Australian Government

Australian Grape and Wine Authority

McLaren Vale Region ISO 14001 – scoping study for consortium certification

FINAL REPORT to

AUSTRALIAN GRAPE AND WINE AUTHORITY

Project Number: **MVG 1301**

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Research Organisation: **McLaren Vale Grape Wine and Tourism Association**

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Summary

The McLaren Vale Wine Region has an impressive record of innovative schemes and practices which promote a sustainable grape growing and wine production industry and care of the environment. Leadership is provided through McLaren Vale Sustainable Winegrowing Australia (MVSWA) and McLaren Vale Grape, Wine and Tourism Association (MVGWTA). The Region is recognised for these achievements within Australia, but has no formal means of using this reputation when marketing overseas. The International Organization for Standardization (ISO) environmental management standard, ISO 14000, could provide official certification that would be recognised internationally.

The aim of this project was to investigate the feasibility of developing a consortium model for an Environmental Management System (EMS) based on the ISO 14000 standards and the feasibility of seeking certification to ISO 14001. The investigation consisted of four stages: research into conformity certification organisations in Australia and their attitudes towards certification of a consortium and a search for any examples of certification of a consortium; interviews with key informants, typically wine and travel writers from outside McLaren Vale; a pilot focus group session with grape growers from McLaren Vale; and recommendations for an EMS for the MVGWTA consortium.

The study concluded that an EMS guided by ISO 14000 is feasible and worthwhile. The success of the EMS will be described in terms of a few performance measures which are chosen to be: communicable to the general public; representative of the entire McLaren Vale Wine Region; and straightforward to obtain with limited resources. The MVGWTA website can be updated to include the region's environmental policy and time series of the performance measures.

However, the high cost of certification to ISO 14001, and the likely complexity of an EMS that is fully compliant with the standard for all members of MVGWTA, exceeds the likely benefits. A complex EMS is unlikely to engage members of MVGWTA and would not be feasible to implement. Consequently, we do not now recommend certification by a JAS-ANZ accredited company. Alternatively, it may be worth establishing an industry specific auditing scheme. An example of such a scheme is the Australian Southern Rocklobster Clean Green Program, adopted in the fishing industry.

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Introduction

Agricultural land represents 33% of the world's land area and in Australia it represents 53% (World Bank). Loss of topsoil, soil erosion and the effects of nitrates and pesticides on the environment (e.g. pollution of waterways, CO_2 emissions, etc.) are some significant examples of the risks associated to agricultural activities for the environment. This situation is relevant to grape growing because grapes are one of the most valuable fruit crops in the world (Jackson, 2008) as it is part of a complex production chain that ends in wine production. Furthermore, grape growing covers extensive land area in the world. The International Organisation of Vine and Wine - OIV estimated that vineyards covered about 7,528 million hectares in 2012 (OIV, 2012).

The extensive use of land, water and chemicals in food production and its potentially negative consequences for the environment and human health have led to increased concerns from different stakeholders about the impacts of agricultural systems on the environment. Also, the increasing media attention seems to be driven by the voicing of environmental concerns and the increasing number of producers marketing their products with environmental claims. Environmental certifications, such as the ISO 14001 standard, can be seen as beneficial to organisations as they "can be a useful tool to add credibility, by demonstrating that your product or service meets the expectations of your customers."(ISO, 2014a)

Also, for some industries, certification might be a legal or contractual requirement. The ISO family standards, including the ISO 14001 standard, are sets of criteria to develop and implement management systems through systematic procedures and guidelines (ISO, 2004) to be followed by an organisation to support staff to meet the organisation's objectives. ISO 14001 is a management system for environmental objectives. ISO recognises that some small organisations might not have written systems, but larger organisations are more likely to need written procedures to ensure that their staff have a common understanding of procedures, objectives, roles and responsibilities toward the organisation's goals.

The greatest challenge of a certification process is the definition of its scope. The scope definition, following the ISO method and guidelines, determines auditing processes;

therefore the scope determines the certification itself. The McLaren Vale Wine Region (MVGWTA, 2014) proposed to develop this study about certifying a wine region to the ISO 14001 standard, starting with the definition of its scope. There are many reason for this approach: (1) management process development and integration to support environmental objective outcomes; (2) the uniqueness of certification therefore the (potential) spontaneous promotion of the region from the media in general (3) public, including international credibility of regional environmental claims reinforced by the internationally recognised and respected ISO 14001 standard.

This project did not aim to study the feasibility of certifying individual organisations but, rather, the "McLaren Vale Wine Region" as a consortium. Many initiatives have been developed by the MVGWTA over the past years using members' contributions (through levies they pay or their time) as well as external funding. While viticultural activities promoted by the Association yielded impressive on-farm results, the region was still unable to measure and discuss the outputs of these investments, as results were not being formally measured. As a partial response in 2009, MVGWTA successfully launched the Sustainable Australia Winegrowing (SAW) (at the time known as Generational Farming) system to assess wine growers' sustainability (Santiago-Brown, 2014b). In 2013, about half of the region was assessed through the program. With the ISO 14001 project, MVGWTA was seeking to build on SAW and other initiatives using an international standard to structure and develop processes and programs, link activities, and track performance and outcomes in a more systematic way

To the best of our knowledge, there are no examples of wine regions that have been certified under ISO 14001 or any other ISO standard. The ISO standards are based on voluntary adoption (Prakash & Potoski, 2006), matching the Association's philosophy and actions. The MVGWTA's leading example is the adoption rate of SAW. Voluntary adoption and education seems to be a successful way to engage the community and promote meaningful changes in practices and, therefore, beneficial outcomes. ISO 14001 would provide assurance of the Region's environmental achievements to external stakeholders through a worldwide-recognised standard.

ISO 14001 can support the development of a documented system that ensures the environmental specification is met. The specification can be benchmarked against the results of the sustainability program. The system can be implemented electronically and publicly, for example the MVGWTA website could include the region's environmental policy. ISO is a family of standards internationally recognised by most governments, organisations and individuals. This project aimed to provide the foundation to develop an EMS based on ISO 14001 with the purpose of certification. To the best of our knowledge, this would be the first certification of its kind in the world. This pilot project directly contributes to the sustainable development of wine regions in Australia, not only by conserving and preserving the environment but also by developing robust pathways for beneficial interaction between the environment, grape growing and wine making businesses.

The "flipside" of the benefits promoted by an ISO 14001 certification is its cost. It is a challenging (ISO, 2014) and costly task for small and medium size enterprises (SME) (Font, 2002) to pursue this path. Most businesses in McLaren Vale are SME, so the development of a group/collective EMS with the possibility of certification, through the Association, seems to be the only (cost-effective) possible way to ensure successful adoption of formal environmental processes (Zobel, 2007). The EMS can potentially impact on the region's overall sustainability.

ISO 14001 Background

The ISO 14001 standard has its origins in World Trade Organization (WTO) trade agreements and the Earth Summit held in Rio de Janeiro, Brazil in 1992. A technical committee (TC 207), including private and governmental organisations involved in environmental issues worldwide, was created as result of the Earth Summit (BSI Group ANZ, 2014). In 1996, ISO 14001 was first published in a similar structure to the other ISO family standards (order of clauses, main clauses and principles based on the PDCA (plan – do – check – act) cycle for continual improvement, etc). The then newly published standard was the result of the work developed by this technical group. The Environmental Management System (EMS) Standard from 1992, published by British Standards Institution – BSI was used as a basis for the development of the ISO 14001 series (Boudouropoulos & Arvanitoyannis, 1998).

ISO 14001:2004 sets out criteria for an environmental management system (EMS) to which an organisation can be certified. It maps out a framework that an organisation can follow to set up an EMS. In the standard, three commitments are mandatory: prevent pollution, legal (and other) compliance and continual improvement. The ISO 14000 series encompasses two documents (ISO, 2014a):

- ISO 14001 – Environmental Management System (EMS): requirements with guidance for use
- ISO 14004 – Environmental Management Systems (EMS): general guidelines on principles, systems and supporting techniques.

The certification process is described in ISO 14001:
"ISO 14001:2004 sets out the criteria for an environmental management system and can be certified to. It does not state requirements for environmental performance, but maps out a framework that a company or organisation can follow to set up an effective environmental management system. It can be used by any organisation regardless of its activity or sector. Using ISO 14001:2004 can provide assurance to company management and employees as well as external stakeholders that environmental impact is being measured and improved" (ISO, 2014a).

ISO 14001 in the World and in Australia

ISO 14001 is the most widely adopted environmental standard in the world. Currently there are 302,000 organisations certified against the ISO 14001 (Figure 1) standard in 171 countries, from which 3,339 are located in Australia (ISO, 2014c) (Figure 3). East Asia holds 50% of the ISO 14001 certificates in the world and, of these, 69% are from China and 2% from Australia. Therefore China alone holds 35% of the ISO 14001 certificates in the world while Australia holds only 1%. Figure 1 shows the world's distribution of ISO 14001 certified organisations. Figure 2 and Figure 3 shows the increase of certified organisations from 1999 to 2013 in the world and Australia, respectively. Figure 4 indicates the annual growth of ISO 14001 certified organisations in the world for the same period as above. In 2013 there was an increase of 6% of ISO 14001 certified organisations worldwide.

