

Membership Survey: Bud Damage Impact & Response

Prepared By:

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#### 1 Background

In late December 2022, a cold weather event swept across British Columbia, including many of its wine making regions or geographical indications (Gls). Temperatures remained below -20°C for a sustained period in most regions in the BC interior, and they reached as low as -30°C in Kelowna, West Kelowna, and Shuswap / Tappen. Crucially, these conditions are known to cause significant damage to grapevines, impacting yields in both the short and long term.

The first indication of the severity of the cold event at an industry level came in April 2023. Building on bud damage assessments from the Summerland Research and Development Centre and a selection of wineries<sup>1</sup>, a previous study<sup>2</sup> estimated that overall grape and wine production for the 2023 vintage will be 39-56% lower than in a typical year. Vineyard and winery revenue losses associated with this reduction were estimated to be between \$104 million and \$145 million.

This study is complementary to this previous analysis, surveying Wine Growers BC's membership in order to:

- Provide an additional perspective on the expected agricultural and economic losses associated with the cold event, and
- 2 Understand the perceptions of stakeholders regarding various support programs and initiatives, whether they are new or already in place.

The survey was distributed to Wine Growers BC's members on May 23<sup>rd</sup>, 2023, and responses were collected over a period of 10 days. The survey received 38 responses spanning 12 Gls, representing 59% of total industry production, and including both wineries (79%) and independent grapegrowers (21%). In Section 2, stakeholder responses are weighted by their relative production to more accurately reflect total industry-wide production, revenue, and employment losses. However, when assessing stakeholders' perceptions of various support mechanisms in Section 3, all survey responses are weighted equally.

#### 2 Agricultural and Economic Impacts

The agricultural and economic losses estimated by the April 2023 study are alarming for the industry and have fueled discussions regarding how to provide timely and effective support to both grapegrowers and wineries. However, these estimates are also subject to uncertainty, having been extrapolated from bud damage assessments from a subset of vineyards, Gls, and grape varieties. As such, this survey aims to provide an additional perspective on these expected losses

based on stakeholders' subjective assessments of the heath of their vines.

#### 2.1 Agricultural Impacts

**2.1.1 Impact on the 2023 Vintage** To assess the impact of the cold event on the 2023 vintage, survey respondents were asked "For each of the grape varieties that you grow, how do you expect the December 2022 cold event to impact yields this year?" and "In a typical year, what is the approximate size of your harvest (in metric tons)?". The survey responses — cross-referenced with Annual Crop Assessment data from the BC Wine Grape Council — indicate that total grape and wine production for the 2023 vintage will be 54% lower than in a typical year, falling at the upper end of the range estimated by the April 2023 study.

However, while 98% of respondents cited crop losses of at least 10%, the severity of impact does vary significantly across respondents (with some anticipating a complete write-off of their crop this year). Consistent with the findings of the April 2023 study, these differences are driven in part by the location of the vineyard and the grape varieties grown there. Figures A1 and A2 (see Appendix A) demonstrate how production is expected to be impacted in different GIs and for different grape varieties, respectively.

2.1.2 Multi-Year Impact Severe bud damage which extends to the secondary and tertiary buds can result in both multi-year and permanent reductions in crop yields. Due to a lack of available data, the April 2023 study did not attempt to estimate the extent of these long-term damages. To fill this knowledge gap, survey respondents were asked "What proportion of your total planted acreage do you expect to suffer long-term damage?" and "What proportion of your total planted acreage do you expect to have to replace as a result of the December 2022 cold event?". Based on their responses, it is estimated that 45% of the industry's total planted acreage will suffer long-term

#### **Estimated Agricultural Impacts**



**54%** reduction in grape and wine production for the 2023 vintage



**45%** of total planted acreage suffering long-term damage



29% of total planted acreage needing to be replaced

<sup>&</sup>lt;sup>2</sup> Economic Impact of December 2022 Bud Damage (Cascadia Partners, April 2023)



<sup>&</sup>lt;sup>1</sup> Bud damage assessments were collected from more than 40 sites and represent 6 GIs and 18 grape varieties.

damages and 29% will need to be replaced entirely. The latter will require significant financial investment by businesses and take at least 3 years to reach maturity.

