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Deloitte.

The Niagara Cluster: Ontario's Untapped Economic Engine

May 2023

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This report has been provided for the purpose of providing an analysis regarding the economic contribution of the sector - as informed by research, data analysis and stakeholder consultations - and examples of key learnings from select international jurisdictions.

This study does not represent a full cost-benefit analysis and does not represent a comparison of the potential economic contribution of the wine sector to the potential contribution of an alternative use of resources.

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Section 1. Executive Summary

1. Executive Summary

The Niagara Cluster

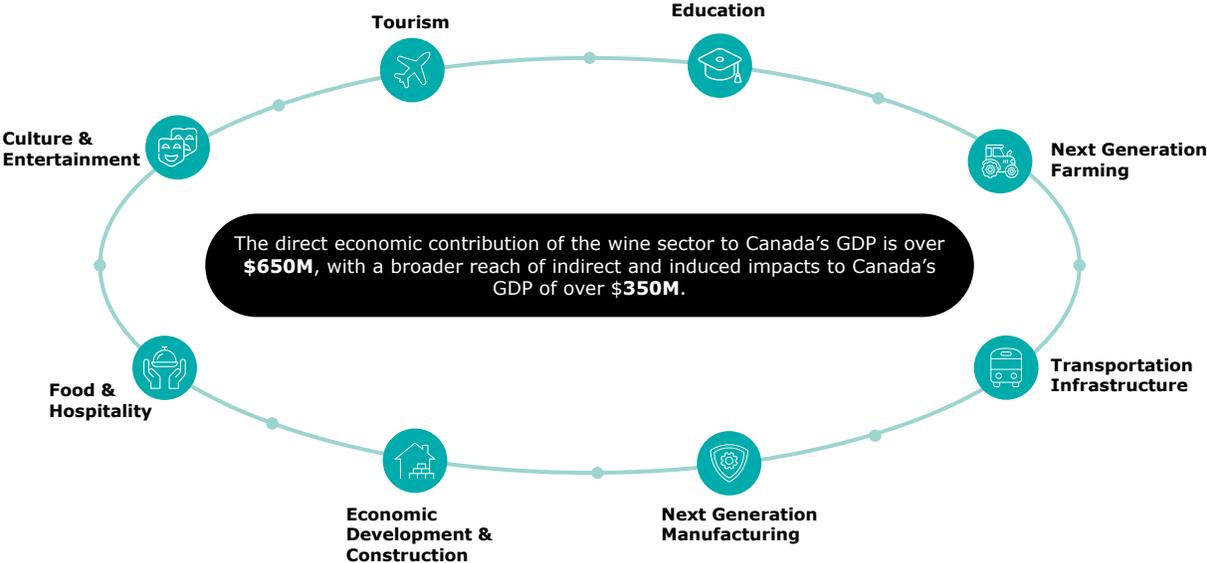
A bustling cluster of food, wine, and cultural experiences resides at the center of the world’s leading tourism economies. The local concentration of similar and complementary industries in the Niagara region offers significant potential for regional health, collaboration, and economic growth. The Niagara economic ecosystem is one of the few regions of the world where premium quality wine grapes can grow. It includes a world-class tourism asset in the Niagara Falls, proximity to a large population base, and comprises an extensive network of businesses that provide entertainment, food, transportation and hospitality for visitors; education and skills to work in these industries; and suppliers for manufacturing, agriculture, and construction. This cluster of sectors drives sustainability, desirability, and human capital formation in the Niagara region.

Clusters are areas of intense economic activity made up of companies, academic institutions, and non-profit organizations that boost innovation and growth in a particular industry.¹ The concentration of Niagara businesses in the tourism industry offers an opportunity to bring together the members of this cluster to develop a holistic strategy to accelerate the economic growth of the region.

Harnessing these agglomeration effects can provide an economic multiplier across these industries that drives the regional economy and acts as a catalyst for growth. The Niagara region’s growth cluster is made up of self-reinforcing economic engines where growth flows to all areas of the economy, making the whole greater than the sum of its parts. For example, a tourism asset that lengthens a visitor’s stay has a positive economic impact and multiplier effect across the industries in the cluster.

Successful clusters benefit from a strong, enabling environment that supports the needs of businesses and their workforces. These supportive environments deliberately nurture dynamism and collaboration on a multitude of levels—from individual to corporate to environmental—and provide a multiplier effect that serves to drive regional and national economies.

Figure 1: The Niagara Cluster



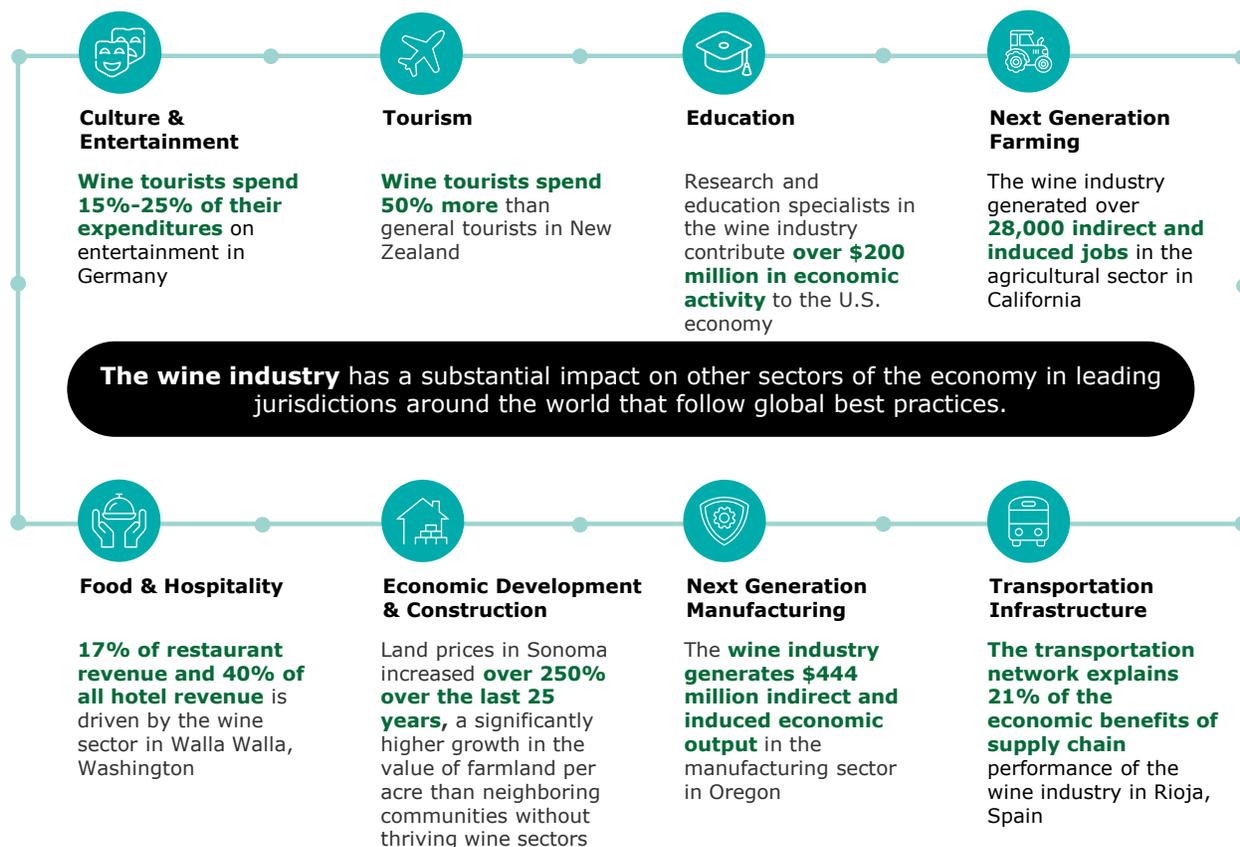
¹ This definition of clusters is defined by the Department of Innovation, Science and Economic Development Canada. The definition can be found at <https://ised-isde.canada.ca/site/global-innovation-clusters/en/about-canadas-innovation-clusters-initiative#1>

The purpose of this Whitepaper is to assess the potential value and contribution of the Ontario wine sector and the wine sector ecosystem in the Niagara Region. Deloitte has undertaken analysis to evaluate key characteristics of successful wine producing jurisdictions. The analysis in this study also demonstrates how the Ontario wine sector is well positioned to drive sustainable economic growth for the region, the province and the country.

Our research shows that the wine industry plays a unique and leading role within the Niagara cluster and acts as an accelerator for economic growth and job creation. It is estimated that, in 2019, the Ontario wine sector (most of which resides in the Niagara Region) contributed just over \$1.0 billion to Canada’s GDP and sustained an estimated employment of 7,222 FTEs within Canada. Of this, approximately \$657 million is the direct impact of the wine sector itself, and another \$353 million when the sector’s purchases from suppliers, and increased spending in the economy from incomes earned are considered.

The economic contribution of the wine sector, however, reaches far beyond the basic economic footprint stemming from its direct activities, impact from its suppliers, and from increased spending in the economy generated from incomes earned from its activities. Through our research of comparative wine-producing jurisdictions, the wine sector has been shown to be an enabler for growth in other sectors as well. Additional benefits could be realized from the adjacent sectors which include greater economic enhancement to sustainable practices within the farming sector; economic development and construction opportunities; transportation, visitor support, and education infrastructure expansion; as well as improved sustainable practices within the manufacturing sector. Figure 2 illustrates some of these additional benefits found in other leading wine-producing jurisdictions.

Figure 2: The Wine Industry as a Catalyst for Growth in Other Leading Jurisdictions



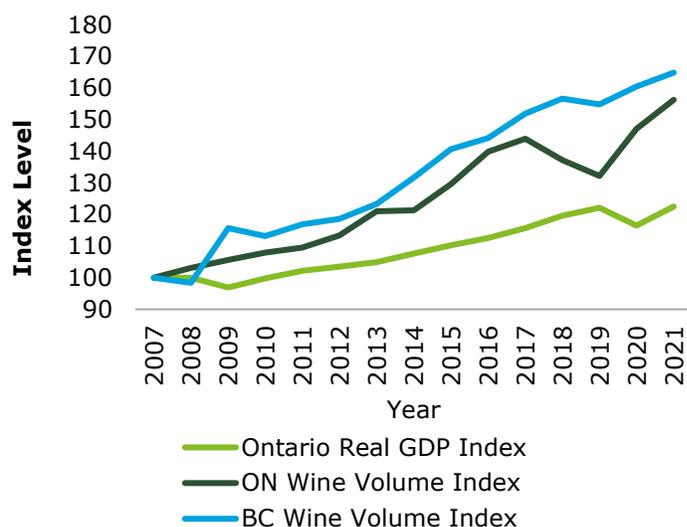
Despite the cluster’s success, it is facing several obstacles. Consultations with stakeholders and cluster members highlighted several key challenges: the tax regime for wine; the need for greater representation of Ontario wines in marketing and distribution; as well as adaptation towards climate change and sustainability best practices. Another significant challenge highlighted by the sector is the Ontario government's plans to expand wine retail into grocery and convenience stores, potentially changing the alcohol retail landscape significantly. The vertical integration of the industry means that changes to wine retail will impact the entire sector, including profitability and production.

A scan of the world’s leading wine jurisdictions was conducted as part of this study to identify global best practices on cluster development for leading wine regions. Supportive policies that adhere to global best practices can help the sector reach its economic potential and provide an opportunity for regional economic development and innovation. Looking at our jurisdictional scan, there were four key learnings on global best practices that emerged:

1. Wine industries dominating their domestic market share
2. Successful wine industries connect with tourism to create world class destinations
3. Tax policies that incentivize investment in the wine sector
4. Leading wine regions incentivize and support capital investment in agriculture and hospitality

If we compare Ontario to British Columbia, BC’s wine sector has experienced greater success in the last 15 years with their wine sector growth consistently outpacing Ontario’s sector over that time period. In addition, the Ontario wine industry is materially lagging British Columbia’s counterpart not just in terms of growth but also with regards to stage of development.

Figure 3: Ontario’s Wine Sector Potential



Our analysis shows that increasing the Ontario wine sector’s domestic market share to that of British Columbia’s domestic market share, could provide a cumulative \$800 million in additional GDP to Ontario’s economy over a ten-year period.

Moreover, with enhanced and robust regional economic development policies, future potential uplift for the Region could amount to at least \$8 billion in additional real GDP in 25 years, representing an approximately 35% increase in regional GDP above baseline projections if the status quo were to be maintained.

There is an opportunity to enhance the

Niagara region’s economy through the clustering effects of the wine industry. A concentrated effort to embrace the cluster’s potential can potentially unlock substantial economic benefits and growth, while simultaneously aligning Ontario’s wine sector with leading best practices and enhancing its competitiveness in the global marketplace.

Key Takeaways

Below we summarize and outline the key takeaways that emerged from the study based on the comprehensive analysis of the sector and findings from stakeholder consultations.

Key Takeaways

1. The **Niagara Cluster** has the opportunity of becoming a flourishing and robust economic region that includes a world-class wine, tourism, agricultural economy. Given the right conditions, with enhanced and robust regional economic development, future potential uplift for the Region could amount to at least **\$8 billion in additional real GDP in a generation, above the current status quo estimate. This represents an uplift of roughly 35% above baseline estimates.**
2. The **wine industry delivers consistent and impactful revenue streams.** Between 2007/2008 to 2020/2021 the Ontario wine sector sales volume for Canadian products had an **Annual Growth Rate of 3.2%. This compares with a 1.5% real GDP growth for the broader Ontario economy in that time period.** Overall, the industry's growth in revenues is relatively consistent over time. This makes the wine industry not only reliable for economic contribution, but its stability also serves as an anchor for any future economic development strategy.
3. Despite its success, in terms of growth and stage of development, the Ontario wine industry is significantly behind the BC wine industry. In addition, the growth of the Niagara Cluster is also lagging behind that of BC. **Between 2009 and 2019, Niagara's real GDP grew by only 9.7%, compared to Kelowna's real GDP growth of 41.4%.** This disparity is all the more significant when one takes into account that the Niagara Region has some robust built-in advantages, such as being close to a much larger population base, having the Niagara Falls, an iconic asset that serves as an international attraction, and having substantial room for capacity growth.
4. The **wine industry has a critical role to play as the catalyst** to the Niagara Cluster's economic development potential. For example, if Niagara had the same economic growth rate as an advanced wine cluster such as Kelowna, then it is estimated that **investment in the regional economy would have been \$4 billion more** between 2009 and 2019. This increase in investment produces economic benefits for other industries in the region and the Niagara economy more broadly.
5. Ultimately, with Kelowna's real GDP growth rate experienced from 2009 to 2019, the Niagara Region's real GDP in 2019 would have been **\$4.5 billion** more than what was realized. **Cumulatively, over the course of 2009 to 2019, the Niagara Region would have experienced an additional \$20.5 billion in real GDP.** This disparity represents a clear economic development challenge for the Niagara Cluster. Nevertheless, overcoming this challenge provides an opportunity to win the support and ambitions of the population of the Niagara Region and the province as a whole.
6. The wine industry in Ontario has become entrenched due to the unique microclimate conditions of the Niagara Region. Niagara is responsible for **90% of grape production in Ontario.** The region is also the largest wine production region in Canada, responsible for **80% of Canada's total grape and wine production.** Investing in Niagara's wine region will have an impact on an economically sustainable sector, beyond Ontario's borders extending to Canada's wine industry as a whole.
7. Foreign competitors such as Australia, The United States and France protect their own markets with domestic market shares by volume of 82%, 60%, and 87% respectively. Increasing the Ontario wine sector's domestic market share by sales of 33% to that of British Columbia's domestic market share by sales of 47% could provide an additional \$70 million in GDP for the current year and **more than \$800 million in additional GDP** over a ten-year period to Ontario's economy.



Key Takeaways (Cont'd)

8. The wine industry plays a critical role in driving tourism and visitation amongst high-end, long-haul travellers. In New Zealand, it is estimated that wine tourists spend approximately 50% more than general tourists. Translated to Ontario, this could imply that the wine tourists in the Niagara region **contributed approximately an additional \$350 million than what would otherwise be the case for general tourists to the Region.**

Niagara's tourism economy currently suffers from a lack of extended stays, and as the wine industry and Niagara's Cluster experiences and amenities continue to premiumize, the growth potential for the Niagara tourism economy will continue to grow.

9. Global best practices include:

- Dominating domestic market share.
- Connecting wine industries and tourism to create world class destinations.
- Competitive tax policies that incentivize investment in the wine sector.
- Incentivizing and supporting capital investment in agriculture and hospitality

10. The Ontario and Canadian governments are critical partners not only with the Ontario wine sector, but also with other key industries within the Niagara Cluster. Government championing of the wine sector and other regional industries is a key element found in the best-in-class wine regions around the world. The department of agriculture is often the key point of contact with the wine sector in other leading jurisdictions. Given its familiarity with agricultural practices, it is generally in the best position to orient government on how to best regulate the wine sector, while maintaining the goal of sector expansion and addressing broader sector needs – as opposed to a primary preoccupation of extracting economic rents. For instance, in Australia the wine industry is overseen by the Department of Agriculture, Fisheries, and Forestry, and in France it is overseen by the National Institute for Agriculture and Seafood Products.

11. Wine regions play a key role in creating a higher standard of living in uniquely beautiful landscapes. Wine is a unique economic engine that promotes growth while preserving the desirable local character of the region. A thriving wine industry serves as a key catalyst for economic development, providing **compelling communities for housing**, and would help create jobs in the Niagara region.

12. The wine industry is uniquely suited to leverage Niagara's **existing infrastructure** (such as education and transportation) to **facilitate its future growth.**

Niagara's post-secondary institutions, namely Brock University and Niagara College together employ over 8,400 people. Additionally, the University of Niagara Falls is scheduled to welcome new students in 2024. Overall, the Niagara Cluster can continuously gain from the economic benefits of post-secondary institutions. In the United States, research and education specialists in the wine industry contribute **over \$200 million in economic activity.**

Additionally, the Niagara Region is primed for growth as it has a solid foundation of a strong infrastructure network, which includes four major highways, five international border crossings into the United States, two major commercial vehicle border crossings, three international airports within 100km, and nearby access to Ontario's largest port. A strong foundation of infrastructure is essential for growth of the wine sector. In Rioja, Spain, **the transportation network accounts for 21% of the economic benefits of supply chain** performance of the wine industry.



Key Takeaways (Cont'd)

13. The wine industry plays a critical role in maintaining the Greenbelt. The industry provides one of the best uses of land within this protected region. **In Canada, only 0.03% of arable land is used for vineyards.** The Ontario wine industry resides within a unique microclimate that enables grapes for premium quality wines to grow. As only 0.53% of arable land on earth is currently used for wine production, Ontario has a significant economic asset for potential growth. Grapes are one of Ontario's highest value crop, a market force, and incentive that allocates land to its most lucrative use while simultaneously preserving the Greenbelt.
14. The Wine economy not only helps to enhance **Niagara's existing cultural amenities**, such as the Shaw Festival, but also creates interest and demand for additional cultural experiences, ranging from festivals, eco-tourism, and agritourism. In Germany, **wine tourists spend 15%-25% of their expenditures** on entertainment.





Section 2: Introduction

2. Introduction

2.1. Background

The objective of this white paper is to develop a quantitative and qualitative analysis to communicate the potential value of the Niagara Region wine industry. The white paper aims to explore three main hypotheses:

- Ontario's premium wine industry is an economic engine; its success is an important driver to the Niagara Region reaching its full commercial potential as a community.
- There is a gap between global best practices to grow wine regions around the world and the practices currently found in Ontario
- Implementing leading best practices in Ontario could uncover important economic benefits enabling further competitiveness and sector growth.

To explore these hypotheses and measure the impact of the wine industry in the Ontario Region three key layers of economic analysis were conducted. Our approach speaks to the current impact by conducting an Input-Output model, a comprehensive impact through an analysis of adjacent sectors and consultations, and a comparative impact by performing a jurisdictional scan looking for best practices.

- **Economic Impact Modelling:** The core analysis of the wine sector and wine sector ecosystem is an economic footprint assessment, which is conducted using an Input-Output model that estimates the potential impact of a change (e.g., investment, industry expansion, etc.) to an economy. Notably, the wine sector is composed of four subsets of the wine industry: grape production, wine production, distribution and wine wholesalers, and wine retailing. Additionally, included in the overall impact of the wine production supply chain is transportation and warehousing. The Niagara wine sector ecosystem includes industries from the travel, hospitality, transportation, culture, and entertainment sectors.
- **Impact Analysis:** To complement this quantitative analysis, we extend our analysis to discuss broader economic uplift stemming from the sector to show how the wine sector's growth in Niagara could provide additional general economic uplift. The impact analysis includes data from research papers, peer scanning, and comparative analysis. Additionally, ten stakeholders were consulted for feedback and insights. Stakeholders included leaders in the Niagara region such as elected officials, representatives of industry and education, and select business operators within the tourism and winery sectors. Stakeholders provided input on the current business climate, the major strengths and sustainable growth barriers, the role of the wine sector in enabling growth and strategies that could support the industry and region. The Region's reliance on and recognition of the sector's importance is evident in the stakeholder interviews.
- **Jurisdictional Scan:** Finally, we look to globally leading practices. A jurisdictional scan was conducted to compare and contrast Ontario's wine ecosystem, partnerships, and maturity with five peer jurisdictions (British Columbia, California, Oregon, Australia, France). We reviewed secondary literature, official policies, and other resources to perform the jurisdictional scan. The scan identifies differentiated tax and financial interventions and benefits associated with the identified economic interventions. The purpose of the jurisdictional scan is to understand whether Ontario's practices are in line with best-in-class wine sector practices.



In addition to these three key layers of analysis, we sought insight from a group of wine industry and community leaders (“The Coalition”) through a series of workshops. The Coalition aims to build a shared vision for the Region, foster collaboration and coordination, and responsible development. It should be noted that the views and expressed opinions of coalition members do not represent in whole or in part the views or opinions held by Deloitte.

Based on our analysis, the wine sector provides an opportunity to drive economic growth in the Region today and tomorrow. Grape-growing and winemaking are not only significant contributors to the regional, provincial, and national economies today, their future ongoing success is essential to the region reaching its full growth potential. A thriving premium wine sector creates the headroom for many other adjacent sectors to reach higher, attracting human capital, investment and higher end tourism that attracts visitors with a willingness to spend more on the immersive experiences a wine economy can deliver.

As the reputational capital of the region increases accompanied by a growing realization of the quality of life it offers (manifested through increased visitation), wealth in the region will appreciate via both new dollars coming into the area and asset appreciation for those dollars already invested there.

With Canada’s largest urban area perched along the shores of Lake Ontario less than a two-hour drive (by car) away, increased GO service coming onstream, an expanded airport, and a hovercraft soon to be shuttling visitors into the area, the Niagara region is poised for growth. Premium wines and wineries, agritourism, culinary experiences, recreational opportunities such as scenic bike trails dotted with quaint rural villages and charming main street shops, golf and cultural attractions are the ingredients for not only a premium wine sector, but a premium regional experience that wine underpins.

2.2. Study Contents and Structure

The outcomes of our research and study are structured in six sections:

- Section 3 (The Region Today) introduces the Niagara Region and the Ontario Wine Sector.
- Section 4 (The Wine Sector and Adjacent Sectors) presents the Economic Footprint Assessment and other structural benefits.
- Section 5 (The Wine Sector Challenges and Opportunities) presents the challenges identified in the wine sector and other regional challenges in Niagara.
- Section 6 (Missed Opportunity) introduces the cost of lost opportunities, as well as the opportunity that exists to Ontario if the wine sector overcomes existing challenges.
- Section 7 (Conclusion) concludes the paper.

A case can be made that wine, its economic value, and its potential with the right policies in place can help Niagara, Ontario, and Canada benefit economically. It has only just begun to realize its full potential. To this end, we offer an economic whitepaper that errs on principles of conservatism to measure its current impact today, leverages comprehensiveness to capture its accretive symbiotic relationship with adjacent sectors and informs with comparative analysis across other wine-making jurisdictions to identify best practices and draw inspiration from those wine economies that are thriving.

A large waterfall cascading over a rocky cliff into the ocean under a blue sky with white clouds. The water is white and frothy as it falls, creating a misty spray at the base. The rocks are dark and jagged, and the ocean is a deep blue-green color. The sky is a vibrant blue with scattered white clouds.

Section 3: The Region Today

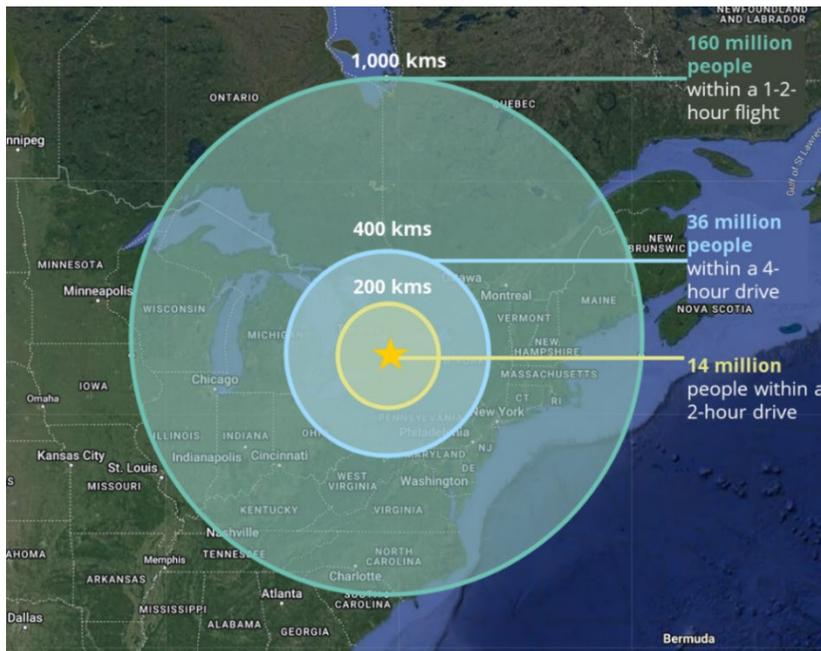
3. The Region Today

The Niagara Region Today

The Niagara Region, home to the iconic Falls and privileged to have a micro-climate suitable for grape-growing holds a unique opportunity to build an ecosystem that brings together different industries that promote sustainability, desirability, and human capital formation in the Province.

The Niagara Region is made up of 12 local municipalities and enjoys unique economic characteristics that distinguish it from other communities.² Moreover, as seen in Figure 4, approximately 160 million people are within a 1-2 hour flight of Niagara, highlighting Niagara’s prime location to attract tourists from many regions. In 2016, the Niagara Region was designated as a Foreign Trade Zone point (Canada’s first designated Foreign Trade Zone Point), and as a result industries in the Region can benefit from a cheaper and faster access to foreign markets. Approximately \$100 billion worth of Canada/United States trade flows through the Niagara Region each year.³ Some of Niagara’s key sectors identified by the Niagara Economic Development association include manufacturing, agri-business, tourism, finance, insurance, and real estate. In 2021, the Niagara Real GDP (an inflation-adjusted measure that calculates the value of all goods and services) was \$15.9 billion.⁴

Figure 4: Niagara’s Prime Location to Attract Tourists



Additionally, one of the Niagara Region’s main advantages is the quality of life it offers its residents. For example, the Region’s presence of various recreation activities, strong community belonging, unique geography and environment, access to quality education, and actions to support affordable housing makes it a unique place to live.⁵

²Local Municipalities. (n.d.). Niagara Region, Ontario. Retrieved January 13, 2023, from <https://www.niagararegion.ca/government/municipalities/default.aspx>

³ Economy. (n.d.). Bonjour Niagara - Ressources Communautaires Francophones. Retrieved January 13, 2023, from <http://www.bonjourniagara.com/vivre/en/employment/economy/#:~:text=Agri-business%20is%20a%20fundamental%20pillar%20of%20Niagara%E2%80%99s%20economy.>

⁴ Economic Indicators. (n.d.). Niagara Economic Development. Retrieved January 13, 2023, from <https://niagaracanada.com/data/economic-indicators/>

⁵ Living in Niagara 2020. (n.d.). Retrieved April 17, 2023, from <https://www.livinginniagarareport.com/>

Despite these novel features, The Niagara Region is facing a series of economic challenges that could limit its potential. As a result of the COVID-19 pandemic and the Region's traditional reliance on immigration and tourism, the Niagara Region witnessed shutdowns, business restrictions, significant layoffs, and loss of income.⁶ With tourism at a complete standstill, other sectors and local economy had been exposed significantly. The COVID-19 economic disruption displayed an economic vulnerability. An area of concern is that Niagara's GDP per capita is significantly lower than Ontario and is not forecasted to catch up.⁷

The Niagara Region's economy is challenged to re-grow and rebound and capitalize on its established industries and tourism offering. The Niagara Region's economy has an established base of tourism, manufacturing and services-oriented industries that work together to support one of Canada's premier tourism offerings. Although Niagara Region has an established base of tourism, it will need to be expanded and revitalized with new offerings to help meet current challenges. Additionally, with a lower cost of living compared to other regions such as the GTA, leaders consulted believe the Region is ready for more investment.

The Ontario Wine Sector Today

Ontario saw the first plantation of grapes and winemaking in 1811. Ontario's first winery was established in 1866 on Pelee Island and Niagara's first winery was established in 1873.⁸ Today, in Ontario, vineyards span from Prince Edward County through the Niagara Peninsula to Lake Erie North Shore.⁹ The Ontario wine sector is made up of entrepreneurs, leading wineries of different sizes with a range of total revenue, profit margins, number of employees, and number of years operating in the industry. Currently, Prince Edward County has 22 wineries, Lake Erie North Shore 13 wineries, and the Niagara Region has 185 wineries.¹⁰ The industry is largely represented by the Ontario Craft Wineries which advocates for over 100 wineries across Ontario and provides a leading voice for small and medium-sized VQA winery members.

Deloitte and VQA Ontario conducts an annual survey on the performance of the wine and grape industry. Figure 5 showcases the survey result related to the distribution of wineries by sales cohort in 2019. The sector¹¹ is heavily represented by smaller wineries, with total sales of \$0 million to \$5 million.¹²

⁶ Niagara Region. (n.d.). Niagara Covid-19 Business Impact Survey Part 2.