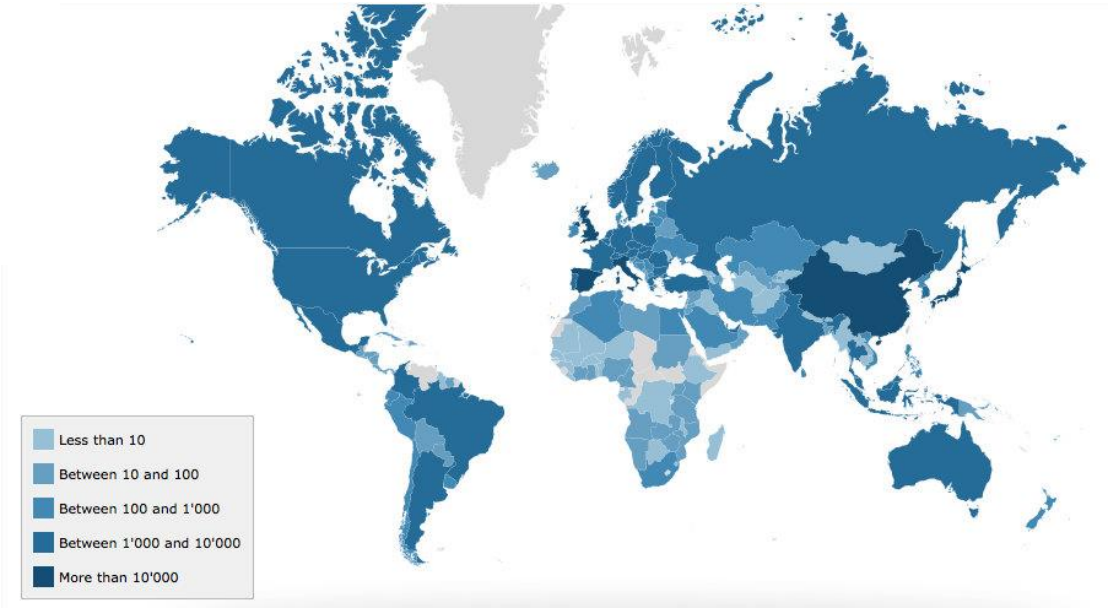

Figure 1 – ISO 14001 certifications in the world (ISO, 2014c)

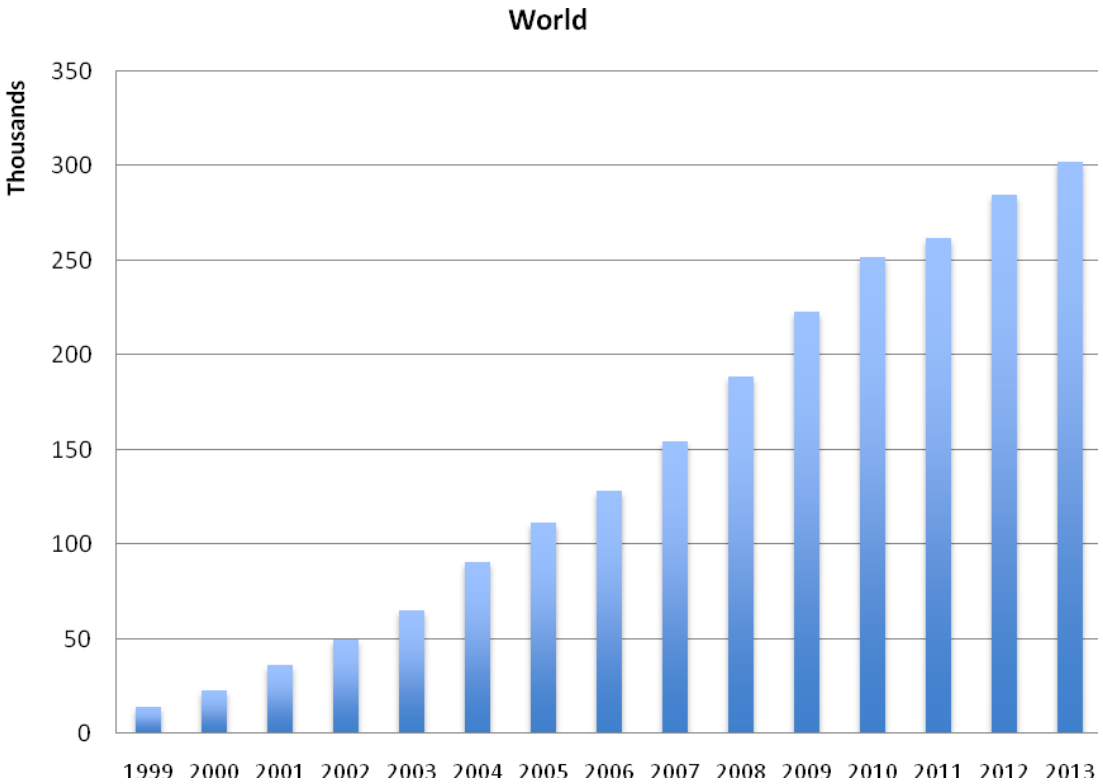

Figure 2 - Total ISO 14001 certificated organisations in the world (1999-2013) (ISO, 2014c)

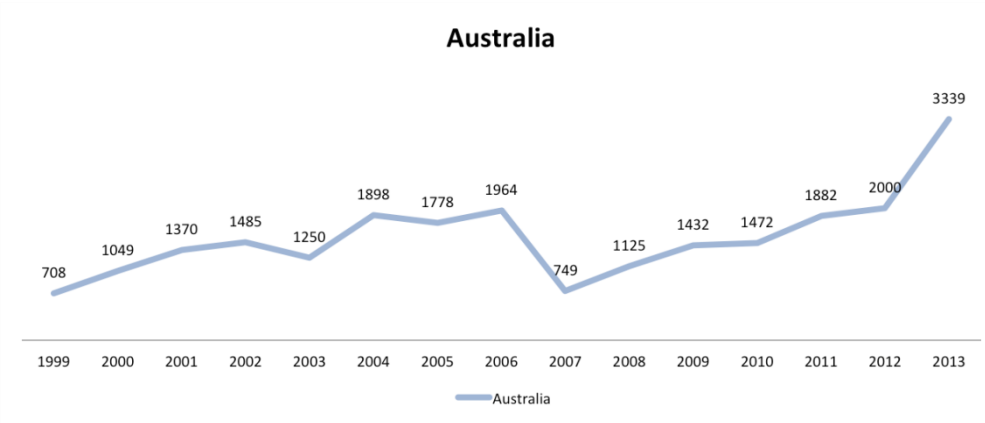

Figure 3 – Total ISO 14001 certificated organisations in Australia (1999-2013) (ISO, 2014c)

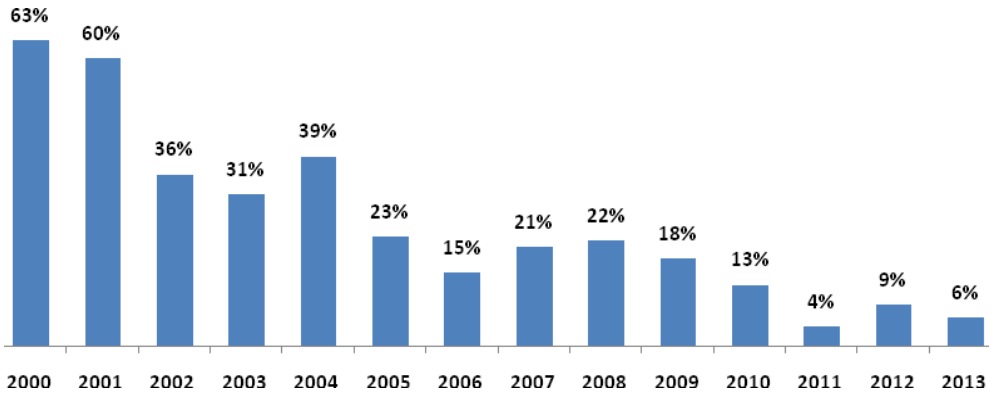

Figure 4 - ISO 14001 - world annual growth compared against all others (in %) (ISO, 2014c)

Figure 5 below shows the share of issued certificates by economic sector. The five largest sectors are highlighted: the first sector is Construction, accounting for 17%; followed by Basic metal & fabricated metal products (10%); Electrical and optical equipment (9%), Wholesale & retail trade, repairs of motor vehicles (7%) and Rubber and plastic products (5%). Agriculture and fishing are also highlighted in this illustration and represent only 1% of the total ISO 14001 certifications issued worldwide.

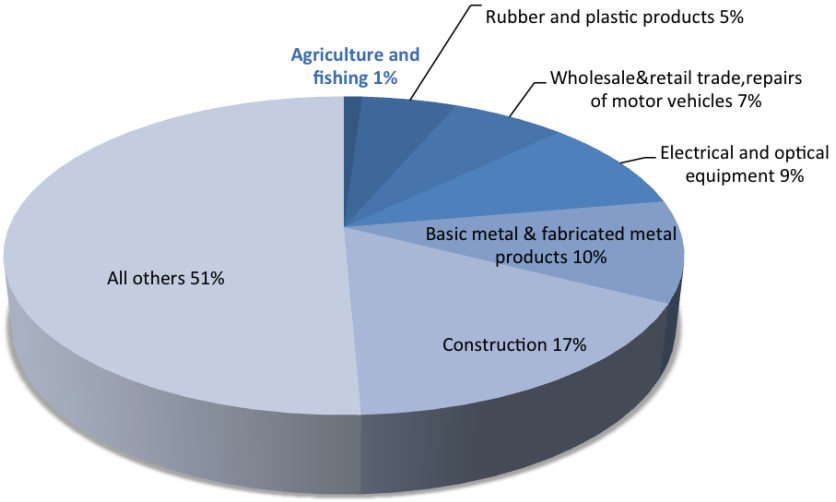

Figure 5–ISO 14001 certificates by economic sectors (in 2013) (ISO, 2014c)

Identification of parties in the Australian context

In Australia, several organisations[1], including the Australian Government are involved in the process of an ISO certification. The diagram below (Figure 6) shows the relationships and roles of each one of these organisations. The overall understanding of these parties involved in an ISO certification, including the ISO 14001 (environmental) certification is necessary to understand the development, recommendations and conclusions of this project.

[1] Organisation here is used in an extremely broad way and means any sort of organised group other than individuals (e.g. commercial businesses, non-profit businesses, governments in general, etc.)

