

MCLAREN VALE SUSTAINABLE WINEGROWING AUSTRALIA

2013 RESULTS

www.mclarenvale.info



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Publisher

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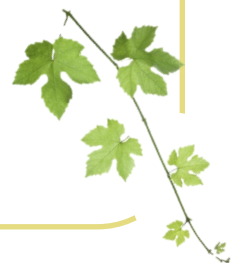
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Introduction



McLaren Vale Sustainable Winegrowing Australia (MVSWGA) is a program developed for the McLaren Vale region to assess and improve winegrowers' sustainability. It is the only sustainability program in winegrapes in Australia.

It was formally launched in 2009, inspired by some of the main sustainability programs in viticulture at the time, such as Lodi Rules and California Sustainable Alliance. Growers from McLaren Vale developed content based on topics that most impacted their sustainability. The content of the assessment is updated annually and reviewed by world-recognised experts in the field.

All growers from the program are subjected to third-party audits in a random sampling approach. The methodology was developed by Irina Santiago's findings from her ongoing PhD research on sustainability in viticulture at the University of Adelaide. The methodology has three main principles: (1) assessment over time; (2) grower sustainability levels identified on a continuum and not on a pass/fail basis; (3) the assessment and reporting system must be useful for the grower to understand their sustainability status and be able to improve it.

MVSWGA encompasses sustainability indicators and spray diary reporting plus six assessment chapters: Soil Health, Nutrition & Fertiliser Management; Pest & Disease Management; Biodiversity Management; Water Management; Waste Management; and Social Relations (Work, Community & Wineries). Blocks within vineyards are identified by GPS coordinates which are related to spray diaries. The reporting system cross-tabulates disease pressure and chemical usage in 'real time'.

The program uses a triple bottom line approach (economic, environment and social) in a systemic assessment that combines relevant indicators and clear pathways for growers' improvement. It does not favour any farming system but it does favour outcomes from management choices. The reporting system, which includes regional benchmarks for all assessment topics, is available through an interactive online system available for all members of the program.

The aim of MVSWGA is to increase overall grower sustainability by providing useful and comprehensive reports to help growers increase their understanding of their own vineyards while comparing results with their peers. The program takes into account the impact of the natural environment, cultural and market forces on individual business. It also demonstrates growers' collective responsibility for maintaining and enhancing the surrounding landscape.

MVSWGA is starting its fourth year of data collection, with all data collection and the reporting system made available online.

I'd like to thank all growers who have given their time, contributing to the improvement of MVSWGA. I'd also like to thank Cary Dreelan, our system developer who exceeded all expectations with the design and functionality of the online system.

Last but not least, thank YOU for your support and help. MVSWGA would not be possible without your contribution. It has been an incredible journey!

Irina Santiago

Sustainability Officer

McLaren Vale Grape Wine and Tourism Association

November 2013

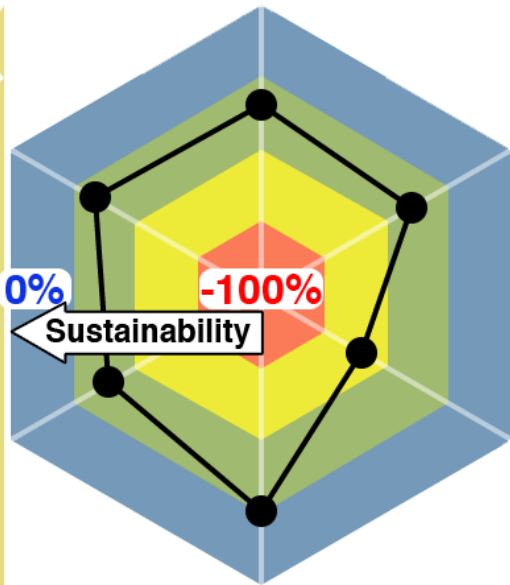


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How to read the graphs

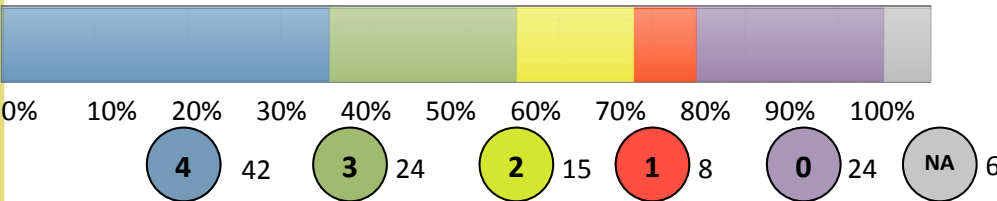
Spider Graphs



The spider graphs show values relative to the maximum 'perfect score' that can be achieved. The attributed weight (importance) for each item is taken into consideration and is displayed on the table below the graphs.

Results are shown as percentage change between maximum possible points and the score for the specific member or region. The centre of the graph represents -100% (minus one hundred percent), the worst possible result or least sustainable situation. The outer edge of the graph represents 0% (zero percent), the best possible result, i.e. 'perfect score' or most sustainable situation. The closer to zero (the outer edge), the better the result! The sustainability journey is about moving from the centre to the edge of the spider graph.

Stacked 100% Bar Graphs



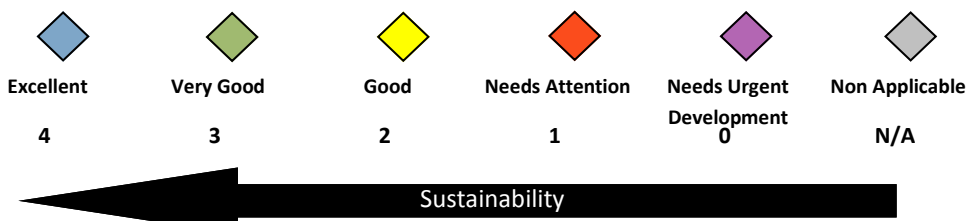
The Stacked 100% Bar Graphs show the count of absolute values for each topic. The attributed weight (importance) for each item is not taken into consideration.

The count above shows how many members responded in each category. The graph results are shown in percentages of the total, out of 100%.

The graph compares the percentage that each value contributes to a total, across each of the categories.

How to interpret the results and colours

Each colour represents a category of the workbook, varying from grey (non-applicable) through 0 to 4. The aim is to move from the right to the left as shown in the image below.



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Members: sites, production & areas under vine

This booklet shows the results of MVSWGGA, one of the finest programs for viticultural sustainability in the world. McLaren Vale growers continue to embrace this world-class program, which moved to an online system in 2013, providing significant benefits in analysis and comparative measures, as well as data input, recording and reporting.

There was a 37% growth in membership this year, from 87 to 119 members, leading to a 32% rise in participating vineyard sites, from 145 to 191. As a result, the total area under vine in the MVSWGGA program has grown by 30% in the past 12 months.

MVSWGGA members represent 4,386ha of farm land, of which 2,929ha (67%) is area under vine. Amongst its members, there are 2,572ha of red varieties planted and 274ha of whites, producing 16,215t and 2,491t of grapes, respectively.

The average red grape production is 6.3t/ha, while for white grapes it is 9.1t/ha.