⁷ Niagara Economic Update. (n.d.). Niagara Economic Development. Retrieved January 13, 2023, from <https://niagaracanada.com/data/reports/>

⁸ History - Wine Country Ontario. (2020b, July 2). Wine Country Ontario. <https://winecountryontario.ca/history/>

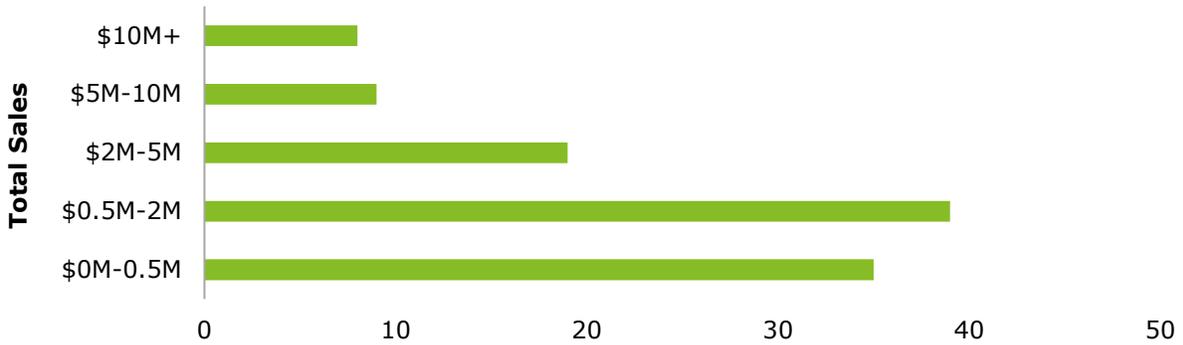
⁹ Wine Industry. (n.d.). The Canadian Encyclopedia.

¹⁰ Prince Edward County - Wine Country Ontario. (2022, May 6). Wine Country Ontario. <https://winecountryontario.ca/region/prince-edward-county/>

¹¹ The study was developed and administered by VQA Ontario and Deloitte. The Ontario Wine and Grape Industry Performance 2019 Study involved winery respondents that account for an estimate of 96% of all wine made in Ontario. Not all wineries in Ontario are accounted for in the survey.

¹² *Ontario Wine and Grape Industry Performance Study*. (2020, March). VQA Ontario and Deloitte. https://ontariocraftwineries.ca/wp-content/uploads/2022/07/2019_Industry_Benchmarking_Study_Final.pdf

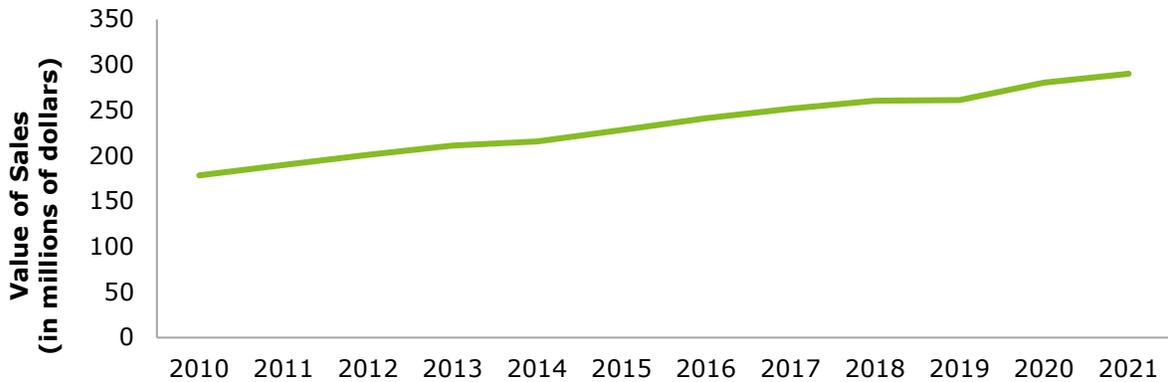
Figure 5: Wineries by Sales Cohort



Source: VQA Ontario and Deloitte Study

Despite facing many challenges, the Ontario wine sector has grown in the past ten years. As seen in Figure 6, the total value of sales of wine in Ontario wine industry has trended upwards. With supportive public policy, the right preconditions for entrepreneurship and investment can allow the sector to continuously grow and drive positive economic prospects to the Province. Unlike comparative jurisdictions, which have dominated their domestic markets and experienced a decline in volume of sales, the Ontario wine sector still has room to grow capacity by gaining more domestic market share from imported wines.

Figure 6: Value of Sales of Canadian Wine in Ontario



Source: Statistics Canada

Key Takeaway

The **wine industry delivers consistent and impactful revenue streams**. Between 2007/2008 to 2020/2021 the Ontario wine sector sales volume for Canadian products had an **Annual Growth Rate of 3.2%**. **This compares with a 1.5% real GDP growth for the broader Ontario economy in that time period**. Overall, the industry's growth in revenues is relatively consistent over time. This makes the wine industry not only reliable for economic contribution, but its stability also serves as an anchor for any future economic development strategy.



The Niagara Wine Sector Today

The Niagara region has a leadership role in Ontario's wine sector. The Niagara Wine Sector is nestled between Lake Ontario to the North and Lake Erie to the South, and benefits from the convergence of meteorological, pedological and topographical conditions that is the Niagara Peninsula. The sector benefits from the Northern micro-climate suitable for growing the kinds of grapes that make wine production possible. Niagara is responsible for 90% of grape production in Ontario.¹³ Additionally, Niagara makes up 80% of Canada's total grape and wine production, making it the largest production region in Canada.¹⁴ Some of the most notable players in the Niagara Region, as outlined by the Niagara Economic Development association include Andrew Peller Limited, Henry of Pelham Family Estate Winery, Vineland Estates Winery, and Arterra Wines Canada.¹⁵

The wine industry in Niagara is one of Canada's most renowned grape-growing and winemaking regions. The growth of independent wineries and authorized wine merchants has further led to an ongoing expansion in Ontario and other parts of Canada. The wineries in the Niagara Region are growing, maturing, and building its reputation domestically and internationally. Currently, the perceived quality of Ontario wine, its reputational capital, belies its success and regard in competitions. The Niagara Peninsula represents 53% of all the labels designated with state appellation for Ontario VQA Wines in 2022, showing the importance and the potential of Niagara Wine in VQA.¹⁶ Additionally, as seen on Table 1 an Ontario wine won the Decanter World Wine Best in Show award in 2018, 2021 and 2022. Moreover, an Ontario wine also won the Decanter World Wine Platinum award in 2018, 2020 and 2021.¹⁷ Overall, the Ontario Wine Industry is one of the leading wine regions in Canada with high-quality wine and a strong market.

Table 1: Decanter Awards

Decanter Awards¹⁸ – Best in Show



Flat Rock Cellars – Nadja's Vineyard Riesling Wine (2022 winner)

13 Regional Quick Facts. (n.d.). Niagara Economic Development. Retrieved January 13, 2023, from <https://niagaracanada.com/data/regional-quick-facts/>

14 Ibid.

15 Ibid.

16 2022 Annual Report - Ontario Wine Appellation Authority. (2023, February 10). Ontario Wine Appellation Authority. <https://vqaontario.ca/annual-reports/2022-annual-report/>

17 Decanter World Wide Awards. (n.d.).

<https://awards.decanter.com/DWWA/2020/search/wines?award=Best%20in%20Show&competitionType=DWWA&country=Canada>

¹⁸ Decanter world wide awards. Decanter World Wide Awards. (n.d.). Retrieved March 15, 2023, from <https://awards.decanter.com/>



Hidden Bench Estate Winery – Felseck Vineyard Chardonnay Wine (2021 winner)



Thirty Bench Wine Makers – Small Lot Cabernet Franc Wine (2018 winner)

Decanter Awards – Platinum



Inniskillin - Riesling Icewine (2021 winner)

Wayne Gretzky Estates – No.99 Vidal Icewine (2021 winner)

Peller Estates - Andrew Peller Signature Series Riesling Wine (2021 winner)



Peller Estates - Andrew Peller Signature Series, Oak Aged Icewine Vidal Blanc (2020 winner)

Ravine Vineyard Estate Winery – Brut Wine (2018 winner)

Wayne Gretzky Estates – No.99 Vidal Icewine (2018 winner)



Trius Winery - Rosé Brut Wine (2018 winner)

Thirty Bench Wine Makers - Small Lot Steel Post Vineyard Riesling Wine (2018 winner)

The wine industry is well positioned to support the Niagara Region and the Province on its path to growth. For example, it can attract more tourists searching for an immersive wine experience and looking to spend their money on accommodation, local merchants, products, and services in the area. Likewise, it can expand attractions by developing new tourism offerings in the form of elevated centers of wine production. To another extent, it can help drive research and educational activities pertaining to viticulture and motivate skills training and workforce development. Overall, the Region is well-positioned to rebound and regroup with wine as an anchor in the rejuvenation.

Key Takeaway

The wine industry in Ontario has become an entrenched, economically sustainable sector due to the unique microclimate conditions of the Niagara Region. Niagara is responsible for **90% of grape production in Ontario**. The region is also the largest wine production region in Canada, responsible for **80% of Canada's total grape and wine production**. Investing in Niagara's wine region will have an impact on an economically sustainable sector, beyond Ontario's borders extending to Canada's wine industry as a whole.



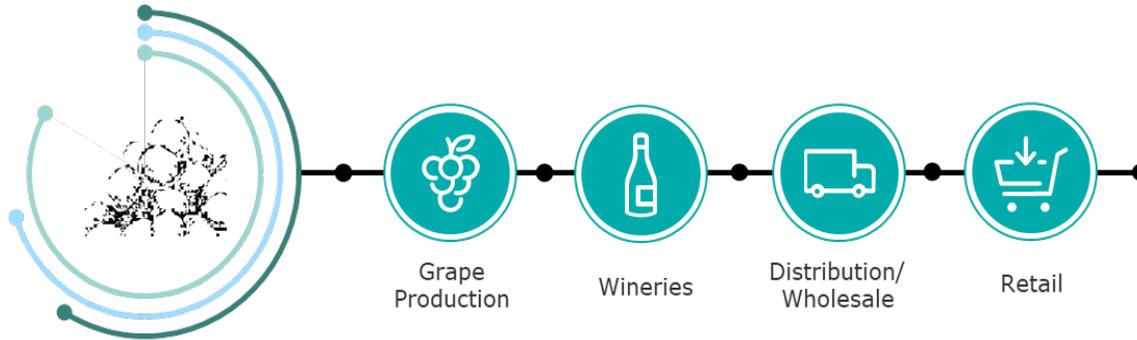


Section 4: The Wine Sector and Adjacent Sectors

4. The Wine Sector and Adjacent Sectors

To fully assess the economic impacts of Ontario’s wine sector, it is critical to also consider the various dimensions of economic attributes of the wine sector ecosystem. In this study, we consider the wine sector to be comprised of the following industries: ¹⁹

Wine Sector



Moreover, we consider the Niagara wine sector ecosystem to include the following industries:

Travel & Hospitality	Transportation	Culture & Entertainment
Traveller Accommodation	Air Transportation	Performing Arts, Spectator Sports, and Related Industries
Travel Services	Rail Transportation	Casinos
Hunting and Fishing Camps	Bus Transportation	Other Amusement and Recreation Industries
Food Services and Drinking Places	Other Transit and Group Passenger Transportation	

For the Niagara region, we developed an impact assessment on the wine sector ecosystem, as opposed to only the wine sector, since the industries within Niagara’s wine sector ecosystem are heavily interrelated with the wine sector itself. Because of this, it is important to assess the Ontario wine sector’s economic footprint within Niagara together with the wine sector’s adjacent industries.

Section 4.1 features the Economic Footprint Assessment, which provides analysis on the wine sector’s economic contribution to the Province and Canada, as well as the wine sector ecosystem’s economic contribution to the Niagara Region. Following this is Section 4.2, which presents other structural benefits that the wine sector has to its adjacent sectors. This subsection, more specifically, includes

¹⁹ The Wine Retailing industry includes retailers outside the LCBO, such as The Wine Shop, Wine Country Vintners, and Wine Rack. By including these retailers, we also account for the downstream impacts of Ontario wineries through the retail and wholesale channels.

supplemental economic analysis that evaluates the economic uplift of other related sectors (i.e., next generation farming, related economic development, and construction, infrastructure, education, and next generation manufacturing).

4.1. Economic Footprint Assessment

Measuring Economic Contribution

To estimate the Ontario wine sector's economic contribution to the Province and Canada, as well as the wine sector ecosystem's economic contribution to the Niagara Region, this study uses an Input-Output (I-O) framework methodology. The I-O framework traces how capital investments and operating expenditures by the wine sector ripple through the regional, provincial, and national economies by creating demand for goods and services across all industries. This section presents quantitative estimates of the expected economic contribution in terms of GDP and employment, along with an overview of the analytical framework and modelling methodology used to derive the reported estimates. Appendix A provides a more detailed overview of Deloitte's I-O model and methodology.

Input-Output (I-O) models are used to simulate the economic impact of an expenditure on a given basket of goods and services or the output of one of several industries. Input-Output analysis uses data on the flow of goods and services among various sectors of the economy, and attempts to model how an expenditure, increase in demand, or investment ripples through a region's economy. This is done by mapping the production of products and services by each industry, and identifying the intermediate inputs used in the production of each final product or service used by consumers, sold as an export, or purchased by government. The model can then aggregate all of the employment and value-added impacts generated in the supply chain as commodities are produced. I-O models also consider the role of imports, which tie the supply chain to the global economy. This data is combined into a single model of the economy which can be solved to determine how much additional production is generated by a change in the demand for one or more commodities or by a change in the output of an industry.

Deloitte's I-O model has been configured using Statistics Canada's 2019 Supply and Use tables²⁰ and 2019 I-O multipliers²¹ to estimate Ontario's wine sector's economic contribution to Ontario and Canada, as well as the wine sector ecosystem's economic contribution to the Niagara Region.

In this study, economic contribution is estimated by applying Ontario-specific multipliers to capital investments and operating expenditures by Ontario's wine sector, as well as the wine sector ecosystem of the Niagara Region. The results presented in this section are measured in terms of:

- **Gross Domestic Product (GDP):** Refers to the total unduplicated value of goods and services produced in the economic territory of a country or a region during a given period.²² In the context of our study, GDP serves as a measure of the total economic value added resulting from expenditures by the wine sector. For this study, we consider GDP at market prices as opposed to GDP at basic prices since the former (latter) is inclusive (exclusive) of imposed government taxes and subsidies on products.
- **Employment:** Estimated in terms of full-time equivalent ("FTE") positions for ongoing employment (i.e., employment contribution associated with annual expenditures). Full-time equivalent positions are counted according to their duration and not according to whether they were employed on a full-time or part-time basis.

Furthermore, economic contribution is assessed at three levels:

²⁰ Statistics Canada (2022). Surveys and statistical programs, 15-602-X. Supply and Use Tables.

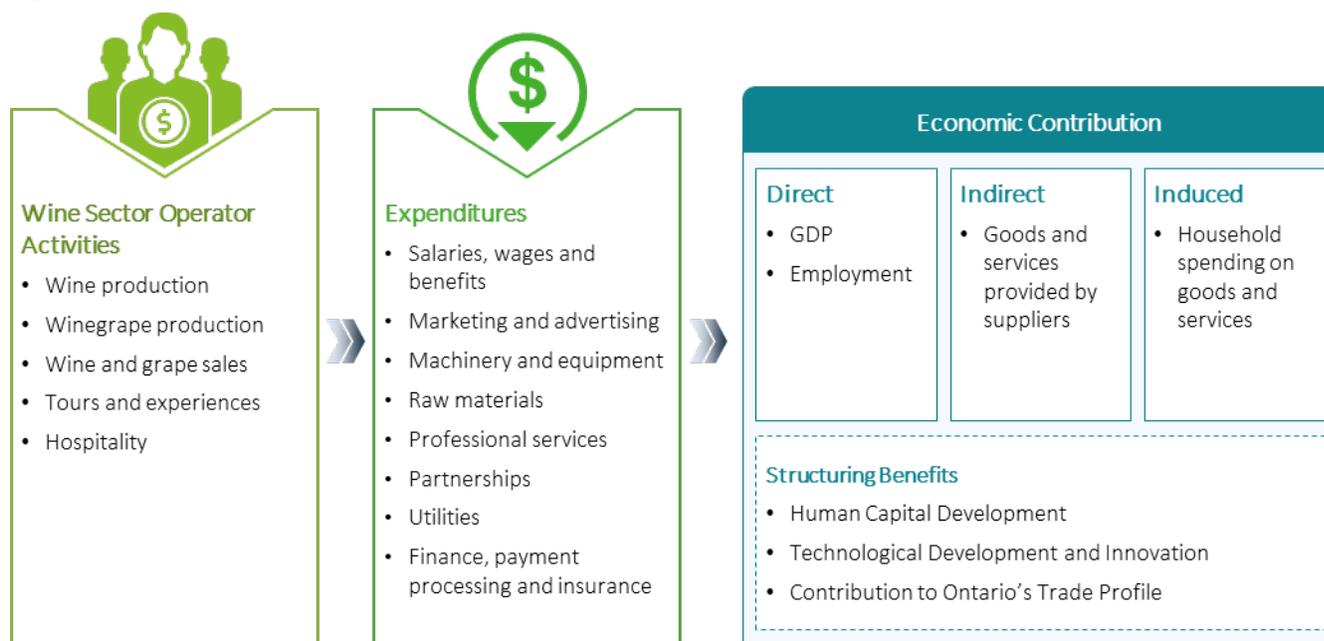
²¹ Statistics Canada (2022). Table 36-10-0595-01. Input-output multipliers, detail level.

²² Statistics Canada (2023). Glossary. Gross Domestic Product.

- **Direct contribution:** represents the economic value added that is directly related to capital investments and operating expenditures in the wine sector. For example, this includes the employment and income of employees directly involved in the wine sector.
- **Indirect contribution:** represents the economic value added resulting from the demand for materials and services that the wine sector generates in supplier industries. For example, this includes economic activity generated in the agriculture, transportation, hospitality, and professional service sectors as a result of demand for materials and services generated by wine sector operators.
- **Induced contribution:** represents the general income effects associated with the expenditure of wages earned as a result of the wine sector’s direct and indirect economic contributions. For example, this includes economic activity stimulated by the purchase of goods and services at the household level resulting from the wine sector’s direct or indirect contribution.

In this study, total economic contribution is based on the direct, indirect, and induced effects. Figure 7 illustrates how these impacts occur.

Figure 7: Economic Contribution Framework



When determining the footprint of the wine sector, Deloitte estimated an economic profile based on data from Statistics Canada.²³

To ensure the most accurate assessment, we eliminated to the largest extent possible double-counting of inputs from each industry within the defined sector. This approach thereby veers us towards more conservative estimates of the Ontario wine sector’s economic contribution.

All impacts in this section are reported in Canadian dollars in terms of current prices. No cost escalation was considered.

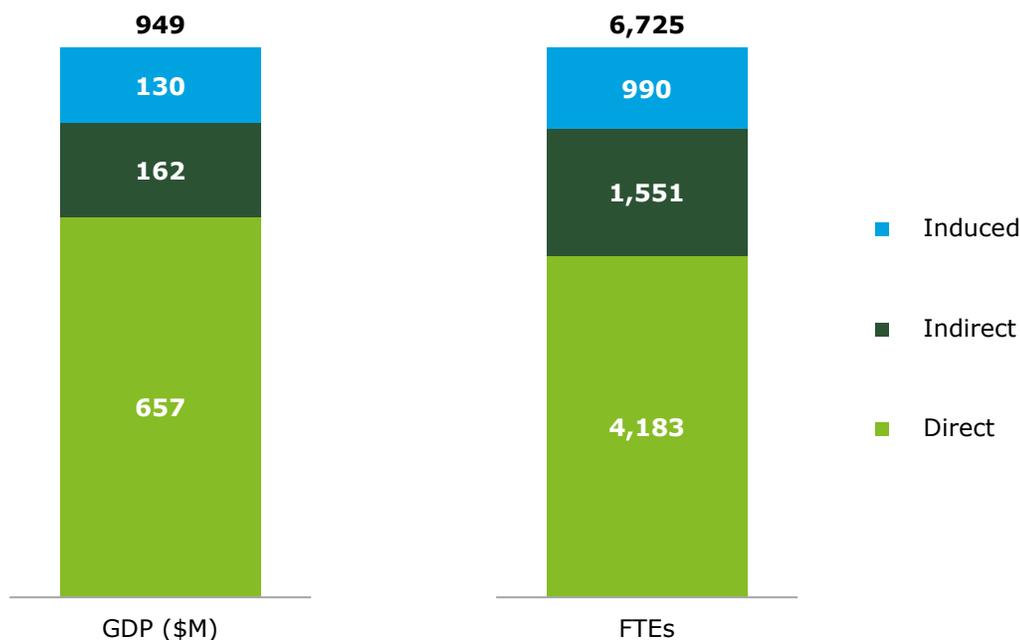
Economic Contribution from Ontario’s Wine Sector to the Province

While Ontario’s wineries are predominately located in the Niagara Region, to provide a comprehensive assessment of the sector’s economic contribution, it is valuable to evaluate all of the Ontario wine

²³ Statistics Canada (2022). Surveys and statistical programs, 15-602-X. Supply and Use Tables. Calculations by Deloitte.

sector's impact to the Province, regardless of geographic location of its wineries. Within the province of Ontario, in terms of direct, indirect, and induced economic contribution, it is estimated that, in 2019, the wine sector contributed **\$949 million to Ontario's GDP**.²⁴ Moreover, Ontario's wine sector sustained an estimated employment of **6,725 FTEs within the Province**. See Figure 8 for a summary of these results.

Figure 8: Ontario Wine Sector's Contribution to the Province



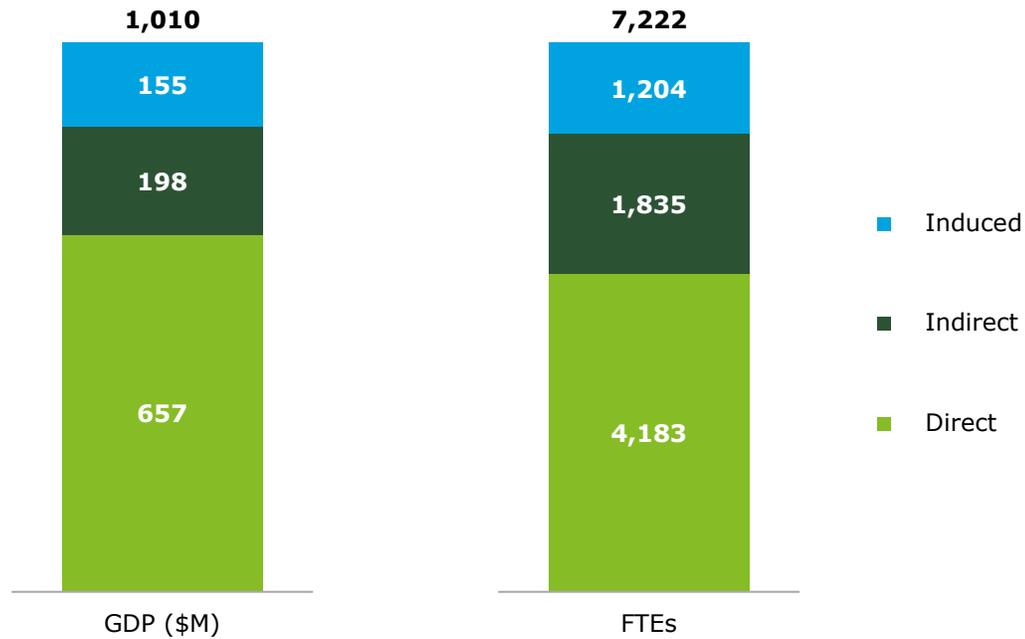
Economic Contribution from Ontario's Wine Sector to Canada

Similar to measuring the economic contribution of Ontario's wine sector to the Province, we can also determine the contribution of such to Canada. Accounting for the direct, indirect, and induced economic contribution, it is estimated that, in 2019, the wine sector contributed just over **\$1.0 billion to Canada's GDP**. Moreover, Ontario's wine sector sustained an estimated employment of **7,222 FTEs within Canada**. See Figure 9 for a summary of these results.

It is important to note that the reported economic contribution to Canada contains the reported economic contribution to Ontario. In other words, the difference between the Ontario wine sector's economic contribution to Canada and that to Ontario is the Ontario wine sector's economic contribution to all other Canadian provinces and territories. For instance, this includes economic activity featuring wine distributors of Ontario-produced wine based in other provinces and territories. Our results show that Ontario's wine sector contributes \$61 million to other provinces and territories, while sustaining an estimated employment of 497 FTEs within other provinces and territories.

²⁴ Given that wines are highly taxed products, GDP impacts also incorporate final demand taxes on products that are paid for by consumers on domestically produced wines.

Figure 9: Ontario Wine Sector’s Contribution to Canada

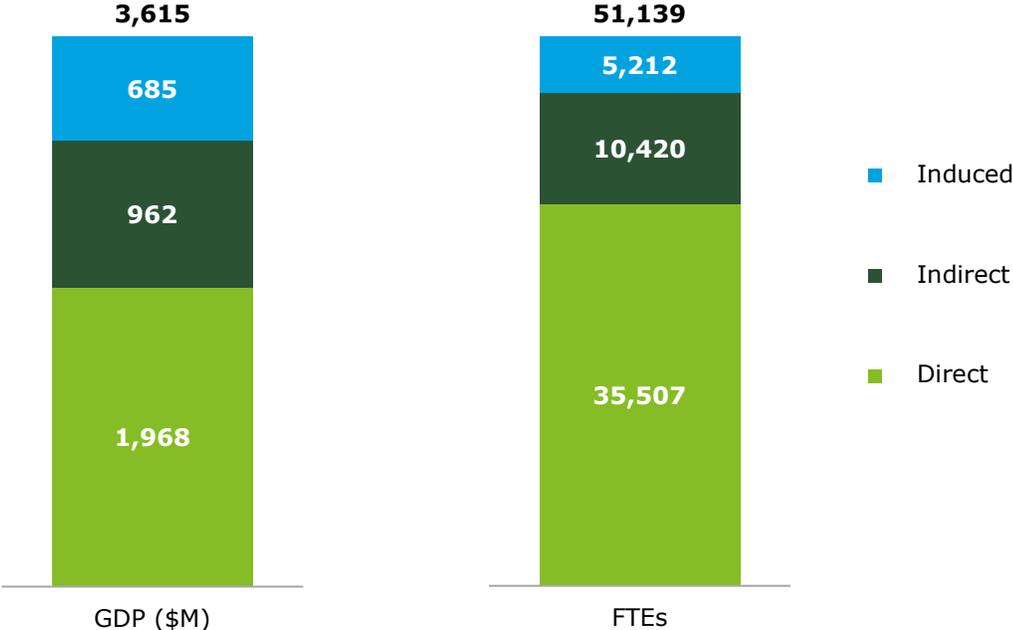


Economic Contribution of Niagara’s Wine Sector Ecosystem

The impact of an industry is greater than just the aggregated economic contribution stemming from its production and sales. It is valuable to measure its impact within a broader ecosystem of industries. The Niagara region’s wine sector ecosystem represents a unique set of industries that are heavily interrelated. As such, it is important to assess the Ontario wine sector’s economic footprint within the Niagara cluster in conjunction with the wine sector’s key set of adjacent industries. Accounting for the direct, indirect, and induced economic contribution, it is estimated that, in 2019, the wine sector ecosystem contributed **\$3.6 billion to the Niagara region’s GDP**. Moreover, Ontario’s wine sector ecosystem sustained an estimated employment of **51,138 FTEs within the Niagara region**. See Figure 10 for a summary of these results.

It is important to note that the reported contribution of Niagara’s wine sector ecosystem is greater than the reported contribution of Ontario’s wine sector to the Province and Canada. This is because our analysis on the Niagara region includes the economic contribution from relevant travel, hospitality, transportation, culture, and entertainment industries along with the wine sector industries. Whereas our analysis on the Province and Canada includes only the economic contribution from the wine sector industries.

Figure 10: Ontario Wine Sector Ecosystem’s Contribution to Niagara



Economic Footprint Assessment – Concluding Thoughts

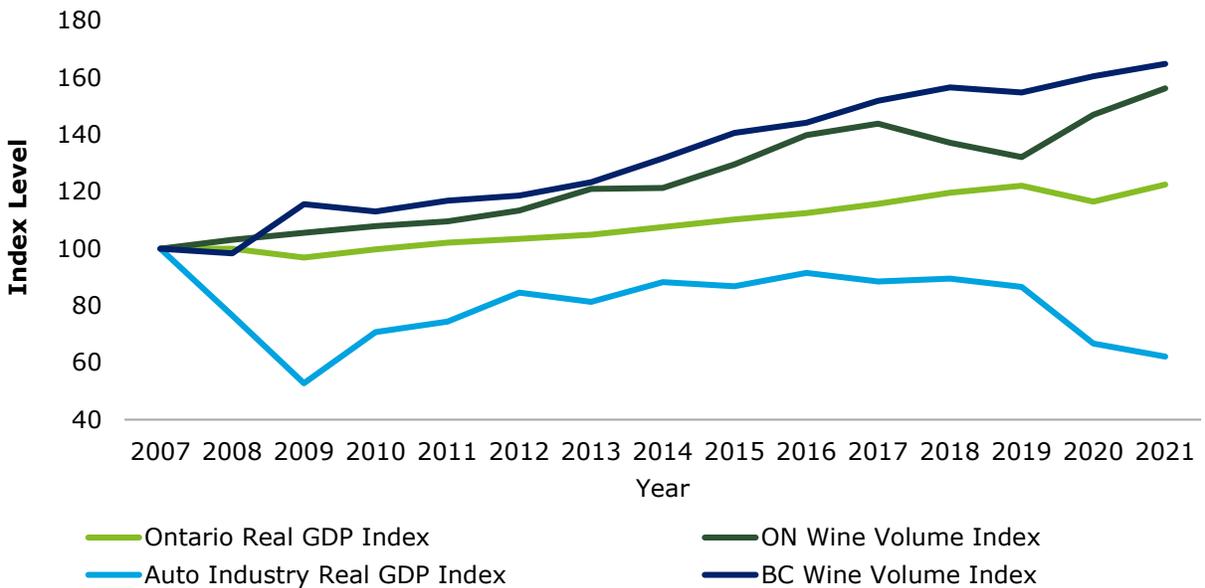
The wine sector stands as an enabler and driver of economic growth in Ontario. It has achieved some success and has the potential for further expansion. At 0.017% of Ontario’s GDP,^{25 26} the wine sector is still small relative to other well-established sectors, like the auto industry, which accounts for 1.94% of Ontario’s GDP.²⁷ Despite this, Ontario’s wine sector is punching above its weight by growing more rapidly due to increased consumer interest. Ontario’s wine sector has demonstrated adept resourcefulness and buoyancy. The economic growth opportunities that the sector presents would provide additional benefits to the Province and Canada in terms of both jobs and economic activity.

²⁵ Statistics Canada (2022). Table 36-10-0402-01 Gross domestic product (GDP) at basic prices, by industry, provinces and territories (x 1,000,000).

