issues more in line with what is expressed by urban Sydney-siders. The main local concerns are water availability, coal-fired electricity, lack of proper waste management, and pesticide use in the vineyards.

The environmental action undertaken by the small businesses is heavily influenced by necessity due to the area not being serviced with public water and waste collection, resulting in virtually every business saving water and recycling waste. Energy efficiency is performed by more than half of the respondents, while renewable energy is used by almost 20% of the respondents.

The emergence of the Greening of Lovedale project four years ago, must be viewed as a result of a genuine concern for the environment - an attitude of “doing our bit” - but also as a way to market and distinguish Lovedale from the rest of the Hunter Valley wine area. They have a good understanding of the concept of sustainability, yet, in their day to day business operations have a pragmatic approach, maintaining that environmental sustainability must balance with business profitability.

The findings reveal that internal and external institutional pressures and drivers to pursue environmental action vary according to the size, type, and the market orientation of the business. This tendency is also prominent for business owners’ perception of the value-adding of environmental improvements. There seems to be less variation with regards to barriers to environmental action.

In small businesses (both grape and tourism), internal pressure to pursue environmental action was primarily based on own values, beliefs and knowledge. Small businesses also have serious cost constraints in relation to undertaking major environmental investments, and will often not be eligible for rebates or other incentives; while in larger companies (both wine and tourism) internal pressure comes from owners and shareholders. Larger businesses have greater external pressures primarily due to market pressures to pursue environmental improvements and standards.

Wine and grape growing businesses were more regulated and received more environmental advice and support than tourism businesses. This is due to Council requiring winery waste and waste water effluents to be treated on site. Control in relation to pesticides spray is handled by the council; however, pesticide methods and amounts are the responsibility of vineyard managers, in collaboration with viticulturalists and winemakers based on the legally binding application description. Viticulturalist consultants and suppliers provide important advice and new products for reducing the environmental impact of grape growing. Reducing wineries’ energy and water use is largely up to the business cost-benefit calculations.

Small wine businesses sell predominantly through their own cellar doors or local outlets and, therefore, do not have to adhere to stringent export market regulations. Large wine businesses are focused on improving environmental credentials and standards as a way both to improve wine quality and to obtain better margins. Winebusinesses that export their product are required to adhere to importing countries' and retailers' environmental regulations and certification requirements, with importers increasingly requiring ISO 14001 certification (Global GAP) and carbon labeling on imported produce.

Small tourism businesses have little regulation of business operations' environmental impact. There are no regulations with regards to energy and water use and waste reduction/recycling. There are few environmental knowledge providers and little coordinated policy-making for small tourism providers, apart from the local business organisations' own efforts. Environmental action for small tourism businesses is voluntary and through the Greening of Lovedale process. It is self-organised and peer pressured. Large tourism businesses have considerable pressures that are both internal (management, owners and shareholders) and external (from corporate customers, investors and visitors' social media use) and require the company to pursue environmental improvements and certifications. It could be concluded that, in general, small businesses are more influenced by normative and culturally cognitive institutions than large businesses where market based and regulatory pressures are much more prominent.

These insights also have implications for value-adding of environmental action. For small businesses, the value-adding of pollution control and cost-reduction is important and to a large extent exploited due to necessity among Lovedale businesses. The value-adding prospects of product stewardship in the form of environmental certification is less evident for small businesses as there are considerable transaction, administrative and knowledge costs involved and small economic benefits. For large businesses, product stewardship is increasingly important due to market pressures from customers, retailers and investors. Globally oriented companies view environmental certification, standards and organic labels ways to approach new markets with larger margins.Value-adding from sustainable development includes a long-term environmental vision to ensure that future business is more important for a cluster of small businesses than for large businesses. While collaboratively a micro-cluster of businesses may be able to create value-adding through a differentiated green tourism destination, larger businesses will be more concerned about developing value-adding through environmental credentials for the company brand.

The Greening of Lovedale process has contributed to increased cohesion and a collaborative spirit within the Lovedale business community. The peer pressure and social control within the micro-

cluster ensures that Lovedale's own environmental rating system is accounted for, while this system also saves time and administration costs compared with formal certification arrangements. Its success depends on continuous monitoring to avoid "greenwashing" of the "green destination". The Greening of Lovedale process is seen as an inspiration for the Cessnock Council and has improved connections with the Hunter Valley wine industry through their efforts against the local presence of the Coal Seam Gas industry.

CHAPTER 6 ENVIRONMENTAL ACTION IN VIKEBYGD

6.1 INTRODUCTION

The previous chapter presented findings from the field research conducted in Lovedale, in the Hunter Valley. This chapter will present research findings from the Vikebygd Landscape Park (VLP) in Hardanger to examine how this community of small agriculture-based tourism businesses pursues sustainable development.

The chapter uses the same structure as for the chapter on Lovedale, starting with demographic and business characteristics, followed by a description of environmental concerns, issues and actions. Thereafter, a summary of business owners' perceptions of sustainability is presented which leads into findings regarding the pressures, drivers and barriers for environmental action. The next section then examines the different value-adding propositions of environmental action and use of environmental issues in marketing. The last section presents findings identifying the sources of environmental knowledge and what role the micro-cluster organisation plays in pursuing environmental action.

The 21 questionnaires that were obtained represent 40% of the 52 individual shareholders in VLP. They live and work in Vikebygd, being active members of the Vikebygd Shareholding Company. Results from the survey are found in Appendix 8. The 24 interviews were gathered with actors both within and outside of the Vikebygd micro-cluster. Forty-six percent (11) of the interviews were performed with actors inside the micro-cluster, while the other 54% (13) were performed with actors outside the micro-cluster. Appendix 6 lists the attributes of the Norwegian interviewees. The analysis in this chapter will be focused on the data collected inside the micro-cluster. Some of the findings from the interviews from outside the micro-cluster will be used to mirror perceptions from the surrounding institutional and business environment. Further details on the research methodology are found in Chapter 3.

6.2 VIKEBYGD MICRO-CLUSTER CHARACTERISTICS

6.2.1 THE OWNERS OF VIKEBYGD BUSINESSES

Data from the survey and interviews confirm that the majority of business owners reside in Vikebygd as a result of inheriting family farms. Some have pursued tertiary education and experienced years of professional life elsewhere, yet returned when wanting to settle down and have children in a rural

environment. Most farms are managed in combination, with either one or both adult in the household having work outside the farm.

The age distribution among the business owners is more even than in Lovedale: among the 11 interviewees in Vikebygd only 5 interviewees (45%) were 50-65 years old or above. Nine respondents (81%) were born in Vikebygd and either never moved out or returned.

Similarly, for the survey results (n=21), 9 respondents (43%) were between 35-50 years, while 10 respondents (48%) were above 50 years. Only 2 respondents (9%) were below 35 years. This is a community with members from all age groups, and where heirs inherit farms at varying ages depending on the health of their parents, when they want to retire, and the professional ambitions of the heir. Only 6 respondents (29%) of the survey were women. This may be due to farming increasingly becoming a man's domain as women seek off-farm income (Bjørkhaug & Blekesaune, 2008), making the man most up–to-date on environmental issues on the farm. While the age distribution is more even than in Lovedale, the general ageing of the rural population is a concern in Vikebygd.

The majority of respondents are native to Vikebygd and have lived there most of their lives. A separate question specific to the Vikebygd survey asked whether respondents had lived in Vikebygd all their life, were new to the area or had returned after having lived elsewhere. This question was filled in by all 21 respondents. A total of 16 respondents (76%) were native to the Vikebygd area, 12 respondents (5 %) had never moved out and 4 respondents (19%) had been away, but had returned to the area. Only 5 respondents (24%) were not native to the area.

> *"….these small farms are deeply linked to the families, and very hard to sell for many… .There are probably a majority of people around here who have grown up here and are of farmer families. It isn't a place that new people move to…" Svein, Farmer, Vikebygd*

This gives a clear indication of the impact on democraphic characteristics of the allodial inheritance laws discussed in Chapter 4. Yet, even though farm responsibilities call heirs back to the farm, more than half (12 respondents - 57%) have a tertiary degree, while 8 (38%) have had vocational training. Compared to the average 19% with tertiary degrees in Hardanger, the Vikebygd Landscape Park respondents are resourceful and well educated.

In 1999, a law was passed providing farmers the right to a pension in order to promote earlier retirement and take-over by next generation (Landbruks og Mat Departementet, 1999). This has led to secure retirement income for the parents, but in practice, has meant that the parents' generation would

probably continue working on the farm for a pension, while it would be easier for the heirs' generation to combine work outside the farm when the parents had secured a decent income. Improvements and simplification of farm operations (halting the combination of fruit cultivation and animal husbandry) has also meant that maintaining the small fruit orchards is achievable alongside full-time jobs elsewhere.

> *"….. Many are employed in Odda, Kinsarvik and Karmøy (heavy industry) …then there are jobs at the school and in health... Some have jobs in the oil industry in the North Sea…That they make the effort to maintain the farm in addition is impressive, you know when they earn so much money…" Svein, Farmer, Vikebygd*

The tiny well-kept fruit orchards in Vikebygd are a result of the allodial law where farms are handed down to the next generation. Thus, the social normative pressure to return to the family farm and continue cultivating the land has a profound impact in the area. The percentage of business owners who are born and bred in Vikebygd speaks of centuries of embeddedness in the Vikebygd community. Yet, Vikebygd is also connected to the outer world, with the majority of the respondents having a tertiary qualification and additional jobs outside the farm.

6.2.2 VIKEBYGD BUSINESS CHARACTERISTICS

In the Vikebygd survey (n=21), 12 respondents (57%) were sole traders, 3 respondents (14%) were public companies and 2 respondents (10%) were classified as a non-profit businesses. Three respondents (14 %) classified themselves as family businesses, however, these should be added to the sole traders as the term "family business" does not exist as a legal entity in Norway where farms are always classified as sole traders (Bærug, 2011). When adding these into the sole trader category, the proportion of sole traders amounts to 71% indicating that these are mostly self-employed farmers.

A majority (12 respondents – 57%) stated that they only had one business activity (agricultural production, tourism or services), while 9 respondents (43%) indicated that they had multiple business activities. Agricultural activity is the dominant income activity with 12 respondents (57%) noting this as source of income, which is an indication of the importance of agricultural activity in the Vikebygd community. Complementary tourism activities such as accommodation, food, and adventure are less developed with only 4 respondents (20 %) providing tourism services. 7 respondents (33%) provide community services, such as grocery stores, a museum, tourist information, petrol stations, taxi-drivers, and nonprofit services, pointing to the fact that this is a self-sufficient community.

As with Lovedale, these figures do not give the full picture of how income is derived; qualitative data later revealed that most of the businesses have income from outside the farm, either as employees or through running other businesses.

> *"I don't think there is anybody here where both husband and wife take their sole income from the farm. There are a few where one person is solely on the farm, but that is also slowly diminishing, they mostly have employment outside." Lateral Actor, Ullensvang*

During interviews, farmers indicated that, even though they continued the fruit cultivation, the farm did not provide enough work or income for modern day living and maintaining the old buildings on the farm. Most farmers have winter employment in local or regional agricultural and heavy industries or public institutions. Yet, entering into the tourism industry was perceived as risky and incompatible with fruit cultivation, as both have their peak season during summer. Others stated that it was fully possible to live off the farm with new quality improving technologies and globally approved certifications, but that it was more interesting to have more "legs to stand on" (tourism and on-farm manufacturing). This also increased the numbers of visitors to the area and interest in the way they live and farm.

Eighty-one percent (13 respondents) employed between 1 and 19 people, classifying these as small businesses (Australian Bureau of Statistics (ABS), 2008). Eight respondents (39%) had no employees. The high prevalence of employees is partly due to the hiring of seasonal workers, but also because many of the respondents had other businesses outside agriculture/tourism. The stability of farm businesses in Vikebygd is confirmed by 80% (17 businesses) having operated for more than 10 years and 57% (13 businesses) for more than 20 years.

In contrast to the individual sale of grapes and wine through cellar-doors seen in Lovedale, the overarching importance of the fruit co-operatives is indicated by the fact that 75% (9 of 12) of respondents who have agriculture as their main income sell the majority of their fruit to them. Around half, 6 respondents (50%), also sell fruit along the road or through local outlets. Other outlets were mentioned, such as niche markets through networks of friends in cities or through the Debio, the National Co-operative for Organic Produce.

Interviews revealed that farmers and manufacturers have benefitted from Norwegian consumers becoming more quality and "local produce" conscious. There has been a substantial increase in demand for Norwegian fruit and fresh fruit juices, with the demand for Norwegian plums, pears and organic fruit not being met. The geographically protected Hardangerjus is sold at prices four times higher than imported juice, and has resulted in an agreement with the fruit co-operatives to supply

second quality juicing apples at substantially increased prices. Small fresh juice and cider manufacturers are starting up that sap into this profitable market niche by using first class apples. This could potentially lead to the fruit co-operatives not being able to provide retailers with agreed amounts of fruit, and, thus, the profitability of the whole membership based co-operative may be undermined.

Since there were only one accommodation and one tourism provider in the sample results, guest origin data from the survey were not deemed valid. Interviews indicated that tourists are mostly Norwegian families and German camper van tourists. Other common groups of foreign tourists are the Dutch, French, British, and increasing numbers of eastern Europeans. A major issue is how to tempt these self-sufficient tourist types to use local tourism facilities and buy local produce.

There are several ports for cruise boats in Hardanger, however, only a few interviewees had experience with the cruise boat market. Cruising tourists have limited time and are erratic in numbers, making it difficult to provide catering and entertainment at short notice in small time-poor communities. Opposed to this market is a strategy to attract niche markets with a particular interest in the cultural traditions of Hardanger (fiddle, embroidery, cider) or in trekking on the Folgefonna Glacier with typical Hardanger meals served. The numbers for this type of tourism operations are slowly increasing.

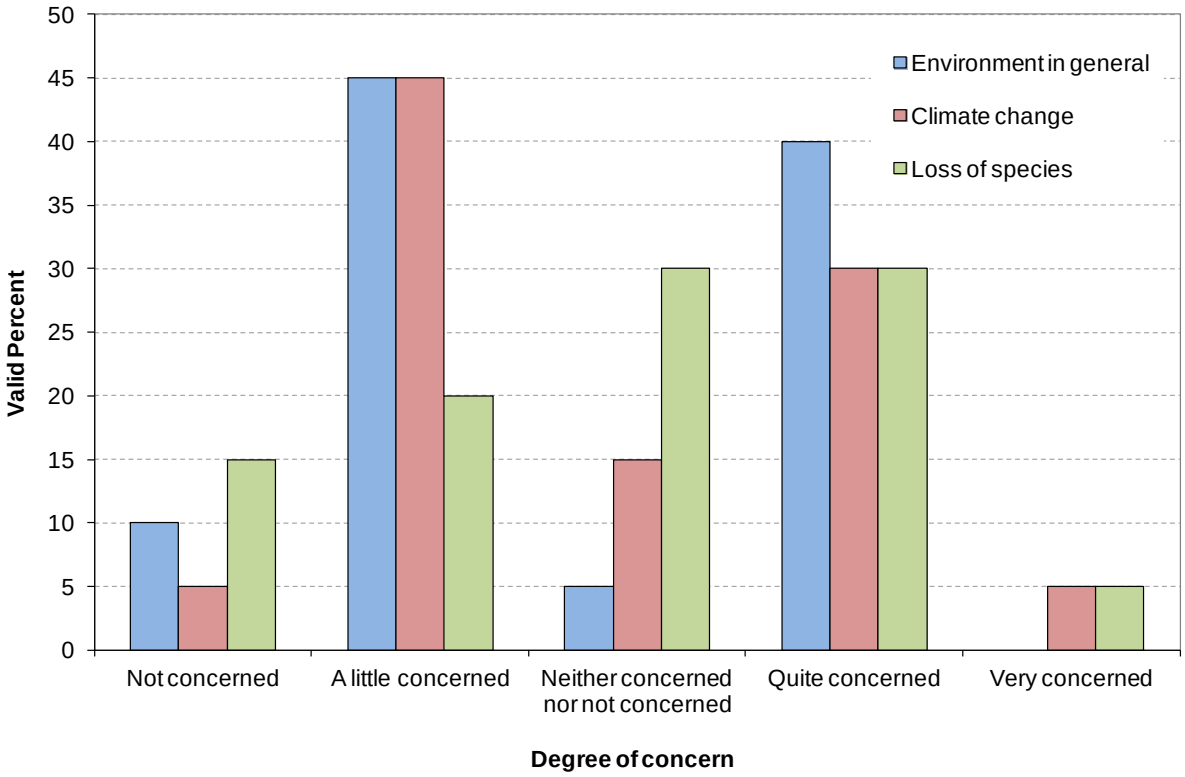
6.3 ENVIRONMENTAL CONCERNS, ISSUES AND ACTION IN VIKEBYGD

Vikebygd respondents were asked to rate their concern for the environment in general, climate change and loss of species using a five point Likert scale. As can be seen from the chart in Figure 6-1, concern for environmental issues was generally low, with around 40% being quite or very concerned about the environment in general, while only 35% were quite or very concerned with climate change and loss of biodiversity. Forty-five percent were only a little concerned with environmental issues and climate change. The figure seems to reflect that there are few environmental issues that directly impinge on people's lives. In addition, many environmental actions have been mainstreamed into public sector operations, such as waste management and recycling, sewage and water pollution, and strict control and monitoring of pollution from industry has been undertaken. Even though climate change will affect everyone, the concern in Vikebygd regarding these issues is not high.

These findings are similar to findings in a survey from 2007, where Norwegians were reported to be much more concerned about environmental problems in a global context than those encountered locally. Ninety-four percent were very or quite concerned about global pollution of waterways and

seas, 94% were very or quite concerned about loss of biodiversity globally, and 92% were very or quite concerned about global climate change. For local issues, however, such as waste and sewage management, water quality and air pollution, the percentages for being very or quite concerned ranged between 20-25%. Norwegians thus perceive that environmental degradation, climate change and loss of biodiversity are global environmental issues, and less relevant locally.Listhaug and Jakobsen (2008) also found that Norwegians' environmental concern had declined since 1989, with rural people being slightly more climate skeptics than urban people (only 5% difference). Women and people with higher education levels were also more concerned than average.

Figure 6-1 Concern for environment, climate change and loss of species (n=21)



Respondents were asked to rate the most important issues for improving sustainability in Vikebygd, with the two most significant being "Pollution of the Fjord" (30%); and "Bush encroachment - Reduction of the Cultural Landscape" (30%); followed by "Unaesthetic Waste left in Landscape" (15%); "Agricultural pollution of small streams" (7%); "Depopulation" (7%) and "Climate change" (7%) received two responses each. The response rate was only 62% (n=13) for this question. The following interview response sums up the local sentiment:

"But the environment, I don't think we have any big environmental problems. ….The fjord is clean now. We use wood for heating... we have hydropower, and plans to build a mini-

hydropower plant, we deliver glacier water to the (carbon neutral) water bottling plant. So I think we are doing fairly well really. If there is any problem, then it is the issue of bush encroachment." Lars and Gudrun, Farmers in Vikebygd

As expected, the heavy metal pollution of Sørfjorden from old times is still considered the largest environmental problem, as there is still a strict ban on eating fish and crustaceans caught in the Sørfjorden (Klima og forurensningsdirektoratet (KLIF), 2010). Due to depopulation and reduced animal grazing, with fruit-orchards concentrated in the easier access areas, there is a continual battle to maintain the open cultural landscape important for preserving biodiversity. Waste left in the landscape and air pollution from burning pruning waste complies poorly with the image of a clean and tidy Norwegian countryside. There are also conflicts between the preservation of biodiversity in small streams and rivers and the development of mini-hydropower plants, yet this is less of a concern to Vikebygd respondents, many of whom have lodged applications for mini-hydro-power plants.

When asked about industry awareness, 75% (15 respondents) thought that their industry had a high awareness of environmental issues, stating that their industry is medium, quite or very aware of environmental issues. Fifty % (10 respondents) thought that environmental issues would be more or much more important for their business in 5 years, considerably less than the 76% in Lovedale, and may be an indication that environmental issues to a large degree have been mainstreamed into agricultural practice.

The main environmental actions performed by the Vikebygd respondents (n=21) have included efforts to sort (14 respondents - 67%) and recycle (9 respondents - 43%) waste; attempts to reduce the environmental impacts of agriculture, such as the reduced use of pesticides and fertilizer (13 respondents- 62%); the preservation of the cultural landscape and the stalling of bush encroachment (12 respondents - 57 %); and prevention of erosion (7 respondents - 33 %). Around one quarter had installed energy-efficiency measures (heat pumps and insulation) (6 respondents 28%) and one quarter reported to be farming organically (5 respondents - 24%). A few respondents reported that they were using renewable energy (3 respondents -14%), such as mini-hydropower and biofuel; and 3 respondents (14%) had made efforts to reduce transport.

The high percentage of the sorting and recycling of waste must be seen in the context of the state of the art waste sorting and recycling system with which the residents of Ullensvang Council are provided. Environmental action in relation to use of pesticides is the result of continuous pressure from authorities through conditions linked with subsidies, the food safety controls of the fruit co-operative, and technological innovation. The fruit co-operative is also a purchasing co-operative and

supplies its members with all inputs that are needed. They have been given the responsibility for the regulation of the sale of pesticides according to farm acreage and pesticide plans submitted electronically. Every box of fruit is labeled with the farmer's identity as any pesticide residues will immediately damage not only the farmer, but also the whole industry. The farming communities' adherence to and protection of being a clean and green industry is strong, resulting in higher quality, better prices and a significant level of consumer trust in Norwegian produce.

> *"The control is good, and the treatment deadlines are strict. I feel it very comfortable and safe to sell the fruit to the co-operative. Even though I know there are very damaging chemicals, I feel that with the authorities control and the awareness around it, it feels very good." Morten, Combined Business, Vikebygd*

As has been described in Chapter 4, subsidies are paid for the maintenance of the cultural landscape; however, it is labour intensive with subsidies being only an incentive. However, in interviews, people seem to have pride in maintaining the cultural landscape and grazing pastures, at least close to the farm. Erosion control comprises the construction of terraces that both reduce runoff and ease tractor access for pruning and harvesting work in the fruit orchards.

Some people mentioned actions to reduce CO2 emissions: the installation of heat pumps (3 respondents), the use of bio-fuels for heating (3 respondents), the insulation of houses (1 respondent), and the construction of small hydro-power-plants (1 respondent). The individual waterfall rights in Norway have resulted in farmers becoming hydroelectricity providers to the European market. The value of a stream and the electricity it can produce may be many times the value of the actual land or farming activity upon it, and increases the incentive of heirs to take over farms. Many joint applications for mini hydropower plants have been lodged from Vikebygd farm clusters.

6.4 PERSPECTIVES ON SUSTAINABILITY

In order to examine the concept of sustainability in the Vikebygd context, a similar procedure as for the Lovedale interviews was followed: first a question on how the interviewee defined sustainability, followed by a question on how he/she would define environmental sustainability.

6.4.1 THE AMBIGUITY OF SUSTAINABILITY

Similar to responses received in Lovedale, the question "How would you define sustainability?" was met with shyness and often moved into an opinion around social and industry sustainability. It also

came across to the researcher that the use of the term sustainable (bærekraftig) was a bit outdated. This was also pointed out by Daugstad, Rønningen and Skar (2006) who state that the term sustainable agriculture disappeared from policy documents at the end of the 90s, the concept being considered less "trendy", when increased focus on tourism, cultural and landscape values changed the perspective to concepts of added value and entrepreneurship.

Sustainability is closely linked to securing agricultural activity and the long term use of nature and the land for future generations:

> *Sustainability - "I think of it like this that the next generation must have a possibility too. That we use, but don't exploit natural resources. .....An important part of living out here in the rural areas, is that it should not be too strict rules for using nature." Morten, Combined Business, Vikebygd*

> *"Sustainability has to have a connection to production of food and nature. The day we liberate ourselves totally from using nature, then what?" Magne, Farmer Vikebygd*

Sustainability is seen as strongly linked to continued farming activity and the use of nature, whilst farming can not only comprise payment for producing common goods such as the cultural landscape. Living on a farm in rural Norway without farming is not seen as sustainable. Sustainability is also about avoiding depopulation (social sustainability), and managing to keep the next generation in the area. Bjørkhaug (2006) also reported that, among Norwegian farmers, environmental sustainability was considered a small issue compared to maintaining a farming livelihood and the social sustainability of communities:

> *"I feel we have a good ecological balance here. We don't have very intensive production methods. Nobody has big farms, because they are too steep and laborious to cultivate intensively. So I feel environmentally we are in good shape.....But I do think we need to base most of our production on the resources that are here. It is sad to see all the old pastures get overgrown by bush; we don't use the most laborious areas any longer, instead we feed the cows with imported fodder." Gunhild, Farmer*

It could be concluded that underlying this view is a radical sustainability approach, which emphasizes local and regional self-sufficiency and resource use. It also exhibits a view on wealth distribution, questioning why a rich country like Norway should import fodder (and emit greenhouse gases) from poor countries where people are starving. However, the issue of bush encroachment is also an issue of

structural change in agriculture, with most farmers having well-paid jobs in addition to fruit cultivation and thus having moved away from the responsibility of animal husbandry.

Few made reference to economic aspects in relation to sustainability. This will be discussed further below.

None of the interviewees mentioned issues of sustainability in relation to tourism, which is probably due to tourism being an emerging income earning activity in Vikebygd. Nature based and rural tourism is envisaged as an engine or opportunity to educate urban people about the link between nature and food. Interviews with larger tourism providers in the area revealed that the main concern for sustainability in tourism is the increase in cruise boat tourists. This is viewed as the opposite of sustainable tourism:

> *"Sustainable tourism is local, based on authentic history, culture and nature, and with respect for the environment. It needs to be economically sustainable and contribute to jobs and infrastructure locally. The cruise industry …uses a country's attractions and natural resources in their marketing, and then keeps all profitable business onboard the ship. Only crumbs fall on the country that owns the natural resources and that, through skills and business acumen, have built up a strong destination brand. Cruise-tourism is not a sustainable part of tourism!" Big Accommodation Provider, Bergen*

The local authorities also have the clear opinion that sustainability is linked to controlling tourist numbers into the area, in order to avoid wear of the landscape and people. It states that Ullensvang does not have the capacity for large-scale tourism, with cruise tourism being considered consumption tourism, polluting the fjords and leaving little wealth behind.

6.4.2 PERSPECTIVES ON ENVIRONMENTAL SUSTAINABILITY

The discussion around environmental sustainability exhibited an overall impression that, locally, most environmental improvement possible had been undertaken; and in fruit cultivation improvements are also continuously being made through new methods, technologies and varieties. While much has been done in relation to environmental sustainability in the orchards, bush encroachment leading to loss of biodiversity in old mountain pastures is a recurring issue.

Climate change as a global environmental issue was mentioned in relation to increased tourism. While tourism may provide incentives to maintain the cultural landscape, such as keeping old animal tracks open and converting old mountain huts to tourist accommodation, the issue of increased emissions

due to air and cruise boat travel is a concern. The inherent contradiction in increasing tourism in the area using unsustainable transport and, at the same time, trying to be a sustainable destination was an issue addressed by several respondents.

> *"It is completely contradictory to pursue sustainable tourism if we are receiving international tourists. As long as there are no environmentally sustainable travel modes, how can we be sustainable? …..But how can I get them (tourists from USA) out here with my environmental conscience clean…..." Gro, Fruit Farmer, Vikebygd*

Yet from the tourism organisations' perspective, environmental sustainability of tourism is not (yet) an issue, with Norway being presented to the world through images of the coast, fjords and mountains, and the "Powered by Nature" slogan. While nature is Norway's competitive advantage, this is equivalent to it being a sustainable tourism destination. In fact, according to the regional tourism organisations, even though Norwegian tourism is probably on the sustainable side, green tourism is not a high priority. While farmers emphasise the loss of cultivated land, an increasing concern among tourism operators is that tourists will not come if there is "nothing but bush to see". The picturesque rural landscapes in Norway and particularly the small farms on the west coast are a result of poverty and survival strategies up through generations, and may be hard to sustain when economic conditions and people's livelihood strategies change.

While environmental authorities mentioned the issue of biodiversity loss in stream and rivers due to the construction of multitudes of mini-hydropower schemes, this was only mentioned by one farmer as a problem. Biodiversity loss in the natural environment thus does seem less of an issue than biodiversity loss in the cultural landscape. Again, we can see the Norwegian attitude of nature as being a taskscape to be used, but not exploited. Yet, while the issue of biodiversity loss linked with the cultural landscape has been around for decades and is a problem also for tourism, there may be less understanding for biodiversity loss in the natural environment.

6.4.3 PERSPECTIVES ON ECONOMIC SUSTAINABILITY

The interviews did not mention economic sustainability as being at the forefront of their concerns. This may be due to the fact that average wealth and wealth distribution among Ullensvang inhabitants is above country average; and, with less expensive housing and urban temptations, an impression is that people live prudently but well in Vikebygd, with resources to invest on their land and buildings. The issue of economic sustainability for agriculture based businesses in Vikebygd has been and still is closely linked with the availability of additional income earning possibilities in the area. Ullensvang

has been well endowed with jobs in the nearby industrial town of Odda and improved infrastructure has now made it feasible to have jobs in Bergen in combination with flexible home office arrangements or well paid shift work in the North Sea.

Another aspect which has made combining the farm with other jobs more feasible is the introduction of farmers' pensions in 1999 (Landbruks og Mat Departementet, 1999) to promote earlier succession by the next generation before they had built careers elsewhere off the farms. This has in some cases led the parent generation, while being pensioners living on the farm, offering valuable extra pair of hands in hectic seasons, while the younger generation can continue off farm work, education or travel. For the older generation, it maintains a sense of purpose, while they also have a secure income from the pension. For many, this is a win-win situation, with greater flexibility for both generations, while, for other families, farm succession may be a tense and difficult issue, particularly if the younger generation is not given freedom to change focus and the ways of production.

The large collective and collaborative restructuring effort among the fruit co-operatives in Hardanger triggered by the WTO-judgement in 1995 forced them to position themselves for increased global competition and retail power. The modernisation of technology and packaging also included much tighter quality control and was followed up by a "revolution" in the way fruit was grown, pruned and harvested to obtain the maximum harvest of first class fruit. Vikebygd farmers have benefitted hugely from the proximity to the fruit research station and extension services in Ullensvang to implement the cultivation revolution. Fruit quality has improved vastly and a price per unit to farmers has increased considerably due to these repositioning measures. Several interviewees stated that fruit cultivation is quite profitable compared to, for instance, milk production.

The fruit co-operatives have also sought to strengthen the focus on local specialities through obtaining the geographic protection of fruit (apples, pears, plums, and cherries) produced in Hardanger. Value-adding from this has not materialised due to resistance from retailers wanting the retailer brand to be the point of quality distinction. The geographic protection of Hardanger jus (juice), freshly squashed apple juice from Hardanger, has, on the contrary, been a great success. Distribution has been secured through the dairy co-operative TINE and it has become a highly sought after product on the national market. This provides added value to apples that cannot be used for consumption and which would otherwise have been used for fruit juice concentrate. The large demand for Hardanger jus has led TINE to negotiate an agreement with the fruit co-operatives to ensure the guaranteed supply of apples for a fee. However, this leaves farmers with a smaller margin than if they delivered their apples directly to the juice manufacturer or to other small on-farm juice manufacturers.

There are a few small scale cider producers in the area, but the prospects of these becoming commercially viable depends on alcohol laws being eased to allow for on-farm cider sale to tourists, and the State Wine Monopoly improving the promotion of locally produced drinks. The issue of the adequate supply of fruit is also valid for cider producers. However, the increased focus on cider quality has led to farmers planting apple varieties especially for cider production. As the process of more local production and the geographic protection of produce continue, a shortage of apples seems to be eventuating. While the authorities promote more small scale on-farm juicing and cider production, bigger manufacturing businesses which require a certain volume for the national market and the co-operatives themselves may fail to get an adequate supply.

Tourism is envisioned as an income-earning possibility that can be combined with fruit production, replacing employment elsewhere. However, investing in tourism is risky and demands very different skills, such as long term persistence in marketing, people and language skills, and quality control of customer services. While there is financial and training support available for starting up tourism ventures, the lack of business skills may lead to ventures closing down when government money runs out. The availability of well paid and non skilled jobs in the manufacturing industry is also seen as a barrier for creativity and innovation into new tourism ventures.

A new valuable income generating activity linked with Vikebygd farms is the construction of mini hydropower plants which is often organised jointly from a group of farms located around the same stream. Several interviewees stated that these would be vital to provide regular and permanent income and thus income security to keep fruit-farming alive. It could also create tension between the farmers that have and does not have waterfall rights to use for mini hydropower plants.

It is as if increased individualisation of the farmer as producer, manufacturer, tourism operator, and energy producer may undermine the strong collective institutions that have been the safety net for smallholders on the west coast for almost a century. On the other hand, innovation and entrepreneurship are seen as prerequisites for halting depopulation and attracting the younger more individualistically minded generation. In general, however, being a farmer in Vikebygd seems to give many opportunities to sustain a living, whether this is as a farmer, salaried worker or entrepreneur.

6.4.4 PERSPECTIVES ON SOCIAL SUSTAINABILITY

Social sustainability is, according to Black (2005), the extent to which people manage to maintain their social identities, and how they manage to collaborate to deal with environmental, social and economic challenges. For most interviewees, social sustainability was the most important aspect of

sustainability, in particular how to stop depopulation and to get more young people to settle in Vikebygd. The obligation felt by the next generation to take over the farm is still very much alive, and there are virtually no farms for sale in the area.

However, the allodial law, albeit founded on normative pressures of duty, may also contribute to bringing well educated and resourceful people back to the village. While depopulation is a looming problem, it seems that the improved infrastructure and the availability of flexible and well-paid jobs, coupled with good community services in health, schools and cultural events provide the basis for social sustainability being present in the area. The issue of farm succession will, according to the Ullensvang Council, become more critical in the next decade, as a considerable number of old farmers (aged around 70 years) have not succeeded in getting the next generation to take over (Steine, 2010).

> *"The allodial law has both positive and negative sides. A lot of resourceful people in our community would never have returned here if it wasn't for the allodial law. But, on the other hand, there are also examples of farms where it would have been better that the place was sold and new people with new energy and enthusiasm take over. ...Many of the people who buy farms don't have the same stayer-attitude." Magne, Farmer, Vikebygd*

There may also be other lifestyle benefits of living on a farm which are valuable and may attract the next generation, such as usufruct hunting rights linked to the farms' mountain pastures, summer cabins within the national park, and, lately, the income generating prospect of mini hydropower plants. According to this perspective, tourism and other on-farm related business ventures are seen as possible attractors for young people to return:

> *"With tourism, it means that something is happening. We live so remotely here, so to get the youth to move back here, we need a bit of renewal and the prospect that it is possible to make a living in different ways. That you can make a living in other ways than to struggle in the steep orchards we have here." Lars and Gudrun, Farmers, Vikebygd*

The more open-minded see an opportunity for other types of businesses, other people and impulses to thrive and to change the community from a homogenous agricultural identity to a more heterogeneous and "humane" society where you can follow your interests and skills. The spiraling back to a more pluri-active farming livelihood is seen as a better model than the striving to become a full-time effective farmer. The Vikebygd community is a welcoming community, fuelled by a few strong community personalities, "local chiefs", who have taken initiatives to pursue cultural events and community action.

These strong personalities are aware that handing over community roles to young people is vital to creating strong intergenerational networks, but this has proven more difficult than expected due to differences in attitudes towards community work and the use of leisure time. When returning from receiving education in town, the younger generation often has full-time jobs outside and higher demands and expectations of holidays abroad, and, thus, less time and energy to participate in voluntary community work. Most of the cultural events that have been organised have been targeting both local and outside audiences. Events are organised year round and there are many community halls available for use by both outsiders and locals. Even so, people in Vikebygd perceive that they have achieved a high level of social sustainability through the cultural events that have been organised, and view the creation of the landscape park as yet another vehicle for community building:

> *"These different events, ….."they do something with people, you create social capital, which is very difficult to put a price on. But it is part of building an identity. …I think many young people have come back and are positive to living here ….due to our community building work, the positive thinking and identity building. It's important that negativity doesn't come in." Gro, Fruitfarmer, Vikebygd.*

The connection to the land and caring for nature and environment are seen as a continuation of the social sustainability and community that has lived in Vikebygd for generations. The landscape park is thus seen as yet another vehicle for community building and caring for the area. For the new generation, tourism is seen as a potentially different value-adding and income earning strategy in the area that will help prevent depopulation.

6.4.5 PERSPECTIVES ON CLUSTER SUSTAINABILITY

Many interviewees raised their concerns about the sustainability of the fruit production cluster and agriculture in Norway in general. They particularly pointed to three processes that could lead to the demise of their current livelihoods in Vikebygd. First, the wealth created by the North Sea oil and gas for the Norwegian economy limits the need to be self-sufficient in food; second, global competition and liberalisation will increase pressure to reduce protection and subsidies to Norwegian agriculture; and, third, the depopulation or social sustainability issues for the rural areas.

While Ullensvang LGA is the council with the highest dependence on agricultural production in Hardanger, among many there is a certain pessimism regarding the future of agriculture in Hardanger and in Norway as a whole:

"Norway has never before been able to free itself from dependence on the natural resource base to such an extent as today. You don't have to farm to survive. With oil money you can get everything you want. ....in this way you can impoverish an area. The day we quit using nature here, why should we live here?" Magne, Farmer, Vikebygd

That fear of loss of agricultural activity shows how strong the Vikebygd identity is connected to rural farm life even though they might not get a dominant part of their income from the farm. The farmer wants to remain being a farmer, and, without farming as an activity, rural depopulation and Norway's cultural identity are at stake. The Vikebygd inhabitants are firm in their conviction that they have a larger role to play in Norwegian identity building, and in the Vikebygd Landscape Parks Manifesto, the letter of the secretary states the following:

"I think small rural communities such as ours, with such a strong emphasis on primary production, just have to make an effort and market itself in a positive and extroverted way in order to justify its existence towards society and the authorities. …..…The landscape park is a good tool to obtain a living community and cultural landscape. The cultural landscape is mostly farmer's responsibility. We have the smallest farms in the country, and will never be as efficient as the market economy would like us to be. .. many people will not give their blessing to our small scale patchwork agriculture for economic reasons. But this is exactly the reason why so many people live here, and it is a beautiful and well maintained village." (Vikebygd Landskapspark, 2009)

A blow for the preservation of the pristine fjord landscape was the decision by the central government to construct new powerlines through Hardanger. All affected councils protested and civil disobedience by local farmers and national artists in folk costumes took place to stop the construction of the "Hardanger Monster Masts". Again, Hardanger farmers see themselves as being caretakers of Norway's cultural identity, while poor decisions are taken by the urban elites in Oslo.

"One thing is the purely practical and aesthetic, that it will damage our landscape and tourism potential. The other issue is the lack of democracy and fairness, when small hydropower-plants are being constructed around here we are often met with that this is un-aesthetic and that Hardanger is a landscape of national value which must not be damaged, whereas the central government seem not to have the same rules." Ullensvang Council

Yet, even though there is fear of reduced agricultural activity, and while there may be fewer active farmers and more land leased to neighbours, total acreage has remained constant during the last 30 years. Recruitment is less of a problem in Hardanger than elsewhere, as Hardanger fruit farmers have

repositioned themselves in relation to global and national markets, and increased profitability. Innovation and new market niches linked with fruit production are also emerging, some more successful than others. Yet, an emerging issue is that these niche productions threaten the collective institutions, the fruit co-operatives, which have acted as wealth distribution and safety nets for members. They have been the underlying engines of the industry and have experience with working with the larger retailers.

Social sustainability remains an overarching issue for both farmers and local authorities. The council is working hard to counter the depopulation trends in the area. As the next generation is often both well educated and willing to take more risks, jobs have to be interesting and relatively well paid. One of the strategies for Ullensvang council is to reinvest some of their income from hydroelectricity sales into maintaining community services. There also seems to be enough lifestyle traction in Ullensvang that there is little problem getting well educated people to relocate there.

> *"..we sell hydropower to the grid and and this income is why we are able to maintain such a decentralised population structure in Ullensvang, with 6 schools and 5 preschools. .....We managed to negotiate that part of the National Mapping Agency was located here with 50 jobs including 8 lawyers, and we wondered if it was possible to get people to move here. There was no problem...." Council*

While the fruit cluster is undergoing change to cater for different types of pluri-active well educated farmers, the availability of community organizations, such as the landscape park, and good public services secure the continuing stream of returning heirs.

6.5 PRESSURES AND DRIVERS FOR ENVIRONMENTAL ACTION

6.5.1 INTERNAL PRESSURES TO UNDERTAKE ENVIRONMENTAL ACTION

The issue of internal pressures to undertake environmental action was divided into three questions: first, a question on whether the respondent felt any internal pressure, then, if so, what type of internal pressure. The question was formed as a multi-response question with seven options, including an open option. The question rating most important internal pressures has been omitted due to the low response rate.

Less than half of the respondents (10 respondents or 45%) felt that their businesses received internal pressure to improve environmental aspects of their business (n=20). The majority of these (7

respondents- 73%) stated that own values and belief was felt as internal pressure, followed by 3 respondents (33%) stating increased knowledge. These findings are confirmed among the interviewees:

> *"I think it is my responsibility (to undertake environmental action) to get this done. I don't think society should be telling me what to do. And I can't demand attitudinal changes from everybody in society." Gunhild, Farmer*

Since half of the businesses in the survey are farms which are mostly sole traders, internal pressure from owners and employees would not be expected. In tourism and services businesses, however, environmental action is often driven by committed employees:

> *"We have a few employees who are green and very environmentally conscious, and who are happy to pull the load, so we are hoping for a Green Lighthouse Certification, we have ambition for that for the whole museum." Diagonal Actor.*

Also among the Vikebygd business owners, most feel pressured by their own values and beliefs to undertake environmental action and to do the right thing by the environment.

6.5.2 EXTERNAL PRESSURES TO UNDERTAKE ENVIRONMENTAL ACTION

A majority of respondents (68% - 13 respondents) felt external pressure to undertake environmental action. Not surprisingly, the majority of these felt pressured by the public sector, with 75% (10 respondents) feeling pressured by the federal government, 54% (7 respondents) by the county level and 33% (4 respondents) by the local council. Around half of the respondents (54 % - 7 respondents) also stated they felt pressure from customers and guests, and one third (33% - 4 respondents) from different business associations, such as the fruit co-operatives (33%) and suppliers (31%). The more "idealistic" environmental organisations, such as Vikebygd Landskapspark, national and local environmental groups, were considered less important (less than 20%) than the public sector, customers and business associations. Pressures from neighbours, the community and tourism organizations were of low importance (15% - 2 respondents each).

That the public sector agencies are perceived as a major source of environmental pressure is consistent with the Norwegian model of strong public involvement in environmental reform and agricultural policy implementation. This is partly as a result of environmental conditions attached to the subsidies, and where adherence is controlled and monitored by public authorities, and partly through mandatory services (waste sorting and recycling by council).

The high pressure felt from customers/consumers may be due to increasing demand from Norwegian consumers that domestically produced fruit should be "high quality, clean and green" and with a minimal use of pesticides. The confidence in Norwegian produce has been strengthened by reports of pesticides in imported produce, whereas virtually nothing has been found in Norwegian produce in the latter decade. The agricultural sector has, through research, field trials and extension services, succeeded in finding and implementing new methods to ban and minimise pesticide use. While pesticide use is controlled not only by the farmers (compulsory pesticide use license), authorities' subsidy conditions, and food safety requirements, the sale of pesticides is regulated according to acreage by the fruit co-operatives.

> *"Every farmer has to take part in a quality assurance scheme for agriculture, including an environmental plan where pesticides and fertiliser use is planned and monitored. This is self-monitored, but third party auditors control these plans on a regular basis. If implementation has not happened according to plan, subsidies will be cut." Lateral Actor (Fruit Co-op)*

Interestingly, pressure from neighbours and local community was low, especially when this is compared to responses from Lovedale. This might be due to technical discussions and solutions that are discussed with neighbours and in the community and are not perceived as normative pressures, whereas regulatory issues such as mandatory or conditional requirements are perceived as pressure.