Snapshot

Members	119
Distinct Vineyard Sites	191
TOTAL FARM area (ha)	4,386
TOTAL area UNDER VINE (ha)	2,929
Area under RED grapes (ha)	2,572
Area under WHITE grapes (ha)	274
RED grape production (t)	16,215
WHITE grape production (t)	2,491
Average RED grape productivity (t/ha)	6.3
Average WHITE grape productivity (t/ha)	9.1

Comparisons

	South Australia	McLaren Vale	MVSWGGA	Comparisons		
				MVSWGGA vs South Australia	MVSWGGA vs McLaren Vale	McLaren Vale vs South Australia
TOTAL grapes (t)	700,525	35,229	18,706	2.7%	53.1%	5.0%
Total RED (t)	412,856	29,258	16,215	3.9%	55.4%	0.7%
Total WHITE (t)	287,669	5,971	2,491	0.9%	41.7%	2.1%
TOTAL area (ha)	75,301	7,463	2,929	3.9%	39.2%	9.9%
RED area (ha)	53,519	6,275	2,572	4.8%	41.0%	11.7%
WHITE area (ha)	21,782	962	274	1.3%	28.5%	4.4%
Others (unknown, rootstocks, etc)	1,232	225	83	6.7%	36.9%	18.3%
Number of Growers	3,488	544	191	5.5%	35.1%	15.6%

Note: South Australian data from the SA Winegrape Crush Survey Regional 2013. The Phylloxera Board estimates that the non-response rate for McLaren Vale is 18.9%

The table above shows the position of MVSWGGA members compared to South Australia and the McLaren Vale region.

MVSWGGA members represent 35% of grapegrowers in the McLaren Vale region.

Members produced more than half of the total amount of grapes in the McLaren Vale region, and almost 3% of that in South Australia. About 55% of the region's – and 4% of the state's – red grapes came from MVSWGGA growers. Members represented almost 40% of the area in McLaren Vale and about 4% of South Australia.

There are 544 vineyards in the McLaren Vale region, 191 of which are owned by MVSWGGA members. They represent 35% of total vineyards in the region and 5% of South Australian vineyards.

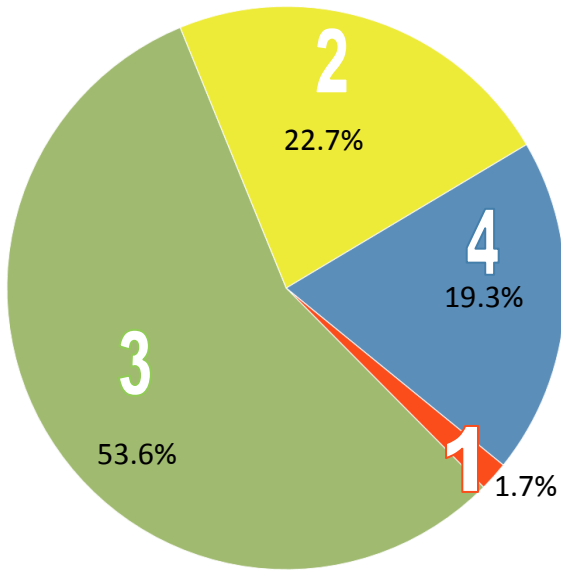


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Factsheet: members, farming system & sizes



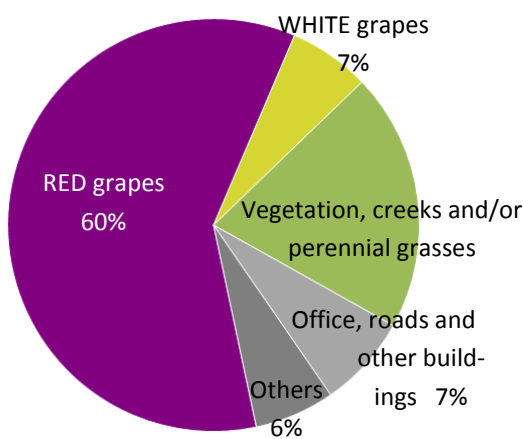
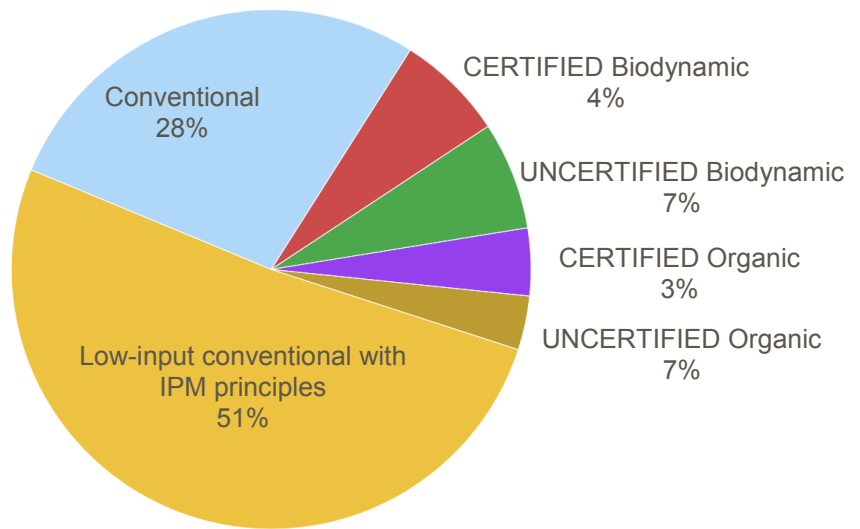
MVSWGGA was created with the assumption that growers have different levels of sustainability. The assessment method places growers in four distinct categories which express their sustainability level according to a colour code, correlating results from the assessment with a level as follows:

- ◆ 4 Excellent
- ◆ 3 Very Good
- ◆ 2 Good
- ◆ 1 Needs Attention

The pie chart on the left shows the number of members by sustainability category. The majority of members (56.3%) are in the Green category. Both Blue and Yellow categories each have about 20% of the members, while two members are in the Red category.

MVSWGGA members are committed to sustainable and responsible grapegrowing. An impressive 72% of growers are either farming with low inputs and Integrated Pest Management (IPM) principles, biodynamically or organically.

More than half of MVSWGGA members (51%) are farming with low inputs and IPM principles, while 6% are certified organic (a further 9% are uncertified) and 3% are certified biodynamic (a further 5% are uncertified). The remaining 28% of members farm conventionally.



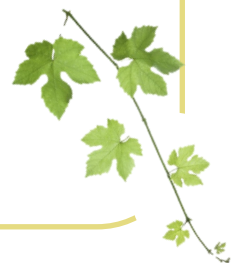
The McLaren Vale region is heavily dominated by red grape production. From the total 4,386ha of farm land that MVSWGGA members hold, 60% is used for growing red grapes, while 7% is used for whites.

Generating biodiversity is certainly high on the agenda in the region, with members dedicating 20% of farm land to vegetation, creeks and/or perennial grasses. About 7% is allocated to offices, roads and buildings.