²⁶ Statistics Canada (2022). Table 16-10-0117-01 Principal statistics for manufacturing industries, by North American Industry Classification System (NAICS) (x 1,000). Calculations by Deloitte.

²⁷ Government of Ontario, Ontario Economic Accounts - Ontario Data Catalogue (2023). Table 16 Ontario Production by Industry at 2007 Prices.

Figure 11: Economic Activity in the Ontario Wine Sector is Punching Above its Weight



Source: Statistics Canada, Ontario Economic Accounts, Deloitte Calculation

Future growth of Ontario’s wine sector can be maintained if the right policies are in place, impediments to growth are removed, and incentives between government and the wine sector are aligned. Governments have several tools, such as taxation and subsidization policies, at their disposal that could be used to support the wine sector’s growth momentum. For example, British Columbia’s provincial government has established conducive policies that have promoted growth to British Columbia’s wine sector.

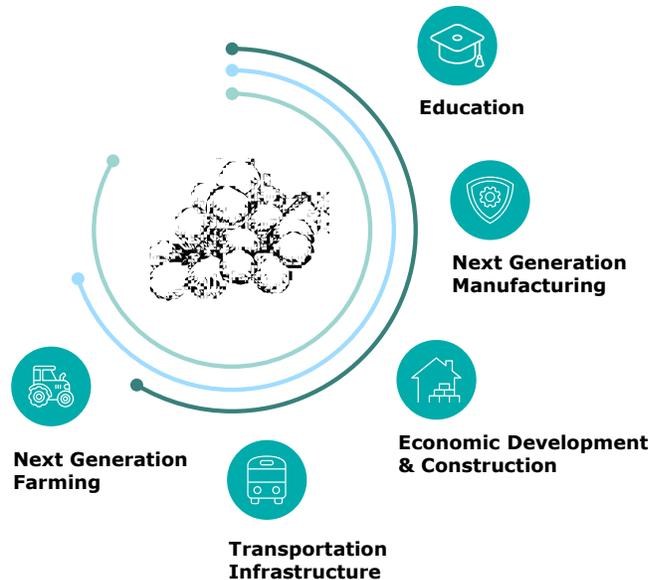
4.2. Other Structural Benefits

Section 4.2 analyzes the additional benefits the wine sector can provide and offers a comprehensive view of the impact of the sector to the economy.

The objective of the supplemental economic analysis is to provide an extension of the analysis to cover other types of beneficial impacts beyond what the economic footprint assessment can provide. When thinking of the wine industry it is important to remember that the industry does not stand alone, but instead drives opportunity across the economy (i.e., adjacent sectors as identified by Figure 12) through many forms of interaction (i.e., vectors).

Through our research the wine sector was shown to be a catalyst for growth in other sectors of the economy. Figure 13 summarizes and highlights some case studies of these impacts identified in leading wine-producing jurisdictions around the world.

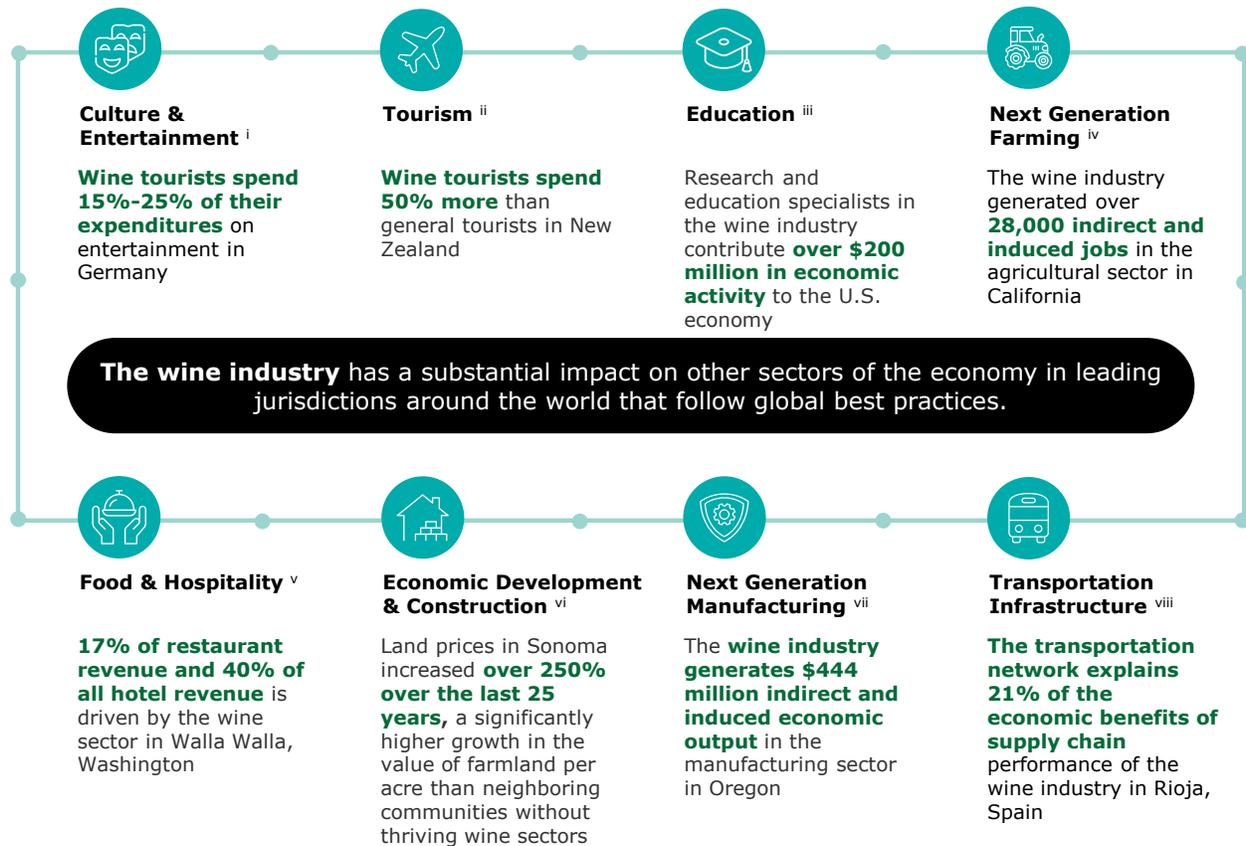
Figure 12: Wine Sector & Adjacent Sectors



In this section we present additional case studies and data points. The section is organized as follows:

- **Overview of the adjacent sector** (i.e., next generation farming, economic development and construction, infrastructure, education, and next generation manufacturing).
- **The opportunity and impact of the adjacent sector to the Niagara Region.**
- **Economic vectors** identified for the adjacent sector (how the sectors interact and drive opportunity).
- **Data points or case studies** to support the magnitude, direction, and support of economic impact.

Figure 13: The Wine Industry as a Catalyst for Growth in Other Leading Jurisdictions²⁸



²⁸ i. Tafel, M., & Szolnoki, G. (2020). Estimating the economic impact of tourism in German wine regions. *International Journal of Tourism Research*. <https://doi.org/10.1002/jtr.2380>

ii. NZIER. (n.d.). Alcohol beverages industry A thriving, durable industry adding value to New Zealand's financial, environmental and social economies.

iii. 2022 Economic Impact Study of the American Wine Industry Methodology. (2022, September 19). Wine America. <https://wineamerica.org/economic-impact-study/2022-american-wine-industry-methodology/>

iv. California Wine Industry - WineAmerica Economic Impact Study. (n.d.). WineAmerica. <https://wineamerica.org/economic-impact-study/california-wine-industry/>

v. Storchmann, K. (2008, June). THE ECONOMIC IMPACT OF THE WINE INDUSTRY ON HOTELS AND RESTAURANTS IN WALLA WALLA. *American Association of Wine Economists*. https://wine-economics.org/wp-content/uploads/2012/10/AWE_WP18.pdf

vi. Santos M., & Richman, V. (2021). Financial impact of high land prices on the viability of winery startup projects. *International Journal of Wine Business Research*. https://www.researchgate.net/publication/351704291_Financial_impact_of_high_land_prices_on_the_viability_of_winery_startup_projects/link/60cb9a74458515dc178cadbe/download

vii. Oregon Wine Industry - WineAmerica Economic Impact Study. (n.d.). WineAmerica. <https://wineamerica.org/economic-impact-study/oregon-wine-industry/>

viii. Diaz-Reza, J. R., Garcia-Alcaraz, J. L., Martinez-Loya, V., Avelar-Sosa, L., Jimenez-Macias, E., & Blanco-Fernandez, J. (2018, January 4). Impact of Infrastructure and Production Processes on Rioja Wine Supply Chain Performance. <https://pdfs.semanticscholar.org/4954/50b2960d70e0bcf4433b551546b46ac52d5e.pdf>

4.2.1. Next Generation Farming

Overview

Next Generation Farming refers to the integration of cutting-edge technology and sustainable farming practices into the agricultural industry. The potential for the wine sector to act as a driver of innovation and sustainability is significant. Grape production per acre provides one of the highest values relative to other agricultural products in the Canadian economy²⁹, and strong investment in this grape crop and wine sector could aid in the integration of cutting-edge technology and sustainable farming practices into the agricultural sector as a whole. The Niagara wine sector is uniquely positioned to leverage the benefits of next generation farming and the sector could be a lead adopter of new technology.

Around the world, arable land dedicated to vineyards make up only 0.53% of land use.³⁰ In Canada, only 0.03% of arable land is used for vineyards.³¹ Niagara is bestowed to have a unique blend of climate, geography and grounds found in the region making it a home to some of the best growing conditions in the country, with an abundance of quality soil perfectly suited for growing grapes.^{32 33} The moderating effects of Lakes Ontario and Erie and the protective influence of the Niagara Escarpment create an area of moderate temperatures during the spring and summer growing seasons. Niagara is a top grape-growing region because of its rich, fertile soils and distinctive microclimate, making it very suitable for grape cultivation.³⁴ There are vines on 13,600 acres in Niagara.³⁵ When combined with advanced technology, next generation farming in the Niagara wine sector has the potential to significantly increase yields, reduce costs, and improve sustainability.

²⁹ Canada, A. and A.-F. (2022, November 10). Government of Canada invests in wine industry. [www.canada.ca. https://www.canada.ca/en/agriculture-agri-food/news/2022/11/government-of-canada-invests-in-wine-industry.html](https://www.canada.ca/en/agriculture-agri-food/news/2022/11/government-of-canada-invests-in-wine-industry.html)

³⁰ Calculation accounting for the figures that the world has 1,387.06 million hectares of arable land as of 2023 (The World Bank), and vineyards account for 7.3 million hectares as of 2020 (International Organization of Vine and Wine).

³¹ Calculation accounting for the figures that Canada has 38,235,000 hectares as of arable land as of 2023 (The World Bank), and vineyards account for 12,565 hectares (Wines of Canada).

³² Soil and climate make Niagara grape heaven | the western producer. (n.d.). Retrieved March 7, 2023, from <https://www.producer.com/news/soil-and-climate-make-niagara-grape-heaven/>

³³ What you should know about fruit production in Ontario. [ontario.ca. \(n.d.\). Retrieved March 7, 2023, from https://www.ontario.ca/page/what-you-should-know-about-fruit-production-ontario](https://www.ontario.ca/page/what-you-should-know-about-fruit-production-ontario)

³⁴ Grape Growers of Ontario. Explore our Grape Growing Regions. (n.d.). Retrieved March 21, 2023, from <https://grapegrowersofontario.com/grape-industry-in-ontario/explore-our-grape-growing-regions/>

³⁵ Ibid

Key Takeaway

The wine industry plays a critical role in maintaining the Greenbelt. The industry provides one of the best uses of land within this protected region. **In Canada, only 0.03% of arable land is used for vineyards.** The Ontario wine industry resides within a unique microclimate that enables grapes for premium quality wines to grow. As only 0.53% of arable land on earth is currently used for wine production, Ontario has a significant economic asset for potential growth. Grapes are one of Ontario's highest value crop, a market force, and incentive that allocates land to its most lucrative use while simultaneously preserving the Greenbelt.



Next generation farming represents a sophisticated approach to agriculture that leverages cutting edge technology to optimize crop yields and minimize environmental impact. This technology-driven approach being undertaken by agricultural sectors like the wine sector can help to dispel the outdated image of a non-innovative industry.

Next Generation Farming's impact on the Niagara Region

Stakeholders made the observation that the Niagara wine region can be a driver of innovation and sustainability and a great example of an agricultural sector leading the way in the adoption of next generation farming practices. In the paragraphs that follow, we describe how the wine industry can support next generation farming in the Region by leveraging the grape crop's high resilience and economic value as well as taking advantage of the new agricultural technologies that readily apply to the region's wine sector.

Grapes provide greater economic enhancement to crop growers

The grape crop has shown to be an important and profitable asset to the agritech and next generation farming sectors in various regions³⁶, offering sustainable and reliable economic benefits to the sector. The high demand for the crop, combined with its versatility and ease of growth, as well as the efficient viticulture methods associated with it, make it an economically attractive option for crop growers.

Demonstration 1: The crop's economic value

Canada wide, grapes represent the 4th highest produced crop at 104,2031 metric tons (12.3% of the total production) and in 2021, grapes were the most imported fruit in Canada with a dollar value of \$669 million.³⁷ The United States displays a similar trend in terms of the high economic value of the grape crop to its region. Grapes are the highest-value fruit crop grown in the U.S., with over 70% of the grapes produced being used in wine.³⁸

In Ontario more than 90% of the grapes grown are produced on the Niagara Peninsula. In recent years, higher value grape cultivars have been planted much more frequently.³⁹ This is in response to

³⁶ Phuong, A. M. (2022, August 12). Innovations in grape growing technology increase revenue. Vietnamagriculture. Retrieved March 15, 2023, from <https://vietnamagriculture.nongnghiep.vn/innovations-in-grape-growing-technology-increase-revenue-d329740.html>

³⁷ / Gouvernement du Canada. (2022, December 22). Government of Canada. Language selection - Agriculture and Agri-Food Canada / Sélection de la langue - Agriculture et Agroalimentaire Canada. Retrieved March 10, 2023, from <https://agriculture.canada.ca/en/sector/horticulture/reports/statistical-overview-canadian-fruit-industry-2021>

³⁸ Sara Delheimer. (n.d.). National wine day: Growing great grapes. National Institute of Food and Agriculture. Retrieved March 10, 2023, from <https://www.nifa.usda.gov/about-nifa/blogs/national-wine-day-growing-great-grapes#:~:text=Grapes%20are%20the%20highest%2Dvalue,and%20economically%20from%20traditional%20regions.>

³⁹ What you should know about fruit production in Ontario. ontario.ca. (2022). Retrieved March 10, 2023, from <https://www.ontario.ca/page/what-you-should-know-about-fruit-production-ontario>

an increase in the demand for wine of higher quality. In 2022, the farm gate value of grapes was \$104 million.⁴⁰

One of the highest value agricultural products in Canada is grapes for winemaking, which is rooted in Canadian soil and produces high-quality wines as well as significant economic benefits for all Canadians⁴¹

Demonstration 2: Grape crop resilience

Grapes are an excellent example of how a crop can provide greater economic enhancement to growers. While most crops in the area require significant quantities of water, grapes tend to be more resilient. Grapes require less water, and some varieties fare better in extreme environments of heat in comparison to other crops. This resilience provides a greater economic benefit for crop growers on the account that they are not required to invest as much in water resources to maintain yield.

As mentioned, some grape varieties can grow better in the heat, which is a significant advantage for crop growers. They can grow grapes even in locations with less-than-ideal weather, which again leads to greater economic enhancement. As a result, grape crops have become an attractive option for crop growers looking to maximize their profits while minimizing their expenses.⁴²

Demonstration 3: Precision viticulture

Precision viticulture is the use of advanced technologies and digital systems to monitor and control vineyard operations with the goal of increasing quality and yields. It involves the application of real-time data from sensors and satellite imagery to measure, monitor, and adjust vineyard operations in order to optimize vine health and grape production.

According to a study by Caffini in 2022, precision viticulture has the potential to reduce costs related to labor, fertilizer, and irrigation while optimizing grape quality. Moreover, it can detect problems in the vineyard before they become significant. The application of precision viticulture technology can also bring benefits in terms of sustainability by reducing water and chemical use. The wine sector can help adopt this technology creating opportunities for viticulture developers to integrate this innovation, which can lead to improved efficiency, product quality, and reduced costs. This, in turn, can result in job creation and a more sustainable approach to farming.⁴³

Demonstration 4: Premium wine could enable higher priced grapes

Grape growing has long been an important crop for many regions around the world. In recent years, the trend towards premium wine production has led to increased economic benefits for grape growers.

⁴⁰ Statistics Canada (2023) Area, production and farm gate value of marketed fruits (x1,000). <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210036401&pickMembers%5B0%5D=1.9&pickMembers%5B1%5D=2.2&pickMembers%5B2%5D=4.5&cubeTimeFrame.startYear=2018&cubeTimeFrame.endYear=2022&referencePeriods=20180101%2C20220101>

⁴¹ Canadian wine and grape industry contributes \$11.57 billion in economic impact to Canadian economy. Wine Growers Canada. (n.d.). Retrieved March 21, 2023, from <https://www.winegrowerscanada.ca/canadian-wine-and-grape-industry-contributes-11-57-billion-in-economic-impact-to-canadian-economy/>

⁴² Lozano, J. (2018, September 23). Wine grapes become alternative crop in dry conditions. Lubbock Avalanche-Journal. Retrieved February 14, 2023, from <https://www.lubbockonline.com/story/news/state/2018/09/22/wine-grapes-become-alternative-crop-in-dry-conditions/10363501007/>

⁴³ Caffini, T. (2022, October 28). Precision Viticulture: What are the advantages of its application? Macchine per Protezione delle Colture: entra nel mondo di Caffini. Retrieved February 14, 2023, from <https://www.caffini.com/en/blog/post/precision-viticulture-what-are-the-advantages-of-its-application.html#:~:text=On%20the%20one%20hand%2C%20precision,value%20of%20the%20end%20product>

By producing high-quality grapes for premium wines, growers can command a higher price for their crops, leading to greater economic enhancement overall.⁴⁴

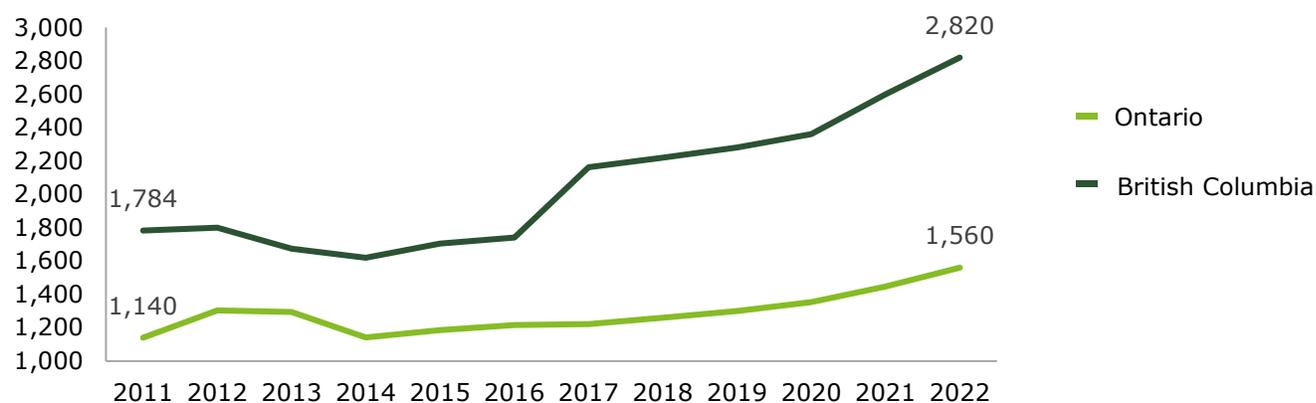
The primary beneficiaries of the higher prices of grapes are the grape growers themselves. By producing high-quality grapes for premium wines, growers can command a higher price for their crops, leading to increased profits and improved living standards. This can also create new employment opportunities within the grape-growing industry.

In addition, wine producers and distributors also benefit from the higher prices of grapes. By using the best grapes, they can produce better quality wine, which can lead to increased sales and profitability. This, in turn, leads to larger investments in the wine industry and further economic growth.

Lastly, consumers benefit from the higher prices of grapes as well. While they may have to pay more for premium wines made from these grapes, they get to enjoy better quality wine, which enhances their overall experience.

Ontario has the potential to benefit from higher priced grapes. As seen in Figure 14, British Columbia has a higher grape farm gate value per ton compared to Ontario. Policy can play a key role in achieving higher value for grapes in Ontario.

Figure 14: Fresh Vinifera, Fresh French Hybrid Grapes Farm Gate Value per ton



Source: Statistics Canada

Spearheading efforts to integrate sustainable practices into agriculture

Modern viticulture methods have shown to be a pioneer in developing sustainable agricultural practices such as reducing water and fertilizer use, improving soil quality, and promoting biodiversity many of which have the potential to be integrated into other areas of agriculture - improving efficiency and boosting economic output. Canada has made some biodiversity national targets in response to the UN's Strategic Plan for Biodiversity 2011-2020, consisting of four goals and nineteen targets, to increase conservation and awareness of biodiversity. These include better land use planning management, environmentally sustainable management across sectors, improving information about biodiversity ecosystem services, raising awareness of biodiversity, and encouraging participation in

⁴⁴ Reiger, T. (2017). Premiumization for Higher Grape Pricing Read more at: <https://winesvinesanalytics.com/news/article/193641/Premiumization-for-Higher-Grape-Pricing> Copyright © Wines & Vines. Retrieved from <https://winesvinesanalytics.com/news/article/193641/Premiumization-for-Higher-Grape-Pricing>

conservation.⁴⁵ The sustainable agricultural practices implemented by the wine sector can help Canada move closer to achieving its targets and goals for biodiversity conservation and protection.

Demonstration 1: Utilizing precision agriculture

Precision agriculture uses technology to analyze and measure the soil, water, and air quality of each individual crop field to tailor the application of inputs, such as fertilizer and water, to maximize efficiency and reduce waste.⁴⁶

Data collected from sensors and mapping tools can be used to optimize irrigation and fertilization in crops other than grapes, leading to higher yields and greater sustainability. Similarly, fermentation and bottling technologies can be applied to other types of produce, such as fruits and vegetables, to increase efficiency and quality. By taking advantage of these technologies, farmers in Niagara and Ontario can ensure their output meets the highest standards, while also reducing their environmental impact.

Demonstration 2: Investment in sustainable viticulture practices

Investment in sustainable viticulture practices such as canopy management, irrigation management, soil and water conservation, integrated pest management, and the conservation natural resources represents a clear benefit for next generation farming.⁴⁷

The benefits of sustainable viticulture practices are not limited to the wine industry. Other agricultural sectors can also benefit from these practices. For example, sustainable farming techniques can help reduce the use of synthetic fertilizers and pesticides in crop production. This not only helps to conserve natural resources, but also reduces the risk of environmental pollution and health hazards associated with the use of synthetic chemicals.

Technological advances in viticulture are being integrated into other agricultural sectors

The wine industry utilizes modern technology such as automation, robotics, and artificial intelligence to allow for precision vineyard management and better harvesting to produce higher-quality wines. Many of these technological advancements have potential to be useful in other areas of agriculture.

Demonstration 1: Automation and Robotics

Automation and robotics are being used to improve efficiency in the wine sector.

A European research consortium, consisting of Spanish, French, Italian, and German universities, and companies is working on the development of unmanned robots for vineyard management. The robots are equipped with non-invasive advanced sensors and artificial intelligence systems to provide fast and reliable information about the state of the vineyards. This information includes vegetative development, water status, production, and grape composition.⁴⁸

Automation and robotics products in the wine sector show the potential to advance the wine sector by providing producers with powerful tools to improve the competitiveness of their farms. By predicting

⁴⁵ 2020 biodiversity goals and targets for Canada. [biodivcanada.ca](https://www.biodivcanada.ca/national-biodiversity-strategy-and-action-plan/2020-biodiversity-goals-and-targets-for-canada). (n.d.). Retrieved March 15, 2023, from <https://www.biodivcanada.ca/national-biodiversity-strategy-and-action-plan/2020-biodiversity-goals-and-targets-for-canada>

⁴⁶ Caffini, T. (2022, October 28). Precision Viticulture: What are the advantages of its application? *Macchine per Protezione delle Colture: entra nel mondo di Caffini*. Retrieved February 14, 2023, from <https://www.caffini.com/en/blog/post/precision-viticulture-what-are-the-advantages-of-its-application.html#:~:text=On%20the%20one%20hand%2C%20precision,value%20of%20the%20end%20product>.

⁴⁷ Irrigation management of wine grapes in Ontario. [ontario.ca](https://www.ontario.ca). (n.d.). Retrieved March 10, 2023, from <https://www.ontario.ca/page/irrigation-management-wine-grapes-ontario>

⁴⁸ Science Daily. (2015, January). A robot to help improve agriculture and wine production Retrieved from <https://www.sciencedaily.com/releases/2015/01/150128113713.htm>

grape production or ripeness, vine growers can assess quality without touching the crop, ultimately leading to better yields and higher quality wines. This project also showcases the potential for next generation farming technologies to be applied in other industries, enabling farmers to work more efficiently and sustainably.

Demonstration 2: Artificial Intelligence

Artificial intelligence (AI) is being used in the wine industry to help growers cope with the challenges presented by climate change. The Government of Canada is committed to investing in initiatives to promote AI adoption across the economy and society as it is a driver of economic growth and good jobs.⁴⁹ This includes robotics, smart sensor technology, and machine learning to monitor vineyard growth and predict grape maturity based on berry cell death. Smart sensors are also being developed to monitor the effects of smoke contamination and taint. AI is being applied to big data collected by vineyards to develop specific models based on machine learning to predict wine aroma profiles based on weather and management information. These integrated AI systems can be used to modify vineyard management strategies, such as canopy management and irrigation scheduling, to target specific consumer preferences or wine styles.⁵⁰

The integration of robotics, smart sensor technology, and machine learning in viticulture management can be extended to other crops, allowing farmers to work more efficiently and sustainably. By monitoring crop growth and predicting their maturity, farmers can adjust their management strategies to target specific consumer preferences, improve yields and quality. Furthermore, the use of AI can help farmers reduce their environmental impact by optimizing water and pesticide use, reducing waste, and promoting more sustainable farming practices.

Demonstration 3: Alignments to broader sustainability goals

Protecting, restoring, and promoting sustainable use of terrestrial ecosystems, sustainably managing forests, and halting biodiversity loss, represent the focuses of the Sustainable Development Goal 15 of the 2030 Agenda for Sustainable Development.⁵¹ Investment in grape-growing and next generation farming brings enhanced economic value to these sustainability goals as wine's investment in agricultural best practices aligns with broader UN-stated ecological and biodiversity goals.

4.2.2. Economic Development and Construction

Overview

The economic development and construction sector play an important role in the growth of a region. It encompasses the development of new houses, commercial buildings, and other real estate to satisfy the demand of a growing population. Construction activity drives several direct benefits to a community through factors such as supply chain uplift in the purchase of materials to creation of jobs. In the Region, construction and related services are becoming increasingly important as some of Niagara's emerging sector includes architectural, engineering, and related services.⁵²

⁴⁹ Innovation, S. and E. D. C. (2022, June 22). Government of Canada launches second phase of the Pan-Canadian Artificial Intelligence Strategy. Canada.ca. Retrieved March 15, 2023, from <https://www.canada.ca/en/innovation-science-economic-development/news/2022/06/government-of-canada-launches-second-phase-of-the-pan-canadian-artificial-intelligence-strategy.html>

⁵⁰ Fuentes et al. (2020) .How artificial intelligence (AI) is helping winegrowers to deal with adversity from climate change. Retrieved from <https://ives-openscience.eu/7131/>

⁵¹ United Nations. (n.d.). Biodiversity and ecosystems | Department of Economic and Social Affairs. United Nations. Retrieved March 21, 2023, from <https://sdgs.un.org/topics/biodiversity-and-ecosystems>

⁵² Emerging Sectors | . (n.d.). Niagara Economic Development. Retrieved January 13, 2023, from <https://niagaracanada.com/key-sectors/emerging-sectors/>

Economic Development and Construction's impact on the Niagara Region

Stakeholders noted that the Niagara Region, unlike other regions in Canada which are saturated and have limited space for growth, has material space for development of mixed real estate. Below we outline how the wine sector can support economic development and construction in the Region by encouraging investment and economic development in a community, promoting demand for land to establish vineyards and wineries, and increasing the value of real estate in an area.

Spur investment and development in a community and region (especially rural)

Rural development can be a challenge. Research has shown that wineries can be a source of rural growth and have a positive impact in driving economic development in a community. Cvijanovic et. al (2018) concluded that the wine industry has a positive impact on rural development by positively influencing productivity, growth, and investment in the rural economy. Growth in the wine sector may also influence innovation, migration, and household growth in an area.⁵³ The impact of the wine sector on investment and development can range from an increase in business investment and development to revitalizing a local city's culture. Additionally, the wine sector provides a unique opportunity to connect agri-tourism to a community's development and promote a lifestyle that boosts locally sourced goods and recreational opportunities in a resident's footsteps.

Demonstration 1: Piedmont Triad, North Carolina

Research has shown that the increase of North Carolina wine sector has diversified the economy, stimulated jobs, and created new market opportunities in rural communities. A survey conducted with 633 households located in North Carolina Piedmont Triad further validates residents' views on the perceived benefit of the spur of wineries in communities. The survey showed that most residents perceived that the Triad wineries have increased tourist spending (68% of residents surveyed), the variety of local businesses (57% of residents surveyed), and the variety of cultural activities (54% residents surveyed). Additionally, most residents either saw an increase or a stable number of local businesses, jobs, and a benefit in the real estate and property tax.⁵⁴

The survey indicates that the key benefit that the wine sector has provided in the development of the region has been by primarily diversifying local businesses and cultural activities. In general, the diversification of local businesses and activities are important for the development and resilience of a community.

Demonstration 2: St. Catharines, Ontario

St. Catharines experienced a significant decline in the city's downtown core since the 1960s and 1970s. To address a declining downtown city core, and drive economic growth, the city invested significant public and private funds to its downtown Creative Cluster plan which included developing a wine sector cluster (i.e., the Energizing Niagara's Wine Country Communities plan). The aim was to develop a downtown cluster that would attract young people, tourists, and private investment. A key element of the Energizing Niagara's Wine Country Communities plan was to establish the Wine Route. To do so, St. Catharines worked with the Wine Council of Ontario to ensure that their downtown could support the wine industry and would be a place where private investment could take place. To align St. Catharines to the Wine Country brand and their broader aspirations, the city developed the Downtown Creative Cluster Master Plan which led to the urban-economic landscape change in St.

