

SUSTAINABLE AUSTRALIA WINEGROWING

2015 / 2016
GROWING SEASON RESULTS



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ABOUT THE PROGRAM

The Sustainable Australia Winegrowing (SAW) program is the result of a series of initiatives developed by the McLaren Vale Grape Wine and Tourism Association (MVGWTA) since the early 2000's. These initiatives were developed with the objective to improve viticultural practices, fruit quality and financial viability in the region. Among others, the initiatives included seminars and workshops, a growers' bulletin (CropWatch) providing information and pest and disease alerts for the region from weather monitoring stations, field days and research trials.¹

In 2005, the Association also released a series of materials and codes to support growers' development, including the financial benchmark for McLaren Vale growers, and a Pest and Disease Code of Conduct in 2006. The growers voluntarily endorsed both documents in 2007. In this same year the Soil Management, Water Management and Preservation of Biodiversity Codes were also released.¹

While the investments in grower education made by MVGWTA yielded dramatic on-farm results for many growers, the Association was unable to measure and discuss the outputs of these investments because a process for systematically measuring on-farm results had not been developed.

In 2009, MVGWTA launched the Generational Farming pilot program and compiled the most relevant tools and information available to develop a self-assessment tool for growers to improve their sustainability.

In 2010, the Association was fortunate enough to hire Dr Irina Santiago-Brown while she assessed all major global viticultural sustainability systems for her PhD research. The learnings from the research were applied to improve the assessment methodology and revamped into the current SAW program.

Sustainable Australia Winegrowing was created to maximize growers' and regional overall sustainability, and aims to minimize environmental impacts. The data capture and reporting provides growers with the best management tool to demonstrate their performance against their regional peers and recognised best practice.

Sustainable Australia Winegrowing is now available to any grower across Australia, and is accredited by the Australian Wine Research Institute (AWRI) for full Entwine Membership.

For more information on Sustainable Australia Winegrowing visit: <http://mclarenvale.info/industry-development/sustainable-australia-winegrowing>

¹ Dr Irina Santiago-Brown, Implementation Manual Sustainable Australia Winegrowing – SAW, 2015

NOTE FROM PROGRAM COORDINATOR

The McLaren Vale region recognises the importance of sustainable winegrowing practices which safeguard the health of our land, our community and our industry for generations to come.

Although the Sustainable Australia Winegrowing (SAW) program was officially launched in 2011, the McLaren Vale region has had a long-term commitment to sustainability.

It is this commitment to sustainability, along with the tight knit nature of the McLaren Vale wine industry community, that has lead in the success of the SAW Program.

Without the generosity of the McLaren Vale wine industry and its contribution of invaluable time, knowledge and experience, the SAW program would not be where it is today.

Every member of SAW should be incredibly proud of their efforts again this year. You have continued to strive for *and achieve* improvements in the sustainability of your practices as well as providing a positive and inspirational example to winegrowers in our region and across Australia.

Your continued support and effort in the program is serving to build the reputation of the McLaren Vale region as a leader in sustainability and to ensure the continued success and health of our industry, community and environment for many generations to come.

I would like to thank Dr. Irina Santiago-Brown. The Sustainable Australia Winegrowing program is a credit to her hard work, determination, passion and collaborative effort to work with the growers of our region.

It is with great pleasure that we share the outstanding results of the 2015-16 McLaren Vale Sustainable Australia Winegrowing season with you.

I look forward to working with you all to make the up-coming 2016-17 season an even greater success.

Robyn Groffen
Grower Engagement and Development Officer
McLaren Vale Grape Wine & Tourism Association
October 2016

WHERE AND HOW TO READ THE GRAPHS

WHERE TO FIND THE GRAPHS

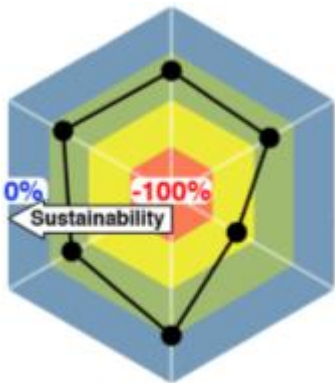
The graphs for each individual Member and region can be found in the online system as soon as the results are released. The graphs are located in the “Reports” section of the system. Users can select to view reports in up to three columns to facilitate the comparison between years and keep track of their individual and regional performances. Regional results published in this report reflect the date of its publication. The online system automatically updates the regional reports as individual data is changed. A slight variation between the data published in this report and the online system may occur after the individual growers auditing process by independent third party auditors.

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.



SPIDER GRAPHS

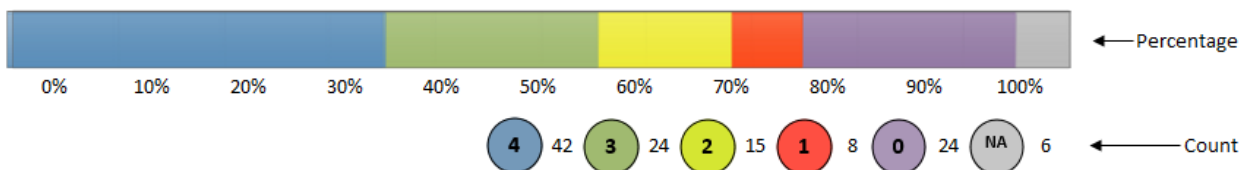


The spider graphs show values relative to the maximum ‘perfect score’ that can be achieved. The attributed weight (importance) for each item is taken into consideration and is displayed on the table below the graphs.

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 number and percentage of Members in each category for each topic. The attributed weight (importance) for each item is not taken into consideration.

SUMMARY OF RESULTS: 2015 / 2016 GROWING SEASON



194 VINEYARD SITES

USED THE SAW PROGRAM TO
MEASURE SUSTAINABILITY
AND IMPROVE PRACTICES

The 2015 / 2016 Sustainable Australia Winegrowing season has proven to be another successful year. On average, growers improved their performances in every chapter of the program, from pest & disease management to biodiversity management.

Four new Members joined the program in 2016 to take the total number of Members to 125 - a 45% increase from when the program first started in the 2011 / 2012 season. SAW represents 194 distinct sites in McLaren Vale, covering 4,455 hectares of farm area. For area under vine, the program represented 2,906.2 hectares, accounting for 39.5% of the whole region's area under vine.

The total crush for SAW Members was 24,362 tonnes, with 21,844 tonnes of red grapes and 2,518 tonnes of white grapes. SAW Members achieved a 40% average yield increase from last season which is similar to the 44%

average yield increase for region.

By variety, Shiraz was the most widely grown grape variety at 1,589 hectares, and accounted for 56.4% of total vineyard area within the program. Cabernet Sauvignon was the second most widely planted variety for SAW Members with 491.7 hectares planted, representing 17.3% of total vineyard area within the program. Similar to last year, plantings of Shiraz, Cabernet Sauvignon, Grenache, and Mataro accounted for the majority of the area under vine (79%) within the program.

SEASON SNAPSHOT	14/15	15/16	VARIANCE
Members / Vineyards (Ha)	131	125	-4.6%
Distinct Vineyard Sites / Sites (Ha)	201	194	-3.5%
Total Farm Area (Ha)	4,410.1	4,455	+1.0%
Total Area Under Vine (Ha)	2,954.1	2,906.2	-1.6%
Area Under RED Grapes (Ha)	2,661.4	2,629.0	-1.2%
Area Under WHITE Grapes (Ha)	209.7	206.1	-1.7%
RED Grape Production (t)	15,719	21,844	+39%
WHITE Grape Production (t)	1,604	2,518	+57%
Average RED Grape Productivity (t/Ha)	5.9	8.3	+40.7%
Average WHITE Grape Productivity (t/Ha)	7.6	12.2	+60.5%

COMPARISONS: SAW VERSUS REGION VERSUS SOUTH AUSTRALIA



60% OF MCLAREN VALE'S WINEGRAPES ARE GROWN ON VINEYARDS WHICH USE THE SAW PROGRAM TO ASSESS AND IMPROVE PRACTICES

The table below highlights the key wine industry statistics for Sustainable Australia Winegrowing, McLaren Vale and South Australia.

SAW represents over half of McLaren Vale's total crush at nearly 60%, and accounts for nearly 3% of South Australia's crush.

The SAW Program contributes 59.31% of McLaren Vale's total red grape crush, and 60.43% of the region's white grape crush.

As a region, McLaren Vale provides 5.01% of South Australia's total crush, 7.42% of the red grape crush, and 1.3% of white grape crush.

McLaren Vale accounts for 9.69% of South Australia's total area under vine, with SAW Members accounting for 39.52% of McLaren Vale's area under vine.

	South Australia	McLaren Vale	SAW	Comparisons		
				SAW VS South Australia	SAW VS McLaren Vale	McLaren Vale VS South Australia
TOTAL grapes (t)	817,981	40,997	24,362	2.98%	59.42%	5.01%
Total RED (t)	496,463	36,830	21,844	4.40%	59.31%	7.42%
Total WHITE (t)	321,518	4,167	2,518	0.78%	60.43%	1.30%
TOTAL under vine area (ha)	75,858	7,353	2,906	3.83%	39.52%	9.69%
RED area (ha)	54,568	6,410	2,629	4.82%	41.01%	11.75%
WHITE area (ha)	20,116	740	206.1	1.02%	27.85%	3.68%
Others (unknown, rootstocks, etc)	1,172	202	71.07	6.06%	35.18%	17.24%

Note: South Australian and McLaren Vale data from the SA Winegrape Crush Survey—2016.