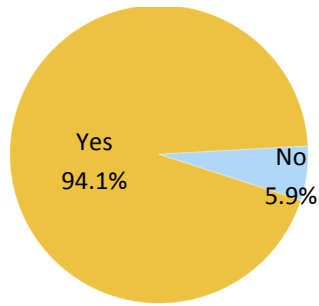
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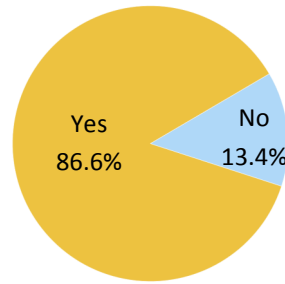


Grape production & wines

Harvest all grapes produced by members



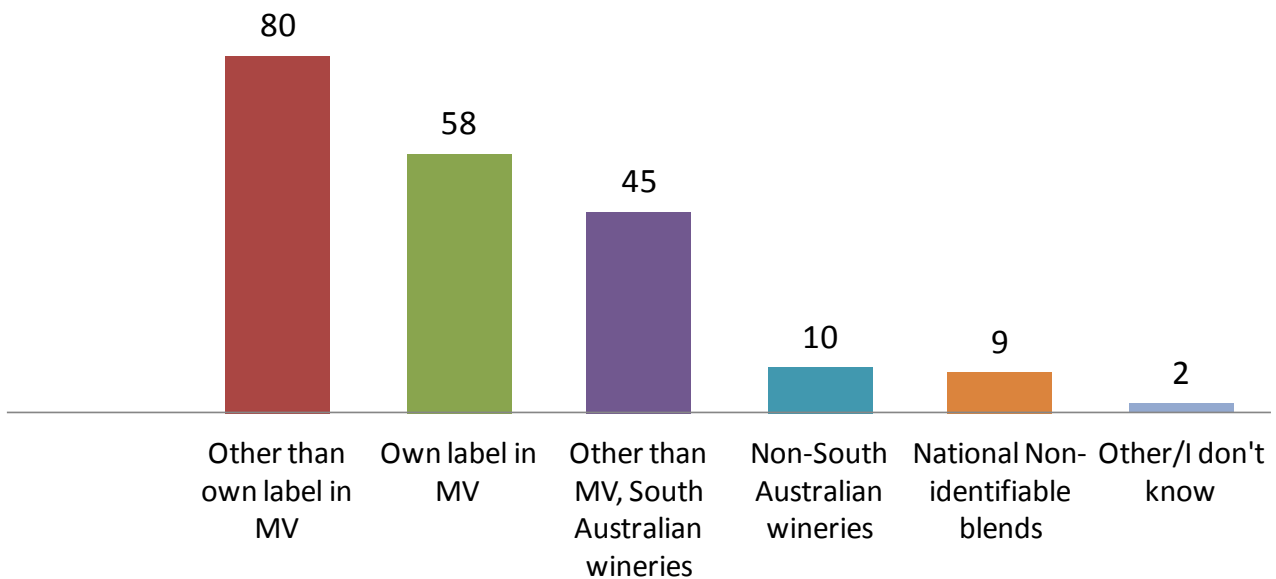
100% usage of grapes harvested (sold or winemaking)



MVSWGA members have a high level of economic sustainability, with 94% harvesting all of their grapes. Only seven members did not harvest all the grapes they produced, with the total amount of grapes not harvested only amounting to 11t.

More than 86% of members used 100% of their harvested grapes, with only 17t not utilised.

Number of members in each grape destination category



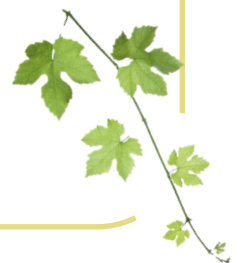
About 39% of MVSWGA members grew grapes that were used to produce wines by other wineries in the McLaren Vale region, while 28% used their grapes to produce wines for their own McLaren Vale label.

For 22% of members, their grapes were used by South Australian wineries outside the McLaren Vale region, while 5% of members had their grapes used by non-South Australian wineries, and another 5% had their grapes used in national non-identifiable blends.



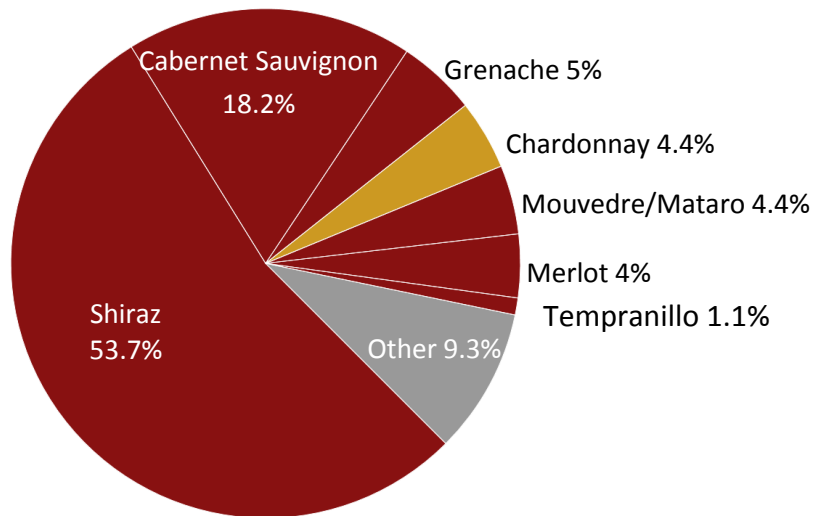
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Grapes (area under vine)

ALL

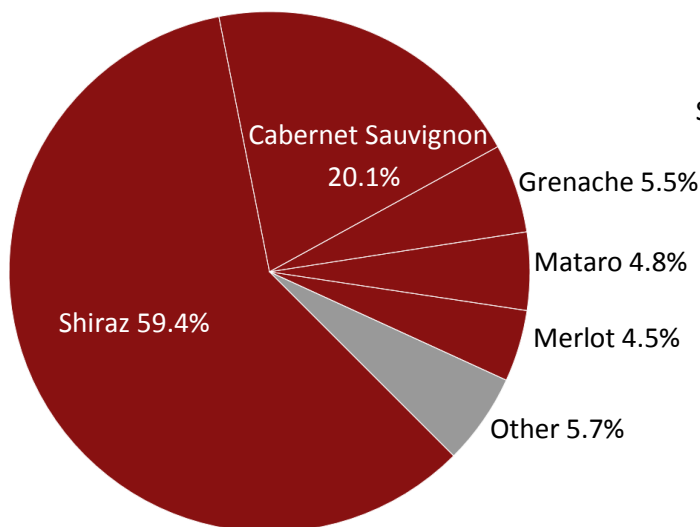


Shiraz remains by far the most important variety in the McLaren Vale region, accounting for more than half (54%) of all area under vine amongst MVSWGGA members. Cabernet Sauvignon accounts for 18%, Grenache 5%, Merlot 4%, Mouvedre/Mataro 4% and Chardonnay 4%. All other varieties represent about 11%.

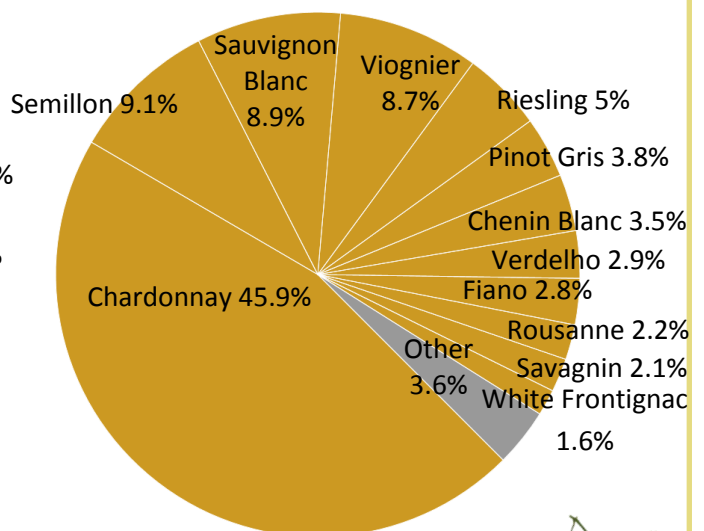
MVSWGGA members produced 16,215t of red grapes in 2013 from 2,572ha under vine. Shiraz is the most planted red, representing 59% of the total reds, followed by Cabernet Sauvignon (20%), Grenache (6%), Mouvedre/Mataro (5%) and Merlot (4%). Other varieties, including Tempranillo and Sangiovese, represent 6% in total.