⁵³ Cvijanović, D., Novakovic, D. J., & Vojinović, Z. (2018). *Wine Industry as a Source of Rural Growth and Development*. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3103829

⁵⁴ *Are Neighbors Benefiting from Wine Tourism Development? Perceptions from the North Carolina Piedmont Triad | NC State Extension Publications*. (n.d.). <https://Content.ces.ncsu.edu/Are-Neighbors-Benefiting-From-Wine-Tourism-Development#:~:Text=First%2C%20neighbors%20of%20Triad%20w>. Retrieved February 13, 2023, from <https://content.ces.ncsu.edu/are-neighbors-benefiting-from-wine-tourism-development#:~:text=First%2C%20neighbors%20of%20Triad%20wineries%20are%20somewhat%20aware>

Catharines and both public and private investment in new infrastructure (totaling approximately \$400 million).^{55, 56}

Today, St. Catharines, by working with the Wine Council of Ontario, is part of the Ontario Wine Route, which guides visitors through different wine regions and allows tourists to have a unique travel experience.⁵⁷ The Ontario Wine Route is a connector which makes St. Catharines more than a city, and part of a wider region.

Demonstration 3: Kelowna, British Columbia

The number of wineries, retail sales in the wine sector, and share of volume of domestic wine volume consumed in British Columbia has been increasing in the past ten years as outlined in Appendix B.⁵⁸

Okanagan has approximately 86% of the province's vineyard acreage.⁵⁹ The Okanagan region is supported by strong infrastructure and education programs such as the Okanagan College and the University of British Columbia Okanagan Campus (additional information on Section 4.2.4). Okanagan and Kelowna are experiencing strong growth. Kelowna's population grew 12% from 2016 to 2021 and is one of the fastest growing census metropolitan areas in Canada.⁶⁰ Translated to Ontario, a strong population growth in the Niagara region spurred by a healthy wine sector would encourage significant investment and economic development.

Demonstration 4: Creating a higher standard of living

The wine industry has been a key catalyst for economic development and community transformation across the globe. In the United States, the development of the wine industry has been no different. Deng, Marlowe, Harrington (2023)⁶¹ allude to a study by Glass (2010) that evaluated this transformation and found that the enclaves in which the wine industry operates have seen an increase in population growth and new residential offerings. This finding is mirrored in later literature, such as Alonso (2016)⁶², which highlights the role of wineries in preserving and maintaining the rural landscape, promoting tourism, providing jobs, and sponsoring local events. Furthermore, three additional groups were identified as making significant contributions. These include educators, who are responsible for disseminating knowledge about the region and its products, reorganizers, those seeking to enhance the reputation of the region or its products, and engagers, operators who develop and strengthen collaborative relationships and networks locally.

The collective efforts of all these groups have been instrumental in providing compelling communities for housing and population growth. The proliferation of the wine industry has resulted in social, economic, and cultural benefits to the communities it serves, from providing jobs and economic stability to increasing the desirability of the area as a place to live.

⁵⁵ Deloitte did not independently verify this estimation.

⁵⁶ Kurylovich, D. (2019). *Deindustrialization and Economic Development in St. Catharines, Ontario*. School of Urban and Regional Planning Department of Geography and Planning Queen's University. https://qspace.library.queensu.ca/bitstream/handle/1974/26604/DmitryKurylovich%20MRP_FinalDraft_Sept18.pdf?sequence=1

⁵⁷ Ibid.

⁵⁸ *Viticulture*. (n.d.). Central Okanagan Economic Development Commission. Retrieved March 7, 2023, from <https://www.investkelowna.com/key-sectors/viticulture/>

⁵⁹ *Okanagan Valley Wine Region of British Columbia* | Wine BC. (n.d.). Wines of British Columbia. Retrieved March 7, 2023, from <https://winebc.com/discover-bc-wine-country/okanagan-valley/>

⁶⁰ Statistics Canada (2023). Table 17-10-0135-01 Population estimates, July 1, by census metropolitan area and census agglomeration, 2016 boundaries.

⁶¹ Dixit, S. K. (2023). *Routledge Handbook of Wine Tourism*. Routledge.

⁶² Alonso, A. D. (2016). Wineries' contribution to the local community: A stakeholder view. *International Journal of Economics and Business Research*, 12(4), 295. <https://doi.org/10.1504/ijebr.2016.081225>

Key Takeaway

Wine regions play a key role in creating a higher standard of living in uniquely beautiful landscapes. Wine is a unique economic engine that promotes growth while preserving the desirable local character of the region. A thriving wine industry serves as a key catalyst for economic development, providing **compelling communities for housing**, and would help create jobs in the Niagara region.



Increase demand for land to establish vineyards and wineries

In economic development, proximity has specific roles. When companies, governments, and customers are located close to one another, important clustering effects can occur. Researchers suggest that the amassing and coalescing of wineries in the same region creates economic value through beneficial economic clustering effects such as shared learning, improvement of process, and ability to obtain higher prices for products.

Clustering effects spur additional value-add which promotes economic development in a region such as enhanced land values that can promote growth and investment as asset values appreciate. Proximity to large urban areas alongside a thriving wine sector can be wealth creators as land appreciates and the area grows in attractiveness and desirability. The Niagara Region is in a unique position to benefit from the clustering effect of wineries.

Demonstration 1: Napa & Sonoma, California

As wineries cluster in a region, it leads to an increase in the demand and the price of land to establish vineyards and wineries. The land prices in wine growing regions around the world have been increasing over the past several decades. Hira and Swartz (2014) show that the value of farmland per acre is significantly higher in Napa and Sonoma compared to other regions in the United States.⁶³ In Sonoma since 1997, land price in the region increased by 250%, while the price of grapes (which is usually hypothesized as an indicator of land prices) rose by only 50%.⁶⁴ The high land prices can be attributable to cluster benefits, economic support in a region, social capital, entrepreneurship, and value of wines.

Demonstration 2: Hawkey's Bay, New Zealand

In the past 20 years, the Gimblett Gravels wine district in Hawke's Bay, New Zealand has transformed from an underutilized region to one of the most expensive winegrowing areas in the country. The area has been transformed as winemakers identified the area's ability to produce high quality red grapes, which led to an increase in the purchase of the land, followed by purposeful and strategic actions to build the region's wine reputation, and simultaneously increasing the perceived value of wine among

⁶³ Hira, A. and Swartz, T. (2014), "What makes Napa Napa? The roots of success in the wine industry", *Wine Economics and Policy*, Vol. 3 No. 1, pp. 37-53.

⁶⁴ Santos M., & Richman, V. (2021). *Financial impact of high land prices on the viability of winery startup projects. International Journal of Wine Business Research.*
https://www.researchgate.net/publication/351704291_Financial_impact_of_high_land_prices_on_the_viability_of_winery_startup_projects/link/60cb9a74458515dc178cadbe/download

consumers. Environmental, economic, political, and social factors have stimulated an increase in demand for land, increase in valuation of land, and development of a wine cluster.⁶⁵

Demonstration 3: Climate Change

Climate change is challenging many traditional wine regions to adapt their wine production. Overall, climate change can negatively affect the wine industry as weather patterns become more unpredictable and extreme. However, Canada may be in a better position than other wine countries. Ashenfelter and Storchmann (2014) forecast that climate change will impact land prices of wineries around the world and will realign winners and losers with winners being closer to North and South Poles.⁶⁶ Therefore, if Canada is able to adapt to changing weather and mitigate potential crop losses from extreme conditions the Canadian wine sector could be the beneficiary of changing climate patterns due to increasing temperatures, and other wine-growing regions becoming more scarce and challenged by climate change.

Community Desirability

Wineries and vineyards can have a positive impact on community desirability as demonstrated on the accretive effects in the value of the real estate of an area. Vineyards can help maintain an open agricultural space and preserve the character of an area which can support a strong real estate market.

Demonstration 1: Napa Valley, California

Overall, Napa housing prices are approximately 65% higher than the national average and 49% higher compared to California. Napa's average home prices are almost three times higher than the national average. Most real estate agents indicate that the Napa real estate market was resilient during the pandemic, and there has been an increase in demand post-pandemic. Additionally, Napa real estate prices are expected to increase approximately 30% in the next 10 years.⁶⁷

The property wealth of Napa Valley can be largely attributed to its agriculture, tourism, and local wineries. Napa Valley is a sought-after location for residents due to its strong infrastructure and good schools. About 34% of residents rent their houses and there is a strong demand for vacation rentals.⁶⁸ Napa Valley is a prime example of how a region can amplify its wealth through wineries and wine-related tourism.

Demonstration 2: Bordeaux, France

Bordeaux is the fifth most expensive city in France, behind Paris, Antibes, Annecy, and Lyon. The average sold price of a property in Bordeaux is currently 4,982 euros per square feet. The average price of a second-hand apartment in Bordeaux rose during the pandemic. Recently, Bordeaux became a target for remote workers and retirees due to its natural endowments, architecture, and access to Paris.⁶⁹

Ontario wine regions, such as Niagara, have similar characteristics to Bordeaux with regards to its natural endowments and proximity to large urban cities (e.g., Toronto). The Region has the potential to be a large attractor of remote workers, retirees, and investors.

⁶⁵ Overton, J. and Heitger, J. (2008), "Maps, markets and merlot: the making of an antipodean wine appellation", *Journal of Rural Studies*, Vol. 24 No. 4, pp. 440-449.

⁶⁶ Ashenfelter, O. and Storchmann, K. (2014), "Wine and climate change", *American Association of Wine Economists (AAWE)*, Working Papers 152, 10.22004/ag.econ.164854

⁶⁷ T, R. (2022, February 20). *All You Need To Know About Napa's Real Estate Market*. <https://www.california.com/all-you-need-to-know-about-napas-real-estate-market/>

⁶⁸ Ibid

⁶⁹ Rowlinson, L. (2022, July 26). Bordeaux and beyond: buyers head to France's south-west. *Financial Times*. <https://www.ft.com/content/0270433f-a7ca-42af-8978-d4e26974f872>

4.2.3. Infrastructure: Transportation and Visitor Support

Overview

Infrastructure is key to enhance the quality of life of residents, improve logistics for businesses, and develop a skilled workforce. Transportation is important to facilitate the movement of people and goods within an economy. Notably a strong transportation infrastructure is essential to sustain a successful wine sector.

Additionally, it can be noted that the wine sector can also support the development of new or enhanced infrastructure in many forms. For example, the wine sector could have a positive impact on visitor infrastructure by increasing the demand for accommodations, restaurants, and other leisure activities.

Infrastructure's impact on the Niagara Region

The continuous development of infrastructure, such as more efficient transportation will have a positive impact to the residents, and the tourism potential of the Region. Transportation will also support the growth of the Niagara wine region, allow the sector to attract more tourists and diminish transportation costs.

Moreover, the Niagara Region is already one of Canada's most famous natural attractions. The wine sector can support the Region in becoming a world class tourism destination by diversifying tourists' activities, promoting year-round tourism, encouraging tourists to stay longer and spend more.

Impact on transportation and infrastructure

Investment, construction, and maintenance of roads in rural areas is essential for a successful wine industry. A lack of development of transportation in an area could be a barrier of growth. Therefore, it is essential for a wine region to have a well-developed transportation system and roads.

Economic development in the wine sector also supports the development of other general infrastructure such as irrigation systems, which are essential for other industries such as agriculture, livestock farming, and aquaculture.

Demonstration 1: Construction & Redevelopment of Roads

In 2021, the Niagara Region approved a project to reconstruct the Lakeshore Road which provides both a commuter linkage between the Old Town to St. Catharines and has an agriculture and residential use. The first phase of the construction was between Four Mile Creek to Konzelmann Winery, and the second phase is between Townline Road to Konzelmann Winery. This project provided a positive impact by encouraging more wine tourism.⁷⁰

Similarly, the revitalization of the downtown in St. Catharines (further information in Section 4.2.2) so the city could re-route the Wine Route through the downtown in 2014 has had positive impacts in development of the city's transportation infrastructure. For example, St. Paul Street was converted from one-way to two-way traffic. The update of the flow of traffic was previously cited as an important development in previous studies undertaken by the city.⁷¹

Demonstration 2: La Rioja, Spain

Diaz-Reza et al (2018) analyzed the impact of infrastructure and transportation benefits within the supply chain of wineries in La Rioja, Spain. They found transport costs are positively affected by

⁷⁰ Reconstruction of Lakeshore Road (Regional Road 87) - Niagara Region, Ontario. (n.d.). Niagararegion.ca. Retrieved February 13, 2023, from <https://niagararegion.ca/projects/regional-road-87-construction/default.aspx>

⁷¹ Kurylovich, D. (2019). Deindustrialization and Economic Development in St. Catharines, Ontario. School of Urban and Regional Planning Department of Geography and Planning Queen's University. https://qspace.library.queensu.ca/bitstream/handle/1974/26604/DmitryKurylovich%20MRP_FinalDraft_Sept18.pdf?sequence=1

infrastructure, and a decrease in transport costs will automatically lead to economic benefits within the wine supply chain.⁷²

Demonstration 3: New irrigation system in the Barossa Valley region, Australia⁷³

In the Barossa Valley wine region of Australia, the government has invested in a new irrigation system to ensure that the region's vineyards have access to the necessary water resources. Some of the drivers for the delivery of additional water infrastructure include increased productivity in the wine sector and other primary industries and improved climate resilience of the wine industry.

This new irrigation system consists of a network of pipelines, pumps, and storage reservoirs, providing winemakers in the region with a reliable source of water for their vineyards. This investment into infrastructure helps to reduce water stress and improves the quality of the grapes, thus helping to support the growth of the local wine industry.

Visitor Support Infrastructure

In general, it has been shown that the wine industry helps diversify and grow tourism activities in a region. It attracts tourists looking to immerse themselves in wine's centers of production and spend their money on accommodation, local merchants, products, and services in the area. The activities can include winery edutainment which refers to several initiatives that educate individuals about the wine sector such as blending sessions, harvesting workshops, vineyard nature walks, and cooking classes which support tourism. Additionally, the growth in wineries can increase the demand for hospitality and tourism infrastructure, such as hotels, restaurants, and tasting rooms.

Demonstration 1: Walla Walla, Washington

A study conducted on the impact of the wine industry on hotels and restaurants in Walla Walla shows that no less than 17% of Walla Walla's restaurant revenue and approximately 40% of all hotel revenue in 2007 is driven by the local wine production. Studies suggest that the increase in demand is due to a growing number of wine tourists requesting accommodation and food services. The demonstration highlights the importance of the wine industry for the accommodation industry in Walla Walla and shows the importance of the wine industry in increasing demand for hospitality and tourism infrastructure.⁷⁴

Demonstration 2: Perceived potential in the "buy local" movement

During consultations, a stakeholder discussed how Niagara Parks has expressed their commitment to the promotion of local food and beverage, continuous inclusion of Niagara VQA wines, and has recently certified their restaurants under the Culinary Tourism program called 'Feast On'. This certification program encourages restaurants to source a minimum of 25% of their food and beverage products from Ontario producers.

The consultations also uncovered concerns about the scaling up of the buy local movement in Ontario. Many chefs are interested in buying local but there is a lack of leadership and opinion leaders to drive this initiative forward. Despite this, there is potential to build on this movement outside of Niagara and encourage more restaurants and chefs to embrace local food and beverage sourcing.

There is great potential to connect Niagara as a region through the promotion of local food and beverage. There is an opportunity to scale up the buy local movement, through the commitment from

⁷² Díaz-Reza, J., García-Alcaraz, J., Martínez-Loya, V., Avelar-Sosa, L., Jiménez-Macías, E., & Blanco-Fernández, J. (2018). Impact of Infrastructure and Production Processes on Rioja Wine Supply Chain Performance. *Sustainability*, 10(2), 103. <https://doi.org/10.3390/su10010103>

⁷³ Department of Primary Industries and Regions, S. A. (2023, February 13). New Water Infrastructure for the Barossa. PIRSA. Retrieved March 20, 2023, from https://pir.sa.gov.au/regions/new_water_infrastructure_for_the_barossa

⁷⁴ Karl, S. (2008). THE ECONOMIC IMPACT OF THE WINE INDUSTRY ON HOTELS AND RESTAURANTS IN WALLA WALLA. <https://ageconsearch.umn.edu/record/37358?ln=en>

leaders and opinion leaders, and encourage more chefs and restaurants to source their ingredients locally.

Investing in the local market has the potential to increase demand for visitor support infrastructure. The “buy local” movement is sustainable and can appeal to other tourists’ groups such as younger people. By promoting local food and beverage and encouraging chefs and restaurants to source their ingredients locally, it can create more job opportunities, and attract visitors, as well as boost the local economy. Additionally, it could lead to more culinary tourism opportunities and create a stronger connection between Niagara and other communities in Ontario.

Demonstration 3: Wine tourists spend more than non-wine tourists

Wine tourists tend to spend roughly 50% more on tourism than all tourists as shown by a study done in 2022 on New Zealand’s financial, environmental, and social economies by the New Zealand Institute of Economic Research.⁷⁵ Wine tourists likely have a higher income than other types of tourists, allowing them to spend more during their visits providing an opportunity for wineries and the local economy to capitalize on the higher spending capacity. While one cannot distinguish between tourists that specifically come for the purpose of wineries and those that come for the Niagara Falls, it does stand to reason that those that take extra time to go from the Falls to visit wineries in the Region will likely spend more than those that leave after visiting the Falls. Hence, any future tourism strategy should be integrated with the winery sector.

Increased spending by wine tourists increases the demand for visitor support infrastructure, such as accommodation, transportation, and entertainment options. This increased demand provides an opportunity for local communities to benefit from the influx of tourists, creating more job opportunities and improved services to accommodate these visitors.

In Ontario in 2019, tourists spent an average of \$259 in the Niagara Region.⁷⁶ It is estimated that annually there are 2.6 million wine tourists.⁷⁷ In New Zealand, it is estimated that wine tourists spend approximately 50% more than general tourists. Translated to Ontario, this could imply that the wine tourists in the Niagara region contributed approximately \$350 million more than what would otherwise be the case for general tourists to the Region.

Key Takeaway

The wine industry plays a critical role in driving tourism and visitation amongst high-end, long-haul travellers. In New Zealand, it is estimated that wine tourists spend approximately 50% more than general tourists. Translated to Ontario, this could imply that the wine tourists in the Niagara region **contributed approximately \$350 million more than what would otherwise be the case for general tourists to the Region.** Niagara’s tourism economy currently suffers from a lack of extended stays, and as the wine industry and Niagara’s Cluster experiences and amenities continue to premiumize, the growth potential for the Niagara tourism economy will continue to grow.



⁷⁵ NZIER. (n.d.). Alcohol beverages industry A thriving, durable industry adding value to New Zealand’s financial, environmental and social economies.

⁷⁶ Government of Ontario (n.d.). Regional tourism profile. <https://www.ontario.ca/document/tourism-regions/region-2-niagara-canada>

⁷⁷ VQA Wines of Ontario, Wine Growers of Ontario, Ontario Craft Wineries (n.d.). Ontario’s VQA Wine & Grape Industry 2030 Vision. https://winecountryontario.ca/wp-content/uploads/2023/02/2030-Vision_Executive-Summary-web.pdf

Demonstration 4: Wine Routes

Gatti and Incerti (1997) highlight that wine routes have been key to increase the value of rural areas. Wine routes can be viewed as a cultural itinerary that complements the tourism strategy in a region and transforms rural areas from drive-throughs to tourism activities. In Europe, many countries such as France, Germany, Italy, and Portugal have established wine routes. These successful wine routes combine the natural vocation of an area for tourism and quality wine products and successfully link the wine sector and agriculture with rural and thematic tourism. Wine routes allow for communities to regain interest in the development of the countryside and could lead to growth in jobs and new professions. ⁷⁸ Ontario has its own wine route, and the positive impacts that the wine route can have in a region's development is seen in the St. Catharines case study in Section 4.2.2.

Demonstration 5: Wine Events & Festivals

Beverland, Hoffman and Rasmussen (2001) studied the evolution of events in the Australasian Wine Sector. The findings indicate that wine sector events evolve overtime, ranging from regional awareness events to brand enhancement and customer loyalty. The study highlights that regional wine events attract a significant number of tourists and help build loyalty to the region and its wineries. ⁷⁹

Key Takeaway

The Wine economy not only helps to **enhance Niagara's existing cultural amenities**, such as the Shaw Festival, but also creates interest and demand for additional cultural experiences, ranging from festivals, eco-tourism, and agritourism. In Germany, **wine tourists spend 15%-25% of their expenditures** on entertainment.



4.2.4. Research and Educational Activities

Overview

Education is key to attract talent, build human capital, and retain students in a region. Wine regions often are made up of a cluster of wineries and vineyards. The coalescing of businesses provides a clustering effect which encourages educational activities, research and development. Research has shown that investments have a profound impact on productivity within the wine industry, enhancing the potential for economic development opportunities.

Research and Educational Activities' impact on the Niagara Region

Encouraging the establishment and expansion of viticulture education programs will attract students from outside of the Niagara Region. Research has shown that Niagara's population of people in the 20-to-29-year age cohort has grown in the past 15 years and is the only age group where Niagara does not have population losses, which researchers hypothesize is due to its post-secondary

⁷⁸ Gatti, S., & Incerti, F. (1997). *The Wine Routes as an Instrument for the Valorisation of Typical Products and Rural Areas*. <https://ageconsearch.umn.edu/record/231431>

⁷⁹ Beverland, M., Hoffman, D., Rasmussen, M., (2001). *The Evolution of Events in the Australasian Wine Sector*.

institutions.⁸⁰ A strong wine cluster will encourage graduating students to remain in the Region, build the human capital, and contribute to a broader skill set.

Therefore, the wine sector can assist the Region in diversifying the local workforce, help build human capital, and support career development. Employment opportunities in the wine sector range from internships for students, allowing them to gain hands-on experience and build industry contacts, to full time positions.

Research and educational activities pertaining to viticulture and support in talent and career development

For the wine workforce, being taught in proximity to vineyards and producers is a key part of an enriched educational experience. As a result, the industry can be seen as a magnet for educational investment in new programs and facilities in communities.

Additionally, wine clusters encourage innovation in the sector and higher education institutions. Wine research and development (R&D) has been shown to have positive impacts on the industry and the economy. For example, a study conducted by the New Zealand Institute of Economic Research shows that R&D in the wine sector has contributed between 20-25% to the annual economic growth of the wine industry, a \$64.5 million boost to the national economy driven by higher productivity.⁸¹

Demonstration 1: Niagara College, Ontario

The Niagara College Teaching Winery offers certificates aimed at training students for the day-to-day responsibilities of managing and working within the wine industry.⁸² Niagara College also offers multiple opportunities for graduates to further their learning in Niagara Colleges' Wine Business Management, Hospitality and Tourism Management or International Business Management programs.

Niagara College also has a wine visitor and education center, a \$3.6 million state-of-the-art industry center. The center offers informative tours, and an information center to visitors as they explore the wine industry in Niagara.

Demonstration 2: Brock University, Ontario

The Brock University's Cool Climate Oenology and Viticulture Institute (CCOVI) is an internationally recognized research facility dedicated to viticulture. The institute offers the only program dedicated specifically to wine in cool climate regions in the world and works with over 100 wineries and grape growers in Ontario supporting the industry with research, education, and outreach.⁸³ Like Niagara College, it has dedicated facilities and programs that train and educate workers for the wine, tourism, and hospitality sector.

In 2014-15 a study conducted by the former MDB Insight (now Deloitte), shows that the CCOVI contributed more than \$91 million, 307 jobs to Ontario's economy, and more than \$4.7 million worth

⁸⁰ *Niagara's population retention efforts need to focus on a wider age range: researchers.* (2017, January 25). Brock University. <https://brocku.ca/media-room/2017/01/26/niagaras-population-retention-efforts-need-to-focus-on-a-wider-age-range-researchers/>

⁸¹ Torshizian, E., Maralani, M., & Isack, E. (2020). *Economic impact of research and development in the wine sector NZIER report to Bragato Research Institute (BRI).* https://bri.co.nz/wp-content/uploads/2020/06/Economic-impact-of-Bragato-Research-Institute_Final-report_NZIER_June2020.pdf

⁸² Kurylovich, D. (2019). Deindustrialization and Economic Development in St. Catharines, Ontario. School of Urban and Regional Planning Department of Geography and Planning Queen's University. https://qspace.library.queensu.ca/bitstream/handle/1974/26604/DmitryKurylovich%20_MRP_FinalDraft_Sept18.pdf?sequence=1

⁸³ Last, A. (2023, February 8). Brock University works with Ontario wineries in support of industry research. [Www.chch.com. https://www.chch.com/brock-university-works-with-ontario-wineries-in-support-of-industry-research/](https://www.chch.com/brock-university-works-with-ontario-wineries-in-support-of-industry-research/) A. (2023, February 8). Brock University works with Ontario wineries in support of industry research. [Www.chch.com. https://www.chch.com/brock-university-works-with-ontario-wineries-in-support-of-industry-research/](https://www.chch.com/brock-university-works-with-ontario-wineries-in-support-of-industry-research/)

of economic impact to the investment in government-and-industry supported research and development. ⁸⁴ The Brock University program has a job placement rate of over 95% as winemakers, oenologists, and personnel in various aspects of the grape and wine industry. The average salary for graduates in the program ranges from \$40,000 to \$150,000. ⁸⁵

As of 2020-21 the institute has 43 students at an undergrad level, 333 continuing students, 2.19 million in research funding, and 4,155 participants in program. The funding comes from both the government and industry partners. ⁸⁶ As indicated by one of the stakeholders consulted:

Students come to Brock because they are “the only program at the University level offering this type of training. You can get a world-class training available to you in your backyard, with a guaranteed job with advancement opportunity.”

Both Niagara College and Brock University viticulture programs attracts and retains students and younger people to the area from not just the Niagara region, but other parts of the country. As identified by one of the stakeholders consulted, Brock helps create the support structures that enable the wine industry to keep the graduates that are coming out of our programs.

Overall, higher education supports the region by exporting research, driving employment, building human capital to propel the industry, and attracting young people who will stay, create, and build wealth.

Key Takeaway

The wine industry is uniquely suited to leverage Niagara’s **existing infrastructure** (such as education and transportation) to **facilitate its future growth**.

Niagara’s post-secondary institutions, namely Brock University and Niagara College together employ over 8,400 people. Additionally, the University of Niagara Falls is scheduled to welcome new students in 2024. Overall, the Niagara Cluster can continuously gain from the economic benefits of post-secondary institutions. In the United States, research and education specialists in the wine industry contribute **over \$200 million in economic activity**.

Additionally, the Niagara Region is primed for growth as it has a solid foundation of a strong infrastructure network, which includes four major highways, five international border crossings into the United States, two major commercial vehicle border crossings, three international airports within 100km, and nearby access to Ontario’s largest port. A strong foundation of infrastructure is essential for growth of the wine sector. In Rioja, Spain, **the transportation network accounts for 21% of the economic benefits of supply chain performance of the wine industry**.



⁸⁴ Little, K. (2016, January 21). Brock’s grape and wine research centre giving Ontario’s economy a big boost: study. The Brock News. <https://brocku.ca/brock-news/2016/01/brocks-grape-and-wine-research-centre-giving-ontarios-economy-a-big-boost-study/>

⁸⁵ Graduate and undergraduate studies. (n.d.). Brock University. Retrieved March 14, 2023, from <https://brocku.ca/ccovi/graduate-undergraduate-studies/>

⁸⁶ Cool Climate Oenology and Viticulture Institute 2020–21 Year in Review. (n.d.). Retrieved February 13, 2023, from https://issuu.com/brockuniversity/docs/2021-316-ccovi_annual_report-digital-final-issu?fr=sOWM1MzQxOTYyNzY

Demonstration 3: UBC Okanagan Wine Research Center, British Columbia

The Wine Research Center leads wine research and education at the University of British Columbia (UBC). The Wine Research Center works across both campuses, headquartered on the Okanagan campus, and offers three different research facilities: mass spectrometry core facility, wine library, and a plant growth facility. The Wine Research Centers focuses on fostering a cooperation between the academic institutes, the wine industry sector (through initiatives such as the Wine Vision 2040, Wine Sector Co-op Specialization programs, wine research collaboration), and communities around the world. The Wine Research Center is a partner of the International Viticulture Enology Society, an academic association founded in 2017 by leading universities and researching institutes.⁸⁷

Overall, the UBC Okanagan campus has witnessed steady growth. Between 2005 and 2020, the number of buildings grew 350%, and since 2015/16 there has been a 158% increase in research funding.⁸⁸ Although the growth cannot be completely attributed to the Wine Research Center and its programs, the Wine Research Center is one of the growing programs in the UBC Okanagan campus. In 2020 the Wine Research Center shifted its headquarters from the Vancouver campus to the UBC Okanagan campus to be in the “heart of BC’s wine country”. The Wine Research Center also plans to grow their facilities such as building a sensory analysis lab in Kelowna.⁸⁹

Demonstration 4: Australia

The successful entry of Australia and the United States into the global wine market has been enabled by the wine sector’s strong R&D initiatives such as the development of steel tank fermentation, and the adaptation of industry-wide technologies to local agricultural conditions. Australia and the United States are also beneficiaries of being supported by influential research and training institutions such as the Australian Wine Research Institute which supports influential wine sector research, solutions, and knowledge transfer.⁹⁰

Demonstration 5: Career Opportunities in the Wine Sector

The wine industry offers many career opportunities for individuals looking to work in the field. Wine-related jobs range from vineyard workers, earning on average 15.81 CAD an hour, to a winery brand manager, earning on average 62.56 CAD per hour.⁹¹ Additionally, there are positions that arise from the overlap of the wine sector with other adjacent sectors such as the tourism or culture sector, such as tour guide positions, or wine-tasting coordinators. The sector is known to provide stable career opportunities, job security, and upward mobility.⁹²

4.2.5. Next Generation Manufacturing

Overview

Canada's wine sector has been experiencing rapid growth in recent years, creating a ripple effect throughout various industries. One such industry is next generation manufacturing, which leverages

⁸⁷ Wine Research Centre. (n.d.). Wine.ubc.ca. Retrieved March 7, 2023, from <https://wine.ubc.ca/about/>

⁸⁸ *Facts & Figures*. (n.d.). UBC’s Okanagan Campus. Retrieved March 7, 2023, from <https://ok.ubc.ca/about/facts-and-figures/>

⁸⁹ *UBC Okanagan uncorks new Wine Research Centre headquarters*. (2020, June 29). UBC Okanagan News. <https://news.ok.ubc.ca/2020/06/29/ubc-okanagan-uncorks-new-wine-research-centre-headquarters/#:~:text=Wine%20Research%20Centre%20will%20expand%20its%20presence%20across>

⁹⁰ Hira, A. and Swartz, T. (2014), “*What makes Napa Napa? The roots of success in the wine industry*”, *Wine Economics and Policy*, Vol. 3 No. 1, pp. 37-53.