When asked to rate the two most important external pressures, the above was confirmed, with the federal government being rated as most important, and the county level as second most important.

External pressure is, thus, mostly felt through public sector agencies that monitor the implementation of a large variety of regulations on environmental action. And, even though fruit is not produced organically, environmental conditions and control in relation to pesticide use is very strict. The high perceived pressure from customers and consumers is in line with the perceived responsibility the agricultural sector feels towards the consumers to produce food of high quality in return for subsidies. Tourism organisations were not conceived as pressuring for environmental action.

6.5.3 DRIVERS FOR ENVIRONMENTAL ACTION

The main drivers of environmental action were linked to personal values as well as improved business opportunities, with 11 respondents (65%) stating that it was "The right thing to do". Second came "Risk Management" with 10 respondents (56%); 9 respondents (53%) each stated "Market opportunity/environmental branding", with "Buyers/Fruit Co-operatives demand and "Attractiveness to employees" being important drivers. Interestingly, government authorities were not considered

among the top drivers, even though they were considered as giving the most pressure. Less than half (47%) stated that "Governmental regulations" (8 respondents - 47%) and "Conditions linked with grants" (7 respondents - 44 %) were strong drivers of environmental action."Cost- reduction" was only considered a driver by 32% (6 respondents). "Fear of Consequences" was considered a driver by 23% (4 respondents) and "Increased knowledge" by 17% (3 respondents). This is substantially different to Lovedale where these two drivers were most important. Other drivers such as "Request by business association", "Environmental groups" and "Environmental conditions linked with funding" only had one response each (5%). "The right thing to do" was rated the most important driver for environmental action.

It can be concluded that the most important drivers are normative, with both the "The right thing to do and "Risk management" being related to the risk of detrimental reputation by community and by the industry if, for instance, pesticides are not used properly. The fact that farmers think environmental action is good agricultural and environmental practice - it is the "Right thing to do"- is confirmed through the statement:

> *" …what motivates me must be the general attitude that you need to do something good. It is that we are creating the future for the next generation and they need to be able to continue living here and thrive, both those who are permanently here and those who visit us." Gro, Fruitfarmer, Vikebygd*

The normative driver "being the right thing to do", is considered the result of many years of mainstreaming environmental action through authorities' and farmers' organisations embedding environmental behaviour into the culture. Vedeld, Krogh and Vatn (2003) show that farmers will perceive environmentally friendly practices as "good agronomy", if this is disseminated through the agricultural sector organisations and if it focusses on benefits, such as cost reduction and improved market opportunities. As one lateral actor in the agricultural sector explained it:

> *"I think that the pressure from authorities (to pursue environmentally friendly practices), ….although farmers have reluctantly agreed to this, after three four years it is part of the way you do things, and when you go to another place and it is not done, you don't feel good if you're not doing it. …But you know it is not because people have wanted it, but a result of long and tedious environmental work. Twenty to thirty years of pressure from the authorities. And then people agreed in the end. The introduction of compulsory Environmental Plans for each farm in 2002-03, meant that all farmers had to take courses in environmental planning, pesticide and fertilizer use. …..It was a huge thing of environmental consciousness among*

farmers, and it wasn't popular in the beginning ….but it creeps under your skin, and in the end you accept it, …and there is control and fines if you don't do it and you may lose your subsidies if you don't comply." Ullensvang Council

The other surprising result is the high degree of drivers related to business opportunities and risk alleviation. This is in line with consumers demanding a high environmental quality of Norwegian products, while farmers are being monitored both by the authorities and their own co-operatives. Failing to pursue standards is detrimental not only to prices obtained through the co-operative, but also risks losing subsidies. If pesticides are found, it may lead to long-term economic detriment for the region and the industry, as consumers might lose trust in Norwegian producers. This may subsequently result in a demand for less import protection and restriction.

"The demands on a professional fruit grower are becoming higher and higher. There are very good results of pursuing new technology and methods in fruit cultivation. There is less work, more fruit and better quality which gives a better price. ….If you don't have premium quality you're out.....because we compete with imported fruit all the time so we have to keep up. ....but all our inputs are much more expensive than for the imported fruits..... and then you have a limiting climate...." Lateral Actor, Fruit Extension, Ullensvang

While both normative and regulatory institutions are important drivers on the agricultural side of business, there are less distinct drivers for the tourism activities. Some interviewees stated that there was a slight tendency for more tourists to be interested in using public transport, but the majority were still travelling by air or car. Some tourists are also more environmentally demanding, such as German tourists, who often ask for recycling and energy-saving options. However, the potential of marketing Hardanger as a "clean and green" region was considered high, primarily due to the abundance of nature and short-travelled traditional foods, with little focus on the environmental improvement of tourism operations.

"The Hardanger farms have a large potential as a tourism destination, ...with short-travelled food, farm-stays, animals, mountains treks ....and whether it is environmentally certified or not is not that important, but it can add value for the region and to the tourism ventures. .....Most of our visitor surveys state that people come to Hardanger due to the untouched nature, peace and quiet that is here...." Regional Tourism Organisation, Hardanger.

The possibility of promoting the region as a sustainable destination as a result of short travelled food and nature based tourism is seen as a good value-adding opportunity for tourism in Hardanger.

While many tourists expect a high environmental standard in Norway, there seems to be less awareness and willingness to pursue this within the tourism sector. No survey respondents or interviewees named tourism organisations as being important for pursuing sustainable tourism, with tourist operators and marketing agencies primarily focussed on trying to increase the very low occupancy rates in Hardanger.

6.6 BARRIERS TO ENVIRONMENTAL ACTION

The two barriers which received the largest number of responses were “Lack of time” (8 respondents - 53%) and “Too little financial support” (6 respondents - 42 %). “Cost implications”, “Lack of technology” and “Lack of knowledge” were mentioned by around 25% of businesses (4 respondents each), while 3 respondents each (20%) mentioned “Too small market for environmental products” and “Environmental investments were too risky”. “Other priorities were more important” (2 respondents and 14%) and “Competitors were not doing it” (one respondent 6%) were not considered important barriers.

That lack of time is a major barrier is a logical consequence of the pluri-active income-generation Vikebygd farmers. There are also time constraints with regards to labour intensive environmental action, such as the maintenance of the cultural landscape, clearing the bush, keeping tracks open, and organic farming.

> *”And there are very few that are unemployed here. In other words, people have too much to do, not too little. There is no unemployment on the farms, (you can always improve them), but they mostly have other jobs in addition…” Gro, Fruitfarmer, Vikebygd*

While the two barriers “Lack of financial support” and “Cost Implications” are related, only the latter was an option in the survey, and, thus, respondents added the lack of financial support in the open option. If the number of respondents for “Cost implications” and “Lack of Financial Support” is summarised, costs implications will be the largest barrier (as was the case in Lovedale) and not surprising for small businesses.However, when Vikebygd farmers point to a lack of financial support this can both be a symptom of general subsidy dependence or, more specifically, that production of societal goods, such as the maintenance of cultural landscape, is not provided with adequate economic incentives.

Interviews revealed that it was considered risky to pursue organic methods due to lack of appropriate methods or technology. This finding is contradictory to information obtained from the extension

services, which states that it is quite easy to produce organic plums for which there is a large demand from retailers.

When it came to pursuing sustainable tourism ventures, knowledge and skills were considered lacking among businesses. Others point to the need to overcome traditions and attitudes that tourism is not an acceptable way to earn income. And there is also a lack of competence in hospitality and tourism, and the attitude that you don't need any particular skills to do jobs in tourism. This points to the need for a more professional attitude.

> *"Even if they have an idea and the ability, ……people often lack knowledge and skills (about sustainable tourism), it is new, and there has been very little of it in Vikebygd. ….and even if there is competence on sustainable tourism in Hardanger and in Norway, the sole trader, don't have it….so there is a lot of new things they have to learn, and there is a bureaucracy……...regulations about this and that, how to serve food and alcohol, there is a lot to relate to….." Svein, Farmer, Vikebygd*

More substantial barriers to increased tourism include the lack of infrastructure and the feeling of becoming marginalized. Vikebygd is located around 2.5 hours from Bergen, Stavanger and Haugesund. Together they comprise an "urban tourist" market of around 600,000 people. However, Bergen airport has, in recent years, become an international airport and there are positive prospects for getting foreign tourists directly to Hardanger. However, the public transport system is not adequate for catering for tourists.

> *"The problem is lack of accessibility, there are many flights coming this way, but they don't go further than the coast (Bergen). We want them to come in here and visit real Hardanger farmers ....with the new bridge and new roads we will only be 1 hour and 50 minutes from Bergen airport. It is in the rural areas that the product and identity lies." Large Accommodation Provider, Ullensvang*

However, while the bridge was a controversial development which was built across the pristine Hardangerfjord, it will primarily benefit the east side of the Sørfjorden, and make the western side of the fjord more marginalised. The limited market for tourism ventures is also a major problem as the occupancy rates for many accommodation providers remain low (around 30% for hotels in Hardanger) and many close during winter. This makes returns on investment hard to recover. The prime tourism season also falls when the farmers are at their busiest.

Community attitudes act both as a barrier and as a driver. While many focussed on the work that local resource persons (local leaders) were doing to initiate new ideas, show leadership and promote community feeling, social cohesion and wellness, many also pointed to the problem of small communities, where jealousy lead s to a tendency to pull each others' new projects down, rather than building each other up. The fierce competition for resources, projects and jobs both between and within local council leads to a lack of professionalism and profitability;

> *"There is a strong resistance in Hardanger against channelling marketing resources through competent and professional regional tourism agencies ...There has always been a tendency that 'we want to manage by ourselves' and that we don't want others to get hold of our (marketing) money. But Hardanger MUST stand united with Hordaland County and the whole of Fjord Norway to become visible. Alone they are too weak." Big Accommodation Provider, Bergen*

While cost and time are the main barriers against environmental action in agriculture, barriers for pursuing sustainable tourism ventures in Vikebygd also comprise lack of skills and attitudinal barriers. However, there is also a need to understand that these barriers cannot be overcome quickly and that patience is required to mobilise the strengths of the communities and their connections to the landscape and find new ways to use this connection to land.

6.7 THE COMPETITIVE ADVANTAGE OF ENVIRONMENTAL ACTION

The issue of whether environmental action will lead to value-adding and a competitive advantage for Vikebygd farms and tourism businesses will be further examined in this section. It will use the same framework (Hart, 1995) as was used to examine the value-adding features of environmental action in Lovedale. It seeks to examine the three different processes of pollution control/cost-reduction, product stewardship/environmental certification and sustainable development/environmental strategy for an area. Again, the blending of responses from both surveys and interviews will be presented to assess how a competitive advantage can be captured through environmental action and activities linked with the natural resource base. During the interviews in Vikebygd, many stated that value-adding was due to geographic protection and small-scale tourism. Although these are not directly classified as environmental action, they are part of what the interviewees themselves called sustainable development and sustainable tourism.

6.7.1 VALUE-ADDING OF POLLUTION CONTROL AND ENVIRONMENTAL MANAGEMENT

Environmental action undertaken in Vikebygd is primarily in the agricultural production and for the households due to tourism not being well developed. As can be seen from the figures in Section 6.3, a majority of respondents were performing waste recycling and sorting, and reducing input use in agriculture and activities to preserve the cultural landscape. Around one quarter responded that they were growing fruit organically (although whether it was all or just some of the fruit was not specified). With regards to energy, one quarter had installed energy-efficiency systems and 15% were using renewable energy.

The three main pollution control activities (waste management, agricultural input reduction and energy-efficiency) are supported and promoted by authorities through infrastructure (waste collection) or extension services and incentives, making them less costly and easier to undertake. Organic fruit cultivation is classified as product stewardship and will be dealt with in the next section. Preservation of the cultural landscape and renewable energy can be classified as sustainable development measures securing the area for future business.

The survey questionnaire also included questions as to the levels of environmental management strategy or planning that were held by businesses. Of the 20 respondents that answered this question, 13 respondents (62%) stated that their businesses had ideas or a strategy to address environmental issues. Of these, 10 respondents (48%) had an environmental plan with measurable targets. Four respondents (19%) had an environmental plan that involved staff training. Two respondents (10 %) had a plan that involved the assessment of suppliers. In addition, 7 respondents (3 %) stated that they had other types of environmental or resource use plans (organic production, farm OHS plans, landscape preservation plans, etc.). The high level of environmental plans with measurable targets (specified as Bondens Miljøplan) is not surprising as this is a requirement for obtaining subsidies. Maybe more surprising is that not all the 12 respondents that have agricultural production indicate that they have a plan. This could be that their farms are too small (less than 2.5ha) to be eligible for subsidies.

Through the interviews, several value-adding aspects of environmental action in agriculture are revealed. The reduced and more targeted use of fertilizer has led to cost reduction. While the reduced use of pesticides and the control thereof by authorities has led to high consumer trust in Norwegian products and, therefore, willingness to pay for expensive Norwegian produce even when there are cheaper alternatives around. The value-adding of having an environmental management plan

(Bondens miljøplan) is that fruit can be delivered to the fruit co-operative which will ensure a higher price for the fruit. It also gives it a quality label.

For other types of environmental action such as the maintenance of cultural landscape, there is no immediate value-adding other than the direct subsidies.

With regards to tourism, the issue of the value-adding of environmental action was not mentioned; instead the impression given was that it is enough to brand Norway as having a clean nature and a special cultural heritage for the development of sustainable tourism. There was an increasing focus on what can be named local and short-travelled food, which, to some extent, can be labelled environmental action. However, there was little evidence of focus on environmental awareness around producing these local products.

6.7.2 VALUE-ADDING OF PRODUCT STEWARDSHIP - ENVIRONMENTAL CERTIFICATIONS

Product stewardship through environmental certification and standards is thought to result in ensuring exclusive access to niche markets or retailers. Nine respondents (43%) of businesses had obtained some type of third party audited environmental certification, of these 2 (10%) in eco-tourism, 3 (14%) for Quality Assurance in Agriculture (OHS for farms) and 3 (14 %) were certified by the organic certification organization, Debio. 1 (5%) was GLOBAL GAP certified, and 1 (5%) had a separate Natural Resource Management Plan for preserving biodiversity. In addition, 6 respondents (19%) stated they were planning environmental certification of some kind in the future.

The level of environmental certification is high compared to Lovedale where third party audited certification was only undertaken by two businesses. The high percentage of farms with organic certification (14%) is also higher than the 6% average for Norway in 2009 (Snellingen Bye, Aarstad, Løvberget, Berge, & Hoem, 2010). The explanation for this could be that, in Hardanger, it is relatively easy to grow organic plums, and there is increasing demand for this product that gives a considerable added margin (15-20% more for organic fruit).

Interviews with vertical actors confirm that, even if there is a market opportunity for organic produce, there is still skepticism:

> *"There is a lot of nice talk (about organic production), but, in reality, farmers are not fully confident that the added labour and risk are compensated in the added price." Fruit Extension, Ullensvang*

While only one farmer claimed to have Global GAP certification, interviews revealed that this certification was well known among Vikebygd farmers. According to the fruit co-operative, around 10% of the members (20) of the Utne Fruit Co-operative are Global GAP certified, with the co-operative offering training and assistance with paperwork. It is promoted particularly for cherries as it is a requirement for exportation to the European market. While cherries obtain the best price on the Norwegian market, being able to export cherries when there is domestic overproduction reduces loss for the farmer owned fruit co-operatives and, subsequently, the members. The reason why there are not more farmers pursuing Global GAP certification is the large amount of paperwork. The co-operative has a major role in supporting and overseeing the certified farms, with an external auditor controlling them. While the Global GAP arrangements are costly for the co-operative, they have positioned Hardanger fruit farmers and the co-operative for export markets and provided farmers with skills in certification requirements.

It is a great advantage for farmers to have a co-operative that can assist in the implementation and administration of requirements. This reduces losses for the co-operative and improves skills and market knowledge. Even so, the bureaucratic processes underpinning many certification systems reduce the uptake among small pluri-active farmers. For both organic and Global GAP certification it may be concluded that they provide value-adding for both the farmer and the co-operative, both in increased price and market opportunities.

Except for one non-profit public institution planning to obtain Environmental Lighthouse Certification, there was an absence of environmental certification of tourism ventures. In some interviews, a fairly negative attitude towards environmental certification was revealed:

> *".....these ISO 14001 certifications, you mustn't force small companies to do it. It fast becomes consultant food. It costs money and takes a lot of time. ..And for sole traders in tourism I have very little faith that it is well spent time rather than working on selling their products. ... there is not enough income to make it a competitive advantage."....Per, Combined Business, Vikebygd.*

During interviews, the value-adding of different types of food labelling was discussed. While these are not environmental certification as such, all these labels have strict environmental credential requirements attached. There are labels that promote buying Norwegian food (Nyt Norge), a Norwegian speciality label, and three types of protected food labels based on geographic region, tradition characteristics or community origin. A rooster label indicates that this food is produced on a farm providing rural tourism, while a keyhole indicates that this is a healthy food. The geographically

based labels are classified as a product stewardship strategy, where product certification ensures exclusive market access. In Hardanger, apples, cherries, pears, and plums have all received protection based on geographic region (see Figure 6-2 for Hardanger logo). In order for fruit to receive the geographic origin label it has to be the best 20% fruit available. However, value-adding from geographically protected fruit has not been forthcoming:

> *"With the geographic protection of Hardanger fruit....., the thought was that it would lead to a better price in the market, but this has appeared to be a good theory, but does not function in practical terms....But that is not because of us, but it is the big retailers, they want to use their own packaging with their own brand. So all fruit wherever it comes from looks the same. And the prices are the same, Norwegian standard price. ....So, as long as the retailers don't want it, and they are the ones paying us, we have no incentive to continue geographic labelling from our side." Fruit Co-operative, Ullensvang*

Figure 6-2 The Hardanger Rose

Logo for the Geographic Protection of the Hardanger Region

The geographic protection of freshly squeezed apple juice from Hardanger has, however, been a success for several reasons: professional marketing and fast national distribution was ensured through collaboration with the Norwegian Dairy Farmers Cooperative (TINE); Hardanger apple juice was marketed as a luxury juice ("Sunday Juice"), thus being able to receive a very high margin; and it contributed to a more profitable use of the apples that did not obtain first grade quality for consumption.

> *"We are very happy that the Hardanger Juice has succeeded, because it helps us market our region in a way. We get the Hardanger name out. And we got TV ads. So that builds our Hardanger apple brand also. .... Hardanger has a well reputed name and Tine realised that, so now they have had to struggle to get enough apples. There are many wanting the pressing apples now. And then there are all these farm-based juice makers mushrooming up." Fruit Co-operative, Ullensvang.*

Cider from Hardanger received geographic protection in 2009, after a four year process of establishing the quality assurance rules for cider under this label. Virtually every fruit-farm in Hardanger produces cider, yet the commercialisation of cider required focus on the quality both of the apples used, the process and the final product. There are, to date, only three approved small-scale producers of cider from Hardanger, and only one of these sells cider through the State Wine Monopoly; the other two sell directly to restaurants with alcohol serving licences. In spite of strict alcohol laws and the lack of marketing possibilities for cider, there is increased demand for specialities like cider from Hardanger, and they have now organised themselves into a Cider Producers Association, lobbying actively to change the strict alcohol laws preventing cellar-door sales of cider.

While the geographic protection of Hardanger Fruit has not resulted in higher margins for farmers, both Hardanger apple juice and the cider from Hardanger have succeeded in increasing farm prices. The geographic protection and labelling of food products from Hardanger will assist in the branding of the tourist region of Hardanger. The increasing use of the Hardanger Rose logo on all goods and services from Hardanger increases the visibility of the region. Local events serve local food and produce to raise awareness and support local producers.

6.7.3 VALUE-ADDING FROM SUSTAINABLE DEVELOPMENT STRATEGY

The interviews revealed interesting perspectives around the value-adding of landscape. The responses could be divided into the following categories: value-adding of nature, value-adding of the cultural landscape/farming landscape, value-adding in relation to the culture and history linked to the landscape and in relation to having an experience of landscape and culture. There seems to be some areas or experiences of landscape from which value is easier to abstract than others; and some business owners are more entrepreneurial than others in seeing the possibilities of abstracting value from the landscape.

When asking business owners in Vikebygd about how they saw that nature adds value to their business and tourism endeavors, a common reaction was one of a surprised expression followed by:

> *"That was a strange question! 'Nature and the cultural landscape' are everything for us! ..... We get so much for free with the nature we have got here, both with the nature and the landscape." Gro, Fruitfarmer, Vikebygd*

So, while there is almost gratitude for the free assets that nature gives the locals, trying to define and pinpoint what exactly gives value-adding in relation to nature is less evident. For some, the nature and landscape are beautiful, yet the difficulty in finding ways for tourists to access it is a hurdle.

> *"We have a breathtaking landscape. But it sets real limitations to the possibilities you have. .....there are so few roads and possibilities to get people out there. But maybe we haven't seen the possibilities." Per, Combined business, Vikebygd*

Therefore, there is a slow recognition that the unique nature in Hardanger has value for tourists and the farmers and other locally focussed businesses need to be reminded of the potential there is in the abundance of common good around them.

> *"I think it was a wake-up call for the people who went to Switzerland to see that farmers there were paid for taking care of nature and the cultural landscape, that it had a value in itself. This is not something that is deeply rooted in the farmer population in the west coast, the primary concern has been to develop the area with tractors, electricity, and hydro power plants. So the issue of nature having an own value is something that maybe will start to mature in people. Some people anyway." Farmer's Son, Vikebygd.*

Yet, more and more there are small businesses that use nature as a base for tourism ventures, such as guided glacier walks, rafting, kayaking, canoeing, bicycling, climbing, mountain trekking, and the like. But it seems as if there is a need for somebody outside to see the possibilities. Many small businesses in Hardanger have been initiated by "outsiders" who can see the potential and have the skills and resources to find ways to abstract value from the area. However, as Vikebygd remains primarily an agricultural society, this outsider perspective may be less prominent. A first step may be the establishment of the landscape park, which in itself has created some synergies in the form of successful applications for start-up funding of tourism ventures. Many of the businesses see the advantage of being part of the Hardanger "brand", and the latest addition to this is the Vikebygd Landscape Park, with both these geographic brands being perceived as adding value and income earning potential to local businesses.

The value-adding of nature is maybe less apparent than the value-adding of the cultural landscape itself. For practical farmers, it is easier to see why the fruit farming landscape in Hardanger is unique. Yet, there is a danger of it becoming a living museum rather than an active farming community:

"We cultivate apples in terraces, and that is pretty special, not a lot of people grow apples on terraces. It is a bit like the cultivation of grapes in Europe. It really is very special." Lars og Gudrun, Fruit Farmer, Vikebygd

"We had a discussion concerning the plastic we cover the cherry-trees with. Is it ugly or nice, some say it is nice and some don't care. But nobody thinks it is negative. You know we live here, and we can't become museum accessories either, just stand here in our folk costumes and smile and greet people, then everything stops." Agricultural Extension, Ullensvang Council

The landscape is formed by fruit cultivation, and without it, there would be no basis for tourism or local communities. From the council's point of view there is a need to find additional income earning sources, so that farmers stay and continue their practices. The pride and identity that lie with being a true Haring, adds value to the landscape and cultural value to Vikebygd as a tourist destination,but is also a privilege of the farm heirs, and which is not open to external entrepreneurs. It may seem that there is a bigger demand from the tourism industry to use agriculture and the cultural landscape as a tourism product, than the supply of willing farmers.

However, while farmers are perceived as the kingpin for adding value by themselves, their own experiences seem to indicate otherwise. Tourism is seen by some as a saviour for adding to the pension, or for attracting the next generation to come back to the farm with other less labour intensive and more people focussed activities. And, while there is some patience, if a project doesn't earn money, it will be discontinued within a few years; in addition, while the grant money has led to an improvement in the technical standards of houses, income earning has not materialised. For others, investment in the cultural and heritage buildings is something they do for the next generation and out of their own interest, yet may provide income in the future.

"I think that what we are doing is good for the people coming after us. Not all we do can be instantly profitable...For example, the fixing of old barns,... there is potential in old barns, ...There is the atmosphere, the history that these old buildings tell us, that has a value in itself, and then you may make an income out of it....whether it is big or small." Gro, Fruit Farmer, Vikebygd

There are also other benefits in networking with domestic tourists through the nature-based adventure tourism in Vikebygd;

"A great advantage for my (other) business is the network these tours create. Because I host parties in an old house, with catering and drink. So I have had many visitors locally, but also from Bergen, Haugesund and Stavanger." Morten, Combined Business, Vikebygd

There is, thus, a strong awareness of the uniqueness of the natural landscape, cultural heritage and value among most people in Vikebygd, but finding ways to make income from these characteristics is more difficult. While mass marketing towards the European markets is being pursued by the national organisations, the result on the ground is that European tourists come by car or campervan, leaving little for the local population. A different perspective from large tourism operators in the area is the tourists from cultures and countries most distant from Norway, like China, Japan and Brazil that may have the genuine interest and willingness to pay to see something uniquely different. For the French, watching apple cider being made, but not being able to enjoy a glass due to alcohol restrictions, may be too familiar yet strange. Whereas for the Japanese market, it is worth paying a lot just to experience the Hardanger music, cider, embroidery and food.

However, major challenges exist, first the short tourism season, and, secondly, the lack of business skills among the operators. As globalisation leads to greater mobility of people and capital, with increasingly similar food, culture and life experiences, people and tourists go looking for unique experiences. The future profitability of these ventures maydepend on how much the operators are willing to share with other non-residents in the implementation of the business, and whether they are able to meet people openly and talk about the way they use nature and culture.

The tourism industry is acutely aware that Hardanger's competitive advantage lies in providing an authentic and thriving farm community in a fantastic landscape.

"..it is the fruit farmers that sit on the product that we sell, so if they don't take care and continue in the business they are good at then we will die, we will be a dead business (hotel) in a dead fjord, like New Zealand, where there is no light anywhere. .... in the urban areas people think about Norway and Norwegian-ness only on the 17th of May (Norway's National Day); the rest of the year there is Scottish whiskey and white wine from Germany, whereas the local beer brewed and the cider produced around here, we are not allowed to serve !!" Large Accommodation Provider, Ullensvang

6.7.4 USE OF ENVIRONMENTAL ISSUES IN MARKETING

The survey included questions about whether environmental issues were used in marketing. Five respondents (25%) did not use environmental issues in their marketing. Seven respondents (35 %)

used environmental issues a little, while 4 respondents (20 %) used them some, and 3 respondents (15%) used environmental issues a lot in the marketing of their business. One respondent (5%) stated that environmental issues were their main focus in the marketing. This indicates that 15 respondents (75%) used environmental issues in marketing of their business.

The relatively high percentage of businesses that use environmental issues in marketing shows a clear tendency to view environmental issues as "marketable" for tourism and consumer business purposes. The use of environmental and cultural heritage for the value-adding of rural agricultural and tourism businesses is supported through policy documents from the tourism, agricultural and environmental authorities. Yet, providing information about how environmentally friendly agriculture and council operations are is not deemed to be important in tourism operations. Also, how tourism providers respond to the challenge of climate change is, to a large degree, missing in marketing material, even though many have implemented actions that reduce CO2 emissions, such as insulation, heat pumps and the construction of mini hydropower plants. In many ways, people are happy to use the image of clean nature and characteristic culture in marketing, but, beyond that, environmental issues may not be in the forefront of their strategy.

6.8 ENVIRONMENTAL KNOWLEDGE AND NETWORKS

This section will first examine the results from the quantitative survey on how and where environmental knowledge is derived. Second it will analyse, based on the qualitative data. the role of the micro-cluster organisation in pursuing environmental action.

6.8.1 SOURCES OF ENVIRONMENTAL KNOWLEDGE

The survey included a multi-response question with 10 options, including one open option. The respondents were also asked to specify which associations were sources of knowledge. Four respondents did not answer this question (n=17).

More than half obtained environmental information from friends and neighbours (10 respondents - 59%) followed by slightly less than half obtaining environmental information from participation in voluntary environmental activities (8 respondents - 47%) . Seven respondents (41%) gained environmental knowledge through own research. Eight respondents (47 %) obtained information through different business associations, primarily the Indre Hardanger Forsøksring (field trials) (4 respondents), the Farmers Union (Bondelaget) (2 respondents), the Fruit Co-operative (2 respondents), the Organic Fruit Growers Association (2 respondents), as well as one each from the

Builders Association, Food Safety Control and National Industry Association. Six respondents 35 %) obtained information from Vikebygd Landskapspark. Six respondents (36%) stated they had received free training from authorities. Four respondents (22 %) had paid for courses or advice on environmental action. One respondent had received environmental knowledge from anunspecified business association.

An interesting reflection from these findings is that the structures that provide environmental knowledge are not similar to the structures that are nominated as drivers for environmental action. The high response rate indicating that environmental knowledge and information were provided by friends and neighbours contrasts with the low perceived pressure (only 15%) coming from friends and neighbours (See Section 5.5.2) This might indicate that environmental issues are not contentious issues and can be discussed openly to find practical solutions within the community.

> *"Here in Vikebygd we have a tightly knit community where everybody knows everybody due to little immigration and because the farm families are stable with concern to agricultural production. As a resul,t technical issues can be discussed both at community parties, sports association, hunter and rifle clubs, bridge and book clubs." Magne, Farmer, Vikebygd*

The knowledge deriving from voluntary environmental activity was not specified, yet this is probably through actions to preserve biodiversity in the cultural landscape in which many farmers participate. Further the waste sorting and recycling done through the council also demands knowledge in order to do it in the right way.

From the above findings, the most interesting is the large number of organisations and business associations that provide environmental knowledge within the agricultural sector, supporting the farmers in their environmental pursuits. Considering that this area has the smallest farms in the country and that farms only produce for the domestic market, there are substantial networks and interest groups surrounding the farmers. In the area of sustainable tourism, only 2 respondents (11%) pointed to the locally based Innovation Norway as being a knowledge provider.

Interviews confirmed that environmental knowledge was provided through the agricultural sector organisations, primarily the fruit co-operatives, the local council and the extension services. These organisations were also mentioned as drivers for environmental action (Section 6.5.3). However, often interviewees were more interested in describing the knowledge provided by these organisations in the area of value-adding business opportunities. Of particular interest was a long term research and development project to improve the quality and protection of the Hardanger cider brand and the establishment of a Cider Producers Association to raise the awareness of Hardanger as an apple cider

tourism destination. There was a general call for the agricultural organisations to support small business development and diversification rather than just horticulture skills.

In relation to environmental knowledge, an issue mentioned by several interviewees was the lack of agricultural skills among the younger generation. While the majority has higher education, many lack any training in fruit cultivation and thus have reduced environmental knowledge. This has resulted in the offering of horticulture weekend courses for young people returning to take over farms.

6.8.2 FORMAL AND INFORMAL NETWORKS INFLUENCING ENVIRONMENTAL ACTION

6.8.2.1 THE VIKEBYGD MICRO-CLUSTER FORMAL NETWORKS

Most formal organisations operate at a council level, following the administrative zone of the Ullensvang Local Government area. This is also the case for the Ullensvang Chamber of Commerce (Ullensvang Næringsforum), which, in the latter years has focused on infrastructure development (The Hardanger Bridge) which primarily benefits businesses on the east side of Sørfjorden, that is, not Vikebygd.

> *"We were very engaged when they established the Chamber of Commerce, but then the focus was solely on the other side of the fjord (east side). And they only want to work towards the construction of the bridge over there, that was their main focus, and then we kind of lost the spark..." Morten, Combined Business*

The Vikebygd Landscape Park Shareholding Company is the only formal business related organisation that operates within the self-defined geographic delineation of Vikebygd. Its declared objective is to act "as a tool to make Vikebygd survive and develop towards a thriving community" (Vikebygd Landskapspark, 2009). As was described in Section 4.3.3, it builds on previous community strengthening initiatives, but can also be seen to fill the gap of a business promotion organisation with a focus on the west side of the fjord. While the Vikebygd community had to apply and self-organise to obtain funding, there was a certain level of pull incentive in the process of establishing the landscape park. Yet, many of the environmental and nature-based business activities envisaged in the landscape park had been an ongoing process in the area.

> *"It was initiated a bit top down, since it was the county who wanted to work landscape parks. But the county should work with us and for us. And in a way we have been doing the same thing since 1990, with rural community and business development. We started in 1995*

with signage of trekking routes (through the landscape) and promoting farmers to maintain the cultural landscape....." Gro, Fruitfarmer, Vikebygd

Vikebygd Landscape Park received funding during the first two phases of the Landscape Park Programme. While the first phase (2006 - 2008) established an identity and purpose, the second phase (2009 - 2011) of the project created jobs and found a model of an organisation that would ensure self-financing of activities in the future. After initial research and advice was sought, a decision was made on the 26th March, 2009, to transform the Vikebygd Landscape Park into a shareholding company, with individuals, businesses and local authorities being among the shareholders. The idea was that the landscape park would create jobs and income generation, which, in turn, would lead to income for the shareholding company. The company has employed someone to be a manager and marketer in a 25% position; all other activity is based on voluntary unpaid work. In 2008, an evaluation of Vikebygd Landscape Park pointed to the company as being less successful in creating jobs and somewhat disconnected from the community (Fylkesmannen i Hordaland, 2008a).

The reason for these shortfalls during the second phase is thought to be partly the lack of human resources and skills in non-farm business development (tourism and on-farm manufacturing) in Vikebygd and partly an overly optimistic view from funding agencies on how fast it is possible to create jobs in a small community. There were also changes within the Vikebygd Landscape Park board which reduced outcomes and enthusiasm; during the first phase of the project many of Vikebygd's influential "community leaders" were on the board, supporting the goals of the park and the launch of the shareholding company. This also included the promotion of starting up small tourism businesses, inspiring the board members to establish teir own projects. When the park entered the second phase, these corner-stone people wanted to pursue their own tourism ventures and withdrew from the landscape park board. It was also seen as a strategy to recruit younger people and give them experiences in organising community work. However, this has resulted in less energy and activity within the landscape park organisation, while, on the other hand, small tourism ventures are slowly building up their businesses and tourist numbers.

The landscape park provides a collaborative forum for developing small businesses and jobs founded on principles of geo-tourism (sustainable tourism) and functions as an umbrella for for joint marketing, information dissemination and tourism infrastructure initiatives in Vikebygd. The members have organised open days to show what tourism services are on offer, and have assisted in creating tourism experience packages and in pursuing collaboration with an adjacent landscape park to develop trekking routes across administrative zones. The landscape park has also contributed to obtaining additional funds from other sources, as it is perceived as an advantage for small business to

support applications such that they belong to a supportive and focussed business cluster. It has, thereby, contributed to obtaining additional investment into the area. For marketing purposes, it is also an advantage to have a logo and be part of the landscape park environmental brand. The landscape park also acts as a focus for other activities and public cultural institutions that operate in the region.

> *"I really want to be part of the landscape park. And I really want to be in a tourism experience package and a system. Because if somebody could help me with marketing of the business that would be great. I don't like that bit of the business nor do I have the drive that is needed to market myself which is needed." Gunhild, Farmer, Vikebygd*

While some farmers see obvious benefits of the Vikebygd Landscape Park, the all-encompassing goals and somewhat confusing concept of the landscape parks has left some people a bit indifferent to the establishment:

> *"We found it difficult to understand what this landscape park really was, and I am not sure I really understand it now either. ...And it is quite difficult to understand how they are going to make money on it, they will have to make money through tourists who eventually paying for this when they visit the area." Lars and Gudrun, Farmers, Vikebygd*

The biggest problem for the landscape park is the lack of time and people to pursue all the projects being suggested. There is also not a clear view of how the shareholding company will obtain income from the activities it initiates. While the current activity level by the landscape park organisation is not high, it seems as if, through the expansive push during the first phase of the landscape park, seeds of innovation have been sowed within the Vikebygd community. Especially important seems to be the organization of a business oriented entity with a name, an identity and a logo/brand that can be used for marketing the whole area and the individual businesses. The initial inspirational study trips to see how other farmers have pursued small-scale sustainable tourism in Switzerland and England were also mentioned by several interviewees as eye-openers for how to create new value-adding activities based in nature and a well-maintained cultural landscape.

6.8.2.2 VIKEBYGD MICRO-CLUSTER - INFORMAL NETWORKS

Norway is stated to have one of the highest memberships of community organisations per resident and Vikebygd is no different. The Vikebygd community, due to geographical barriers, has been split up into small clusters of farms (klynge-tun) or hamlets that have traditionally functioned as collaborative networks intertwined in both work and community enhancing activities. Each hamlet would traditionally collaborate vertically with hamlets above or below to exchange resources, fishing or

mountain grazing rights. These vertical collaboration structures are now often the same groups submitting joint applications for mini hydropower plant development around a stream or river that run through the hamlets, and are important for future resource use.

There are also a plethora of small clubs and associations that have been active for decades, some for almost a century. In June 2012, the Vikebygd Landscape Park published an invitation for a Return Home Party to celebrate 10 different anniversaries of different community organisations. The oldest were the Vikebygd Hunters and Shooting association of 100 years, the Solnut Sports association of 75 years and the Nå Fruit Co-operative of 60 years. The old community hall at Nå turned 80 years old while the Aga Eco-Museum buildings were first protected by the Heritage Trust 75 years ago. Other institutions and associations include Nå Theatre club, Nå music Association, Nå library, two primary schools and one junior high school. There are also community services such as a shop, a petrol station, the first preschool built 30 years ago, two primary schools and one junior high school. In addition, there are bridge clubs, a word collector club (old expressions that are dying out), reading groups, and senior clubs. Therefore, there is ample opportunity to meet and have a chat through the vast network of membership organisations. Yet, even if there are a large network of intertwined networks, most of these meetings are organised; it is as if you have to meet for a reason, and once at the meeting you can discuss other things at the same time, but there is no culture for non-planned social encounters.

> *"There is something with the culture that keeps people from meeting and having a chat, therefore it is better to organise a meeting on some technical issue, and then you can talk about other things, maybe since they are old farmers used to hard work, you know there is prestige in working." Svein, Farmer, Vikebygd*

This is slowly changing with more young people and tourists: there is the use of old buildings for public meeting places, the establishment of a small business services centre in Nå, and, during the summer months, the landscape park initiated a licence for having a "Friday Pub" serving cider and food rotating between different farm tourism venues. The younger generation, while being more leisure oriented than their hardworking parents' generation, might also bring more a individualist innovation and other inspirations to the community.

While many of these institutions support nature based activities, direct environmental action is not the prime focus. Yet, practical solutions to environmental issues may well be discussed and disseminated through any of the many organisations and associations present in Vikebygd. These meeting places

also contribute to maintaining the social normative pressure to maintain the orchards and keep the cultural landscape and treks open.

6.8.2.3 THE ROLE OF THE VIKEBYGD MICRO-CLUSTER ORGANISATION IN ENVIRONMENTAL ACTION

The landscape parks are based on the principles of geo-tourism which has the objectives of promoting income generating activities and tourism that preserve, strengthen and accentuate a place's unique identity, it's environment, culture, aesthetics, cultural heritage, and the activities which add value to the local community (Fylkesmannen i Hordaland, 2008b). So, while environmental action is not the only focus of a landscape park, it is an integral part of the underlying concept. The basic idea is that thecommunity within the landscape park makes use of the area for income generation in both a social and environmental sustainable way.

Many types of environmental action, such as renewable energy and waste management, have been mainstreamed into the daily lives of Norwegians through the strong involvement of the authorities. At the farm level the main activities are the preservation of biodiversity through keeping the cultural landscape maintained, providing more renewable energy and ensuring they have implemented the latest energy efficiency measures implemented in their rental houses. The awareness created by the landscape park of the potential for value-adding from tourists wanting to visit and use the cultural landscape during their holidays has increased the focus of maintaining the cultural landscape. This is a self-feeding process, as, when more tourists come and enjoy the landscape, the locals can become increasingly aware of the value of what they have.

The creation of the Vikebygd Landscape Park, provides a framework for pursuing small scale tourism in places of spectacular beauty. It has also contributed to a common platform for starting up and marketing small-scale tourism ventures, a need which has been lacking in regional and local tourism organisations.

> *"There are eight landscape parks in Hordaland, and this is something we are looking to develop together, and make something interesting for tourists so that they don't necessarily have to only stop at Vikebygd, but that we altogether can offer something that will keep the tourists in the area for more days……" Svein, Farmer, Vikebygd*

With the establishment of the Vikebygd Landscape Park on the west side of the fjord, they also function as a voice towards the Ullensvang Council in planning, business development and infrastructure issues. In addition, from the council's point of view, any effort that will help the farmers

achieve an acceptable income, whether it be via tourism or other value-adding, is positive as it will help to keep people living in Vikebygd and the maintainance of the cultural landscape will be supported. The council has an important role in the local area planning and has recently produced a coastal development plan which has received much praise for its environmental considerations. Further, the council is required to produce a plan for development of mini hydropower plants and for climate action, which will affect businesses and income-generation prospects in Vikebygd.With the establishment of the Vikebygd Landscape Park, the Vikebygd population has been given a voice into these processes, and has also become more aware of the value of long-term protection of areas for public access along the shoreline.

6.9 CONCLUSION

The demographic characteristics of the survey respondents reveal a variety in age, yet with a relatively high education level (59% have tertiary education) and proven to be a resourceful group. The majority (76%) are from Vikebygd and have lived in the area most of their life. This is an indication of the strong social normative and cultural cognitive pressures that induces the majority of the younger generation to dutifully take over even those that are small farms, based in the 1000 year old allodial law. In order to ensure the continued farming of the land, the laws demand that the heirs of farms need to live on and farm the land. There are virtually no farms for sale in the area, thus, the Vikebygd farming population remains remarkably stable.

The Vikebygd farmers deliver their fruit to the membership based fruit co-operatives. Virtually all farmers are members of the fruit co-operatives. In order to position themselves in an increasingly competitive domestic market , improve fruit quality and gain better prices the Hardanger farmers decided to embark on a large restructuring of ten small fruit storage and packaging facilities into three large state of the art packaging, sorting and labeling facilities.

The Vikebygd Landscape Park was established in 2006, following a call for applications for the funding of the pilot stage by Hordaland County. Vikebygd Landscape Park was built according to previous community building efforts and initially had local leadership figures on the board. The main goal of the park is to create sustainable development through using nature and the cultural landscape in sustainable ways to generate income and reduce depopulation

The issue of climate change does not seem to be of major concern to Vikebygd farmers. These findings are in line with similar studies on Norwegians' concern for the environment, which shows that Norwegians are more concerned about global environmental issues and less about how these

global issues impact on the local environment and local action. With regards to environmental action the majority sort and recycle waste, seek to reduce inputs and erosion in agriculture, and maintain the cultural landscape.

When Vikebygd farmers discussed the issue of sustainability the main concern was the continuation of a farming livelihood for the next generation, that is, social sustainability. When asked to define environmental sustainability, responses comprised the continued ability to use nature for farming and income generating purposes. The establishment of Vikebygd Landscape Park is, therefore, a step in dealing with the community's biggest concerns.

Internal pressure to undertake environmental action was overwhelmingly stated to be own beliefs, values and knowledge, again indicating the strong social normative institutions that operate within such a tightly knit community. External pressure to undertake environmental action among Vikebygd fruit farms is perceived as coming primarily from authorities at national, county and council level, the fruit co-operatives and consumers, and, to a lesser extent, from business associations and the Vikebygd Landscape Park. The authorities provide direct pressure through ensuring that environmental conditions are met in return for subsidies. The fruit co-operatives have a cornerstone role in ensuring that fruit is cultivated environmentally sound: they control how much pesticide is sold to each farmer, perform residue tests on fruit and support the farmers in pursuing environmental certification, such as the Global GAP required for the export of fruit. Most fruit is sold domestically, and there is an increasing demand for organic fruit.