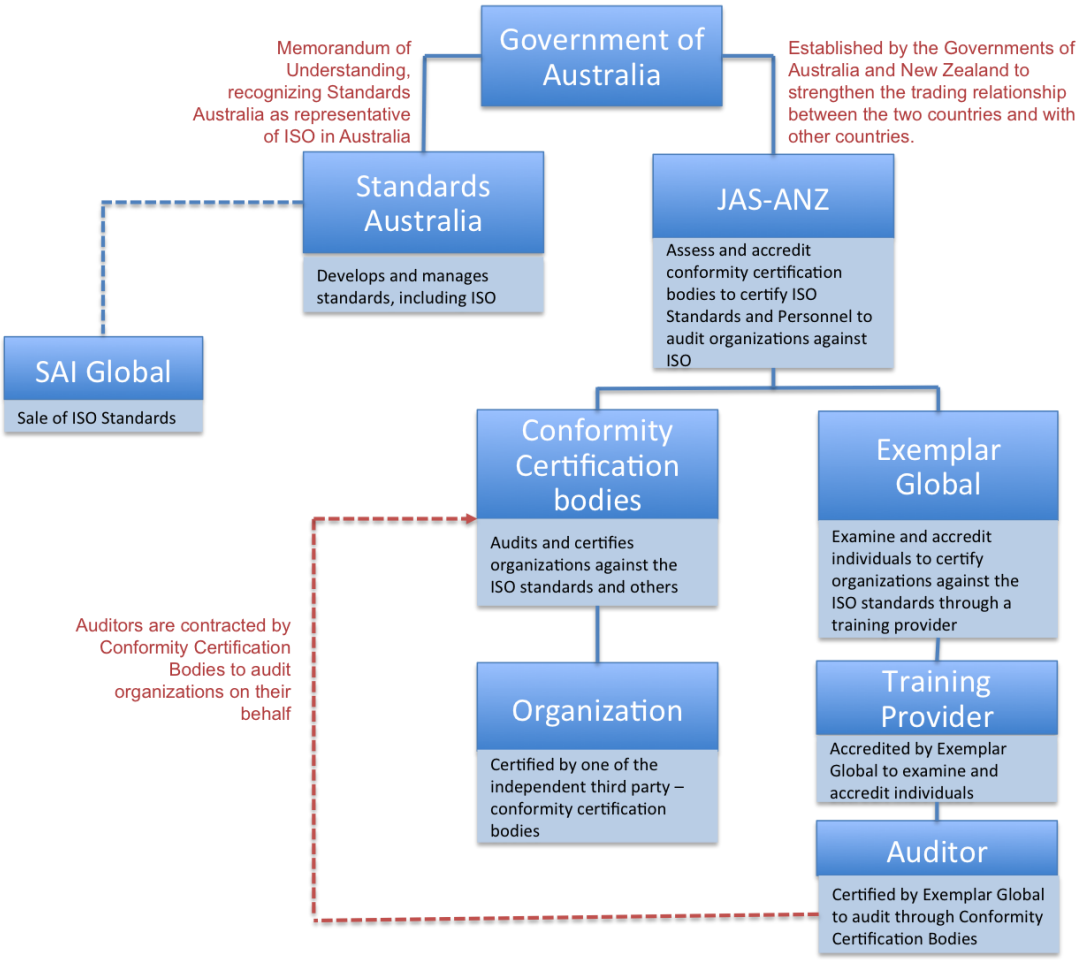

Figure 6 – ISO in Australia: organisations and roles

The next section of this study is divided into two sub-sections: a) briefly defines each of the parts involved in an ISO certification process in Australia; b) defines technical terms, commonly used in auditing and certification processes, therefore used throughout this study:

The organisations involved in an ISO certification in Australia are:

Standards Australia: was established in 1922 and is recognised through a Memorandum of Understanding with the Australian Government as the peak non-government standards development body in Australia and also Australia's representative on the International Organization for Standardization (ISO). Standards Australia is an independent, non-government, not for profit organisation "responsible for bringing together industry, government and consumer groups to develop Australian Standard ® brand standards"

(Standards Australia, 2014). Standards Australia is in charge of developing or managing a collection of approximately 7,000 Australian standards.

JAS-ANZ (JAS-ANZ, 2014)**:** was established in 1991 by the Australian and New Zealand Governments to strengthen the trading relationship between the two countries and with other countries. The JAS-ANZ Treaty signed between Australia and New Zealand established the Governing Board, Technical Advisory Council and Accreditation Review Board of the Joint Accreditation System of Australia and New Zealand (JAS-ANZ). The treaty defines that both countries will operate a joint accreditation system and to deliver on four goals relating to Integrity and Confidence, Trade Support, Linkages, and International Acceptance.

JAS-ANZ is a not for profit, self-funding inter-governmental organisation. It is non-discriminatory, in that it accepts applications from Conformity Assessment Bodies operating anywhere in the world. Accreditation programmes are accessible to all conformity assessment bodies, irrespective of size, location or affiliations, whose operations include activities for which accreditation programmes are currently available.

Currently JAS-ANZ offers accreditation for the following programmes:

- Management systems certification such as environmental management systems (AS/NZS ISO 14001) and others
- Product certification such as Codemark, Watermark and others
- Personnel certification
- Inspection
- Greenhouse Gas validation and verification

SAI Global (SAI Global, 2014): bought the commercial business from Standards Australia in 2003 and is responsible for the sales of Standards from Standards Australia. Also, SAI Global is a Conformity Assessment Body and a Training Provider for ISO auditors.

Conformity Assessment Body: also known as (independent) third party certifiers in the ISO process. These organisations are accredited by JAS-ANZ to certify organisations against the

ISO Standards. In Australia, currently, there are thirty-one [2] Conformity Assessment Bodies accredited to certify organisations against the ISO 14001 Standard.

Exemplar Global (Exemplar Global, 2014): encompasses RABQSA International and iNARTE. It provides both personnel certification and accreditation to Training Providers. Exemplar Global personnel certification customers include auditors, engineers, technicians and consultants. Training Providers include organisations that train auditors, higher education institutions and corporations that train staff and customers. In Australia, Exemplar Global is accredited by JAS-ANZ to provide personnel certification against the ISO requirements.

Organisation: in this diagram means any commercial, service provider, industrial for profit or not organisation seeking ISO 14001 certification.

Training Provider: an organisation accredited by Exemplar Global to examine and accredit individuals to conduct audits through a Conformity Assessment Body.

Auditor: individual accredited by Exemplar Global, through a Training Provider to conduct audits through a Conformity Assessment Body when ISO 14001 certification is the final objective or to conduct audits, internally or externally to the organisation for the purpose of continuously improving their processes.

Some Key definitions:

Accreditation: means the procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks (JAS-ANZ, 1998). Accreditation is a specific organisation's process of certification

Audit: process undertaken by the organisation and conducted by an accredited external Auditor, with the objective of becoming certified against the ISO 14001 Standard.

[2] View annex for complete list of Conformity Assessment Bodies accredited in Australia (for ISO 14001 certifications).

Certification refers to the confirmation of certain characteristics of an object, person, or organisation. This confirmation is provided through an external audit. In the ISO 14001 process, certification is achieved when the organisation meets the criteria defined by the standard, validated by an independent third party auditing process conducted by an auditor accredited by a Conformity Assessment Body.

Conformity assessment: means systematic examination to determine the extent to which a product, process, service or individual fulfils specified requirements (e.g. Standard).

Compliance assessment (ISO, 2004): means systematic examination to determine the extent to which a product, process, service or individual fulfils specified legislation.

Environmental aspect (ISO, 2004): element of an organisation's activities or products or services that can interact with the environment (e.g. use of chemicals, use of water, etc.). The process of listing environmental aspects should take into consideration: emissions to air, releases to water, releases to land, use of raw materials and natural resources, use of energy, energy emitted (e.g. heat, radiation, vibration), waste and by-products, and physical attributes (e.g. size, shape, colour, appearance).

Environmental performance (ISO, 2004): measurable results of an organisation's management of its environmental aspects, usually done by collecting data though indicators.

Environmental impact (ISO, 2004): changes to the environment, either adverse or beneficial that result wholly or partially from environmental aspects are called environmental impacts. It is important to note that a significant aspect has or can have a significant environment impact (e.g. spray drift, leaching of chemicals to waterways, depletion of water resources, etc.)

Standards: are published documents setting out specifications and procedures designed to ensure products, services and systems attain a level of quality, are reliable and consistently perform in the way they were intended.

ISO 14001 requirements: EMS

The first clause of the ISO 14001 defines its scope (ISO, 2004). It is meant to specify requirements for an environmental management system (EMS) to enable an organisation to:

1. Develop and implement an environmental policy;
2. Develop environmental objectives;
3. Comply with legal and other requirements; and
4. Identify and inform significant environmental aspects (as those which the organisation can control and those which the organisation can influence).

ISO 14001 does not determine specific environmental performance criteria. Those are developed by each organisation engaged in the development of an EMS.
Clause 1 also explains that the standard can be used by organisations in the following situations:

1. Develop and implement an EMS
2. Assure conformity with its own stated environmental policy
3. Demonstrate conformity with ISO 14001 by three different possible pathways:
    a. Making a self-determination and self-declaration;
    b. Seeking confirmation of its conformance by external stakeholders interested in the organisation (e.g. customers, other organisations involved in the chain)
    c. Seeking confirmation of its conformance by independent third party (certification)

Clause 2 (Normative References) is not applicable to this standard but is kept in the text in order to retain identical clause numbering with its first edition.

Clause 3 defines terms used in the standard.

Clause 4 describes the requirements to develop an EMS according to the ISO 14001 Standard. These are the minimum requirements an organisation must follow to become certified. Clause 4 contains the “continual improvement process” (Figure 7) or Plan-Do-Control-Act (PDCA) cycle developed from Deming’s Plan-Do-Study-Act (PDSA or Shewhart)

improvement cycle (Deming, 2000) as its basis. There are five overall steps: 1. Environmental policy; 2. Planning (plan); 3. Implement (do); 4. Checking (control); and 5. Review (act).

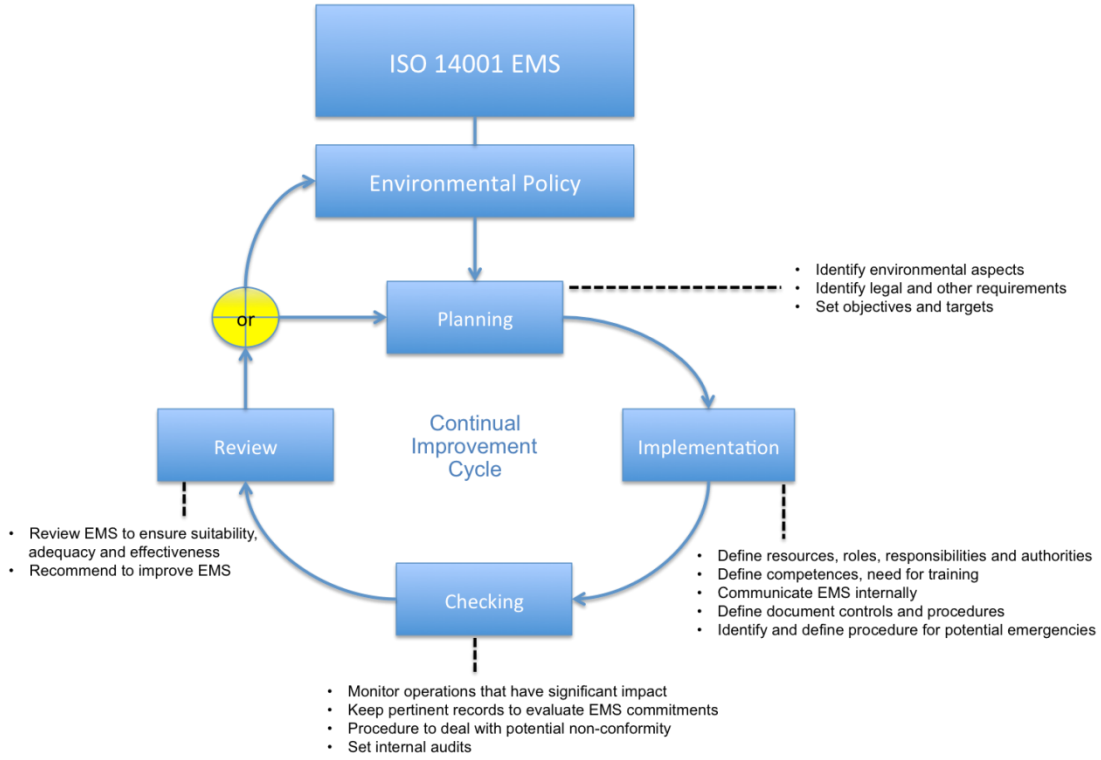

Figure 7 – ISO 14001 Clause 4: continual improvement cycle for implementing an EMS

1. Environmental policy: the first step of the requirement is the establishment of an "environmental policy", which must be a written document communicated/available to any stakeholder. The environmental policy is set by the top management and sets the scope of the EMS, which must be appropriate to the nature, scale and environmental impacts of the organisation's impacts. Environmental policies must also state the compliance of the organisation to legal and other requirements related to environmental aspects of the organisation. It sets the framework for continual improvement.