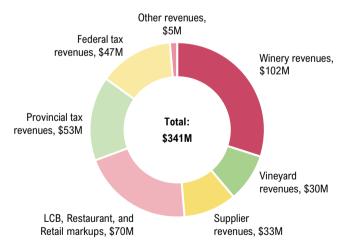
#### 2.2 Economic Impacts

Production losses of this magnitude will have a severe impact on the economics of the industry, affecting the sales revenues of both vineyards and wineries, the tax revenues collected by government, and the livelihoods of agricultural workers and other wine industry professionals.

**2.2.1 Revenue Impact** To assess the revenue impact of the cold event, survey respondents were asked "How do you expect the December 2022 cold event to impact your business' revenues this year?". Under the assumption that sales revenues are proportional to production, the responses indicate that total industry revenues attributable to 100% BC wine will decrease by 43% or \$341 million<sup>3</sup>. Of these losses, \$133 million are set to be incurred by vineyards and wineries. Crucially, these losses cannot be recovered by consumer substitution to non-BC products, as is the case for retailer revenues and government tax revenues<sup>4</sup>.

Driven in part by variation in the extent of production losses across respondents, anticipated revenue losses also differ significantly across businesses, with some citing as high as 90% revenue losses and others anticipating that their revenue will not be impacted at all.

Comparatively, the anticipated reduction in industry revenues is somewhat lower than the anticipated reduction in grape and wine production. This is likely attributable to the strength of the



**Figure 1:** Anticipated loss of revenue attributable to 100% BC wine, by revenue source<sup>4</sup>.

2022 vintage and the ability to bolster the 2023 vintage with grapes from the previous year, as well as the effectiveness of existing industry supports such as crop insurance.

**2.2.2 Employment Impact** To assess the impact of the cold event on employment, survey respondents were asked "How do you expect the December 2022 cold event to impact your business' number of employees this year?". Under the assumption that employment is proportional to production<sup>3</sup>, the responses indicate that the number of jobs at vineyards and wineries will decrease by 20%. Based on the most recent employment numbers in the industry<sup>4</sup>, this amounts to 381 full-time equivalent (FTE) jobs.

#### **Estimated Economic Impacts**



A \$133 million decrease in the total revenues of vineyards and wineries



A **\$100 million** reduction in government tax revenues attributable to 100% BC wine<sup>4</sup>



A 20% reduction in vineyard and winery employment, totaling 381 lost jobs

# 3 Stakeholder Perceptions of Existing and Proposed Support Mechanisms

While long term solutions are being evaluated as part of the Perennial Crop Renewal Program (an initiative led by the BC Wine Grape Council), there remains a need for timely and effective solutions for both vineyards and wineries to mitigate losses associated with the 2023 vintage. To help prioritize which support mechanisms should be put in place and/or extended, survey respondents were asked to share their perspectives on various programs and initiatives.

#### 3.1 Perceptions of Existing Programs

A number of programs already exist to help grapegrowers and wineries mitigate and recover from agricultural losses. These include:

I. <u>Agriculture Insurance & Income Protection</u>: Provides insured participants with coverage against yield and vine losses above pre-determined thresholds.

<sup>4</sup> While government tax revenues attributable to 100% BC wine products will decrease, total government tax revenues will likely increase due to consumer substitution to non-BC products, which are taxed at a higher rate than BC products.



<sup>&</sup>lt;sup>3</sup> Estimated revenue (\$) and job losses are modeled based on the 2019 economic impact estimates published by Wine Growers BC in 2022.

- II. <u>AgriStability</u>: Provides benefit payments to eligible participants when their current year margin falls more than 30% below their average margin over the previous 5 years.
- III. Agri-Business Planning Program (Disaster Recovery Planning Stream): Provides successful applicants with up to \$5,000 (or up to \$20,000 for a group) in business planning services and coaching from a qualified business consultant.

Survey respondents were asked questions to elicit whether they were aware the programs, which they had used (either currently or in the past), and which they found effective, with the results plotted in Figure 2.