Members produced 2,491t of white grapes this year, which came from 274ha under vine. By far the main planted white variety is Chardonnay (46%), followed by Semillon (9%), Sauvignon Blanc (9%), Viognier (9%) and Riesling (5%). There are many new and alternative varieties with small production that represent 19% of the total white varieties planted. They include Pinot Gris/Grigio (4%), Chenin Blanc (3%), Verdelho (3%), Fiano (3%), Rousanne (2%), Savagnin (2%) and White Frontignac (2%).

ONLY REDS

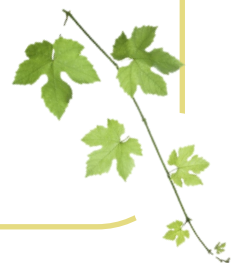


ONLY WHITES



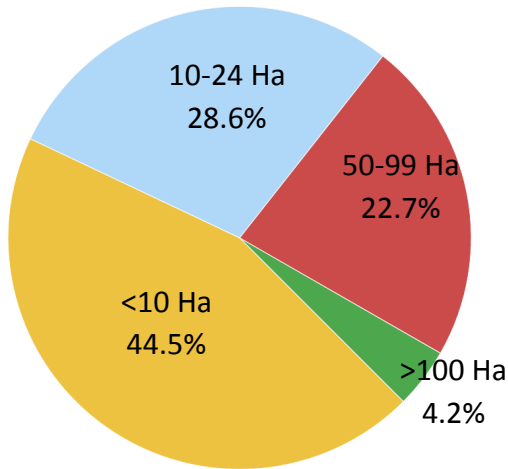
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Farming systems and vineyard sizes & land use (by members)

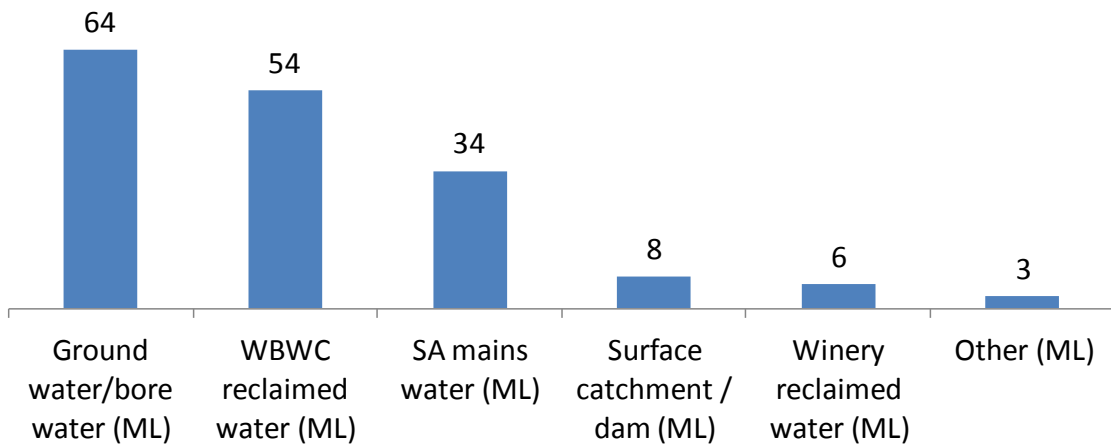
Members by size (total area under vine)



With a large percentage of wineries in the McLaren Vale region being small, family-run boutique operations, it is not surprising that close to half (44%) of MVSWGA members have vineyards smaller than 10ha. Almost a third (29%) have vineyards between 10-24ha and close to a quarter (23%) have 50-99ha, while only a handful of growers (4%) have more than 100ha. No MVSWGA members have vineyards between 25-49ha.

Water: irrigation sources & water usage

Number of members in each water source



Ground/bore water, Willunga Basin Water Company (WBWC) reclaimed water and SA mains water were the three major water sources used by MVSWGA members in 2013.

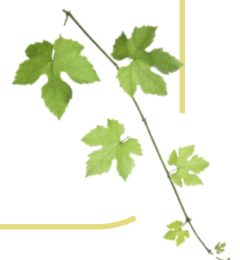
Ground/bore was the water source most heavily relied upon by members, with 64 utilising it. WBWC reclaimed water followed with 54 members, and 34 used SA mains water.

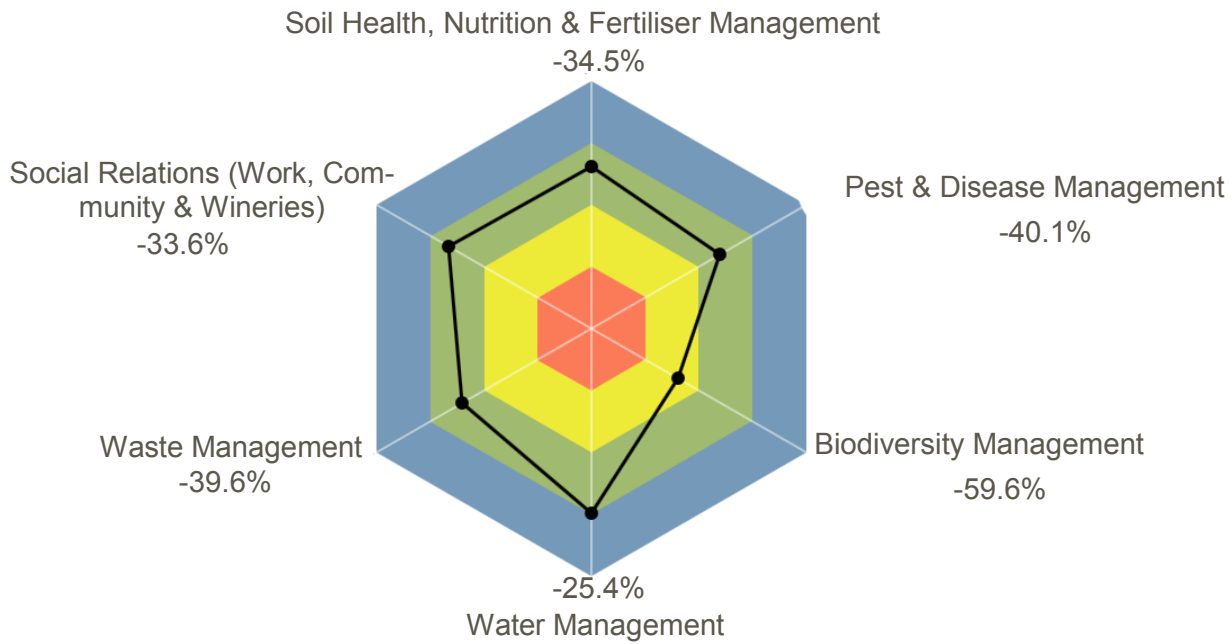
Eight members used surface catchment/dam water, while six made use of winery reclaimed water.



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The spider graph above shows the overall results of our main assessment chapters: Soil Health, Nutrition & Fertiliser Management; Pest & Disease Management; Biodiversity Management; Water Management; Waste Management; and Social Relations (Work, Community & Wineries).

In the MVSWSGA program the Soil Health and Pest & Disease chapters each account for 20% of the weight of the assessment, and all others each account for 15%.

The overall sustainability category for McLaren Vale is Green as well as all the individual chapters. The results are similar to last year, however this year there was a 3.5% overall improvement in the sustainability level of the region.