MAIN SURVEY RESULTS:



33% OF SAW MEMBERS PERFORMED IN THE BEST PRACTICE CATEGORY

46% OF VINEYARDS IN THE SAW PROGRAM ARE LESS THAN 10 HECTARES IN SIZE

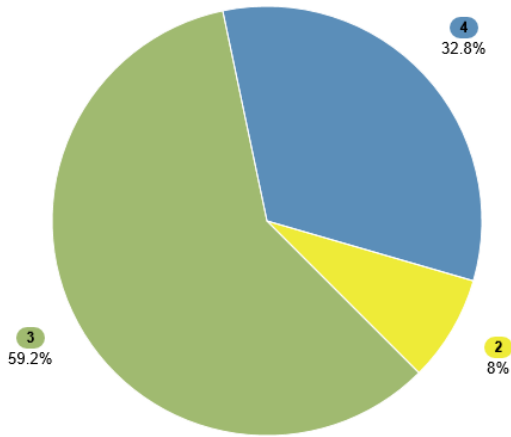
64% OF SAW MEMBERS USE LOW-INPUT CONVENTIONAL PRACTICES WITH IPM PRINCIPALS

84% OF WINEGRAPES FROM SAW MEMBER'S VINEYARDS WERE MADE IN TO MCLAREN VALE WINE

57% OF SAW MEMBERS USED WILLUNGA BASIN WATER COMPANY (WBWC) RECLAIMED WATER FOR IRRIGATION

56% OF SAW VINEYARD AREA IS PLANTED TO SHIRAZ

MEMBERS BY SUSTAINABILITY CATEGORY



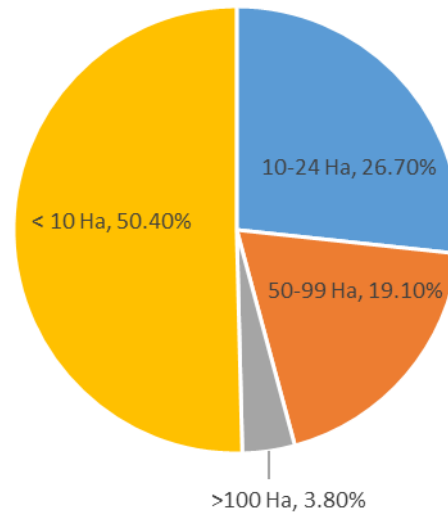
SAW Members continue to improve on overall sustainability with 32.8% performing at 'best practice' (category 4), and 59.2% for category 3 (very good). 8% of Members achieved a category 2 (Good) sustainability score, while no McLaren Vale SAW Members attained a 'least sustainable/needs attention' (category 1) sustainability score.

The number of Members in categories 4 and 3 increased from last season, proving that SAW Members are making bigger strides towards best practice as a region.

MEMBERS BY VINEYARD SIZE

Consistent with previous years, SAW Members are primarily under 10 hectares in size, covering 46.4% of the program.

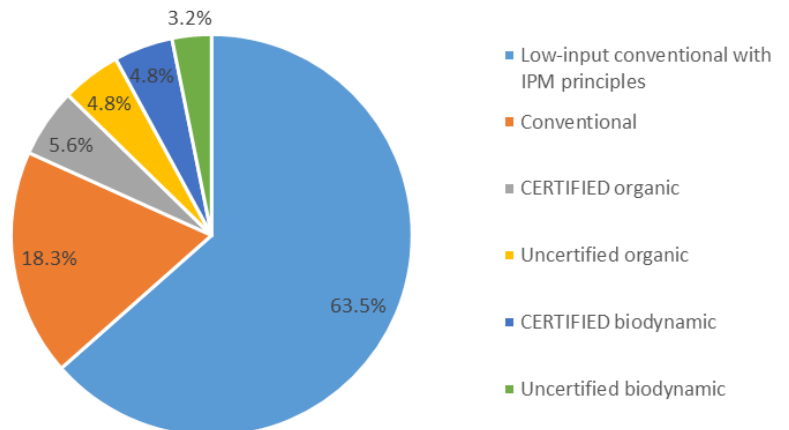
Only 3.2% of Members are over 100 hectares.



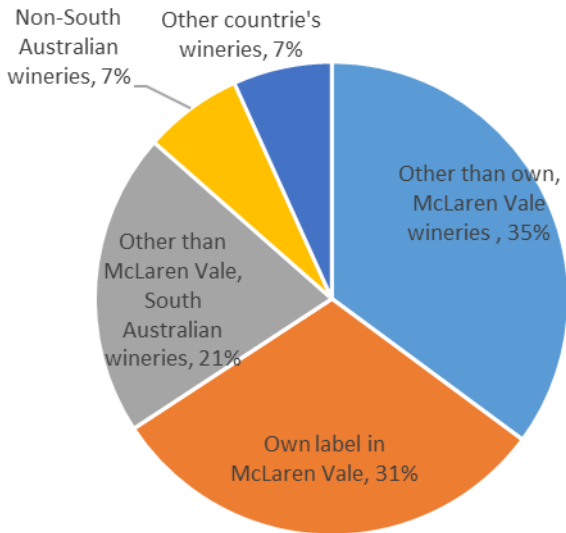
MEMBERS BY FARMING SYSTEM

The majority of SAW Members use low-input conventional practices with IPM principals (63.5%) while 18.3% used conventional practices.

The percentage of Members that used either organic or biodynamic practices remained at 18.4% this year, however the proportion of those Members that were certified organic or biodynamic increased from 9.8% to 10.3% this year.



MEMBERS BY GRAPE DESTINATION



The majority of SAW Members (35.1%) sold their grapes to a McLaren Vale winery while 30.6% of SAW Members used their grapes for their own McLaren Vale labels.

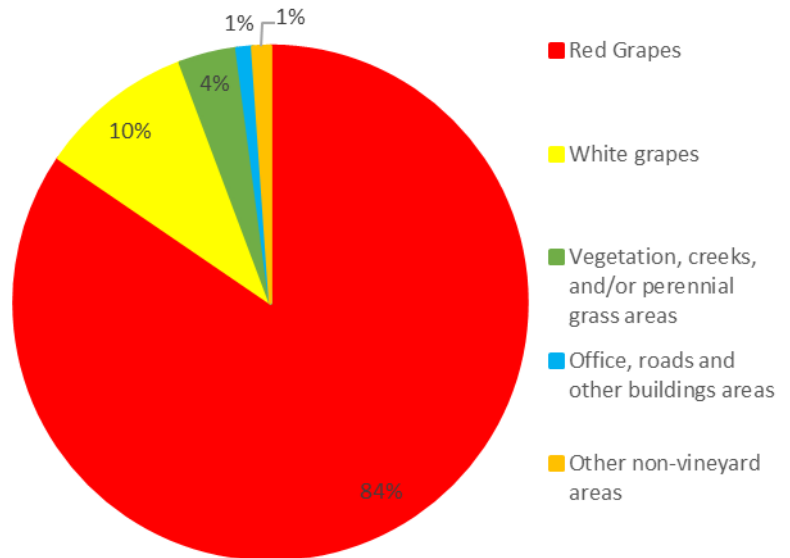
34.2% of Members sold grapes to wineries outside of McLaren Vale while 13.5% of Member's grapes were used in non-South Australian wines or national non-identifiable blends.

As in previous years, no SAW Members categorised their grapes as being used for international wineries or labels.

MEMBERS BY LAND USE

Land use for SAW Members continues to be dominated by red grapes at 84% of the area, while 10% of SAW land area is planted to white varieties.

Vegetation, creeks and/or perennial grassed areas make up only 4% of the vineyard area of SAW Members.



MEMBERS BY GRAPES HARVESTED

94% OF SAW MEMBERS HARVESTED ALL OF THEIR GRAPES THIS YEAR

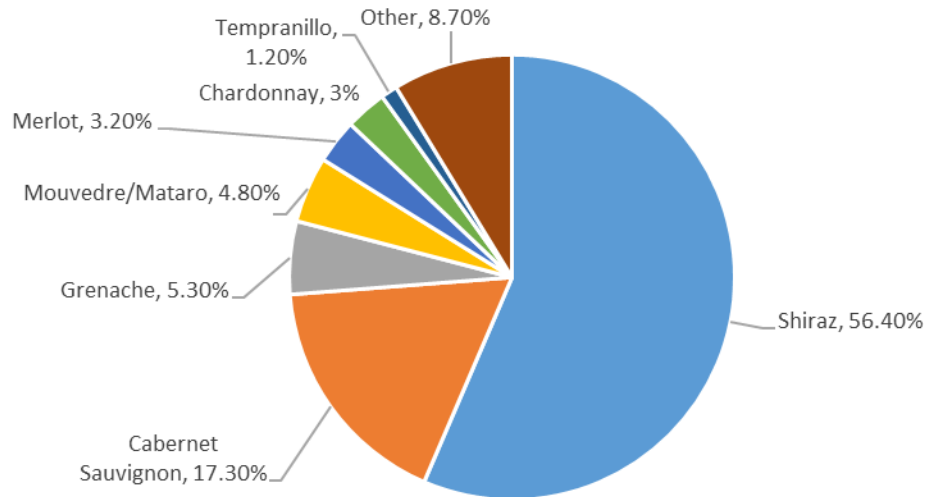
95% OF SAW MEMBERS USED (I.E. SOLD OR MADE THEIR OWN WINE) ALL OF THE GRAPES THEY HARVESTED THIS YEAR

0% OF GRAPES GROWN BY SAW MEMBERS WERE REJECTED BY ANY WINERIES FOR EXCEEDING MRL'S THIS YEAR

MEMBERS BY VARIETY

Shiraz represents the largest area under vine in the SAW program at 56.4%, while Cabernet Sauvignon accounts for 17.3% and Grenache 5.3%.