Agriculture Insurance & Income Protection leads the way in terms of stakeholder awareness (76%) and enrolment (50%). 40% of respondents (or 80% of those who have used the program) also found it to be an effective support mechanism. In terms of opportunities to improve the program, 8% suggesting speeding up the timeline for assessments and insurance payouts, whereas another 8% recommended site-specific insurance coverage rather than amalgamating coverage across multiple sites operated by a single business.

Two-thirds (67%) of survey respondents were aware of the AgriStability Program, with 33% having taken advantage of the program in the past. Of those that have participated in the program, nearly three-quarters expressed that it was effective in mitigating against unexpected revenue losses. While there were limited recommendations regarding how to improve the program, 5% of respondents suggested expanding the program to include replant provisions and another 5% suggested providing better information about the program and improving communications.

Finally, the BC Agri-Business Planning Program (Disaster Recovery Stream) lags significantly behind in terms of

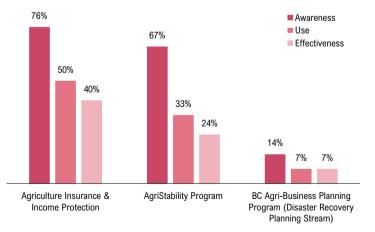


Figure 2: Stakeholder perceptions of existing support programs and initiatives

awareness (14%) and participation (7%). However, 100% of respondents who used the program expressed that the business planning services provided were an effective support. There were no suggestions for how this program could be improved.

It is clear from the survey responses that these programs provide valuable support and coverage for those participating in them. However, for all three programs, at least 50% of respondents are not taking advantage of them and many remain unaware of them entirely. As a result, initiatives which increase stakeholders' awareness and enrolment in these programs could help alleviate some of their losses from the December 2022 cold event.

# 3.2 Perceptions of Proposed Temporary Support Mechanisms

**3.2.1 A Dedicated AgriRecovery Grant** In the past, dedicated recovery grants have been established to support agricultural producers recover from unexpected crises like this year's wine grape winter damage. For example, the 2021 Flood Recovery Program was established to help offset the costs of returning to production for effected livestock and crop farmers. Support for such a program is high amongst survey respondents, with 87% expressing their support for such an initiative. Respondents suggested that the program could take the form of cash transfers, conditional labour supports, rebates on crop insurance premiums, interest-free loans, or tax credits.

**3.2.1 A Temporary Allowance of Non-BC Wine for Land-Based Wineries** While not applying to BC VQA designated wines (which would still need to be produced from 100% BC grapes), this temporary conversion to a LDB Commercial Winery Sales Agreement could help limit the impact of reduced grape production on the production of this year's vintage. However, support for the program is mixed amongst survey respondents. Only 45% of respondents support such an allowance, with many citing fears of consumer confusion and difficulty sourcing inputs relative to large national wineries. As a result, establishing supports to help connect relatively smaller wineries with non-BC grapegrowers may be an important equitable consideration to ensure the program is accessible to wineries of all sizes.

#### **Perceptions of Temporary Support Mechanisms**



**87%** of respondents would support a dedicated AgriRecovery grant



**45%** of respondents would support a temporary allowance of non-BC wine



### **Appendix A: Supplemental Figures**

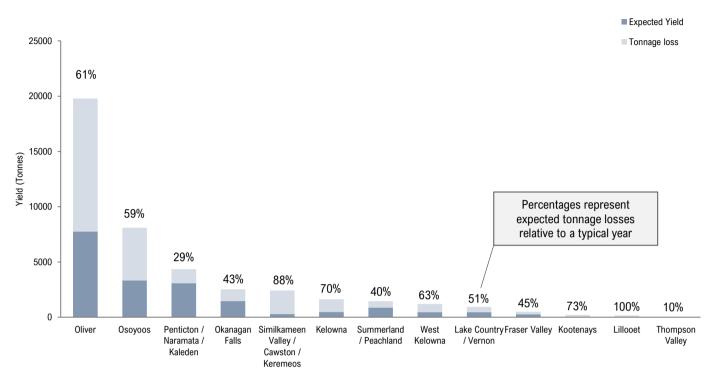


Figure A1: Anticipated tonnage and tonnage loss by region or geographical indication (GI).