⁹¹ Indeed (2022, November 24) 12 Jobs in the Wine Industry (With Salaries and Duties). Retrieved April 14, 2023, from <https://ca.indeed.com/career-advice/finding-a-job/list-of-jobs-in-the-wine-industry>

⁹² Frontline Food Facts (n.d.). Wine not get a stable job in the wine industry? Retrieved April 14, 2023, from <https://frontlinefoodfacts.ca/careers-in-food/wine-not-get-a-stable-job-in-the-wine-industry/>

new technologies to design and produce products more efficiently and sustainably. The wine sector's increasing demand for winemaking equipment such as fermentation tanks, barrels, and bottling machines is helping create demand in the domestic manufacturing sector, while the sector's focus on sustainable practices is providing a model for other industries to follow and it appears to be a sector with much opportunity.

The Canadian wine industry is highly innovative and places a focus on product and process improvements. The sector displays a great affinity for innovation despite the ongoing perception associated with the agricultural industry being slow to adapt. Similar to other industries in the early stage of development, it is characterized by a customer-driven strategy, where the main efforts are focused on the improvements of products and processes. Collaboration is common, mainly at the regional level. Innovation approaches in Canadian wineries differ from those of other countries such as the New World Wine (NWW) countries, which tend to be scientific-oriented and geared towards mass production of standardized and inexpensive wine.⁹³ These factors are different in the case of the Canadian wine industry, which is compelled to use niche product segmentation because of its high production costs and small market share. The wine is also consumed domestically and working with HEIs is not frequently done.⁹⁴ Furthermore, the Canadian wine industry is made unique by its harsh climate, stringent laws, and composition of very small and new wineries.

Next Generation Manufacturing's impact on the Niagara Region

Stakeholders noted that the Niagara wine region could be a catalyst for innovation in the manufacturing sector and that it could serve as a great illustration of an agricultural sector setting the standard for the adoption of cutting-edge manufacturing techniques. It was also highlighted that the sector is growing rapidly, and this combined with the plethora of manufacturing technologies emerging in the sector, could create a great number of opportunities for manufacturing businesses in the region. With the wine sector's focus on sustainability, it provides a model for other industries to follow in adopting eco-friendly manufacturing practices.

Spearheading efforts to integrate sustainable practices into manufacturing

The rapid growth of Canada's wine sector is spearheading the integration of various sustainable practices in their own manufacturing processes. The wine sector is leveraging their manufacturing process and supply chain in the implementation of new technologies to help design and produce products sustainably and efficiently.

Demonstration 1: Fetzer Vineyards

Californian winery Fetzer Vineyards has demonstrated its dedication to sustainability by putting several initiatives into place. A large percentage of their energy requirements are met by a solar power installation they have. Additionally, Fetzer Vineyards uses 100% recycled paper for their wine labels and has a water-saving irrigation system.

Fetzer started investing in sustainable farming methods in the late 1980s, and since then, it has developed a reputation for being dedicated to sustainability. The estate is the first winery in California to run exclusively on renewable energy, among other accolades and certifications. The organic wine brand Bonterra, whose wine has been vinified at Fetzer since the late 1980s, is also produced by Fetzer.⁹⁵

Fetzer Vineyards' sustainability initiatives provide an example for the Niagara wine sector to follow. Implementing similar initiatives could see wineries in the region also take significant steps towards promoting sustainability, reducing their carbon footprint, and protecting the environment.

⁹³ Lord-Tarte , E. (2012). Innovation and the development of the Canadian wine industry.

⁹⁴ Ibid

⁹⁵ Fetzer vineyards - wine brand, based in California. Wine. (2021, August 23). Retrieved March 3, 2023, from <https://www.wine-searcher.com/merchant/2253-fetzer-vineyards>

Demonstration 2: Henry of Pelham

Henry of Pelham is a family-owned estate winery located in Niagara. The winery has been actively involved in the adoption of sustainable practices in their operations. The winery's commitment to sustainability is evident in their efforts to reduce their carbon footprint, conserve water and energy, and promote biodiversity.⁹⁶

The winery utilizes sustainable farming practices such as wetland restoration and biofilters providing a unique opportunity to improve the quality of the ground water that both enters and leaves their property, the utilization of ozonated water and high-pressure steam to sterilize equipment (thus reducing the water volume used), and woodland preservation.

Henry Pelham represents an example of a Niagara based winery spearheading efforts to integrate sustainable practices into manufacturing by being one of the first wineries in Ontario to have had both their winery and vineyards certified by Sustainable Winemaking Ontario (SWO) - a certification program that ensures wineries adhere to environmentally sustainability practices.⁹⁷

Technological advances in wine manufacturing are being applied to other areas or helping build the sector⁹⁸

Technological advances in wine manufacturing are driving innovation and growth in the industry. In fact, many of the technologies being developed and applied in wine production have the potential to transform other industries as well.

In recent years, winemakers have been experimenting with technologies such as precision viticulture, where sensors and mapping tools are used to optimize grape growing and harvesting. This approach allows for more precise control over the vineyard, resulting in higher yields, better quality grapes, and more sustainable practices. Similarly, advancements in fermentation and bottling technologies are allowing winemakers to produce wines with more consistent quality and greater efficiency.

As the demand for high-quality wines continues to grow, Niagara and Ontario as a whole are well-positioned to capitalize on these technological advances and lead the way in the industry.

Demonstration 1: Satellite and drone imagery

Satellite and drones' imagery are an example of technological advances in wine manufacturing being applied to other areas. As a case study, Astrium Infoterra (an EADS subsidiary) and the Institut Coopératif du Vin (ICV) have jointly developed Oenoview, a tool providing vine vigor maps and soil maps which use satellite images based on natural radiation emitted by the leaves of the vine and via an infrared technology mapping the planes.

In Bordeaux, Chateau Pape Clément acquired its first drone in 2014. This tool is used to detect the dose of fungicide necessary to fight wine disease. It can also be used to visualize differences in vine vigor in real-time.

There is also ongoing research led by European scientists which are testing the use of robots equipped with sensors and cameras. The project developed a prototype robot called Vinbot. The objective is to reduce error margin from 30% (manually) to 10-15% with robots. The robot is expected to be commercialized in 2-4 years.⁹⁹

⁹⁶ Henry of Pelham & Speck Bros. Sustainability from Vine to Table. (2023, February 6). Retrieved March 8, 2023, from <https://sustainablewineon.com/>

⁹⁷ Sustainable Winegrowing Ontario. (2022, September 7). Retrieved March 8, 2023, from <https://sustainablewinegrowingontario.ca/>

⁹⁸ Marr, B. (2022, November 8). The biggest technology trends in wine and winemaking. Forbes. Retrieved March 15, 2023, from <https://www.forbes.com/sites/bernardmarr/2022/05/18/the-biggest-technology-trends-in-wine-and-winemaking/?sh=6b836b2e4e46>

⁹⁹ European Commission. (2017). Smart vineyard: management and decision making support for wine producers. Digital Transformation Monitor.

These advancements can be applied to other sectors such as construction, emergency response, and transportation by using satellite images to monitor progress of projects, gather information on natural disasters and monitor transportation infrastructure respectively.¹⁰⁰ Additionally, drones and robots equipped with sensors and cameras can be used to measure and monitor crops and soil in real-time to reduce errors and improve accuracy in other agricultural industries.¹⁰¹

Demonstration 2: Tank Sensors

Tank sensors provide accurate and precise data on oxygen, temperature measurements, and brix levels during the fermentation process. This data is crucial in determining the quality of the wine produced. Tank sensors have revolutionized the wine industry by enabling winemakers to produce high-quality wines consistently. In fact, some experts argue that this technology has helped put the United States on the global wine map.¹⁰² The use of tank sensors in the wine industry has paved the way for new advancements in technology.

Researchers are also building on tank sensors to develop new artificial intelligence (AI) systems that can predict the quality of wine based on the data collected by sensors. This AI technology can help winemakers make better decisions during the fermentation process, resulting in higher quality wines.¹⁰³

The use of tank sensors is not limited to the wine industry alone. This technology is now being applied to other areas, such as the production of beer, cheese, and yogurt.^{104,105} Tank sensors can help monitor the production process of these items, ensuring consistent quality and taste.

Demonstration 3: Insights from Stakeholder Consultation

Large organizations have already recognized the value of data collection and analytics, as well as investing in technologies to drive production and growth. This aligns with the broader trend of next generation manufacturing, which emphasizes leveraging data and technology to optimize production and efficiency.

Wineries can learn from large organizations who have recognized the value of data collection and investing in technologies to drive production and growth. The trend of next generation manufacturing, which emphasizes leveraging data and technology to optimize production and efficiency, can also be applied to winemaking. By collecting and analyzing data on the winemaking process, wineries can identify areas for improvement and make data-driven decisions to increase efficiency and quality. This can lead to cost savings, improved product quality, and increased customer satisfaction.

Although some of Canada and Ontario's existing research and development funding such as the Scientific Research and Experimental Development (SR&ED) tax incentives are available to the wine industry, they are often agnostic.¹⁰⁶ Ontario's wine industry could benefit from obtaining more wine industry specific research and development funding like those available in other jurisdictions. This government support can provide the resources necessary for wineries and breweries to invest in data and technology, which can ultimately lead to increased productivity and profitability. Without this

¹⁰⁰ Transport Canada. (2021). Drone strategy to 2025.

¹⁰¹ Ibid

¹⁰² Vittek, S. (2022, December 24). Tech companies are pushing precision agriculture into American vineyards: Ambrook research. Ambrook. Retrieved March 9, 2023, from <https://ambrook.com/research/vineyard-tech-napa-valley-precision-agriculture-monarch>

¹⁰³ Patkar, G. S., & Balaganesh, D. (2021). Smart agri wine: An artificial intelligence approach to predict wine quality. *Journal of Computer Science*, 17(11), 1099–1103. <https://doi.org/10.3844/jcssp.2021.1099.1103>

¹⁰⁴ Sensor Technology for the brewing process. United Kingdom. (2023, January 24). Retrieved March 9, 2023, from <https://www.anderson-negele.com/uk/brewing-process/>

¹⁰⁵ 2022, O. A. J. 9. (2022, June 24). Sensors in the dairy industry. AZoSensors.com. Retrieved March 9, 2023, from <https://www.azosensors.com/article.aspx?ArticleID=2587>

¹⁰⁶ Scientific Research and Experimental Development (SR&ED) tax incentives

support, many small and medium-sized businesses may struggle to keep up with larger organizations that have the resources to invest in technology and data collection.



**Section 5: The Wine Sector Challenges
and Opportunities**

5. The Wine Sector Challenges and Opportunities

For the Ontario wine sector to unlock its true potential, the sector needs to overcome existing challenges that hamper sector growth. To identify the main challenges faced by the sector, Deloitte sought industry insights and compared the policy architecture of the Ontario wine sector with peer jurisdictions. Additionally, the wine sector coalition members highlighted key characteristics of leading wine jurisdictions and outlined that a lack of alignment to these features leads to challenges that inhibit sustainable growth.

Key Characteristics of Leading Wine Jurisdictions

As highlighted by stakeholders, the key characteristics of leading wine jurisdictions include:

1. A dominant presence and representation in their local wine market.
2. A tax structure that allows for a sustainable profitability margin.
3. Public incentives for capital investments.
4. A connection of the wine industry to agri-tourism, eco-tourism, and cultural tourism



Section 5 includes a description of the challenge faced by the Ontario wine sector as identified by and validated with stakeholders and case studies from other jurisdictions.

5.1. Wine Sector Challenges

5.1.1. Taxation

The Challenge

Stakeholders and coalition members highlighted that taxation is a major factor impeding the Ontario wine industry from reaching its full potential. The Ontario wine sector pays a variety of different types of taxes including the environmental tax (refer to Appendix B for more information), the farm gate tax, and the federal escalator tax. The heavy tax burden is having a detrimental effect on the sector's ability to bring forth sector growth, attract capital investment, and procure higher prices for grapes.

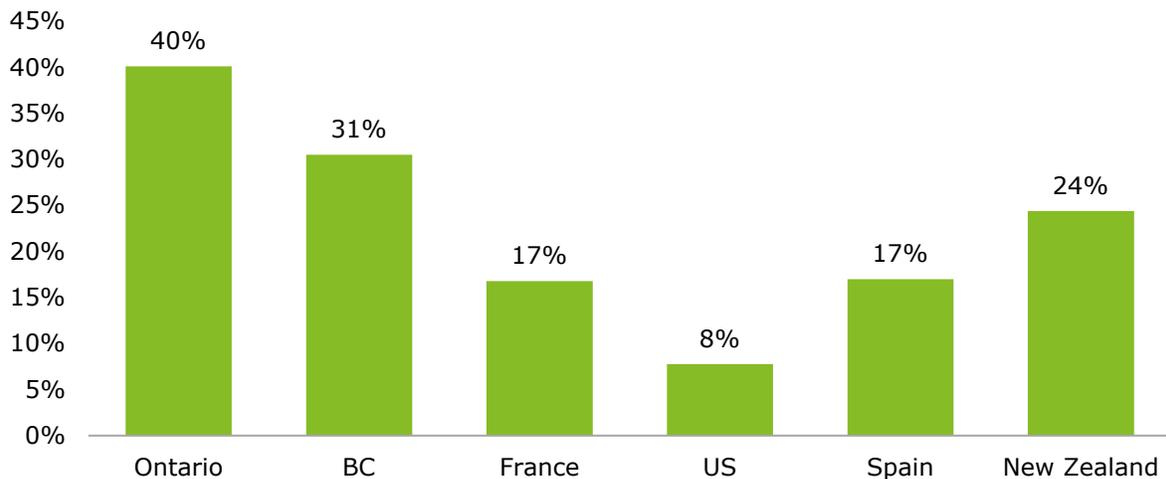
The Sector Today

Government regulation and cost of compliance was one of the most reported business challenges identified by wineries of all sizes, and one of the top challenges grape growers identified in the Ontario Wine and Grape Industry Performance Study of 2019.¹⁰⁷

As seen in Figure 15, Ontario's tax regime is inconsistent with global best practices. This can restrain the level of employment and economic activity that the sector produces for the Province.

¹⁰⁷ Ontario Wine and Grape Industry Performance Study. (2020, March). VQA Ontario and Deloitte. https://ontariocraftwineries.ca/wp-content/uploads/2022/07/2019_Industry_Benchmarking_Study_Final.pdf

Figure 15: Share of Taxes on Products as a Percentage of Domestic Sales



First, we outline Ontario’s current state, and then include some examples of taxation in prime wine regions.

Ontario’s Farm Gate Tax¹⁰⁸

Ontario wineries are taxed at a rate that is not seen in any other wine-producing nation. The current financial strife is partly the result of an antiquated tax and levy structure that penalizes Ontario wineries in comparison to imported products.

For instance, the 6.1% farm gate tax levied on wine sold by an Ontario winery represents a rate not seen in any other wine-producing nation.¹⁰⁹ The 6.1% tax is a particular pain point for small wineries. The farm gate tax essentially a tax on small businesses, and it represents a major barrier for those trying to excel in the wine industry. Reforming this tax would not only help the industry, but it would also bring about considerable economic growth and provide more employment opportunities.

Canada Federal Escalator Tax

In January 2023, it was announced that a federal escalator tax on beer, wine, and spirits would increase prices on these items by 6.3% starting in April.¹¹⁰ The federal escalator tax has placed an excessive burden on the wine sector, making it difficult for small businesses to remain profitable. As a result, wineries are struggling to absorb these costs and remain viable.

VQA Wine Support Program¹¹¹

The Ontario budget for 2022 increased funding for the VQA Support Program from \$7.5 million to \$10 million and extended it through 2024–2025. The VQA Wine Support Program assists Ontario wineries in becoming more innovative and competitive so that more of their wines can be sold at the LCBO.

¹⁰⁸ Snyder, D. (2020, October 12). No room to breathe: How an antiquated tax system is killing Ontario's wineries. thestar.com. Retrieved March 14, 2023, from <https://www.thestar.com/business/2020/10/12/no-room-to-breathe-an-antiquated-tax-system-is-killing-ontarios-small-wineries.html?rf>

¹⁰⁹ Ibid

¹¹⁰ Turcotte, S. (2023, January 6). A tax that's tough to swallow: Cost of alcohol going up. Kitchener. Retrieved March 14, 2023, from <https://kitchener.ctvnews.ca/a-tax-that-s-tough-to-swallow-cost-of-alcohol-going-up-1.6220994>

¹¹¹ VQA Wine Support Program Updated Program Guidelines 2022/23 - agricorp. (n.d.). Retrieved March 13, 2023, from <https://www.agricorp.com/SiteCollectionDocuments/VQA-ProgramGuidelines-en.pdf>

The program offers grants to wineries to support their investments in expanding their VQA wine business, including tourism-related initiatives. With the increased funding, investments in marketing, labor, and capital will be made possible, which is crucial for the growth of the Ontario wine industry. The multi-year commitment also assists Ontario wineries in developing multi-year plans for spending on marketing and promotion at the LCBO, which is a crucial ally in the continued success of the sector.

An uncapped program would further benefit the Ontario wine industry by allowing wineries to access grants for larger scale projects, which will enable them to compete with other wine regions in Canada. The programs expansion could enable Ontario wineries to increase their production and improve their quality, making them more competitive in the marketplace.

In comparison, the Quality Enhancement Program (QEP) seen in British Columbia offers rebates to wineries that sell their wines through government liquor stores which pay wineries a higher proportion of the retail price for wines sold under the Vintners Quality Alliance (VQA).¹¹²

Adoption of a rebate system similar to the QEP program into Ontario could benefit the Ontario wine industry. Ontario wineries would receive similar rebates, incentivizing them to sell their wines through the LCBO. This would increase the amount of Ontario VQA wine sold at the LCBO, which would benefit both the wineries and the LCBO. This would also help to establish VQA wine across Canada and increase competition between the provinces.

Example 1: British Columbia

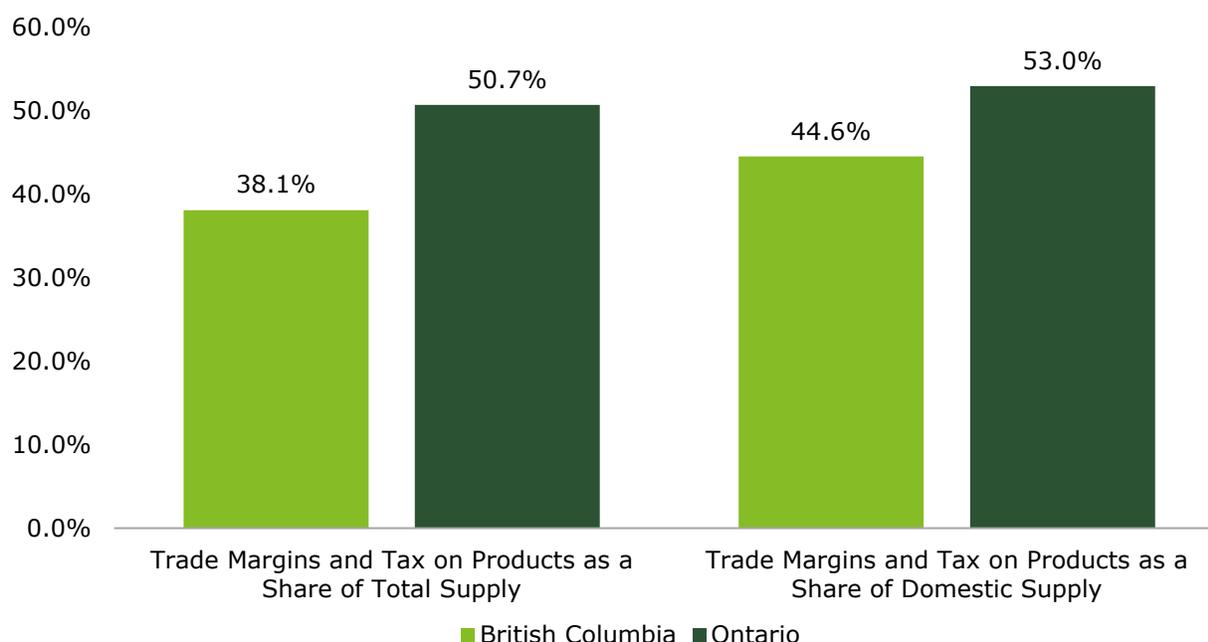
British Columbia has a more favourable trade margin and taxes on products regime compared to Ontario. This allows wineries in British Columbia to experience higher profit margins and enables them to have more capital to invest in the sustainability and growth of their companies.

As observed on Figure 15, the trade margins and tax on products as a share of total supply is higher in Ontario than British Columbia, with a significant 12.6% difference. The disparity does not include corporate income, which adds to the tax burden that wineries face.

It could be argued that total supply includes exports, which can skew the data as British Columbia has a larger interprovincial export volume than Ontario. However, after excluding the export factor, the difference in trade margins and tax on products as a share of domestic supply is still large and uncompetitive for Ontario, with an 8.4% difference. The disparity highlighted in Figure 16 depicts that Ontario faces uncompetitive levels of taxation which impedes the industry from reaching its full potential (see Section 6 for more information).

¹¹² Ministry of Justice Liquor Distribution Branch. (2014). Overview of the Quality enhancement program.

Figure 16: Trade Margins and Tax on Products Ontario versus British Columbia



Source: Statistics Canada (2019)

Example 2: France

Of the countries that tax wine on a volumetric basis, France has by far the lowest rate at \$0.04 USD per litre¹¹³. In comparison, Canada taxes wine at \$0.702 CAD per litre of wine, for wine containing more than 7% absolute ethyl alcohol by volume¹¹⁴. The US exhibits a graduated taxation system on wine imposing varying tax rates based on alcohol content and type. The general tax rate for wine with an alcohol content of 16% or less is \$1.07 USD per gallon (or approximately \$0.38 CAD per litre). However, for the first 30,000 gallons, the effective tax rate is \$0.07 USD per gallon when accounting for tax credits. For quantities over 30,000 but up to 130,000 gallons, the effective tax rate increases to \$0.17 USD per gallon when accounting for tax credits. For volumes exceeding 130,000 but up to 750,000 gallons, the effective tax rate increases to \$0.54 USD per gallon when accounting for tax credits¹¹⁵.

France is already known for being one of the world's largest producers and consumers of wine. The country has a rich history and culture surrounding wine, and it is an important part of its economy. A lower tax rate on wine in France may help to keep the cost of wine affordable for French consumers and may also encourage the consumption of domestic wines.

The resulting low taxation in the French market compared to other markets like Canada seeds a strong domestic sector and builds domestic demand for domestically produced wines.

¹¹³ Asen, E. (2023, May 22). Wine taxes in Europe. Tax Foundation. <https://taxfoundation.org/wine-taxes-in-europe-2021/>

¹¹⁴ Agency, C. R. (2023, March 31). Government of Canada. EDRATES Excise Duty Rates - Canada.ca. https://www.canada.ca/en/revenue-agency/services/forms-publications/publications/edrates/excise-duty-rates.html#_Toc527013622

¹¹⁵ Tax rates. TTBGov - Tax and Fee Rates. (n.d.). <https://www.ttb.gov/tax-audit/tax-and-fee-rates#wine>

Example 3: Australia

Australia is the only country in the jurisdictional analysis that taxes wine on an ad valorem basis, which means that the tax is based on the value of the wine rather than the volume. This tax system has been in place for many years in Australia ¹¹⁶

One of the consequences of imposing an ad valorem tax is that it does lead to high-end or premium wines being taxed at a higher rate compared to lower-priced wines, which can impact the competitiveness of Australian wine producers in the global premium wine market.

Despite this, the ad valorem system in Australia has proved positive as it has promoted shared incentives between the wine sector and government so to promote higher value-added wines collaboratively. All parties desire for higher-priced products to gain market share and enhance revenues.

5.1.2. The Future of Retail

The Challenge

The future of the Ontario alcohol retail landscape could potentially be at risk due to expansion plans from the Government. The retail laws and policies in Ontario have a significant impact on the economic landscape of the wine sector and the future of retail. Furthermore, its impact on economic development objectives are essential aspects that need to be considered.

In Ontario, the Master Framework Agreement (MFA) governs the sale of alcohol and outlines the types of retailers eligible to sell it. ¹¹⁷ The Winery Retail Stores (WRS) system is a critical component of the local wine industry, providing Ontario-based wineries with the right to sell their products in tightly regulated, private retail locations. The WRS network has 292 total distribution points ¹¹⁸ and is protected by the MFA and international trade agreements. Grocery and convenience store industries are seeking to end protections for WRS stores when the MFA expires on January 1st, 2026. A 2018 Deloitte study on the consequences of a move to a private retail model revealed that a shift towards such a model was estimated to have a significant impact on Ontario's agriculture with a 59% decline in wine grape sales. The estimated impact of a private retail model on domestic wine sales and tourism was estimated to have a negative impact of \$760M at year 10 after the retail expansion, before indirect and induced effects. ¹¹⁹ The loss of the WRS distribution channel would have a significant negative economic impact on the local wine industry.

¹¹⁶ Study into Global Wine Industry Support Measures. (2018). Infinity.

¹¹⁷ Alcohol master framework agreement, September 2015. ontario.ca. (n.d.). Retrieved April 18, 2023, from <https://www.ontario.ca/document/alcohol-master-framework-agreement-september-2015>

¹¹⁸ TheSpec.com. (2015, March 3). Private wine chains face major shakeup. thespec.com. Retrieved April 18, 2023, from <https://www.thespec.com/opinion/columnists/2015/03/03/private-wine-chains-face-major-shakeup.html>

¹¹⁹ Deloitte. (2018). Proposed Ontario Alcohol Policy Reform: Economic Implications to Wine Industry.

Figure 17: Map of the Ontario Greenbelt



5.1.3. Stringent & Fragmented Government Regulatory Structure

The Challenge

Currently, Ontario wine producers report to the Minister of Finance and are overseen by the Alcohol and Gaming Commission of Ontario. It was emphasized by stakeholders and coalition members that from an oversight and regulatory perspective, the wine industry suffers from fragmented reporting to different governing bodies. As a result, with multiple reporting channels, economic oversight and accountability can be confusing and limited.

In contrast, in other jurisdictions the department of agriculture is the key point of contact with the wine sector and orients the government on how it is best regulated. Table 2 outlines the government oversight body per jurisdiction studied. Additionally, below we outline how Australia and France, two prime examples of jurisdictions with successful wine sectors, are overseen and supported by their governments.

Table 2: Government Oversight Body per Jurisdiction

Jurisdiction	Government Oversight Body
 Ontario	AGCO, reporting to Minister of Finance
 BC	Ministry of Public Safety and Solicitor General
 California	The Department of Alcoholic Beverage Control
 Oregon	Oregon Liquor and Cannabis Commission
 Australia	Department of Agriculture, Fisheries, and Forestry
 France	National Institute for Agriculture and Seafood Products

Example 1: Australia

The Australian wine industry is overseen by the Department of Agriculture, Fisheries, and Forestry, which provides guidance to the Australian government on wine-related matters. This includes international market access, policy settings, and addressing industry issues. The department collaborates with Australian winemakers, grape growers, industry representative bodies, other government agencies, and international organizations.

Wine Australia is the Australian wine industry's statutory research and development, marketing, and regulatory body. It administers the Label Integrity Program, wine export licensing, and the Register of Protected Geographical Indications. Wine Australia also provides export data and market intelligence to the industry. It is funded by levies, matching funding from the Australian government, and user-pays fees.

The Australian wine industry is governed by the *Wine Australia Act 2013* and the *Wine Australia Regulations 2018*. These regulations provide for the *Label Integrity Program* and the *Register of Protected Geographical Indications*. The Act and regulations implement the agreement between Australia and the European community on trade in wine and the agreement on trade in wine between the Government of Australia and the Government of the United Kingdom of Great Britain and Northern Ireland.

Overall, the Australian wine industry benefits from strong government support, oversight, and regulation, ensuring the quality and integrity of Australian wines, while facilitating access to international markets.

Example 2: France

The French National Institute for Agriculture and Seafood Products (INAO) is responsible for overseeing the French wine sector. Its mission is to orient and regulate the French wine market within the European and worldwide framework.¹²⁰ INAO is responsible for the classification of French wines, including the Appellation d'Origine Contrôlée (AOC) system, which regulates the geographical origin and production methods of wines. It also works to ensure the quality and authenticity of French wines, and to protect their reputation both in France and internationally.¹²¹ Overall, INAO plays a crucial role in the French wine industry, working to promote and regulate this important sector.

Case Study: The Value of a Strong Partnership with the Government

The dairy industry is a pronounced example of the value of a strong partnership between the government and the agricultural sector.

The dairy industry benefits from the supply management, a national agricultural policy, that includes producer pricing, production discipline, and import controls. The import controls include tariff rate quota which allows a pre-set quantity of milk to be imported at a specific rate quota.¹²² The supply management minimizes volatility, allows farmers to receive consistent prices for the products, and protects domestic farmers. The Dairy Farm IBIS report calculates an increase in profit

¹²⁰ Wines words. FranceAgriMer | Vin De France. (n.d.). Retrieved March 15, 2023, from <https://www.vindefrance.com/wines/grape-varieties-of-france/wine-words/franceagrimer>

¹²¹ National Research Institute for Agriculture, Food and the environment. Homepage | INRAE INSTIT. (2023, February 25). Retrieved March 15, 2023, from <https://www.inrae.fr/en>

¹²² Milk (n.d.) Managing Supply. Retrieved April 18, 2023 from <https://new.milk.org/Our-Milk/Responsible-Farming/Managing-supply>

of 3.3% in 2023, and a profit margin of 24.3%.¹²³ The high profit margin is largely attributed to the supply management of the industry, and the strong partnership with the government.

As outlined above, an agricultural industry has gained value from a strong partnership with governments. There are benefits to replicating this model to other areas within the agricultural sector, including wine.

Key Takeaway

The Ontario and Canadian governments are critical partners not only with the Ontario wine sector, but also with other key industries within the Niagara Cluster. Government championing of the wine sector and other regional industries is a key element found in the best-in-class wine regions around the world. The department of agriculture is often the key point of contact with the wine sector in other leading jurisdictions. Given its familiarity with agricultural practices, it is generally in the best position to orient government on how to best regulate the wine sector, while maintaining the goal of sector expansion and addressing broader sector needs – as opposed to a primary preoccupation of extracting economic rents. For instance, in Australia the wine industry is overseen by the Department of Agriculture, Fisheries, and Forestry, and in France it is overseen by the National Institute for Agriculture and Seafood Products.