While Grenache represents a small percentage of area under vine, it is an important variety for the region as the third most planted grape for the last four seasons.

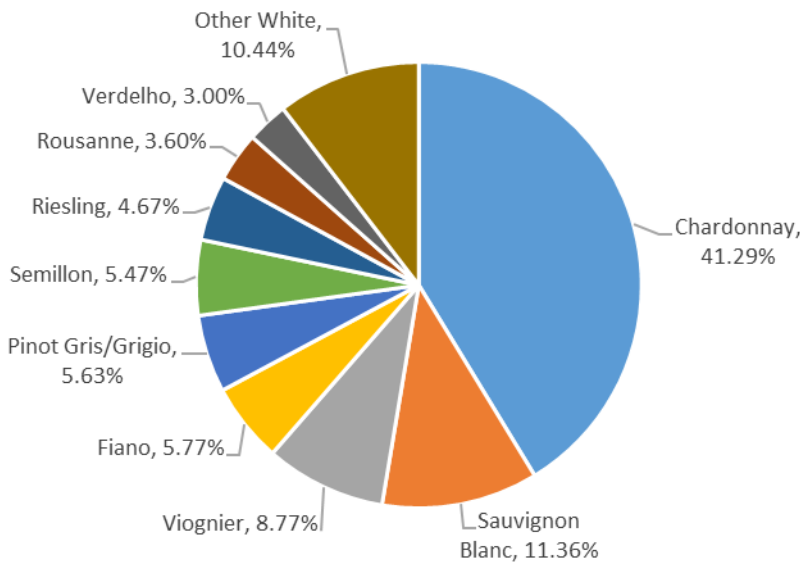


MEMBERS BY WHITE VARIETIES

A combination of 15 different white varieties are grown over 206.1 hectares of SAW Member's land, producing 2,518 tonnes and averaging 12.2 tonnes per hectare.

Of these white varieties, Chardonnay was the most widely grown (41.3%), followed by Sauvignon blanc (11.4%) and Viognier (8.8%) and smaller amounts of Fiano (5.8%), Pinot Gris (5.6%), Semillon (5.5%), Riesling (4.7%), Rousanne (3.6%), Verdelho (3%).

The 'Other White' category is made up of small amounts of Chenin Blanc (2.7%), White Frontignac, (1.9%) Savagnin (1.9%), Marsanne (1.7%) and Vermentino (1.7%).

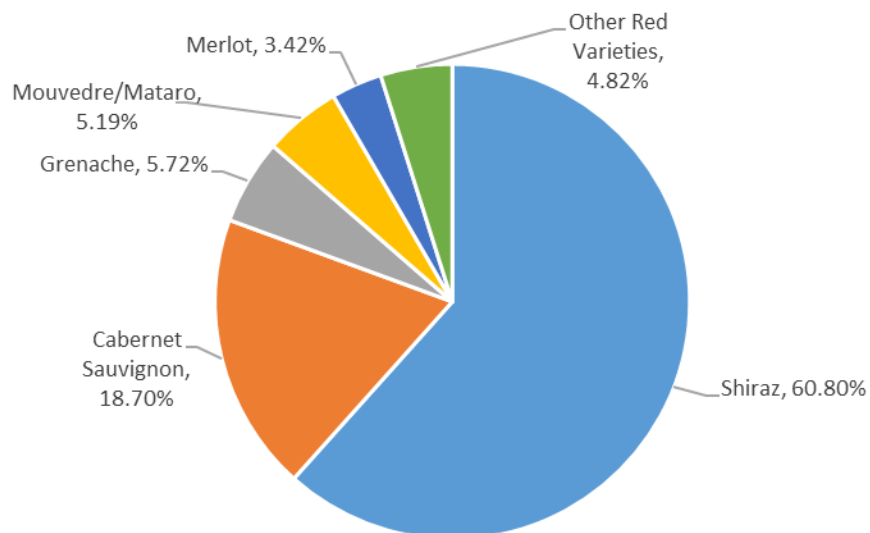


MEMBERS BY RED VARIETIES

A combination of 25 different red varieties are grown over 2,629 hectares of SAW Member's land, producing 21,844 tonnes and averaging 8.3 tonnes per hectare.

Of these red varieties, Shiraz was the most widely grown (1,598.5Ha) followed by Cabernet Sauvignon (491.7Ha), Grenache (150.3Ha), Mourvedre (136.5Ha) and Merlot (90Ha).

In the "Other Red" category, the majority of the area is made up of Tempranillo (35.4Ha), Sangiovese (18.4Ha), Petit Verdot (16.5Ha) and smaller amounts of Touriga (8.3Ha), Malbec (7.7Ha), Graciano (7.3Ha), Cabernet Franc (6.5Ha), D'Avola Nero (6.4Ha), Pinot Noir (6Ha), Barbera (5Ha) and Red Frontignac (4.4Ha) and very small amounts of other red varieties such as Caringnan, Aglianico and Primitivo.



MEMBERS BY WINE RETAIL PRICES

White Wine

Of the SAW Members who reported on white wine price, 32.3% of respondents sold their white wine in the \$15 - \$19.99 price range and 33.8% sold their wine in the \$20 - \$29.99 price range.

13.8% of respondents sold their white wine in the \$30 - \$49.99 price range while only 9.2% sold their white wine in the \$7 - \$14.99 price range.

No respondents sold their white wine for more than \$50 or less than \$7.



Red Wine

Of the SAW Members who reported on red wine price, 25.6% of respondents sold their red wine in the \$15 - \$19.99 price range and 16.6% sold their red wine in the \$20 - \$29.99 price range.

6.3% of respondents sold their red wine in the \$30 - \$49.99 price range while 24.6% sold their red wine in the \$7 - \$14.99 price range.

A retail price over \$50 was achieved by 1.3% of respondents while 15.6% of respondents sold their red wine for less than \$7.



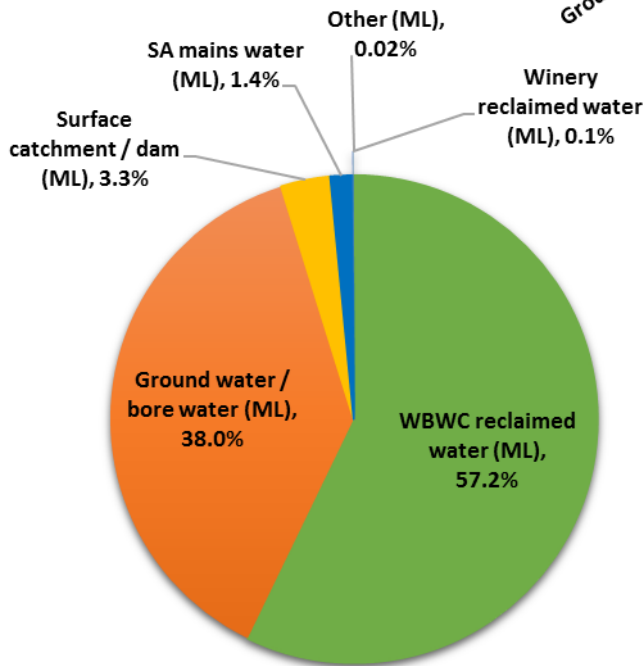
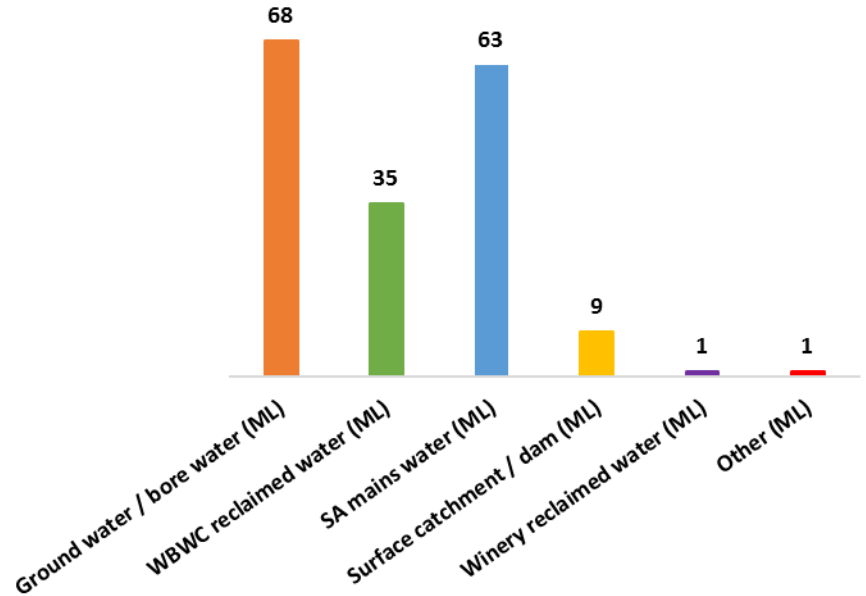
Note: Members were able to select more than one option for retail prices, leading to higher total responses than total number of SAW Members

MEMBERS BY WATER SOURCE AND USAGE

Sustainable Australia Winegrowing Members continue to utilise ground/bore water, Willunga Basin Water Company (WBWC) reclaimed water, and South Australia mains water as the three main irrigation water sources.