Water Management achieved the best result in 2012/13. The percentage change between the regional result and the maximum points that could be achieved was -25.4%.

Biodiversity Management had the weakest result with -59.6%.

Social Relations achieved -33.6%, Soil Health -34.5%, Waste Management -39.6% and Pest & Disease -40.1%.



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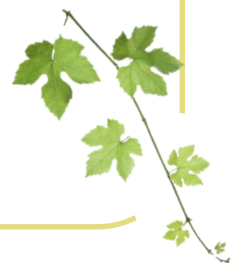


Table 1. Comparison between 2011/12 to season 2012/13

Chapter	Gap to reach the 'Perfect Score' Previous season 2011/12	Gap to reach the 'Perfect Score' Current season 2012/13	% Change Previous vs Current Season
Soil Health, Nutrition & Fertiliser Management	-35.9%	-34.5%	3.9% improvement
Pest & Disease Management	-41.1%	-40.1%	2.4% improvement
Biodiversity Management	-64.0%	-59.6%	6.9% improvement
Water Management	-25.8%	-25.5%	1.2% improvement
Waste Management	-39.6%	-39.6%	no change
Social Relations (Work, Community & Wineries)	-35.2%	-33.6%	4.5% improvement
Overall annual IMPROVEMENT	-40.1%	-38.7%	3.5% improvement

The table above shows the comparison by chapter between season 2011/12 and 2012/13. All chapters except Waste Management showed an improvement in 2012/13.

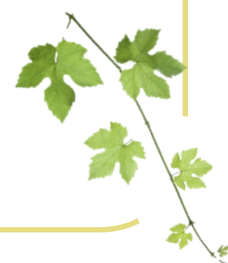
Soil Health recorded a 3.9% improvement on season 2011/12 while Pest & Disease increased by 2.4%.

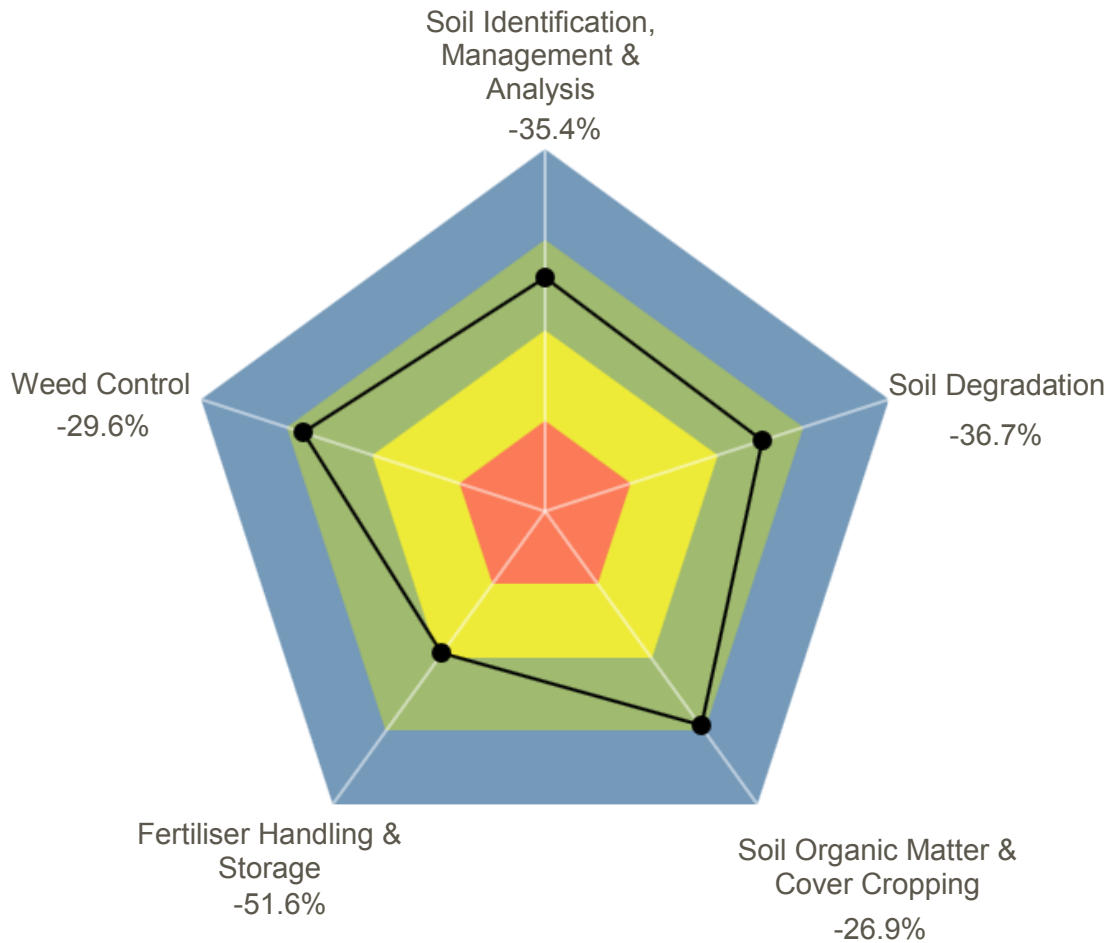
Biodiversity Management had the highest improvement (6.9%). This reflects activities by the McLaren Vale Grape Wine and Tourism Association (MVGWTA) to increase awareness and education in viticulture. There was particular emphasis placed on Biodiversity Management in the region as it was the lowest result among the chapters in 2011/12.

The release of the *McLaren Vale Biodiversity ID Booklets* (birds, trees and grasses) by the MVGWTA and a series of seminars on biodiversity played a significant role in the improvement of Biodiversity Management in 2012/13.

The highest rated chapter was Water Management at -25.5% in relation to the maximum achievable results. In addition to the excellent result, Water Management also had a 1.2% improvement on season 2011/12.

Waste Management had identical results in 2011/12 and 2012/13, while Social Relations recorded a 4.5% improvement.





Sections and Weights

The Soil Health, Nutrition & Fertiliser Management chapter is divided into five sections: Soil Identification, Management & Analysis; Soil Degradation; Soil Organic Matter & Cover Cropping; Fertiliser Handling & Storage; and Weed Control.

The Soil Health chapter represents 20% of the assessment in the MVSWGGA program.

Within the Soil Health chapter, the Soil Identification section represents 30%, Soil Degradation 20%, Soil Organic Matter & Cover Cropping 15%, Fertiliser Handling & Storage 10%, and Weed Control 25%.

Overall Results

The Soil Organic Matter & Cover Cropping section had the best results for the Soil Health chapter. The percentage change between the regional result and the maximum points that could be achieved was -26.9%.

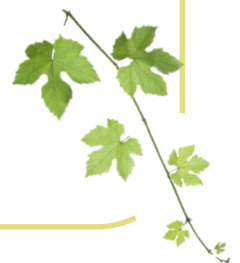
Fertiliser Handling had the weakest result with -51.6%.