While some pressures were related to mandatory or incentive based institutions, when respondents were asked to identify the strongest drivers, it being "the right thing to do", consumer demands and risk were the most popular responses. This indicates that thesocial normative to undertake environmental action in the orchard has become the right thing to do; this was not the case a decade ago. Barriers were, foremost, a lack of time, lack of financial support and lack of knowledge.

With regards to the competitive advantages of environmental action, these can be divided into pollution control, product stewardship and sustainable development strategies. With regards to pollution control, most farmers had pursued waste management and input reduction measures. Every farm that receives subsidies is required to have an environmental management plan. There was less focus on energyefficiencies. There was little focus on environmental action among tourism providers.

Product stewardship, such as environmental certification, seeks to pre-empt competitors through establishing a niche market. In Norway, this would also include the geographic protection of fruit and products due to these labels representing environmental conditions for cultivation and manufacturing.

Product stewardship strategies are being implemented in Vikebygd and are strongly supported by the fruit co-operative. There is geographic protection of Hardanger apples, plums, pears and cherries, as well as Hardanger freshly squeezed juice and cider. This strategy has been very successful for the manufactured produce; however, for the geographically protected fruit there has been no return via an increased price due to resistance from the retailers. The co-operative support all farmers who want to obtain Global GAP certification for produce to be exported, as this ensures access through large European retailers, and organic certification due to unmet domestic demand. There is, however, little focus on environmental certification in the tourism businesses at the present time.

A sustainable development strategy for competitive advantage is when clusters of businesses or an area decides to pursue environmental sustainability in order to position itself for future business. The establishment of the Vikebygd Landscape Park would be classified as such a strategy, as it seeks to develop businesses and jobs by means of the sustainable use of the natural environment in Vikebygd. An issue here is the lack of time and business skills to begin a new type of business in tourism or on-farm manufacturing. The cultural landscape and characteristics are creating an attractive destination for tourists, yet, with few businesses involved in trying to make them stay and experience more in Vikebygd, the income is yet to be substantial.

Environmental knowledge is obtained within the community and through a variety of agricultural extension services, industry and trade associations. There is a surprising number of actors involved in the environmental knowledge delivery among farmers. The homogeneity of responses around what type and how environmental actions have taken place indicates that there is little difference between big and small actors in the agricultural sector relating to environmental action. With concern to the tourism industry, there is little awareness of what type of environmental action is required to establish a sustainable tourism destination.

There are processes, incentives and certification organisations in Norway pursuing these issues; however there was little interest and considerable skepticism towards pursuing environmental certification in the tourism industry.

CHAPTER 7 COMPARING TWO MICRO-CLUSTERS

7.1 INTRODUCTION

This chapter will compare and discuss the findings from the two micro-clusters. Comparisons will be based both on survey and interview data obtained in each micro-cluster described in Chapters 5 and 6, as well as relate the comparisons to contextual factors that have been described for each case in Chapter 4. It will further relate the findings to the theories presented and discussed in the literature review in Chapter 2. This chapter will thus lead into the final chapter, Chapter 8, where findings in relation to the selected research questions, research contribution, limitations of the study, and suggestions for future research will be presented.

This study has been based on two types of data, a survey and semi-structured interviews. While the surveys were undertaken among business owners within each of the micro-clusters, results from these have not been used to generalise findings to be representative for the whole area or country, but rather they areused to uncover contextual and factual differences and similarities between the two cases. The process of mirroring two polar cases with considerable contrasting features contributes to theory development through observing contrasting patterns of constructs, relationships and phenomenon observed (Eisenhardt & Graebner, 2007).

The statistical methods for the analysis were limited to using SPSS for descriptive statistical comparisons and to examining whether differences between cases were statistically significant. To assess statistically significant differences, cross-tab analysis using Chi-square tests, Monte Carlo simulation or Exact tests were used, where results depended on whether basic assumptions for the Chi square tests were met or not. For Chi-square tests, significant association is met when the P-value < 0.05 and no more than 20 % of cells have an expected count of less than 5, and no expected count less than 1. For the Monte Carlo Simulation 2-sided test, assumptions of association are met when the P-value < 0.05. For cross tabulations tests where the number of dependent and independent variables equals 2, an Exact test will be performed. Assumptions of association in an Exact test are met when the P-value < 0.05. Further description of the statistical methods used can be found in Chapter 3 on Methodology, while results from the comparative statistical tests are presented in Appendix 9.

The findings from the interviews in each micro-cluster (Chapters 5 and 6) and contextual factors described in Chapter 4 have been used to both critically assess and explain the quantitative differences found between cases as well as nuances and occasional contradictory survey findings. Further, these findings have been related to theories discussed in Chapter 2. As such, the mixed methods analysis makes it possible to add considerable depth to the analysis, while the selection of interviewees from

both within and outside the micro-cluster creates a better understanding of why and how environmental value-adding is occurring, which is the basis for theory generation (Greene, 2012).

The chapter follows the same structure as the two previous chapters. It will start by describing differences in business-owner demographics and micro-cluster characteristics, relating findings to contextual features and cluster and micro-cluster theory (Atherton & Johnston, 2008; Karlsson, 2008; Michael, 2007a, 2008; Porter, 1998b; Trippl & Todtling, 2008).

There then follows a comparison of environmental concerns and actions performed, relating these to the contextual (Johns, 2001) and institutional factors (Scott, 2008) that have been described for each location in Chapter 4.

The next section delves into an analysis of differences in perceptions about sustainability, and seeks to link these findings to theories regarding approaches to sustainability (Dryzek, 1997, 2005; Mebratu, 1998) and whether observed differences can be related to concepts of radical and pragmatist sustainability approaches in agriculture (Cocklin & Dibden, 2005; Dibden, et al., 2009; Gray & Lawrence, 2005).

The differences observed in pressures, drivers and barriers for environmental action will be examined in relation to institutional (Marquis & Battilana, 2009; Ostrom, 2010a; Scott, 2008), cultural values (House, et al., 2004; Noorderhaven & Koen, 2005) and resources based theory (Hart, 1995; Margaret A Peteraf, 1993; M A Peteraf & Barney, 2003).

For analysing differences in the value-adding of environmental action, interviews and survey findings will be related to the frameworks of the natural resource based view (Hart, 1995) and the value-adding web framework (Brown, et al., 2007; Brown, Burgess, Festing, Royer, et al., 2010). Differences in environmental knowledge providers and formal and informal networks will be based on findings from interviews both within and outside the micro-cluster and discussed in relation to the contextual features of each area as well as micro-cluster theory (Michael, 2008) and the value-adding web framework (Brown, et al., 2007; Brown, Burgess, Festing, Royer, et al., 2010).

7.2 COMPARING MICRO-CLUSTER CHARACTERISTICS

There were statistically significant differences found between the two case studies in relation to the characteristics of the business owners and the businesses, such as gender and age distribution, education level, business activity and type, duration of business operation, and the period of living in the area (see Table 9.1 in Appendix 9).

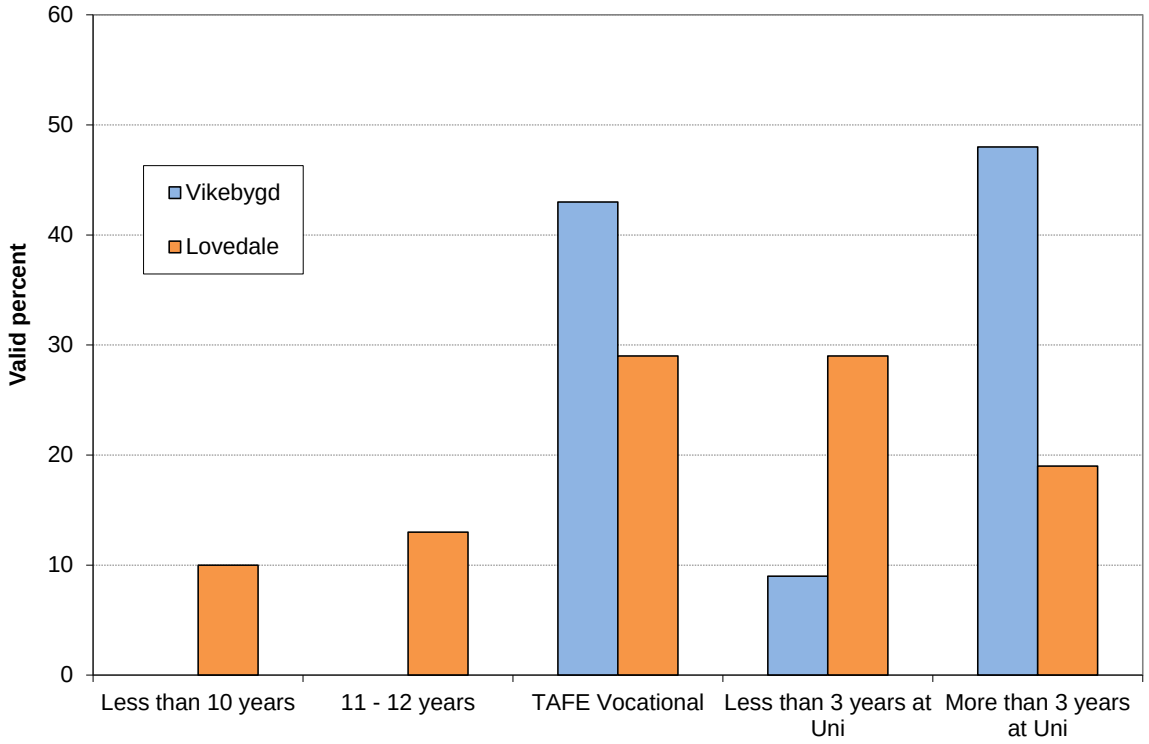
7.2.1 BUSINESS OWNER CHARACTERISTICS

The gender distribution of the samples in the two cases was statistically different. While the proportion of women respondents in Lovedale was 56%, it was only 28% for the Vikebygd sample. One explanation is that in Vikebygd, where each farm household has many income streams but with an emphasis on agricultural production, men are more in charge of the agricultural business, while women often have paid work outside the farm, (Moxnes Jervell, 1999) leaving men more solely in charge of farm management, and thus feeling more knowledgeable about the environmental issues covered in the questionnaire. In Lovedale, the majority of the businesses were focussed on tourism, the owners were semi-retired and women were often in charge of the tourism activities (accommodation, wine tasting, food catering). As agricultural labour and services, such as vineyard management, pruning and harvesting were mostly subcontracted, the male business owners often had paid work outside the wine tourism business.

This may have implications for the responses in relation to environmental concerns. In both countries, statistical data indicate that women are more concerned about the environment than men (Listhaug & Jakobsen, 2008; NSW Department of Environment Climate Change and Water, 2010). Similarly, these studies indicate that environmental concern is closely related to educational level, with people with higher education being more concerned and more knowledgeable about the environment.

Figure 7.1 below indicates that the education levels among business owners in the two micro-clusters are significantly different (see Table 9.1 in Appendix 9). While it is quite evenly distributed in the Lovedale sample, with a high percentage having either vocational training (29%) or up to 3 years Uni education (29%), there is a larger prevalence of two types of education: either vocational training (43%) or tertiary degrees (48%). This reflects the educational needs for farm heirs, where vocational training in horticulture, practical machinery and other related disciplines are appropriate for running the farm. On the other hand, the high level of tertiary education in Vikebygd is a good indication of how strongly the allodial law impacts on the return of farm heirs. While high educational levels correspond to high environmental concern, this is not featured in Vikebygd, which is thought to be a result of the lack of an immediate environmental crisis or locally impacting environmental issue. For Lovedale, the high educational levels correspond well with the high environmental concern. For both samples, the percentage of respondents with tertiary degrees is considerably higher than average for the population in the two councils (See Chapter 4). Again, this is in line with other findings showing that people with higher education are more concerned with the environment and therefore active in the establishment of the greening process and landscape park.

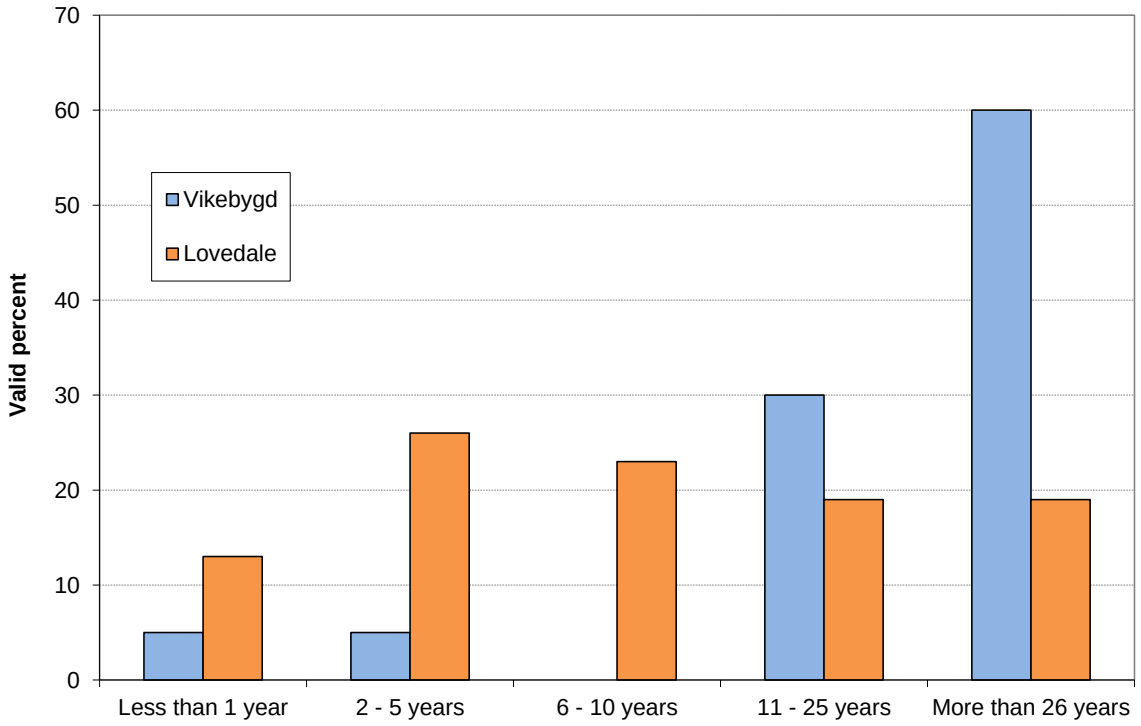
Figure 7-1 Education levels in Lovedale and Vikebygd



Age distribution differences were not statistically significant (P-value >0.05) between the cases. Even though the Lovedale sample was typical for amenity-led migrants (N Argent, et al., 2010), or tree-changers, with people mainly over 50 years of age, the age distribution is more even in Vikebygd. The lack of a statistically significant difference could be a sign of an aging population in Vikebygd.

There is significant difference between the numbers of years the business owners have lived in the area (See Table 9.1 in Appendix 9). From Figure 7.2 below it is seen that most of the Vikebygd respondents (90%) have lived in the area more than 11 years, and 60% have lived there more than 26 years. The Lovedale respondents however, show a more even distribution between recent and longer-term residents. Twenty-six percent have lived in Lovedale between 2 and 5 years, while only 18% have lived there more than 26 years.

Figure 7-2 Years lived in the area by Lovedale and Vikebygd respondents



This again reflects the large difference in mobility of residents in the two areas. Vikebygd is a rural area where farms are inherited, and with heirs staying or returning to the village even after higher education has been completed to help them take over the farm. The subsidy rates for agricultural production, in conjunction with the availability of jobs in the manufacturing and public sector, adequate infrastructure and amenities, makes living in Vikebygd possible for people with professional aspirations. Farms are so small that they can be, and have to be, combined with other income earning activities. In Odda, there are industry jobs available, while in Bergen, Stavanger and Haugesund (2.5 hours away) there are flexible job opportunities that can be combined with farming, either through professional jobs with flexible home office arrangements or shift work in the North Sea Petroleum, offering two weeks on and three weeks off. In addition, living costs in Vikebygd are relatively cheap as farms that are inherited are not valued at property market rates, but rather at a low agricultural property value. Figures from the survey questionnaire in Vikebygd showed that only 25% of the respondents had moved to Vikebygd from other areas (in-migrants), while 60% had always lived in Vikebygd and 15% were people who had returned home after years of study and work elsewhere. This again indicates the stability of the population and the attachment of people to the farmland of the families. While the most marginal farmland is being left, the most productive is being continuously improved and terraced to make it easier for tractor access.

The Lovedale case is in an area where agricultural properties are traded on the open market, and it is a popular area for “tree changers”. While proximity to Sydney is attractive and a safety valve for urban dwellers “gone bush”, it has also meant high demand for properties and thus high property prices. This trend is changing due to the wine glut and the expansion of coal seam gas extraction. More lifestyle vineyards are up for sale and prices are decreasing. Also, in Lovedale vineyards have been sold and vines have been taken out.

7.2.2 BUSINESS ACTIVITY, STRUCTURE AND YEARS OF OPERATION

The respondents were asked to describe their business activity through a multi-option question. In both micro-clusters slightly above half the respondents indicated that they had only one business activity. In Lovedale, 16 businesses or 52% performed only one business activity (e.g. accommodation, grape sales, wine sales or catering), while the remaining 15 businesses (48%) had multiple business activities. In Vikebygd, 57% or 12 respondents had only one business activity (agricultural production, tourism or services), while 43% had multiple business activities. The results indicates that in both areas agricultural activity is supplemented by other income-earning activities.

Figure 7-3 Business activities in Lovedale and Vikebygd

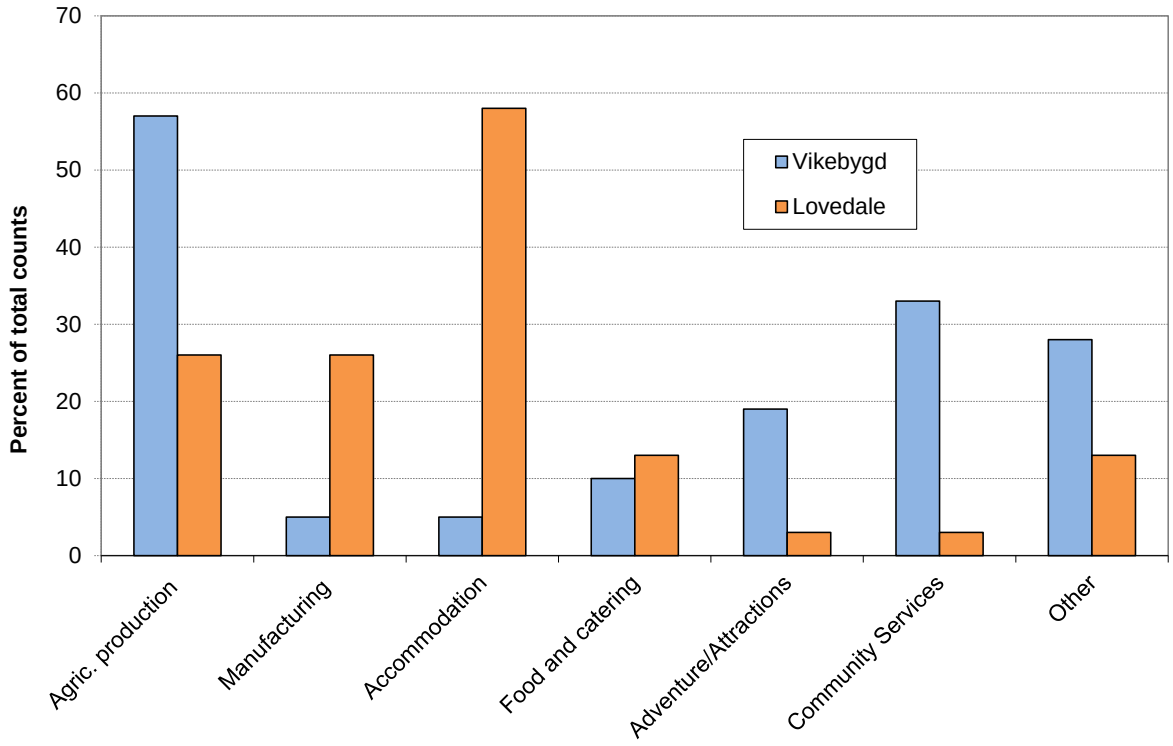


Figure 7-3 shows the type of business activities in the two micro-clusters. Even though agriculture based tourism is the focus in both areas, there are statistically significant differences (see Table 9.1 in Appendix 9) between the two micro-clusters with regards to the prevalence of accommodation businesses in Lovedale and community services in Vikebygd.

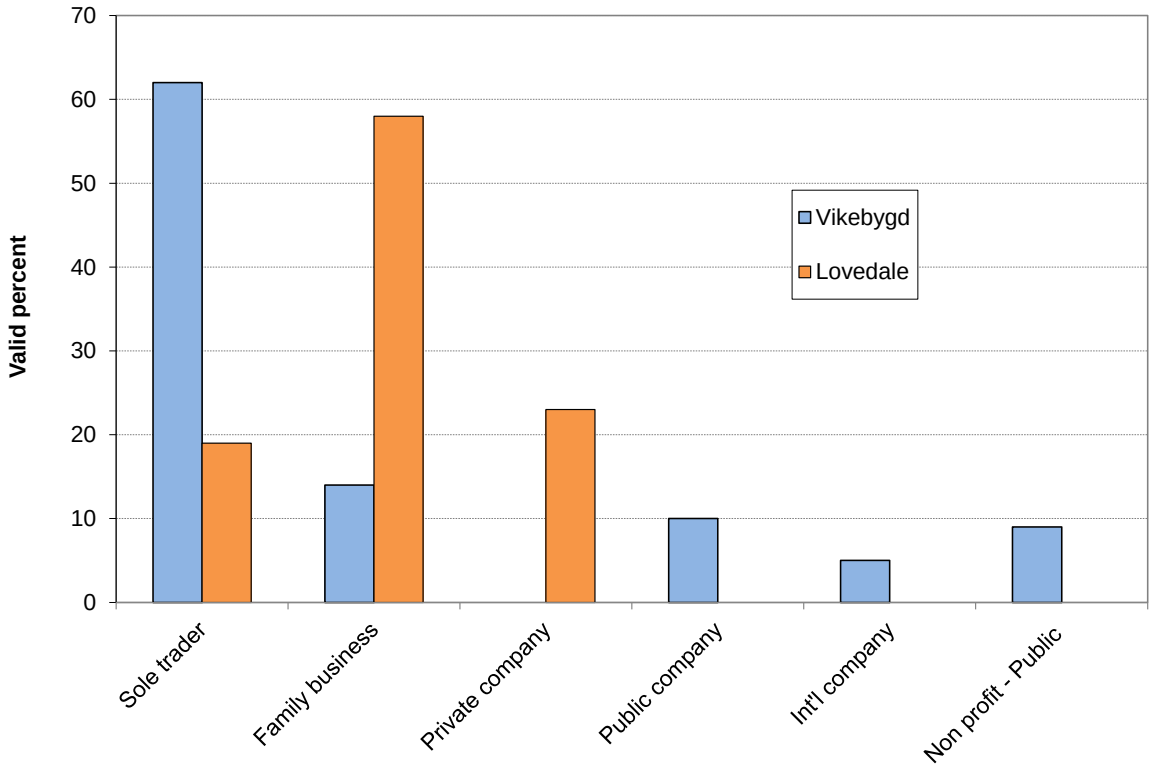
The structure of the two areas can be analysed using Michael's (2007a) micro-cluster framework, where agricultural businesses are classified as horizontal businesses, with tourism services (catering, accommodation and adventures) as diagonal or complementary businesses, vertical businesses would be the upstream or downstream actors (manufacturing or customer groups), while lateral actors would be supporting actors such as organisations or community services.

In Lovedale, agricultural production is a less prominent business activity, while complementary business activities such as accommodation and manufacturing/sale of wine through cellar-doors, indicate that Lovedale has more focus on tourism than on agricultural production. In Vikebygd, the focus is primarily on agricultural production, and thus the prevalence of horizontal actors is high, with much fewer diagonal/complementary actors involved in tourism services such as accommodation and food and catering. There is more focus on the manufacturing of grapes to wine and thus a higher prevalence of vertical actors (cellardoors) in Lovedale, while the low prevalence of vertical actors in Vikebygd confirms the vital role of the fruit co-operatives and a corner stone manufacturing business. There are more adventure or tourist attraction businesses in Vikebygd, which is in line with the greater emphasis on nature based tourism sought to be developed in the area. The large occurrence of lateral actors such as community services and non-profit/public organisations and other complementary actors such as retail and construction businesses in Vikebygd accentuates that this is a self-sufficient community. Thus, Vikebygd is an area that is deeply embedded in a highly functional and collectively organised agricultural district (with community and agricultural services intact), where new initiatives are taken to diversify income and develop Vikebygd as a tourist destination. It could be expected that the Vikebygd micro-cluster profile may change as more on-farm manufacturing and tourism businesses emerge.

Comparing the type of business between the two micro-clusters show a statistically significant difference confirming contextual differences in property ownership while also being related to the dominant business activity in the area (see Table 9.1 in Appendix 9). The Lovedale businesses are primarily family businesses, sole traders or private companies. The large proportion of family businesses reflects that these are family trusts, often established for tax and intra-generational wealth transfer reasons, which makes sense as investments made by early retirement or retired owners.

Around 24% are private companies, thus they are incorporated but the equity is held by an individual or a family.

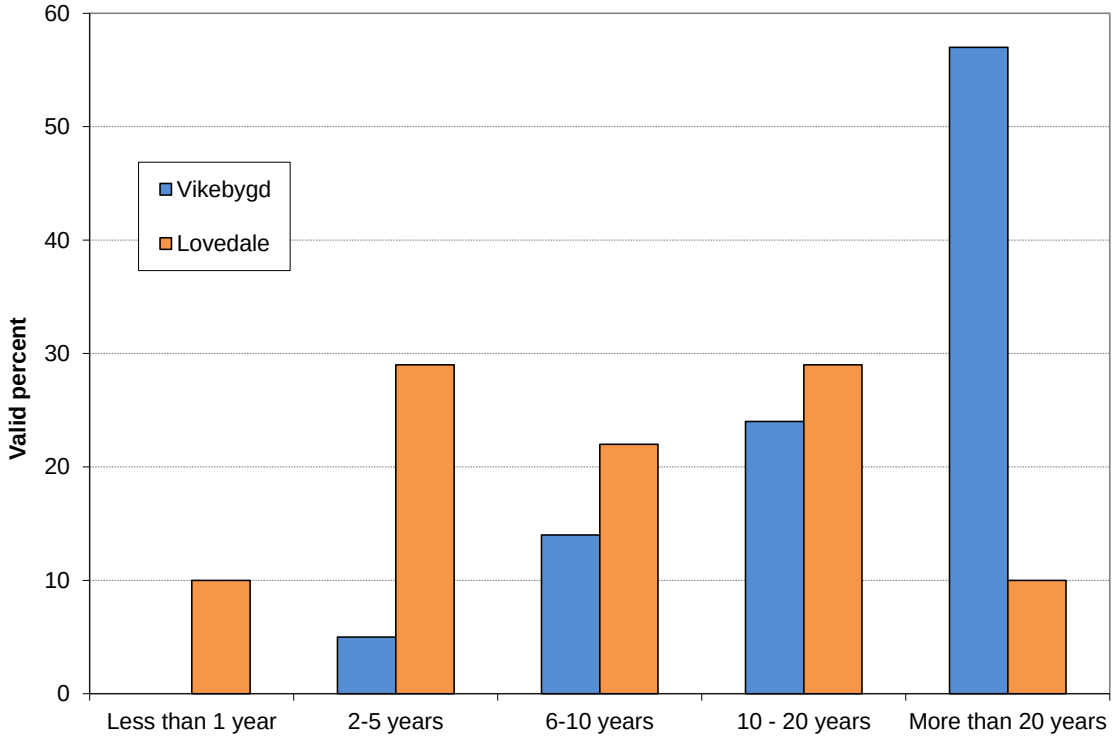
Figure 7-4 Type of businesses in Lovedale and Vikebygd



The Vikebygd businesses were more heterogenous, with sole traders, family businesses, the public and international owned companies and non-profit institutions (see Figure 7-4), reflecting that this micro-cluster organisation has members from all types of business and community entities. The largest proportion was sole traders, the legal entity of farms. Some respondents have also mentioned family businesses, which has has been explained previously, does not exist as a legal entity in Norway, and these respondents should most probably be considered as sole traders. This reflects that the micro-cluster organisation "Vikebygd Landskapspark" is embedded in a community, as distict from the single focus of wine-tourism businesses which is found in Lovedale. According to micro-cluster theory, there is a concept of optimal micro-clustering. The Vikebygd micro-cluster is a self-sufficient community in which the agriculture and tourism businesses are embedded, yet the predominant focus is on the agricultural activity, with the area having few accommodation and catering providers. This is in contrast to the Lovedale micro-cluster which is dominated by tourism services, having no community services, being a more single-focused business micro-cluster, possibly making it more optimal as a wine tourism destination. Vikebygd is still developing tourism services, albeit these will be based on nature-based activity and local foods and less on high-end gourmet food

and wine experiences. While both of these cases fit the characteristics of being a micro-cluster, it could be stated that both are dependent on the services, support and diversity that the larger wine-tourism (Hunter Valley) or fruit-tourism (Hardanger) clusters provide.

Figure 7-5 Years of operation of businesses in Lovedale and Vikebygd



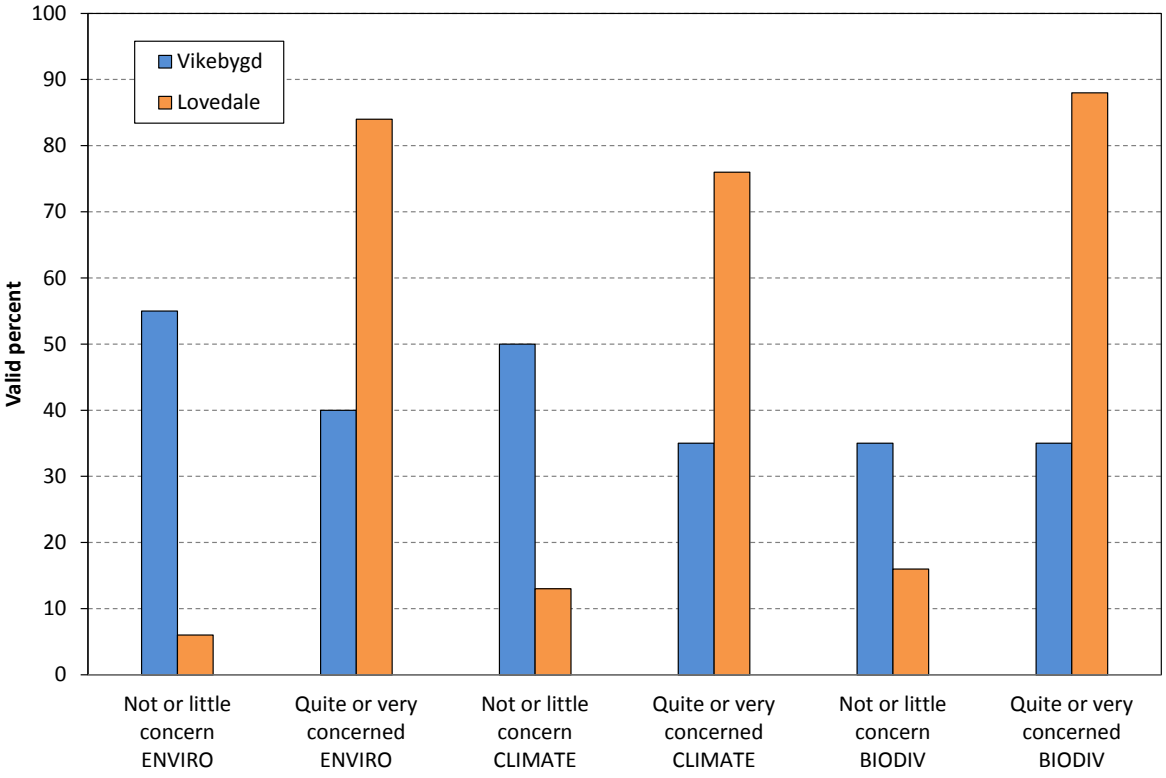
The variations in lengths of business operation of the two micro-clusters (see Figure 7.5) are statistically significantly different (see Table 9.1 in Appendix 9). While around 80% of Vikebygd businesses have been in operation for more than 10 years, this is valid for only around 30 % of the Lovedale businesses. The majority of businesses (57%) in Vikebygd have been in operation more than 20 years, while only 10% of Lovedale businesses have been operating for more than 10 years.

This reflects the influence of the allodial law on Norwegian farm continuity and long term traditional operations of these farm businesses. The Lovedale businesses show a more even distribution of years of operation, with 28% of businesses being in the 2 - 5 years of operation and 28 % being in the 10-20 years of operation groups. Hence we have a contrasting profile of old and established farms in Vikebygd, and relatively new, family trusts or incorporated businesses in Lovedale. The next sections will compare and discuss how these business and business owner characteristics influence environmental concern, issues and action.

7.3 COMPARING ENVIRONMENTAL CONCERN, ISSUES AND ACTION

When comparing the two micro-clusters concern for the environment, climate change and loss of biodiversity, statistically significant differences were found for all factors (P value < 0.05) (see Table 9.2 in Appendix 9 for tests of association for environmental concern and action).

Figure 7-6 Environmental concerns compared



As Figure 7-6 illustrates there is a much higher percentage of respondents in Lovedale who are quite or very concerned with all three environmental questions. While among the Vikebygd respondents around 35-40% were quite or very concerned, more than twice the percentage of respondents (76 - 88%) were quite or very concerned in Lovedale. These substantial differences can be due to the following factors being different in the two cases: a) prevalence of environmental problems/environmental crisis in the local environment, b) the prevalence of extreme weather and the potential impact of climate change and c) the types of climate change action that are feasible to undertake in the local area.

Visible environmental destruction may lead to an increase in people's concern and environmental action. Downs (1972) suggests that environmental issues become a concern when environmental deterioration becomes so apparent that something needs to be done. On the other hand, Jennings and

Zandbergen (1995) discuss how environmental crises may also lead to deinstitutionalization; undermining faith in the current system/institutions whether they be the current ecological paradigm, humans' and authorities willingness to act or technological solutions. Environmental crises can thereby lead to both increased and decreased environmental action.

According to Listhaug and Jakobsen (2008) in the Norwegian Bureau of Statistics, the Norwegian population had its highest environmental alert around 1989, with several environmental crisis having occurred nationally during the 1980s and 1990s (pollution of fjords were discovered, fish deaths in the North Sea, oil rig accidents, acidification of fresh water lakes and seal invasion). These environmental crises happened at the same time as the launch of the Brundtland report on Sustainability and Development in1989. Norway was at that time in the forefront of environmental action, with the establishment of a separate environmental ministry and an EPA, in the mid 1970s.This was followed by a consistent effort to mainstream environmental policy and action across all sectors in society. This has reduced the numbers of extreme environmental incidents both locally and nationally, and, according to Listhaug and Jakobsen (2008), may have led to a decrease in environmental concern. In 2007, around 90 to 9 % of Norwegians were quite or very concerned about global environmental issues such as climate change, loss of biodiversity and other issues such as pollution, while only between 20 and 25% were quite or very concerned about local environmental issues (Listhaug & Jakobsen, 2008). Little differences were found between rural and urban populations, yet women and people with higher education showed a higher concern for the environment.

Even though visible local environmental issues have been reduced, and most of Norway's electricity is hydropower, annual CO2 emissions have gradually increased since the Kyoto protocol was signed in 1997, primarily due to the increased use of gas for power generation in the North Sea and wealth related to an increase in consumption (Lafferty, et al., 2007). The loss of species is occurring throughout the Norwegian landscape due to bush encroachment as natural grazing decreases when animal husbandry is concentrated to larger farms. The surge in the construction of mini-hydropower is also expected to lead to a loss of species in rivers and streams. These issues are, however, hard to sell when Norway has "clean" nature, creating the perception of Norway having few environmental issues (Lafferty, et al., 2007). The Vikebygd respondents' low concern for environmental issues are similar to the findings of Listhaug and Jakobsen (2008) discussed above.

Norgaard (2011) found in a study on rural Norwegian's attitudes to climate change a very high concern about climate change, stating that they already felt the impact of less snow in the winter, were also well informed about [both the issues what issues?] and the ways to reduce greenhouse gases and were generally not sceptical of human induced climate change. Yet, they did not act accordingly.

She states that it seemed that they avoided acting upon the consequences of their knowledge as if this issue was too big or too abstract to consider. Similar reactions were found among Vikebygd interviewees even though more extreme weather incidences had increased in recent years.

For a rural resident in Hardanger, there are not many easy options for reducing greenhouse gas emissions. The main reason for increased CO 2 emissions is the increased consumption and the use of natural gas as an electricity source in the North Sea. There is bipartisan political agreement that Norway must become carbon neutral by 2030, and the government has initiated action to reduce emissions from the North Sea through the controversial construction of a new main electricity grid through Hardanger (see Chapter 4 on the context of "Hardanger Monstermasts"), and, as such, Hardanger as a region has paid a price for the national effort to reduce CO2 emissions. For rural Hardanger households, however, almost all electricity is hydropower, and in addition, firewood is used for heating. It is mandatory to follow strict building codes for improved energy efficiency (heat pump and insulation) when building or renovating houses. A national rebate program, for which every household is eligible, to replace old fuel inefficient wood stoves with highly efficient biofuel stoves has been rolled out for a decade. The remaining options to "do something" about climate change are to stop using cars and reduce consumption. However, to find solutions to increase public transport or trains in the fjordregion is not something that can be pursued by a local community, and has not received enough traction from the national public. Reducing consumption among rural smallholders may also be somewhat less feasible as most lead quite frugal lives, with money being used to improve the farm or farmhouses. Another factor is that, for Norwegian farmers, climate change will most likely have a positive impact due to the increased length of growing seasons and harvests.

The situation is substantially different in Australia and Lovedale. While there is general acceptance that Australia has a bad track record with regards to loss of species, increased salinity of soils and water, deforestation and one of the world's highest CO2 emission rates per capita, the environmental debate and particularly the human-induced climate change have been contentious issues over the last decades (Charlton, 2011). While Australia only signed the Kyoto protocol in 2007, national climate action policies are fiercely disputed and lack bipartisan support. The introduction of the carbon tax from the 1st July 2012 is continuously opposed with climate change denial from senior influential political and industry leaders. At the same time, the last decade has seen consecutive droughts, severe bushfires and flooding, which for many is an indication that climate change is already happening.

Locally in the Hunter, there are huge mining operations which require both water and land to compete with agricultural demands. While the mines are not always visible in the landscape, there is an increasing focus on the detrimental local health impacts of coal dust and mining effluents in water and

soil. The recent expansion of coal seam gas exploration occurring “over the top of landowners heads”, coupled with a large degree of unknown factors such as its impact on groundwater levels and the potential salination of soils and streams from effluent, lead to increased concerns and fear around environmental issues (Hunter Valley Protection Alliance and Hunter Valley Wine Industry Association, 2012).

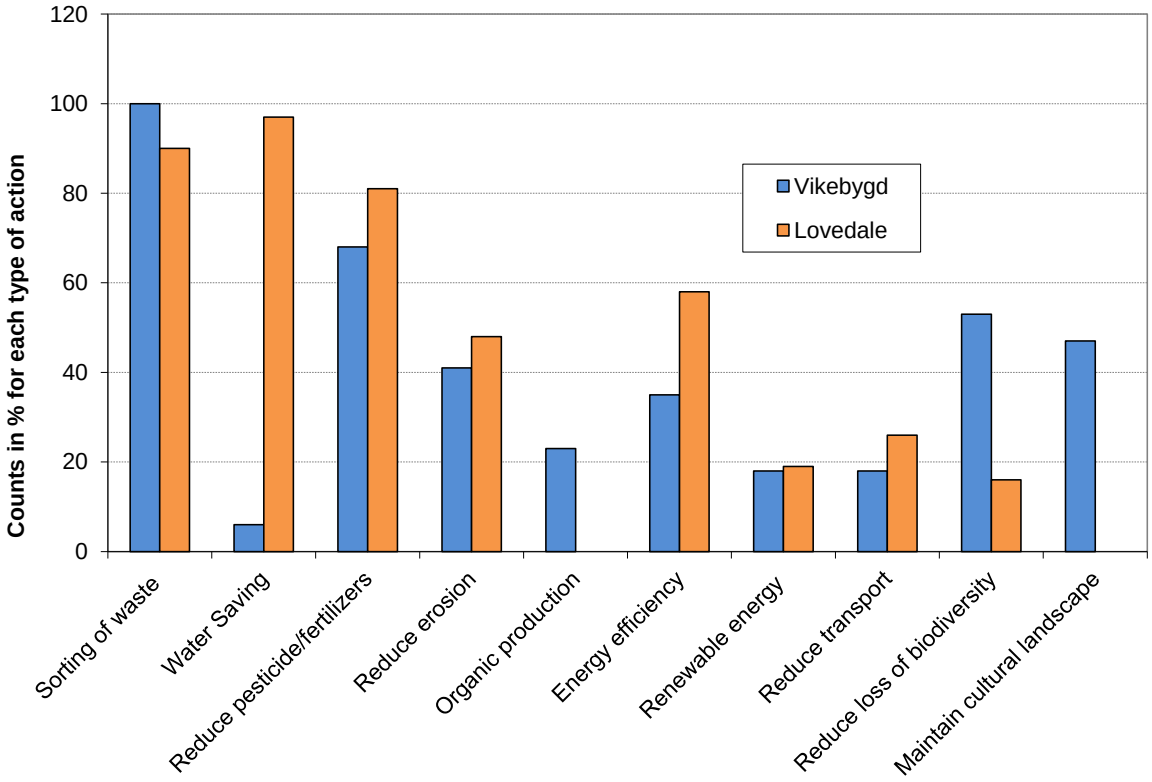
The increasing frequency of severe natural disasters, with both property damage and human fatalities such as bushfires, floods and cyclones, increases the awareness of climate change and not least its impact on the agricultural sector. These environmental crises frighten people and provide a direct incentive for pursuing environmental action. The recent report on the detrimental impact of climate change on the Hunter’s grape industries is also evidence that the local wine industry takes these issues seriously (Blackmore & Goodwin, 2009)

Most of Australia’s electricity is generated by coal-fired power-stations, and there is a general awareness that every kilowatt used results directly in CO2 emissions. There is also a heightened awareness in the Hunter Valley that the region is the location of large coal-mines with all the electricity in the area generated by coal-fired power stations. As such, it is “easier” to reduce CO2 emissions in Lovedale than it is in Vikebygd. Climate change is also more visible due to the concrete impacts on the Semillon grape important for the Hunter Valley.

Despite these events, the Australian rural farming population remains sceptical to humanly induced climate change, and according to surveys, only 27% believe in it (Donnelly, et al., 2009). This is not the same as the attitude encountered among rural Norwegians, who acknowledge and accept the climate science, but see few ways to act upon it locally or individually. The opposite is true for Australian urban residents, where 67% are a great deal or a fair amount concerned about the environment, a finding reiterated by a recent survey in NSW (NSW Department of Environment Climate Change and Water, 2010). Lovedale residents seem to reflect a more typical urban concern for climate change than a rural concern. De Vries and Peterson (2009) examined how individual environmental action is influenced by context specific value-orientations and knowledge. In both micro-clusters, there seems to be a more or less accepted worldview within the micro-cluster, based on the specific context of the environmental issues by which they are surrounded. While both communities are very knowledgeable about the environmental issues at hand, for the Lovedale community there are more possibilities to do something individually and locally than for the Vikebygd community. These differences would be expected to be manifested in environmental action as discussed below.

The survey questionnaire included a section where businesses could indicate the (self-reported) environmental action in which they were currently involved (Figure 7-7). The list of environmental actions was based on tested surveys on sustainability from New Zealand and Australia, (Collins, et al., 2009; NSW Department of Environment Climate Change and Water, 2010), but included more specific actions regarding agricultural businesses. Some environmental action would be less relevant in one location than in another due to climate and/or availability of public services. Water scarcity and water use is less important in Norway compared with drought prone Australia. In Vikebygd, some types of environmental action (waste sorting and recycling and hydropower-electricity) are implemented by the public sector.