38% of Members use Ground/bore water, 20% use WBWC reclaimed water and 36% use SA mains water. The remaining 6% of Members used surface catchment/dam water, winery reclaimed water, and 'other' water sources.

Note: Members were able to select more than one option for irrigation sources and water usage, leading to a higher total response rate than total number of SAW Members.



When comparing the actual amount of each water source used by SAW Members, the largest amount of irrigation water came from WBWC reclaimed water (57.2%) followed by ground water/bore water (38.0%). The remaining 4.8% of water used by SAW Members was sourced from surface catchment/dam (3.3%), SA mains (1.4%), winery reclaimed water (0.1%) and 'other' (0.02%).

REMEMBER!

When inputting your irrigation sources and water usage, be sure to use **mega litres (ML)**!
 If applicable, be sure to convert your kilo litres (KL) to ML before you input your data next season.
 1,000 KL = 1 ML

1.43ML

OF IRRIGATION WATER PER HECTARE OF VINEYARD WAS USED BY SAW MEMBERS COMPARED TO 1.32ML LAST SEASON

4.2%

OF SAW MEMBERS DID NOT IRRIGATE THIS SEASON

CHAPTER RESULTS

OVERVIEW

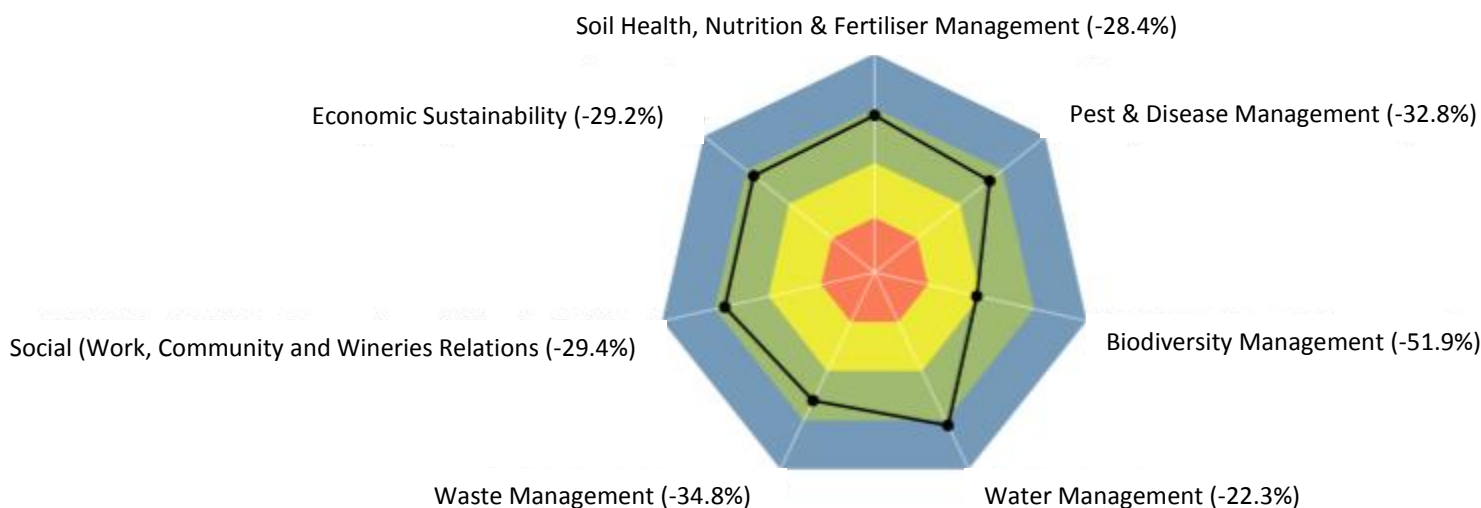
Sustainable Australia Winegrowing consists of 7 chapters (excluding the Main Survey), of which there are 150 questions. The chapters cover Soil Health, Nutrition & Fertiliser Management, Pest & Disease Management, Biodiversity Management, Water Management, Waste Management, Social Relations, and Economic Sustainability.

The weighting of each chapter is reviewed by a team of authors followed by external peer reviewers to ensure best practice is truly represented in each topic. Soil Management and Pest & Disease Management are both weighted at 20%, while Biodiversity Management, Water Management, and Waste Management are all weighted at 15%. Social Sustainability is weighted 14%, and

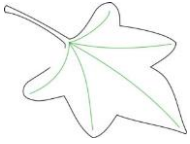
Economic Sustainability is 1%. The low weight of Economic Sustainability is due to introducing it as a new chapter that requires an external peer review, however even with a low weighting, it is an invaluable aspect of the program.

The overall sustainability score for McLaren Vale is **green** and the region has a –33% gap to reach best practice in all chapters.

Water Management continues to be a strong chapter for the region, with only –22.3 gap to reach the “perfect score.” Biodiversity Management continues to be the weakest chapter for this region, with a –51.9% gap to reach best practice compared to –52.8% last season.



CHAPTER	GAP TO REACH THE 'PERFECT SCORE'		% CHANGE FROM PREVIOUS SEASON VS CURRENT SEASON
	2014-15	2015-16	
Soil, Health, Nutrition and Fertiliser Management	-30.3%	-28.4%	-1.9% improvement
Pest & Disease Management	-35.3%	-32.8%	-2.5% improvement
Biodiversity Management	-52.8%	-51.9%	-0.9% improvement
Water Management	-24.8%	-22.3%	-2.5% improvement
Waste Management	-36.6%	-34.8%	-1.8% improvement
Social Relations	-31.8%	-29.4%	-2.4% improvement
Economic Sustainability	-33.8%	-29.2%	-4.6% improvement
Overall Workbook	-35.1%	-33.0%	-2.1% improvement



OVERVIEW

AS A REGION, MCLAREN VALE IS PERFORMING IN THE GREEN SUSTAINABILITY CATEGORY AND IS 33% AWAY FROM REACHING BEST PRACTICE IN THE SAW PROGRAM



PEST & DISEASE MANAGEMENT

98% OF SAW MEMBERS USE INTEGRATED PEST MANAGEMENT PRACTICES TO CONTROL PESTS AND DISEASES



SOIL MANAGEMENT

97% OF SAW MEMBERS MAINTAIN A PERMANENT SWARD OR ANNUAL COVER CROP IN THE MID ROW TO INCREASE THE ORGANIC MATTER LEVELS OF THE SOIL



BIODIVERSITY MANAGEMENT

98% OF SAW MEMBERS HAVE IDENTIFIED AREAS ON THEIR PROPERTY WHERE BIODIVERSITY COULD BE ENHANCED



WATER MANAGEMENT

65% OF SAW MEMBERS USE RECLAIMED WATER AS AN IRRIGATION SOURCE



WASTE MANAGEMENT

98% OF SAW MEMBERS HAVE A PAPER AND CARDBOARD RECYCLE PROGRAM



CHAPTER RESULTS

COMPARISON OF 2014/15 AND 2015/16 SEASONS

On average, the region improved its sustainability score in all chapters this season compared to last season. The biggest improvements were seen in the Economic Chapter with a 4.6% improvement followed by the Pest and Disease Management and Water Management chapters which both had a 2.5% improvement from last season.

These improvements suggest that SAW Members are actively working toward more sustainable practices, particularly in the areas of economic sustainability, pest and disease management and water management.

Biodiversity Management continues to be a challenge for SAW Members in our region. Improvement in the biodiversity management requires hands-on effort, financial investment and planning guidance.

SAW training courses provided to Members focused on encouraging the use of action plans. A biodiversity workshop focused on creating Biodiversity Action Plans and record keeping with guest speakers from NRM, the council, Melbourne University and environmental consultants

This season, the number of SAW Members in category 4 (excellent), the most sustainable category, increased by 14% from last season, while the number in category 3 (very good) remained the same as last season. The number of Members in category 2 (good) decreased by 50% and there were no Members in category 1 or 0 (needs attention and needs urgent development). This is an excellent achievement for our Members and our region.