2. Planning: at this stage the organisation needs to implement a procedure to identify its significant environmental aspects (which have significant impact on the environment) within the scope of the EMS. These aspects have to be separated between those that the organisation can control and those that it can influence. The planning phase also includes

the identification of any legal or other environmental requirements to which the organisation subscribes and its interactions with the organisation's activities.

3. Implementation: in this phase resources, roles, responsibilities and authorities are defined for the implementation of the EMS. The organisation must ensure that any personnel performing any tasks that have the potential to cause any significant environmental impact are competent to perform such tasks on the basis of appropriate education, training (if necessary) or experience. If training is identified as necessary to ensure competency to conduct the tasks that have potential to cause significant impacts on the environment then training records must be kept. The implementation is done through communication and execution of the EMS, which includes definition of relevant document controls and procedures as well as procedures for potential emergencies.

4. Checking: as soon as the Implementation phase is executed, the EMS must be checked to ensure it is achieving the intended goals within the scope of the EMS. The checking phase is done through pertinent monitoring and measurements of significant environmental impacts. The checking must be conducted on a regular basis, which is determined by the environmental risk of each organisation. Records of these evaluations must be kept and pertinent procedures to deal with potential non-conformity with the EMS must be in place. Internal audits, fully documented, including the scope of the audit, are a mandatory step in this phase.

5. Review: this phase, conducted by the top management, deals with the review of the entire EMS to ensure its suitability, adequacy and effectiveness. The results of the review will determine the drivers for the planning step or even promote changes to the environmental policy.

The steps necessary to implement an EMS according to the ISO 14001 standard are shown in Figure 8. It shows a typical process to develop and implement an environmental management system. Typically, top management determines the environmental policy which is the stated commitment towards the environment and driver for resource allocation to implement the EMS. Environmental aspects and their impacts are defined. Through risk

assessment methodologies, which are determined by the complexity and risk to the environment of the operations or activities of the organisations, the significant aspects are identified. Objectives and performance measures (indicators and targets) are then established together with an appropriate system to keep track of the performance toward the established objectives. Usually this process is reviewed annually, but depends on the level of risks to the environment that the organisation can cause. The review might identify new environmental aspects, which will keep the cycle turning or might even identify the need to review the environmental policy itself.

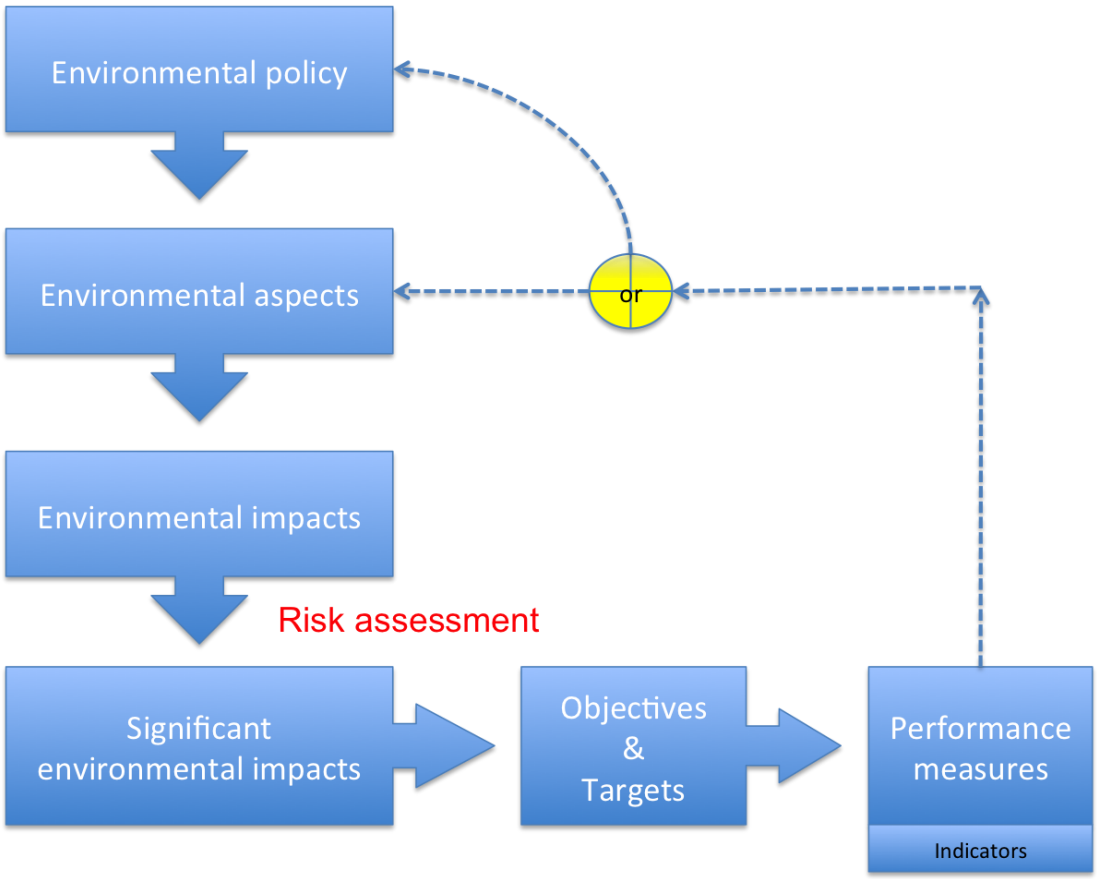

Figure 8 – A typical process for developing an EMS based on ISO 14001

The EMS requirements are described here as the necessary basis to make a recommendation on the feasibility of certifying a wine region against ISO 14001. The background information provided in these first sections drove the analysis of the results of this study. The ISO 14001 standard also contains guidance on the use of the standard (Annex A) and the correspondence between ISO 14001:2004 and ISO 9001:2000, which might be

useful to optimise the certification process of organisations when undertaking combined audits for both standards.

The process explained above might be assessed and validated through independent third party audits conducted by Conformity Assessment Bodies (Figure 6). The demonstration of conformity with the ISO 14001 standard through an independent third party is usually related to a certification process. Certifications in general emerged to provide integrity assurance in a world that is increasingly complex and no longer locally restricted. In the production of any product, an important outcome of certification is the incorporation of the concept of traceability, where products, and components of products, can be tracked back to their place of production. This study sought to determine the feasibility of having a wine region certified against the ISO 14001 standard.

Project Objectives

1. To develop a model to support a consortium approach for regional businesses to attain certification to an ISO 14001 environmental management system;
2. To establish the feasibility of a consortium approach to ISO certification;
3. To consider how the EMS can be set up to accommodate changes in work practices and changes in the environmental policy, so as to allow improvement and higher environmental protection standards;
4. To plan how the MVGWTA can proceed with certification to ISO 14001; and
5. To develop guidelines for other regions in Australia that are considering seeking ISO 14001 certification.

Method

This project was developed in four stages: (1) Data collection: key informant approach and Conformity Assessment Bodies research; (2) Organisation and data analysis from interviews and research; (3) Focus group/adapted nominal group pilot session with grape growers; (4) Data analysis from group discussion and (5) final report (recommendations).

Stage One

The key informant approach is a method in which leaders (formal, informal and influential) and experts are selected to share their opinions about a topic, as they are (potentially) representative and knowledgeable in the proposed research topic. Marshall (1996) points out that key informants usually, but not always, occupy positions of responsibility and influence. Ideal key informants carry five main characteristics: (1) Their role in the community should be related to the sort of information that is being sought from them; (2) Knowledge; (3) Willingness to communicate this knowledge; (4) Ability to communicate; and (5) Impartiality. These five criteria were used to select individuals for interview (Marshall, 1996).

This project sought out such individuals who write or communicate about wine, food and tourism. Thirty influential individuals were identified for this stage. The Australian Grape and Wine Authority – AGWA and Primary Industries and Regions South Australia – PIRSA contributed to the list. Also, research from secondary sources (magazines, journals, blogs, etc.) was used to support the identification of these individuals related to wine, grapes, food and tourism industries. Influential individuals from McLaren Vale were excluded from this phase to meet the fifth criterion, as well as to ensure that the project captured insights and perceptions from uninvolved stakeholders to the ISO 14001 project in McLaren Vale.

Most of the selected individuals regularly write in public media and are seen as opinion-formers. For a project like this, communication with external stakeholders is a core component. The benefit of developing group goals aimed at regional environmental outcomes was an obvious driver for this project. Nevertheless, the ability to communicate these goals and involve external stakeholders, informing and/or changing their perceptions of the region was an important objective. These individuals were selected as they are representative of the "communication barrier" that needs to be overcome to communicate with consumers about environmental credentials and the overall benefits they can provide for a wine region.

Many of these individuals will be the ones reporting on the outcomes of a project like this, when implemented by McLaren Vale or any other region. Because of that, this project

sought to understand their perceptions of an "environmentally friendly" wine region and the ISO 14001 certification itself. These perceptions were used in the third phase of the project when sub-groups (as described in the Scope section of this project) were put together to define group-specific environmental performance indicators that would support bridging the perceptions and insights from the interviews with measurable goals, by selecting a set of indicators from each specific sub-group.

A short, five-question email questionnaire was sent to these individuals (Figure 9) after they had agreed to participate in the project. Thirteen individuals responded. The questions were conceived to capture perceptions, emotions and memories related to wine regions instead of lists of known environmental indicators. Because of the nature of the project and its aim to develop an environmental recognition to visitors/consumers of a wine region, the links between these perceptions and group actions contributed to raising awareness about the importance of environmental issues and engaging the broader local and non-local communities in the project.

Questionnaire:

Q1 Can you remember the first wine region you visited and, if so, what do you remember from your visit?
Q2 Please name a wine region you enjoy visiting, and list what you enjoy about it.
Q3 In your opinion, is this wine region environmentally friendly and, if so, why? If not, what might be improved?
Q4 What things do you expect to see in an environmentally friendly wine region?
Q5 Any other comments or suggestions about McLaren Vale's proposed environmental management system and its certification?

Figure 9 – Questionnaire sent to influential individuals

Also, during Stage One, secondary source research was conducted to try to find cases of regional/consortium/group certifications that could provide McLaren Vale with insights on how to develop its certification. Furthermore, four Conformity Assessment Bodies were contacted for the purpose of investigating the feasibility of third party auditing, using the ISO 14001 standard with the purpose of certifying the McLaren Vale Wine Region.