Figure 7-7 Environmental action - Vikebygd and Lovedale



Virtually all of the Lovedale respondents (97%) undertake water saving activities. This is strongly influenced by the area not being connected to public water utilities, making water saving and rainwater tanks a necessity and a cost-saving action to avoid buying water from private providers. Similarly, many Lovedale respondents are not provided with council waste collection services and have to find their own solutions to waste management (90%). In Vikebygd, water supply is not an issue (only 6% reported undertaking water saving action) as most farms have their own abundant freshwater streams deriving from the glacier. All Vikebygd residents sorted and recycled waste (100%) as the Ullensvang Local Council provides a mandatory waste collection and sorting service

for every household. In addition, rebates are given for returned glass and plastic drinks bottles, while toxic waste can be delivered for free to separate waste collection stations. The presence of a well-functioning “environmental infrastructure” is the result of 30 years of mainstreaming of environmental action and investment into every municipal administration. This has been made possible by substantial amounts of public income being channelled down to the council level, based on a national willingness for spatial redistribution of wealth across the country (Gulbrandsen & Engelstad, 2005) .

With regards to environmental action in agriculture, there were no significant differences between Vikebygd and Lovedale when it came to measures designed to reduce pesticides/fertiliser and erosion. However, while there were four farmers producing organic fruit in Vikebygd, no grape growers in Lovedale reported producing organic grapes.

In Norway, virtually all electricity is hydropower, however no respondents mentioned this as a renewable source, which would indicate that respondents have only mentioned individual hydro-power generation in answering the questionnaire. Three respondents (18%) in Vikebygd identified mini hydropower and bio-fuels as renewable energy. In Lovedale, 19% of the respondents reported using renewable energy (either purchasing green energy or using solar energy). More than half of the Lovedale respondents pursued energy efficiency measures (58%), while only 35% did so in Vikebygd.

One of the biggest environmental issues in Norway is loss of biodiversity due to bush encroachment on agricultural grazing land. Rare native flora and fauna linked to the cultural landscape are dependent on grazed pastures. AsVikebygd farms became specialised, fruit farmers abandonned domestic animals and old pastures were encroached upon by bush leading to loss of biodiversity as well as changes in the cultural landscape. Subsidies are available for farmers who undertake activities to maintain cultural landscapes and reduce bush encroachment and this is done by a high proportion of Vikebygd respondents. In Australia, the opposite is the problem: deforestation and the loss of native trees and plants due to cultivation. Even though most of the Lovedale residents are concerned with loss of species, only 16% pursue actions to increase native vegetation.

There were no significant differences (Monte Carlo P-value = 0.795) between the two cases when rating their industrys association’s awareness on environmental issues. In both cases around 70-75% of respondents stated that their industry was either medium, quite or very aware of environmental issues.

When respondents were asked whether they thought environmental issues would be more important than or equally important to their business in 5 years there were statistically significant differences between the two micro-clusters (Monte Carlo P-value = 0.01). While around half (50%) of the Vikebygd respondents considered that environmental issues would be more or much more important in 5 years, 71% of Lovedale respondents thought that environmental issues would be more or much more important in 5 years. These results indicate that Lovedale businesses think that environmental issues will be increasingly important and that, through pursuing environmental action, they are ahead of the game. The lesser concern showed by the Vikebygd businesses could be a reflection of environmental issues being mainstreamed through public sector support and activities. Norwegian farm businesses have faith that associations and businesses are already doing what they should be doing and are "adequately concerned" about the environment.

7.4 COMPARING PERSPECTIVES ON SUSTAINABILITY

The comparison of sustainability perspectives between Vikebygd and Lovedale will first examine the differences in responses on how to define sustainability, followed by an examination as to whether the approach taken by the agriculture based tourism sectors in the two micro-clusters can be defined as pursuing a reformist (weak) or radical (strong) sustainability (Gray & Lawrence, 2001) approach. Last, cluster sustainability as it is defined in the literature, will be examined in relation to the views expressed in the two locations.

Comparing perceptions of sustainability

The Vikebygd respondents were primarily concerned with two aspects of sustainability: first, intergenerational sustainability - sustainability would mean that they would be able to usethe natural environment a way that benefitted themselves while also preserving it forand future generations ; second, social sustainability, the degree to which people stay or return to the farms and the community. These opinions point more towards a strong/radical sustainability approach where the focus is on intergenerational distribution and an economy and society in harmony with nature (Gray & Lawrence, 2001). Bjørkhaug (2006) also explored what sustainable agriculture meant for the Norwegian farmers, and found that "sustainability as a concept with a definition seems to be irrelevant to Norwegian farmers' everyday operations" (2006, p. 129), being more concerned about farming livelihood and social sustainability of communities. Yet, the economic circumstances or livelihoods of farmers and the social sustainability of the community would also be part of the sustainability concept, and classification into weak or strong sustainability approaches would be dependent on the extent to which short-term economic profitability would override environmental and

social sustainability. The provision of subsidies with environmental conditions, the lack of market value of land through the allodial law and the small scale of agricultural activity in Vikebygd softens the purely for-profit rationale that is more prevalent in the Australian context. Even with the more long term and traditional approach to farming in Vikebygd, the fruit-farmers have exhibited a remarkable willingness to change to more environmentally friendly cultivation methods (including organic production) and invest in modern packaging and labeling facilities in their membership based co-operative upon the threat of global competition. On the other hand, there is resistance to introducing tourism as an income-generating activity in the area.

The pursuit of geographical protection and development of a landscape park must be seen as processes of bioregionalism/localism to improve social, economic and environmental sustainability. These processes are more focused on the domestic market with the Norwegian urban consumer becoming more demanding and interested in local specialities and quality. It is as if the well-travelled Norwegian consumers, having been exposed to local food cultures abroad, have renewed their interest in food culture at home. The increased focus of localism, followed up by public authorities demanding third-party labeling and quality assurance, provides additional support and impetus to pursue these innovative livelihood strategies. There is, however, little focus on the export of these traditional or localised products, yet efforts to create sustainable tourism destination guidelines further strengthens the localist food focus for international tourists.

There was also a more general concern regarding urban people's lack of connection to agriculture and nature, resulting in a lack of understanding of where food is coming from. There is a perception that farmers have an important role to play in countering this tendency. Underlying these opinions is the view that a condition for rural sustainability is that it involves producing food and not only common societal goods such as a beautiful cultural landscapes and cultural identities. Yet, clearly, the farmers also see themselves as managers of natural resources, and role players in educating urban people about the connection between nature and food production. These findings are in line with Daugstad et al. (2006, p. 79) who concludes that the Norwegian farmers purpose is no longer to merely produce food, but to become specialists in niche productions, tourism and "providers of identity" in that they provide a Norwegian rural identity for both urban Norwegians and tourists.

This also seems to be the case in Vikebygd, where farmers see themselves as sustainable users of the natural environment and caretakers of national identity with knowledge about food production. Yet, Daugstad et al. (2006, p. 79) also found that the term "sustainability" is little used and has been replaced by an increasing focus on business and value-adding. This may indicate that the concept of sustainable development is being left behind and replaced by a more profit-oriented approach, yet it

may also be that the idea of "sustainability" as a tool for decision-making on livelihood strategies may be too vague.

The most marked difference between Lovedale and Vikebygd was the Lovedale respondents' focus on maintaining an economic return. The intergenerational distribution aspects were mentioned by some respondents, often in connection with the respondents anxiety about their grandchildrens' future, yet in business matters there was a clear impression that investments in environmental improvements would have to make economic sense. There was little focus on social sustainability. This is clearly a result of businesses driven more by market criteria in Lovedale, and with very few incentives and subsidies for environmental improvements. Another issue among Lovedale respondents was the divide between pursuing sustainability in business and in private life, with it being easier in the business sphere where targets and cost-benefit calculations were the basis for implementation. Several respondents pointed to the fact that the term "sustainability" changes as new technology and new goals are set.

Comparing industry's sustainability stances

Gray and Lawrence (2001) divided industry approaches to sustainability into a reformist or pragmatic (weak) stance and a radical (strong) sustainability stance, based on whether they were environment or human focused, the degree of acceptance of modern technology, intergenerational distribution, the environmental risk aversion, approach to new systems and ways of thinking and the degree to which sustainability is compatible with globalised markets.

While many researchers consider that environmental sustainability is seen as being incompatible with the Australian export market oriented agriculture (Cocklin & Dibden, 2005; Dibden, et al., 2009; Gray & Lawrence, 2005), the Lovedale tree-changers are not export focused, rather they have a domestic wine-tourism focus and see their greening project as a way to differentiate themselves from other surrounding wine areas. However, in the current wine glut, and due to them being small businesses, there is more of a short-term profit focus. This could also be a consequence of the Lovedale respondents' mobility and lack of connection to the area. The divide between private life and business aspects of sustainability is also different to Vikebygd, where the farmers' strong embeddedness in community and nature as well as the hands on nature of their farming work, results in there being less of a divide between the private and business aspects of life. In Lovedale, staff are hired to undertake most practical tasks in the vineyard, and thus improved cultivation methods becomes a cost factor and less of a practical change for the business owners.

The Vikebygd community exhibits a more radical or strong sustainability (Gray & Lawrence, 2001) approach than Lovedale. In Vikebygdlong-term inter generational aspects of farming and the use of natural resources are strong, and many initiatives such as the establishment of the Vikebygd Landscape Park, are designed to improve the social sustainability of the area. The current move to build local and regional identities through geographic protection and strengthening of the cultural and natural assets base of rural communities also points to a radical sustainability approach. The high prevalence of organic certification (almost 20% of respondents) is indicative of the precautionary principle being important with a preference of green technologies even though it may be more risky.

In Lovedale, vineyards and wineries are primarily owned by resourceful lifestyle vignerons investing in vineyard properties traded at market prices, forcing owners to assess these investments in relation to short-term costs and benefits. In Lovedale, business owners were focused on the economic outcomes of environmental improvements, and with the relatively frequent turnover of vineyards among tree-changers there is less focus on improving the vineyard or the natural environment for the next generation - intergenerational distribution. However, even within the context of the more business focused Lovedale vineyards, approaches varied significantly with some traditional family wineries exhibiting strong intergenerational distribution approaches for maintaining old vineyards and the rural aesthetics of the Hunter Valley. While the wine industry is offering commendable environmental advice on how to reduce greenhouse gas emissions from grape and wine production, more effort is made on climate change adaptation measures pointing to a more anthropocentric view. Globalisation or export of wine were not mentioned as problems in relation to sustainability, while geographic protection of wines is undertaken to position wines for a very competitive global market.

The classification of the Norwegian agricultural industry into a radical sustainability approach is easy as it: is domestically focused, is a relatively homogenous farmer community, has state support both financially and through regulatory measures and is affected by cultural and social normative pressures to continue farming on the family farm. The Australian agricultural sector is a much more diverse farmer community, ranging from locally focused lifestyle farmers to multi-national companies with substantial differences in sustainability approach depending on market and consumer demand as well as business owners' own values and inter-generational outlook.

The Lovedale wine tourism businesses can be said to be embedded within a more reformist or weak sustainability worldview, being more market-driven and integrated in the global economy. When interviewing large family wineries in the Hunter Valley about sustainability, there was a markedly greater long-term perspective regarding both the business sustainability and also the industry's and the region's potential for maintaining a strong wine industry and an aesthetic rural feel of the area. As

such the larger family wineries have a more intergenerational distribution perspective than the more short-term horizon of the Lovedale lifestyle wine tourism operators.

Comparing perceptions of cluster sustainability

The perceptions obtained from interviewees regarding cluster sustainability can be examined using cluster renewal theory based on Porter's analysis of efficiency and innovation factors important for growth and sustainability (Porter, 2000) as well as the three types of cluster renewal of old industrial regions (Trippl & Todtling, 2008), namely: incremental change and diversification and radical change. Porter (1990b) suggests that structural rigidities such as tradition, customs and lack of innovation may hamper cluster sustainability, while external threats to cluster sustainability are due to fundamental changes in demand, infrastructure and technology.

Both micro-clusters belong to larger agricultural regions, with agricultural businesses being at the core of the micro-cluster existence, yet the degree of complementary businesses in tourism is significantly different. In Vikebygd, on-farm tourism and manufacturing is emerging slowly among the most entrepreneurial and outward looking, often the younger generation, and can be described as cluster diversification strategy (Trippl & Todtling, 2008). In Lovedale, tourism service providers are in the majority, yet highly dependent on the wineries and cellar doors. Lovedale has moved away from a pure agricultural (grape and wine) focus towards a more gastronomic landscape. Lovedale and the Hunter Valley have for decades been in a process of diversification (Trippl & Todtling, 2008), from being pure wineregions to being winetourism regions with major investments in tourism infrastructure (Trippl & Todtling, 2008).

In spite of its small size, the Hunter is known to be innovative and producing high quality wines compared to other regions, with Hunter wineries and winemakers receiving multiple international awards (Allen, 2011; Sharpe, 2011). New ways to connect to urban consumers include the promotion of young winemakers and quality Hunter wines both in Sydney and overseas (Graham, 2011), and have led to the establishment of Hunter Valley wine bars in Sydney, and a focus on the history of wine in the Hunter evidencing increasing pride in the region and a stronger identity for the region. The piloting of green technologies (lean and green bottles), the introduction of the EntWine environmental management system, the study of how climate change impacts on the Hunter Valley Wine Industry, and the Greening of Lovedale project points to an industry environmental sustainability that forms part of the cluster renewal process in the Hunter Valley. The one issue both wine and tourism businesses state will be detrimental to the Hunter wine cluster is increased mining or coal seam gas activity. This development is a radical change (Trippl & Todtling, 2008) as it will

transform the landscape, reducing the attraction for tourists, increasing pollution, diverting water to mining and distorting the local labour market through offering higher salaries.

For Vikebygd, the biggest threat to its current cluster activities is the reduction of the import protection and the decrease in subsidies which will undermine the economic sustainability of fruit production by reducing prices obtained on the domestic market. Without subsidies, cultivating the steep slopes of Vikebygd will be unprofitable. Second, the lack of returning heirs for the farms will lead to depopulation and generally reduced community spirit. There are also internal threats, such as the impact of the allodial law reducing the possibility for new entrants to take over farms and reducing the possibility for new perspectives on tourism and innovation and this may contribute to a decline in cluster sustainability. In essence, environmental sustainability is ensured more through the preservation of current agricultural activity, whereas there is little attention to innovation and environmental improvements in the tourism services.

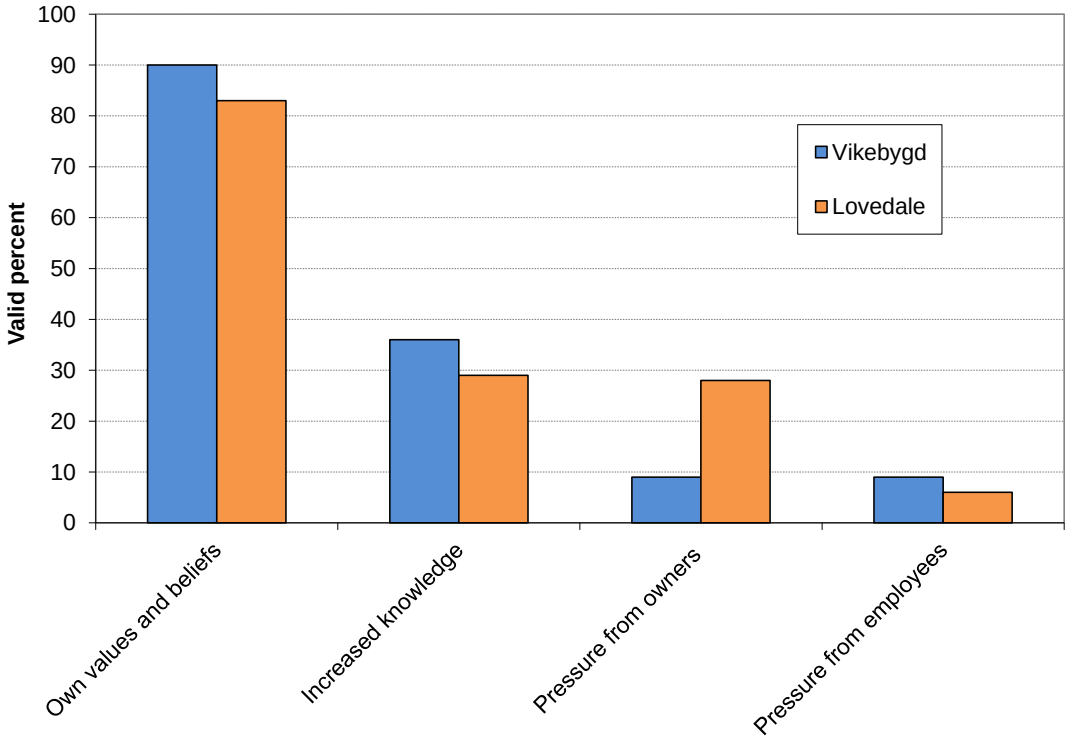
7.5 COMPARING PRESSURES AND DRIVERS FOR ENVIRONMENTAL ACTION

7.5.1 DIFFERENCES IN INTERNAL PRESSURES FOR ENVIRONMENTAL ACTION

There were no statistically significant differences in the type and percentage of internal pressures perceived by business owners in the two cases. In both Vikebygd and Lovedale, around half of the respondents (9 respondents - 45% in Vikebygd, and 16 respondents - 51% in Lovedale (Chi Square Test P value=0.645) stated that they felt internal pressure to improve environmental action. (See Table 9.3 in Appendix 9 for results on tests of association)

Both micro-clusters comprise primarily small businesses; in Lovedale 52 % employed less than 4 people while, in Vikebygd, 81% employed less than 4 people. The questions about internal pressures (from employees, owners and shareholders) may, therefore, be more differentiated in businesses that employ more people and have a public or private company limited and not the sole traders and family trust run businesses in Vikebygd and Lovedale. Yet, as Figure 7-8 below exhibits, the overall internal pressure in both micro-clusters comes from the business owners' own values and beliefs as well as increased knowledge.

Figure 7-8 Internal pressures to pursue environmental action



The high percentage of respondents indicating "Own values and beliefs" as main internal pressure both in Vikebygd and Lovedale, points to the two populations having strong personal commitments to undertake environmental action, and as such is an indication of both social normative and cultural cognitive pressures (Scott, 2008) to undertake environmental action in the cluster. According to Scott (2008, p. 51) normative institutions would guide environmental behaviour through the feeling of social obligation and would be morally governed; ie governed by values and beliefs to "do the right thing". This is similar to results found by Collins among small businesses in New Zealand, where the dominant internal pressure was perceived to be own values and beliefs (Collins, et al., 2009). Interviews with large wine and tourism companies (discussed in chapters 5 and 6), indicated that these have different and additional internal pressures from owners, shareholders and employees. However, no survey results were obtained from any large companies in either micro-cluster.

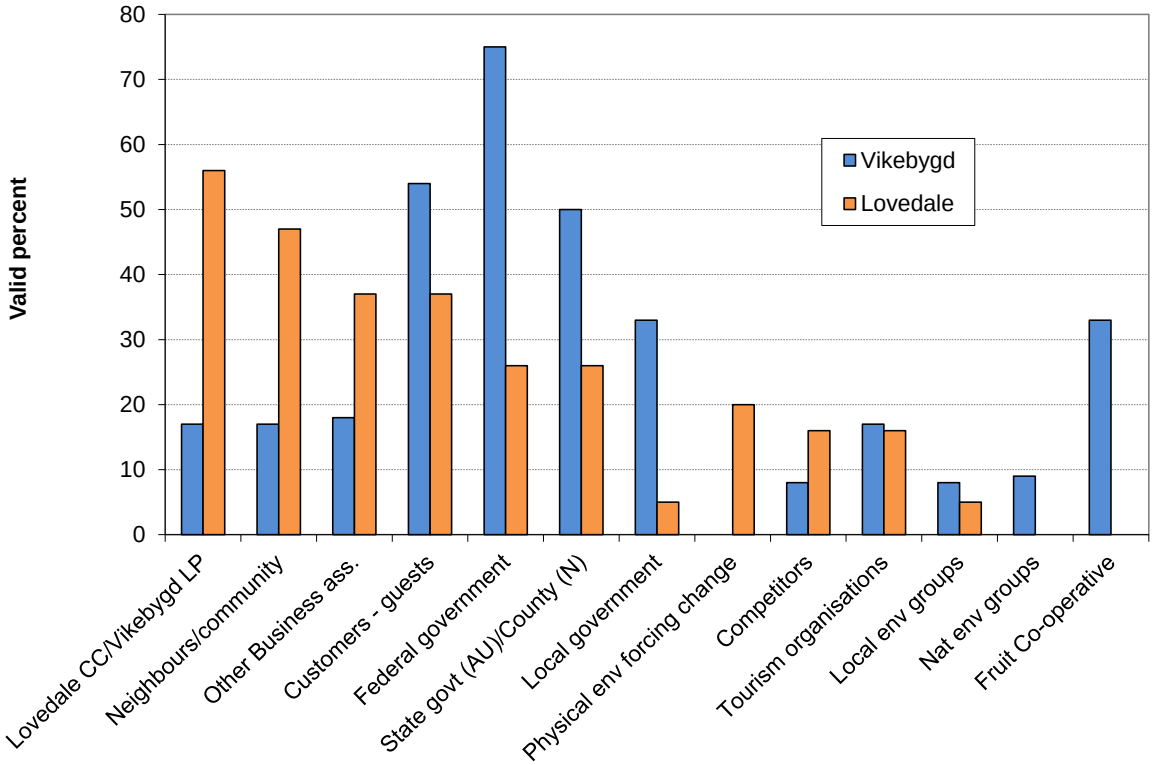
There seems thus to be no difference between small businesses from the two micro-clusters in internal pressure to pursue environmental action. While a major difference in internal pressures appears between small and large businesses in both countries.

7.5.2 DIFFERENCES IN EXTERNAL PRESSURES FOR ENVIRONMENTAL ACTION

There were no statistically significant difference (Chi Square, P-value = 0.341) between the two micro-clusters with regards to the percentage of the businesses feeling external pressure to pursue environmental action. In Vikebygd 68% (14 respondents), while in Lovedale 55% (17 respondents) identified external pressures to undertake environmental action. Yet, as is shown in Figure 7.8 below there are substantial statistically significant differences between micro-clusters with regard to the pressure felt from Federal Government (Chi Square P value = 0.008, Local Government) (Chi Square test P value = 0.038), and Buyers/Fruit Co-operatives) (Exact test P value = 0.02). See Table 9.3 in Appendix 9 for overview of statistical test results.

The differences exhibited in external pressure in Figure 7-9 comply with the differences in environmental policy implemented in the two countries. This result is as expected for a coordinated market economy like Norway (Beugelsdijk & Schaik, 2005; Koen, 2005) where the state has an active role in reforming society towards improved environmental behaviour (Østerud & Selle, 2006). As exhibited, Vikebygd businesses are feeling external pressure from a strong and coordinated involvement by all levels of government which encompasses even the small fruit farms in Hardanger. The opposite is exhibited among the Lovedale businesses, where little pressure is felt from any level of government, reflecting a more market based environmental policy (Dibden, et al., 2009). Instead, Lovedale's own chamber of commerce, other business associations and the local community are perceived to be providing external pressure. This indicates that, in Vikebygd, regulative institutions (Scott, 2008) are perceived as providing a strong pressure on farmers, while, in Lovedale, normative pressure from community and business associations are important for environmental behaviour. Another factor that may be the reason for the lack of regulatory pressure in Lovedale is that the fact that more than half the Lovedale respondents are tourism operators, which generally has less industry involvement, control and regulation than the agricultural sector. Regulatory measures for accommodation providers would primarily be more concerned about OH&S issues and less about environmental action.

Figure 7-9 External pressures to pursue environmental action



The other significant finding is the role of the local fuit co-operative, in providing considerable external pressure for environmental action among Vikebygd farmers. This confirms that mainstreaming of environmental considerations have been implemented also by the agricultural sectors own membership organisations (Dryzek, et al., 2002). Opposed to this is the lack of collective grape purchasing organisations in Lovedale, where grapes are sold and bought on an individual basis. Particularly in a period of wine glut, it is a buyer's market, often with unsustainable prices and leaving little incentive for producers to conform to more laborious environmental behaviour. Environmental improvements will thus be based on individual values and undertaken voluntarily, pressured by local normative pressure.

Somewhat surprising in both micro-clusters, around half of the respondents felt that customers and guests provided external pressure to pursue environmental action. In Vikebygd, this pressure is expressed through the ever stricter quality control performed by the Fruit Co-operative, in accordance with retailer's quality assurance conditions and the domestic market demand. In Lovedale this is primarily experienced through demands from tourists visiting accommodation providers. While consumer pressure is not directly experienced in Vikebygd, it is indirectly felt through environmental conditions set in agreements between the fruit co-operative and retailers.

7.5.3 DIFFERENCES IN DRIVERS FOR ENVIRONMENTAL ACTION

Figure 7-10 depicting drivers for environmental action exhibits similar findings as differences recorded for external and internal pressures above. Statistically significant differences between the micro-clusters were found in relation to "Environmental conditions linked to grants" (Exact test, P value = 0.019), "Attractiveness to employees" (Exact test, P value = 0.015), "Government regulation" (Chi Square P value = 0.00) and "The right thing to do" (Chi Square P value = 0.002). While no respondent in Lovedale mentioned demand from buyers of produce as a driver for environmental action, "Demand from the Fruit Co-operative" was an important driver in Vikebygd.

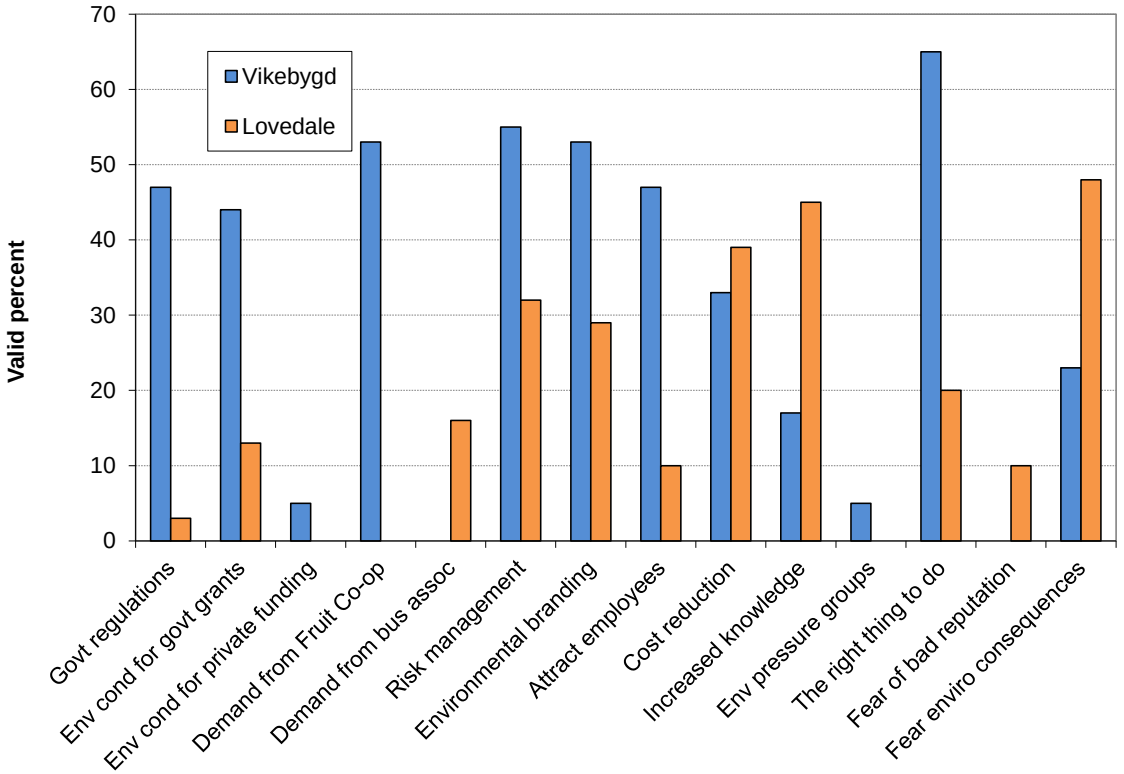
Interestingly, the two drivers that receive the highest score are both linked to individual values or knowledge. In Vikebygd (65%) state that "The right thing to do" is a driver for environmental action, which would indicate that environmental action is the socially and culturally appropriate behaviour. It could thus be determined as both a social normative and cultural cognitive institution, where environmental action is a social obligation and taken for granted based on common beliefs (Scott, 2008). Environmental improvements in agriculture has thus become "Good agronomy" and mainstreamed into what farmers do (Vedeld, et al., 2003). Vatn (2009) talks about a co-operative rationality where doing the right thing is a strong driver for pursuing voluntary action benefiting the community as a whole. In contrast, in Lovedale, "Fear of Environmental Consequences" and "Increased knowledge" were the largest drivers. These could be classified as being based on a more individual rationality (Vatn, 2009), where increased knowledge and, to a lesser extent, morals drive environmental action reflecting different mental models of understanding environmental issues (de Vries & Petersen, 2009). These differences could also be explained using a cultural values theory where, in Scandinavian cultures, there are higher scores for societal collectivism than for Anglo-Saxon cultures such as Australia (Gelfand, Bhawuk, Nishii, & Bechtold, 2004; House, et al., 2004; Waldman, et al., 2006).

Significant differences between the two micro-clusters were also found in relation to the presence of regulatory institutions driving environmental action in Vikebygd (government regulations and environmental conditions linked to grants and demand from fruit co-operatives to comply with labelling quality standards). While cost-reduction would drive environmental action in Lovedale (see Table 9.3 in Appendix 9 for tests of association).

Interestingly, environmental branding and creating an attractive workplace for employees receive a higher response rate in Vikebygd than in Lovedale, indicating that business concerns, such as environmental branding of business and attracting staff are more prominent in Vikebygd businesses

and community service providers. This complies with the finding that culturally cognitive institutions drive environmental action related to workplaces more strongly in Vikebygd than in Lovedale. More surprising was that environmental branding was a stronger driver in Vikebygd than in Lovedale, which would indicate that environmental action is percieved as a competitive advantage for the area.

Figure 7-10 Drivers for environmental action in Vikebygd and Lovedale

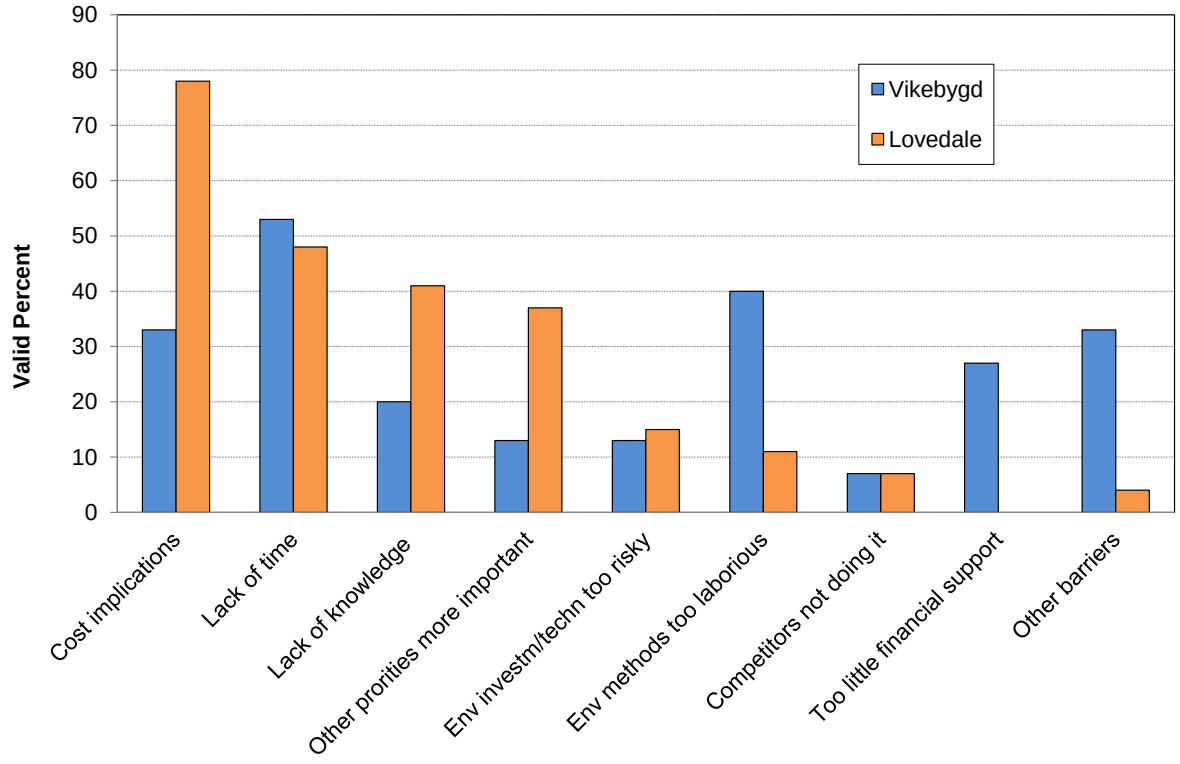


7.6 COMPARING BARRIERS FOR ENVIRONMENTAL ACTION

The two micro-clusters mostly have similar perceptions of barriers for environmental action (see Figure 7-11 below). Yet, for "Cost implications", there was a statistically significant difference (Chi Square test, P-value = 0.0084). While only 5 respondents (28%) of the Vikebygd questionnaire reported cost implications as a barrier, 24 respondents (78%) in Lovedale reported this to be the main barrier. This is not surprising as, in the current wine glut, economic sustainability is the biggest issue. In addition to cost implications, Lovedale respondents also pointed to "Lack of knowledge" and "Other priorities being more important". As many of the Lovedale residents are recent arrivals, direct investments to improve the business would be seen as a priority rather than an environmental action which may more naturally come as incremental improvements. "Lack of knowledge" may be due to many of the Lovedale businesses being tourism operators where environmental issues are less

emphasised by industry. This is similar to findings by Collins (2009) for small businesses in New Zealand.

Figure 7-11 Barriers for environmental action in Vikebygd and Lovedale



Cost implications, were not considered to be the largest barrier in Vikebygd, on the other hand, 9 respondents (4 %) mentioned “Lack of financial support” in the open question, suggesting that environmental action should be supported by government funds or subsidies. This reflects that Vikebygd farmers expect to be compensated by public resources for environmental behaviour. This option is not mentioned by any of the Lovedale respondents.

In Vikebygd, three other factors were considered barriers, namely lack of time, environmental technologies being too risky and there being no suitable technology. Two respondents in Vikebygd explained that the lack of time is because business owners have many types of income, farming being only one of them. These findings must be seen in relation to the type of environmental action that is most demanded in Vikebygd, reducing bush encroachment, use of pesticides and going organic. All of which may be more labour intensive while not providing direct profits. Reducing pesticides or going organic means introducing more knowledge and labour intensive integrated pest management techniques, which may be more risky.

7.7 COMPARING VALUE-ADDING AND COMPETITIVE ADVANTAGE OF ENVIRONMENTAL ACTION

The framework suggested by Hart (1995) (discussed in Section 2.3.2 in Chapter 2) is used to analyse how the value-adding of environmental action and strategy affects the firm and the micro-cluster in Lovedale and Vikebygd. According to this model, there are three levels of competitive advantage based on environmental strategy and action: 1) pollution prevention involving action that improves resources management and thereby reduces costs and increases profitability; 2) product stewardship which seeks to pre-empt competitors through gaining exclusive access or establishing environmental barriers through minimising life-cycle costs of products, and mostly involves the pursuit of environmental standards, certifications and third-party audited labeling; and 3) sustainable development which seeks to secure future position in the market through minimising environmental burdens and the sustainable use of natural resources to promote firm and micro-cluster social, environmental and economic development. Findings from both the questionnaires and interviews around drivers for environmental action, degree of environmental certification and branding and action performed in relation to the prevention of loss of biodiversity and the maintenance of the aesthetic of the landscape were used to analyse the perceived value-adding aspects of environmental action performed in the two micro-clusters.

7.7.1 DIFFERENCES IN THE VALUE-ADDING OF POLLUTION PREVENTION

As was shown in Sections 7.3 and 7.5, there were significant differences between the two micro-clusters in relation to reported environmental action pursued and drivers for environmental action.

In Lovedale, environmental action (water saving and waste recycling/sorting) was done out of necessity and the need for cost-cutting. Due to the lack of council services and as a result of being a high-end tourist destination (high-end tourists demand clean, serene surrounds) each wine tourism business had established structures and routines for water saving and waste recycling and management. In Lovedale, the lack of local council funds for waste collection services in low density areas lead to small businesses having to take on the costs for professional waste management. Energy efficiency was undertaken as a matter of good business practice, reducing costs while renewable energy (solar) was only installed if business obtained a rebate or it was a cost efficient solution when renewing hot water installations or if major up-scaling costs of grid was avoided. A summary account of value-adding benefits from pollution control at the firm and micro-cluster levels for Lovedale is depicted in Table 7-1 below.

Table 7-1 Value-adding potential from pollution prevention in Lovedale

Pollution prevention Lovedale	Environmental driver Minimise resource use	Key organisational process Continuous environmental improvement	Competitive advantage firm level	Competitive advantage micro-cluster level
Agriculture	Reduce emissions, fossil energy-use, effluents and waste. Reduce pesticides and fertiliser use Reduce water use.	Council regulation for winery waste and waste water for all. Viticulturalists and wine-makers promote latest input reduction strategies.	Reduced water use, pesticide and input use reduces costs. Renewable energy too expensive. Use of winery waste for soil improvement too costly/laborious for short term profitability.	Less developed more rustic feel due to lack of infrastructure and public services attracts tourists. Availability of water through PID is asset in area. Potential for cost-saving if instalment of renewable energy (solar power) can reduce up-scaling costs of electricity grid.
Tourism	Reduce energy-use, minimise waste, reduce transport.	Renewable energy, waste recycled and sorted, keep tourists in area for longer.	Energy-efficiency measures = cost cutting.	

In Lovedale, interviews revealed that business owners would examine the business case for environmental investments carefully. Thus, investing in environmental technology that had a longer repayment period than 2 years would not be acceptable. This calculation would be more pronounced among larger businesses than smaller businesses, where owners would be more driven by values.

In Vikebygd, waste recycling and sorting is a mandatory requirement of the council, which has a state of the art waste management system for every business and household. The public waste collection system implemented in a low density area such as Vikebygd thereby reduces costs for each individual business. Environmental investments made in the public sector make it less costly to pursue pollution prevention measures for a business. In Vikebygd, energy efficiency measures are promoted through a national rebate system for the insulation of houses and replacement of old fuel inefficient stoves. All household electricity provided is hydro-power, and additional clean energy is provided to the grid through new mini-hydro-power plants. A summary account of value-adding benefits pollution control at the firm level and micro-cluster level for Vikebygd is depicted in Table 7.2 below.

Table 7-2 Value-adding potential from pollution prevention in Vikebygd

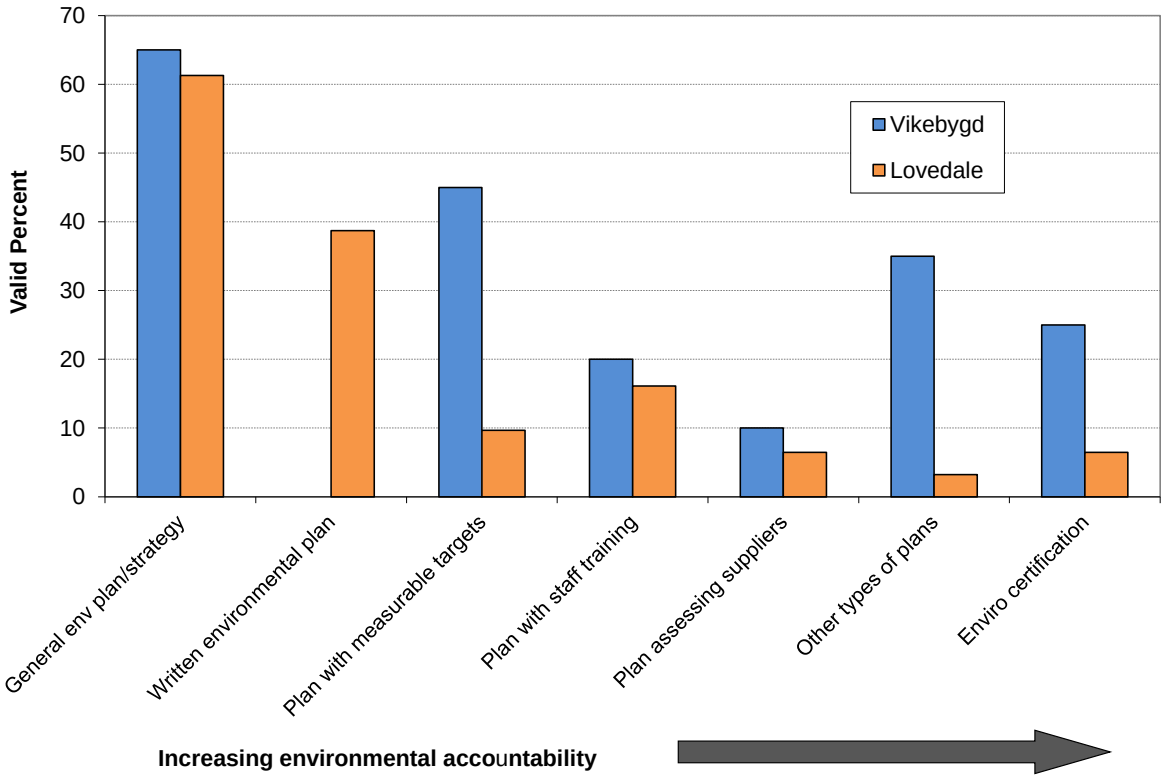
Pollution prevention Vikebygd	Environmental driver. Minimise resource use	Key organisational process. Continuous Environmental improvement	Competitive advantage firm level	Competitive advantage micro-cluster level
Agriculture	Reduce emissions, fossil energy-use, effluents and waste. Reduce pesticides and fertiliser use.	Environmental conditions attached to subsidies and price of fruit. Environmental management plan for all farms. Supported by extension services, the fruit co-operative and research.	Quality of fruit is linked with minimum pesticide and fertiliser use. Increased profitability due to higher prices for improved quality for fruit.	Improved fruit quality for industry. Improves reputation and fruit Co-op can negotiate better price from retailers. Reduced pesticides use improves image vis-à-vis tourists. Water in landscape is clean and drinkable. Excellent waste management system in place. Hydropower electricity us used and produced locally.
Tourism	Reduce energy-use, minimise waste, reduce transport.	Renewable energy, waste recycled and sorted, public transport, keep tourists in area for longer.	All energy is hydropower in Vikebygd. Costs of waste management taken by the public sector. Rebates available for improved insulation of houses and fuel efficient ovens.	

In both micro-clusters, agricultural advisors (in Lovedale these would be consultant viticulturalists, in Vikebygd these would be public extension services) were involved in reducing pesticide and fertiliser use for cost-cutting, quality and environmental reasons. Yet, there were statistically significant differences between the degree of environmental management planning and implementation between the two areas. Differences in environmental plans and certifications can be seen in Figure 7-12 below, while environmental plans will be discussed under pollution prevention. Environmental certification which required third party auditing will be dealt with under the next section. (See Table 15.4 in Appendix 15 for results from tests of association). No significant difference was found with respect to the businesses having a general idea or strategy for environmental improvement. This would indicate that voluntary environmental planning and the level of awareness of environmental issues is quite high among business owners in both areas.