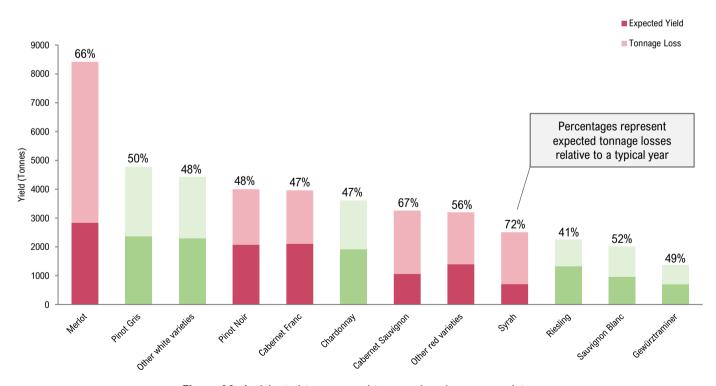


Figure A2: Anticipated tonnage and tonnage loss by grape variety.



### **Appendix B: Survey**

#### Overview:

We understand that a cold event in December 2022 will have a significant impact on independent grapegrowers and wineries across British Columbia. With this survey, we aim to better understand:

- 1. How will the cold event will impact your business?
- 2. What types of support programs and initiatives would be most impactful for your business?

Your feedback is important and all responses to this survey are strictly confidential. We thank you for your participation in our survey.

#### **Part 1: Baseline Information**

- 1. Are you an Independent Grower or a Winery?
- 2. What is the name of your vineyard / winery?
- 3. In a typical year, what is your approximate harvest size (in metric tons)?

#### Part 2: Impact by Grape Variety

4. Of the grape varieties that you grow, how do you expect the December 2022 cold event to impact yields this year?

												Not at all
	Not applicable	Complete write-off	Down 90%	Down 80%	Down 70%	Down 60%	Down 50%	Down 40%	Down 30%	Down 20%	Down 10%	(Normal yields)
All varieties	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\circ$
Merlot	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Cabernet Franc	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\circ$	$\bigcirc$	$\circ$	$\circ$	$\circ$	$\circ$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Cabernet Sauvignon	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Syrah	$\circ$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Pinot Noir	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Other red varieties	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Pinot Gris	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Chardonnay	$\circ$	$\circ$	$\bigcirc$	$\circ$	$\bigcirc$	$\circ$	$\bigcirc$	$\circ$	$\circ$	$\bigcirc$	$\bigcirc$	$\circ$
Riesling	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Gewürztraminer	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\circ$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Sauvignon Blanc	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Other white varieties	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\circ$	$\bigcirc$	$\circ$	$\circ$	$\circ$	$\circ$	$\bigcirc$	$\bigcirc$	$\circ$



# **Appendix B: Survey (continued)**

#### Part 3: Impact by Region

5. Of the regions that you grow grapes in, how do you expect the December 2022 cold event to impact yields this year?

	Not applicable	Complete write-off	Down 90%	Down 80%	Down 70%	Down 60%	Down 50%	Down 40%	Down 30%	Down 20%	Down 10%	Not at all (Normal yields)
Fraser Valley	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$
Gulf Islands	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Kelowna	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$
Kootenays	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\circ$	$\bigcirc$	$\bigcirc$	$\circ$	$\bigcirc$	$\circ$	$\bigcirc$
Lake Country / Vernon	0	0	0	$\circ$	0	0						
Lillooet	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$
Okanagan Falls	$\circ$	$\circ$	$\circ$	$\bigcirc$	$\circ$							
Oliver	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$
Osoyoos	$\circ$	$\circ$	$\bigcirc$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\bigcirc$	$\circ$	$\circ$
Penticton / Naramata / Kaleden	$\circ$	0	$\circ$	0	$\circ$							
Shuswap	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$
Similkameen Valley / Cawston / Keremeos	$\circ$	$\circ$	0	$\circ$	0	0	$\circ$	$\circ$	0	0	0	$\circ$
Summerland / Peachland	0	0	0	$\circ$	0	0	$\circ$	$\circ$	0	0	0	0
Thompson Valley	$\circ$	$\circ$	$\circ$	$\bigcirc$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\bigcirc$	$\circ$	$\circ$
West Kelowna	$\circ$	$\circ$	$\bigcirc$	$\circ$								
Vancouver Island	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$