5.1.4. Distribution, Marketing, and Promotion

The Challenge

As seen by our jurisdictional scan, in order for a wine region to be successful, it must dominate their own domestic market. Currently the Ontario wine sector has a low domestic market penetration of Ontario wine with 36.0% by volume and 24.8% by net sales in 2022. Additionally, the Ontario wine sector faces challenges of distributing wine through the Liquor Control Board of Ontario (LCBO) and faces strict restrictions of the inter-provincial trade of wine. The access to viable retail markets, and the gross margin on sales through the LCBO were two of the most reported business challenges in the Ontario Wine and Grape Industry Performance Study 2019.¹²⁴ The Ontario wine industry's net sales market share at the LCBO remains at 24.8% for the 2021-22 year.¹²⁵

Government support is paramount to the success of a wine region and increased support in the Ontario region is critical to the sectors advancement. Funding from the government currently exists in the form of the VQA wine support program. The Ontario budget for 2022 increased funding for the VQA Support Program from \$7.5 million to \$10 million and extended it through 2024–2025. However, further support for this program would assist Ontario wineries in becoming even more innovative and competitive so that more of their wines can be sold at the LCBO, it would also assist Ontario wineries in developing multi-year plans for spending on marketing and promotion at the LCBO.

¹²³ McGrath (2023) Dairy Farms in Canada. Retrieved April 18, 2023 from <https://my.ibisworld.com/ca/en/industry/11212ca/industry-at-a-glance#key-statistics-snapshot>

¹²⁴ *Ontario Wine and Grape Industry Performance Study*. (2020, March). VQA Ontario and Deloitte. https://ontariocraftwineries.ca/wp-content/uploads/2022/07/2019_Industry_Benchmarking_Study_Final.pdf

¹²⁵ 2021-22 annual report - aem.lcbo.com. (n.d.-b). <https://aem.lcbo.com/content/dam/lcbo/common/pdfs/LCBO-FY2022-Annual-Report-Final-AODA-Compliant-EN.pdf>

The Sector Today

Gross margins on sales through the LCBO was one of the most frequently selected business challenge across wineries of all sizes in the Ontario Wine and Grape Industry Performance Study of 2019.¹²⁶

Ontario wine producers are treated and taxed in the same manner by LCBO as imports. Below we outline how the United States, specifically California, has supported their wine sector by facilitating the distribution and encouraging the consumption of domestic wine.

Example 1: United States

The United States is one of the largest markets for wine in the world. The importation of wine into the United States is subject to heavy taxation for importers, creating an uneven playing field for foreign wine producers. This situation has led to a significant disadvantage for wine importers and provided a strong support to domestic wine producers.

According to producer support estimates, import tariffs were as high as 127.4 million USD in the United States in 2016-2017.¹²⁷ This is a significant amount and illustrates the high price that foreign wine producers have to pay to access the US market. In contrast, Australian wine producers faced import tariffs of 20.6 million AUD, a much lower amount than their American counterparts.¹²⁸

Example 2: California, Multi-Channel Distribution of Wine

In California, there is no government-run liquor board, and wineries must rely on private distributors to sell their products. Direct to consumer sales are experiencing an increasing trend over the last several years. Furthermore, this trend is not expected to decline any time soon.¹²⁹

The California Department of Alcoholic Beverage Control (ABC) is a state agency that provides the highest level of service and public safety to the people of the State through licensing, education, and enforcement.¹³⁰ However, the ABC does not regulate distribution as stringently as the LCBO for example and allows for private distribution and a multi-channel system.

A multi-channel system could potentially increase competition, which would benefit consumers and help to create a more vibrant and diverse alcohol industry in Ontario.

Example 3: United States, Inter-State Trade of Wine

In the United States, there are very few restrictions on inter-state trade of wine. It can be shipped almost freely between states with 44 states permitting winery direct-to-consumer shipping.¹³¹ This has created an opportunity for the wine sector to expand into domestic markets more easily. Successful wine producing jurisdictions have a common characteristic that their local wineries tend to dominate their domestic markets.

¹²⁶ Ontario Wine and Grape Industry Performance Study. (2020, March). VQA Ontario and Deloitte. https://ontariocraftwineries.ca/wp-content/uploads/2022/07/2019_Industry_Benchmarking_Study_Final.pdf

¹²⁷ Study into Global Wine Industry Support Measures. (2018). Infinity.

¹²⁸ Ibid

¹²⁹ The rise of direct-to-consumer. KPMG. (n.d.). Retrieved March 15, 2023, from <https://kpmg.com/xx/en/home/insights/2022/10/the-rise-of-direct-to-consumer.html>

¹³⁰ California, S. of. (n.d.). About ABC. Alcoholic Beverage Control. Retrieved March 15, 2023, from <https://www.abc.ca.gov/about/>

¹³¹ Taylor, R. (2014, July 14). U.S. wine shipping laws, state by State. Wine Spectator. Retrieved March 15, 2023, from <https://www.winespectator.com/articles/us-wine-shipping-laws-state-by-state-50258>

California is one of the largest wine producing jurisdictions in the United States. In 2021, the estimated retail value of Californian wine to the United States was \$45.6 billion.¹³² This clearly shows the significant contribution of the wine industry to the US economy.

The inter-state trade of wine has the potential to create more economic opportunities for the wine industry. The ability to ship wine freely between states means that wineries can reach a wider customer base, which can lead to increased sales and profits.

Moreover, inter-state trade can encourage healthy competition among wineries, which can lead to an improvement in the quality of wine produced. This can attract more customers, both domestically and internationally, which can further boost the wine industry's contribution to the US economy.

Example 4: United States, Three-Tier System of Alcohol Control

The United States has created a distinctive three-tiered regulatory system for alcohol that serves as the basis for all domestic regulations.

After Prohibition was repealed in 1933, The United States established a new methodology to control the production, distribution, and sale of alcohol. The three-tier system was created to assist in controlling consumer alcohol consumption and in streamlining government alcohol tax collection. The three-tier system was developed to prevent sole ownership in production, distribution, and retail. As a result, before reaching the consumer in the beverage industry, all alcoholic beverages pass through three hands.

Tier 1: Producers/Manufacturers

All producers, such as brewers, distillers, vintners, and importers of foreign alcoholic beverages, are included in Tier 1. The products are manufactured at this stage of the system, after which they are sold to a distributor, typically at a price increase of 50%. The products are now in Tier 2 as a result to this sale.

Tier 2: Distributors/Wholesalers

Distributors manage the logistics for manufacturers, including product storage, shipping, and marketing. Distributors also aim to sell products to a variety of retailers and businesses because they have a network of contacts and relationships with retailers that producers do not always have. While the system's middle tier is where distributors are located, wholesalers may also occasionally serve as the middleman.

Tier 3: Retailers

Retailers, which include licensed locations like bottle shops, liquor stores, restaurants, and bars, are the last tier before consumers. There are, however, some states that, allow for the sale of alcohol in grocery stores with additional permits. Retailers at this stage of the system make sure that only people of legal drinking age are allowed to purchase alcoholic beverages.¹³³

¹³² California & US Wine Sales. (n.d.). Wine Institute. Retrieved March 15, 2023, from <https://wineinstitute.org/our-industry/statistics/california-us-wine-sales/>

¹³³ Fields, J. (2022, April 23). Understanding the three-tier system of alcohol distribution. VinePair. Retrieved April 17, 2023, from <https://vinepair.com/articles/three-tier-system-explainer/>

5.1.5. Reputation and Changing Preferences

The Challenge

The standpoint of the stakeholders and coalition members was that the low levels of consumption of domestic wine in Ontario compared to other regions (see Appendix B), coupled with changing preferences such as younger people drinking less (and switching from alcohol to cannabis) could lead to lower demand in the wine sector.¹³⁴

Ontario has a large, underutilized capacity to promote its own products. As outlined in stakeholder consultations, Ontario should focus in competing with international (best in the world) products. Ontario has the capacity to produce high-quality wine as seen by multiple awards from Decanter (see Appendix B).

The Ontario wine sector would benefit from government support to grow a strong domestic wine sector and explore other markets to overcome reputational challenges and changing preferences. The alignment of key players will be imperative, including government and stakeholders in the hospitality industry.

In other jurisdictions, governments are supporting their wine industries by protecting, and promoting its domestic industry. Page 58 outlines how the United States supports the domestic market. Below we outline additional examples of how jurisdictions have supported their wine sectors by launching programs that support the wine market's reach in international markets.

Example 1: Australia

In 2018-2019 the Australian Government had two priorities for the Australian wine market. The first was to introduce as strategy to increase the demand and the premium paid for all Australian wine. The government's strategy was to promote Australian fine wine in various regions, protect the reputation of Australian wine (through annual analytical surveys, regulatory services, Label Integrity Program), and build Australian vine and wine excellence. The second priority was to increase competitiveness by improving resource management and sustainability, improving vineyard and winery performance, enhancing market access, building capacity, business intelligence, and measurement.¹³⁵

The Export & Regional Wine Support Package, a 50 million AUD reform over four years, aimed at promoting demand for Australian wines in export markets and the nation's wine tourism, supported the first government strategy outlined above. The program included international marketing campaigns (targeting markets with the strongest growth potential i.e., China and the United States), wine export, state-based and competitive grants, capability development, and the development of brand strategy for the craft cider business. As an example, the program launched 21 regional international wine tourism projects, and six state-based projects through the States Grants program.¹³⁶

The direct and purposeful priorities set by the Government of Australia allows for government support to be designed in such a way that supports the wine sector to grow and reach its goals. For example, in the United States the perception of Australian wine rose 24% after individuals participated in a tasting event or visit.¹³⁷

¹³⁴ Kary, T. (2022, May 31). What Do Zoomers Like? Pot or Shrooms, Not Booze. *Bloomberg*. <https://www.bloomberg.com/news/newsletters/2022-05-31/gen-z-prefers-marijuana-or-shrooms-to-alcohol>

¹³⁵ *Wine Australia Annual Report 2018-19*. (n.d.). Australian Government. Retrieved March 13, 2023, from <https://www.transparency.gov.au/annual-reports/wine-australia/reporting-year/2018-2019-9>

¹³⁶ *Wine Australia Annual Report 2018-19*. (n.d.). Australian Government. Retrieved March 13, 2023, from <https://www.transparency.gov.au/annual-reports/wine-australia/reporting-year/2018-2019-9>

¹³⁷ *Wine Australia Annual Report 2018-19*. (n.d.). Australian Government. Retrieved March 13, 2023, from <https://www.transparency.gov.au/annual-reports/wine-australia/reporting-year/2018-2019-9>

Example 2: United States

As outlined in Appendix B, California already dominates its domestic wine market with an 80% share of domestic wine volume in 2019 in the United States. Government programs have been directed towards supporting the wine sector by promoting its exports.

The Market Access Program (MAP) funding is committed for activities that support advertising, consumer relation, point of sale demonstration, participation in exhibits, and research and development. In California, the MAP supported the Wine Institute to coordinate over 50 discrete foreign trade events in FY2017 and support individual requirements of individual wineries. MAP also supported Oregon through the Washington Wine Commission and the Oregon Wine Board.¹³⁸

Example 3: France

France and the European Union supported the sector in a phase of declining domestic consumption through market promotional assistance. The European Agricultural Guarantee Fund, matched by industry funds, and further co-funding through the European Union Common Agricultural Policy (CAP) funded program for discrete programs to promote agricultural products with protected designations of origin.¹³⁹

5.1.6. High Costs & Economies of Scale

The Challenge

Stakeholders and coalition members stressed that wineries often struggle with high capital investment, rising input, labour, and land costs which can impact the profitability in the sector.

The Sector Today

In the Ontario Wine and Grape Industry Performance Study of 2019, rising input, labour and land costs were ranked among the top three challenges for every wine sector segment.¹⁴⁰ Economies of scale is an important factor to maintain the sustainability of the sector. The report also identifies that only 45% of companies under \$5 million report a pre-tax profit, compared to 88% of wineries over \$5 million.¹⁴¹

Government support for investment in innovation and restructuring is a key ingredient to support the sector. It has been identified that governments in other jurisdictions such as France, United States and Australia have supported their wine sector through funding to assist in the sector's modernization and restructuring efforts. The Ontario government must recognize the capital intensity and the ongoing pressures to modernize and thrive to continuously support the growth of the wine sector.

Example 1: France

In early February 2023, France's Ministry of Agriculture announced several measures designed to help ease a 'crisis in the wine sector'. The plan includes providing financial support for winemakers to distill excess stocks, as well as developing a long-term plan to modernize the sector (e.g., adapting to climate change challenges and shifting consumption patterns in France and in export markets). A total of €160m could be made available for distilling excess wine stocks in 2023.¹⁴²

¹³⁸ Study into Global Wine Industry Support Measures. (2018). *Infinity*.

¹³⁹ Ibid

¹⁴⁰ *Ontario Wine and Grape Industry Performance Study*. (2020, March). VQA Ontario and Deloitte. https://ontariocraftwineries.ca/wp-content/uploads/2022/07/2019_Industry_Benchmarking_Study_Final.pdf

¹⁴¹ Ibid.

¹⁴² Mercer, C. (2023, February 8). *French government floats €160m fund to ease "wine crisis."* Decanter. <https://www.decanter.com/wine-news/french-government-floats-e160m-fund-to-ease-wine-crisis-497209/>

Additionally, in 2017, over three-quarters of the industry's annual European Union common agricultural policy (CAP) budget went towards restructuring support to modernize vineyards and wineries. Vineyard restructuring and conversion made up the largest share of support under the European Union CAP Wine common market organization (CMO) at an estimated 499.5 million euros (or 43% of the budget) in 2017.¹⁴³

High costs contribute to low profitability of companies and modernizing efforts may support lower cost of goods sold. Government support to the sector could help increase profitability and increase investment opportunities.

Recently, Canada has established a similar program. In 2022, the federal government launched the Wine Sector Support Program a two-year, \$166 million program, to provide wineries with the tools required to stay innovative and competitive.¹⁴⁴ The federal program illustrates how the wine industry is becoming increasingly recognized in Canada. Continuous support, especially at the provincial level can help provide further growth in the sector.

Example 2: United States

Between 2008 and 2013 the US farm bill allocated \$15 million to the continuation of value-added grants and authorized the appropriations committees to provide additional funds. Many wineries and winery associations have benefited from this program.¹⁴⁵ The US farm bill created a significant economic boost for wineries in the United States allowing them to increase production, create more jobs, and expand their markets.

The USDA's Rural Development arm provides matched funding to wineries under its Value-Added Producer Grant (VAPG) program. Between 2016-17, 40 wineries in California and Washington were granted a total of 7 million USD (out of 45 million USD program). The grants are dedicated to projects for up to 250,000 USD, or less than three years in duration to finance working capital required to operate businesses, including hiring labour needed to expand production, designing and purchasing new packaging materials, and other initiatives. To qualify for the grants, wineries need to be vertically integrated and produce over 50% of the grapes used in its production and consequently smaller wineries end up benefiting more from the program.¹⁴⁶ Investment in the wine sector has a long-term return to capital, and so early support to wineries can increase the likelihood of success and promote growth in the sector.

Example 3: Australia

The Wine Growth Fund, developed by the Victoria state government, was a small grants program introduced in 2016-17 to develop the wine industry in Victoria. The fund offered up to 20,000 AUD per producer and up to 50,000 AUD for collaborative projects between organizations. Grants were provided on a \$1 for \$1 basis, and the matching funds could come from group of wineries, associations, regional organization, or the Australian government.¹⁴⁷

The Wine Growth Fund supported investments into plant and equipment, cellar dollar facilities, ecommerce capabilities and other initiatives that would allow the industry to develop a profitable and sustainable market. The Wine Growth Fund funded over 120 different projects across the region.¹⁴⁸

¹⁴³ Study into Global Wine Industry Support Measures. (2018). *Infinity*.

¹⁴⁴ Government of Canada launches new support program for Canada's wine sector. (2022, June 29). Government of Canada. <https://www.canada.ca/en/agriculture-agri-food/news/2022/06/government-of-canada-launches-new-support-program-for-canadas-wine-sector.html>

¹⁴⁵ Nelson, B. (2008, July). *Congress Funds Grapegrowers*. Wines Vines Analytics. <https://winesvinesanalytics.com/features/article/56626/Congress-Funds-Grapegrowers>

¹⁴⁶ Ibid

¹⁴⁷ *Wine Growth Fund*. (2020, February 10). Regional Development Victoria. <https://www.rdv.vic.gov.au/grants-and-programs/wine-growth-fund#:~:text=The%20Wine%20Growth%20Fund%20was%20a%20small%20grants>

¹⁴⁸ Ibid

5.1.7. Climate Change and Sustainability

The Challenge

Climate change impacts to production

The stakeholders and coalition members brought attention to the fact that climate change is an increasing challenge in the wine sector. Climate change can lead to extreme weather patterns, impact temperature variability, elevate CO₂ levels, pests, and quantity of annual rainfall, and introduce other adversarial factors. Consequently, it will impact grape yields, and could impact wine quality, price, costs, and profits.¹⁴⁹ Therefore, it is essential for the wine sector to continuously research and adapt to changing climate. In other jurisdictions, partners and governments are encouraging research for a sustainable practice. It will be critical for the government to support the Canadian wine industry and the region to ensure climate resilience and sustainability.

Example 1: Australia

The Australian wine industry invested significantly in building the institutions and resources in place to support research and development in the industry. Between 2016-17 the producer support estimate in Australia was approximately 327 million AUD, whereas 14.2 million was specifically directed towards research and development and market promotion.¹⁵⁰

The Australian Wine Research Institute (AWRI) supports a sustainable and successful industry through leading viticulture research, practical solutions, and knowledge transfer. The AWRI is governed by an industry-led board and collaborates with Wine Australia (the industry's statutory research and development, marketing, and regulatory body). In 2022, AWRI operated more than 100 research collaborations, partnered internationally, and held the AWITC and WineTech conferences.¹⁵¹

Additionally, the Sustainable Winegrowing Australia Association, the national program for sustainable grape growers and winemakers, is expanding. As of 2022, the association has 113 member wineries, and 807 member vineyards (covering approximately 37% of Australia's total vineyard area). In just three years, the association developed a sustainable winegrowing Australia certified mark, which currently 242 wine labels hold.¹⁵²

In Ontario, a similar program exists, the Sustainable Winegrowing Ontario Certified, which like its Australian counterpart has a logo that assures consumers that the complete grape to glass cycle is sustainable. Currently, the program has 53 vineyards, and 24 wineries in the program.¹⁵³ To have a similar growth as the Sustainable Winegrowing Australia Association it will be important for consumers to increasingly seek out the Sustainable Winegrowing Ontario Certificate to encourage wineries and vineyards to pursue the certification. In Australia, it is estimated that 78% of Australians consider a brand's social and environment actions when making a purchase.¹⁵⁴ The high consumer recognition and advocacy can be partly driving an increase in the number of members in the association.

¹⁴⁹ Ashenfelter, O. and Storchmann, K. (2014), "Wine and climate change", American Association of Wine Economists (AAWE), Working Papers 152, 10.22004/ag.econ.164854

¹⁵⁰ Study into Global Wine Industry Support Measures. (2018). *Infinity*.

¹⁵¹ *Australian Wine Research Institute Annual Report 2022*. (n.d.). Australian Wine Research Institute. Retrieved March 8, 2023, from <https://www.awri.com.au/wp-content/uploads/2023/01/AWRI-2022-Annual-Report.pdf>

¹⁵² *Impact Report*. (n.d.). Sustainable Winegrowing Australia. Retrieved March 8, 2023, from https://sustainablewinegrowing.com.au/wp-content/uploads/2023/02/impact_report_2022.pdf

¹⁵³ *THE CERTIFIED SUSTAINABLE CHOICE*. (n.d.). Sustainable Winegrowing Ontario. Retrieved March 8, 2023, from <https://sustainablewinegrowingontario.ca/>

¹⁵⁴ *Impact Report*. (n.d.). Sustainable Winegrowing Australia. Retrieved March 8, 2023, from https://sustainablewinegrowing.com.au/wp-content/uploads/2023/02/impact_report_2022.pdf

Example 2: SWEEP Program, California

The State Water Efficiency and Enhancement Program (SWEEP) offers grants to implement irrigation systems that reduce greenhouse gas emissions or save water in California agriculture operations. This includes system components such as soil moisture monitoring, drip systems, low pressure irrigation and others.¹⁵⁵ By providing government grants that save water or reduce greenhouse gas it will both save costs of producers and promote sustainability of the sector.

The 2021 SWEEP program awarded \$43 million to fund 283 grower projects that save water or reduce greenhouse gas emissions. Many growers are still unaware of the program, and so Tule, Hotspot AG, and Innovative AG Services teamed up to educate growers about SWEEP and opportunities to save water and energy. Tule provides several vineyards in California with cutting-edge artificial intelligence and in-the-field agronomic expertise.¹⁵⁶

In Canada, the federal government has launched a similar initiative in 2021 a \$165.7 million Agricultural Clean Technology program. The program provides businesses with funding to adopt the latest clean technologies under two funding streams the Adaptation Stream and the Research and Innovation Stream. The Adaptation Stream will support the adoption of clean technologies such as powering farms with clean energy or more efficient grain dryers. The Research and Innovation Stream will support pre-market innovation of agricultural clean technology.¹⁵⁷

Domestic versus imported wines

Sustainability and the carbon footprint are increasingly a concern for stakeholders. Overall, wine's carbon footprint is smaller than some other economic activities. The biggest emission associated with wine products is its transportation to the consumer especially for wines transported by air cargo, and in heavy glass bottles.¹⁵⁸

Consequently, local products are the greenest option, when compared against the carbon footprint generated by imported wines. Greater support for the Ontario wine industry directly translates into greater support for Ontario's ecological future.

The Greenbelt

Support for the wine sector also represents a unique opportunity for encouraging policies and practices for the sustainable use of land. The sector can play a unique role as keys champions for stewardship of the Greenbelt.

The Greenbelt Foundation, who are stewards of Ontario's Greenbelt aims to support food and farming, foster livable communities, enable climate resilience, and enhance natural system.¹⁵⁹ The wine sector supports the Greenbelt Foundation in their goals. Every investment made in the Ontario wine industry is an investment made in Ontario's ecological future.

Firstly, the Niagara Peninsula Tender Fruit and Grape Area protects lands designated for grape production. The wine sector can continue to provide a market-based sustainable land use of the area and support rural economic development through promotion of culinary tourism opportunities for Greenbelt businesses.

¹⁵⁵ CDFA - OEFI - State Water Efficiency & Enhancement Program. (n.d.). California Government. <https://www.cdfa.ca.gov/oefi/sweep/>

¹⁵⁶ California Growers Can Benefit from Sweep Grants. (2022, June 13). Wine Industry Advisor. <https://wineindustryadvisor.com/2022/06/13/california-growers-can-benefit-from-sweep-grants>

¹⁵⁷ Helping farmers and agri-businesses adopt clean technologies to reduce emissions and enhance competitiveness. (2021, June 4). Wwww.canada.ca. <https://www.canada.ca/en/agriculture-agri-food/news/2021/06/helping-farmers-and-agri-businesses-adopt-clean-technologies-to-reduce-emissions-and-enhance-competitiveness.html>

¹⁵⁸ Thompson, A. (2008, November 10). The Carbon Footprint of Wine. Livescience.com; Live Science. <https://www.livescience.com/3041-carbon-footprint-wine.html>

¹⁵⁹ Greenbelt (n.d.). <https://www.greenbelt.ca/>

Secondly, the wine sector can foster livable communities, by enhancing economic development opportunities through agri-tourism, cultural-based recreation, and tourism in the Greenbelt. The wine sector can support the development of adjacent areas to the Greenbelt and maximize the economic opportunity.

Finally, as outlined in Section 4 of the report, the wine sector is a driver of research and development. Therefore, the sector can support climate resilience in the Greenbelt by using industry research and best practices to enhance natural systems to make them more resilient to severe weather events.

5.2. Other Regional Challenges

Building a World Class Tourism Destination

Niagara has the potential to become a world-class tourism destination. However, it faces several challenges to reach its full potential. Stakeholders identified key opportunities to build a world-class tourism destination such as improved infrastructure, as well as higher-yield and diversified tourism offerings.

First, infrastructure is a challenge for the Niagara tourism industry. As outlined by a stakeholder, access to Niagara is challenging for tourists. In prime season, the Queen Elizabeth Way (the main highway linking Toronto with the Niagara Peninsula) can be difficult to travel. Additionally, GO Trains and flights to the Niagara airport are not frequent. Stakeholders highlighted that investment in infrastructure, and clear land policies could incentivize capital investments in the Region and further develop the Region's border and adjacent areas.

Second, recently in a study by Casago, using data from Trip Advisor, Niagara Falls was rated the biggest "tourist trap" in Canada.¹⁶⁰ As outlined by one of the stakeholders consulted, Niagara needs to "develop higher-yield customer experiences and modernized tourism offering to reach the next level". Furthermore, many regions in Canada are overly dependent in the summer to be profitable and often have a lower quantity of tourists during the winter. Niagara needs to develop diversified tourism offerings to ensure a consistent cash flow throughout the year and lower financial risk for businesses.

The growth and development of the premium wine industry could play a critical role in delivering on that potential. It could assist the tourism industry diversify its activities, support various initiatives in the Region, and attract higher yield spenders (as seen on Section 4.2.3). A strong diversified tourism industry can lower financial risk, and along with government support (such as infrastructure development) can encourage more investors to enter the Niagara market.

The Sector Today

As identified by the Ontario Wine and Grape Industry Performance Study of 2019, one of the top investment purposes in 2019 for wineries was tourism and hospitality. Wineries with total sales between \$2 to \$5 million devoted approximately 44.4% of their investments to tourism and hospitality. In 2019, wineries of all other sizes reported planning for high investment in tourism and hospitality in the next five years.¹⁶¹

¹⁶⁰ Gaba (2023, April 14) Niagara Falls rated biggest 'tourist trap' in Canada "Everything is a scam". Yahoo. https://ca.style.yahoo.com/tourist-trap-casago-report-niagara-falls-canada-154041921.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNhLw&guce_referrer_sig=AQAAALMIO96RdggfFgFDzrNqvQdATnc4f-jMIqDovoQnTOzVQmRddRFgeLI1Mnt3RqlB4pDwbmL9HoZV1Z3GTacG7pe8D-h5mXP6XMQmzon_9Bsj5Rbcp9qXeh2MU00rGMZlxAOxjpy_S7mU6C_74kXwy2LSiti_08lvrH6vukt-zdl#:~:text=With%20over%20475%20reviews%20that,tacky%20surroundings%20and%20underwhelming%20attactions.

¹⁶¹ Ontario Wine and Grape Industry Performance Study. (2020, March). VQA Ontario and Deloitte. https://ontariocraftwineries.ca/wp-content/uploads/2022/07/2019_Industry_Benchmarking_Study_Final.pdf

Overall, stakeholders advocate for greater collaboration in the Region to develop a strategy and roadmap that would enable Niagara to deliver on its potential for being a world-class tourism destination. Stakeholders suggested that all industries in the Niagara tourism economy need to understand their gaps in relation to other world-class tourism regions. It will take the entire Niagara tourism economy working in concert for the region to meet its potential.

Key Takeaway

Global best practices include:

1. Dominating domestic market share.
2. Connecting wine industries and tourism to create world class destinations.
3. Competitive tax policies that incentivize investment in the wine sector.
4. Incentivizing and supporting capital investment in agriculture and hospitality.



Local Misalignment

As outlined by stakeholder consultations it often takes time for the different municipalities within Niagara to agree on different approaches to economic development. For example, it took a significant duration of time for leaders to agree that the GO Train connection is important for Niagara. The lack of cohesion between municipalities and the region, and the multiple organizations each with their own goals can lead to material misalignment of objectives and the potential to hamper growth opportunities for a development in the Region. As outlined by a stakeholder:

“Niagara has so much potential. If we get more focus and alignment, there will be no holding it back. There are already lots of great things going on. But it could be even more.”

Therefore, there is considerable alignment to be leveraged, and the region should focus on building a strong coalition with unified goals to take the Niagara Region to the next level, where the Provincial government has a pivotal role to play in fostering consensus.

Section 6: Missed Opportunity

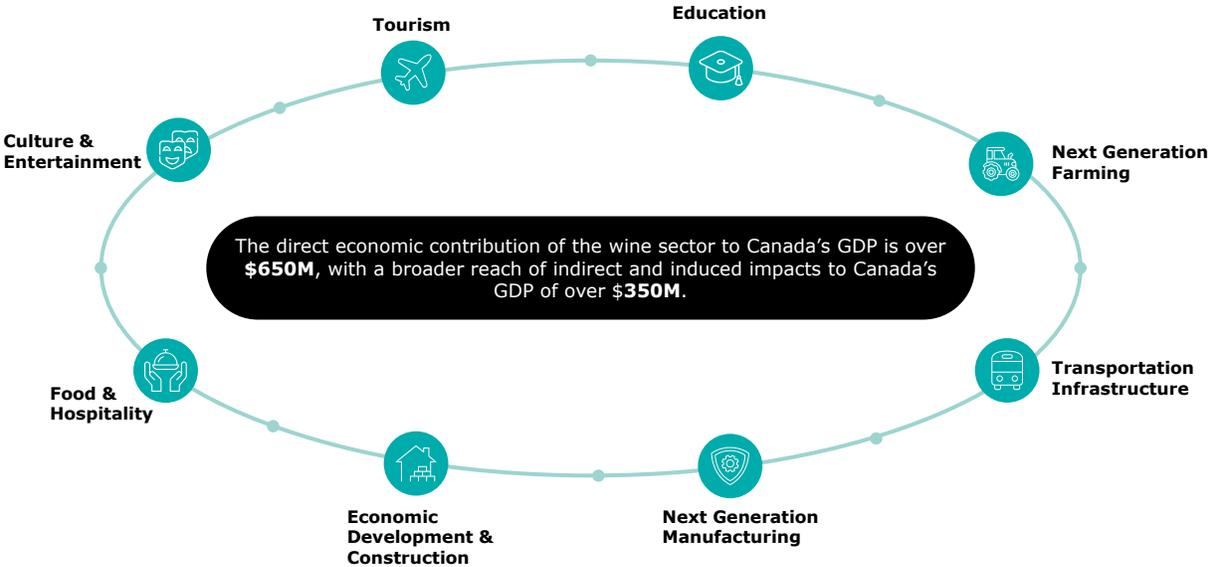


6. Missed Opportunity

6.1. Lagging Behind

The Niagara Cluster has the opportunity of becoming a flourishing and robust economic region that includes a world-class wine, tourism, and agricultural economy. Within the Cluster, the wine industry has a critical role to play as the catalyst for unlocking the Niagara Cluster’s economic development potential. As such, a prosperous wine sector could bring about additional benefits to other sectors within the Niagara Cluster. These benefits include greater economic enhancement to sustainable practices within the farming sector; economic development and construction; transportation, visitor support, and education infrastructure expansion; and improved sustainable practices within the manufacturing sector. However, to enable the wine industry to help the Province of Ontario realize these cross-sectoral benefits, the wine industry must be nurtured.