Stage Two

In the second stage, the data collected from the interviews were organised and analysed through a combination of qualitative and quantitative methods. NVivo 10, computer-aided content analysis software was used to support the analysis and build content (tag) clouds to support finding commonalities among interviewees' responses. The software was set to cluster "stem words" (e.g. environment, environmental) as synonymous as the content of the interviews was not technical and the grouping did not seem to significantly alter the formation of the clouds. A qualitative analysis of the interviews was also conducted and this was the main source used to interpret and find the most relevant perceptions and emotions from the content of the interviews. These emotions and perceptions were used in the following stage (Stage Three) as the basis of the discussion, aiming to "bridge" these with environmental performance measures based on known/common activities and operations from each sub-group, as well as their environmental aspects and impacts.

Stage Three

A pilot sub-regional group discussion was organised. Because many of the members of the McLaren Vale Grape, Wine and Tourism Association are part of the Sustainable Australia Winegrowing (SAW) it was natural for this project to start this discussion with winegrowers already involved in the sustainability program. These winegrowers had been involved in a series of initiatives regarding the environment, including assessing their own environmental performance. They seemed to be the ideal sub-group to conduct the pilot session to test the method proposed here by this project.

Additional criteria were defined to select winegrowers for this session: the vineyard they were involved with must be producing wine branded as "McLaren Vale" and they must live in the region. These criteria were required because of the systemic nature of the project and the close relationship between vineyards, wine making and visitors to the region. These growers were seen as the ones who would be impacted the most by positive or negative environmental outcomes from any initiative and would also be the ones most affected by positive or negative environmental perceptions of the region.

The session was organised to last two hours. Ten grape growers replied to the invitation and eight attended the session. The session was conducted by the Main investigator and assisted by an Assistant Moderator. The session was structured as follows:

1. Brief presentation on the project
2. Introduction to the main aspects of the ISO 14001 standard
3. Presentation of the tag clouds from the interviews
4. Presentation of relevant excerpts of the interviews
5. Request to participants to individually write environmental aspects and their impacts and suggest performance measures for the sub-group from a given (that could be amended) list of activities related to the sub-group.
6. The Assistant Moderator then listed on a whiteboard the individual results read out-loud by each participant.
7. Discussion
8. Summary of the ideas and list of 3-4-consensus performance measures for the sub-group.

The method suggested in this project proposes repetition of Stage Three with each of the sub-groups as defined below (Results & Discussion – The scope) prior to the definition of the environmental policy. It was considered counter-productive to try to go beyond the list of performance measures at this stage. The ISO 14001 standard advises that the detail and complexity of an EMS is dependent on the resources devoted as well as a number of other factors such as the size and nature of the activities. The detail and complexity of the EMS for a wine region will be determined by the sum of the performance indicators proposed by each sub-group and the availability of resources to select and implement the most appropriate monitoring indicators.

Stage Four

This stage was dedicated to data analysis of the group discussion. Two other people attended the session as observers. After the meeting, these two people (the other researcher and the person in charge of the marketing of the Association) discussed their impressions and notes from the session organised in Stage Three. Written comments and notes were also sent to the Main Researcher for compilation purposes and to support the

development of the next phase (final report development), especially the Results and Discussion section of the report.

Stage Five

Final report writing including recommendations.

Results & Discussion

The Results and Discussion section is divided into three main topics: The proposed scope, findings from the interviews with key influencers and a method to develop and implement a regional EMS and Certification and its associated costs.

The Scope

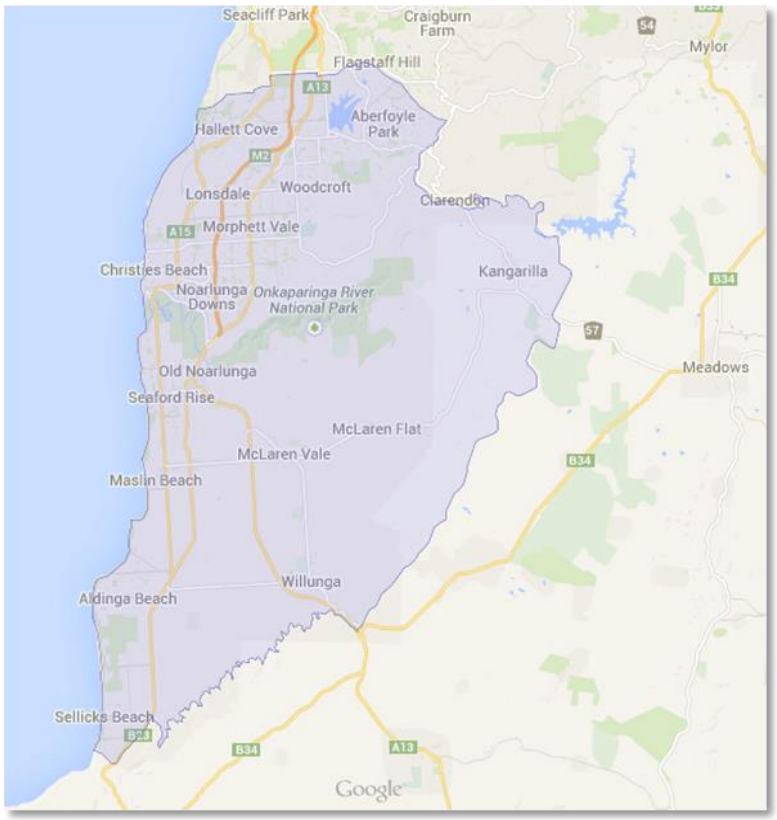

Figure 10 – McLaren Vale Wine Region – Geographic Indication Map

The starting point for the development of an EMS is the definition of its scope. The scope guides the development of the environmental policy, which therefore drives the EMS development process (Figure 7). This study proposed the development of an EMS for the McLaren Vale Wine Region, administered by the McLaren Vale Grape Wine and Tourism Association – MVGWTA. The scope, therefore, should be limited to the geographic

boundaries of the McLaren Vale Wine Region, as defined by its Geographic Indication – GI (Figure 10) and the scope of the Constitution of the MVGWTA, which defines the Association's potential members. It is important to note that the GI limits do not necessarily correspond to political (government) boundaries, which define suburbs and cities, for instance. As this project proposed the development of the EMS to be driven by a wine region Association and to ensure (as required by ISO 14001) that the scope is clearly communicated to external stakeholders, this project proposes that the physical boundaries of the scope of the EMS are the same as defined by the GI of the region in question, as defined by the recognised wine regions Geographic Indications in Australia.

To fulfil the ISO 14001 requirement to clearly identify the location of the organisations in the scope of the EMS, we propose the distinction between organisations that are members of the Association from those that are not. The scope should be limited to organisations that are members of the Association, therefore the intersection of the GI McLaren Vale and the Constitution of the MVGWTA results in five main subgroups of organisations related (more) directly to grape and wine: 1) Vineyards; 2) Wineries; 3) Cellar Doors; 4) Restaurants; and 5) Accommodation.

The GI McLaren Vale also encompasses other organisations that are not Association members. However, members and non-members, government and housing are all connected through parks, creeks, roads, vegetation areas etc. (Figure 11). To develop an EMS for a wine region, it is advisable that these connecting areas should also become part of the scope of a wine region EMS. These areas connect all areas occupied by the sub-groups proposed as well as the ones not included in the scope of this project and are therefore essential for the development of a meaningful regional EMS. These are identified as areas that cannot necessarily be controlled by the ISO 14001 EMS for a wine region, but they can, certainly, be influenced by it. Because of that, biodiversity is proposed as a sixth sub-group for the scope of this EMS. The sub-group goals and targets should be driven by collective actions around the environment, which can impact and benefit the entire wine region.

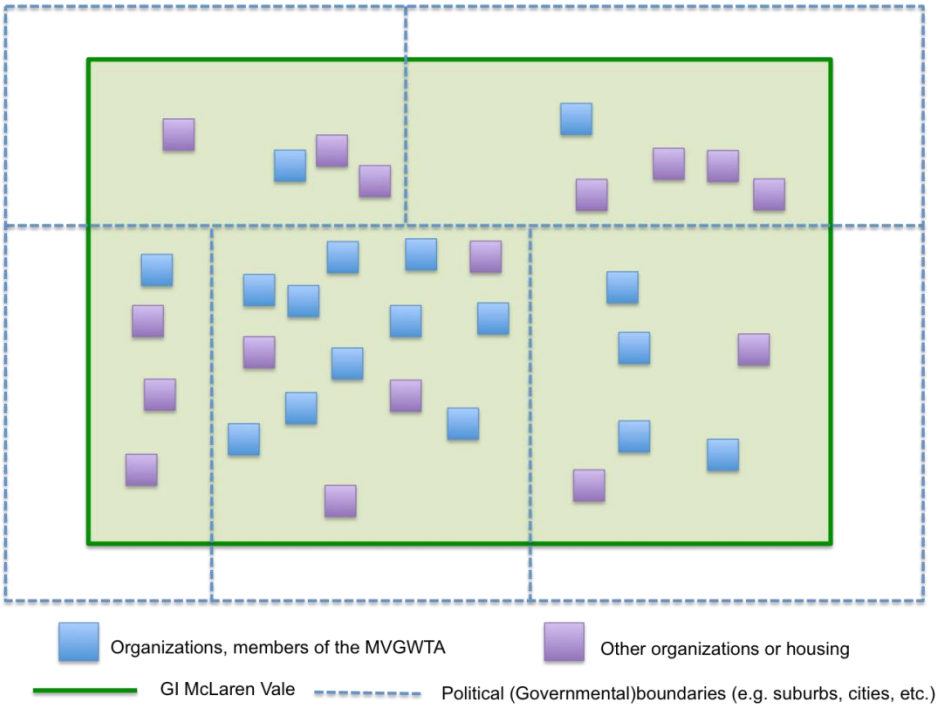

Figure 11– Scope of the McLaren Vale Wine Region ISO 14001 project

Interviews

This section presents the most important perceptions and emotions related to wine regions and environmental credentials gathered through the interview responses with 12 key influencers selected for this project. Figure 12 was built excluding Question 1 as it had a distinct purpose from the other questions. The first question was about their memories from the wine region they first visited and had two main purposes: (1) to connect them to their emotions and memories with the objective to produce more spontaneous responses and (2) to try to determine the role of environment in a broader perspective, where environment was not necessarily the focus of the question.

Figure 12 – Content cloud from Interview responses (Questions 2 to 5)

When interviewees were asked about their memories of their first wine visits, the people they met as well as the community feeling around the wine culture were described as the most memorable moments. The wine tasting experience of diverse wines and the idea of the wines coming from the vineyards in the region were also remembered. The service

provided around wine and food, including local produce was also recollected. Similarly, the 'outside experience' and the surrounding environment to the cellar doors and restaurants, including vineyards, were cited as important parts of their memories.