A significant difference appeared when asked if the businesses had environmental plans in writing and whether it had measurable targets. While, in Lovedale, 40% of business had an environmental plan in writing, all of the 43% (9 respondents) with environmental plans in Vikebygd also included measurable targets, a so-called “Farmers Environmental Plan” (Bondens Miljøplan). While not being classified as an environmental certification, they form part of a national environmental assurance scheme, are a requirement for obtaining subsidies and include plans for the use of pesticides and

fertilizers. These plans are sent electronically to the fruit co-operative which ensures that farmers only can buy the amount of pesticides needed for the acreage involved. The fact that not all businesses in Vikebygd have environmental plans, could be due to farms being too small (less than 2.5 hectares) to receive subsidies, but could also be because other types of businesses in services industries would not have the same requirements. Only 10% (3 respondents) of businesses in Lovedale stated that they had a plan with measurable targets, yet these will not be implemented as part of a national scheme or acted upon by suppliers. There were no significant differences between cases with regards to environmental plans involving staff training or supplier assessments.

Figure 7-12 Differences in environmental plans and certification in Lovedale and Vikebygd



A significant difference was recorded between cases for businesses having additional types of environmental plans. In Vikebygd, 38% (8 respondents) had other types of environmental plans, such as Quality and Environmental Assurance plans for agriculture (KSL i landbruket), Cultural Landscape Management Plans and Environmental Accreditation of Services Buildings (Miljøfyrtårn). For Lovedale, only 6% (2 respondents) of businesses had other types of plans, including Energy Audits and Land Management Plans.

The above findings indicate that the management of inputs, and thereby pollution control, in Norway is much more mandatory and is monitored both by public authorities and through subsidies.

Differences in the value-adding potential of pollution prevention between the two micro-clusters reveal some interesting differences; Firstly, the involvement of the public sector in continuous environmental improvement at a business level. In Vikebygd environmental management plans are mandatory both for obtaining subsidies and for the purchase of pesticides through supply co-operative. In Lovedale this is purely based on individual initiative, best practice and owners' values. The second difference is the degree of public involvement in agricultural extension. In both areas, businesses are actively reducing their input use in agricultural production, however, in Lovedale this is based on expert advice from a private viticulture consultants and implemented by employed farm managers, whereas, in Vikebygd, it is implemented by the farmers through the government supported and membership based extension and farm trials services as well as through the fruit co-operative. This reflects again the differences between a liberal market economy where service delivery is based on market mechanisms, and a coordinated market economy where the public sector is actively involved in environmental reform partly through the provision of agricultural services (Beugelsdijk & Schaik, 2005; Dryzek, et al., 2002). The third difference is the lack of funds at the council level in Lovedale and Vikebygd which contributes to a vastly different level of basic environmental infrastructure (waste collection and recycling) as well as the mainstreaming of environmental investment even in quite remote rural councils in Norway (Ullensvang). While Lovedale is located in one of Australia's largest tourist destinations and is and has possessed the considerable presence of extractive industries, yet little investment into local infrastructure has been established. This is somewhat in line with OECD-figures pointing to the low level of resources being delegated down to local council level in Australia as compared to Norway (OECD, 2011a, 2011b). This has implications for the value-adding of pollution control action for the firm and micro-cluster. While waste management costs have to be taken on by the individual businesses in Lovedale, this is a cost adopted by the public sector in Norway. Lastly, the level of tourism: In Lovedale, business owners have a stronger necessity to keep the area clean and serene due to the high end tourists that venture in the area. In Vikebygd, the low exposure to tourists has meant that there are waste and farm practices that impact on the aesthetics of the area.

7.7.2 DIFFERENCES IN THE VALUE-ADDING OF PRODUCT STEWARDSHIP

As described above, value-adding from product stewardship comes from securing exclusive access to niche markets or creating environmental barriers to other competitors through environmental certification and standardisation with third party auditing. When comparing the two micro-clusters with regards to environmental certification (see Figure 7.11 above), statistically significant differences were found (see Table 9.4 in Appendix 9). Among Vikebygd businesses, 38% (9 respondents) had

some kind of environmental certification, (Debio - organic certification, Global GAP ISO 14001 certification, Quality Assurance in Agriculture and Environmental Certification of Public Buildings (Miljøfyrtårn)), while only 7% (2 respondents) of Lovedale businesses had a type of environmental certification (Eco-tourism and Triple AAA Green Star rating).

In Vikebygd, both organic certification and Global GAP certification are supported by the local agricultural support services and the fruit co-operative is accredited to provide certification labels. There is an increasing demand for organic produce by both Norwegian consumers and retailers, which gives value-adding advantage for all farmers through increased per unit price. Global GAP certification, however, is not directly advantageous for the individual farmer as prices are lower than domestic prices, but, indirectly, Global GAP certification ensures that surplus fruit can be exported at an acceptable price benefitting the fruit co-operative. Through organic certification, domestic producers can pre-empt and position themselves against imported organic produce and further increase trust in Norwegian produce. Global GAP certification positions farmers and the co-operative to export produce. There is thus no difference between small and large fruit farming businesses in the value-adding of product stewardship environmental certification strategy.

Environmental management plans are not mandatory for Australian grape-growers, but are considered part of good farm practice, with the Australian Wine Business Federation suggesting that grape-growers subscribe to the ENTWINE environmental management system (Winemakers Federation of Australia, 2010) leading to ISO 14001 certification. For smaller growers, this system is deemed too administratively laborious and costly and has received little traction. None of the Lovedale vignerons reported that they use the ENTWINE or ISO 14001 certification, yet many stated they were making efforts to reduce the use of pesticides. Interviews with larger wineries revealed that many had quality assurance schemes to ensure the production of consistent wine quality which they stated was a prerequisite for the reputation of their brand, their best chance for winning international wine awards, and being able to take higher margins for their wine. Many envisaged that environmental certification would become a requirement for exporting to Europe and the USA in near future. As a wine-producing country, Australia has been surpassed by New Zealand, California, France, South Africa and Chile which now have mandatory environmental assurance schemes for all wine-producers. The value-adding for environmental planning and certification is thus a much more pressing issue for larger and exporting wineries and grape-growers than for small businesses which sell their wine locally through cellar-doors.

With regards to tourism businesses, environmental planning and certification was not prominent in either micro-cluster. However, interviews revealed that more value-adding was perceived to be

possible from pursuing environmental certification by larger accommodation providers due to both internal and external pressures to establish environmental credentials. One non-profit tourism business in Vikebygd was becoming certified according to the Eco-Lighthouse (Miljøfyrtårn) certification system, with value-adding based in cost reduction through improved environmental management and environmental branding. Similarly, one business in Lovedale was in the process of Eco and Climate Action Certification of Tourism. However, for smaller accommodation providers, added value was less evident with tourists less prone to selecting accommodation based on environmental credentials.

Geographic protection labels available in both Norway and to some extent in Australia, could provide value-adding based on environmental improvement by being based in local production. In Norway, all geographically protected labels also require strict environmental management systems and this can be classified as a type of product stewardship environmental strategy. In Australia, these are less prominent but emerging for wine, although more based in historical and single paddock wines.

The value-adding potential for the product stewardship, environmental certification and geographical protection strategies varies depending on the size and type of business, public and industry support and the type of market. The environmental certification of agricultural produce has larger value-adding potential if demanded by domestic consumers or required for exporting. In Norway, both the domestic and export markets demand environmental assurance schemes and organic produce. In Australia, only export oriented wineries are confronted with these requirements, and there is only a slow increase in demand for organic wines. Small tourism operators have little value-adding impetus for environmental certification as most tourists select accommodation based on price and comfort. For larger tourism providers, environmental certification adds value that secures corporate customers requiring environmental credentials. These differences are in line with Porter and Van den Linde (2000) stating that in order to gain green competitive advantage tougher environmental regulation will force all businesses to pursue environmental action more quickly through creating demand for environmentally friendly products. A summary account of value-adding for product stewardship environmental strategies for different types and sizes of businesses in Lovedale and Vikebygd is given in Table 7-3, Table 7-4, Table 7-5 and Table 7-6.

Table 7-3 Value-adding from product stewardship strategies for Lovedale tourism businesses

Size of business	Environmental plan/strategy	Environmental certification ISO 14001/Eco-Tourism/Green Globe	Geographic branding	Sustainable tourism destinations
Small to medium business	No added value apart from owners own awareness. Mandatory minimum requirement according to council.	Too costly, too much administration, uncoordinated efforts from authorities. No immediate value added.	Value-adding important for attracting guests and profits.	Value-adding if coupled with strong geographic branding.
Large business	Added value in improved environmental branding for important for corporate customers. Mandatory minimum requirement according to council.	Very important for value-adding, mandatory requirement by both owners and corporate customers. Improves public image and is verified by third party scrutiny.	Value-adding of geographic branding less important than company brand.	Value-adding may be important if coupled with strong geographic branding. Easier for large businesses as they already have environmental certification.

Table 7-4 Value-adding from product stewardship strategies for Lovedale wine businesses

Size of business	Environmental plan/ assurance scheme	Environmental certification	Organic certification	Geographic branding
Small/medium business, local sale	Voluntary and considered part of good management.	Too costly and administratively laborious. For domestic sale quality of wine more important.	Important for selling to niche markets. Added value only if quality is good.	Important for selling to niche markets and keeping tourists in the area.
Small/medium business. local and export sale	Voluntary and considered part of good management.	Often mandatory by retailers for export. For domestic sale quality of wine more important.	Important for selling to niche markets. Added value only if quality is good.	Important for selling to niche markets and keeping tourists in the area.
Large business, Local and Export sale	Voluntary and considered part of good management.	Often mandatory for export. For domestic consumption quality of wine more important. Large companies may have parallel lines of both carbon neutral and ordinary wines.	Important for selling to niche markets, and for company image. Big companies may have parallel lines of both organic and non organic wines.	Less important than company's own quality brand. However, single paddock wines are becoming more popular as parallel lines to winery brand wine.

Table 7-5 Value-adding from product stewardship strategies for Vikebygd tourism businesses

Size of business	Environmental plan/compliance	Environmental certification	Geographic branding	Sustainable tourist destinations
Small to medium business	Mandatory waste management through council services. Value-adding in relation to creating an environmental geographic brand.	Value-adding may be less prominent due to lack of market. Considered to be an administrative burden.	Very important for value-adding, attracting guests and profits. Especially the Hardanger brand is world-known.	Could become important and easy to achieve due to considerable environmental investment and infrastructure already in place.
Large business	Mandatory waste management through council services. Value-adding in relation to creating an environmental geographic brand.	Increasing pressurefrom government. Pressure from public sector customers that give priority to environmentally certified tourism providers. Government targets for Sustainable Tourism providers.	Important in conjunction with small businesses providing culture and heritage experiences/events. The Hardanger brand is world-known.	Could become important and easy to achieve due to considerable environmental investment and infrastructure already in place.

Table 7-6 Value-adding from product stewardship strategies for Vikebygd fruit-businesses

Size of business	Environmental assurance scheme	Environmental certification (ISO 14001/Global Gap)	Organic certification	Geographic branding
Small to medium fruit producer	Mandatory requirement for subsidies. Value-adding in the form of subsidies.	Mandatory for export, yet not value-adding as price is lower when exported.	Value-adding due to large demand. May be technologically risky, but better price.	No added value for geographically branded fruit.
Fruit Co-operative	Mandatory requirement for class 1 fruit as well as geographic protected labels.	Mandatory for export. Value-adding for fruit co-operative due to reduced losses of surplus.	Large value-adding potential due to demand from consumers and retailers and for export.	Not important for fruit sales, as retailers decide price and labelling. No added value.
Manufacturing business (juice/cider)	N/A	ISO 14001 certification may reduce costs.	Value adding for selling to niche markets. Potentially large.	Very important to obtain niche market prices and exclusive attributes.

7.7.3 DIFFERENCES IN THE VALUE-ADDING OF SUSTAINABLE DEVELOPMENT

Hart (1995) suggests a third environmental strategy which will provide long-term value-adding and competitive advantage, the sustainable development strategy. For this to occur, it is assumed that the firm operates so that it uses the natural environment and resources with limited environmental impact while at the same time ensuring firm growth and development. The firm thus does need to have a shared vision and environmental strategy not only for the firm but also with actors in the surrounding area. A micro-cluster pursuing environmental sustainability could be seen as pursuing value-adding based on sustainable development. In Tables 7.1 7.2, 7.3, 7.4, 7.5, and 7.6 a summary of the value-adding potentials of pollution control and product stewardship strategies are assessed in relation to the size and type of business and for the whole micro-cluster.

In Lovedale, the establishment of the ”Greening of Lovedale” project may develop increased awareness and impetus for the Lovedale businesses to develop a more sustainable destination, which will differentiate Lovedale from the other wine areas in Hunter Valley. The Greening of Lovedale process has also led to a different community spirit (social sustainability) with an aspirational goal of becoming a green leader in the region. While there is no support for these activities to individual businesses, the Lovedale Chamber of Commerce has received support to develop the Lovedale Green Business Directory containing information on how to become a more environmentally friendly tourism operator as well as a listing of dedicated green businesses following the assessment guidelines decided by the Lovedale Chamber of Commerce. This type of document would lead to increased awareness about what environmental action can add value and reduce environmental impact for the micro-cluster as a whole. The Greening of Lovedale process has also led to increased organisation and involvement in the Hunter Valley Protection Alliance to stop the exploration and extraction of coal seam gas in the Lower Hunter Valley.

While geographical protection of produce in Norway is linked to environmental quality assurance schemes, this is not the case for the geographical protection of Hunter Valley wines. There is therefore less potential for environmental value-adding in the area due to the geographical protection of Hunter Valley wines. On the other hand, for small wineries, geographical protection may be more important for economic sustainability due to sales being primarily locally through the cellardoor. For the larger Hunter Valley wineries, geographical protection seems less important as they will be more focused on producing consistent quality, and thereby blending grapes from a variety of regions. Yet this is changing, for with many of the larger wineries producing parallel lines of single paddocks wines, the French connotation of terroir seems also to enter Hunter Valley. And with a larger focus on

the wine producing ability of each paddock and specific older vines, maintaining long term sustainability in soil and vines becomes more important.

In Vikebygd the creation of the landscape park can be seen as an attempt to develop a common strategy for the sustainable use of natural resources and landscapes in a small area based on a self-identified community identity. While the main focus of the landscape park has been to create jobs and reduce depopulation, there is also a general focus on maintaining both the cultural landscape and the heritage buildings in the area. The landscape park has increased the focus on environmental issues in tourism ventures. A big impact of value-adding for environmental action is the production of renewable energy in mini-hydro-power plants. This is only a possibility for farms that have waterfall rights within their property and thus is gained through location, but in Vikebygd many such farm clusters have this opportunity. In the Hardanger region, several products have been geographically protected. While this can be seen as a product stewardship effort to create exclusive market access and pre-empt other products on the market, it can also be seen as protecting a region's natural resources due to the requirements of environmentally friendly production methods. The geographical protection of produce linked to a region of natural beauty is an additional way to attract tourists to the area, further achieving a potential for the value-adding of sustainable development in the region.

The degree to which environmental issues are used to promote the business or area give an indication as to whether the business sees this as a value-adding strategy. No statistically significant difference was found (Monte Carlo test, P value = 0.213) between the two areas. This indicates that, while the level of environmental planning, certification and third party control is higher in Vikebygd than in Lovedale, the use of environmental issues in marketing is at the same level. It would be fair to say that the environmental issues used for the marketing of Vikebygd are subject to a higher degree of public scrutiny and accountability as environmental action is a requirement for subsidies and more third party audited environmental certification. The lack of third party audited environmental action, while maintaining the environmental marketing of Lovedale, could be seen as an attempt at greenwashing (Jermier & Forbes, 2003); despite this, the levels of commitment and peer pressure to pursue environmental action were, according to the researcher's observations, high in Lovedale

Due to the mainstreaming of environmental infrastructure, even in the smallest rural council, value-adding of sustainable development is easier for Vikebygd than for Lovedale due to some of the costs for environmental action being carried by the public sector. In Lovedale, the costs of environmental action are carried fully by the individual business due to the lack of council infrastructure. While Lovedale sees their process of greening as developing a competitive advantage due to the area being

less developed, there are fewer opportunities for the firm to gain a competitive advantage through the lack of demand for environmentally certified products and tourism services.

In Vikebygd, there are more competitive advantages for the farm to pursue sustainability measures due to the demand for certified fruit and products. Many environmental improvements have been introduced as mandatory, which give limited competitive advantage to the firm as "everybody is doing it". Lastly, the environmental infrastructure (waste recycling and collection, hydropower electricity) put in place by public authorities, even in such remote areas as Vikebygd, is a competitive advantage for the region and the micro-cluster and may lead to a positive image reputation with tourists.

7.8 COMPARING ENVIRONMENTAL KNOWLEDGE AND NETWORKS

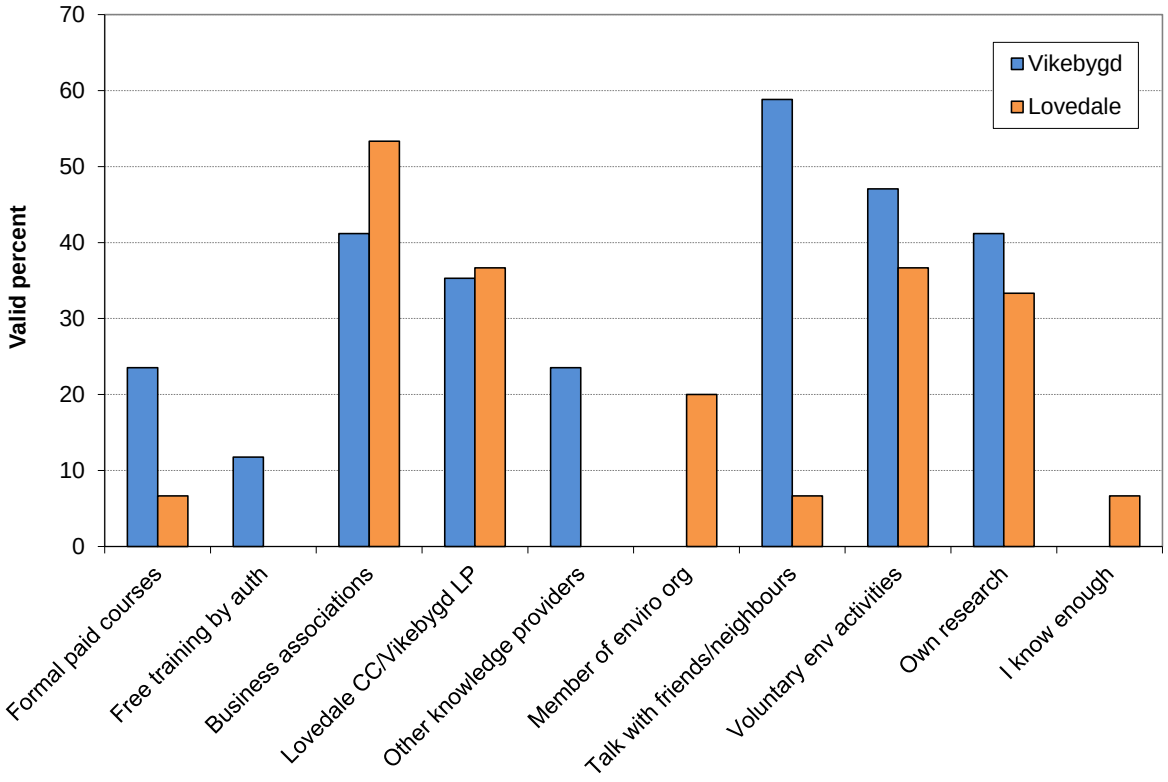
7.8.1 DIFFERENCES IN SOURCES OF ENVIRONMENTAL KNOWLEDGE

There were no substantial differences between the micro-clusters with regards to what were the major sources of environmental knowledge. In both micro-clusters, local business associations and the micro-cluster organization, as well as own research and environmental organisation were the most important sources of environmental knowledge, as can be seen in Figure 7-13. Statistically significant differences were recorded between micro-clusters with regards to the availability of other knowledge providers (Exact Test, P-value 0.017) and the degree of environmental knowledge being provided through discussion with friends and neighbours (Chi Square, P value 0.00) (See Table 9.4 in Appendix 9 for tests of association).

Figure 7-13points to the importance of local and community based organisations as sources of knowledge on environmental issues; however, the availability of local organisations active in environmental knowledge provision was substantially different and an indication of the nature of the communities of the two micro-clusters. While Vikebygd is a self-sufficient rural agricultural community that has existed for centuries, Lovedale was only established around 25 years ago as a business community. While only one additional business association was named in Lovedale, the Lovedale Vignerons Association, in Vikebygd, eight other agricultural services, business or industry organisations were mentioned. That these are all considered important environmental knowledge providers indicates that environmental issues are mainstreamed into industry organisations and accepted as a part of their responsibility. It must be noted that environmental improvements are also undertaken due to both social normative institutions, indicating that it is a social obligation to pursue

environmental improvements and cultural cognitive institutions that take environmental improvements for granted (Scott, 2008).

Figure 7-13 Sources of environmental knowledge in Lovedale and Vikebygd



There are less industry organisations identified under other environmental knowledge providers by the Lovedale respondents as they are less embedded in the community structure. Substantial environmental knowledge is provided by the consultant viticulturalists and winemakers directly to farm-managers, and, thus, not necessarily conveyed to the owners of the business. The vast prevalence of agricultural organisations and associations in Norway can also be seen as a result of a path dependent process where different types of farming interests have been organised and continue partly through public support.

For businesses in accommodation and tourism the lack of the naming of tourism organisations or hospitality industry associations indicates that respondents do not obtain environmental information from these organisations, and are more reliant on the Lovedale Chamber of Commerce for this.

A statistically significant difference (Exact test, P-value = 0.00) was found in the degree of environmental knowledge provided through informal discussions with neighbours/friends in the community. While 20 respondents (59%) in Vikebygd stated that they used neighbours and friends as

sources of environmental information, only 2 respondents (7 %) in Lovedale used this informal source of knowledge.

In Vikebygd, environmental issues are more mainstream and acceptable to discuss "over the fence" in the significant number of of community and agricultural organizations that exist in the area where most people can meet and discuss practical solutions. In Lovedale, business owners are more self-reliant with regards to seeking information through own research due to their high level of education. This is in line with findings from the NSW Government (NSW Department of Environment Climate Change and Water, 2010) wherein university graduates were more likely to find reliable information about environmental issues from scientists and government agencies, while rural residents and retirees would rely more on information from friends and family, businesses and religious leaders. Sydney-siders were more likely to rely on environmental knowledge from government and environmental organisations, and less from business and local councils. Lovedale business owners' high reliance on business associations may be due to the Chamber of Commerce's greening process. That friends and neighbours are rated low probably reflects that this community is largely an urban and utilitarian community where businesses collaborate and compete and environmental knowledge is deemed more credible when it comes from business associations rather than neighbours.

7.8.2 Differences in Role of the Micro-cluster Organisations on Environmental Action

The differences in the role of the micro-cluster organisation with regards to environmental action can be linked to the differences in the type of community in which they are located, the organisation's importance and role in the local community and the existing web of organisations already involved in environmental action. While both the Lovedale Chamber of Commerce and the Vikebygd Landscape Park can be considered the only organisations that are concerned with promoting both agriculture and tourism businesses within the micro-cluster, the value-adding web they are part of is substantially different and, thus, their roles in environmental action are different.

The Lovedale businesses are located in a relatively recently formed community of family-based wine tourism businesses, the majority being tourism operators, and have emerged as a micro-cluster based on physical or spatial proximity (Atherton & Johnston, 2008) where co-location forms the basis of value-adding economies of scope and reduced transaction costs. In Lovedale, the micro-cluster organisation is the only business focussed organisation, with an additional focus on environmental issues. Lovedale Chamber of Commerce is, therefore, pivotal for environmental action in the micro-cluster, and may also act as an inspiration for the surrounding community. The impact of the Lovedale

Chamber of Commerce on environmental action is substantial through peer pressure and awareness-raising in particular when it comes to environmental improvements among the tourism providers

In Vikebygd businesses are primarily fruit farmers with added income from a variety of other sources; the farms have belonged to the families for centuries, and the micro-clusterhas emerged through transactional proximity (Atherton & Johnston, 2008) where intense trading and collaboration have developed trust and mutual interdependency, thereby reducing transaction costs. This was demonstrated when the fruit co-operatives were restructured. In Vikebygd, with its centuries' long history and web of community and business associations, the landscape park is the "youngest" organisation in the area. Its primary objective is to develop sustainable business and reduce depopulation in the area. Even though there is an underlying premise that the Vikebygd Landscape Park should pursue environmental sustainability, this seems not to be its primary objective. While there are many other and more embedded agricultural organisations that have stronger monitoring roles in environmental action, the landscape park mighthave produced results with regards to focusing on environmental improvements for tourism operators.

7.9 CONCLUSION

This research has sought to examine how contextual and institutional differences influences environmental behaviour in two agricultural based tourism micro-clusters. From Chapter 4, a review of contextual, institutional and path dependent/historical aspects of the two micro-clusters indicated that, at a national level, the main differences would be linked with the liberal market and export focused Australian agricultural/environmental policies, versus the coordinated market and domestic market focused Norwegian agricultural policies (Bjørkhaug & Richards, 2008; Noorderhaven & Koen, 2005). These differences are also linked to cultural values, where Australia rates high in individualism compared to the Nordic/Norwegians scoring high in societal collectivism (House, Javidan, Hanges, & Dorfmann, 2002). These institutional differences have implications for what type of agricultural and environmental policies have been implemented in the two respective countries: in Australia, environmental policies are primarily market based and voluntary (Wine Makers Federation of Australia, 2007), while the opposite is the case in Norway where there is a strong emphasis on regulatory institutions, linking high subsidies and strict produce quality labelling systems for mandatory environmental management (Landbruks og Matdepartementet, 2011). The two micro-clusters also have considerable differences in path dependent formation processes; Vikebygd is a self-sufficient community where farm succession is completely based on millennia old allodial inheritance

laws, and Lovedale is a cluster of small wine tourism businesses established as a separate destination around 25 years ago where vineyards are sold on the property market.

These substantial differences in path dependence, contextual factors, regulatory, social normative, and cultural cognitive institutions (Scott, 2008) would be expected to lead to differences in environmental behaviour, perceptions around sustainability, drivers and barriers for environmental action, as well as what and how the value-adding of environmental action is obtained. This chapter has compared findings from the two locations to assess how these differences manifest in environmental behaviour at micro-cluster level and how they affect environmental value-adding for the individual business and the micro-cluster.

Impact of micro-cluster characteristics on businesses' environmental behaviour

According to institutional theory, a micro-cluster can be defined as an organisational field, comprising businesses with their suppliers and buyers, consumers, regulatory agencies, and other lateral actors that may influence how the business is doing things (DiMaggio & Powell, 1983, 1991). Accordingly, the organisations that, in aggregate, constitute a part of a business's life will influence how a business "does things" and, for this study, how a business pursues environmental behaviour. In his work on tourism micro-clusters, Michael (2007a) emphasised the importance of not only the individual businesses and the network of horizontal, diagonal-complementary, vertical, and lateral actors, but also the involvement of the community and the successful development of a micro-cluster. Marquis and Battilana (2009) described how communities influence businesses behaviour through regulatory, social normative and cultural cognitive institutions. Granovetter (1973) and Uzzi (1996, 1999) looked at how strong or weak relationships, or ties between businesses in the business community can have an impact on business behaviour; while strong ties and long term loyalties are able to encourage high voluntary participation, this results in less innovation or risk-taking. In this study, it was assumed that the characteristics of the community in which the greening process and landscape park is embedded would influence the environmental behaviour of the businesses.

The Vikebygd apple tourism micro-cluster has few complementary/diagonal (tourism) actors, with the main focus being on horizontal actors (agricultural producers) (Michael, 2003) and can thus be classified as an emerging tourism micro-cluster. The centuries' old dependency on agricultural activity and community in the area has led to the presence of a wide range of lateral actors of support services and research, and community organisations which collectively provide strong normative pressure to pursue environmental initiatives that are mandatory through subsidies and labelling requirements. When new requirements are being demanded by authorities, it takes a process of

consensus-making in the agricultural sector before they becomes the norm, “good agronomy” and, collectively, “the right thing to do”.

All of this might not be necessary here as it has been stated before.In the Lovedale micro-cluster, the horizontal businesses (grape- and wine-producers) are a minority (15 wineries), with complementary tourism businesses (50-60) being the large majority. Sales are done locally and individually through cellardoors. There are few lateral actors, with the Lovedale Chamber of Commerce and the Lovedale Vignerons associations providing the strong coordinating forces of the micro-cluster and with most businesses recruiting viticulture, winemakers and farm managers to take care of practical issues on the farm. The greening process in Lovedale is an inspirational project, and, while informal and formal network provide arenas to discuss and motivate each other for further environmental action, business owners maintain a utilitarian view on what they want to pursue or not. Many are innovative and go far in becoming green, piloting new technology and willing to becoming environmentally certified.

The two micro-clusters, thus, seem to be examples of two extremes in relation to weak or strong ties according to Granovetter (1973), where Vikebygd leads to collective effort based on collective approval and consensus on new approaches, whereas, in Lovedale, innovation, including environmental innovation, is considered a competitive advantage and may be pursued by the more innovative and risk-taking individual business owners. While environmental action is promoted, it is an individual choice to pursue it. In both of the micro-clusters, environmental action and ways to pursue it is discussed in both formal and informal networks.

Impact of contextual and institutional differences on environmental concerns and actions

Surprising differences were observed between the two micro-clusters in their degree of concern for the environment. Only between 4% to 35% of Vikebygd respondents were quite or very concerned about the environment, climate change and loss of biodiversity, while, in Lovedale, between 67% and 88% were quite or very concerned, that is, more than twice that observed in Vikebygd. While the level of education and general awareness around environmental issues is considered quite high in both places, these findings may reflect contextual differences such as the degree and frequency of environmental crisis locally, the degree of authorities’ involvement and investment in environmental infrastructure and solutions, and the individual business owner’s ability to deal with the issues.

According to Downs (1972), visible environmental destruction may lead to increased environmental concern and action, but may also undermine faith in the current systems or institutions , leading to either increased local environmental action to counter the inactivity of governments or local inaction as a result of inability to deal with the issue.

Listhaug and Jakobsen (2008) studied environmental concern in the Norwegian population, finding that it was at its highest in the 80s and 1990s when major environmental crisis were observed and institutions were established to solve the issues. This is also the case for Vikebygd, where major environmental crises (pollution of the fjord, detection of high values of pesticides in fruit, water and soils, and a lack of waste collection services) were experienced in the 1980s and 1990s. These were followed by more than 30 years of public effort to reduce pollution from industry, agriculture and sewage through strict emission controls, investments in waste management and recycling services for all households, the implementation of integrated pest management techniques and management systems on all farms, and the introduction of subsidies for the maintenance of cultural landscape and prevention of loss of biodiversity. In Vikebygd, there is an attitude that environmental issues in agriculture have been and are stillbeing dealt with satisfactorily through the regulatory control mechanisms linked with subsidies and food labelling. Climate change, however, seems not to be an issue which is perceived to be possible to deal with locally in a rural environment, as is also documented by Norgaard (2011). While all electricity is hydropowered and farmers use biofuels for heating, options for further reductions in greenhouse gases would be to reduce transport or consumption. However, public transport is limited due to the low density of the population and most farmers are frugal and use money to invest in the farm rather than for consumption. In addition, groups of farms are involved in profitable mini hydropower stations.

Australia and the Hunter Valley have seen an increased frequency in extreme weather patterns with bush fires, floods, frost, and droughts that all have had direct and adverse effects on both the grape growing and tourism industries. The Hunter Valley wine industry is already adapting to changing weather patterns. Lovedale is located next to large open cut coal mines and coal fired power stations located in the Hunter Valley. And while environmental issues are worsening there is, at the same time, a relentless expansion of the extractive industries, including exploration for coal seam gas in the Lovedale area. This has not only led to concerns with regards to water and air quality, but also about CO2 emissions and climate change. While extractive industries have been part of the backbone of the economy in the Hunter Valley, council investment in rural infrastructure is hampered by lack of resources. Many Lovedale businesses have dirt roads and are not being provided with council waste collection or public water and sewage, making necessities of water saving and the sorting and recycling of waste. This situation has created both an awareness of environmental issues and a radicalisation of the Lovedale business owners, who now are actively involved in movements to stop coal seam gas expansion and have an increased distrust in the NSW State Government (Hunter Valley Protection Alliance and Hunter Valley Wine Industry Association, 2012); there is alsoincreased social tension within the community (Kelly, 2012a). Unlike the situation in Vikebygd, the individual

business owner has many options for reducing environmental impact of their business. Since all grid electricity is coal-fired, any effort to reduce energy use or switch to renewable energy will have a positive impact; a majority of business owners, therefore, have pursued energy efficiency measures and installed or bought renewable energy.

Impact of differences in pressures, drivers and barriers on environmental behaviour

Business environmental behaviour is a result of internal and external pressures, as well as motivational drivers and barrier. According to Scott (2008) organisational behaviour is guided by regulatory, social normative and cultural cognitive institutions, and is also expected to influence business environmental behaviour.

In both micro-clusters, the largest internal pressures were own values/beliefs and increased knowledge, which is typical for small business owners, as confirmed by a longitudinal study among small business in New Zealand (Collins, et al., 2009). Through interviews with larger wine tourism businesses in the area, it was revealed that internal pressures to pursue environmental improvements were felt from owners, shareholders and through company environmental branding policies.

Substantial differences were observed between micro-clusters with regards to external pressure to pursue environmental action, and are seen partly as a result of differences in involvement by the public sector in environmental reform and incentives, and partly the difference in business focus. In a coordinated market economy like Norway (Beugelsdijk & Schaik, 2005; Koen, 2005) where the state has an active role in societal reform, including environmental reform (Østerud & Selle, 2006), and where the cultural values model indicates that societal collectivism is high (House, et al., 2004). Vikebygd businesses identified external pressure to pursue environmental improvements in fruitfarming from all levels of government, with mandatory environmental requirements linked with subsidies and food quality labels. As all farms above 2.5 hectares are eligible for subsidies, environmental management systems are thus implemented as mandatory and in an egalitarian manner. In Lovedale, little pressure is felt from any level of government, reflecting a more market based environmental policy (Dibden, et al., 2009). Instead, Lovedale's own chamber of commerce, other business associations and the local community are perceived to provide external pressure. This indicates that, in Vikebygd, regulative institutions (Scott, 2008) place strong pressure on farmers, while, in Lovedale, social normative pressure from community and business associations are important for environmental behaviour. The lack of regulatory pressure in Lovedale may also be due to the majority of Lovedale respondents being tourism operators, which, in general, has more regulation than the agricultural sector. While there are some rebate schemes for energy efficiency for

small businesses, these are often time and size restricted on a first come basis. A similar pattern was observed for drivers that provide motivatation for environmental action.

Interestingly, in both Vikebygd and Lovedale, the drivers that received the highest scores were linked to individual values and knowledge. In Vikebygd, environmental action was considered the "Right thing to do" among most business owners, reflecting that this is considered a social obligation and part of what is considered "good agronomy" (Vedeld, et al., 2003) benefitting the whole community and industry. In Lovedale, the highest scores were "Fear of environmental consequences" and "Increased knowledge" and these reflect a more individual rationality (Vatn, 2009) as being important for environmental behaviour.

There were also differences between micro-clusters in the importance of drivers felt from industry associations and buyers and suppliers. The dominant role of the fruit (and agricultural supply) co-operatives in monitoring and controlling pesticide and input use and purchases, testing for pesticides residues in fruit and supporting environmental certification procedures makes them a focal point for environmental improvement in Vikebygd.

Interviews with larger businesses revealed that drivers are the company's own quality and environmental policies, owners and investors, as well as corporate customers requiring environmental credentials before booking. Among exporting wine businesses, global retailers, competitors and importing countries' regulations increasingly demand environmental credentials or certifications.

The main barriers both in Vikebyd and Lovedale were related to costs, time and knowledge, which is similar to responses received in other small business surveys (Collins, et al., 2009). However, while costs were the main barrier in Lovedale, the largest barrier in Vikebygd was the lack of financial assistance, that is, an expectation of the farmers that environmental action is a societal responsibility and therefore needs compensation, which they are not receiving. This may be due to the fact that one of the major environmental activities is the maintenance of the cultural landscape, which has little agronomical importance for their farming practices, and is therefore considered a societal task which reduces loss of biodiversity and enhances the aesthetic of the area.

Impact of differences in environmental value-adding

Michael (2008) states that successful micro-clusters depend on community involvement and that value-adding clustering benefits not only the individual business, but also the micro-cluster and the community. Hart (1995) proposes three strategies where environmental action could lead to value-adding and competitive advantages for the firm and, potentially, the micro-cluster: pollution reduction

that would reduce costs and save inputs, product stewardship that would secure exclusive access to specific markets or customers, and a sustainable development aimed at longterm sustainable use for the firms and surrounding natural resources to position the firm or the micro-cluster for future operations.

Value-adding from pollution reduction strategies in the two micro-clusters exhibited differences due to differences in public service delivery and regulation. In Lovedale, a strong individual focus was on recycling waste and saving water due to the lack of public services and thereby saving expenses from private service delivery. For the tourism providers, energy efficiencies were considered to be good business practice, such as reducing both CO2 emissions from the coal fired electricity generators and costs and thus leading to value-adding. The increased use of renewable energy was only considered value-adding if it was done in conjunction with the renewal of technical equipment, such as solar hot water and solar powered signs. Instalments of solar energy generation were considered value-adding if it also received a rebate, if it reduced grid connection costs (saved transformator upgrade costs) and if it was undertaken for new development (not retrofitting). In the area of grape and wine businesses, reduced inputs are partly out of necessity due to the current wine glut. However, input use is strictly dependent on how to obtain the best quality grapes for producing best quality wine, and, as such, is less of an environmental value-adding proposition. An environmental assurance scheme for grape growing, Entwine, is recommended by the wine industry, but not mandatory. A major value-adding cluster asset, benefitting both large and small wine tourism providers, is the Private Irrigation District, which was established as a community project for Lower Hunter water users on a private membership basis (Hunter Wine Country Private Irrigation District, 2000). It functions as an insurance against water scarcity, with water quotas linked to the size of the property and not the owner so as to avoid water speculation. Competitive advantage at the cluster level of pollution reduction could be the instalment of solar power for most business owners, which will reduce grid upgrade costs and could attract tourists to solar powered destinations.

In Vikebygd, public services provide mandatory waste collection and the recycling and sorting of waste and, therefore, does not provide environmental value-adding for the individual business. All electricity is hydropower generated, yet further reducing power consumption adds value in the form of cost reduction. This is pursued by several businesses through the instalment of heat pumps or insulation.

In the agricultural sector, the regulation and monitoring of input use through the compulsory farm management plans links produce quality directly to appropriate input use. This has implications for the individual fruit farmer as, in order to obtain the best price and quality assurance labels for fruit a

specific input level and care of trees are required. In addition, the reputation of Hardanger fruit is at stake and will potentially suffer a detrimental long term economic impact if high pesticide levels are found in the fruit. The mandatory farm environmental management plans also function as a national environmental assurance scheme and have potential value-adding implications for the individual farmer due to cost reduction.

Product stewardship strategies in the form of environmental certification were not prominent in Lovedale. Value-adding based on environmental certification is not easily obtained by smaller domestic wine businesses, due to wine and grapes being more regulated by fashion trends and awards than environmental credentials. While Entwine may lead to ISO 14001certification for grapes and wine, this had not been pursued by Lovedale wineries due to the costs and administration it incurs. The environmental certification of tourism provision was not perceived as value-adding as few tourists were willing to pay more, especially if it reduced comfort and luxury. There was also a tendency for tourists wanting to have a "holiday" from environmental concerns. The potential for value-adding of product stewardship strategies was quite different for large wine and tourism businesses in Lovedale, who are under greater external and internal pressure to produce third party audited environmental credentials to build a global brand, and satisfy shareholder and corporate customer demands. Larger wineries are increasingly required by global retailers importing wines from Australia to pursue environmental certification and carbon labelling, as well as environmental assurance schemes.

Product stewardship strategies in the form of environmental certification (organic or Global GAP) and geographic protection were prominent features in Vikebygd that provide value-adding benefits for the farmer due to increased margins and export potential. It was also made easier through administrative and labelling support by the fruit co-operative and knowledge provision by the research station, extension services, organic certifiers, and other agricultural knowledge providers. In addition, maintaining high environmental standards could benefit the whole fruit-farming community through a good reputation and trust among Norwegian consumers. A geographic protection scheme has been developed in Norway (KSL Matmerk, 2010), with labels to protect the produce of both regions, traditional manufactured products and local specialities. In Hardanger fruit and manufactured products, apple juice and cider have been geographically protected, thus, improving the branding of the area as a tourist destination. All labels require that the produce be first class and that farms have the mandatory environmental management plans; they thus also function as environmental pollution and product stewardship strategies for the environment. While geographic protection was value-adding for manufactured products, there was no added benefit in the labelling of produce as the retailers emphasise their own brand instead of the origin of produce. There was no great awareness of

or interest in the environmental certification of tourism ventures due to few tourism providers being present in Vikebygd.

Hart's (1995) third environmental value-adding strategy was the sustainable development strategy which aims at securing and positioning the firm and the cluster for future growth through the development of a shared vision for securing the resources and landscapes for future agriculture and tourism businesses. Due to the considerable environmental investments already available in Vikebygd, together with a large web of environmental knowledge providers specifically in the agricultural sector, pursuing a process towards creating a sustainable destination would be more feasible in Vikebygd than in Lovedale where considerable investments have to be done on a voluntary and individual basis. Considering the lack of council infrastructure, the current low profitability in wine and the threat from the expansion of extractive industries, the prospects of value-adding through the creation of a sustainable destination may be more difficult to envisage.

The next chapter will review the academic and practical contribution of the research findings, discuss the limitations of the research design and suggest areas for future research.

CHAPTER 8 CONCLUSION

8.1 INTRODUCTION

This final chapter will first summarise the findings from the contextual, qualitative and quantitative studies from Chapters 4, 5, 6 and 7 in relation to the five research questions selected for the study.

It will then be followed by a summary of the three main areas of contributions that this study has provided to new knowledge. The first will deal with new knowledge derived from the findings. The second will deal with contributions with regards to methodological issues; in particular in the areas of comparative analysis, cluster analysis, the use of value-adding webs, and the usefulness of using mixed methods research in the study. Lastly, the study's more applied contributions with regards to policy and the implementation of environmental action in the two micro-cluster contexts will be presented. The last two sections present the limitations of the study and suggest areas for future research.

Solutions to global environmental issues such as climate change and loss of biodiversity are being negotiated through complex arrangements at global and national level, but mayhave little influence onthe environmental behaviour of small business communities. In spite of this, clusters of businesses and communities worldwide pursue voluntary and collective environmental action, indicating the need to understand more about the drivers, barriers and value-adding mechanisms. The study has sought to examine how contextual and institutional factors (regulatory, social normative and cultural cognitive) impact on environmental action and the potential for environmental value-adding for agricultural based tourism businesses and micro-clusters. The two cases from Australia and Norway ensured that these factors were examined under the polar extremes of a market liberal and market coordinated political systems, and therefore provide insights into the impact of different policies to promote environmental action.

8.2 SUMMARY CONCLUSIONS

The main conclusions of the findings on the five research questions adopted for this study are summarized below:

RQ1. How are sustainability and environmental sustainability defined in the two micro-clusters?

CHAPTER 8 CONCLUSION

This study examined perceptions of sustainability and of environmental sustainability in two different institutional and contextual settings. Different approaches to sustainability were examined in Chapter 2, Section 2, indicating that sustainability includes elements of environmental, social and economic considerations (Khalili, 2011), but also elements of intergenerational and wealth distributive aspects as exemplified in the definition, " development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations World Commision on Environment and Development (UNWCED), 1987). A division into pragmatic or radical sustainability approaches was found to be dependent on long term view, inter-generational perspectives, the degree of precautionary principles when introducing new technology and whether globalisation can be combined with sustainable development or needs to be contained, rather than pursuing a regionalised or localised sustainability strategy (Cocklin & Dibden, 2005; Dryzek, 1997; Gray & Lawrence, 2005). Thus, one of the underlying questions for this study was to examine if and how differences in contextual and institutional factors would impact on the business owners' own definitions of sustainability and environmental sustainability.