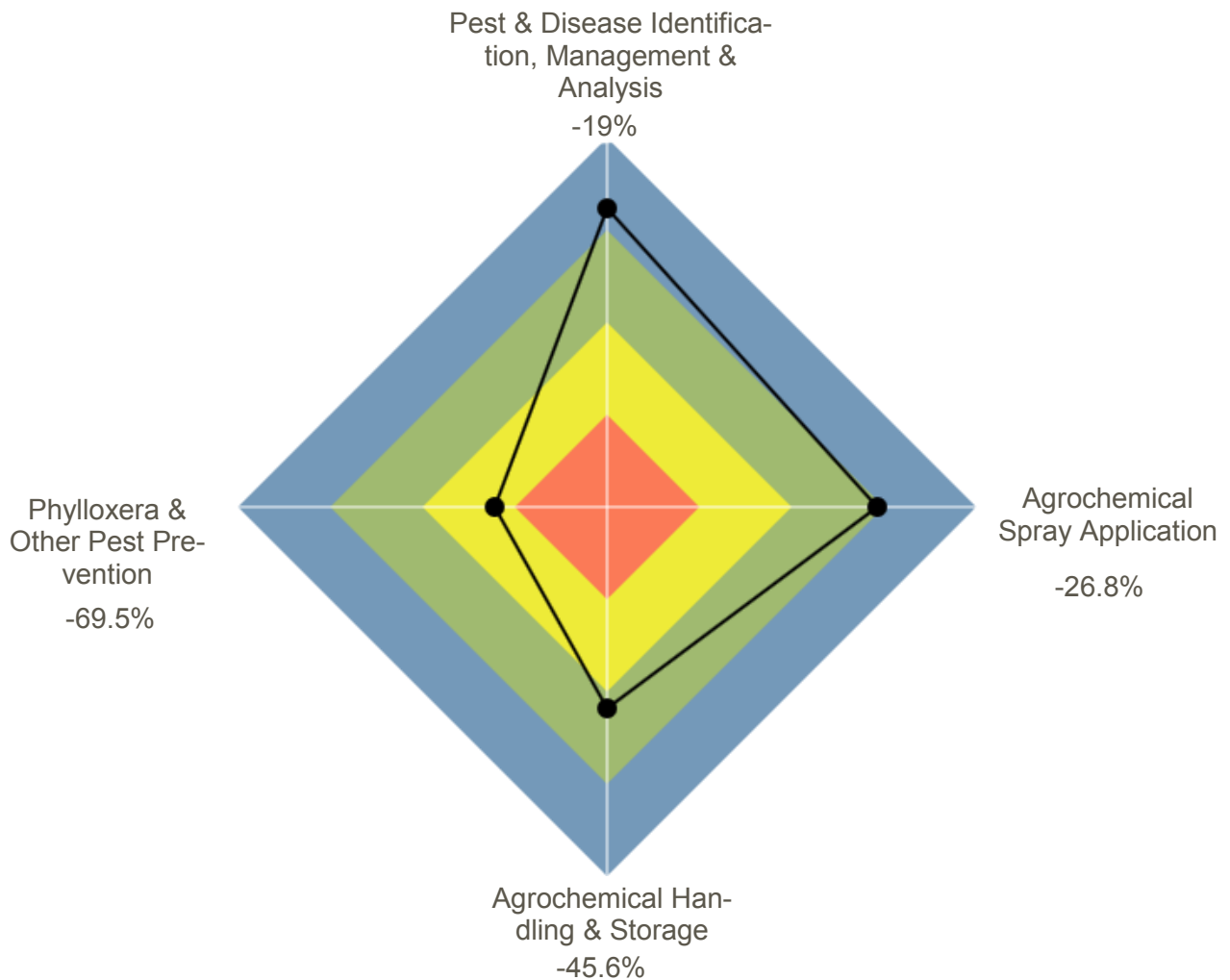
Weed Control achieved -29.6%, Soil Identification -35.4% and Soil Degradation -36.7%.



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Sections and Weights

The Pest & Disease Management chapter is divided into four sections: Pest & Disease Identification, Management & Analysis; Agrochemical Spray Application; Agrochemical Handling & Storage; and Phylloxera & Other Pests Prevention.

The Pest & Disease chapter represents 20% of the assessment in the MVSWGGA program.

Within the Pest & Disease chapter, both Pest & Disease Identification, Management & Analysis and Phylloxera & Other Pests Prevention represent 30% each. Agrochemical Spray Application represents 25% and Agrochemical Handling & Storage represents 15%.

Overall Results

The Pest & Disease Identification, Management & Analysis section had the best results for the Pest & Disease Management chapter. The percentage change between the regional result and the maximum points that could be achieved was -19%.

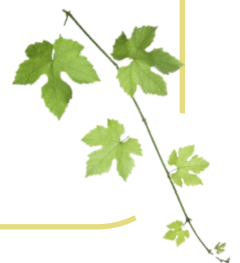
Phylloxera & Other Pest Prevention had the weakest result with -69.5%.

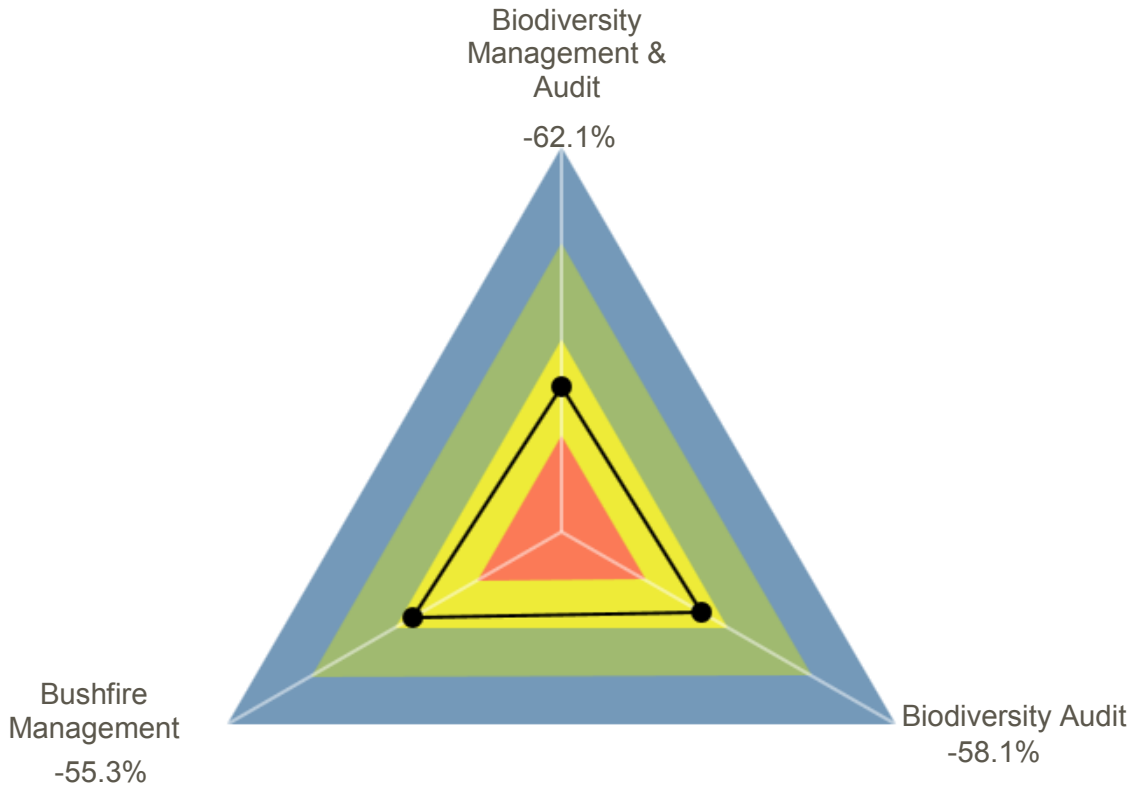
Agrochemical Spray Application achieved -26.8% and Agrochemical Handling & Storage -45.6%.