2014-15 MEMBERS PER SUSTAINABILITY CATEGORY			2015-16 MEMBERS PER SUSTAINABILITY CATEGORY		
Category	Count	%	Category	Count	%
4	36	27.5%	4	41 (+14%)	32.8%
3	74	56.5%	3	74 (0%)	59.2%
2	20	15.3%	2	10 (-50%)	8.0%
1	1	0.8%	1	0 (-100%)	0.0%
REGION: -35.1% TO REACH PERFECT SCORE			REGION: -33% TO REACH PERFECT SCORE		

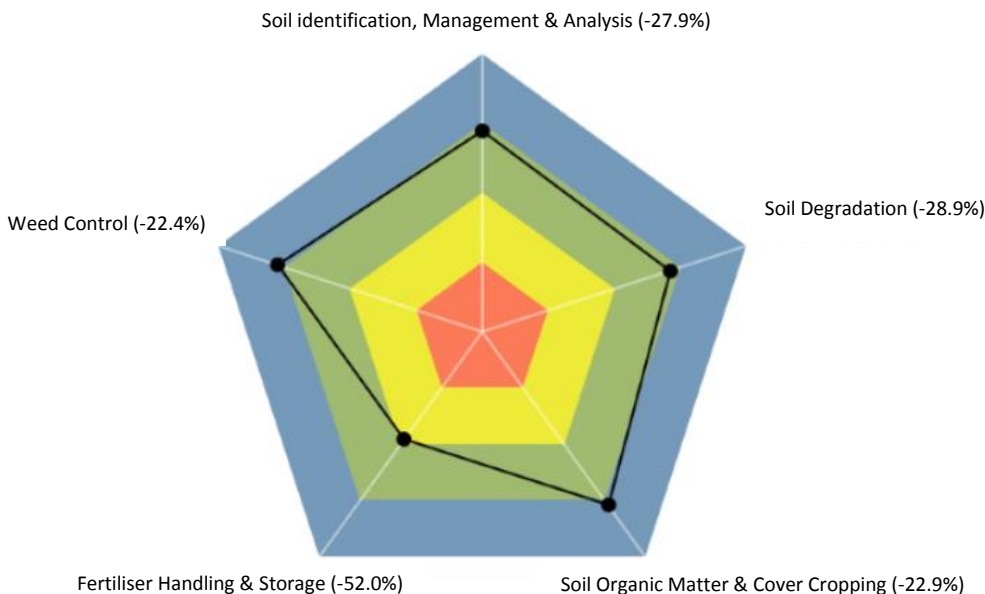


CHAPTER RESULTS

SOIL HEALTH, NUTRITION AND FERTILISER MANAGEMENT

Soil Health, Nutrition and Fertiliser Management is weighted 20% for the overall workbook. Within this chapter, the sub-topics and their weightings are Soil Identification, Management & Analysis (30%), Soil Degradation (20%), Soil Organic Matter & Cover Cropping (15%), Fertiliser Handling & Storage (10%), and Weed Control (25%).

The spider graph below shows each sub-topic and the percentage gap to reach the 'perfect score.'



Weed Control was closest to best practice with a -22.4% gap followed closely behind by Soil Organic Matter & Cover Cropping at -22.9% away from best practice. Fertiliser Handling & Storage continues to require the most improvement with a -52% gap from best practice.

McLaren Vale as a region scored **green** in this chapter, with a -28.4% gap to reach best practice.



UNSUSTAINABLE PRACTICES LIKE EXCESSIVE CULTIVATION, DRIVING TRACTORS ON WATERLOGGED SOILS AND EXCESSIVE USE OF HERBICIDES AND SYNTHETIC FERTILISERS CAN DEGRADE OUR SOILS.

THE PRACTICES WE EMPLOY IN OUR VINEYARDS CAN SIGNIFICANTLY AFFECT THE LONG TERM HEALTH OF OUR SOILS.

48% of SAW Members reduced their reliance on herbicides by integrating cultural weed control practices.

2.2 is the average number of herbicide rounds used by conventional SAW Members last year.

Effective and appropriate applications of nutrients can reduce costs, improve vine health and soil microbial activity.

56% of SAW Members made site specific nutrient applications.

69% of SAW Members use plant tissue analysis results to guide nutrient applications.

Safe storage of fertilisers is necessary to protect the environment and human health. See the PIRSA Agrochemical storage factsheet for more information <https://www.dropbox.com/s/rja2o7mxsf9vqjb/PIRSA%20-%20Agchem%20Storage%20Factsheet.pdf?dl=0>

82% of SAW Members who handle fertilisers have a designated fertiliser handling area.

24% have a designated fertiliser handling area which is located, constructed and maintained to minimise harm to off target and sensitive areas.

Poorly managed heavy vehicle operations can lead to soil compaction. Soil compaction can impact vine performance by limiting root growth, nutrient uptake and water infiltration.

70% of SAW Members monitor heavy vehicle operations and take measures to reduce the number of passes where possible.

10.9 is the average number of heavy vehicle operations per SAW member this year.

Soil organic matter, measured as organic carbon, increases the cation exchange capacity (CEC) and water-holding capacity of soil, it improves soil structure and nutrient availability and buffers soil from changes in pH.

84% of SAW Members monitor soil organic carbon levels and **97%** maintain a permanent sward or annual cover crop in the mid row to increase the organic matter levels of the soil.

70% of SAW Members have a good understanding of the different soil types on their property.



‘SOIL PLAYS A VITAL ROLE IN THE EARTH’S ECOSYSTEM. WITHOUT SOIL HUMAN LIFE WOULD BE VERY DIFFICULT. SOIL PROVIDES PLANTS WITH FOOTHOLD FOR THEIR ROOTS AND HOLDS THE NECESSARY NUTRIENTS FOR PLANTS TO GROW; IT FILTERS THE RAINWATER AND REGULATES THE DISCHARGE OF EXCESS RAINWATER, PREVENTING FLOODING; IT IS CAPABLE OF STORING LARGE AMOUNTS OF ORGANIC CARBON; IT BUFFERS AGAINST POLLUTANTS, THUS PROTECTING GROUNDWATER QUALITY.’¹

¹<http://www.isric.org/about-soils>



CHAPTER RESULTS

PEST & DISEASE MANAGEMENT

Pest & Disease Management is weighted 20% for the overall workbook. In this chapter, Pest & Disease Identification, Management & Analysis contributes 30% weighting to the chapter, while the weighting for the Agrochemical Spray Application sub-topic is 25%, Agrochemical Handling & Storage 15%, and Biosecurity and Phylloxera accounts for 30% of the chapter's weighting.

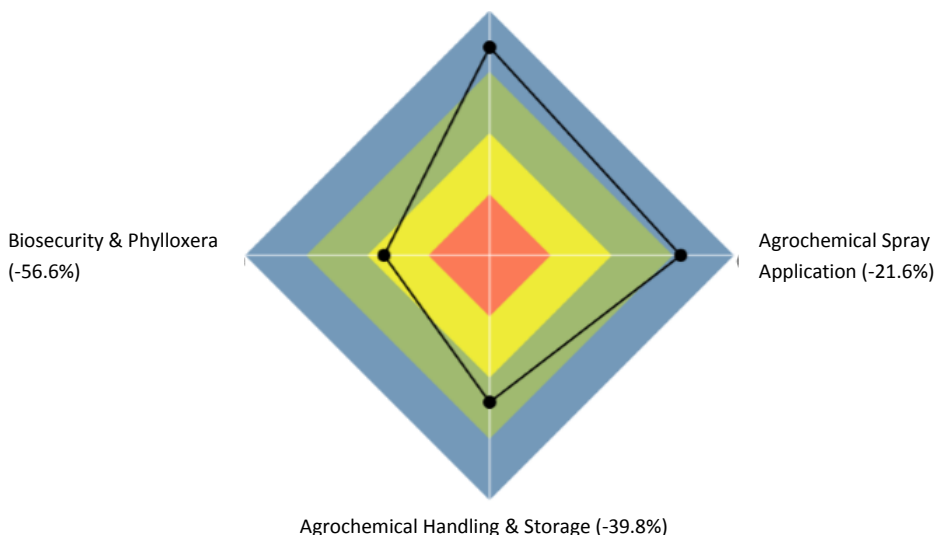
Pest & Disease Identification, Management & Analysis produced the best results in the chapter with only a –

14.8% gap to reach best practice. Biosecurity & Phylloxera had the weakest result with –56.6% to reach the 'perfect score.' Agrochemical Spray Application saw improvement from last year, going from –23.0% in 2014-15 to –21.6% in the current season.

The region scored **green** for Pest & Disease Management, with –32.8% left to reach best practice for the chapter.



Pest & Disease Identification, Management & Analysis (-14.8%)



'INTEGRATED PEST MANAGEMENT (IPM) IS AN ENVIRONMENTALLY SENSITIVE WAY OF MANAGING PESTS. IT USES A COMBINATION OF PRACTICES AND CONTROL METHODS TO PREVENT PROBLEMS FROM OCCURRING RATHER THAN DEALING WITH THEM AFTER THEY HAVE HAPPENED. IPM PRACTICES INCLUDE FORWARD PLANNING, REGULAR MONITORING AND TIMELY DECISION-MAKING.'¹

Effective control of grapevine pests and diseases requires correct identification of the target, the right choice of agrochemical, and the right dose of agrochemical. It also requires equipment that is matched to the target and well set up and calibrated to ensure good.

For more information, read the GWRDC Spray Application: Grapevines factsheet that can be found on the Wine Australia website <http://research.wineaustralia.com/wp-content/uploads/2013/10/Spray-Application-grapevines-December-2013-Web.pdf>

50% of SAW Members employ contractors to spray their vineyards.