Substantial differences were found between the two micro-clusters in how business owners define sustainability and environmental sustainability (Sections 5.4 and 6.4).

In Lovedale, where properties are traded on the open real estate market and have a turnover of five to ten years, and the wine tourism business is seen as both an investment and a lifestyle change, there is a shorter term view of sustainability, with business owners expressing the view that environmental sustainability has to be balanced with economic sustainability. Yet, pursuing environmental sustainability is also considered a vital part of the lifestyle change that prompts the business owner to invest and move to Lovedale (Section 5.4)

In Vikebygd, where farms are and have been handed down through generations, there is strong social normative and cultural cognitive pressure (Scott, 2008) to keep the farm in the family and, thus, turnover of properties is virtually non-existent. There is also a general view that the natural resources which underpin and surround the micro-cluster are a resource that must be used and harvested by the current and future generations. Therefore, in Vikebygd, sustainability was first and foremost defined as an issue of social sustainability (reducing depopulation and promoting the young generation to return to the farm) as well as one of securing the continued sustainable use of the area's natural resources (Section 6.4).

In Vikebygd, where the long term agricultural view of sustainability comprises intergenerational considerations of leaving the farm in a better (economic and environmental) position for the next

generation, the focus on sustainable use of natural resources as well as a domestic, regional and local focus on production implies that there is a more radical sustainability approach in the area, as defined by Cocklin and Dibden (2005). In the Lovedale micro-cluster, most business owners would be classified as having a pragmatic sustainability approach as shown by the shorter term view of business duration, the globalised perspective of both tourism and wine sales, and the fact that investment in property is undertaken for short term business profitability purposes(Cocklin & Dibden, 2005). Even though these differences appear at the business owner's level, they are also driven by the differences in the two countries' government policies, environmental incentives and subsidies, as will be further examined under RQ 2 and RQ 3 below.

In both micro-clusters there are considerations other than economic that ensure these enterprises continue, as the agricultural activity alone may not be independently viable. It is the lifestyle and cultural cognitive choices that make these enterprises exist. These decisions are based on a willingness to pursue a lifestyle and, therefore, a belief in a different type of wellbeing derived from farming and sustainable living. In Lovedale, the domestic wine glut has resulted in a buyer's market and has led many small vineyards to produce grapes on economically unsustainable terms. However, many Lovedale business owners have invested in the vineyards as a lifestyle choice and will accept less profitability from the agricultural side of business and instead pursue tourism ventures or other paid employment to remain living in the area (Section 5.2.2). In Vikebygd, farmers receive substantial subsidies both for producing under such harsh climatic conditions and on small farms, as well as payment for undertaking societal tasks such as preserving the cultural landscape and undertaking environmental considerations. In addition, most Vikebygd farmers, even though feeling social normative pressure to inherit the farm, have substantial income from outside paid work as the small scale of the farms makes it possible to combine them with substantial outside work (Section 6.2.2.).

Within each cluster there were also differences in sustainability perceptions related to demography, type of business and whether the business owner had an inter-generational or short term view of the business (Section 7.4). Many of the Lovedale business owners had a typical urban environmental outlook (NSW Department of Environment Climate Change and Water, 2010), which was also reflected in their environmental concern and behaviour (Section 5.3). The old family wineries were seen to have a longer term view of the natural resources (soil, water and vines) on which they depended. This suggests that the perception of sustainability in relation to agriculture based tourism is more linked to the economic importance and long term horizon of the agricultural side of the business venture. On the other hand, if tourism is the main income-earner, environmental sustainability will be pursued on a more short term basis and be related to cost-benefit calculations (Section 7.4).

RQ2 - How do formal and informal institutions influence business-driven environmental actions?

The two selected micro-clusters are both pursuing business driven and collective environmental action through their respective greening process and the establishment of a landscape park (Dolsak & Ostrom, 2003; Ostrom, 2010a) where both have the goal of developing an environmental brand/destination. The rationale for pursuing environmental action was found to differ between the two depending on available environmental infrastructure, formal and informal institutions and perceived business benefits for the firm and the micro-cluster. For organisations/businesses and communities formal and informal institutions (North, 1990, 1991) can be divided into regulatory, social normative and cultural cognitive institutions (Scott, 2008), all influencing environmental behaviour as examined in the literature review in Section 2.3.5. A review of regulatory, social normative and cultural cognitive institutions inthe two micro-clusters is presented in Chapter 4.

The Australian agricultural sector has always been an export oriented and market driven industry, whereas the Norwegian agricultural sector, with only 3% arable land, produces only for the domestic market, and focusses on food safety, farmer welfare, environmental and social sustainability, and national self-sufficiency. Australia's market liberal/productivist stance provides only 4% subsidies, whereas Norway's multi-functional agriculture has subsidies at 61% of gross farm income, the highest subsidy levels of the OECD countries (OECD, 2010). This has implications for the implementation of environmental policies, which, in Australia, are based primarily on voluntary and market based instruments, while, in Norway, environmental action is mandatory, controlled and linked with subsidy payments or food quality labelling systems to a much larger degree.

There is also a larger provision of resources provided for all Norwegian councils for investing in environmental infrastructure than in Australia (OECD, 2011a, 2011b). In the tourism sector, there are substantial differences in government involvement, with minimal involvement from the Australian tourism organisations (Tourism Industry Council NSW, 2010), to strong promotion and national goals for eco-certification of tourism businesses in Norway (Nærings og Handelsdepartementet, 2007). Regulatory institutions influencing environmental action are therefore much stronger in Norway than in Australia, as is the degree of coordination of policies and implementation modes, as may be expected in a coordinated market economy such as the Norwegian (Beugelsdijk & Schaik, 2005; Koen, 2005).

At a business level, these policy differences also have implications for the existence of and how incentives are distributed. In Vikebygd, all farms above 2.5 hectares are eligible for a variety of direct

and indirect subsidies with clear environmental conditions attached and there are also rebate systems for energy efficiency measures available for all households. The implementation of energy efficiency measures in Australia is focused on eco-efficiency, cost benefit calculations and environmental investments which have a repayment period of less than two years, resulting in the incentives being targetted for larger businesses where more substantial environmental improvements can be made.

There were also differences with regards to cultural cognitive and social normative institutions influencing environmental action at the micro-cluster level. The Lovedale business owners may be described as a distinctly urban, developed in the last 25 years, individualistic and sophisticated with business focussed primarily on high-end tourism. The Vikebygd business owners may be described as distinctly rural, from a community developed over centuries and with primarily an agricultural production focus, yet with clear societal responsibilities as managers of Norway's natural and cultural identities (Bjørkhaug & Richards, 2008). These community differences, which can be described as having strong or weak social ties (Granovetter, 1973, 1985) or different degrees of embeddedness (Uzzi, 1997, 1999) influence the attitude to new environmental initiatives and technology and to the development of new tourism ventures.

While business communities with strong ties and cultural embeddedness lead to high voluntary participation and collective business and environmental efforts (such as the many membership-based agricultural organisations present in Vikebygd and adherence to agreed norms of low pesticide use) it may limit innovation due to low risk propensity and cultural pressures to conform. In Lovedale, with business owners less embedded in the local community, there is a higher degree of innovation, sophistication and customer focus than in Vikebygd, and with collective environmental action undertaken based more on utilitarian business interests.

The above contextual and institutional differences were confirmed in the survey findings; internal pressures to pursue environmental action in both micro-clusters can be described as social normative, that is, based on the business owners' "Own values and beliefs". This is expected as most businesses in both micro-clusters are small (either sole traders or family trusts), and, therefore, do not have shareholder, employees or business owners pressures to pursue environmental action. With regards to drivers, the was the appearance of differences in cultural cognitive pressures to pursue environmental action; in Vikebygd, 65% state that "The right thing to do" is a driver for environmental action, indicating that environmental action is socially and culturally appropriate behaviour based on common beliefs (Scott, 2008).

Environmental improvements in agriculture have thus become “Good agronomy” and mainstreamed into what farmers do (Vedeld, et al., 2003). Vatn (2009) talks about a co-operative rationality where doing the right thing is a strong driver for pursuing voluntary action benefiting the community as a whole. In Vikebygd, the communities have, for centuries, conformed to social pressure to pursue correct pesticide use and protect water quality (once approved by the community) in order to avoid bringing the whole apple industry into disrepute. In contrast, in Lovedale, “Fear of Environmental Consequences” and “Increased knowledge” were the largest drivers. These could be classified as being based on a more individual rationality (Vatn, 2009) where increased knowledge and, to a lesser extent, social norms drive environmental action. These differences could also be explained using cultural values theory, where, in Scandinavian cultures, there are higher scores for societal collectivism than for the more individualistic Anglo-Saxon cultures such as Australia (Gelfand, et al., 2004; House, et al., 2004; Waldman, et al., 2006).

As can be expected from the differences in formal and informal institutions described above, strong drivers for environmental action in Vikebygd were regulatory institutions linked with subsidies, grants or food quality labelling systems implemented by authorities and the local fruit co-operative. In Lovedale, there were minimal pressures observed from government authorities to pursue environmental action. On the other hand, the local community and business associations in Lovedale perform substantial social normative pressure on businesses to follow up the greening process.

RQ3 - How is business-driven environmental action supported by local and other stakeholders?

There are substantial differences in the presence of and support by local and other stakeholders to pursue environmental action (see Sections 5.8, 6.8 and 7.8). Environmental action is both a result of environmental infrastructure being provided by public authorities making practical environmentally sound solutions easy to undertake and also knowledge provision by local lateral actors.

There are large differences in the level of wealth and environmental infrastructure provided by local councils between Vikebygd and Lovedale. This is partly due to the general differences in the devolution of power and resources from the national to local government level (OECD, 2011a, 2011b). It is also due to Ullensvang being a wealthy LGA with few inhabitants and substantial direct income from hydropower generation, whereas the semi-urban council of Cessnock has the region’s lowest income distribution and experiences increasing investment pressures on service delivery due to urban sprawl. The council has few other income sources than land and waste collection rates, and is restricted with regards to increasing these due to the low income profile of the majority of its

residents. The Cessnock Council is largely considered by the Lovedale businesses as a barrier to environmental action rather than a promoter of it.

In both micro-clusters there are more knowledge-providers and actors in the agricultural sector than in the tourism sector. However, the type of actors that provide environmental knowledge is very different in the Australian market liberalist system compared to the Norwegian market's coordinated approach. In Lovedale, the most important member based knowledge providers in is the regional Hunter Valley Wine Industry Association and individual grape-growing knowledge is purchased from business consultants (viticulturalists, farm managers and winemakers). In Vikebygd, there are a plethora of membership based agricultural industry associations, farmers unions and, not least, the membership based fruit co-operatives which provide knowledge and also pressure to conform to standards of good quality and to securing a good reputation for produce from Hardanger. In addition, there are agricultural officers at council level that provide environmental advice and control in order to obtain subsidies. Agricultural and environmental advice on cultivation is obtained through membership in the local extension and farm trial services which are co-located with the regional fruit research station. The magnitude of the group of agricultural and environmental knowledge providers or lateral actors in Vikebygd is sizeable compared to the few efficient knowledge providers of the Lovedale grape growers.

There are generally less support and pressure from regional tourism organisations to pursue environmental action in both micro-clusters. However, at the national level in Norway, there is a distanct policy to develop Norway as a sustainable tourist destination, and this is followed by national targets for the environmental certification of tourism ventures (Innovasjon Norge, 2010). In Australian tourism strategy documents, environmental sustainability does not feature as an issue (Department of Resources Energy and Tourism, 2009). This can again be reflective of the more coordinated market approach in Norway, versus the market liberal approach implemented in Australia (Koen, 2005).

RQ4 - What are the drivers and barriers to environmental action in the two clusters?

The study found that there were substantial differences between the two micro-clusters with regards to drivers and barriers for environmental action. These were linked to differences in: the national environmental policy/regulatory system and market focus; the prevalence of lateral and vertical actors; and the visible occurrence of local environmental crises (see Sections 5.6, 5.7, 6.6, 6.7, 7.6, and 7.7). Social normative and cultural cognitive differences between the micro-clusters' approaches to environmental action have been discussed under RQ 2.

In Lovedale, public authorities were almost absent as drivers for environmental action among the small wine tourism businesses. Environmental authorities target larger businesses for environmental incentives and technology innovation in order to maximise environmental impact for the least amount of money; thus, most small businesses will fall outside environmental schemes introduced by authorities. On the other hand, interviews revealed that there were substantial drivers for improving environmental credentials for larger tourism or more export-oriented wine businesses linked to pressure from corporate customers, importing retailers and shareholders (Sections 5.6 and 5.7).

In the Norwegian coordinated market economy (Noorderhaven & Koen, 2005), where farmers produce solely for the domestic market, supported by a high level of subsidies in-built environmental conditions, the study clearly showed how the public sector is actively involved in society's and the agricultural industries' environmental reform (Østerud & Selle, 2006). In addition, the more coordinated and decentralised approach (Dryzek, et al., 2002; Tranvik & Selle, 2005) to environmental action in all councils resulted in respondents indicating that public authorities at local, county and national level are considered prominent drivers for environmental action for all sizes of farms (Sections 6.6 and 6.7).

The prevalence of actors involved in environmental sustainability is substantially different both in numbers and in the type of actors between the two micro-clusters and this leads to a difference in external pressures and drivers. Vikebygd has been a self-sufficient community for centuries and has a plethora of lateral actors, which reflects the landscape park's deep embeddedness in the agricultural industry. Lateral actors comprise research stations, fruit extension services, fruit co-operatives, farmers unions, farmers interest organisations, as well as community services (schools, pre-schools, library, shops, fuel-stations), and many leisure/community organisations that have evolved over the last century. Of particular importance, are the fruit co-operatives, which have an important role in negotiating prices with retailers and as drivers for improving quality (both visual and environmental) and, thereby, prices. Virtually all producers are members of the fruit co-operative and each fruit producer can be tracked through advanced labelling systems, which leads to strong peer pressure for correct environmental performance. The fruit co-operative is, thus, a prominent driver for environmental improvements. Customers feature as a considerable driver in Vikebygd, and this is thought by purchasing retailers to result in considerable pressure to improve fruit quality, as well as environmental quality.

Lovedale being a "new" area, having emerged only 25 years ago lacks most of these community/leisure organisations and services, yet they have two strong micro-cluster organisations, the Lovedale Chamber of Commerce and the Lovedale Vignerons Association; these have the

objective of promoting the interests of the businesses in the area. They are also considered the strongest drivers to pursue environmental action among the businesses in Lovedale. Other industry organisations, such as the Hunter Valley Wine Industry Association, are less prominent. This may be due to the Lovedale business owners being less embedded in the wine tourism industry in general, as they are relatively recent entrants to the area, and also to the fact that agricultural knowledge and management of the vineyard are obtained through hiring staff or buying viticulture consultant services. In both the tourism and wine businesses customers do not feature as strong drivers for environmental improvements; in tourism this is due to the high luxury and comfort standards demanded from tourists; and, in the wine business, demands focus more on taste, fashion and awards than environmental credentials.

In both micro-clusters there are more actors involved in and driving environmental improvements on the agricultural side of business than on the tourism side.

The prevalence of environmental crises is also thought to be the basis for differences in environmental concern and, thus, drivers of environmental action (Listhaug & Jakobsen, 2008). While "Doing the Right Thing" was a strong driver in Vikebygd, which was derived from the considerable pressure from the diverse agricultural sector organisations pushing for more environmentally friendly and improved quality produce, in Lovedale, a prominent driver was "Fear of environmental consequences". In the last decade, Australia has seen devastating extreme weather incidences, such as droughts, bushfires, floods and cyclones, and, although these are not necessarily a result of climate change, they offer a stark reminder of what is predicted to come. Lovedale, located in the coal and gas rich Hunter Valley, is also located in the midst of the conflict between short term national wealth and long term climate change action. Although weather patterns have changed in Vikebygd as well, with erratic snowfall and a higher prevalence of avalanches, there is less sense of environmental crisis, and this is exhibited in a much lower concern for environmental issues.

An emerging picture based in the qualitative findings is that there are substantially different drivers for large and small businesses. For larger businesses, whether in wine or tourism, environmental performance and certification are of paramount importance in order to comply with increasing pressure from corporate customers, importing wine retailers and shareholders.

There were no significant differences in barriers between the two micro-clusters; both cost and time implications are ranked as the largest barriers to pursuing environmental action. Interestingly, in Vikebygd, the monetary barrier was described as lack of financial support (from authorities), while, in Lovedale, cost implications were considered an individual business decision. That time-consideration

is a barrier is to be expected for small business owners who often have multiple income streams to make ends meet.

RQ5 How is environmental action perceived to add value to the business and the micro-cluster?

The resource based view is a model that seeks to explain how firms can add value and thereby gain competitive advantage from external and internal, and tangible and intangible resources (Barney, 1986; J. B. Barney, 1991; Dierickx & Cool, 1989; Margaret A Peteraf, 1993; Wernerfelt, 1984, 1989). Building on these models, Hart (1995) suggested the natural resource based view, which examines value-adding opportunities that arise from taking the biophysical (natural) environment into account at a firm level. It further proposes a matrix to analyse how competitive advantage from the natural environment can be gained for the firm or the whole micro-cluster following three interconnected strategies: pollution prevention, product stewardship and sustainable development (see Section 2.4). Findings from the survey questionnaire and interviews were examined in relation to the three environmental strategies and perceived value-adding and competitive advantage, as expressed by the business owners (Sections 5.7, 6.7 and 7.7).

The study found that value-adding and competitive advantage gained from environmental action depended on whether your business was small or large, whether it was primarily in agriculture or in tourism, the market focus (domestic or export), and to what degree there were lateral actors and infrastructure in place to support environmental strategies. The last point would be dependent on agricultural support policies and environmental infrastructure, which would result in a difference between the micro-clusters with regards to the value-adding of environmental action for small businesses.

In Lovedale, small businesses would obtain less value-adding benefits from environmental action and environmental certification than large businesses primarily due to the lack of domestic demand. The perception is that there are not enough environmentally aware tourists and the administrative burden is too large to provide a value-adding benefit. In grape growing and wine making, long term environmental sustainability action is more prominent among the larger old family wineries that are reliant on the natural resource base and centuries old vines for producing quality grapes. On the other hand, “tree changing outsiders” are seen to be more open to new ways of doing things and are often seen as pursuing environmentally friendly viticulture techniques and green packaging technology based on their environmental knowledge and values. In Australia, the fashion driven wine industry has been less focused on environmental aspects of wine production than on awardwinning quality.

In Vikebygd, where the price of fruit is partly derived through subsidies and partly through negotiated agreements between fruit co-operative and retailers, there is value-addeding for environmental certification (Global GAP or organic) of specific fruit types, as this ensures potential for export and higher margins from the increasing domestic demand for organic produce. In addition, there are administrative and technological support and pressure from both co-operatives and research/extension services to pursue environmental certification.

For large tourism operators in both countries, environmental branding through becoming environmentally certified (Green Globe or ISO 14001) is seen as important, and is increasingly enforced by shareholders, owners and corporate customers. Thus, the value-adding and competitive advantage of environmental certification is high and increasing. In Norway, accommodation and conference providers with environmental certification (Eco-Lighthouse or Svanen) are also increasingly given preference for all public sector events.

For small tourism operators, there are few immediate value-adding benefits from pursuing environmental certification. Few guests will pick their accommodation provider based on environmental credentials alone. As a micro-cluster pursuing the development of an environmentally sustainable destination, the value-adding benefits for the firm and the micro-cluster as a whole may be more prominent, as this will attract tourists on the grounds that a green micro-cluster provides a different experience than other destinations. This line of thinking, the environmental branding of a destination, is more prominent in Lovedale than in Vikebygd.

On the other hand, the geographic protection of traditionally and locally manufactured produce, or products with cultural heritage value, is more prominent and is seen as obtaining more value-adding in Vikebygd than in Lovedale. Geographic protection of fruit, Hardanger apples for instance, does not obtain value-adding benefits due to resistance from retailers who want to promote their own brand rather than geographic specific brands. In the Australian wine industry, there has been more focus on securing good overall quality of wine than developing distinct territorially derived wines. Albeit this is also changing with more single paddock wines being developed by the older wineries. Implicit in this renewed focus on terroir, is that high quality wine from these areas requires a longer term sustainability view of maintaining soil and vines.

8.3 CONTRIBUTIONS

As can be seen from the above summary of findings, this study's research question has developed new knowledge in the area of understanding businesses' and micro-clusters' environmental behaviour in

different contexts. It has also delivered methodological contributions with its mixed methods and cluster analysis approach to studying collective environmental behaviour. It has also provided applied and policy contributions in the area of environmental policy for small business and micro-clusters.

8.3.1 NEW KNOWLEDGE

This study has contributed new knowledge to how groups of businesses respond to global environmental issues and how the micro-clustering of business groups can generate value-adding, as well as develop local identities and natural attributes. It further shows how a country's and community's contextual (Johns, 2001, 2006; Marquis & Battilana, 2009) and institutional differences (Scott, 2008) influence individual business and collective environmental behaviour (Ostrom, 2009, 2010a). The study has also showed that these differences result in distinctives in rent generation, value-adding benefits for the business and the micro-cluster when pursuing environmental action (Brown, Burgess, Festing, Royer, et al., 2010; Hart, 1995).

In a liberal and export oriented market economy where agricultural properties are freely traded, environmental behaviour is undertaken based more on short term cost benefit calculations, than seen as a cost reducing and environmental branding activity. In a more coordinated market economy where agricultural properties are handed down following millennia old laws, environmental behaviour is strongly influenced by a long term perspective and what has become the cultural cognitive and social normative "Right thing to do". Yet, under a coordinated market economy with substantial environmental infrastructure and agricultural support and knowledge providers in place, value-adding based on product stewardship (environmental certification and geographic protection) is more easily obtained.

The combination of the micro-cluster (Michael, 2007a) and the value-adding-web approach (Brown, Burgess, Festing, Royer, et al., 2010) for gathering quantitative and qualitative data on one particular issue, that is, environmental behaviour, led to the identification of substantial differences in how regulatory and market based instruments influence businesses, depending on the type of business (agricultural or tourism), the market focus (domestic versus export oriented) and the size (small versus large). Thus, in the more market liberal approach in Australia, small businesses (in wine, grape or tourism) do not obtain sufficient benefit from environmental assurance or certification schemes to warrant the administrative costs to pursue them. The few environmental incentives available are often timelimited and released based on cost to environmental benefit calculation, resulting in smaller businesses often being less eligible for support. Thus, small businesses have less individual competitive advantage from pursuing environmental action. Large businesses have clearer

competitive advantages for pursuing environmental certification as a requisite for accessing vital export markets (wine) and adhering to large corporate customer's demands (accommodation). Yet, the majority of small businesses in Lovedale still pursue substantial environmental action based on the business owners' beliefs and values, fear of the environmental consequences, and knowledge about environmental problems.

Both the pressures and drivers to pursue environmental action and certification are substantially different in the Norwegian setting due to the intricate subsidy system which requires farms as small as 2.5 hectares to develop and comply with an environmental management plan (environmental assurance scheme) in order to be able to first obtain quality produce prices and food labels. The network of local membership based institutions in manufacturing, packaging, labelling, horticultural and fruit-manufacturing research, and on-farm trials ensure that even the smallest farm obtains added advantage of environmental assurance, certification and geographically protected products. Other subsidies are available for maintaining biodiversity in the cultural landscape and for continued fruit-cultivation on steep slopes. It could thus be stated that, in Vikebygd, even the smallest farm obtain value-adding benefits for pursuing environmental action and certification through heavy support and monitoring by local agricultural knowledge providers. Even though the Norwegian fruit producers only supply the domestic market, the Norwegian consumers are very quality conscious and, thus, provide a strong impetus for farmers to remain as clean and green as possible.

8.3.2 METHODOLOGICAL CONTRIBUTION

The use of cluster analysis (Porter, 1998b, 2000), provides a framework to examine clusters of businesses that collaborate and compete within the same industry to gain a competitive advantage for the firm and the cluster as a whole. The cluster framework has been developed further for smaller clusters in tourism (Michael, 2003, 2008; Michael Hall, et al., 2007) where competitive advantage is based on economies of scope through developing bundles of products and services that attract niche market customers/tourists.

The use of micro-cluster theory and analysis (Michael, 2008; Michael Hall, et al., 2007) for examining groups of business in a process of environmental sustainability has provided the study with a distinct business and value-adding focus. The division of micro-clusters into different actors in a value-adding web has further provided a framework to gather the most varied view of environmental behaviour from both within and outside the micro-cluster.

The micro-cluster framework divides the organisational field (DiMaggio & Powell, 1983; Scott, 2008), that is, the framework within which a business operates, into four types of actors (horizontal, vertical, lateral, and diagonal/complementary), and has provided a good framework to analyse:

- what type of micro-cluster the two cases could be defined as being: (primarily agriculture (horizontal) or primarily tourism (diagonal/complementary actors))

- what network of lateral (supporting organisations/actors) exists within and outside the micro-cluster

- differences in the above factors between the two micro-clusters.

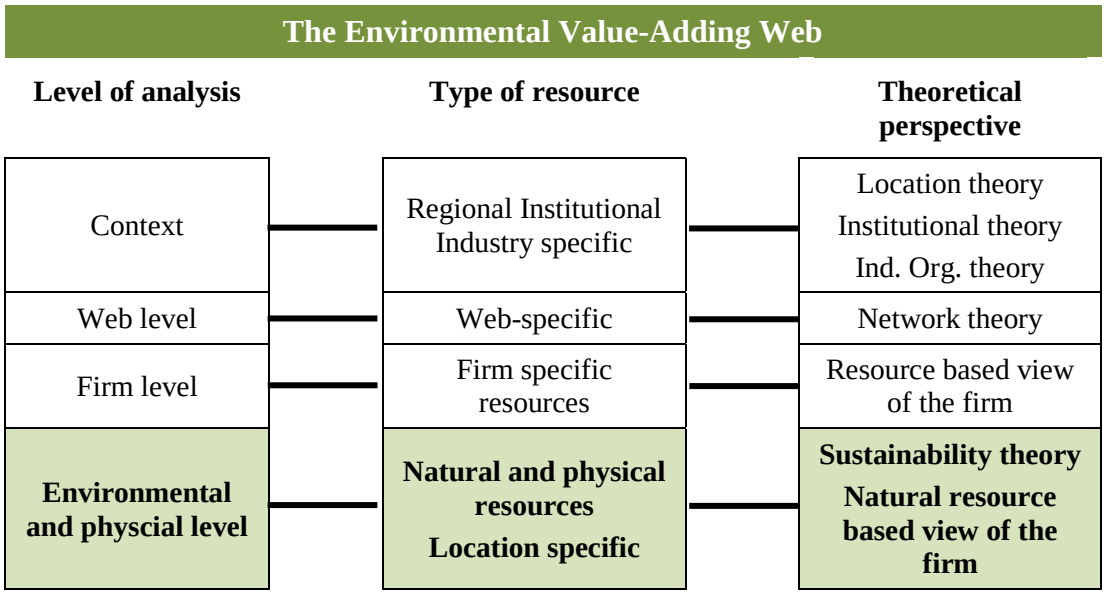
Clusters have been defined by Porter (2000, p. 15)as “geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions in a particular field that compete but also cooperate”. Yet, the difficulty remains as to how to define a cluster geographically and for many smaller regions and or areas Porter’s clusters would be too large to study the complex value-adding processes that occur in the area of agriculture based tourism. This study has, therefore, used the tourism micro-cluster framework (Michael, 2007a), where the focus is on creating competitive advantage through developing clusters of complementary firms that can collectively deliver a bundle of attributes to make up a specialized regional product. Through the adherence to the micro-cluster definition, these two micro-clusters were selected based on the fact that their geographic delineation was self-defined by the community, and based on a joint interest to pursue the development of a small tourist destination with a specific identity.

The use of micro-cluster and the value-adding web frameworks to analyse environmental action and behaviour furthered the understanding of how groups of businesses and communities pursue collective environmental action. The combination of these two being frameworked into one model for analysing collective action is similar to the concept of polycentric systems of collective environmental action as suggested by Ostrom (2009, 2010a). And this may, therefore, provide a new approach to understanding how institutions influence environmental motivations and behaviours among clusters of small businesses and communities.

Cluster analysis has been furthered through the model of the value adding web (Brown, Burgess, Festing, & Royer, 2010; Brown, et al., 2007; Brown, Burgess, Festing, Royer, et al., 2010) where different levels of rent generation or value-adding can be examined based on contextual, economic, institutional, or relational rent generating assets. While there is still more work to be done in the area of rent generation from environmental action and natural resource management, the VAW framework

provides a starting point to assess value-adding based on environmental behaviour. In a global economy where energy demands, natural resources and agricultural livelihoods increasingly are pressured, environmental behaviour and action can be seen as the foundation for value-adding efforts by the businesses. It is therefore suggested that the VAW framework be extended with a natural resource base level, to form the Environmental Value-Adding Web (EVAW) (see Figure 8-1below).

Figure 8-1 The Environmental Value-Adding-Web



In this framework the natural and physical resource base has been added as an extra level of analysis, which is highly localised and linked with the local physical and natural environment. Linked to this level of analysis would be the theoretical perspectives of the Natural Resource Based View (Hart 1995), Polycentric Systems (Ostrom, 2010) and Sustainability (Cocklin & Dibden, 2005; Gray & Lawrence, 2005). Using a value-adding perspective for the analysis of collective environmental action can provide a useful framework to assess the impact of environmental policy, with particular reference to market- and incentive based environmental policies. This framework can also be used for analysing how rural industries may experience value-adding or value-reducing impacts of global energy demand, whether it be value-adding of producing renewable energy (mini hydropower or solar power) or value-subtracting from reduced property value as it influences natural resource quality (soil and water), availability (reduced availability of agricultural land or wildlife habitats) and aesthetics

(reduced availability or improved rural landscape) for instance when coal seam gas extraction is developed in the vicinity.

The micro-cluster framework and differentiation into different actors was used to select interviewees with as different viewpoints and roles as possible. This is in line with the philosophical stance of the interpretive mixed methods designs selected for study (Greene, 2008b; Howe, 2004) which emphasise democratic dialogue in order to obtain multiple and diverse standpoints on the issues of sustainability and environmental action. The research process is, thus, an opportunity for respectful listening and understanding of two business communities' realities (Caracelli & Greene, 1993). As such, the value-adding focus of the micro-cluster framework can provide useful both for analysing collective environmental action and for analysing business micro-clusters other than tourism.

The use of an identical approach of embedded mixed methods data gathering (Howe, 2009a) in two contextually and institutionally different micro-clusters provides a new methodological approach for undertaking comparative case studies of collective environmental behaviour (Alston, 2008; Beckmann & Padmanabhan, 2009). The process of gathering auxiliary quantitative data within the micro-cluster, while qualitative data was gathered from the value-adding web of actors within and outside the micro-cluster is considered to be a new way of analysing collective environmental behaviour.

8.3.3 APPLIED / POLICY CONTRIBUTION

This study has revealed that, at a local level, there are substantial differences in environmental action and value-adding between types of industries (agriculture and tourism), as well as between size of business. This knowledge can be used for improving policies to promote environmental action, environmental certification and value-adding for both small and large clusters of businesses. There is a need to examine how market based instruments can also motivate environmentally committed small business owners to pursue environmental action.

This study has also discussed how value-adding benefits from collective environmental action by a micro-cluster can be obtained. In both countries, it is seen that when a micro-cluster collectively pursues a greening process to develop a sustainable destination or an environmental brand for their area, this may strengthen the sense of pride and identity for the area and improve cohesion and social sustainability. This may add economic, social and environmental benefits for the individual business and the micro-cluster as a whole. In the Australian context, few incentives are available for developing sustainable destinations or green micro-clusters; however, there would be scope for developing policies and/or incentive systems that can be targeted at committed business communities.

For instance, area based solar power installation would reduce the need for grid upgrade and could become an important green attribute of a destination. In the Norwegian context, the establishment of landscape parks can be seen as a pilot for pursuing sustainable development in small self-defined micro-clusters. However, while the landscape park's main focus has been social sustainability and job creation, there is a need to further develop the environmental credentials of their ventures, particularly when pursuing increased numbers of international tourists and customers.

The development of sustainable destinations where community, businesses and local authorities collaborate to create a greener destination is an important novelty which may be used for policydevelopment at micro-cluster level.

The study has also provided some potential for learning and a cross-fertilization of ideas between the two micro-clusters. The researcher has in both micro-clusters provided presentations about the other micro-cluster, as well as comparisons between them. In this way the study has given the Vikebygd Landscape Park insights from Lovedale on how to become more professional, consumer/touristm focused and open to new environmental technology and improvements. The Lovedale community could as such provide inspiration for Vikebygd to open up to attracting lifestyle people by using capital, skills and business networks that could benefit the whole community. The Lovedale business community, on the other hand, have been introduced to and inspired by the Vikebygd's community's focus on geographic, cultural and historical identity and branding. Australian grape growing and wine making had its naissance in the Hunter Valley, yet there is little effort expended in making and using this important history in tourism and identity building efforts. Lovedale could also be inspired by the pilot guidelines for sustainable destinations being piloted in Norway.

8.4 LIMITATION OF RESEARCH

The limitations of the study are linked with how to define micro-cluster boundaries, the issue of representation, timing, and the complexity of comparing two micro-clusters across different climatic, institutional and contextual settings.

The selection of a micro-cluster was undertaken on the basis of the micro-cluster's own definition and their initiative in pursuing a collective environmental initiative. However, it could be stated that neither of the two micro-clusters are independent of the wine or fruit producing regions and industry within they are located, and, therefore, they cannot be defined as a separate industry cluster. They may still, however, be classified as a separate tourism micro-cluster due to the fact that they have

defined themselves as a specific destination with a particular identity and tourism features worth visiting.

The two selected micro-clusters are not representative of all agriculture based tourism micro-clusters in Norway or Australia. Small scale grape and fruit production are both agricultural activities which do not require full year and daily attendance by the business owner, and thus can be more easily combined with other income earning activity such as tourism. Vikebygd comprises the smallest farms in Norway located in a unique fruit cultivation area, and is thus not representative of other types of agriculture based tourism areas in Norway (such as animal husbandry or other agricultural production forms). Lovedale may be representative of other lifestyle wine tourism micro-clusters, but is less representative of large-scale wine production areas or other types of large scale agricultural activities.

The comparison of two types of agricultural production (grapes and fruit) and manufactured products from these (wine, cider and juice) also warranted unforeseen complexities in relation to how value-adding is achieved for the produce and products. While fruit for direct consumption and manufactured products from theis are under strict food safety regulations and third party control, there is less direct control during grape growing, whereas for exported wines third party audited control is required. Business margins for wine are a result of fashion, trends and awards in competitions according to taste and storability, and not necessarily environmental production methods. Business margins in fruit production are more directly related to first class quality including environmental production methods, as well as how fruit co-operatives are able to negotiate with the retailers and use innovative packaging to ensure higher price per unit for the farmers.

The study is a cross-sectional study and, as such, does not offer longitudinal data on how environmental behaviour changes as the micro-cluster greening processes evolve. Both greening processes are relatively recent and, since the researcher's data collection in 2009, they have been confronted with both internal and external challenges: the extractive industries seem to have acquired an increasing stronghold in the Hunter Valley and, throughout, 2012 adverse effects on the wine tourism industry in the region have been reported (Kelly, 2012c). The environmental efforts of the Lovedale Chamber of Commerce seem lately to be more focused on the external threat to their existence, coal seam gas, than the greening of each business and the micro-cluster. Contrary to this, in December 2012 the landscape parks were announced as models for future regional development in Norway, with funding not only for the establishment of new landscape parks, but also for the continuation of "older" landscape parks (such as Vikebygd) as models for budding rural development initiatives (Kommunal og regional-departementet, 2012). Yet, the landscape parks' lack of focus on environmental sustainability remains an issue. The cross-sectional nature of this study fails to

adequately address the considerable impact global energy demand has on businesses in the Australian countryside and it does discuss Norwegian authorities' recent move towards supporting rural livelihoods using the landscape park model.

Undertaking survey research in two areas located on the opposite sides of the planet has had its logistical challenges. It would have been beneficial to obtain more responses from both micro-clusters, yet the time constraint, particularly when undertaking field work in Vikebygd, made it more difficult to develop a better relationship with the population and, thus, increased the pressure on completing the surveys. While the responses from both micro-clusters were not representative of the whole community, they provide sufficient indications of the differences in environmental action and attitudes to be able to compare the two micro-clusters.

The survey questionnaire was completed primarily by small businesses in both micro-clusters. Yet, through qualitative interviews with agricultural and tourism businesses both within and outside the micro-clusters it became clear that there were major differences in external and internal pressures to pursue environmental action. These differences could not, however, be detected in quantitative data from the survey questionnaire, and conclusions regarding differences in environmental behaviour [between size of business???not sure what you mean here] are largely based on qualitative findings.

The two cases were selected to offer contrasting elements adequate for theory development, as well as a degree of similarity (size, type of business and a self-organised greening process). Findings exhibit that the two cases were not only contrasting each other, they would in many respects be of opposite extremes with regards to institutional systems (Eisenhardt & Graebner, 2007; Yin, 2003). Of particular concern is that the two micro-clusters appeared to comprise a very different demography, with Vikebygd being a largely rural agricultural population, whereas, in Lovedale, the business owners were largely ex-Sydney urban professionals who had moved to Lovedale for a lifestyle tree-change. However, even in Vikebygd, the impulses from urban living were prominent among the younger well-educated generation. This added an extra layer of complexity in the analysis, as there would be substantial differences in attitudes in both countries, between rural and urban people, to environmental action, perceptions around sustainability, and the value-adding of environmental action. It may have been more appropriate to study the issue of collective environmental behaviour between two micro-clusters that were demographically more similar (urban lifestyle based micro-cluster or purely agricultural based cluster in both countries).

The undertaking of a comparative study between two countries and languages as a single researcher may lead to biases in analysis. While the researcher is Norwegian, and has lived in Australia for almost a decade, inherent cultural biases may still have occurred.

8.5 FUTURE RESEARCH

While there has been much work done on technological improvements and the macro-policy aspects of environmental action, there is still scope to develop better methodological frameworks to examine environmental behaviour on a local scale. This thesis has developed a theoretically sound methodological framework to analyse collective environmental behaviour by providing a research design, instruments and selection criteria for gaining further insights into how environmental behaviour may vary depending on institutional factors. Further fine-tuning and improvements of survey instruments and methodology would be areas for future research. Future methodological improvements could be made to using cluster analysis and the value-adding web to examine environmental behaviour and how it is related to perceptions of value-adding, business type, size, andinstitutional and contextual factors. As described above, the use of a mixed methods approach revealed substantial differences between small and large businesses within the same industry in perceived drivers, barriers, external and internal pressures to performing environmental action. To obtain more of both quantitative and qualitative data around the differences in internal and external pressures between small and large businesses it would be important to develop environmental policies that provide incentives for environmental action both for large and small businesses, as well as clusters of small businesses. The future of environmental policy lies in triggering both the positive social normative pressures that are established in micro-clusters as well as providing incentives that can support clusters of small businesses to collectively reduce their environmental impact.

The development of support, policies and incentive systems that can target micro-clusters in an effort to become sustainable destinations would be one way of supporting self-organised collective environmental action among groups of businesses committed to making an environmental difference.

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APPENDICES

Appendix 1 Australian Survey Questionnaire

Information about your business

How long has your business been in operation? *(please tick):*

☐ 0-1 Years ☐ 2-5years ☐ 6-10 years ☐ 10-20 years ☐ More than 20 years

2. What is the ownership of your business ? (*please tick*)

☐ Sole Trader ☐ Family Business ☐ Australian Private Company

☐ Australian Public Company ☐ Internationally Owned Company

3. How many people are employed in your business full time?

☐ Only myself ☐ 1-4 people ☐ 5-19 people ☐ 20-100 people ☐ More than 100 people

4. Which of these industry groups best describes your income-earning activity? *(please tick all that are applicable)*

☐ Agricultural produce for sale (grapes, olives, livestock etc)

☐ Manufacturing of agricultural produce (wine-production, olive oil production, etc)

☐ Tourism - Accommodation

☐ Tourism Catering (café. food-sales, restaurant)

☐ Tourism Adventure (Activities for tourists)

☐ Community, Social and Personal Services

☐ Other please specify:

_____

Please indicate the two main sources of income of the business:

1._____

2. _____

5. Where do you sell your produce? *(please tick all that apply)*

☐ Direct from property (cellardoor, road sales)

☐ Locally (To local winemakers, farmers markets, local restaurants)

☐ Regionally/State (Regional winemakers, buyers)

☐ Nationally (Buyers, winemakers)

☐ Internationally

☐ Others - please specify:

_____

6. If your business is in tourism where are most of your customers/guests from? *(please tick all that apply)*

☐ Local ☐ Regional ☐ State ☐ National ☐ Overseas

Please indicate where your two most important customer/guests come from ?