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Sections and Weight

The Biodiversity Management chapter is divided into three sections: Biodiversity Management & Audit; Biodiversity Audit; and Bushfire Management.

The Biodiversity Management chapter represents 15% of the assessment in the MVSWSGA program.

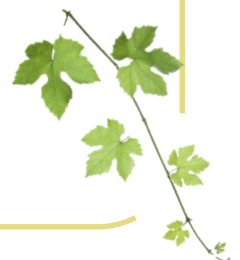
Within the Biodiversity chapter, Biodiversity Management & Audit represents 47%, Biodiversity Audit 40% and Bushfire Management 13%.

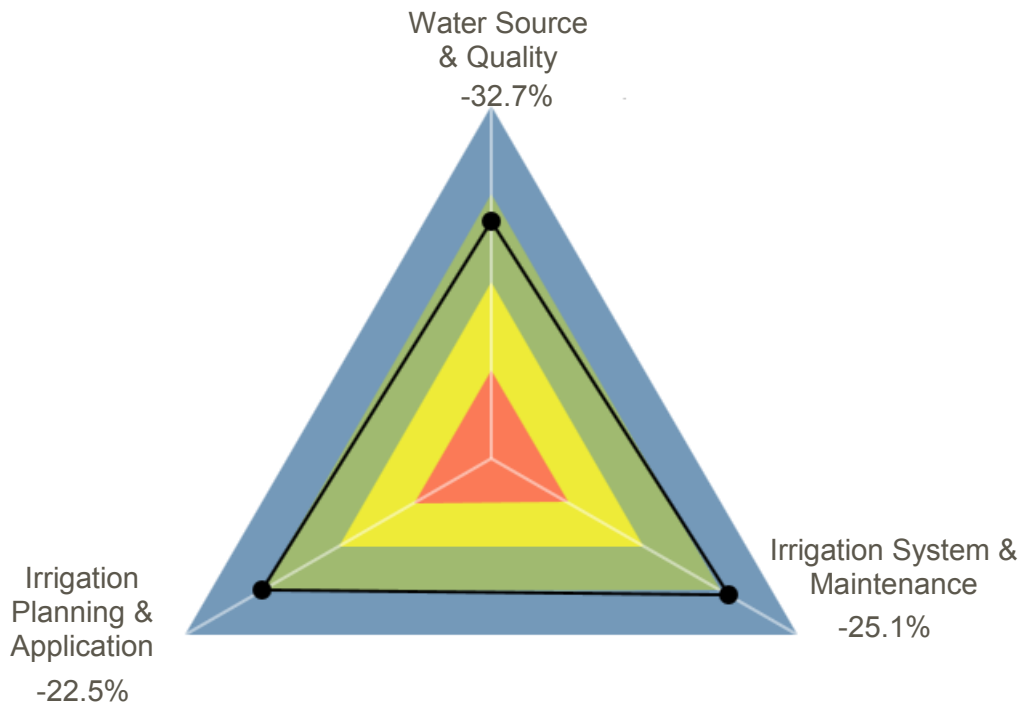
Overall Results

The Bushfire Management section had the best results for the Biodiversity chapter. The percentage change between the regional result and the maximum points that could be achieved was -55.3%.

Biodiversity Management & Audit had the weakest result with -62.1%.

Biodiversity Audit achieved -58.1%.





Sections and Weights

The Water Management chapter is divided into three sections: Water Source & Quality; Irrigation Planning & Application and Irrigation System & Maintenance.

The Water Management chapter represents 15% of the assessment in the MVSWSGA program.

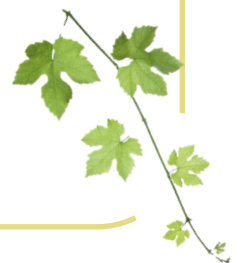
Within the Water Management chapter, Water Source represents 20%, Irrigation Planning & Application 47% and Irrigation System Maintenance 33%.

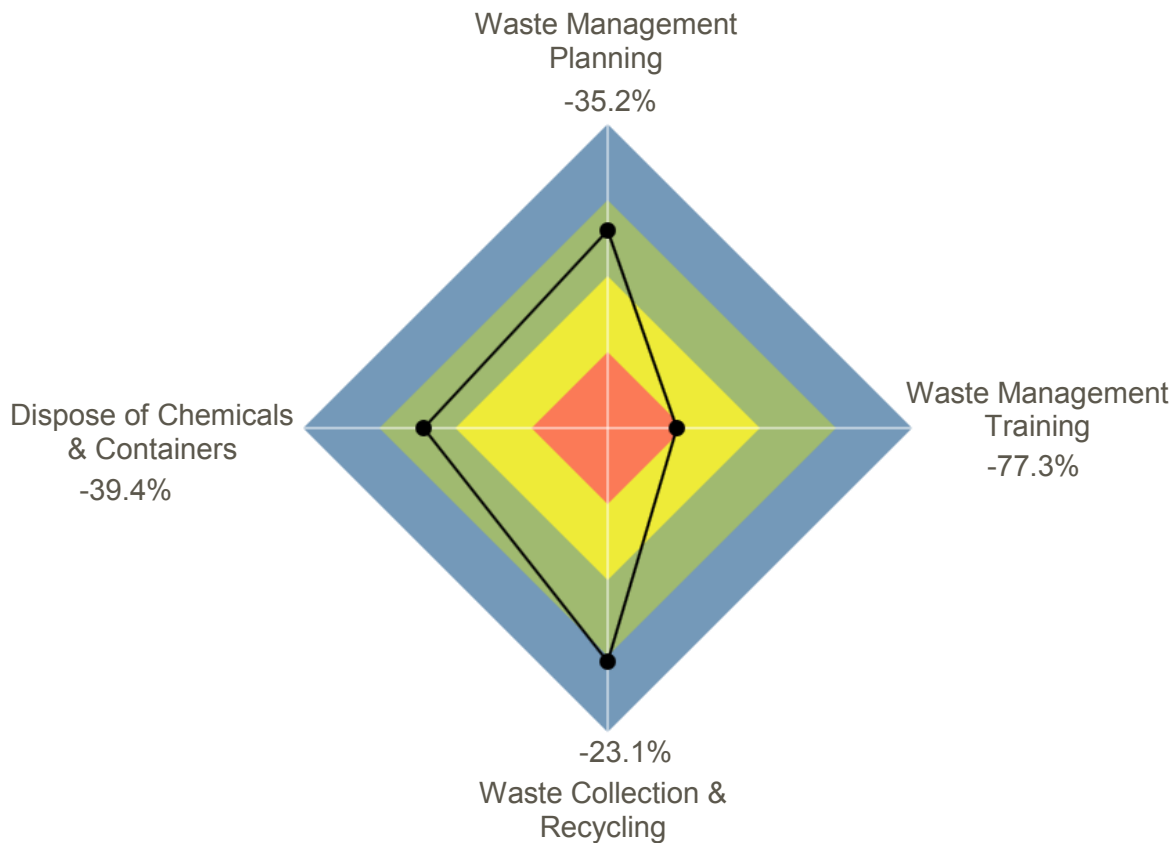
Overall Results

The Irrigation Planning & Application section had the best results for the Water Management chapter. The percentage change between the regional result and the maximum points that could be achieved was -22.5%.

Water Source had the weakest result with -32.7%.

Irrigation System & Maintenance achieved -25.1%.





Sections and Weights

The Waste Management chapter is divided into four sections: Waste Management Planning; Waste Management Training; Waste Collection & Recycling; and Dispose of Chemicals & Containers.

The Waste Management chapter represents 15% of the assessment in the MVSWSGA program.