65% of SAW Members assess spray coverage during critical times of the season.

¹ <http://www.epa.nsw.gov.au/pesticides/integratedpestmgmt.htm>

Timely vineyard monitoring for pests and diseases along with an understanding of pest and disease lifecycles and the influence of weather on pest and disease development is critical for good pest and disease control.

100% of SAW Members monitor their vineyards for pests and diseases at key times during the season.



CropWatch



Contact MVGWTA to sign up to regular CropWatch reports and updates and keep abreast of up-to-date pest and disease information for the McLaren Vale region.

Although South Australia is Phylloxera free, Phylloxera still poses a significant threat to our region. Phylloxera can easily be spread to our region by grapevine materials (rootlings, cutting, leaves and stems), soil from a vineyard, movement of machinery, equipment or vehicles, whole grapes, grape products (must and wine) and people and clothing. Preventing the spread of Phylloxera to our region is critical to our region's sustainability.

48% of SAW Members have an entrance sign that advises entrance conditions and restrictions.

59% of SAW Members visually inspect vehicles before allowing entry onto the vineyard and remove mud and plant material when required.

A Phylloxera sign at the entrance of your vineyard increases awareness of the risk of Phylloxera. The more awareness there is around Phylloxera, the stronger the fight to prevent it becomes. Spread the word – not the pest!



McLAREN VALE

We love our vines and our land in McLaren Vale

Help us minimise the risk of introducing phylloxera and other vine pests and diseases to McLaren Vale

**DO NOT ENTER THE VINEYARD ROWS BY FOOT
OR BY VEHICLE WITHOUT APPROVAL**

Thank you for your assistance in protecting our vineyards so that we can continue to offer you our unique wines for generations to come

KEEP SOUTH AUSTRALIA PHYLLOXERA FREE

 Contact office on **8323 XXXX** 



CHAPTER RESULTS

BIODIVERSITY MANAGEMENT

Biodiversity Management has a weighting of 15% in the SAW assessment. There are three sub-topics within the chapter which include Biodiversity Management with a 47% weighting, Biodiversity Survey with a 40% weighting, and Bushfire Management a 13% weighting.

Biodiversity Management continues to be a challenge for SAW Members in our region. The region scored yellow

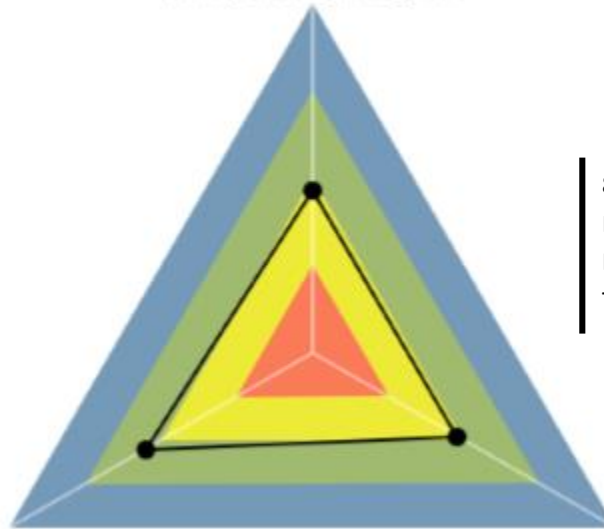
for Biodiversity Management with a gap of -51.9% to achieve to reach the 'perfect score.'

At -45.0%, Bushfire Management was the closest to reaching best practice within the chapter. The Biodiversity Management section is -53.7% away from best practice while the Biodiversity Survey section has -52.9% left to reach best practice.



'BIODIVERSITY PROVIDES A RANGE OF 'ECOSYSTEM SERVICES' WHICH HAVE THE POTENTIAL TO IMPROVE VINEYARD HEALTH AND AESTHETICS.'¹

Biodiversity Management (-53.7%)



81% OF SAW MEMBERS HAVE MADE A COMMITMENT TO INCREASE THE BIODIVERSITY OF THEIR PROPERTY

Bushfire Management (-45.0%)

Biodiversity Survey (-52.0%)

Biodiversity is the variety of all life forms on earth – the different plants, animals and microorganisms, their genes and the ecosystems of which they are a part. Australia is home to between 600,000 and 700,000 species, many of which are found nowhere else in the world. Changes to the landscape and native habitat as a result of human activity have put many of these unique species at risk.²

81% of SAW Members take measures to reduce potential impacts on beneficial organisms when controlling pests and diseases.

28% of Members have conducted a biodiversity survey on their property.

27% of SAW Members have identified the main species of trees on their property and have > 10 trees/ha on average over their property.

¹ <http://www.environment.gov.au/biodiversity/conservation>

² <http://research.wineaustralia.com/wp-content/uploads/2012/11/FS-Biodiversity-Workshop-Notes.pdf>

The McLaren Vale ID Booklets (available in printed or PDF format upon request at MVGWTA) highlight native and/or pest trees, weeds and birds. These booklets can be used to assess your own property or the wider region to take appropriate action eradicating pests, or planting certain grasses or trees to encourage beneficial insects, birds and other wildlife.

Improvement in the biodiversity management requires hands-on effort, financial investment and planning guidance. The McLaren Vale Biodiversity Project is a joint venture between the McLaren Vale Wine Industry, local community, NRM and the Onkaparinga Council which provides support and assistance to local landowners to improve biodiversity management on their property. You can get involved with the McLaren Vale Biodiversity Project by contacting the group via their Facebook page

<https://www.facebook.com/pages/Biodiversity-McLaren-Vale-Tree-Planting/681026865318172>

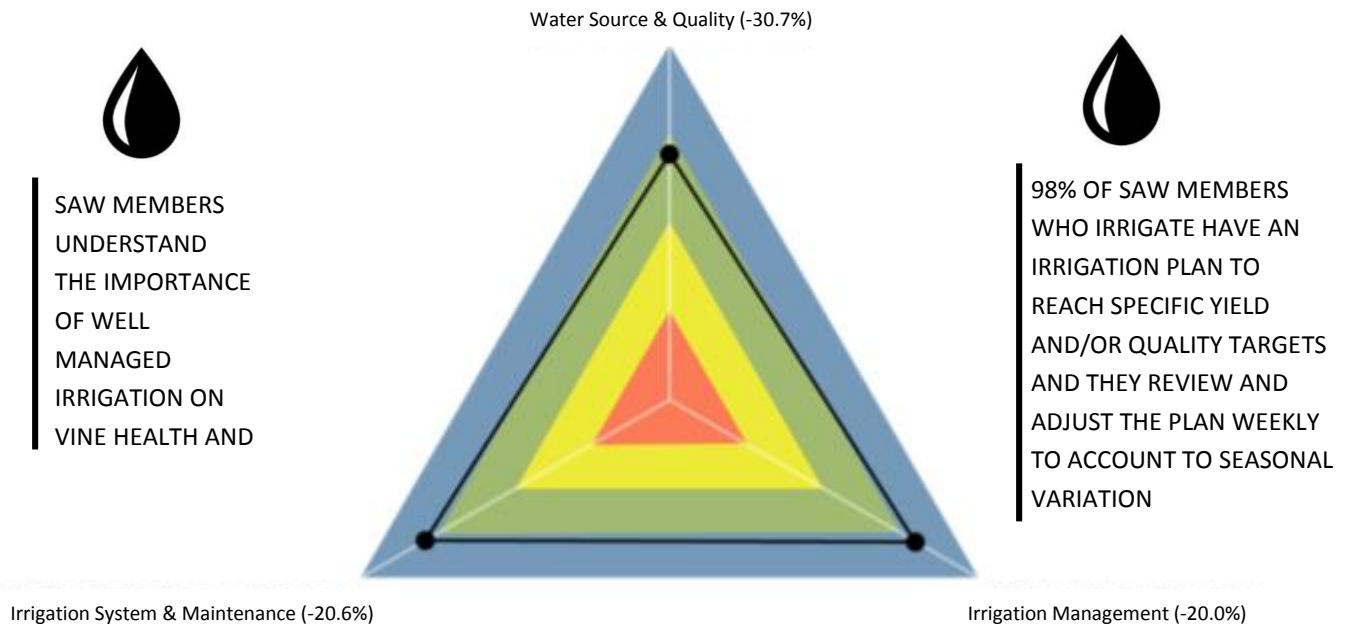
WATER MANAGEMENT

Within the Sustainable Australia Winegrowing chapter weightings, Water Management accounts for 15%. The three sub-topics that form the chapter are Water Source & Quality with a 20% weighting, Irrigation Management a 47% weighting, and Irrigation System & Maintenance with a 33% weighting.

Irrigation Management was the strongest sub-topic, with a -20.0% gap to best practice. Irrigation System & Management scored similarly, with -20.6%. Water Source & Quality has the most to improve, with -30.7% to most sustainable practices.

The region scored blue for Water Management with a gap of -22.3% to achieve best practice.

The three most utilised water sources in the program were ground/bore water, Willunga Basin Water Company (WBWC) reclaimed water, and South Australia mains water.



Reclaimed water is waste water which is captured, treated and reused instead of flowing out to sea. In areas where it is available, reclaimed water is considered the most sustainable water source in McLaren Vale for vineyards where ground water volume or quality is limited.