Figure 18: The Niagara Cluster



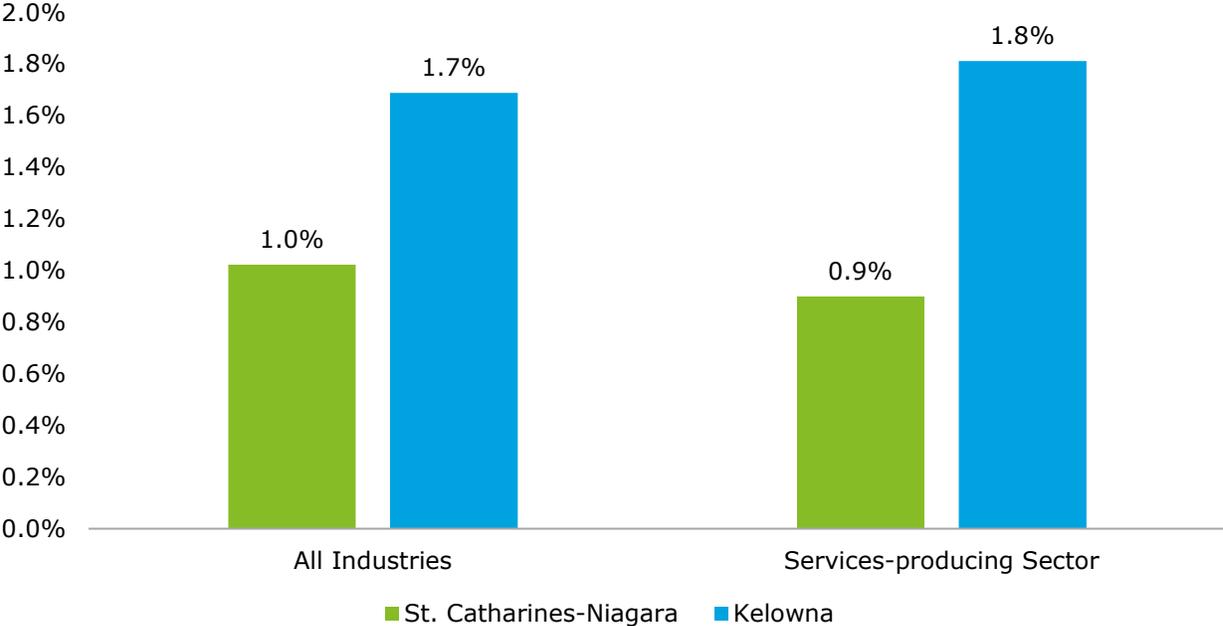
The economic development challenge of the Niagara Cluster provides an opportunity to support the ambitions of the Niagara region and province of a whole. Moreover, the economic benefits may not be difficult to acquire, as demonstrated by the benefits presently realized in other jurisdictions. For example, the Ontario wine industry is materially lagging BC’s wine industry in terms of growth and stage of development. In addition, the growth of the Niagara Cluster is also lagging BC’s key counterpart wine region found in Kelowna. This disparity is all the more striking when consideration is made that the Niagara Region has some key baked-in advantages such as the vicinity of a far greater population base, an iconic asset that serves as an international attraction in the Niagara Falls, and substantial room for capacity growth.

As shown by Figure 19, over the past ten years, employment across all industries within St. Catharines-Niagara has grown at an annual average rate of a mere 1.0%, whereas employment across all industries within Kelowna has grown at an annual average rate of 1.7%. This disparity is exacerbated in the service-producing sectors, on average, as annual employment growth in Kelowna has been double that of St. Catharines-Niagara from 2012 to 2022. In addition to this, Figure 20 demonstrates that, from 2009 to 2019, Kelowna’s real GDP increased by 41.4%, whereas Niagara’s

GDP grew by only 9.7%. On an annual basis this translates to an average annual growth rate of 3.5% for Kelowna and only 0.9% for the Niagara Region.¹⁶²

Although we cannot infer a direct link between wine industry policies and the stark employment and GDP growth rate differences between Niagara and Kelowna, industry and regional economic development policy differences are certainly a factor. As a result, GDP and employment growth are on the table for the Ontario Government to win, while simultaneously supporting the dreams and ambitions of everyone in the Niagara region and Province of Ontario.

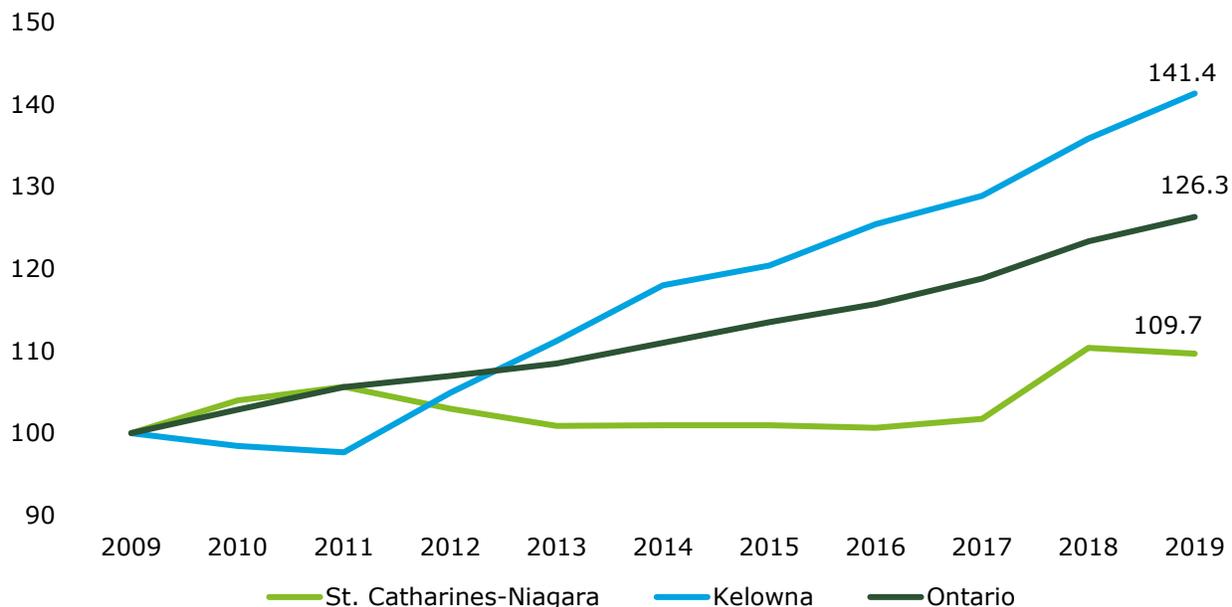
Figure 19: Annual Average Employment Growth Rates from 2012 to 2022



Source: Statistics Canada

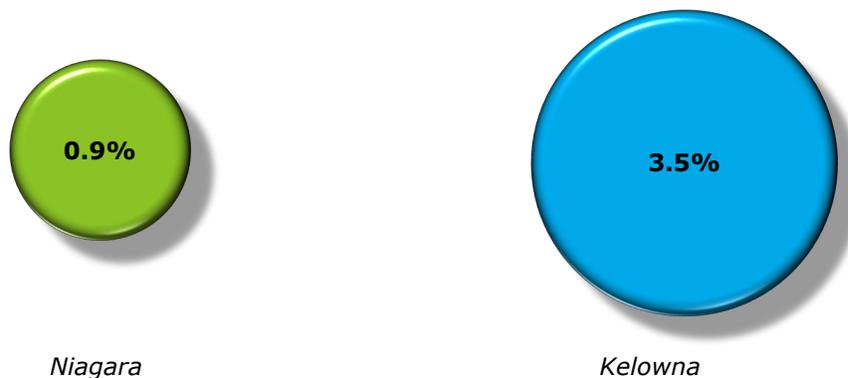
¹⁶² Statistics Canada (2022). Table 36-10-0468-01 Gross domestic product (GDP) at basic prices, by census metropolitan area (CMA) (x 1,000,000) and Table 36-10-0222-01 Gross domestic product, expenditure-based, provincial and territorial, annual (x 1,000,000). Calculations by Deloitte.

Figure 20: Real GDP Index from 2009 to 2019 (Base Year = 2009)



Source: Statistics Canada, Ontario Economic Accounts, Deloitte Calculation

Figure 21: Niagara and Kelowna Real GDP Annual Average Growth Rates from 2009 to 2019



Over this time period, if Niagara’s real GDP had grown by a rate that is equivalent to Kelowna’s real GDP growth rate, Niagara’s economic activity in 2019 would have been **\$4.5 billion** more than what was realized. In 2019 it is estimated that the provincial economy missed out on approximately \$850 million of additional investment to the Niagara region that could have been made had Niagara’s real GDP growth rate been that of Kelowna’s. Moreover, with Kelowna’s real GDP growth rate, the Niagara region would have cumulatively, from 2009 to 2019, produced an additional **\$20.5 billion** in real GDP, of which it is estimated that roughly **\$4 billion** would have been investment into economy.

Key Takeaway

Despite its success, in terms of growth and stage of development, the Ontario wine industry is significantly behind the BC wine industry. In addition, the growth of the Niagara Cluster is also lagging behind that of BC. **Between 2009 and 2019, Niagara's real GDP grew by only 9.7%, compared to Kelowna's real GDP growth of 41.4%.** This disparity is all the more significant when one takes into account that the Niagara Region has some robust built-in advantages, such as being close to a much larger population base, having the Niagara Falls, an iconic asset that serves as an international attraction, and having substantial room for capacity growth.



Key Takeaway

Ultimately, with Kelowna's real GDP growth rate experienced from 2009 to 2019, the Niagara Region's real GDP in 2019 would have been **\$4.5 billion** more than what was realized. **Cumulatively, over the course of 2009 to 2019, the Niagara Region would have experienced an additional \$20.5 billion in real GDP.** This disparity represents a clear economic development challenge for the Niagara Cluster. Nevertheless, overcoming this challenge provides an opportunity to win the support and ambitions of the population in the Niagara Region and the province as a whole.



Key Takeaway

The **wine industry has a critical role to play as the catalyst** to the Niagara Cluster's economic development potential. For example, if Niagara had the same economic growth rate as an advanced wine cluster such as Kelowna, then it is estimated that **investment in the regional economy would have been \$4 billion more** between 2009 and 2019. This increase in investment produces economic benefits for other industries in the region and the Provincial and Canadian economy more broadly.



6.2. A Path Forward

Increasing Niagara's employment and GDP growth rates to catch up with Kelowna's could take time, however there is a quick win opportunity that is ready for the taking. If Ontario's wine industry can increase the domestic market share of wine sales to equal that of British Columbia's wine sales, the wine industry can substantially enhance the economic contribution to the Province of Ontario and Canada. Our results showcase the lost opportunities associated from not promoting domestic production over foreign imports, an area in which British Columbia, compared to Ontario, has achieved some modest success. For reference, in 2019 the domestic market share of Ontario wines sales was 33%, whereas that of British Columbia wines sales was 47%.¹⁶³ We assessed the opportunity using

¹⁶³ Statistics Canada (2022). Table 10-10-0011-01 Value of sales of alcoholic beverages of liquor authorities and other retail outlets, by beverage type (x 1,000).

2019 as a reference year since it is the last full year prior to the pandemic, which therefore eliminates any distortions in economic activities that could have been associated with the pandemic.

As shown in Figure 22, with a domestic market share equal to that of British Columbia, the Ontario wine sector’s economic contribution to the Province would increase by **\$70 million in GDP** and **620 FTEs**. Under the same scenario, as shown in Figure 23, the Ontario wine sector’s economic contribution to Canada would increase by **\$77 million in GDP** and **682 FTEs**. This implies that expansion would also benefit other provinces, as with the incremental economic contribution to other provinces and territories being approximately **\$7 million in GDP** and **62 FTEs** in sustained employment. This additional uplift would amount to **more than \$800 million in additional GDP** over a ten-year period to Ontario’s economy.

Key Takeaway

Foreign competitors such as Australia, The United States and France protect their own markets with domestic market shares by volume of 82%, 60%, and 87% respectively. Increasing the Ontario wine sector’s domestic market share by sales of 33% to that of British Columbia’s domestic market share by sales of 47% could provide an additional \$70 million in GDP for the current year and **more than \$800 million in additional GDP** over a ten-year period to Ontario’s economy.



Figure 22: Incremental contribution to the Province when the Ontario wine sector’s domestic market share of Ontario wine sales is equal to that of British Columbia wine sales

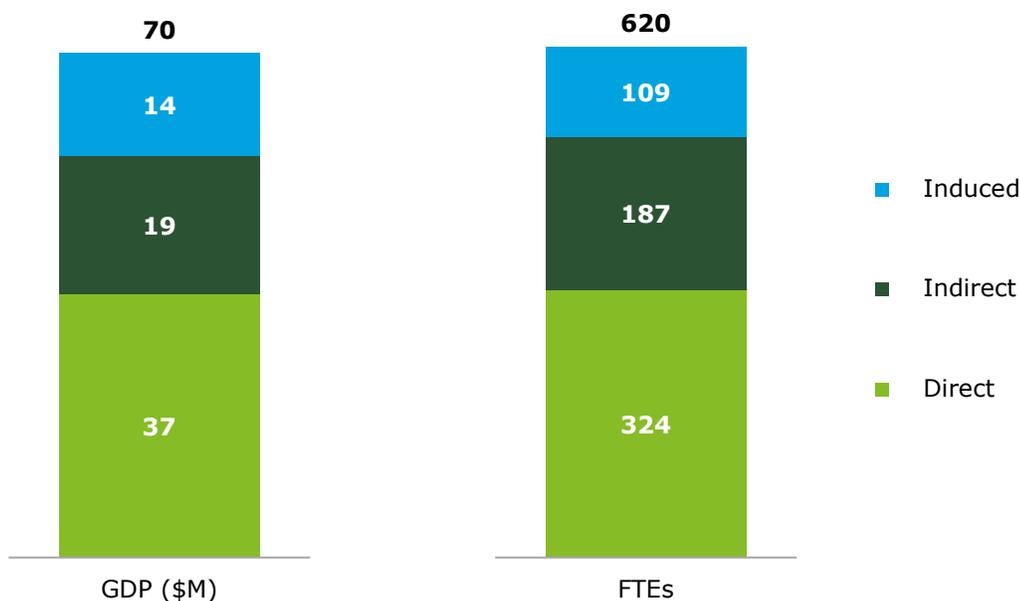
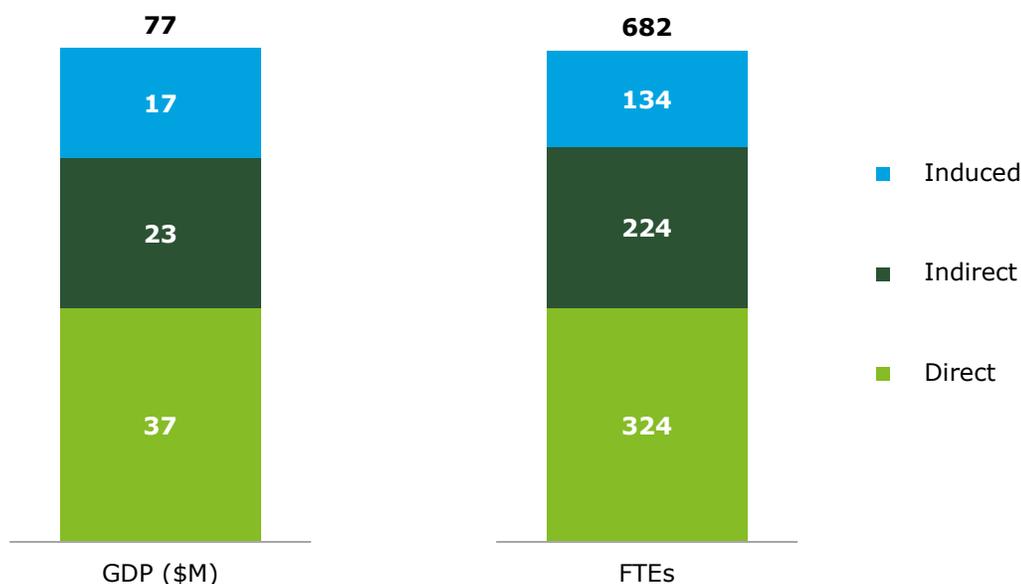


Figure 23: Incremental contribution to Canada when the Ontario wine sector’s domestic market share of Ontario wine sales is equal to that of British Columbia wine sales



The results above show that if Ontario’s wine sector can increase its domestic market share to the same level as British Columbia’s wine sector, significant value, in terms of GDP and jobs can be realized for Ontario’s economy. By adopting similar practice as British Columbia, Ontario has an opportunity to attain the incremental economic contribution depicted above.

In order to achieve the Niagara Cluster’s optimal future, critical members of the Niagara Cluster can conduct research on global best practices to identify how they can be applied within the Niagara Region and the Province. The corresponding economic impact could be significant with respect to the increase in economic activity, tax revenues, and job creation. Niagara is presently, and has been for years, poised for economic success due to its comparative advantages over other regions. With more than 13 million tourists visiting Niagara each year, Niagara should be flourishing compared to Kelowna.¹⁶⁴ Moreover, approximately 14 million people live within 200 kilometers of Niagara, whereas less than 1.0 million people reside within such distance of Kelowna.¹⁶⁵ Figures 24 and 25 depict the surrounding area of Niagara and Kelowna, respectively.¹⁶⁶ Even with a multitude of nearby cities and a surrounding area population that is well over 10 times that of Kelowna, Niagara has been unable to capitalize on its favourable position as demonstrated by our GDP and employment growth comparison between the regions. In addition to this, from 2009 to 2019, Niagara not only lags Kelowna’s GDP growth but also Ontario’s GDP growth, as shown in Figure 20. Therefore, Niagara’s sluggish economic development over recent history is unique to itself, and unlikely due to provincial trends.

¹⁶⁴ Niagara Economic Development (n.d.). Tourism. <https://niagaracanada.com/key-sectors/tourism/>

¹⁶⁵ Statistics Canada. 2023. Census Profile. 2021 Census; and United States Census Bureau. 2023. Census Profile. 2021 Census.

¹⁶⁶ Map Developers. 2023. <https://www.mapdevelopers.com/>

Figure 24: Map of Niagara’s Surrounding Area

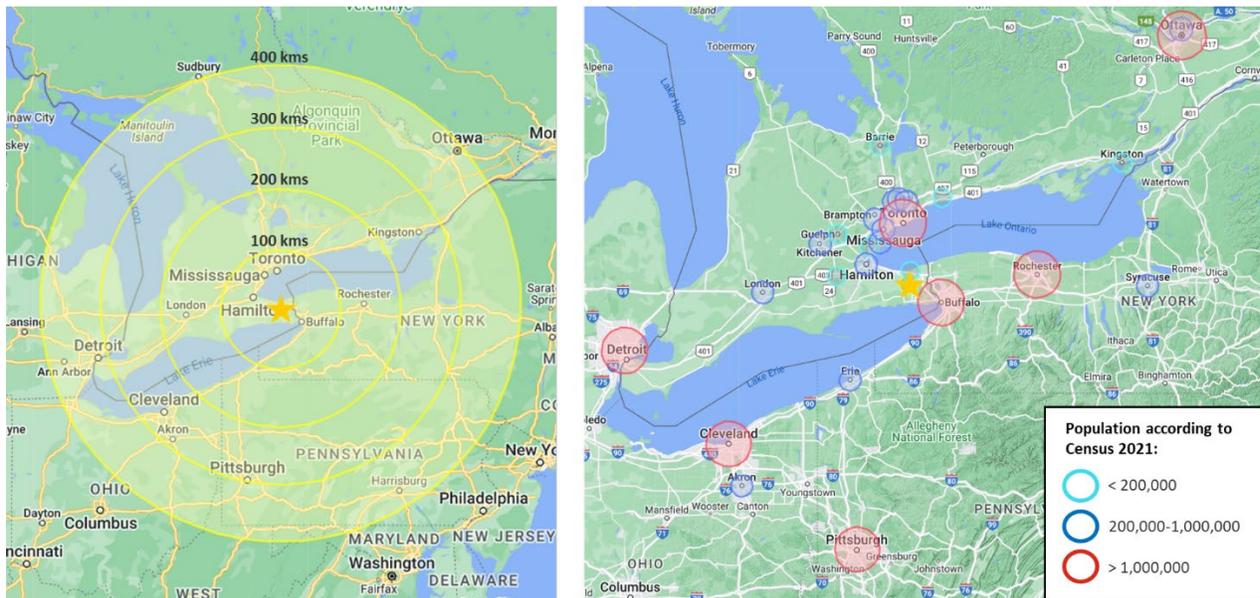
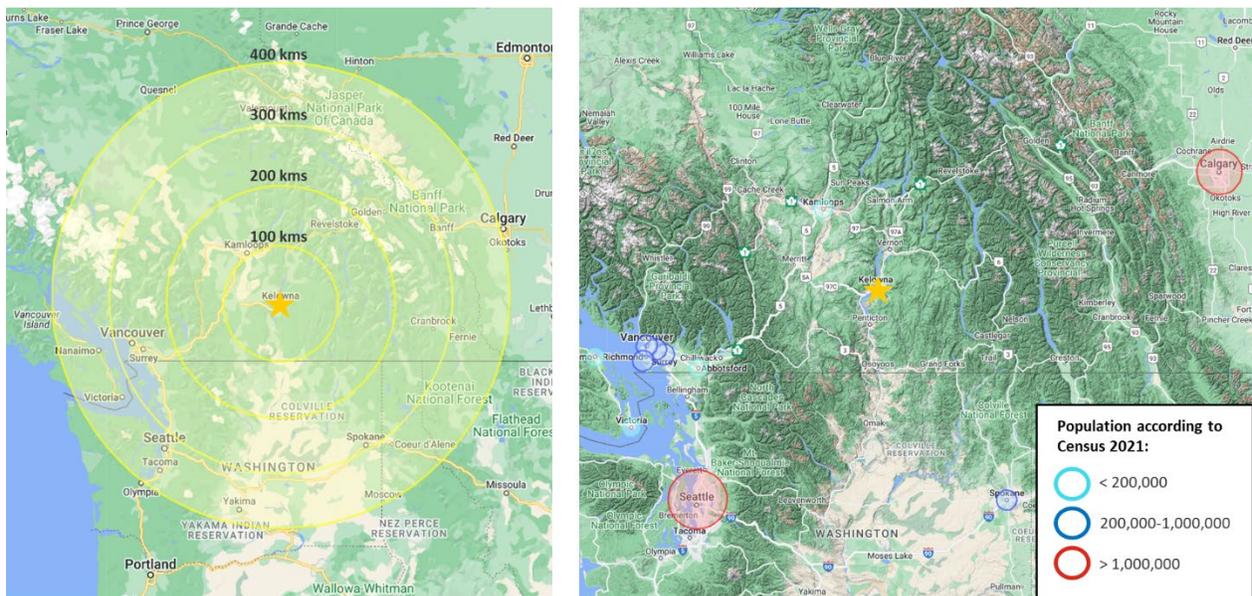


Figure 25: Map of Kelowna’s Surrounding Area



In the mid-2000s, the Mid-Peninsula Trade Corridor was considered by the provincial government. If it had been constructed, this highway would have been an effective trade and transportation corridor between multiple Canada-US border crossings.¹⁶⁷ In 2006, an Economic Impact Analysis¹⁶⁸ of the Mid-Peninsula Trade Corridor was conducted and found that the Corridor could have led to an average annual growth rate of 2.73%, from 2001 to 2031, compared to the 1.03% that had been projected for the Hamilton-Niagara Region. Given that, from 2009 to 2019, Niagara’s real GDP grew annually by an average of 0.9%, the Mid-Peninsula Trade Corridor could be seen as a lost opportunity to develop region. This is especially true since Niagara’s real GDP growth was less than half of the Province of

¹⁶⁷ *Mid Penn Trade (Niagara-to-GTA) Corridor (2008)*. Hamilton Chamber of Commerce.

¹⁶⁸ *Niagara to GTA Corridor Planning and EA Study Update (2010)*. City of Hamilton.

Ontario's annual average real GDP growth of 2.4% over the same time period.¹⁶⁹ Taking action, like developing the Mid-Peninsula Trade Corridor, could accelerate economic growth in Niagara to rectify the gap between its growth and that of the Province. This could potentially lead Niagara's real GDP to grow at annual average rate of 2.7%, as opposed to our baseline growth projection of 1.2%, from now until the mid-to-late 2040s,¹⁷⁰ our analysis indicates that the Niagara Region could achieve, in the late 2040s, at least a 35% higher level of GDP, than would otherwise be achieved without this initiative. As a conservative estimate, this would translate into an additional \$8 billion of real GDP for the Region. However, further study and analysis is required. A final point should be made on this lost opportunity. Estimates of the rate of return on public capital can vary considerably, with some public investment providing negative returns. The Mid-Peninsula Trade Corridor initiative, however, is a project that is highly likely to provide a large positive benefit, both to the Region in particular and Ontario in general. Despite the large upfront capital investment, the infrastructure would pay for itself over time.¹⁷¹

Finally, additional economic growth for the Region could also be obtained through the development, adoption, and implementation of industrial and regional strategy initiatives. These efforts would allow for targeted and coordinated actions by industrial and regional participants in a cohesive and consistent manner to provide the maximum economic uplift. Through such planning and coordination, the Niagara Region can potentially realize real GDP growth rate that exceeds 2.7% - that which could be attained by constructing the Mid-Peninsula Trade Corridor - and potentially rival Kelowna's 3.5% growth.

Key Takeaway

The Niagara Cluster has the opportunity of becoming a flourishing and robust economic region that includes a world-class wine, tourism, agricultural economy. Given the right conditions, with enhanced and robust regional economic development, future potential uplift for the Region could amount to at least **\$8 billion in additional real GDP in a generation, above the current status quo estimate. This represents an uplift of roughly 35% above baseline estimates.**



¹⁶⁹ Statistics Canada (2022). Table 36-10-0468-01 Gross domestic product (GDP) at basic prices, by census metropolitan area (CMA) (x 1,000,000) and Table 36-10-0222-01 Gross domestic product, expenditure-based, provincial and territorial, annual (x 1,000,000). Calculations by Deloitte.

¹⁷⁰ Statistics Canada (2022). Table 36-10-0468-01 Gross domestic product (GDP) at basic prices, by census metropolitan area (CMA) (x 1,000,000) and Table 36-10-0222-01 Gross domestic product, expenditure-based, provincial and territorial, annual (x 1,000,000). Statistics Canada (2023). Table 17-10-0135-01 Population estimates, July 1, by census metropolitan area and census agglomeration, 2016 boundaries. Calculations by Deloitte.

¹⁷¹ Macdonald, Ryan (2008): An Examination of Public Capital's Role in Production. Economic Analysis Research Paper Series. Catalogue no. 11F0027M, no.50. Ottawa: Statistics Canada.

A photograph of a vineyard at sunset. In the foreground, two wine glasses filled with white wine are positioned on the left. To their right is a large, vibrant bunch of dark purple grapes. The background shows a vineyard with rows of grapevines stretching into the distance, bathed in the warm, golden light of the setting sun. The sky is a soft, pale blue. The overall mood is serene and celebratory.

Section 7: Conclusion

7. Conclusion

Looking forward, the Niagara Region is challenged to diversify, develop new additive economic opportunities, and capitalize on its established tourism offering. Coordination among different sectors and municipalities will be key to develop one voice, a shared vision, and objective for the Region. As illustrated throughout the paper, the Niagara Cluster has an opportunity of becoming a world-class wine, tourism, and agricultural economy. In specific, the wine industry stands as a critical player to the stable and long-term anchor for economic development and growth in the Niagara Region. The sector's value proposition is well-articulated, well-understood, and remedies are evident. How it is nurtured, developed, and managed responsibly will determine the extent to which the Niagara Region and beyond will reap the full economic benefit of the sector.

As seen throughout the paper, the Ontario wine sector has made significant progress in the past decade. While still small relative to other industries, the wine industry's growth in volume has outpaced Ontario's GDP growth. Hence, there is significant value that can be extracted by investing in the Ontario wine sector. Tables 3 and 4 summarize the impacts of the wine sector to Ontario, Canada, as well as wine sector ecosystem to the Niagara Region. Our Input-Output Model provides the groundwork and points to wine's significant direct, indirect, and induced economic benefit at multiple jurisdictional levels.

Yet, beyond these sizable yet still narrow metrics, a premium wine sector works its way through the economy as an uplifting influence providing many adjacent sectors significant headroom to grow and thrive. Premium wine acts as a symbiotic partner to agriculture, tourism, hospitality, accommodation, construction, infrastructure, research and development, manufacturing, and more, inviting all to reach higher. The wine sector allows key adjacent industries to pursue new opportunities and develop inspired offers for the marketplace.

Premium wine for many operators across these adjacent sectors is an if-then proposition. If Niagara's wine achieves its premium reputational ambitions, then these sectors activate and invest against a different set of assumptions, different visitor profiles, longer stays, blossoming partnerships among local agriculture, merchants, restaurants, local culinary experiences, recreational opportunities, accommodations, cultural properties, and even human capital development. A premium wine sector creates economic possibility for some sectors that already benefit from visitors to the region.

Table 3: Summary GDP Impact (\$ Millions)

	Canada	Ontario	Niagara
Direct	657	657	1,968
Indirect	198	162	962
Induced	155	130	685
Total	1,010	949	3,615

Table 4: Summary Jobs Impact (FTEs)

	Canada	Ontario	Niagara
Direct	4,183	4,183	35,507
Indirect	1,835	1,551	10,420

Induced	1,204	990	5,212
Total	7,222	6,725	51,138

However, as identified in Section 5, the Ontario premium wine sector is facing challenges to its economic growth and lags in comparison to global best practices found in other wine-producing jurisdictions. Distribution challenges, taxation, and other challenges identified by stakeholders and coalition members differ from the approaches found in leading wine jurisdictions. This has the effect of muting the wine sector’s economic uplift and can hinder the premium-ness of this sector from taking root.

The Missed Opportunity shown in Section 6, shows that if the Ontario wine sector’s domestic market share of Ontario wine sales is equal to the British Columbia wine sector’s domestic market share of British Columbia wine sales, the Ontario wine sector’s GDP contribution would grow by \$70 million, representing a 7% increase from its current level. Moreover, if Niagara’s real GDP had grown, from 2009 to 2019, by a rate that is equivalent to Kelowna’s real GDP growth rate, Niagara’s real GDP would have been \$4.5 billion more than what was realized. Cumulatively, from 2009 to 2019, with Kelowna’s real GDP growth rate, Niagara would have had an additional \$20.5 billion in real GDP, \$4.0 billion of which would have been invested into the economy.