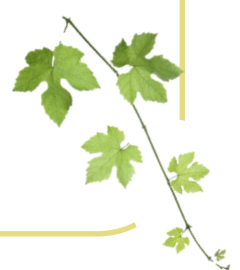
Within the Waste Management chapter, the Waste Management Planning section represents 20%, Waste Management Training 20%, Dispose of Chemicals & Containers 20%, and Waste Collection & Recycling 40%.

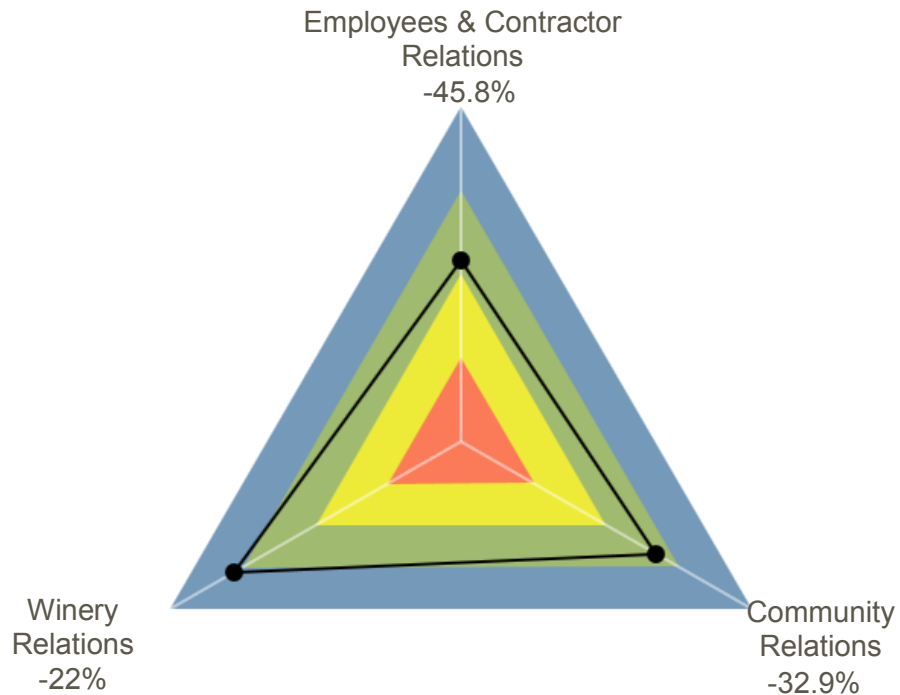
Overall Results

The Waste Collection & Recycling section had the best results for the Waste Management chapter. The percentage change between the regional result and the maximum points that could be achieved was -23.1%.

Waste Management Training had the weakest result with -77.3%.

Waste Management Planning achieved -35.2% and Dispose of Chemicals & Containers -39.4%.





Sections and Weights

The Social Relations chapter is divided into three sections: Employees & Contractors Relations; Community Relations; and Wineries Relations.

The Social Relations chapter represents 15% of the assessment in the MVSWGGA program.

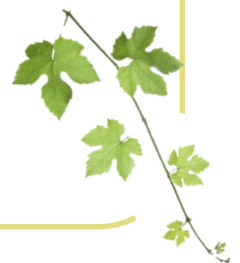
Within the Soil Health chapter, the three sections were evenly weighted at 33% each.

Overall Results

The Winery Relations section had the best results for the Social Relations chapter. The percentage change between the regional result and the maximum points that could be achieved was -22%.

Employees & Contractor Relations had the weakest result with -45.8%.

Community Relations achieved -32.9%.



Spray Target	Area (ha)	% area of Members	Average times
Biodynamic	128.1	4.4	7
Botrytis bunch rot	396.4	13.5	1.8
Bud mite	205.2	7.0	1.1
Bunch mite	27.7	0.9	1
Downy mildew	1724.5	58.9	2.7
Garden weevil	10.3	0.4	1
Grapeleaf blister mite	1.4	0.0	1
Grapeleaf rust mite	185.9	6.3	1.4
Grapevine moth	22.6	0.8	1
Grapevine scale	58.2	2.0	1
Herbicide ^a	523.4	17.9	2.8
Herbicide spot spraying	4.2	0.1	1
Light brown apple moth	680.3	23.2	1.1
Mealybug	1.3	0.0	1
Nutrition ^b	1385.6	47.3	2.7
Plant growth regulators	5.5	0.2	1
Powdery mildew	2774.4	94.7	5.7
Rust Mite	24.8	0.8	2
Snail	52.5	1.8	1
Wetting/adjuvant agent	666.1	22.7	4.6
Wingless grasshopper	16.8	0.6	1
(Not matched) ^c	654	22.3	4
(Unspecified) ^c	206.1	7.0	2.6

Important notes

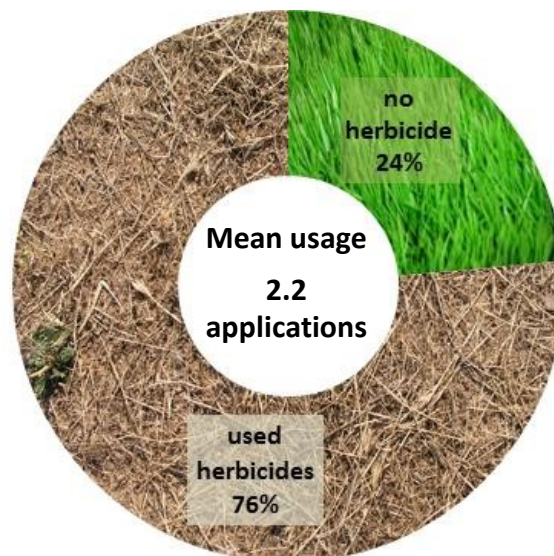
^a The system only allows to capture nutrition through foliar sprays. Some growers might have used composts or liquid fertilisers through drip lines (fertigation).

^b Because the spray data was collected historically, after Vintage 2013, many growers did not report herbicide spraying properly in our online system. This table shows that only 18% of the area was sprayed with herbicides, however the number seems too low as 91 members have informed us (in the workbook assessment) they've applied herbicides. See graph on the right.

^c In most situations, targets were placed automatically into the unmatched or unspecified categories because of misspellings in the importing process from other spray diaries maintained by growers.

The table above shows spray targets, area (ha), the percentage area for each spray target, and the average spray times per target per year.

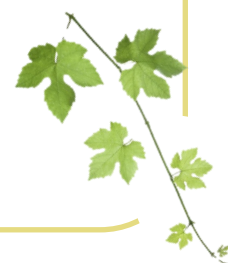
For example, it is clear from the data that the highest disease pressure in the McLaren Vale region is powdery mildew. On average, among those who spray for powdery mildew, growers spray 5.7 times per year.



The graph above is the herbicide usage during the 2012/13 growing season.

Among members who used herbicides, the mean usage was 2.2 applications per year. About 76% of members used herbicides at least once, while 24% didn't use any. There is a direct correlation between growers who did not use herbicides and their reported farming system. About 21% of members farm organically or biodynamically.

It is important to note that there is a discrepancy between the graph above and the table to the left, which is the result of capturing the same data in two models. Our preferred data for herbicide usage is the one above as this was captured through a direct question within the assessment. The data to the left, however, came from the Spray Diary which was collected historically at the end of the season. It was observed that several members reported only canopy sprays targeting Pest & Disease. This was accepted for the 2012/13 season as the requirement to report sprays was a new feature in the assessment system.



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One thing leads to another