88% of respondents said that they would change or at least consider switching to reclaimed water if it became available to them.

65% of respondents said that they would definitely change to reclaimed water if it became available

12% answered that they would not use reclaimed water as an irrigation source.

The distribution uniformity of an irrigation system can have a big impact on vine health and yield. Checking the distribution uniformity of your irrigation system at the start of each growing season is important to ensure that every vine within your vineyard is receiving the correct amount of irrigation.

More information can be found on the CSIRO video on the Wine Australia R&D website:

<http://research.wineaustralia.com/resources/cut-1001-ao4-irrigation-distribution-uniformity/>

64% of SAW Members who irrigate, check the distribution uniformity of their irrigation system at the beginning of the growing season by performing dripper output tests and make any necessary adjustments.

CHAPTER RESULTS

WASTE MANAGEMENT

Within the Sustainable Australia Winegrowing Program, Waste Management has a weighting of 15%. The three sub-topics that form the chapter are Waste Management with a 20% weighting, Waste Management Training (20% weighting), Waste Collection & Recycling (40% weighting), and Disposal of Chemicals and Containers (20% weighting).

Waste Collection & Recycling was the strongest sub-

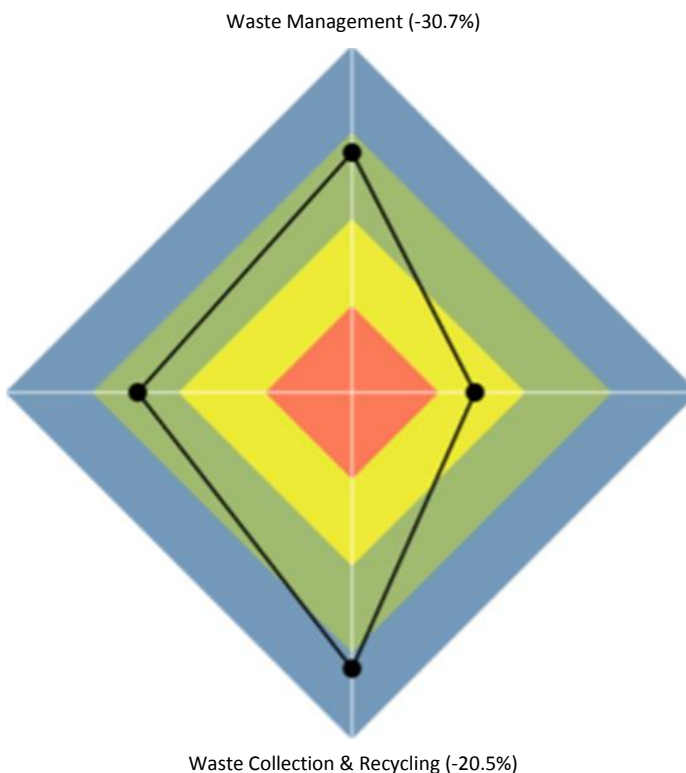
topic, with a -20.5% gap to best practice. Waste Management Training requires the most improvement with a -65.6% gap to best practice. Waste Management scored green at -30.7% away from best practice, and Disposal of Chemicals and Containers also scored green at -38.1% away from best practice.

The region scored green for Waste Management with -34.8% to best practice.



'CLOSE TO 1 MILLION TONNES OF WASTE ARE STILL DEPOSITED TO LANDFILL FROM METROPOLITAN ADELAIDE EACH YEAR. WASTEFUL CONSUMPTION AND DISPOSAL HABITS ARE NOT SUSTAINABLE BECAUSE THE EARTH'S NATURAL RESOURCES ARE LIMITED.'¹

Disposal of Chemicals & Containers (-38.1%)



52% OF SAW MEMBERS HAVE A WASTE MANAGEMENT PLAN WITH TARGETS TO REDUCE THE AMOUNT OF WASTE THEY PRODUCE

Waste Management Training (-64.4%)

The appropriate collection and disposal of unwanted chemicals and empty chemical containers minimises their impact on the environment.

The ChemClear Program, is a national chemical collection and disposal service for unwanted agrichemicals. Chemical are registered for collection on the ChemClear website <http://chemclear.com.au/register-your-chemical/>

60% of SAW Members store unusable chemicals appropriately and keep an inventory of all unwanted chemicals.

DrumMUSTER is a national program for the collection and recycling of eligible, cleaned chemical containers.

72% of SAW Members who handle chemicals delivered their empty, triple rinsed chemical containers to the nearest drumMUSTER/local council collection centre.

For information on the polypipe recycling service that has started in McLaren Vale, visit the Sustaining Endeavour webpage <http://sustainingendeavour.com.au>

¹http://www.epa.sa.gov.au/environmental_info/waste_management

'Each year over half of our household garbage is made up of food and garden waste. Most of this organic waste can be recycled by composting it.'¹

Composting food and garden waste has many benefits. Compost is a rich source of nutrients and organic matter for soil, improving nutrient availability, water holding capacity, water infiltration rate, buffering capacity and reducing water runoff, protecting waterways from erosion and pollution. Composting reduces the amount of

¹ <http://www.compostweek.com.au/core/about-composting/>

organic waste going to landfill therefore reducing greenhouse gas emissions and leachate which can pollute land, groundwater and waterways.

85% of SAW Members who crush grapes on their property, compost the grape marc for use on their property.



'COMPOST REQUIRES FAR LESS ENERGY TO PRODUCE 1KG OF NITROGEN COMPARED TO SYNTHETIC NITROGEN.' GLENN MCGOURTY



Photo courtesy of Richard Wellmore, Wirra Wirra Vineyards

CHAPTER RESULTS

SOCIAL RELATIONS

The Social Relations chapter has a weighting of 14%. Within this chapter the three sub-topics are weighted at 33% each. The sub-topics include Employees & Contractor Relations, Community Relations, and Winery Relations.

Winery Relations was the strongest chapter with a – 20.5% gap to best practice. There was a significant

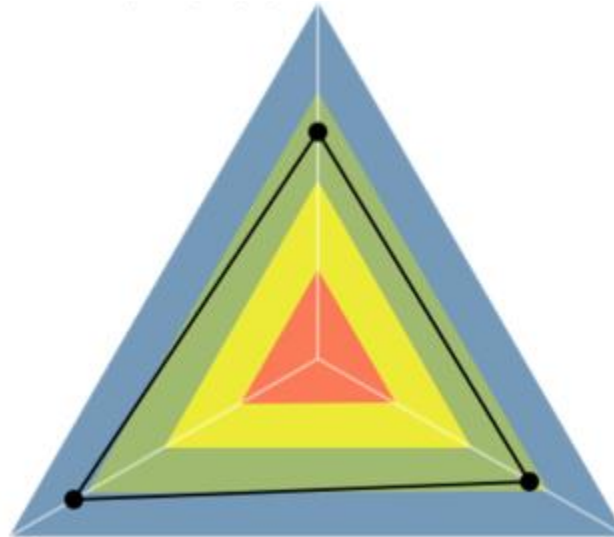
improvement with the Employees & Contractor Relations from last season improving from -41.1% away from best practice to –30.5% away from best practice. The Community Relations score remained the same as last season at -31.2% away from best practice.

The region scored **green** for Social Relations with a gap of –29.4% to achieve best practice.



SUSTAINABILITY DOESN'T WORK IN ISOLATION. IT RELIES NOT ONLY ON AN INDIVIDUAL EFFORT BUT A COMMUNITY, REGIONAL AND THE NATIONWIDE EFFORT

Employees & Contractor Relations (-36.5%)



Winery Relations (-20.5%)



96% OF SAW MEMBERS UNDERSTAND THE IMPORTANCE OF GOOD NEIGHBOUR RELATIONS AND EXCHANGE INFORMATION WITH THEM REGARDING VINEYARD MATTERS

Community Relations (-31.2%)

100% of SAW Members believe committee participation and volunteer work are important.

The SAW Program content is undergoing a full review this year. You can get involved by joining a SAW Working Group or by providing feedback to the SAW Coordinator.

Look out for local seminars and workshops related to viticulture that are advertised in the MVGWTA Weekly Bulletin and the McLaren Vale CropWatch or in the [McLaren Vale Grower Development and Engagement Calendar of Events](#).

While you are taking action by participating in SAW, it is equally important to talk to other growers about the program and the benefits of sustainable farming.

Employee orientation and training are necessary to ensure staff can carry out their role effectively and safely.

53% of SAW Members who employ staff, provide regular OH&S training, conduct scheduled safety audits, utilise an incident/accident reporting system and provide PPE (Personal Protective Equipment) as required.

92% of SAW Members understand the importance of good winery relations and communication to meet grape production and quality specifications.