Question 2 asked the interviewees to name a wine region that they enjoy visiting, and list what was enjoyable about it. All listed the landscape of the region, in a systemic way, as well as the perception of beauty promoted by vineyards. The process of travelling through the countryside to get to the region was cited as important. In the region, interviewees enjoyed the diversity of growers as well as wineries, wines and cellar doors. Other responses highlighted an enjoyment of the heritage of the region and its community expressed through a community feel, local wines, local food, good accommodation (luxurious or not) and the perception of pairing local food with wine and local experiences including meeting the people involved in the making of wine and grape growing.

Questions 3 sought for a connection between regions the interviewees enjoy visiting and their perception of the environment. Apart from the overall aesthetics of the region, including no obvious signs of degradation and increased biodiversity, most interviewees did not feel they had enough information to judge whether the region was or was not environmentally friendly. Some perceived that regions with groups of diverse smaller growers had a good/better awareness of their role with the environment than large agro-industrial regions. Overall, chemical reduction was also seen as desirable when pursuing environmental claims.

Question 4 asked the respondents to share what they expected to see in an "environmentally friendly" wine region. All respondents talked about some sort of systemic, harmonious perception of a balanced environment where the landscape shows signs of a rich biodiversity and vineyards do not have a "chemically-cleaned mid-rows look", but rows with cover-crops. Optimisation of resources (water, chemicals and electricity) as well as recycling programs were also expected to be found in environmentally friendly regions.

Finally, Question 5 was about further comments and suggestions regarding McLaren Vale's proposal to develop an environmental management system and its certification (Figure 13).

For this question, a tag cloud was created showing that the core suggestion from all respondents is related to the need to have a very clear marketing message about the project, linking the benefits of it with the consumers. The responses indicated that an EMS for a wine region must be directly linked to consumers. The development of a community engagement process must also be a core component of the communication and the basis of the story-telling about the project. The choices the EMS will make need to be focused on the consumers and robust stories. The EMS must be an avenue for environmental improvement outcomes and these must be linked to the entire wine chain: from the vineyard to wineries, shops, restaurants, cellar doors and accommodation. In the case of McLaren Vale, it was suggested that the Sustainable Australia Winegrowing (SAW) program should be better communicated to consumers, as it is already perceived as an important environmental initiative.

The findings from the interviews supported the development of an alternative way to develop an EMS through a regional association. It would be difficult to develop an EMS for a wine region strictly following a typical ISO implementation process because of the risk of developing a "non-engageable" EMS with either the internal and external stakeholders, including the media. The essential component seems to be the environmental outcome itself from the community initiative. The outcomes would contribute to the overall perception of a balanced environment, which was cited as essential in a project like this. The perceptions from the interviews should be used as the basis for communication as these key influencers are a natural bridge between wine regions and consumers. Also, it became clear that the performance indicators needed to be well chosen, embracing group goals that could promote overall regional change and awareness about the importance of the environment. Because the project is about an EMS for a wine region, the performance measures and the communication strategy must really be focused on consumer information, awareness and education.

Figure 13 – Content cloud (Question 5 – recommendations to the project)

Recommended process to implement an EMS in a wine region

Figure 14 shows the modified process flow developed from the findings of this project. It suggests an alternative pathway to implement an EMS when a regional association is driving the process. The changes to the original process shown in Figure 8 are highlighted in purple in Figure 14. This modified process flow aims to overcome an original concern about this project, by developing an EMS that is representative of a group of very diverse stakeholders with different priorities and goals. It is likely that an EMS developed strictly following the process described in the ISO 14001 standard (Figure 8) would lead to an inappropriate and/or unrealistic EMS. The ISO 14001 standard states that the top management is in charge of defining the environmental policy (EP). This is appropriate for an organisation with a hierarchical structure, because an EMS needs the full support of top management if it is to succeed and top management will only support the EMS if it aims to facilitate a policy which top management approves. But, the Association is a collective of mainly small and medium sized enterprises which, despite varying degrees of interdependence, have an autonomous management. The Board of Directors of the Association might be interpreted as the top

management, but there is a risk that an EP defined by the Board would not engage the community and that it would therefore be difficult to implement and promote meaningful environmental outcomes. Board members are not necessarily environmental experts and usually, only 2-4 directors represent different industries. This proposal does not exclude the inputs from directors but includes other members to jointly support the definition of EP and the development of the EMS.

The key to success for the collective process proposed in this project is the engagement of the community and avoidance of top-down proposals that are unlikely to engage members in the implementation of a regional EMS. McLaren Vale had two examples that help to justify the rationale of choosing a bottom-up model: (1) the success and high adoption rate of Sustainable Australia Winegrowing (SAW) due to the open process to develop its content (any grower could participate) and feedback mechanisms after every annual results release; and (2) failure to implement the McLaren Vale EMS developed in 2007 due to the top-down approach (mainly) and consequent lack of engagement of members and unrealistic objectives and targets (too many and too complex). The adapted process flow suggested in this project (Figure 14) aims to develop a bottom-up approach with a structured feedback loop mechanism from the top-management (Board).

The adapted process proposed in Figure 14, starts with the interview results with the key influencers, as described in the Method section of this report. The grape growers sub-group was chosen to test the method. In the pilot session, the interview results were presented to the group through tag clouds and relevant excerpts from responses. In the case of the regional sub-group wine grape growers, the following activities/operations were listed:

1. Chemical spray
2. Pruning
3. Harvesting/Picking
4. Under vine management
5. Irrigation
6. Mid-row management
7. Canopy management
8. Chemical storage

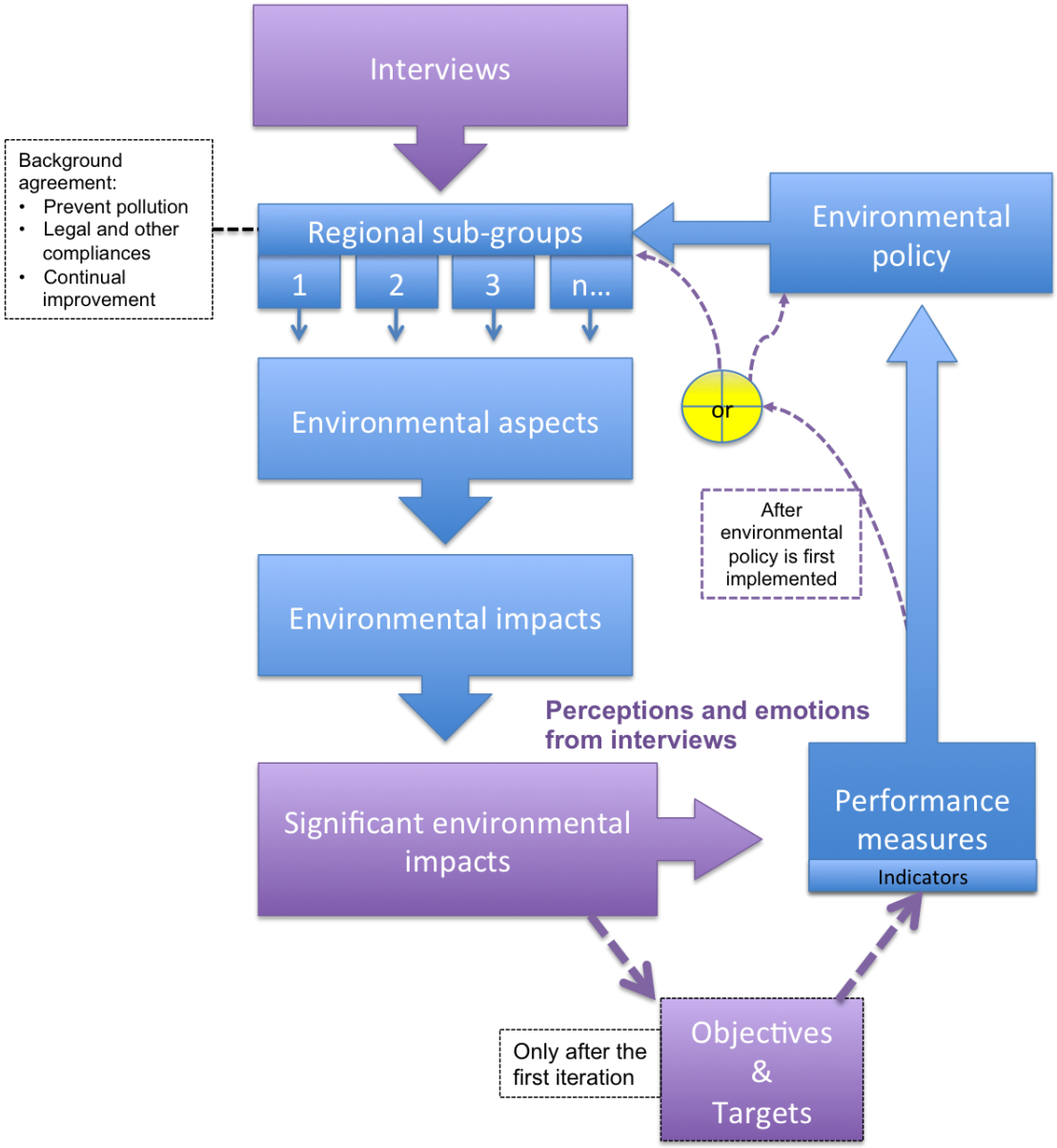

Figure 14 – Proposed process on how to implement a regional EMS, adapting the ISO 14001 standard

In the session, grape growers individually identified aspects and impacts from the above listed activities/operations. It was clear that significant environmental impacts should be chosen not necessarily through a formal risk assessment but by the group interpretation of the results from the interviews. The aim was to find regional performance measures that could be: communicated to the general public; objectively tracked; obtained at low cost without taking up much time. Furthermore, these measures should bridge the emotions and perceptions of the interviewees to actions from growers. It was agreed that to match the objectives of the project, and to allow for most stakeholders including consumers of the

wine and visitors to the region not having expertise in operations of wine grape growing, the performance measures should carry messages clearly associated with beneficial environmental outcomes. Performance measures such as the reduction of a certain percentage of a certain chemical, without some explanation, were unlikely to increase appeal to the media or wine consumers/visitors. Furthermore, the measures should be systemic. The initial four overall performance measures selected by the group were:

i. Soil Health
ii. Canopy Health / Management
iii. Water Usage / Management
iv. Chemical Usage / Spraying – "Why do we use it? What type do we use? How often do we use it? Are there alternative strategies and what are their disadvantages?"
    a. Elemental / Natural
    b. Synthetic

The selection of these indicators is similar to the findings of Santiago-Brown (2014a), whose research on sustainability assessments for viticulture lists the most relevant indicators for environmental sustainability in wine grape growing. This same research suggests that quantitative indicators will differ as they are chosen to match the specific context. For instance, soil scientists have many ways and views on how to measure soil health, but the project is restricted by limited resources and the goal to find meaningful indicators for the chosen performance measure. In McLaren Vale, the above performance measures were refined to:

i. Soil health through worm counts
ii. Canopy health/biodiversity/aesthetics through bee counts
iii. Water use through water sources and seasonal benchmarks
iv. Chemical use through elemental and synthetic spray amounts and seasonal benchmarks

The group concluded that any target audience – journalist/media, average consumer, grower (both internal (McLaren Vale) and external (other Australian regions and beyond)), trade, etc. – has a basic understanding of what can and does affect a horticultural region

‘above’ or ‘below’ the ground. Children are aware that soil, sun and water will affect a plant’s ability to grow. If plants and soil are not healthy (through sun, soil and water), they cannot produce healthy and good quality food. In the case of the wine region, if vines are not healthy they will not produce good quality grapes, and therefore there will be no good quality wine. This is a basic principle that can be communicated to any audience.