1. _____

2._____

Sustainability activities

7. My business engages in the following activities related to the environment (*please tick all that apply)*

☐ Recycling of Waste

☐ Reducing pesticide and fertilizer use

☐ Reducing erosion

☐ Water saving activities

☐ Reduced energy use (CO_2 emissions)

☐ Renewable energy sources (Please Specify_____)

☐ Reducing transport needs

☐ Actions to reduce loss of biodiversity (please specify)

_____

8. Does your business have ideas or strategies to address environmental issues?

☐ Yes ☐ No

If yes, do you: *(please tick)*

☐ have a general plan in writing

☐ have measurable targets in writing

☐ have a plan that involves staff training

☐ have a plan that involves environmental assessment of suppliers

☐ Other (Please specify)

9. Do you have any kind of environmental certification for your business?

☐ Yes ☐ No

If yes, please name the type (or types) of certification:

_____

10. To what extent do you emphasise environmental issues in your marketing? *(please tick):*

☐ Not at all ☐ A little ☐ Some ☐ A lot ☐ It is a main focus

11. How does your business gather knowledge about environmental issues? (Please tick)

☐ I know enough I don't need additional knowledge about environmental issues

☐ Participating in voluntary environmental programmes/activities

☐ Membership of an environmental group or network

☐ Taking courses on environmental issues and technological possibilities

☐ Through business associations (please specify which)

☐ Other (Please specify)

12. How aware is your industry of environmental issues they need to address *(please tick a box) ?*

Unable to answer question	Not aware at all	A little aware	Medium aware	Quite aware	Very aware

13. In the next five years, environmental management for your business will become (*please tick*):

☐ Less important ☐ As important as now to my business

☐ Marginally more important ☐ More important to my business

☐ Much more important ☐ Unable to determine

Motivations for environmental action

14. Is your business getting internal pressure to improve environmentally?

☐ Yes ☐ No

If yes, please indicate from where *(please tick all that apply)* :

☐ Owners of company

☐ Shareholders

☐ Employees

☐ Own personal values and beliefs about the environment

☐ Own increased knowledge about problems and possibilities

☐ Other/s (Please specify)

_____

Please indicate the two most important internal pressures:

1. _____

2._____

15. Is your business getting external pressure to improve environmentally?

☐ Yes ☐ No

If yes, please indicate from where *(please tick all that apply)*:

☐ Customers/guests
☐ Competitors
☐ Business suppliers
☐ Neighbours and local community
☐ Federal Government
☐ State Government
☐ Local Government
☐ Business associations (please specify_____)
☐ Tourism organisations (please specify_____)
☐ National environmental pressure groups (please specify _____)
☐ Local environmental pressure groups (please specify_____)
☐ Other/s (please specify):

_____

Please indicate the two most important external pressures:

1. _____

2._____

Barriers and drivers to adopt environmental activities

16. What are the barriers for implementing environmental activities by your business? (*please tick all that apply*):

☐ Cost implications
☐ Lack of knowledge and skills
☐ Environmental technology too laborious or unpractical
☐ Environmental investments too risky for business outcomes
☐ Lack of time
☐ Competitors not doing it
☐ Other priorities are more important
☐ Other (please specify)

Please indicate the two most important barriers to implementing environmental activities:

1. _____
2._____

17. What factors have influenced you to implement environmental activities (*please tick all that apply*):

☐ Cost management/reduction
☐ Environmental conditions linked to funding from banks or insurance
☐ Environmental conditions linked with grants from government
☐ Pressure from company board
☐ Support from voluntary environmental organisations (Landcare etc).
☐ Request for voluntary action by business associations
☐ Environmental pressure groups
☐ Fear of bad reputation in media and community
☐ Attractiveness to employees
☐ Motivated to become an environmental brand
☐ Risk management (detrimental impact of changes in natural environment)
☐ Government regulations or pressure
☐ Increased knowledge about problem and opportunities
☐ Fear of long-term environmental consequences
☐ Other (please specify):

_____

Please indicate the three most important drivers environmental action: :

1._____
2._____
3._____

Information about you:

18. Gender : ☐ Male ☐ Female

19. What age group do you belong to? *(please tick)*

☐ Less than 24 years ☐ 25-35years ☐ 36–50 years ☐ 50-65 years ☐ More than 65 years

20. What education level have you got: (please tick) :

☐ Year 10 or below ☐ 11-12 years ☐ TAFE/Vocational ☐ Batchelor ☐ Masters or above

21. How long have you been living in Lovedale ? *(please tick)*

☐ 0-1 years ☐ 2-5 years ☐ 6-10 years ☐ 11-25 years ☐ More than 26 years

To what extent are you concerned about:

22. The state of the environment in general *(please tick a box):*

Not concerned	A little concerned	Neither concerned nor not concerned	Quite concerned	Very concerned

23. Climate change *(please tick a box):*

Not concerned	A little concerned	Neither concerned nor not concerned	Quite concerned	Very concerned

24. Loss of species *(please tick a box):*

Not concerned	A little concerned	Neither concerned nor not concerned	Quite concerned	Very concerned

25. Please indicate the three most important issues for sustainability in the Lovedale area :

1._____

2._____

3._____

26. Please add any other comments regarding sustainability:

_____

_____

Lovedale Chamber of Commerce

27. Have you heard of the Lovedale Chamber of Commerce initiative "Greening of Lovedale?
(*please fill in one circle*):

☐ Yes ☐ No

28. If yes , how did you hear about it *(please tick)?*

☐ Lovedale Chamber of Commerce Meetings and E-mails
☐ Lovedale Chamber of Commerce Website
☐ Neighbours/Community
☐ Media
☐ Road Signage
☐ Other (please specify):

_____

29. In your opinion, what issues should "Greening of Lovedale" focus on *(please tick all that apply)*?

☐ Energy-efficiency
☐ Water use
☐ Biodiversity/Loss of species
☐ Renewable energy
☐ Waste management
☐ Improve aestethics of cultural landscape
☐ Reduced pollution to water and soil (erosion, nutrient loss and reduced pesticide use)
☐ Other (please specify):

_____

Please indicate the two most important issues Greening of Lovedale should focus on :

1. _____

2._____

If you would like more information about the "Greening of Lovedale" initiative please contact :

This survey is part of a research project undertaken by the Faculty of Business and Law at Newcastle University. Further information or questions about this research can be obtained from:

PhD-candidate Sidsel Grimstad

Senior Lecturer Dr. Jennifer Waterhouse

Professor John Burgess

Appendix 2 Norwegian Survey Questionnaire

Bakgrunns-informasjon om ditt næringsforetak

1. Hvor lenge har ditt foretak eksistert ? *(sett kryss)*

☐ 0-1 År ☐ 2-5 År ☐ 6 10 År ☐ 10-20 År ☐ Mer enn 26 År

2. Hva slags eierstruktur har foretaket ditt ? *(sett kryss)*

☐ Enkeltmannsforetak ☐ Familiebedrift ☐ Samvirke/Andelslag

☐ Norsk Aksjeselskap ☐ Utenlandsk eid selskap ☐ Landbruksforetak

3. Hvor mange ansatte har du i ditt foretak (inkludert korttidsansatte)?

☐ Bare meg selv ☐ 1-4 ansatte ☐ 5-19 ansatte ☐ 20-99 ansatte ☐ Mer enn 100 ansatte

4. Hvilket av disse næringsområdene beskriver best ditt foretak? *(Sett gjerne flere kryss)*

☐ Salg av råvare (f.eks. Frukt, bær, husdyr)

☐ Salg avd foredlede landbruksprodukter (f.eks. Cider- saft-produksjon)

☐ Turisme –Overnatting

☐ Turisme Matservering, (Kafe-drift, gårdssalg, veisalg)

☐ Turisme Opplevelser (Opplevelses-aktiviteter for turister)

☐ Varer og tjenester i lokalsamfunnet (vennligst spesifiser type tjenester):

_____

☐ Annet (vennligst spesifiser annen inntektkilde)

_____

Vennligst angi dine to viktigste inntektskilder :

1._____

2._____

5. Hvor selger du produktene dine ? *(sett kryss)*

☐ Direkte fra egen gård, veisalg

☐ Lokalt, til lokale gårdssalg, bondens marked, lokale spisesteder

☐ Til oppkjøpere innenfor fylket/regionen

☐ Til nasjonale oppkjøpere

☐ Utenlandske oppkjøpere

☐ Annet (vennligst spesifiser):

---

6. Hvis du driver turistvirksomhet hvor kommer gjestene/kundene dine fra ? (Sett kryss)

□ Lokalt □ Regionalt □ Fylket □ Andre deler av Norge □ Utenlandet

Vennligst angi hvor de 2 viktigste grupper av kunder/gjester kommer fra ?

1. _____

2._____

Gjennomføring av tiltak for økt miljømessig bærekraft

7. Mitt foretak gjennomfører følgende miljøtiltak (vennligst sett kryss*)*

☐ Sortering av avfall

☐ Gjenvinning av avfall

☐ Redusert bruk plantevern-midler og gjødsel

☐ Tiltak mot erosjon

☐ Økologisk drift

☐ Tiltak for å spare vann

☐ Redusert energi-bruk og CO2 utslipp (Vennligst spesifiser _____)

☐ Fornybare energikilder (f.eks. bio energi eller minikraftverk) (Vennligst spesifiser _____)

☐ Redusere transport behovene

☐ Tiltak for å vedlikeholde kulturlandskapet (Vennligst spesifiser _____)

☐ Tiltak for å redusere tap av arter (Vennligst spesifiser) _____)

☐ Andre tiltak (vennligst spesifiser) _____)

8. Har foretaket ditt en miljøplan/strategi ? (Sett kryss)

☐ Ja ☐ Nei

Dersom ja, er dette :

☐ Bondens miljøplan

☐ Annen type miljøplan med klare målsetninger I

☐ Annen type miljøplan som også omfatter miljøopplæring av ansatte

☐ Annen type miljøplan som også omfatter miljøvurderinger av leverandører og foretak vi samhandler med

☐ Annet (Vennligst spesifiser)

9. Har foretaket ditt noen form for miljø-sertifisering ?

☐ Ja ☐ Nei

Dersom ja, kan du vennligst angi hvilken type sertifisering dette er:

_____

Planlegger du å gjennomføre noen form for miljøsertifisering i framtiden ?

☐ Ja ☐ Nei

Dersom ja, kan du vennligst angi hvilken type sertifisering dette er:

_____

10. I hvilken grad bruker du rent miljø aktivt i markedsføring av ditt foretak ? (sett kryss)

☐ Ikke i det hele tatt ☐ Litt ☐ Noe ☐ Stor del ☐ Den viktigste delen

11. Hvordan får du eller ditt foretak økt kompetanse om miljømessig bærekraft og aktuelle tiltak? (sett kryss for alle aktuelle)

☐ Jeg vet nok og trenger ikke økt kunnskap om miljø-tiltak for mitt foretak

☐ Deltagelse i miljø-organisasjoner eller nettverk

☐ Egen kunnskapsinnhenting /informasjons søk på internet o.l.

☐ Uformell kunnskapsutveksling i nærmiljøet

☐ Gjennom betalt veiledning/kurs. Vennligst angi hvilke:

☐ Gjennom gratis veiledning fra myndigheter/offentlige instanser. Vennligst angi hvilke:

☐ Gjennom næringsorganisasjoner. Vennligst angi hvilke :

☐ Gjennom Vikebygd Landskapspark

☐ Gjennom Innovasjon Norge

☐ Annet (vennligst spesifiser)

12. Hvor opptatt er din næring av miljømessig bærekraft ? *(vennligst sett kryssx) ?*

Vanskelig å vurdere	Ikke opptatt	Litt opptatt	Middels opptatt	Ganske opptatt	Veldig opptatt

13. Hvilken betydning tror du miljø-problematikken i tilknytning til ditt foretak vil om 5 år : (Sett kryss) :

Vanskelig å vurdere	Mindre viktig	Like viktiog som nå	Litt viktigere	Mere viktig	Veldig mye viktigere

Motivasjon og press for økt miljømessig bærekraft

14. Føler du press internt i foretaket for å forbedre miljøet ?

☐ Ja ☐ Nei

Dersom ja, er dette presset fra : (sett kryss for alle aktuelle)

☐ Eiere av foretaket (dersom dette er en større foretak)
☐ Aksje-eiere (dersom større foretak)
☐ Ansatte
☐ Egen overbevisning som og verdier om miljø-tiltak
☐ Egen kunnskap om miljø-problematikk og muligheter
☐ Overbevisning og verdier fra andre personer i foretaket enn eier.
☐ Annet internt press (Vennligst spesifiser)

_____

Vennligst angi de to viktigste kildene til internt press:

1. _____
2._____

15. Føler du press utenfra foretaket for å forbedre miljøet ?

☐ Ja ☐ Nei

Dersom ja, er dette presset fra : (sett kryss for alle aktuelle)

☐ Kunder/gjester
☐ Konkurrenter
☐ Leverandører
☐ Naboer og/eller lokalsamfunn
☐ Sentrale myndigheter
☐ Fylket
☐ Kommunen
☐ Næringsorganisasjoner (vennligst spesifiser)

_____

☐ Turist organisasjoner (Vennligst spesifiser):

_____

☐ Lokale miljø-organisasjoner
☐ Vikebygd Landskapspark
☐ Annet (Vennligst spesifiser):

_____

Vennligst angi de to viktigste kildene til press utenfra foretaket:

1. _____
2._____

Barrierer og drivkrefter for økt miljømessig bærekraft

16. Hva hindrer deg i å øke miljømessig bærekraft for ditt foretak? (sett kryss for alle aktuelle)

☐ Koster for mye
☐ Mangler kunnskap og ferdigheter
☐ Miljø-teknologi er for upraktisk og arbeidsintensiv
☐ Miljø-tiltak er for risikabelt økonomisk for foretaket
☐ Har ikke nok tid
☐ Andre foretak i bygda gjennomfører ikke miljøtiltak
☐ Andre investeringer er viktigere
☐ For vanskelig å få økonomisk støtte til å gjennomføre tiltak
☐ Annet (vennligst spesifiser)

_____

Vennligst angi de to viktigste barrierer i pkt 16 for gjennomføring av miljøtiltak i ditt foretak:

1. _____
2._____

17. Hva motiverer deg til å gjennomfører tiltak for økt miljømessig bærekraft i ditt foretak?
(sett kryss for alle aktuelle)

☐ Redusere produksjonskostander
☐ Øke verdien
☐ Ønske fra investorermiljøkrav fra banker og forsikringsselskap
☐ Miljøkrav i tilknytning til tilskuddsordninger
☐ Press og/eller støtte fra lokale miljø-organisasjoner
☐ Press fra nasjonale miljø-organisasjoner
☐ Press/ støtte fra næringsorganisasjoner f.eks. (Bondelaget, Smabrukarlaget, Turistorganisasjoner) (Vennligst spesifiser)

_____

☐ Press fra salgsapparatet (grossist, detaljist/butikk) (Vennligst spesifiser).

_____

☐ Ønsker å bli en miljøvennlig arbeidsplass
☐ Ønsker å bli et miljøvennlig varemerke/foretak
☐ Ønsker å unngå risiko for miljø-ødeleggelser
☐ Myndigheternes lover og forskrifter
☐ Økt kunnskap om miljøproblematikk og løsninger
☐ Frykter miljøkonsekvenser dersom man ikke gjør noe med miljøproblemene
☐ Ønsker å gjøre det som er riktig for miljøet og neste generasjon
☐ Annet (vennligst spesifiser):

_____

Vennligst angi de tre viktigste drivkreftene for økt miljøtiltak:

1. _____

2._____

3._____

Informasjon om deg:

18. Kjønn : ☐ Kvinne ☐ Mann

19. Hvilken aldersgruppe er du ? *(sett kryss):*

☐ Under 24 år ☐ 25-35 år ☐ 36–50 år ☐ 50-65 år ☐ Mer enn 65 år

20. HVilken utdannelsesbakgrunn har du : *(vennligst sett kryss)*

☐ Grunnskole ☐ Videregående ☐ Yrkesretta utdanning
☐ 2 årHøyskole/Universitet ☐ Mer enn 2 år Høyskole/universitet

21. Hvor lenge har du bodd i Vikebygd ? *(Vennligst sett kryss)*

Er du :

☐ Innfødt ☐ Tilbakeflytter ☐ Tilflytter

Hvis tilbakeflytter eller innflytter hvor lenge har du bodd i Vikebygd nå?

☐ 0-1 år ☐ 2-5 år ☐ 6-10 år ☐ 11-25 år ☐ Mer enn 26 år

Hva bekymrer deg når det gjelder :

22. Miljø-tilstanden generelt : *(Vennligst sett et kryss)*

Ikke bekymret	Litt bekymret	Hverken bekymret eller ikke	Ganske bekymret	Veldig bekymret

23. Klima-endringer : *(Vennligst sett et kryss)*

Ikke bekymret	Litt bekymret	Hverken bekymret eller ikke	Ganske bekymret	Veldig bekymret

24. Tap av arter : *(Vennligst sett et kryss)*

Ikke bekymret	Litt bekymret	Hverken bekymret eller ikke	Ganske bekymret	Veldig bekymret

25. Angi de 3 viktigste lokale miljøproblemer i Vikebygd : *(Vennligs spesifiser):*

_____
_____

26. Har du andre kommentarer omkring bærekraft i Vikebygd?

_____

Om Vikebygd Landskapspark (VLP)

27. Har du hørt om Vikebygd Landskapspark ?

☐ Ja ☐ Nei

28. Dersom ja, hvordan fikk du vite om den ?

☐ Møter og arrangement
☐ e-post
☐ Vikebygd Landskapspark Nettside
☐ Andre i bygda
☐ Aviser/media
☐ Veiskilt???
☐ Annet (vennligst angi):

29. Hvordan ønsker du å få info om aktiviteten i VLP

☐ Møter og arrangement
☐ e-post
☐ Vikebygd Landskapspark Nettside
☐ Sosiale medier (Facebook,
☐ Aviser/media
☐ Annet (vennligst angi):

30. Hva bør Vikebygd Landskapspark konsentrere seg om innen bærekraftig reiselivet ?

□ Energi-effektivitet
□ Avfallshåndtering
□ Tiltak for bevaring av biodiversitet /Tap av arter
□ Vedlikeholde og bevare kulturlandskapet
□ Økt utbygging av fornybar energi
□ Bruk av vann
□ Redusere forurensning
□ Produktutvikling innen reiseliv
□ Produktutvikling innen matforedling
□ Estetisk forbedring (rot og skrot)
□ Miljøvennlege produkter
□ Miljøsertifisering av reiselivet?
□ Miljøprofilering i markedsføringen?
□ Annet (vennligst spesifiser):

_____

31. Hva mener du er de 3 viktigste tingene i pkt 30 som VLP bør arbeide med :
(Vennligst spesifiser):

1. _____
2. _____
3. _____

32. Hvordan ønsker du at VLP skal jobbe med disse tingene?

☐ Kurs
☐ Delprosjekt i utvalgte tema
☐ Studieturer
☐ Gode tiips via internett
☐ Annet (vennligst angi):

Hvis du ønsker mere informasjon om "Vikebygd Landskapspark" vennligst ta kontakt med daglig leder:

Denne spørreundersøkelsen er en del av et forskningsprosjekt omkring bærekraftig reiseliv i Norge og Australia.

For mere informasjon om prosjektet kan spørsmål stiles til;

Doktorgradskandidat Sidsel Grimstad

Jennifer Waterhouse

Professor John Burgess

Svar på 3 måter:
Epost til Sidsel Grimstad
Lever direkte på Open dag
Legg i ein boks på kontoret til XXXX

Appendix 3 Australian Interview Guide

Guide for Semi-Structured Interview of Stakeholders in Lovedale Wine Region

Interview technicalities

For researcher use only

Topics

Perceptions of sustainability
Motivations or hinders for undertaking sustainable action
Societal drivers or barriers for undertaking sustainable action
Perceptions of value-adding and value-subtracting of the natural environment on the business.

Beginning the Interview

Thanks for agreeing…etc
The interviewer needs to make sure that the interviewee is aware of his/her rights as a participant in the study: Confidentiality and anonymity, the opportunity to withdraw from the project at any time without giving any reason, the option to terminate the interview at any time without any need to justify ending the interview.
Needs to sign a consent form and read the information sheet handed out to the interviewee by the research student.
The researcher needs to ask for permission to tape record the interview. Tell the participant that the interviews will be transcribed. Tell him/her that he/she can ask to be sent the transcription review, edit or erase parts of his/her statements if he/she so wish.

Obtain basic demographic data about the interviewee,
Ask interviewee to fill in a demographic form before interview starts demographic form is depicted on next page.

Demographic data of interviewee

Name (First and Surname): _____

Age group (please tick a box):
□ Less than 24 years □ 25-35years □ 36–50 years □ 50-65 years □ More than 65 years

Occupation : _____

_____

Name of Main Business: _____

_____

Which of these activities is your business involved in ? *(please tick all that are applicable)*

□ Agricultural production (grapes, olives, livestock etc)
□ Manufacturing of agricultural produce (wine-production, olive oil production, etc)
□ Direct sale of agricultural produce (cellar-door, etc)
□ Tourism - Accommodation
□ Tourism Catering (café. food-sales, restaurant)
□ Tourism Adventure (Activities for tourists)
□ Community, Social and Personal Services
□ Other please specify:
_____

Please indicate the two main sources of income of the business:

1._____

2. _____

For researcher to fill in : Location of interview:_____

Date and time of interview _____

Anonymity code : _____

Interview Topic-questions

Background about interviewee and business.

Please describe your educational background and career development.?
(How long have you lived in Lovedale? Why did you choose to move to Lovedale?
What is your current occupation? How much time does this take of your day?)

Please describe your current business.
(What legal form does the firm have? And when was it founded? Did you start it or did you buy it? Who are your customers, are there distinguishable different customer groups? What is your occupancy rate? How has your business changed the last 3 years? Can you make a living out of this business or do you have other sources of income? Do you employ people in your business, in case how many? For what purposes are they employed? What is the availability of staff for these tasks?) Do any of your staff ask or inspire you to undertake environmental improvements ?

Perceptions of Sustainability

How would you define sustainability generally?
How would you define environmental sustainability for your business and for your region/area? [Prompt: What do think should be done?] Why is it or isn't it important ? What are the most important issues when it comes to reducing the environmental impact of your business in this area?

Environmental Action

What type of actions/improvements have you undertaken to reduce the environmental impact of your property/business ? Why or why not ?
Why have you made the decision to undertake these improvements ?
How are you doing these improvements (financially and practically)? (Do you get any financial support for doing this or do you see any financial benefits from doing this?)
Are you currently part of any kind of environmental certification or are you considering some kind of environmental certification, why or why not ? Why did you choose this type of environmental certification ?
Are there any hints, experience or lessons learned that you would like to share with other business owners who wants to make environmental improvements?
Have you got examples of how your environmental actions have improved your business ?
Are there environmental actions or initiatives that requires joint action by several businesses to achieve ? How could this be done?
How would you suggest that the Lovedale Chamber of Commerce can assist in your environmental efforts through the Greening of Lovedale campaign?

Motivations or de-motivation for undertaking environmental improvements action

Who or what inside or outside your business motivates or inspires you to undertake actions to improve environmental impact ? How does it motivate you? Where do you get your motivation from?

Do you talk about environmental improvements with anybody, in case yes, who?

Where do you get your information about environmental issues from ?

Are you a member of any industry associations, in case which ones. ? What forms of collaboration and cooperation happens on the environmental questions. How do business owners collaborate or cooperate on these issues?

How do you perceive support (either through moral, information or money) from suppliers and customers. What kind of support?

How do you perceive support from business or industry (tourism, wine growers) associations?

How do you perceive support from green organisations?

How do you perceive support from public sector, Local Council, State and Federal ?

How do you obtain knowledge about action/policies on sustainability/environmental issues?

Societal drivers or barriers for undertaking sustainable action

Who do you believe should be responsible for promoting or driving sustainability in your region? [Prompt: Are they doing this and if so how? Why is this working/not working?]

Where do you think the main barriers or de-motivators are to achieving environmental sustainability in your business/region? [Prompt: Why is this happening? How does it hinder you to take sustainability action?]

How does current environmental regulation impact on your business?

Perceptions of value-adding and value-subtracting of environmental issues for the business. Regional branding and identification

Why do you think people choose Lovedale for their holidays/events ?

Are there any differences in perception of Lovedale between overseas guests and Australian guests? What are they?

Do any of your customers ask about environmental ratings or environmental issues ?

How does the natural environment and aesthetic landscape affect their choice? [Prompt: How does it add value to your business?)

Are there any environmental problems (ie clean water/air due to pesticide use) that affects your business ?

How do you think your environmental actions have influenced your business ?

Do you use environmental issues in marketing of your business?

How important are infrastructural aspects (roads, electricity, public transport, waste management, clean water and air, internet access) for your business?

How do these aspects affect the environmental image of your business?

Ending the interview

Interviews are intended to not be more than approximately one hour, if the interviewee does not want to continue further.

When interview has ended, thank for the participation, remind that a summary account of the interview will be sent to them and that they can be sure that they will not be identified in the reports.

Appendix 4 Norwegian Interview Guide

Tema -Guide for halv-strukturerte intervju av aktører i Vikebygd Hardanger

Bare til bruk for forskeren

Intervju-tekniske elementer

Tema

Oppfatninger omkring bærekraftighet
Hva motiverer og/eller demotiverer til bærekraftighets tiltak.
Hva i samfunnet påvirker eller motvirker gjennomføring av bærekraftighets tiltak
Hvordan øker eller reduserer bærekraftighetstiltak verdien av foretaket ditt ?

Hva skal skje før intervjuet starter

Takke for at vedkommende frivillig har ønsket å delta. Informere om følgende:
Intervjueren må sørge for at den intervjuede forstår hvilke rettigheter vedkommende har under deltagelse i studien. All informasjon som blir gitt av vedkommende vil bli behandlet konfidensiellt og anonymt. Vedkommende har rett til å trekke seg fra deltagelse i intervjuet når som helst uten at det er nødvendig å rettferdiggjøre en slik beslutning.
Intervju-objektet må underskrive en samtykke-erklæring etter å ha lest informasjonsskrivet om prosjektet som skal deles ut samtidig med samtylle-erklæringen.
Forskeren skal be om samtykke til å ta opp intervjuet med digital lydopptaker. Fortell intervju+objektet at intervjuet vil bli overført ordrett til skriftlige documenter (transkribert). Forklar at dersom det er ønskelig kan intervju-objektet høre på opptaket eller be om å se utskriften av intervjuet for å vurdere om det er noe vedkommende vil stryke eller forandre på.

Innhent grunnlags informasjon om intervju-objektet

Bakrgunnsdata vil bli innhentet om intervju-objektet i henhold til skjemaet på neste side.

Bakgrunnsdata om intervju-objektet

Navn (For og Etternavn): _____

Aldergruppe (vennligst sett kryss):

□ **Mindre enn 24 år** □ **25-35 år** □ **36–50 år** □ **50-65 år** □ **Mer enn 65 år**

Yrke : _____

_____

Navn på foretak/gård : _____

_____

Hvilke av disse aktivitetene er foretaket ditt involvert i ? ***(Vennligst sett kryss ved alle aktuelle aktiviteter)***

□ Landbruksproduksjon (Frukt, husdyr, skogbruk)
□ Foredling av landbruksprodukter (Saft produksjon, cider produksjon, annet)
□ Direkte salg av landbruksprodukter (gardssalg, veisalg, annet)
□ Turisme - Overnatting
□ Turisme Matservering (Kafe, matsalg, restaurant)
□ Turisme Opplevelser (Aktiviteter for turister)
□ Varer og tjenester i lokalsamfunnet
□ Annet (vennligst spesifiser):
_____

Vennligst angi de to viktigste inntektskildene fra listen over:

1._____

2. _____

Fylles ut av forskeren :

Sted for intervjuet:_____

Dato og tid for intervjuet: _____

Anonymitets kode :_____

Tema-Spørsmål til Intervjuet

Innledende spørsmål

Fortell litt om deg selv, hva din bakgrunn og utdannelse er, hvor lenge du har bodd i Vikebygd ? Hva slags type arbeidserfaring har du ?

Hva driver du med ? Ulike næringer ? Har du andre inntektskilder enn jordbruk/turisme?
Hvor selger du produktene dine? Hvilke kunder/gjester har du? Hvor kommer de fra ? Hva kjøper de? Kommer de tilbake? Hvordan har næringsvirksomheten din forandret seg de siste 3-5 årene ? Har du ansatte i næringsvirksomheten din, hvor mange? Er det vanskelig å få tak i ansatte/arbeidskraft?

Oppfatninger omkring bærekraft

Hvordan vil du definere bærekraft ?

Hvordan ville du definere bærekraft i ditt område og for ditt foretak? [Tilleggsspørsmål: Hva synes du bør gjøres?]

Økologisk bærekraft i Vikebygd

Hva er etter din mening de viktigste tiltakene for økt økologisk bærekraft i Vikebygd?
Hva gjør du i forhold til miljø på ditt foretak (avfallshåndtering, energisparing, opprettholdelse av kulturlandskapet, sprøyting med plantevernmidler og gjødsling, etc).
Får du utbetalt Areal og Kulturlandskapstilskudd? Har du en Bondens miljøplan, hva medfører den av tiltak for ditt foretak? Gjennomfører du andre miljøtiltak som du får ekstra tilskudd til? Hva får deg til å gjennomføre disse tiltakene?
Er du del av eller har du tenkt på å gjennomføre en slags miljøsertifisering ? (Økoturisme, Miljøfyrtårn, ISO 14001, Økologisk Landbruk, annet (Hanen). Har du hørt om disse ordningene, fra hvem ? Hvordan tror du miljøsertifisering vil kunne ha for innvirkning på turismen i Vikebygd? Hvordan kan Vikebygd Landskapspark arbeide med disse tingene?

Hva motiverer og/eller demotiverer til bærekrafts tiltak.

Hvem eller hva innad eller utenfor foretaket/gårdsbruket motiverer deg til å gjennomføre tiltak for økt bærekraft ? Hvordan motivere dette deg?

Hvordan skaffer du deg informasjon om miljø-politikk og miljø-tiltak?

Snakker du om miljøforbedringer med noen i nærmiljøet?

Hvilke medlemsorganisasjoner er du medlem av ? Driver disse aktivt informasjonsspredning om miljøtiltak? Hvordan oppmuntres det til samarbeid?

Hvordan er samarbeidet med kommunen om disse tingene, med Fylkesmannen og med nasjonale myndigheter?

Hvilken rolle har miljøvernorganisasjoner i arbeidet du gjør med miljøforbedringer?

Hvilken rolle har og hvilken slags kunnskaps-spredning driver næringsorganisasjonene med?

Hvor tror du de største hindrene ligger for å oppnå økt bærekraft i Vikebygd området? [Tilleggsspørsmål: Hvorfor skjer dette? Hvordan hindrer dette deg i å gjennomføre bærekraft tiltak?]

Hva i samfunnet påvirker eller motvirker gjennomføring av bærekraftighets tiltak

Hvem eller hvilke institusjoner mener du bør være ansvarlig for å påvirke til økt innsats for gjennomføring av økt bærekraft i ditt område ? [Tilleggsspørsmål: Skjer dette eller ikke? Hvordan fungerer dette? Hvordan fungerer det ikke?]

Hva er de største hindringene for å få til økt økologisk bærekraft i ditt område?

Hvilke miljø- lover og forskrifter påvirker din virksomhet ?

Hvordan øker eller reduserer naturmiljøet/landskapet verdien av foretaket ditt ?

Hvordan vil du si at naturmiljøet/kulturlandskapet påvirker verdien av foretaket ditt? [Tilleggsspørsmål: Hvordan øker det verdien av virksomheten din? Er det noen ting som reduserer verdien for virksomheten din ?]

Har du fått noen kommentarer fra gjester/kunder om naturmiljøet/kulturlandskapet i Vikebygd, er kommentarene forskjellig mellom utenlandske og norske gjester?

Bruker du miljøvennlighet, natur og kulturlandskapet aktivt i markedsføring av ditt foretak?

Er det infrastruktur (veier, strøm, internet etc) som hindrer verdiskaping i foretaket ditt?

<u>Avslutting av intervjuet</u>

Intervjuet er tenkt å ha en times varighet, så sant intervju-objektet ikke ønsker å fortsette.

Ved avsluttelsen av intervjuet skal forsker takke for deltagelsen, og gjenta at intervju-objektet kan få høre intervjuet eller se utskriften hvis det er ønskelig.

Appendix 5 Attributes of Australian Interviewees

*** Where one respondent can be classified as being several types of actors, their main activity is the one identified.**

Pseudonym Or Org.	Actor Type *	Total No.	Size of Business	Lovedale Residency	Age Group	Gend	Previous location	Date of Interview
Chris	Horizontal	1 Horizontal	Small	Lovedale (6-10yrs)	51 - 65 yrs	M	Sydney	17-Dec-09
John	Horizontal/Vertical		Large	Lovedale (>25yrs)	51 - 65 yrs	M	na	17-Dec-09
Lucy	Horizontal/Lateral		Medium	Lovedale (1-5yrs)	36 - 50 yrs	F	Interstate	11-Dec-09
Barry (& Liz)	Horizontal/Vertical		Small	Lovedale (11-25yrs)	51 - 65 yrs	M	Sydney	04-Nov-09
Karl	Diagonal/ Horizontal/Vertical		Large	Lovedale (6-10yrs)	> 66 yrs	M	Sydney	29-Oct-09
Susan	Diagonal/Horizontal		Small	Lovedale (1-5 yrs)	36 - 50 yrs	F	Sydney	23-Oct-09
Nina	Diagonal/Lateral	6 Combined	Small	Lovedale (6-10yrs)	51 - 65 yrs	F	Sydney	29-Oct-09
Joan	Diagonal		Small	Lovedale (1-5yrs)	36 - 50 yrs	F	Sydney	23-Oct-09
Donna	Diagonal		Small	Lovedale (1-5yrs)	51 - 65 yrs	F	Sydney	04-Nov-09
Tony (& Vic)	Diagonal		Small	Lovedale (6-10yrs)	51 - 65 yrs	M	Sydney	17-Dec-09
Linda	Diagonal		Medium	Lovedale (11-25yrs)	51 - 65 yrs	F	Regional	04-Nov-09
William	Diagonal	6 Diagonal	Large	Lovedale (1-5yrs)	36 - 50 yrs	M	Interstate	16-Nov-09
VitiExpert M	Vertical/Lateral	1 Vertical	Small	Lovedale (11-25yrs)	> 66 yrs	M	Interstate	16-Jun-10
Total Interviews within Micro-Cluster : 13 Actors								
Supplier	Vertical	1 Vertical	Large	Non - Lovedale	36 - 50 yrs	M	na	05-Feb-10
VitiExpert F	Vertical/Lateral		Small	Non - Lovedale	51 - 65 yrs	F	na	25-Nov-09
Winemaker	Vertical/Lateral		Small	Non - Lovedale	26 - 35 yrs	F	na	16-Jun-10
Wine Ind Org	Lateral/Horizontal	3 Combined	Medium	Non - Lovedale	36 - 50 yrs	M	na	11-Dec-09
CatchM Auth	Lateral		na	Non - Lovedale	36 - 50 yrs	M	na	01-Dec-09

Pseudonym Or Org.	Actor Type *	Total No.	Size of Business	Lovedale Residency	Age Group	Gend	Previous location	Date of Interview
Plan Dept	Lateral		na	Non - Lovedale	26 - 35 yrs	F	na	21-Dec-09
Tourism	Lateral		na	Non - Lovedale	26 - 35 yrs	F	na	03-Mar-10
Reg Coord	Lateral		na	Non - Lovedale	26 - 35 yrs	M	na	16-Dec-09
Env Dept	Lateral		na	Non - Lovedale	36 - 50 yrs	M	na	15-Dec-09
Agric Dept	Lateral		na	Non - Lovedale	51 - 65 yrs	M	na	07-Dec-09
Council	Lateral	8 Lateral	na	Non - Lovedale	36 - 50 yrs	M	na	01-Dec-09
Ecopreneur	Horizontal		Large	Non - Lovedale	51 - 65 yrs	M	na	11-Dec-09
Family Wine Co	Horizontal	2 Horizontal	Large	Non - Lovedale	26 - 35 yrs	M	na	16-Jun-10

Total Interviews outside Micro-Cluster : 13 Actors

Appendix 6 Attributes of Norwegian Interviewees

*** Where one respondent can be classified into different types of actors, their main activity is the one identified. Previous location in brackets (for instance (Bergen) is the location where tertiary education has been taken.**

Pseudonym Or Org.	Actor Type *	Total No.	Size of Business	Vikebygd Residency	Age Group	Gend	Previous location	Date of Interview
Gro	Horizontal		Small	Vikebygd (>25 yrs)	51-65yrs	F	Local	17-Dec-09
Espen	Horizontal	2 Horizontal	Large	Vikebygd (11-24yrs)	<25yrs	M	Local (Bergen)	17-Dec-09
Lars & Gudrun	Horizontal/Diagonal		Medium	Vikebygd (>25yrs)	51-65yrs	M	Local	11-Dec-09
Per	Horizontal/Diagonal		Small	Vikebygd (>25yrs)	36-50yrs	M	Local (Bergen)	04-Nov-09
Aslak	Horizontal/Diagonal		Large	Vikebygd (11-24yrs)	26-35yrs	M	Local	29-Oct-09
Gunhild	Horizontal/Diagonal		Small	Vikebygd (11-24yrs)	36-50yrs	F	Local (Bergen)	23-Oct-09
Magne	Horizontal/Lateral		Small	Vikebygd(>25yrs)	51-65yrs	M	Local	29-Oct-09
Svein	Horizontal/Lateral		Small	Vikebygd (1-5yrs)	36-50yrs	M	East Coast	23-Oct-09
Morten	Diagonal/Horizontal	7 Combined	Small	Vikebygd (>25yrs)	51-65yrs	M	Local	04-Nov-09
Kristin	Diagonal	1 Diagonal	Large	Vikebygd (5-10yrs)	36-50yrs	F	Bergen	17-Dec-09
Manufact	Vertical	1 Vertical	Large	Vikebygd (>25yrs)	51-65yrs	M	Local	04-Nov-09
Total Interviews within Micro-Cluster : 11 Actors								
Ind assoc	Lateral/Horizontal		Small	Non -Vikebygd	51-65yrs	M	na	29/3/2010
Fruit Coop Supplier	Vertical/Lateral/Horizontal		Large	Non -Vikebygd	51-65yrs	M	na	29/3/2010
Agric Exp	Vertical/Lateral/Horizontal		Small	Non-Vikebygd	51-65yrs	M	na	25/3/2010
Bus Inn Exp	Vertical/Lateral/Horizontal	4 Combined	Small	Non-Vikebygd	51-65yrs	M	na	23/3/2010
Harald	Diagonal	1 Diagonal	Large	Non- Vikebygd	>65yrs	M	na	25/3/2010

Pseudonym Or Org.	Actor Type *	Total No.	Size of Business	Vikebygd Residency	Age Group	Gend	Previous location	Date of Interview
Loc Tourism	Lateral		na	Non-Vikebygd	25-35yrs	F	na	25/3/2010
Reg Tourism	Lateral		na	Non -Vikebygd	36-50yrs	M	na	23/3/2010
Council	Lateral		na	Non-Vikebygd	36-50yrs	M	na	25/3/2010
Loc Agric	Lateral		na	Non-Vikebygd	26-50yrs	M	na	17/3/2010
Dept Env	Lateral		na	Non -Vikebygd	36-50yrs	M	na	22/3/2010
Dept Agric	Lateral		na	Non-Vikebygd	36-50yrs	M	na	22/3/2010
Res Sust	Lateral		na	Non-Vikebygd	36-50yrs	F	na	12/3/2010
Innov	Lateral	8 Lateral	na	Non-Vikebygd	36-50yrs	F	na	11/3/2010

Total Interviews outside Micro-Cluster : 13 Actors

Appendix 7 Log trail of visits to the two micro-clusters

Lovedale log of contact	
General meeting in LCC Introduce project	March 2009
Inaugural meeting of Greening of Lovedale	April 2009
Street drinks	May 2009
General Meeting in LCC Long Term Strategy	July 2009
Tour of wineries and accommodation providers	Sept 2009 and Oct 2009
AGM, surveys	Nov 2009
Fieldwork, interviews Day trips	Oct 2009 to June 2010
Wine Business Conference LCC members present	Dec 2009
Lovedale Long Lunch	May 2010
Streetdrinks	Feb 2010
Rally against Coal Seam Gas in Sydney with LCC	Mar 2010

Vikebygd log of contact	
Landscape park Conference in Norway	May 2009
Meeting with Board of Vikebygd Landscape Park	May 2009
Meeting and approval to start research from Landscape Park Board	Sept 2009
Open Day and AGM in Vikebygd Landscape Park	20 March 2010
Field work. Interviews and Questionnaires	10 -31 March 2010
Observer at Ullensvang Chamber of Commerce AGM	March 2010
Observer at Landscape Park management meeting	March 2010
1 week Holiday in Vikebygd	July 2010
Contact via social media and email	July2010 to July 2011
Meeting with Chairman of the Board and Manager Present results, which the Board would later be introduced to.	4th January 2012
Based on researchers presentation of results, News item on project in Local Newspaper	February 2012

Appendix 8 Results from Survey Questionnaire from Lovedale and Vikebygd

Business Owner's Characteristics

Table 8.1 Gender

	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Male	**13**	**42%**	**15**	**71%**
Female	**18**	**29%**	**6**	**29%**

Table 8.2 Age

Age-groups	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=?) No. respondents	Vikebygd Valid percent
Below 25 years	**0**	**0 %**	**0**	**0%**
25 -35 years	**3**	**10 %**	**3**	**9%**
36 - 50 years	**5**	**16 %**	**13**	**43%**
51 to 65 years	**20**	**64 %**	**13**	**43%**
Above 65 years	**3**	**10 %**	**2**	**5%**
Total	**31**	**100%**	**21**	**100%**

Table 8.3 Education

Education levels	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Less than 10 years	**3**	**10%**	**0**	**0%**
11 - 12 years	**4**	**13%**	**0**	**0%**
Vocational (TAFE or equivalent)	**9**	**29%**	**13**	**43%**
Up to 3 years at Uni	**9**	**29%**	**3**	**9%**
More than 3 years at uni	**6**	**19%**	**15**	**48%**

Table 8.4 How long have you lived in this area?

Years	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=9) * No. respondents	Vikebygd Valid percent
0-1 years	**4**	**13%**	**0**	**0%**
2-5 years	**8**	**26%**	**1**	**21%**
6-10 years	**7**	**23%**	**0**	**0%**
11-25 years	**6**	**19%**	**7**	**78%**
> 26 years	**6**	**19%**	**1**	**11%**
Total	**31**	**100%**	**9**	**100%**

***The results from Vikebygd had a low response rate due to question not being understood. Therefore, I added a question in the Vikebygd survey only, see below.**

Table 8.5 What type of Vikebygd resident are you ?

Type of Vikebygd resident	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Lived here all my life	12	57%
Born here and returned after education/work	4	19%
Not from here	5	24%
Total	21	100%

Micro-Cluster Characteristics

Table 8.6 Type of Business

Type of business	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Sole trader	6	19%	13	62%
Family business	18	58%	3	14%
Private company	7	23%	0	0%
Public company	0	0%	2	10%
International owned company	0	0%	1	5%
Non-profit/public institution	0	0%	2	9%
Total	31	100%	21	100%

Table 8.7 Business activity

Business activity	Lovedale (n=31) No. counts *	Lovedale Valid percent *	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Agricultural production	13	26%	12	57%
Manufacturing of agric. produce	8	26%	1	5%
Accommodation	18	58%	1	5%
Food and catering	4	13%	2	10%
Adventure/Tourist attractions	1	3%	4	19%
Services in Community	1	3%	7	33%
Other	4	13%	6	28%

***This question was a multi-response question, and the results are number of counts per item. Most business had several business activities.**

Table 8.8 Size of business (people employed)

People employed	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Only myself	9	29%	8	38%
1-4 people	16	52%	9	43%
5-19 people	5	16%	4	19%
20-100 people	1	3%	0	0%
Total	31	100%	21	100%

Table 8.9 Years of operation

Years of operation	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
0-1 years	3	10%	0	0%
2-5 years	9	30%	1	5%
6-10 years	7	22%	3	14%
10-20 years	9	29%	5	24%
More than 20 years	3	10%	12	57%
Total	31	100%	21	100%

Table 8.10 Where is produce sold?

Sale of Produce	Lovedale (n=24) No. counts *	Lovedale Valid percent *	Vikebygd (n=19) No. counts *	Vikebygd Valid percent *
Sale direct from property	13	54%	6	30%
Sale through other venues locally	11	46%	6	30%
Nationally	10	42%	3	16%
Within State-region	8	33%	0	0%
Internationally	7	29%	0	0%
Other ***	1	4%	4	28%
Fruit Co-operative **	0	0%	8	42%

***This question was a multi-response question, and results are number of counts per item. Most producers had several channels for the sale of produce.**

**** There are two local Fruit Co-operative to which farmers in Vikebygd deliver their produce (Nå and Utne fruit co-operatives). Virtually all farmers are members of one of these two fruit co-operatives.**

*****Other sales channels in Vikebygd were specific niche markets (3) and the national organic co-operative (1).**

Table 8.11 Where do tourists come from ?

Tourist origins	Lovedale (n=26) No. counts *	Lovedale Valid percent *	Vikebygd (n=0) No. counts **	Vikebygd Valid percent
State	20	77%		
Regional	15	58%		
National	11	42%		
Overseas	9	35%		
Local guests	2	8%		

***This question was a multi-response question, and results are number of counts per item. Most businesses received tourists from different origins.**

**** In Vikebygd there were only a few recently established tourism providers, thus no data for tourist origin were available.**

Environmental concerns, issues and actions

Table 8.12 Concern about environment in general

Degree of environmental concern	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Not concerned	0	0%	2	10%
A little concerned	2	6%	9	45%
Neither concerned nor not concerned	2	7%	1	5%
Quite concerned	18	58%	8	40%
Very concerned	9	29%	0	0%
Total	31	100%	21	100%

Table 8.13 Concern about climate change

Degree of environmental concern	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Not concerned	1	3%	1	5%
A little concerned	3	10%	9	45%
Neither concerned nor not concerned	4	13%	3	15%
Quite concerned	16	51%	6	30%

Degree of environmental concern	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Very concerned	7	23%	1	5%
Total	31	100%	21	100%

Table 8.14 Concern about loss of biodiversity

Degree of environmental concern	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Not concerned	0	0%	3	15%
A little concerned	5	16%	4	20%
Neither concerned nor not concerned	2	6%	6	30%
Quite concerned	13	42%	6	30%
Very concerned	11	36%	1	5%
Total	31	100%	21	100%

Table 8.15 Environmental action performed by businesses

Type of environmental action	Lovedale (n=31) No. counts *	Lovedale Valid percent *	Vikebygd (n=21) N.o counts *	Vikebygd Valid percent *
Sorting/Recycling of waste	28	90%	21	100%
Water Saving activities	30	97%	1	6%
Reduce pesticide/fertilizers	25	81%	13	68%
Reducing erosion	15	48%	7	41%
Organic production	0	0%	4	23%
Energy efficiency	18	58%	6	35%
Use of renewable energy	6	19%	3	18%
Reduce transport needs	8	26%	3	18%
Reduce loss of biodiversity	5	16%	9	53%
Maintaining cultural landscape	0	0%	8	47%

***This question was a multi-response question, and results are number of counts per item. Most businesses performed several types of environmental action.**

Table 8.16 To what extent is your industry aware of environmental issues ?