CHAPTER RESULTS

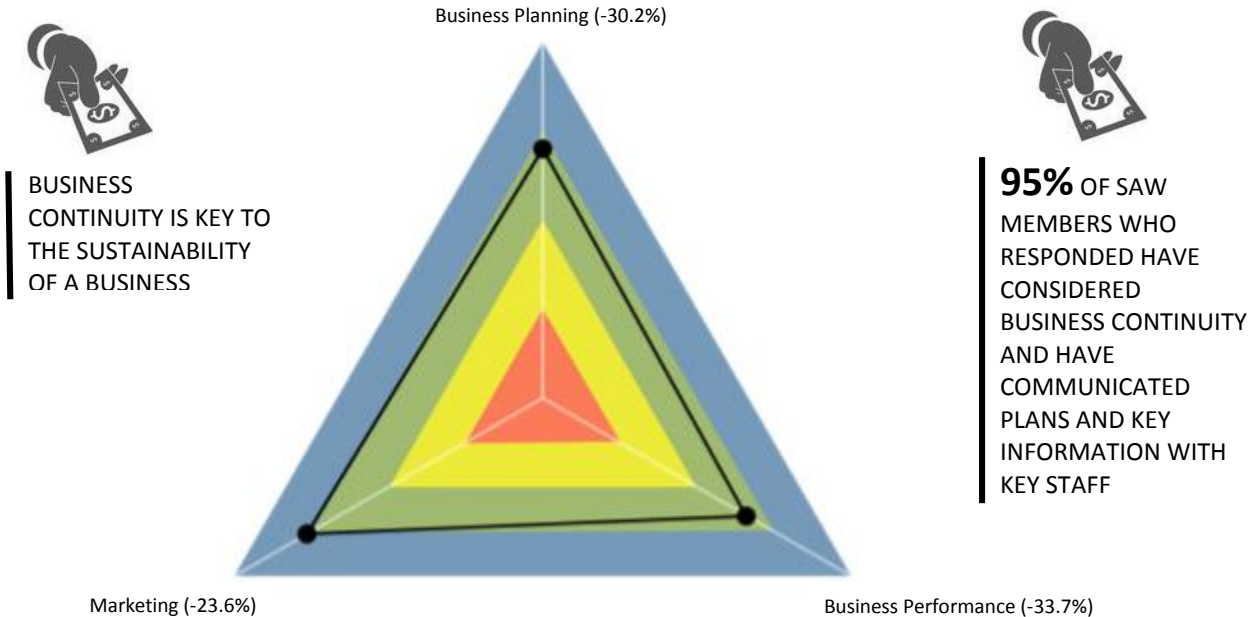
ECONOMIC SUSTAINABILITY

As a new chapter, Economic Sustainability is weighted 1%. This chapter is yet to be peer reviewed, and will undergo this process in time for next season. To that end, every question in this chapter had a N/A option to allow Members the choice as to whether or not to answer.

Within Economic Sustainability there are three sub-topics. These sub-topics and their weight include Business Planning (33%), Business Performance (33%), and Marketing (33%).

Marketing resulted in the strongest result with -23.6%, while Business Performance held a -33.7% gap to best practice. Business Planning resulted in -30.2%.

Overall, Economic Sustainability was categorised as **green** with a -29.2% gap to achieve best practice.



Fulfilling and maintaining legal responsibilities is crucial when operating a business.

74% of SAW Members who responded have the necessary registrations and licences to protect their business and mitigate risk.

Save time, money, and make a good impression on customers just by a quick tidy!

Ensuring your vineyard is well presented with tools, machinery, etc. properly stored is key not only for a good first impression to potential customers, but also for efficiency.

Employees who know where things are located are less likely to waste time looking for something instead of being productive.

100% of SAW Members see the value of maintaining a clean and orderly environment with machinery and equipment well presented.

Communicating your vineyard attributes to consumers and potential grape buyers is becoming more important.

76% of SAW Members have a communication strategy for their vineyard which includes information about geology, soil type, varieties, farming practices, irrigation type, historical yield, row spacing and vine spacing

SPRAY DIARY RESULTS

The table below lists the spray targets, area (ha) sprayed, the percentage area for each spray target, and the average number of spray applications for the season.

Powdery Mildew continues to be the main target for the region, covering 2,600.3 hectares with the average number of sprays per season being 6.3 for the SAW membership.

Downy Mildew is the next most common target, covering 1,499.9 with an average of 2.3 sprays per season for the SAW membership.

An average of 1.7 Botrytis Bunch Rot sprays was applied by SAW Members, 1.6 Light brown apple moth sprays and 1 Bud mite spray.

Spray Target	Area (Ha)	% Area of Members	Average Times
Biodynamic	136.8	4.7	11.9
Black Spot	3.8	0.1	1
Botrytis bunch rot	541.6	18.6	1.7
Bud mite	221.3	7.6	1
Downy mildew	1332.5	45.8	2.3
Garden weevil	40.6	1.4	1
Grapeleaf rust mite	288.7	9.9	1.3
Grapevine scale	201.6	6.9	1
Herbicide*	696.2	24.0	2.7
Herbicide Spot Spraying	11	0.4	1.4
Light brown apple moth	260.3	9.0	1.6
Nutrition**	1290.6	44.4	4.2
Plant growth regulators	6.4	0.2	1
Powdery mildew	2600.3	89.5	6.3
Rust Mite	33.2	1.1	1
Snail	56.1	1.9	1.7
Wetting/Adjuvant Agent	752.9	25.9	4.2
(Not matched)***	692.2	23.8	5.5
(Unspecified)***	537.3	18.5	3.1

Important Notes

* Because the data is captured retrospectively after vintage each year, many growers did not include all herbicide sprays in the SAW spray diary module. The table above shows that only 24% of the area was sprayed with herbicides, however this number does not properly reflect the 102 Members (81%) who responded in the workbook as having applied herbicides (pie graph above).

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

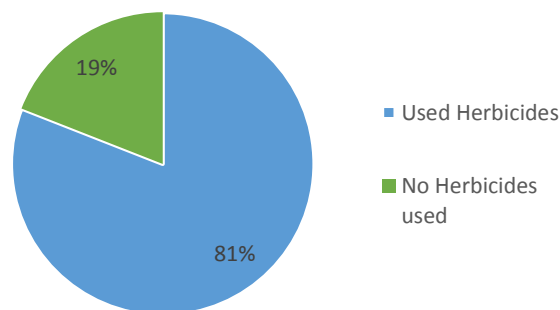
*** In most situations, targets were placed automatically into the unmatched or unspecified categories because of misspellings in the importing process from other spray diaries maintained by growers. either certified or un-certified.

The pie graph adjacent shows the usage of herbicides during the 2015-16 growing season.

102 SAW members reported having applied herbicides at least once during the season, representing 81% of program participants. The average applications per year was 2.1.

24 SAW Members reported no use of herbicides for the year, which accounts for 19% of participants.

18.2% of vineyards in the program were managed biodynamically or organically, either certified or un-certified.



ACHIEVEMENTS

SUSTAINABLE AUSTRALIA WINEGROWING GOALS FOR 2015-16

INCREASED MEMBERSHIP

Industry interest and uptake has extended to six other winegrowing regions through inter-regional collaboration and recommendation, plus development of appropriate supporting documents (MOU, Licencing Agreement, SOP, Quick Reference Papers, and a uniform yet regionally specific Program logo).

The Program is now in use in McLaren Vale, Clare Valley, Barossa, Adelaide Hills, Langhorne Creek and the Granite Belt.

GOALS

SUSTAINABLE AUSTRALIA WINEGROWING GOALS FOR 2016-17

CHAPTER AND SPRAY DIARY REVIEW

The success of the Sustainable Australia Winegrowing program relies on keeping the content up-to-date and scientifically sound. The entire content of the program will be reviewed this year in a six step review process involving an author review, working group review (SAW users from all regions), independent expert review and an independent auditor review.

SPRAY DIARY UPLOAD PLUG-IN

Sustainable Australia Winegrowing is committed to developing a spray diary upload plug-in (upload function) for another two major spray diary programs used in Australian Viticulture (Grapeweb and Grapelink; a Growdata upload plug-in has already been developed). This will reduce the amount of double handling of spray diary information for SAW Members.

GOVERNANCE STRUCTURE DEVELOPMENT

The development of Independent SAW Association (“Permanent Management Structure”) is currently underway to ensure that the Program continues to remain valuable and relevant to growers, as well as continuing to support sustainability in wine grape growing at an individual, regional, state and national level. This includes the development of a governance structure and a SAW Association constitution.

INCREASE MEMBERSHIP

Sustainable Australia Winegrowing will continue to engage with growers in McLaren Vale and other regions in Australia to increase the support and uptake of the program at a regional, state and national level.

ENTWINE ACCREDITATION

Once program updates are finalised (end May 2017), the Program will undergo assessment to ensure its on-going accreditation to Entwine Australia as per all programs accredited to Entwine Australia.

GET INVOLVED

JOIN

Become a Sustainable Australia Winegrowing member and start working towards a more sustainable future.

ASSIST

Join a Sustainable Australia Winegrowing working group to review one or more of the saw chapters and/or spray diary

SHARE

Talk to other growers about the Sustainable Australia Winegrowing program and the benefits of sustainable farming.

VOLUNTEER

Help increase the biodiversity of the McLaren Vale region by joining the McLaren Vale Biodiversity Group and/or other community revegetation groups.

ATTEND

Attend Sustainable Australia Winegrowing events and workshops to keep up-to-date with the latest news and industry best practice developments. SAW events are advertised in the MVGWTA Weekly Bulletin and CropWatch.



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Wine, Food, Beaches
Markets, Trails, Art