#### Part 4: Impact by Region

C	Ò.	What	proportio	on ot '	vour tot	al plante	d acreage	(owned;	not	contracted	l) do	you ex	pect	to sut	ter l	ong-	term d	lamage'	!

		100% (All vines suffer long-term
0% (No long-term damage)	50%	damage)

1.	What proportion of your total planted acreage (owned; not contracted	) do you expect to have to replace as a result of the December
	2022 cold event?	

0% (No vines need replacing)	50%	100% (All vines need replacing)
$\bigcirc$		



## **Appendix B: Survey (continued)**

#### Part 5: Economic Impact

8. How do you expect the December 2022 cold event to impact your business this year?

	Down 100%	Down 90%	Down 80%	Down 70%	Down 60%	Down 50%	Down 40%	Down 30%	Down 20%	Down 10%	No Impact
Revenues	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$
Number of Jobs	$\bigcirc$	$\bigcirc$	$\circ$	$\bigcirc$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$	$\bigcirc$

#### Part 6: Awareness and Effectiveness of Existing Support Programs

<ol><li>Awareness: Which of the following existing support programs are you</li></ol>	Δ	<del>'</del> wareness:	vvnich	of the	following	existing	support	programs	are vou	aware c	)†?
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AgriStability Program	
☐ BC Agri-Business Planning Program (Disaster Recovery Planning S	Stream
Agriculture Crop Insurance & Income Protection	
Other (please specify)	

10. <u>Use</u>: Which of the following existing support programs have you used, either now or in the past?

Other (please specify)	
Agriculture Crop Insurance & Income Protection	
☐ BC Agri-Business Planning Program (Disaster Recovery Planning S	Stream)
AgriStability Program	

11. Effectiveness: Of the existing support programs which you have used, how effective were they?

	Not applicable	Not effective	Somewhat effective	Very effective
AgriStability Program	0	0	0	0
BC Agri-Business Planning Program (Disaster Recovery Planning Stream)	0	0	0	0
Agriculture Crop Insurance & Income Protection	0	0	0	0

12. <u>Improvements</u>: Do you have any suggested improvements for the existing support programs?



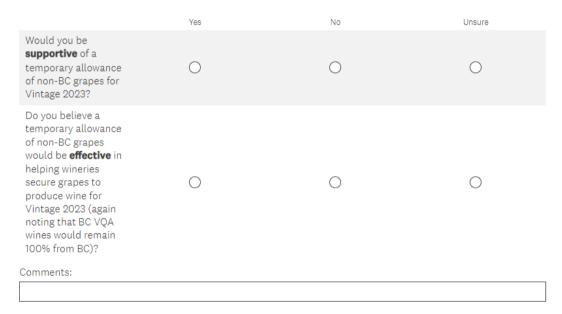
### **Appendix B: Survey (continued)**

#### Part 7: Feedback on Other Temporary Supports

13. In the past, dedicated recovery grants have been established to support agricultural producers recover from unexpected crises like this year's wine grape winter damage (e.g., 2021 Flood Recovery Program).

	Yes	No	Unsure
Would you be <b>supportive</b> of such a dedicated recovery grant?	0	0	0
Do you believe a dedicated recovery grant would be effective?	0	0	0
Comments:			

14. A temporary allowance of non-BC grapes for land-based wineries' wine could help limit the impact of reduced grape production on the production of this year's vintage. (Note that BC VQA designated wines would remain 100% BC wine)



15. Do you have any other suggestions for how government could help support grapegrowers and wineries recover from winter bud damage?

Thank you for your participation.