The results from this sub-group are a preliminary result. As soon as initial performance indicators are collected from each sub-group and compiled, other methods to collect data and statistical models can be determined based on the Association’s awareness of the resources devoted to the EMS. Moreover, the group suggested, that for wine grape growers, the effects of seasonal variation should be taken into consideration. The group pointed out that indicators such as water or chemical use would vary from year to year because of natural variability in rainfall patterns and temperatures, and that this variation might mask improvements in irrigation practices. For example, more water will be needed in relatively dry years but in wetter years there will be more need to use chemical treatments. This can be allowed for by fitting regression models such as:

Indicator = a + b Time (year number) + c Temperature (annual average) + c Rainfall in growing season (total) + error

Additional terms can be added, the error typically has a bell-shaped curve, and the performance of the EMS is measured by the coefficient “b”. If higher values of the indicator correspond to a healthier environment then a substantial positive value of “b” indicates that the EMS is having a beneficial effect in this respect. As soon as the data from all sub-groups are gathered, the project manager (from the Association) will compile the data and propose options for quantitative indicators with cost estimates for using them. A final public consultation will then be organised and the results will be presented to the Board to support the development of the Environmental Policy for the wine region. As soon as the policy is defined, the continual improvement loop would be established by following the process proposed in Figure 14.

Certification and associated costs

Reasons why organisations seek certification to ISO 14000 include: customers may require certification to ISO 14000; customers may expect evidence of an EMS and having certification to ISO 14000 provides such evidence without each potential customer making a separate investigation; certification to ISO 14000 may help with marketing; certification to ISO 14000 demonstrates to stakeholders, including employees, that the organisation is committed to an EMS. These potential benefits of ISO 14000 have to be considered against the costs of certification.

Five Conformity Assessment Bodies were contacted for this project as well as an environmental consulting organisation. The researcher had individual discussions with eight people who were identified through these entities. None had any example in their portfolio of a regional certification like this project proposal. In their opinion, ISO 14000 certification would require individual certification, and therefore an audit of all members. This option was not considered viable because: (1) costs would be prohibitive ($3,000-5,000 per organisation yearly); (2) the project never aimed to increase individual ISO 14001 certification across the region and (3) the original driver of the project was to develop group goals that could promote positive regional environmental outcomes. In summary, the project was about certifying the wine region and not individual organisations or members of the Association.

Technically, the main problem of certifying an association seems to be the fact that the ISO family of standards, including ISO 14001, were developed with single organisations in mind (Zobel 2007). However, there is no statement in ISO 14000 that precludes an interpretation in a different context, and it is more that the certification process has been set up to service large individual organisations than a limitation of the Standard. In order to become certified against ISO 14000, the scope of the certification must cover the operational locations of the organisation. In a wine region, this would imply listing all members of the Association who could then be subject to individual third party auditing. In this scenario, individual organisations could be audited in a defined sampling approach, but to comply with ISO, each individual organisation would need to develop their individual EMS (Ammenberg, Brjesson, & Hjelm, 1999), following the ISO standard. This could be facilitated by the

Association providing a template. Most wine growers in McLaren Vale, and most other wine regions across Australia, are considered small and medium sized organisations (SME) with the owner performing most operations or managing them through contractors and/or a small team of employees. These employees are often seasonal, temporary and / or casual, and the concept of different levels of management is not relevant. However, for the purpose of ISO 14000 certification the Association Directors would be viewed as top management.

The ISO process is written to ensure all these levels conform and understand the wishes and goals of the top management. It also requires internal audits, conducted by an independent party to the ones involved in a specific activity. By not having other available people in the SME, a way to deal with this requirement would be to hire an external consultant to conduct the internal audit. The estimated cost for an environmental consultant is $800-1500/day. This extra cost to conform to the standard is likely to add little value to increasing positive environmental outcomes for a specific SME. In itself, ISO certification does not ensure performance outcomes (Cary & Roberts, 2011; Gunningham, 2007) as it is mainly focused on the management system itself and not environmental outcomes (ISO, 2014a). However, an answer to this common criticism of management system standards is that most successful organisations are unlikely to want to set up a management system unless it does achieve worthwhile objectives.

A new version of ISO 14001 is expected to be released in 2015. "The new version will include a requirement to understand the organisation's context in order to better manage risk, with more emphasis made on leaders (Figure 15) within organisations to promote environmental management. In addition there will be a shift towards improving environmental performance rather than improving the management system" (ISO, 2014b). The shift of emphasis towards positive environmental outcomes demonstrates that the Standard is itself adapting the PDCA cycle and this adds to its credibility. However, the new version adds a layer of "leaders", who are managers promoting environmental management throughout the PDCA cycle. In the context of the Association these leaders might be drawn from the more experienced owners of SME in the region, if such people would be willing to contribute their time and expertise.

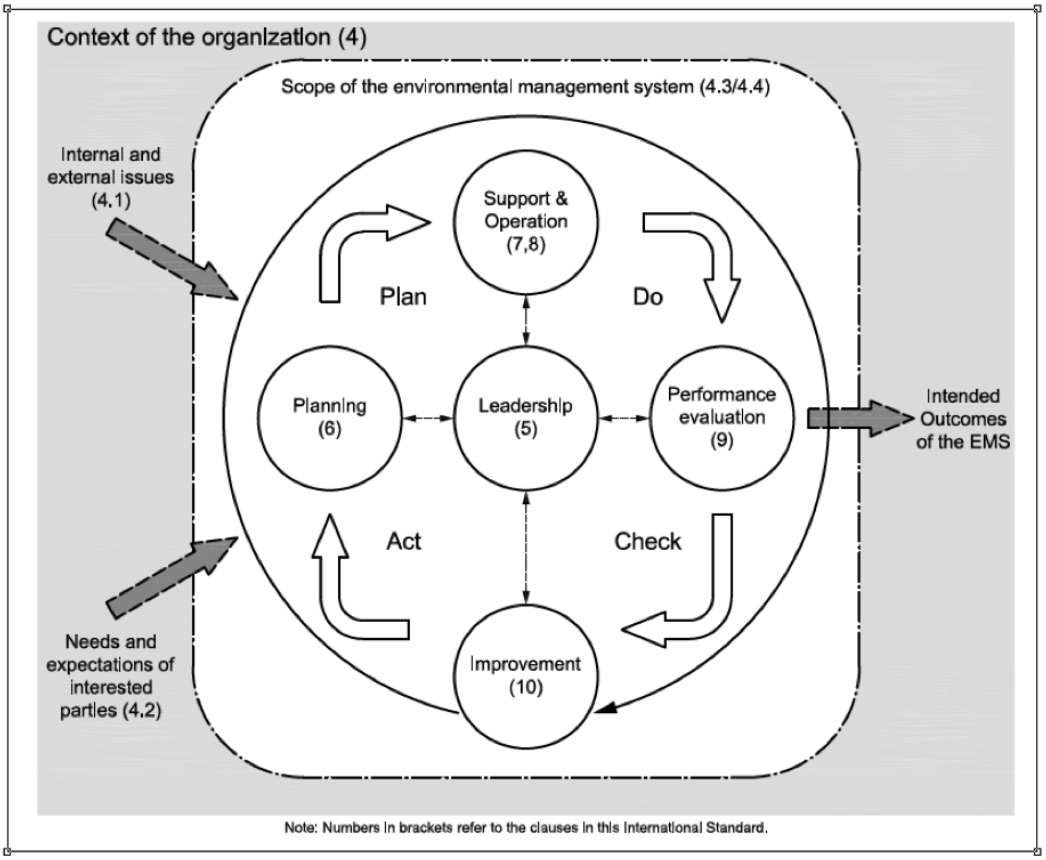

Figure 15 – The New ISO 14001, including leadership in the PDCA cycle

Certification bodies proposed two other certification options: (1) certify the Association Office itself and (2) Develop and certify an environmental program. The first of these two options was dismissed as the environmental impacts and outcomes of a small office did not seem to be meaningful for the region. Also a wine region could not claim to be certified because the office of its Association was certified.

The second option, of certifying an environmental program, is worth considering further. It would require careful definition to distinguish it from certification of the Association as a community, and to establish the scope of audits. Other industries have developed their own environmental programs, borrowing relevant processes from ISO 14001 but adapting and adding other context-specific processes and tools to promote positive environmental outcomes. An example is EarthCheck (Earth Check, 2014), a consulting and environmental certification for tourism initiatives that was developed in partnership with scientific research. EarthCheck certifies its members directly worldwide. The outcomes of the program seem to be meaningful enough to ensure credibility for their certification. Another

interesting example comes from the fishing industry. It is a product certification called Australian Southern Rocklobster Clean Green Program (Southern Rocklobster Limited, 2014). The Clean Green program is owned and maintained by Southern Rocklobster Limited (SRL). SRL is the national peak body owned by license holders across South Australia, Tasmania and Victoria. This program uses the ISO 14000 continual improvement premise and auditing criteria to audit their own environmental program. It might be feasible to set up a similar body for wine regions within Australia. A third example of a consortium that includes an assessment of members is MVGWTA's own Sustainable Australia Winegrowing (SAW).

The resources necessary to implement an EMS for wine regions will vary from region to region and will also depend upon the capabilities of the local staff and Boards managing their local industry associations. Also, it will depend on the performance measurement established by each sub-group and the final selection of regional goals by the Board of the association. It is advisable that the association's staff be in charge of setting the sub-groups to define the initial performance measures. This way, it is more likely that community engagement will be achieved and all the other projects of the association are somehow connected to the environmental goals. Time and costs, as well as whether there is a need for external consultancy, depends on the complexity and pace of the regional EMS project. We recommend that an EMS starts with a few simple and realistic objectives. If these can be met, the EMS can adapt to meet other challenges and consider some form of certification. Beginning with a sophisticated EMS that is certified to ISO 14000 is likely to incur high costs, and there is a risk that members of an association will be overwhelmed by the auditing requirements and disassociate themselves from the initiative.