Industry awareness	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=20) No. respondents	Vikebygd Valid percent
Unable to answer question	4	13%	1	5%
Not aware at all	1	3%	0	0%
A little aware	5	16%	4	20%
Medium aware	3	10%	4	20%
Quite aware	15	48%	10	50%
Very aware	3	10%	1	5%
Total	31	100%	20	100%

Table 8.17 Will environmental issues be more important for your business in 5 years?

Importance of environmental issues in 5 years	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Cannot answer	0	0%	0	0%
As important as now to my business	8	26%	6	30%
Marginally more important	1	3%	4	20%
More important	11	36%	11	50%
Much more important	11	35%	0	0%
Total	31	100%	21	100%

Pressures, drivers and barriers for environmental action

Table 8.18 Does your business have internal pressure to pursue environmental action?

Internal Pressure	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) No. respondents	Vikebygd Valid percent
Yes	14	45%	11	52%
No	17	55%	10	48%

Table 8.19 What type of internal pressure?

Type of internal pressure	Lovedale (n=14) No. counts *	Lovedale Valid percent *	Vikebygd (n=11) No. counts *	Vikebygd Valid percent *
Own values and beliefs **	10	90%	12	83%
Increased knowledge about environment	4	36%	4	29%
From owners of company	1	9%	4	28%
Pressure from employees	1	9%	1	6%

***This question was a multi-response question, and the results are number of counts per item. A few businesses felt several types of internal pressure.**

**** In Vikebygd, two respondents (20%) added other reasons for feeling internal pressure, these were "Solidarity with Fruit Co-operative" and "Landscape aesthethics", both of which was added to the category "Own values and beliefs".**

Table 8.20 Does your business have external pressure to pursue environmental action?

External Pressure	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=19) No. respondents	Vikebygd Valid percent
Yes	17	55%	13	68%
No	14	45%	6	32%

Table 8.21 What type of external pressure?

Type of external pressure	Lovedale (n=17) No. counts *	Lovedale Valid percent *	Vikebygd (n=13) No. counts *	Vikebygd Valid percent *
Lovedale Chamber/ Vikebygd Landskapspark	10	56%	2	17%
Neighbours/local community	8	47%	2	17%
Other Bus assoc	6	37%	2	18%
Customers - guests	6	37%	7	54%
Federal govt	4	26%	10	75%
State govt/County Auth	4	26%	7	50%
Local government	1	5%	4	33%
Physical env force change	3	20%	0	0%
Competitors	3	16%	1	8%
Tourism org **	3	16%	2	17%
Local env groups***	1	5%	1	8%
Nat env groups****	0	0%	1	9%
Fruit Co-ops/ Wholesalers	0	0%	4	33%

***This question was a multi-response question, and results are number of counts per item. Most businesses felt several forms of external pressures to pursue environmental action. Note that only respondents who answered "Yes" to perceiving external pressure are included above; Lovedale (n=17) and Vikebygd (n=13).**

**** Tourism organisations exerting pressure were, in Norway, the Norwegian Mountain Trekking Association (DNT) and, in Australia, Triple AAA.**

*****Pressure from Local Environmental Group was in Vikebygd the local "Future in Our Hands Group", a low consumption advocacy group, while the**

******National Environmental Group was "Norway's national Nature Conservation Organisation" Norges Naturvernforbund".**

Table 8.22 What are drivers for environmental action?

Type of drivers	Lovedale (n=31) No. counts *	Lovedale Valid percent *	Vikebygd (n=18) No. counts *	Vikebygd Valid percent *
Government regulations	1	3%	8	47%
Env cond for govt grants	4	13%	8	44%
Env cond for private funding	0	0%	1	5%
Demand from Fruit Coops	0	0%	10	53%
Demand from bus assoc **	5	16%	0	0%
Risk management	10	32%	10	55%
Environmental branding	9	29%	10	53%
Attract employees	3	10%	8	47%
Cost reduction	12	39%	6	33%
Increased knowledge	14	45%	3	17%
Env pressure groups	0	0%	1	5%
The right thing to do	6	20%	12	65%
Fear of bad reputation	3	10%	0	0%
Fear of enviro-consequences	15	48%	4	23%

***This question was a multi-response question, and results are number of counts per item. Most businesses felt several drivers to pursue environmental action.**

****Demand for voluntary environmental action from business associations was only perceived as a driver in Lovedale and identified as the Lovedale Chamber of Commerce.**

Table 8.23 What are the barriers for environmental action ?

Type of barriers	Lovedale (n=27) No. counts *	Lovedale Valid percent *	Vikebygd (n=15) No. counts *	Vikebygd Valid percent *
Cost implications	21	78%	5	33%
Lack of time	13	48%	8	53%
Lack of knowledge	11	41%	3	20%
Other prorities more important	10	37%	2	13%
Env tech too risky	4	15%	2	13%
Env techn/ methods too laborious	3	11%	6	40%
Competitors not doing it	2	7%	1	7%
Too little financial support	0	0%	4	27%
Other barriers **	1	4%	5	33%

*This question was a multi-response question, and results are number of counts per item. Most businesses stated several barriers to the pursuit of environmental action.

**Other barriers that were specifically identified in Vikebygd were: organic farming methods too complex; organic produce distribution system not adequate; Too much clean nature reduces environmental awareness, Difficult to justify maintenance of cultural landscapes; Multifunctional income streams reduces time on environmental action. Another barrier identified in Lovedale: Rebates for environmental incentives too bureaucratic.

Value-adding of Environmental Action

Table 8.24 What types of environmental plans/strategies and certification do you have?

Type of environmental plans/certifications	Lovedale (n=31) No. counts *	Lovedale Valid percent *	Vikebygd (n=20) No. counts *	Vikebygd Valid percent *
General env plan or strategy	19	61%	13	65%
Environmental plan in writing	12	39%	0	0%
Plan with measurable targets	3	10%	9	45%
Plan with staff training	5	16%	4	20%
Plan w assess suppliers	2	6%	2	10%
Other types of plans **	1	3%	7	35%
Environmental certification ***	2	6%	5	25%

*This question was a multi-response question, and results are number of counts per item. Some businesses stated several types of environmental plans and/or certifications.

** Other types of environmental plans in Vikebygd were "Cultural Landscape Management Plan", "Quality Assurance in Agriculture", and in Lovedale they were: "Energy Audit by NSW DECWA". ***Types of Environmental Certification in Vikebygd were: "Organic certification", "Global GAP certification" and "Eco-Lighthouse Certification". In Lovedale they were; "Eco-Tourism", "Climate Action" and "AAA Tourism Green Star".

Table 8.25 To what extent do you emphasise environmental issues in marketing ?

Emphasis on environmental issues in marketing	Lovedale (n=31) No. respondents	Lovedale Valid percent	Vikebygd (n=21) N.o respondents	Vikebygd Valid percent
Not at all	15	48%	5	25%
A little	4	13%	7	35%
Some	6	19%	4	20%
A lot	5	16%	3	15%
It is main focus	0	0%	1	5%
Total	31	100%	21	100%

Environmental Knowledge

Table 8.26 Sources of environmental knowledge

Environmental knowledge providers	Lovedale (n=30) No. counts *	Lovedale Valid percent *	Vikebygd (n=17) No. counts *	Vikebygd Valid percent *
Formal paid courses	2	7%	4	24%
Free training from authorities	0	0%	2	12%
Business associations **	16	53%	7	41%
Lovedale CC/ Vikebygd Landskapspark	11	37%	6	35%
Other knowledge providers ***	0	0%	4	24%
Member of enviro org	6	20%	0	0%
Discussion with friends/neighbours	2	7%	10	59%
Voluntary env activities	11	37%	8	47%
Own research and experience	10	33%	7	41%
Do not need more knowledge	2	7%	0	0%

***This question was a multi-response question, and results are number of counts per item. Most businesses had several sources of environmental knowledge.**

**** In Vikebygd, organisations providing environmental knowledge were: "Food and labelling authority - Matmerk", "Regional Field Trials Extension Services -Indre Hardanger Forsøksring", "Farmers Union Bondelaget", "The horticulture research stationBioforsk, Ullensvang", "The Fruit Co-operative", "National Industry Association NHO - Tourism", "Association for West Coast agriculture Vestlands-jordbruk", The Builders' Society". In Lovedale, only one organisation was identified "The Lovedale Vignerons Association".**

***** Other environmental knowledge providers identified in Vikebygd were; "Ullensvang Council Agricultural Officer", "Organic Extension Services OIKOS", "Organic Labelling Authority DEBIO", and "Environmental/agricultural officers at County Level Fylkesmannen".**

Appendix 9 Summary of Statistical Tests

Tests relate to the comparative statistics discussed in Chapter 7.

Business Owner and Micro-cluster Characteristics

Table 9.1 Tests of association between micro-clusters and measures of demographics, business structure and modes of operation.

Factors to be assessed	Significant association	Statistical test	P-Value
Gender	Yes	Chi Square	P value = 0.036
Age distribution	No	Monte Carlo	P value = 0.192
Education level	Yes	Monte Carlo	P value = 0.021
How many years lived in the area	Yes	Monte Carlo	P value = 0.03
Business Activity **Agric Production**	No	Fischers Exact Test	P value = 0.258
Manufacturing	No	Fischers Exact Test	P value = 0.07
Accommodation	Yes	Fischers Exact Test	P value = 0.00
Catering	No	Fischers Exact Test	P value = 1.00
Adventure	No	Fischers Exact Test	P value = 0.062
Services in the community	Yes	Fischers Exact Test	P value = 0.03
Other income	No	Fischers Exact Test	P value = 0.072
Business Type	Yes	Monte Carlo	P value = 0.00
Business years of operation	Yes	Monte Carlo	P value = 0.01

Environmental Concern, Issues and Action

Table 9.2 Tests of association between micro-clusters and measures of environmental concern, industry awareness and environmental action

Factors to be assessed	Significant association	Statistical test	P-Value
Concern about the Environment in General	Yes	Chi Square	P value = 0.00
Concern about Climate Change	Yes	Monte Carlo	P value = 0.029
Concern about Loss of Biodiversity	Yes	Monte Carlo	P value = 0.04
Industry awareness of Environmental Issues	No	Monte Carlo	P value = 0.795
Environmental Action			
Sorting/recycling of waste	No	Chi Square	P value = 0.850
Water saving	Yes	Chi Square	P value = 0.326
Reduce use of pesticides and fertiliser	No	Chi Square	P value = 0.000
Reduce erosion	No	Chi Square	P value = 0.632
Organic production *	Yes		
Energy efficiency	No	Chi Square	P value = 0.131
Use of renewable energy	No	Chi Square	P value = 0.885

Factors to be assessed	Significant association	Statistical test	P-Value
Reduce transport	No	Chi Square	P value = 0.521
Reduce loss of biodiversity	Yes	Chi Square	P value = 0.007
Maintain cultural landscape *	Yes		
Industry awareness of Environmental Issues	No	Monte Carlo	P value = 0.795
Environmental issues more important for their business in 5 years from now?	Yes	Monte Carlo	P value = 0.01

***Two types of action only occurred in Vikebygd and statistical analysis could not be undertaken.**

Pressures, Drivers and Barriers for Environmental Action

Table 9.3 Tests of association between micro-clusters and measures pressures, drivers and barriers for environmental action

Factors to be assessed	Significant association	Statistical test	P-Value
Do you feel internal pressure to pursue environmental action?	No	Chi Square	P value = 0.645
Do you feel external pressure to pursue environmental action?	No	Chi Square	P value = 0.341
What type of external pressure? **Significant differences were found in:**			
Federal government	Yes	Chi Square	P value = 0.008
Local government	Yes	Chi Square	P value = 0.038
Fruit Co-operative / Buyers	Yes	Fischers Exact test	P value = 0.02
What are the main drivers for environmental action? **Significant differences were found in:**			
Environmental conditions linked with grants	Yes	Fischers Exact Test	P value = 0.019
Government regulation	Yes	Chi Square	P value 0.00
Attractiveness to employers	Yes	Fischers Exact test	P value = 0.015
The right thing to do	Yes	Chi Square	P value = 0.002
What are the main barriers for environmental action? Significant differences was found in: **Cost implications**	Yes	Chi Square	0.0084

Value-adding of Environmental Action

Table 9.4 Tests of association between micro-clusters and measures of value-adding of environmental action

Factors to be assessed	Significant association	Statistical test	P-Value
General environmental plan or strategy	No	Chi Square	P value = 0.789
Environmental plan in writing	Yes	Chi Square	P value = 0.000

Factors to be assessed	Significant association	Statistical test	P-Value
Environmental plan with measurable targets	Yes	Exact Test	P value = 0.002
Environmental plan including staff training	No	Chi Square	P value = 0.507
Environmental plan including assessment of suppliers	No	Chi Square	P value = 0.520
Other types of environmental plans	Yes	Exact test	P value = 0.003
Environmental certification	Yes	Exact Test	P value = 0.045
Use of environmental issues in marketing	No	Monte Carlo	P value = 0.213

Environmental Knowledge Provision

Table 9.5 Tests of association between micro-clusters and measures of environmental knowledge providers

Factors to be assessed	Significant association	Statistical test	P-Value
Formal paid courses	No	Exact Test	P value = 0.179
Free training from authorities	No	Exact Test	P value = 0.176
Business associations	No	Exact Test	P value = 0.547
Lovedale CC/Vikebygd Landskapspark	No	Exact Test	P value = 1
Other knowledge providers *			
Member of enviro org	No	Exact Test	P value = 0.074
Discussion with friends/neighbours	Yes	Exact Test	P value = 0.000
Voluntary env. activities	No	Exact Test	P value = 0.546
Own research and experience	No	Exact Test	P value = 0.753
Do not need more knowledge	No	Exact Test	P value = 0.528

***Only in Vikebygd.**

Appendix 10 Coding dictionary used for NVIVO and Manual Coding

CODE	ABBREV.	DEFINITION
BACKGROUND-Attributes	BKGR	Descriptions of the background of the interviewee and the business. Also depicts the relationship
- Actor Type	ACT	the interviewee and business has in the
- Education	EDU	community and in relation to the micro-cluster.
- Experience	EXP	
- Income sources INC		
- How long lived in area	YRS	
- Motivation for moving to area	MOT	
HISTORY	HIST	Describes the history of the area and the Micro-cluster initiatives. Also perceptions of the
- History of area	HIS-AREA	importance of the community organisation and
- History of organisation	HIS-ORG	the business.
- History of business	HIS-BUS	
ENVIRONMENTAL ACTION	ENVAC	Description of environmental action.
- Energy	ENV-ENR	
- Waste	ENV-WAST	
- Products	ENV -PROD	
- Biodiversity	ENV-BIO	
PERCEPTIONS OF SUSTAINABILITY	SUST	The interviewees perceptions of what sustainability means. And whether it is
- Definition	SUST-DEF	perceived as a process or a clear goal.
- Process	SUST-PROS	
PERCEPTIONS OF ENVIRO SUSTAINABILITY	ENVSUS	The interviewees perceptions of Environmental sustainability. And what it
- Business focus	ENV-BUS	means for the business and for the
- Nature focus	ENV-NAT	environment.
MOTIVATION-DRIVERS	DRIV	Drivers or motivations to pursue environmental action. Internal drivers (individual and company)
- External drivers	DRIV-EX	External drivers (from regulation or society or
- Internal drivers	DRIV-INT	community).
BARRIERS	BAR	Barriers to pursue environmental action. External barriers in society, internal barriers (individual).
- External barriers	BAR-EXT	
- Internal barriers	BAR-INT	
ENVIRO KNOWLEDGE	ENV KNOW	Where does environmental knowledge come from.
ENVIRO NETWORKS	NETW	What networks offer support for environmental Action.
ENVIRONMENTAL CERTIFICATION	ENV-CERT	Attitudes towards environmental certification, Positive or negative, and why?
- Positive	CERT-POS	
- Negative	CERT-NEG	
VALUE-ADDING	VALADD	Issues around how the interviewee perceives value-adding as a result of environmental

- Nature	**VALAD-NAT**	**action and landscape or nature preservation.**
- Landscape	**VALAD-LNDSC**	
COMPETITIVE ADVANTAGE OF ENVIRONMENTAL ACTION	**COMP ADV**	**Perceptions of how environmental action can lead to competitive advantage for business And for community.**
- Business level	**COMP BUS**	
- Community	**COMP COM**	

Appendix 11 Ethics Approval

HUMAN RESEARCH ETHICS COMMITTEE

Notification of Expedited Approval

To Chief Investigator or Project Supervisor:	**Professor Kenneth Burgess**
Cc Co-investigators / Research Students:	**Ms Sidsel Grimstad**
Re Protocol:	**Business-driven sustainability initiatives of agriculture based tourism clusters in Norway and Australia**
Date:	**15-Oct-2009**
Reference No:	**H-2009-0254**
Date of Initial Approval:	**14-Oct-2009**

Thank you for your Response to Conditional Approval submission to the Human Research Ethics Committee (HREC) seeking approval in relation to the above protocol.

Your submission was considered under Expedited review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is Approved effective 14-Oct-2009.

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the National Statement on Ethical Conduct in Human Research, 2007, and the requirements within this University relating to human research.

Approval will remain valid subject to the submission, and satisfactory assessment, of annual progress reports. *If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.*

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal *Certificate of Approval* will be available upon request. Your approval number is H-2009-0254.

If the research requires the use of an Information Statement, ensure this number is inserted at the relevant point in the Complaints paragraph prior to distribution to potential participants You may then proceed with the research.

**PLEASE NOTE & ACTION THE FOLLOWING:

Amendment to the Information Statement / Survey Cover Letter.
Please add the standard University complaints statement to the end of these documents. The wording of this statement is available in template document at
http://www.newcastle.edu.au/research/human/forms.html.

Amendment to the Consent Form.
Please add a statement that the interview will be recorded and that the participants can request to review/edit the transcript or recording.

Please submit a copy of the amended documents at your earliest convenience.

Conditions of Approval

This approval has been granted subject to you complying with the requirements for *Monitoring of Progress*, *Reporting of Adverse Events*, and *Variations to the Approved Protocol* as detailed below.

PLEASE NOTE:
In the case where the HREC has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, or a Renewal of approval, you will apply to the External HREC for approval in the first instance and then Register that approval with the University's HREC.

Monitoring of Progress

Other than above, the University is obliged to monitor the progress of research projects involving human participants to ensure that they are conducted according to the protocol as approved by the HREC. A progress report is required on an annual basis. Continuation of your HREC approval for this project is conditional upon receipt, and satisfactory assessment, of annual progress reports. You will be advised when a report is due.

Reporting of Adverse Events

It is the responsibility of the person first named on this Approval Advice to report adverse events.

Adverse events, however minor, must be recorded by the investigator as observed by the investigator or as volunteered by a participant in the research. Full details are to be documented, whether or not the investigator, or his/her deputies, consider the event to be related to the research substance or procedure.

Serious or unforeseen adverse events that occur during the research or within six (6) months of completion of the research, must be reported by the person first named on the Approval Advice to the (HREC) by way of the Adverse Event Report form within 72 hours of the occurrence of the event or the investigator receiving advice of the event.

Serious adverse events are defined as:

Causing death, life threatening or serious disability.

Causing or prolonging hospitalisation.

Overdoses, cancers, congenital abnormalities, tissue damage, whether or not they are judged to be caused by the investigational agent or procedure.

Causing psycho-social and/or financial harm. This covers everything from perceived invasion of privacy, breach of confidentiality, or the diminution of social reputation, to the creation of psychological fears and

trauma.

Any other event which might affect the continued ethical acceptability of the project.

Reports of adverse events must include:

Participant's study identification number;

date of birth;

date of entry into the study;

treatment arm (if applicable);

date of event;

details of event;

the investigator's opinion as to whether the event is related to the research procedures; and

action taken in response to the event.

Adverse events which do not fall within the definition of serious or unexpected, including those reported from other sites involved in the research, are to be reported in detail at the time of the annual progress report to the HREC.

Variations to approved protocol

If you wish to change, or deviate from, the approved protocol, you will need to submit an *Application for Variation to Approved Human Research*. Variations may include, but are not limited to, changes or additions to investigators, study design, study population, number of participants, methods of recruitment, or participant information/consent documentation. Variations must be approved by the (HREC) before they are implemented except when Registering an approval of a variation from an external HREC which has been designated the lead HREC, in which case you may proceed as soon as you receive an acknowledgement of your Registration.

Linkage of ethics approval to a new Grant

HREC approvals cannot be assigned to a new grant or award (ie those that were not identified on the application for ethics approval) without confirmation of the approval from the Human Research Ethics Officer on behalf of the HREC.

Best wishes for a successful project.

Associate Professor Alison Ferguson
Chair, Human Research Ethics Committee

For communications and enquiries:
Human Research Ethics Administration

Research Services
Research Office
The University of Newcastle
Callaghan NSW 2308
T +61 2 492 18999
F +61 2 492 17164
Human-Ethics@newcastle.edu.au

Linked University of Newcastle administered funding:

Funding body	Funding project title	First named investigator	Grant Ref
		,	

Appendix 12 Australian Info statement about project

FACULTY OF BUSINESS AND LAW

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

Dear Sir/Madam
Professor John Burgess
School of Business
Faculty of Business and Law
The University of Newcastle
Callaghan NSW 2308
Australia
Ph: +61 2 4921 6680
Fax: +61 2 4921 7398
Email: John.Burgess@newcastle.edu.au

Date : 22nd October 2009

Information statement for the Research Project:

Business-driven sustainability initiatives of agriculture based tourism clusters in Norway and Australia.

Who are we?

You are invited to participate in the research project identified above which is being conducted by Sidsel Grimstad, PhD candidate and her supervisors: Professor John Burgess and Senior Lecturer Dr. Jennifer Waterhouse from the School of Business at the Faculty of Business and Law at Newcastle University. The research project is funded by the University of Newcastle and the Tom Farrell Institute for the Environment.

Why is this research being done ?

This research project is a response to the urgency of environmental action required with regard to climate change and loss of biodiversity, demanding more knowledge around what motivates and hinders environmental action in small businesses. It is a comparative project which will examine two business-driven sustainability initiatives of agriculture based tourism areas in Norway and Australia. In Australia the research looks at initiatives in the Hunter Wine region and in Norway an apple-growing, cider producing region of Hardanger. The research seeks to understand differences in barriers and drivers that exist in the two countries and will therefore help to identify best policy practice. The research project will provide local business owners, associations and policy-makers with information about sustainability actions in the agriculture based tourism industry and intends to identify what is perceived as important sustainability activities for local businesses, what are barriers and what motivates for further action.

The overall purpose of the project is to increase our knowledge about what motivates businesses to undertake environmental action and will be important for policy and business organisations. It will also assist the two organisations in the two countries; namely the Lovedale Chamber of Commerce

and the Vikebygd Landscape Park Shareholding Company to identify what sustainability initiatives should be promoted.

What choice do you have ?

Participation in this research is entirely your choice. And you should only participate after you have read this information statement so that it will be an informed consent if you choose to participate. Whether or not you decide to participate, your decision will not disadvantage you.

How can you participate?

The research project comprises a survey sent to all members of the Lovedale Chamber of Commerce and in-depth interviews of up to 20 people in the area.

Participation in the Survey

The survey will take only 10-15 minutes to fill in. A reply paid envelope is enclosed which can be returned to researcher Sidsel Grimstad at the University of Newcastle. The questionnaire will be distributed to all members of Lovedale Chamber of Commerce, comprising approximately 75 small businesses. The survey should be filled in by the manager/owner of the business. The survey will comprise questions as to what sustainability actions are being undertaken, motivations and barriers for undertaking sustainability actions, and some information about the business and the owners perception on environmental issues.

Participation in an interview.

Ms Grimstad will interview between 15 and 20 people in each of the two clusters. The participants will be selected based on the type of business and role in the business sector. A recruitment form to volunteer for the interview will be sent to all survey recipients. If you want to volunteer for an interview you must fill in the recruitment form and send it in a separate reply paid envelope directly to the researcher in order to maintain the anonymity of the respondents.

The interview is estimated to take around 1 hour at a location and time convenient for the business owner/manager. The interviews will be conducted using a prepared guide focusing on the research themes. Topics may include: What is sustainable development, current sustainability actions, motivations and barriers for undertaking sustainability actions and how the natural environment adds value to the business. Each interview will be tape recorded if you give permission. You will be able to review, edit or erase the tape recording if you so wish. You will also be sent a summary account of the interview for your approval. At the end of the study, you will be sent a letter thanking you for your participation.

How much time will it take ?

The survey has been piloted and takes between 10 - 15 minutes to fill in. The interview is estimated to take approximately 1 hour and will be undertaken at a time and location convenient for the interviewee.

What are the risks and benefits of participating ?

There should be no risks for you or your business of participating in this research.

The benefits of participating would be that you assist your own membership association with gathering information about sustainability activities and how to proceed in the future. In the process, new knowledge about how and what other businesses undertake of actions may also include best practice and cost-cutting innovations that could benefit your business as well. The findings from both survey and interviews will be communicated to the Lovedale Chamber of Business, policy-makers and to industry associations. It is hoped that increased knowledge and awareness among policy-makers and service-providers on what actions are currently being **taken and what barriers and**

motivations to sustainability actions exist among small businesses in the region will improve policy and service-provision**.**

How will your privacy be protected ?

Any information collected by the researchers which might identify you will be stored securely and only accessed by the researchers, except as required by law. The names and addresses of businesses that are included in the survey have been provided by Lovedale Chamber of Commerce, but this information will not be stored by the university or given to anybody else. All information in the survey questionnaire will be kept anonymous and treated as confidential by the researchers. Each interview will be tape recorded if you give permission. You will be able to review, edit or erase the tape recording if you so wish. You will also be sent a summary account of the interview for your approval. Care will be taken so that any reports prepared from the research will not identify single participant's views.

How will the information collected be used?

The survey and interviews will take place during the October-November 2009. Preliminary results from the findings will be presented to the members of the Lovedale Chamber of Commerce at the end of the year 2009. The same procedure will take place in Norway during the first half of 2010. Findings from Australia will also be presented in Norway, and findings from Norway will be presented in Australia.

The research will be submitted as part of Sidsel Grimstad's PhD thesis in early 2011. In addition the findings will be written as scientific papers in academic journals and at conferences.

What do you need to do to participate ?

If you want to participate in the research project you can complete the survey and send it to the researcher as explained above.

If you want to volunteer for an interview, you must fill in the recruitment form enclosed with the survey and send it to the researcher in the reply paid envelope.

Before starting the interview you must read this information statement and read and sign the consent form. The interview can first take place after the researcher has received the signed consent form. A phone number is provided below if you wish to know more about the project.

Further Information

Further information or questions about this research can be obtained from:

Sidsel Grimstad Ph: Mob: Email:

Jennifer Waterhouse Ph: E-mail:

John Burgess Ph: E-mail:

We hope that you will participate in this research as it will give valuable information to the local community and businesses about what your views on sustainability is, and will therefore be important for policy making in the future. We thank you for participating !

Yours sincerely,

John Burgess	**Jennifer Waterhouse**	**Sidsel Grimstad**
Professor	**Senior Lecturer**	**PhD Candidate**

Appendix 13 Australian Consent Form

FACULTY OF BUSINESS AND LAW

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

Professor John Burgess
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Faculty of Business and Law
The University of Newcastle
Callaghan NSW 2308
Australia
Ph: +61 2 49216680
Fax: +61 2 49217398
Email: John.Burgess@newcastle.edu.au

Date: 22nd October 2009

Consent Form for the Research Project: Business-driven sustainability initiatives of agriculture based tourism clusters in Norway and Australia.

Consent Statement

I agree to participate in the above research project and give my consent freely. I understand that the project will be conducted as described in the Information Statement, a copy of which I have kept. I know that the interview will be recorded and that I can request to review/edit the transcript or recording.

I know that I can withdraw from the project at any time and do not have to give any reasons for withdrawing. I have had all questions answered to my satisfaction.

I consent to participate in an interview lasting about 1 hour. ☐ **Yes** ☐ **No**

Name _____ **(Please print)**

Signature _____

Date _____

Please return a signed consent statement to researcher Sidsel Grimstad, Newcastle University before the interview starts. Please keep one copy for yourself.

Appendix 14 Norwegian Info statement about project

FACULTY OF BUSINESS AND LAW

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

Professor John Burgess
School of Business
Faculty of Business and Law
The University of Newcastle
Callaghan NSW 2308
Australia
Ph: +61 2 4921 6680
Fax: +61 2 4921 7398
Email: John.Burgess@newcastle.edu.au

Dato : 3. Mars 2010

Invitasjon til å delta på forskningsprosjektet:

Egen-initierte tiltak for økt bærekraft i landbruksbaserte turismeklynger i Norge og Australia

Du er med dette invitert til å delta i et forskningsprosjekt som gjennomføres av forsker Sidsel Grimstad (Doktorgradskandidat) og hennes veiledere: Professor John Burgess og Senior forsker Dr. Jennifer Waterhouse fra School of Business ved Faculty of Business and Law ved Newcastle Universititet. Forskningsprosjektet er finansiert av Newcastle Universitet og av Tom Farrell Institute for the Environment, i Newcastle, NSW, Australia.

Hvorfor forske på denne problemstillingen ?

Forskningsprosjektet er igangsatt som respons på de miljøproblemstillinger man står overfor i forhold til klima-endringer og tap av biodiversitet, som krever mer kunnskap om hva som hindrer og/eller motiverer småbedrifter til gjennomføre miljøtiltak, Prosjektet foregår i to land og skal ta utgangspunkt i to foretaks-initierte prosesser for å øke økologisk bærekraft i landbruksbasert turisme i Norge og Australia. I Australia skal vi ta for oss et område i Hunter Valley vindistrikt og i Norge skal vi se på et fruktdyrkingsområde i Hardanger. Forsknings-prosjektet søker å forstå forskjellene mellom to land i faktorer som hindrer og motiverer til gjennomføring av miljøtiltak. Det er tenkt at forskningsprosjektet vil kunne identifisere hvilke virkemidler som bidrar til økt gjennomføring av tiltak. Det er også en målsetting at prosjektet skal kunne bidra med informasjon tilbake til lokalsamfunnet, foretakene, og ulike organisasjoner, med informasjon om økologisk bærekraft i landbruksbasert turisme, og hvorfor noen tiltak blir gjennomført og andre ikke. Ved å gjennomføre en tilnærmet lik undersøkelse i to ulike kulturelle kontekster vil en også kunne sammenligne og utdype forskjeller i samfunnssystemer og hvordan disse virker på bærekraftig utvikling.
Prosjektet vil arbeide med og støtte en organisasjon i hvert land som er igang med en prosess mot bærekraftig turisme; i Australia vil forskeren arbeide med den lokale næringslivsforeningen i

Lovedale (Lovedale Chamber of Commerce) og i Norge vil forskeren arbeide med Aksjeselskapet Vikebygd Landskapspark. Prosjektet har som ambisjon å bistå organisasjonen med informasjon og ideutveksling mellom de to områdene..

Bestemmer jeg selv om jeg vil delta i prosjektet eller ikke ?

Deltagelse i forskningsprosjektet er frivillig og du bestemmer selv om du vil delta eller ikke. Du bør også ha lest dette informasjonsskrivet før du eventuellt deltar i prosjektet, slik at ditt samtykke er basert på at du har god kjennskap til prosjektet. Dersom du velger å ikke delta i prosjektet vil dette ikke medføre noen ulemper for deg eller ditt foretak.

Hvordan kan jeg delta?

Du kan delta i prosjektet på to måter: 1) gjennom å delta i en spørreundersøkelse som vil bli distribuert i Vikebygd og/eller 2) delta på et intervju.

Delta i spørreundersøkelsen

Spørreundersøkelsen vil ta bortimot 15 minutter å fylle inn. Spørreskjemaet vil bli sendt ut til alle foretak i Vikebygd og i Aksjeselskapet Vikebygd Landskapspark. Sammen med spørreskjemaet vil det bli gitt instrukser for hvordan innsamling av spørreskjemaet vil foregå. Spørreskjemaet skal fylles ut av foretakets innehaver eller daglig leder. Spørreundersøkelsen omfatter spørsmål omkring økologisk bærekraft i Vikebygd, hvilke type tiltak som er gjennomført, og barrierer og drivkrefter for framtidig gjennomføring, samt innehavers holdninger og oppfatninger omkring miljøtiltak og problemer. I tillegg vil den omfatte spørsmål om foretaket og innehaver.

Delta i et intervju

Sidsel Grimstad ønsker å intervjue omkring 20 personer i hvert av de to områdene. En generell forespørsel om frivillig deltagelse i intervju vil bli sendt ut til alle foretak i Vikebygd. Intervju-objektene vil bli valgt slik at en sikrer størst mulig spekter med hensyn på foretakets type, størrelse og rolle i området. Dersom du ønsker å delta i et intervju, ber vi deg om å fylle inn rekruteringsskjemaet og sende dette til Sidsel Grimstad. I dette skjemaet må du oppgi din addresse og telefonnummer slik at tid og sted for intervju kan avtales nærmere.

Intervjuet vil ta bortimot 1 time, tid og sted skal tilpasses slik at de er til minst mulig bry for innehaver/daglig leder av foretaket. Intervjuet vil omfatte spørsmål som for eksempel: hva er bærekraftig utvikling, hvilke tiltak gjennomføres idag for å bedre økologisk bærekraft, barrierer og drivkrefter for gjennomføring av miljøtiltak, og hvorvidt økologisk bærekraft kan bidra til verdiskaping for foretaket

Forutsatt at det gis tillatelse fra intervju-objektet vil intervjuet bli tatt opp på digital lydopptager. Du vil bli gitt muligheten til å høre opptaket, slette eller redigere opptaket dersom du ønsker det. Du vil også bli sendt et sammendrag av intervjuet til godkjennelse. Ved slutten av forskningsprosjektet vil du bli tilsendt et takkebrev for din deltagelse.

Hvor lang tid vil deltagelse ta ?

Det tar omtrent 15 minutter å fylle inn spørreskjemaet. Et intervju vil ta bortimot en time, tid og sted skal tilpasses det som er best for intervjuobjektet.

Hva er fordeler og ulemper ved å delta i forskningsprosjektet ?

Bortsett fra tidsbruken, skulle det ikke være noen ulemper for deg eller ditt foretak ved deltagelse i prosjektet.

Fordelene ved deltagelse vil være at du bidrar til økt informasjon om og i Vikebygd Landskapspark om tiltak for økt økologisk bærekraft og hva som hindrer eller motiverer til ytterligere tiltak framover.

Gjennom din deltagelse vil en få økt kunnskap om hva som fungerer og ikke, og nye ideer som kan redusere kostnader eller øke inntekter også for ditt foretak kan eventuellt dukke opp. Resultater fra både spørreundersøkelsen og intervjuene vil bli formidlet tilbake til Vikebygd, eventuellt også til myndigheter og næringsorgansasjoner dersom det er interesse for dette.

Vil min deltagelse være anonym ?

All informasjon som samles inn gjennom spørreundersøkelse eller intervju vil bli behandlet konfidensiellt og lagret på en sikker måte. Det innsamlede materialet vil bare kunne brukes av forskeren og hennes veiledere i tråd med gjeldende regler for etisk forskningspraksis. Navn og adresse til foretak i Vikebygd har blitt hentet fra Brønnøysundregisterets enhetsregister. Denne informasjonen vil ikke bli gitt andre. Dersom du gir tillatelse til det, vil intervjuet bli tatt opp digitalt, hvorpå du har anledning til gjennomgå, redigere eller slette opptaket. Du vil også bli sendt et sammendrag av intervjuet til godkjennelse.

Enkelt-individer's eller enkeltforetak's oppfatninger ikke skal kunne identifiseres i rapporter eller forskningsartikler fra prosjektet.

Hvordan skal informasjonen brukes?

Gjennomføringen av spørreundersøkelse og intervju i Lovedale Australia har foregått i Desember 2009 og Januar 2010. Spørreundersøkelsen og intervjuene vil foregå i Vikebygd i perioden mars-april 2010. Foreløpige resultat fra både Lovedale og Vikebygd er tenkt lagt fram både i Vikebygd og Lovedale mot slutten av 2010.

Forskningsprosjektet er del av Sidsel Grimstad's doktorgradsarbeid som skal være ferdigstilt tidlig i 2011. I tillegg vil resultatene bli publisert som akdemiske artikler og på konferanser.

Prosjektet er godkjent av Etisk Forskningsråd ved Universitetet i Newcastle

Dette prosjektet har blitt godkent av Newcastle Universitets Human Research Ethics Committee, Godkjenning No. H-2009-0254 den 14. Oktober 2009. Skulle du ha spørsmål om dine rettigheter som deltager i prosjektet, eller du ønsker å klage på måten forskningsprosjektet blir utført på, kan denne gis til forskeren Sidsel Grimstad. Dersom man ønsker å stile klagen til en uavhengig person kan denne addresseres til Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, e-post Human-Ethics@newcastle.edu.au.

Mere informasjon

Dersom du ønsker mere informasjon om prosjektet kan du ringe eller sende e-post til:

Sidsel Grimstad

Mob:

E-post: Sidsel.Grimstad@newcastle.edu.au

Jennifer Waterhouse

Tel:

E-post: Jennifer.Waterhouse@newcastle.edu.au

John Burgess

Tel:

E-post: John.Burgess@newcastle.edu.au

Vi håper du ønsker å delta i prosjektet som vil gi verdifull informasjon om hva folk tenker omkring bærekraft i Vikebygd. Denne informasjonen vil være nyttig for Vikebygd Landskapspark og andre i lokalsamfunnet og kan brukes som grunnlagsmateriale for framtidig bærekraftig utvikling.

Takk for hjelpa !

Vennlig hilsen

John Burgess	Jennifer Waterhouse	Sidsel Grimstad
Professor	Senior Forsker	PhD Kandidat

Appendix 15 Norwegian Consent Form

FACULTY OF BUSINESS AND LAW

Professor John Burgess
School of Business
Faculty of Business and Law
The University of Newcastle
Callaghan NSW 2308
Australia
Ph: +61 2 49216680
Fax: +61 2 49217398
Email: John.Burgess@newcastle.edu.au

Dato: 3-3-2010

Samtykke til deltagelse i forskningsprosjekt : Frivillige Tiltak for Økologisk Bærekraft i Landbruksbaserte Turistnæringer i Norge og Australia".

Samtykke erklæring

Jeg samtykker på frivillig basis å delta i ovennevnte forskningsprosjekt. Jeg forstår at prosjektet vil bli gjennomført som beskrevet i prosjekt-beskrivelsen som jeg har fått kopi av. Jeg er innforstått med at intervjuet vil bli tatt opp på digital opptaker og at jeg kan be om å høre igjennom, rette eller slette deler eller hele intervjuet enten på opptakeren eller i skriftlig form.

Jeg er innforstått med at jeg kan trekke meg ut av prosjektet til enhver tid og ikke trenger å gi noen forklaring for hvorfor jeg trekker meg. Jeg har fått alle spørsmål om prosjektet besvart tilfredstillende.

Jeg samtykker i å delta i et intervju på omkring 1 time. **□ Ja** **□ Nei**

(Vennligst skriv tydelig)

Navn _____

Underskrift_____

Dato _____

Lever denne samtykke-erklæringen signert til Sidsel Grimstad.

Bakgrunnsdata om intervju-objektet

Navn: _____

Aldersgruppe (sett kryss):

□ **Yngre enn 24 år** □ **25-35 år** □ **36–50 år** □ **50-65 år** □ **Eldre enn 65 år**

Yrke : _____

_____

Navn på foretak: _____

_____

Hvilket av disse næringsområdene beskriver best ditt foretak? *(Sett gjerne flere kryss)*

□ **Salg av råvare (f.eks. Frukt, bær, husdyr)**
□ **Salg avd foredlede landbruksprodukter (f.eks. Cider- saft-produksjon)**
□ **Turisme –Overnatting**
□ **Turisme Matservering, (Kafe-drift, gårdssalg, veisalg)**
□ **Turisme Opplevelser (Opplevelses-aktiviteter for turister)**
□ **Varer og tjenester i lokalsamfunnet (vennligst spesifiser type tjenester):**

□ **Annet (vennligst spesifiser annen inntektkilde)**

_____

Vennligst angi hvilke som er dine to viktigste inntektskilder :

1._____

2. _____

Sted for intervjuet: _____

Dato og tid for intervjuet: _____

Anonymitets kode : _____

Appendix 16 Green Initiative Assessment form Lovedale LCC AGM 9-11-2010

Lovedale Chamber of Commerce Green Initiative Assessment.

This form also serves as your application form for inclusion on the green page of the LCC Lovedale Website.

	Initiative:			Points	Your Score	Comments
1	Environmental Policy on Website			10		Mandatory
2	Photograph of initiative/s			10		Mandatory
	General:					Applies to all
	Energy:					
3	Solar Panels and/or Solar Hot Water		1	5		
			both	10		
4	Insulation			10		
5	Buy Green Energy			10		
6	Reducing Energy Use	Energy efficient appliances	1	5		
		Turning off lights and power	2 or 3	10		
		LED/CFL light globes				
	General Garden/ Agriculture/ Produce:					
7	Water Management	Irrigation program	1	5		
		Use of grey water	both	10		
8	Planting	Tree planting program	1	5		
		Use of natives, heat & drought tolerant plants	both	10		

9	**Reducing Food Miles**	**Local produce**	**1**	**5**	
		Australian made	**2 or 3**	**10**	
		Growing own			
	Waste Management:				
10	**Food waste program**	**Composting**	**1**	**5**	
		Chickens	**both**	**10**	
11	**Recycling**	**Use of recycled products (packaging, paper etc)**	**1**	**5**	
		Recycling of waste (plastic, paper, metal, glass)	**both**	**10**	
	Other:				
12	**Renovating**	**Environmental initiatives as part of renovation**		**10**	**Please describe**
13	**Other initiatives**			**10**	**Please describe**
	Business-Specific:				
	Vineyard Specific:				
7	**a) Adopting organic practices**		**1**	**10**	**}**
	b) Use of Lean Green Bottles		**2 or 3**	**20**	**}Please describe**
	c) Reduced tilling				**}**
	Accommodation Specific:	**Use of environmentally friendly products (e.g.toiletries, candles, make-up wipes)**	**1**	**10**	**}**
		Laundry minimization (e.g. unserviced rooms)	**2 or 3**	**20**	**}Please describe**
		Provision of recycling facilities for guests			**}**
	Restaurant Specific:	**Recycling food waste to methane production**		**10**	

In order to qualify for inclusion on the Green Page of the Lovedale Website, a score of 75% must be reached.

	Maximum Possible Scores:	Required Score 75%:
Vineyards	**150**	**115**
Vineyards with Accommodation	**170**	**130**
Accommodation	**150**	**115**
Restaurants	**140**	**105**
Other	**130**	**100**

Required Attachments:

A photograph of one of your environmental initiatives (e.g solar panels, heat pump hot water system, vegetable garden etc)

If you scored 10 for points 12 and/or 13 please attach your description of the initiative.

If you are a vineyard and/or accommodation business, please attach a short description of your business-specific environmental initiatives.