Conclusions

In spite of being the most widely adopted environmental certification internationally, the ISO 14001 certification numbers are not increasing at the same rates as in the past. Furthermore, the small number of agricultural organisations holding ISO 14001 certifications in the world might be an indication of the difficulties of implementing an ISO 14001 certification in agriculture (Cary & Roberts, 2011), including wine grape growing. Also, the hospitality industry seems to be developing alternatives to the ISO 14001 process and this

seems to be largely due to the relatively small size of many operators and/or the inflexibilities of the ISO process. The majority of organisations from the other proposed sub-groups – wineries and cellar doors – are also made up of small businesses. Apart from these challenges, the commercial benefits from an ISO certification for SMEs are uncertain. Because of the demographics of the majority of the organisations involved in a wine region and the need to foster regional environmental goals and outcomes, this project proposes an alternative process to implement an EMS in a wine region.

Formal ISO certification would be too expensive and is probably insufficiently flexible to accommodate the singularities of a collective EMS. It does not mean that an ISO based EMS (choosing the appropriate parts of the process) cannot be implemented. ISO provides robust guidelines on how to implement environmental management systems and these appropriate processes should be used to develop a regional EMS. ISO 14001 is currently under revision, but it is unlikely that certification to the revised Standard will be appropriate or become a feasible option for a wine region, as the most relevant changes are related to the insertion of a leadership role and shift of focus from the management system itself to environmental outcomes. However, the move towards environmental outcomes may make an industry based self-certification more convincing. It is likely that accredited Conformity Assessment Bodies will continue to focus on larger organisations.

Because there are no legal requirements for an association to develop an EMS, it is assumed that the main driver for a project like this is the collective understanding that the Association's members want to: (1) prevent pollution, preserving and conserving the environment; (2) receive help to comply with environmental legislation and others (if applicable); (3) be involved in improving the regional environmental outcomes over time and (4) be able to promote its environmental claims. The process should not be driven by the certification aim itself, but the environmental outcomes that an EMS can promote, mainly through community engagement in the process. Community engagement could extend to schools in McLaren Vale, for example, collecting data on biodiversity to supplement performance measures. The benefits of eco-claims and certification need to be related to the potential to increase product quality as a result of these changes and/or more

careful means of production in the vineyards (Delmas & Grant, 2008). These changes are likely to lead to a more “well-taken care of” environment.

One of the relevant results from the interviews is the importance of the overall landscape perception, a “feel of balance” with no evident environmental degradation. Certification came in to place to add credibiity to environmental claims. However, the objective of achieving positive environmental outcomes that could be promoted by a management system is more important than certifications. Wine regions are comprised of mostly SMEs with diverse interests and financial capabilities. A collective environmental management system, developed by a regional association and implemented through the proposed adapted process recommended in this project, is more likely to successfully engage the community. The focus on collective goals that can be easily communicated, linking environmental outcomes and perceptions to wine visitors/buyers can add credibility to the process through the outcomes promoted by the initiative. This proposal is dependent on community engagement and its claims will only resonate if external stakeholders perceive/feel the change. A communication strategy focused on consumers was the main recommendation from the key influencers. After all, the association represents the grape, wine and tourism communities for their mutual benefit. The scope of the EMS should coincide with the area limited by the Geographic Indications from the wine industry. This will also contribute to focus on a clear communication strategy.

The conclusion that it is not feasible to certify a wine region to the ISO 14001 standard does not weaken the project. By implementing a process similar to the one described in this project, wine regions should benefit through overall environmental improvement and awareness. Additionally, activities and operations are likely to be optimised which would lead to robust stories to promote the region, increase visitors and ultimately increase wine sales.

Annexes

Accredited Conformity Assessment Bodies by JAS-ANZ (as per Nov. 2014)

For Environmental Management Systems in Australia

1. AsureQuality Limited
2. Business Systems Certification Pty. Ltd
3. Best Practice Certification
4. BSI Group (Australia and New Zealand) Pty Ltd
5. Bureau Veritas Australia Pty. Ltd.
6. Compliance Australia Certification Services
7. Compass Assurance Services Pty Ltd
8. Certex International Pty Ltd
9. Davis Langdon Certification Services be replaced by DLCS International Pty Ltd
10. DLCS International Pty Ltd Trading As DLCS
11. DNV GL Business Assurance Australia Pty Ltd
12. ECAAS Pty Ltd
13. Equal Assurance Pty Ltd
14. Global Certification Pty Ltd
15. Global Compliance Solutions Ltd
16. Guardian Independent Certification
17. Global-Mark Pty Ltd
18. International Industrial Certification Co. Limited
19. Integrated Quality Certification Pvt Ltd
20. International Standards Certifications Pty Ltd
21. Lloyds Register Quality Assurance Limited
22. Management Systems Certification Global Pty Ltd
23. Quality Control Services (Environmental) Pty Ltd
24. QMSCS Pty Ltd (trading as QMS Certification Services)
25. SAI Global Certification Services Pty Ltd Trading as SAI Global
26. Sustainable Certification Pty Ltd
27. Sci Qual International Pty Ltd
28. SGS Systems Services Certification Pty Ltd
29. Transpacific Certifications Limited
30. Telarc SAI Limited
31. TQCS International Pty Ltd

McLaren Vale GI Textual Description:

Geographical Indications of wine regions in Australia are administrated by the Australian Grape and Wine Authority – AGWA (AGWA, 2014)

The Australian Geographical Indication "McLaren Vale" was entered in the Register of Protected Names on 2 September 1997 in response to a direction received by the Registrar from the Presiding Member of the Geographical Indications Committee acting under Section 40Z of the WAC Act 1980.

GI Area Boundaries:

NOARLUNGA TOPOGRAPHIC MAP

Scale 1:50,000

Sheet 6627-4 & PT 6527-1

Third Edition

By authority of the Minister of Lands.

Aerial Photography, Svy SA 3099 & 3111, March 1984.

Photolithography: D.J. Woolman, Government Printer, 1987.

YANKALILLA TOPOGRAPHIC MAP

Scale 1:50,000

Sheet 6527-2

Third Edition

By authority of the Minister of Lands.

Aerial Photography, Svy SA 3725, November 1987.

Photolithography: A.B. Caudell, Government Printer, 1990.

WILLUNGA TOPOGRAPHIC MAP

Scale 1:50,000

Sheet 6627-3

Third Edition

By authority of the Minister of Lands.

Aerial Photography, Svy SA 4196, September 1990.

Photolithography: A. Secker, Government Printer, 1992.

Description:

The Geographical Indication "McLAREN VALE" is located within the zone "Fleurieu", within the State of South Australia, Australia.

The beginning point of the boundary is the coastline on Map Noarlunga (Sheet 6627-4 & PT 6527-1) at grid reference TG717164, thence proceeding in an easterly direction following grid line 164 to the foot bridge at Hallett Cove Railway Station grid reference TG724164 and thence continuing in a north easterly and then easterly direction along Perry Barr Road to its intersection with Aroona Road at grid reference TG743172 and then in a northerly and then north easterly direction along Aroona Road to its intersection with Lonsdale Road at grid reference TG751175, thence north along Lonsdale Road to the intersection with Majors Road at grid reference TG751179, thence proceeding east along Majors Road to its intersection with Main South Road at grid reference TG773182, thence proceeding south to the intersection with Blacks Road at grid reference TG773179 and thence proceed in a generally east and then south east direction along Blacks Road to the intersection with Oakridge Road at grid reference TG815177, thence proceed in a south easterly direction along Oakridge Road to its intersection with Main Road at TG835160, thence in a generally south westerly direction along Main Road to its intersection with Sugarloaf Road at grid reference TG827147 then south westerly along Sugarloaf Road to the intersection with Chandlers Hill Road and Grants Gully Road at grid reference TG823145, thence in a generally southerly then easterly direction along Grants Gully Road to the spillway at Clarendon weir at grid reference TG843118, thence following the centre line of the Onkaparinga River in a generally easterly then southerly direction to the foot bridge south of the Mount Bold Reservoir spillway at grid reference TG887106, thence in a direct line in a generally southerly direction to its intersection with Razorback and Boothill Roads at grid reference TG889095, thence in a generally southerly direction to the dam at grid reference TG889093, thence along the watercourse in a southerly direction to the intersection with Dashwood Gully Road at grid reference TG886067, thence east south east along Dashwood Gully Road for 500 metres to the intersection with Sharondon Park Road at grid reference TG891065, thence in a generally southerly direction along Sharondon Park Road to the northern boundary of Kuitpo Forest at grid reference TG888054, thence following the vehicular track in a generally north west direction along the north west and northern boundary of Kuitpo Forest and thence south along the western boundary of Kuitpo Forest to the intersection with Peter Creek Road at grid reference TG875049, thence proceeding south along Peter Creek Road until the intersection with Knotts Hill Road at grid reference TG881035, thence proceeds in a generally westerly direction along Knotts Hill Road to the intersection with Toops Road at grid reference TG864033, thence along Toops Road in a southerly direction to the intersection with Wickhams Hill Road at grid reference TG860021, thence continuing south along Wickhams Hill Road to the intersection with Range and Glenview Roads at grid reference TG862015, thence proceeding along Range Road in a south south westerly direction to intersect with Pennys Hill Road at grid reference TF835968, thence continuing south south west along Range Road to edge of map at grid reference TF833966; on to Map Willunga (Sheet 6627-3) at grid reference TF833966, thence continuing to proceed along Range Road in a south westerly direction to the intersection with Willunga Hill Road at grid reference TF798918, thence proceeding in a north westerly direction along Willunga Hill Road to the intersection with the 200 metre contour at grid reference TF785926, thence west south west along the 200 metre contour to the intersection with Bangor Road at grid reference TF777923,

thence continuing along the 200 metre contour to the intersection with Delabole Road at grid reference TF761913, thence continuing in a south westerly direction along the 200 metre contour to intersect with Loud Hill Road at grid reference TF749903, thence continuing along the 200 metre contour in a south westerly direction to edge of map at grid reference TF727887; on to Map Yankalilla (Sheet 6527-2) at grid reference TF727887, thence continuing in a south westerly direction along the 200 metre contour to the intersection with Old Sellicks Hill Road at grid reference TF708868, thence proceeding along Old Sellicks Hill Road in a north westerly direction to the intersection with Main South Road at grid reference TF703874, thence proceeding along Main South Road in a south westerly direction to the Rail cutting at grid reference TF687851, thence proceeding along the Cadastral boundary in a north westerly direction to the coastline at grid reference TF675858 and proceeds thence in a generally northerly direction along the coastline to the beginning point at grid reference TG717164 thus completing the defined area.

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