The Niagara Region can realize this economic opportunity by nurturing this uplifting influence to realize its full potential. Canada, Ontario and even the region of Niagara, should consider borrowing policies from leading jurisdictions to cultivate the wine sector and foster its premium reputational capital in its home market.

The sector represents good stewardship of a natural wonder and includes investments that will remain in the region. Moreover, the attractiveness of the sector as an eventual employer and the sector’s partnerships with the local post-secondary institutions (Niagara College and Brock University’s CCOVI) consistently attract new talent to the region that ultimately stays in the region, a valuable resource for Niagara in human capital formation.

With the right preconditions for a flourishing premium wine sector in Ontario, the Niagara region, Ontario, and Canada can realize the full economic benefits of this sector.

Key Takeaways

1. The **Niagara Cluster** has the opportunity of becoming a flourishing and robust economic region that includes a world-class wine, tourism, agricultural economy. Given the right conditions, with enhanced and robust regional economic development, future potential uplift for the Region could amount to at least **\$8 billion in additional real GDP in a generation, above the current status quo estimate. This represents an uplift of roughly 35% above baseline estimates.**
2. The **wine industry delivers consistent and impactful revenue streams.** Between 2007/2008 to 2020/2021 the Ontario wine sector sales volume for Canadian products had an **Annual Growth Rate of 3.2%. This compares with a 1.5% real GDP growth for the broader Ontario economy in that time period.** Overall, the industry's growth in revenues is relatively consistent over time. This makes the wine industry not only reliable for economic contribution, but its stability also serves as an anchor for any future economic development strategy.
3. Despite its success, in terms of growth and stage of development, the Ontario wine industry is significantly behind the BC wine industry. In addition, the growth of the Niagara Cluster is also lagging behind that of BC. **Between 2009 and 2019, Niagara's real GDP grew by only 9.7%, compared to Kelowna's real GDP growth of 41.4%.** This disparity is all the more significant when one takes into account that the Niagara Region has some robust built-in advantages, such as being close to a much larger population base, having the Niagara Falls, an iconic asset that serves as an international attraction, and having substantial room for capacity growth.
4. The **wine industry has a critical role to play as the catalyst** to the Niagara Cluster's economic development potential. For example, if Niagara had the same economic growth rate as an advanced wine cluster such as Kelowna, then it is estimated that **investment in the regional economy would have been \$4 billion more** between 2009 and 2019. This increase in investment produces economic benefits for other industries in the region and the Niagara economy more broadly.
5. Ultimately, with Kelowna's real GDP growth rate experienced from 2009 to 2019, the Niagara Region's real GDP in 2019 would have been **\$4.5 billion** more than what was realized. **Cumulatively, over the course of 2009 to 2019, the Niagara Region would have experienced an additional \$20.5 billion in real GDP.** This disparity represents a clear economic development challenge for the Niagara Cluster. Nevertheless, overcoming this challenge provides an opportunity to win the support and ambitions of the population in the Niagara Region and the province as a whole.
6. The wine industry in Ontario has become an entrenched, economically sustainable sector due to the unique microclimate conditions of the Niagara Region. Niagara is responsible for **90% of grape production in Ontario.** The region is also the largest wine production region in Canada, responsible for **80% of Canada's total grape and wine production.** Investing in Niagara's wine region will have an impact on an economically sustainable sector, beyond Ontario's borders extending to Canada's wine industry as a whole.
7. Foreign competitors such as Australia, The United States and France protect their own markets with domestic market shares by volume of 82%, 60%, and 87% respectively. Increasing the Ontario wine sector's domestic market share by sales of 33% to that of British Columbia's domestic market share by sales of 47% could provide an additional \$70 million in GDP for the current year and **more than \$800 million in additional GDP** over a ten-year period to Ontario's economy.



Key Takeaways (Cont'd)

8. The wine industry plays a critical role in driving tourism and visitation amongst high-end, long-haul travellers. In New Zealand, it is estimated that wine tourists spend approximately 50% more than general tourists. Translated to Ontario, this would imply that the wine tourists in the Niagara region **contributed approximately** and additional **\$350 million than what would otherwise be the case for general tourists to the Region**. Niagara's tourism economy currently suffers from a lack of extended stays, and as the wine industry and Niagara's Cluster experiences and amenities continue to premiumize, the growth potential for the Niagara tourism economy will continue to grow.
9. Global best practices include: (1) dominating domestic market share, (2) connecting wine industries and tourism to create world class destinations, (3) competitive tax policies that incentivize investment in the wine sector, and (4) incentivizing and supporting capital investment in agriculture and hospitality.
10. The Ontario and Canadian governments are critical partners not only with the Ontario wine sector, but also with other key industries within the Niagara Cluster. Government championing of the wine sector and other regional industries is a key element found in the best-in-class wine regions around the world. The department of agriculture is often the key point of contact with the wine sector in other leading jurisdictions. Given its familiarity with agricultural practices, it is generally in the best position to orient government on how to best regulate the wine sector, while maintaining the goal of sector expansion and addressing broader sector needs - as opposed to a primary preoccupation of extracting economic rents. For instance, in Australia the wine industry is overseen by the Department of Agriculture, Fisheries, and Forestry, and in France it is overseen by the National Institute for Agriculture and Seafood Products.
11. Wine regions play a key role in creating a higher standard of living in uniquely beautiful landscapes. Wine is a unique economic engine that promotes growth while preserving the desirable local character of the region. A thriving wine industry serves as a key catalyst for economic development, providing **compelling communities for housing**, and would help create jobs in the Niagara region.
12. The wine industry is uniquely suited to leverage Niagara's **existing infrastructure** (such as education and transportation) to **facilitate its future growth**.

Niagara's post-secondary institutions, namely Brock University and Niagara College together employ over 8,400 people. Additionally, the University of Niagara Falls is scheduled to welcome new students in 2024. Overall, the Niagara Cluster can continuously gain from the economic benefits of post-secondary institutions. In the United States, research and education specialists in the wine industry contribute over \$200 million in economic activity.

Additionally, the Niagara Region is primed for growth as it has a solid foundation of a strong infrastructure network, which includes four major highways, five international border crossings into the United States, two major commercial vehicle border crossings, three international airports within 100km, and nearby access to Ontario's largest port. A strong foundation of infrastructure is essential for growth of the wine sector. In Rioja, Spain, **the transportation network accounts for 21% of the economic benefits of supply chain** performance of the wine industry.



Key Takeaways (Cont'd)

13. The wine industry plays a critical role in maintaining the Greenbelt. The industry provides one of the best uses of land within this protected region. **In Canada, only 0.03% of arable land is used for vineyards.** The Ontario wine industry resides within a unique microclimate that enables grapes for premium quality wines to grow. As only 0.53% of arable land on earth is currently used for wine production, Ontario has a significant economic asset for potential growth. Grapes are one of Ontario's highest value crop, a market force, and incentive that allocates land to its most lucrative use while simultaneously preserving the Greenbelt.
14. The Wine economy not only helps to **enhance Niagara's existing cultural amenities**, such as the Shaw Festival, but also creates interest and demand for additional cultural experiences, ranging from festivals, eco-tourism, and agritourism. In Germany, **wine tourists spend 15%-25% of their expenditures** on entertainment.





Section 8: Appendix



8. Appendix

8.1. Appendix A: Economic Impact Analysis Methodology

8.1.1. Economic Impact (Input-Output) Modelling Overview

Input-Output (I-O) models are used to simulate the economic impact of an expenditure on a given basket of goods and services or the output of one of several industries. Input-Output analysis uses data on the flow of goods and services among various sectors of the economy, and attempts to model how an expenditure, increase in demand, or investment ripples through a region's economy. This is done by mapping the production of products and services by each industry, and identifying the intermediate inputs used in the production of each final product or service used by consumers, sold as an export, or purchased by government. The model can then aggregate all of the employment and value-added impacts generated in the supply chain as commodities are produced. I-O models also consider the role of imports, which tie the supply chain to the global economy. This data is combined into a single model of the economy which can be solved to determine how much additional production is generated by a change in the demand for one or more commodities or by a change in the output of an industry.

Deloitte's I-O model has been configured using Statistics Canada's 2019 Supply and Use tables¹⁷² and 2019 I-O multipliers¹⁷³ to estimate Ontario's wine sector's economic contribution to Ontario and Canada, as well as the wine sector ecosystem's economic contribution to the Niagara Region.

8.1.2. Definitions for Economic Impact Analysis Terminology

The I-O model examines direct, indirect, and induced economic contribution in terms of GDP and employment as defined below:

Measure	Description
Direct Contribution	Direct economic contribution represents the economic value added that is directly related to capital investments and operating expenditures in the wine sector. For example, these contributions include the employment and income of employees directly involved in the wine sector, as well as the associated product and production taxes to the federal, provincial, and municipal governments.
Indirect Contribution	Indirect economic contribution represents the economic value added resulting from the demand for materials and services that the wine sector generates in supplier industries. For example, this includes economic activity generated in the agriculture, transportation, hospitality, and professional service sectors as a result of demand for materials and services generated by wine sector operators.
Induced Contribution	Induced economic contribution represents general income effects associated with the expenditure of wages earned as a result of direct and indirect economic contribution. For example, this includes economic activity stimulated by the purchase of goods and services at the household level resulting from the wine sector's direct or indirect contribution.

¹⁷² Statistics Canada (2022). Surveys and statistical programs, 15-602-X. Supply and Use Tables.

¹⁷³ Statistics Canada (2022). Table 36-10-0595-01. Input-output multipliers, detail level.

Gross Domestic Product (GDP)

GDP is the total unduplicated value of goods and services produced in the economic territory of a country or region during a given period. GDP includes household income from current productive activities (i.e., wages, salaries, and unincorporated business income) as well as profits and other income earned by corporations and government revenues. In the context of our study, GDP serves as a measure of the total economic value added resulting from expenditures by the wine sector. For this study, we consider GDP at market prices as opposed to GDP at basic prices since the former (latter) is inclusive (exclusive) of imposed government taxes and subsidies on products.

Employment

In this study, employment contribution is estimated in terms of full-time equivalent (FTE) positions for ongoing employment (i.e., employment contribution associated with annual expenditures). Full-time equivalent positions are counted according to their duration and not according to whether they were employed on a full-time or part-time basis. That is, two part-time employees would be counted as one full-time equivalent if the total time they spent on the job adds up to the number of hours one full-time employee would work in one year. This approach is consistent with standard statistical terminology.

Additionally, we measured economic contribution in terms of GDP, as opposed to sales, in order to isolate and identify the incremental value-added by wine sector and wine sector ecosystem operators. We avoided the issue of double counting as much as possible by excluding the outputs of one industry in the ecosystem that served as an input in another industry member of the eco-system.

8.1.3. Assumptions and Limitations of the Input-Output Model

The Input-Output model is subject to a number of general assumptions and limitations. The model reflects a simplified macroeconomic structure and does not include various macroeconomic variables of interest, such as interest rates, unemployment rates, and income tax rates, that may ultimately affect overall impact. The model also assumes that the Ontario/Canadian economy has the capacity to produce the goods and services stimulated by any additional economic activity entered into the model. Therefore, it is not able to forecast situations in which demand may outpace the capacity to produce the required goods and services, however it does estimate the portion of goods and services sourced from other provinces in Canada and internationally. The model makes a basic underlying assumption that the number of jobs sustained maintains a linear relationship with short-term gross output and that technologies are fixed. The model also assumes that product prices do not change in response to higher demand.

While we do include induced economic effects, we recognize that this does run the risk of overestimating economic impacts because of the model's rigid assumptions of a fixed expenditure share of household income, is maintained in the presence of the additional economic activity. However, not considering induced economic effects will tend to underestimate economic contribution since household spending is not included in the model. Therefore, economic contribution based on direct and indirect effects alone provides a lower bound for economic contribution, whereas economic contribution based on direct, indirect, and induced effects can be viewed as providing an upper bound for economic contribution.

It is important to note that the economic contribution results should be interpreted as a snapshot of the economic activity associated with the wine sector. These results do not take account of the opportunity cost of labour, capital, and intermediate resources used for capital and operating activities. As such, the economic contribution results do not represent incremental economic impacts.

8.1.4. Wine Sector and Wine Sector Ecosystem NAICS Codes

Throughout this study, we used the North American Industry Classification System (NAICS) to classify industries relevant to the wine sector and wine sector ecosystem. The following tables map each relevant sector to the corresponding NAICS code used during analysis.

Table 5: Wine Sector Industries

	Wine Sector Industry	NAICS Code	NAICS Code
	Grape Production	Non-citrus fruit and tree nut farming	111330
	Wine Production	Wineries	312130
	Distribution and Wine Wholesalers	Alcoholic beverage merchant wholesalers	413220
	Wine Retailing	Beer, wine, and liquor retailers	445320

Table 6: Wine Sector Ecosystem – Travel and Hospitality

	Travel and Hospitality	NAICS Code	NAICS Code
	Traveller Accommodation	Traveller accommodation	7211
	Travel Services	Travel arrangement and reservation services	5615
	Hunting and Fishing Camps	Hunting and fishing camps	721212
	Food Services and Drinking Places	Food services and drinking places	722

Table 7: Wine Sector Ecosystem – Transportation

	Transportation	NAICS Code	NAICS Code
	Air Transportation	Air transportation	481
	Rail Transportation	Rail transportation	482
	Bus Transportation	Urban transit systems	4851
	Other Transit and Group Passenger Transportation	Other transit and ground passenger transportation	4859

Table 8: Wine Sector Ecosystem – Culture and Entertainment

	Culture and Entertainment	NAICS Code	NAICS Code
	Performing Arts, Spectator Sports and Related Industries	Performing arts, spectator sports and related industries	711
	Casinos	Casinos (except casino hotels)	713210
	Other Amusement and Recreation Industries	Other amusement and recreation industries	7139

8.1.5. Previous Economic Impact Studies

There have been other economic impact studies of the wine industry. The most recent study entitled “The Economic Impact of the Wine and Grape Industry in Canada 2019 and 2020” by Economic Forensics and Analytics, Inc. (EFA). It should be noted that the methodology of the current whitepaper is similar with the previous study but also differs in other aspects. Both studies utilize Input-Output frameworks - a standard and credible methodology - to assess economic impacts and economic contribution. Where the difference lies is that the EFA paper estimates the impacts from a transactional perspective. The current white paper, on the other hand, estimates the impacts from a value-added (GDP) perspective, and streamlines the interactions of inter-industry and intra-industry flows of goods and services. The approach in this white paper was used in part because it is in alignment with the approach utilized by Provincial governments and the Federal government in Canada and does not speak to the nature of the methodology used in other previous studies. This study was conducted independently of any previous studies.

8.2. Appendix B: Policy per Jurisdiction

8.2.1. Jurisdictional Overview

Deloitte has conducted a jurisdictional scan to compare and contrast Ontario's policy environment with five peer regions: British Columbia, California, Oregon, France, and Australia. The scan included an analysis of key policy architecture/treatment, identification of differentiated tax/financial interventions, public-private partnerships and cooperation, and key metrics that illustrates the sector's maturity and market penetration.



Table 9 compiles key metrics for the five jurisdictions in the study. Some key observations from the table are:

- Successful wine jurisdictions have a common characteristic in that local producers dominate their domestic market.
- Ontario produces a higher volume of wine compared to British Columbia and Oregon but has a lower number of wineries compared to British Columbia and Oregon.
- Ontario still has room to grow by dominating a greater share of their domestic market.

It should be noted, the data reflects the most recent data points available for each jurisdiction.

Table 9: Jurisdictional Comparison of Key Metrics

Region	Share of Domestic Wine Volume	Number of Wineries	Sales Volume of Wine (millions of litres) ¹⁷⁴	Number of people employed in the sector
Ontario	44% ¹⁷⁵ (2021)	185 ¹⁷⁶ (2022)	188 ¹⁷⁷ (2012)	3,965 ¹⁷⁸ (2021)
British Columbia	53% ¹⁷⁹ (2022)	243 ¹⁸⁰ (2022)	79.8 ¹⁸¹ (2021)	3,655 ¹⁸² (2021)
Oregon	28% ¹⁸³ (2020)	373 ¹⁸⁴ (2020)	48 ¹⁸⁵ (2021)	3,310 ¹⁸⁶ (2020)

¹⁷⁴ For the sales of volume of wine, the data was converted to millions of litres. For Oregon, the original data was in number of cases sold. We performed a calculation to convert to litres assuming 9 litres = 1 case. To convert 5,295,226 cases to litres, we can multiply by 9: 5,295,226 cases * 9 litres/case = 47,762,034 litres. Therefore, there are approximately 47.8 million litres of wine in 5,295,226 cases.

¹⁷⁵ Volume of sales of alcoholic beverages of liquor authorities and other retail outlets, by origin of product (x 1,000). (2023, 24 février). Statistics Canada : Canada's national statistical agency / Statistique Canada : Organisme statistique national du Canada. [https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010001102&pickMembers\[0\]=1.11&pickMembers\[1\]=3.11&cubeTimeFrame.startYear=2009+/+2010&cubeTimeFrame.endYear=2020+/+2021&referencePeriods=20090101,20200101](https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010001102&pickMembers[0]=1.11&pickMembers[1]=3.11&cubeTimeFrame.startYear=2009+/+2010&cubeTimeFrame.endYear=2020+/+2021&referencePeriods=20090101,20200101)

¹⁷⁶ Canadian Business Counts, with employees, December 2021. (2022, 10 février). Statistics Canada : Canada's national statistical agency / Statistique Canada : Organisme statistique national du Canada. [https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310049301&pickMembers\[0\]=2.1&pickMembers\[1\]=3.605](https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310049301&pickMembers[0]=2.1&pickMembers[1]=3.605)

¹⁷⁷ Volume of sales of alcoholic beverages of liquor authorities and other retail outlets, by origin of product (x 1,000). (2023, 24 février). Statistics Canada : Canada's national statistical agency / Statistique Canada : Organisme statistique national du Canada. [https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010001102&pickMembers\[0\]=1.11&pickMembers\[1\]=3.11&cubeTimeFrame.startYear=2009+/+2010&cubeTimeFrame.endYear=2020+/+2021&referencePeriods=20090101,20200101](https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010001102&pickMembers[0]=1.11&pickMembers[1]=3.11&cubeTimeFrame.startYear=2009+/+2010&cubeTimeFrame.endYear=2020+/+2021&referencePeriods=20090101,20200101)

¹⁷⁸ Labour statistics consistent with the System of National Accounts (SNA), by job category and industry. (2023, 10 février). Statistics Canada : Canada's national statistical agency / Statistique Canada : Organisme statistique national du Canada. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610048901>

¹⁷⁹ Volume of sales of alcoholic beverages of liquor authorities and other retail outlets, by origin of product (x 1,000). (2023a, 24 février). Statistics Canada : Canada's national statistical agency / Statistique Canada : Organisme statistique national du Canada. [https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010001102&pickMembers\[0\]=1.11&pickMembers\[1\]=3.11&cubeTimeFrame.startYear=2009+/+2010&cubeTimeFrame.endYear=2020+/+2021&referencePeriods=20090101,20200101](https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010001102&pickMembers[0]=1.11&pickMembers[1]=3.11&cubeTimeFrame.startYear=2009+/+2010&cubeTimeFrame.endYear=2020+/+2021&referencePeriods=20090101,20200101)

¹⁸⁰ Canadian Business Counts, with employees, December 2021. (2022, 10 février). Statistics Canada : Canada's national statistical agency / Statistique Canada : Organisme statistique national du Canada. [https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310049301&pickMembers\[0\]=2.1&pickMembers\[1\]=3.605](https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310049301&pickMembers[0]=2.1&pickMembers[1]=3.605)

¹⁸¹ Volume of sales of alcoholic beverages of liquor authorities and other retail outlets, by origin of product (x 1,000). (2023, 24 février). Statistics Canada : Canada's national statistical agency / Statistique Canada : Organisme statistique national du Canada. [https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010001102&pickMembers\[0\]=1.11&pickMembers\[1\]=3.11&cubeTimeFrame.startYear=2009+/+2010&cubeTimeFrame.endYear=2020+/+2021&referencePeriods=20090101,20200101](https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1010001102&pickMembers[0]=1.11&pickMembers[1]=3.11&cubeTimeFrame.startYear=2009+/+2010&cubeTimeFrame.endYear=2020+/+2021&referencePeriods=20090101,20200101)

¹⁸² Labour statistics consistent with the System of National Accounts (SNA), by job category and industry. (2023, 10 février). Statistics Canada : Canada's national statistical agency / Statistique Canada : Organisme statistique national du Canada. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610048901>

¹⁸³ (s. d.-b). Oregon Wine Industry | Oregon Wine Board. <https://industry.oregonwine.org/wp-content/uploads/sites/2/2021-Winery-Vineyard-Report-09-09-22.pdf>

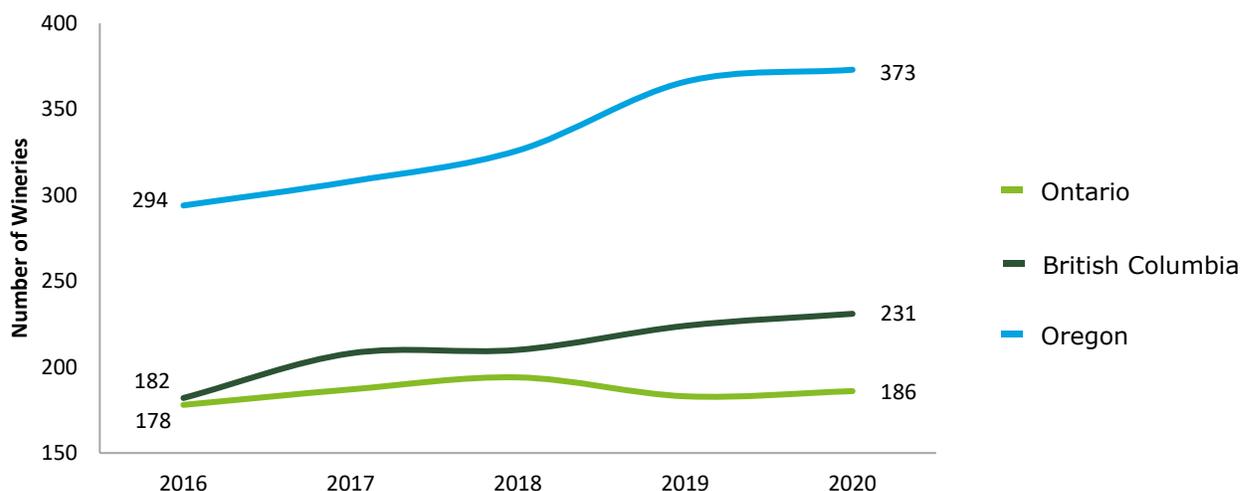
¹⁸⁴ Number of wineries by state, 2001-20. U.S. Bureau of Labor Statistics. <https://www.bls.gov/spotlight/2021/industry-on-tap-winerries/home.htm>

¹⁸⁵ Oregon Wine Industry | Oregon Wine Board. <https://industry.oregonwine.org/wp-content/uploads/sites/2/2021-Winery-Vineyard-Report-09-09-22.pdf>

¹⁸⁶ Employment in wineries by state, 2001-20. U.S. Bureau of Labor Statistics. <https://www.bls.gov/spotlight/2021/industry-on-tap-winerries/home.htm>

Region	Share of Domestic Wine Volume	Number of Wineries	Sales Volume of Wine (millions of litres) ¹⁷⁴	Number of people employed in the sector
California	80% ¹⁸⁷ (2019)	1,991 ¹⁸⁸ (2020)	591 ¹⁸⁹ (2020)	36,001 ¹⁹⁰ (2022)
France	87% ¹⁹¹ (2021)	5,900 ¹⁹² (2020)	2,520 ¹⁹³ (2021)	150,000 ¹⁹⁴ (2020)
Australia	82% ¹⁹⁵ (2022)	2,156 ¹⁹⁶ (2022)	1,604 ¹⁹⁷ (2022)	163,790 ¹⁹⁸ (2022)

Figure 26: Number of Wineries from 2016 to 2020



¹⁸⁷ Number of wineries in the U.S. 2021 | Statista. (s. d.-a). Statista. <https://www.statista.com/statistics/259353/number-of-wineries-in-the-us/#:~:text=California%20is%20without%20question%20America's%20leading%20state%20when,within%20the%20United%20States%20are%20located%20in%20California.>

¹⁸⁸ Number of wineries by state, 2001-20. U.S. Bureau of Labor Statistics. <https://www.bls.gov/spotlight/2021/industry-on-tap-wineries/home.htm>

¹⁸⁹ Wine consumption United States by state 2020 | Statista. (s. d.). Statista. <https://www.statista.com/statistics/942245/wine-consumption-in-the-us-by-state/>

¹⁹⁰ Employment in wineries by state, 2001-20. U.S. Bureau of Labor Statistics. <https://www.bls.gov/spotlight/2021/industry-on-tap-wineries/home.htm>

¹⁹¹ Country Statistics | OIV. (s. d.). Home | OIV. <https://www.oiv.int/what-we-do/country-report?oiv>

¹⁹² Infographie - La viticulture française. (s. d.). Ministère de l'Agriculture et de la Souveraineté alimentaire. <https://agriculture.gouv.fr/infographie-la-viticulture-francaise>

¹⁹³ Country Statistics | OIV. (s. d.-b). Home | OIV. <https://www.oiv.int/what-we-do/country-report?oiv>

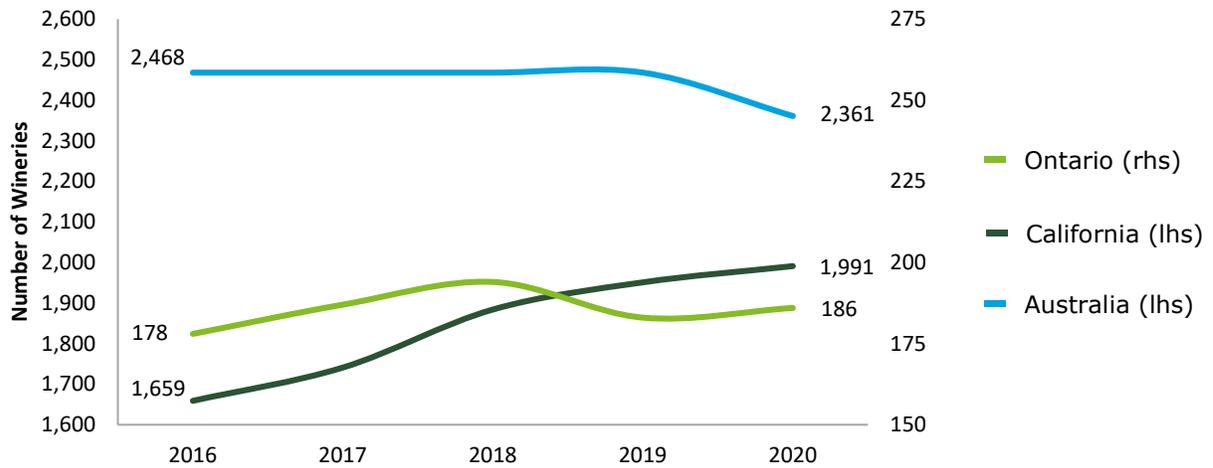
¹⁹⁴ FEVS. (2018, 21 juin). Key figures | FEVS. <https://www.fevs.com/en/the-sector/key-figures/>

¹⁹⁵ Australian wine : Production, sales and inventory report. (s. d.-b). Wine Australia | Wine Australia. <https://www.wineaustralia.com/market-insights/australian-wine-production-sales-and-inventory>

¹⁹⁶ Australian wine : Production, sales and inventory report. (s. d.). Wine Australia | Wine Australia. <https://www.wineaustralia.com/market-insights/australian-wine-production-sales-and-inventory>

¹⁹⁷ Australian wine : Production, sales and inventory report. (s. d.-b). Wine Australia | Wine Australia. <https://www.wineaustralia.com/market-insights/australian-wine-production-sales-and-inventory>

¹⁹⁸ Australian wine : Production, sales and inventory report. (s. d.-b). Wine Australia | Wine Australia. <https://www.wineaustralia.com/market-insights/australian-wine-production-sales-and-inventory>



8.2.2. British Columbia

British Columbia was chosen as a peer jurisdiction as it represents one of Canada's largest economic engines along with Ontario. In addition, its location on the West Coast, focus on technology, and abundant natural resources are significant contributors to the economy making it an attractive location for businesses and investors.

Decanter Awards ¹⁹⁹ – Best in show – No awards

Decanter Awards – Platinum

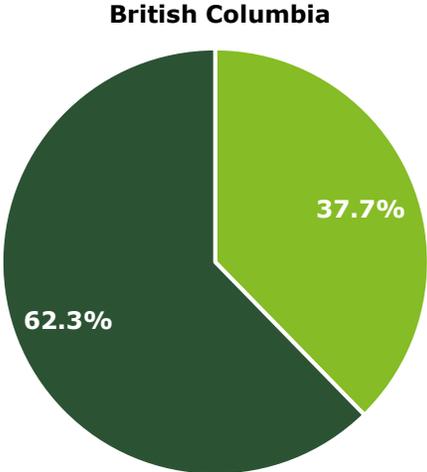
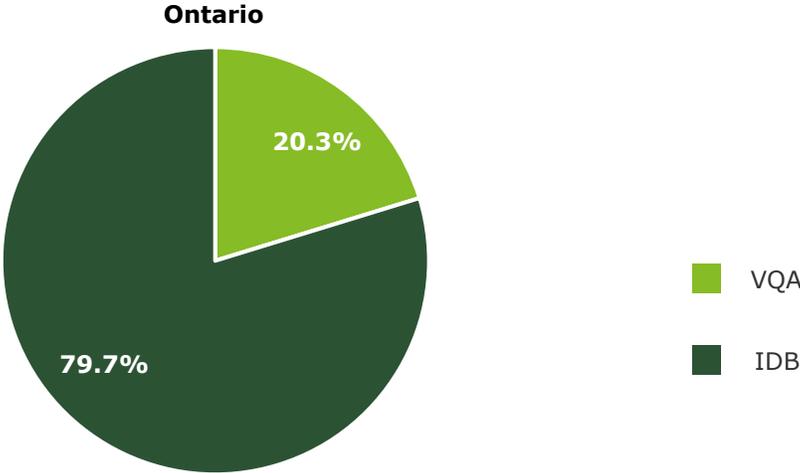


Decanter – 1 Platinum in 2022 competition year

199 Decanter world wide awards. Decanter World Wide Awards. (n.d.). Retrieved March 15, 2023, from <https://awards.decanter.com/>

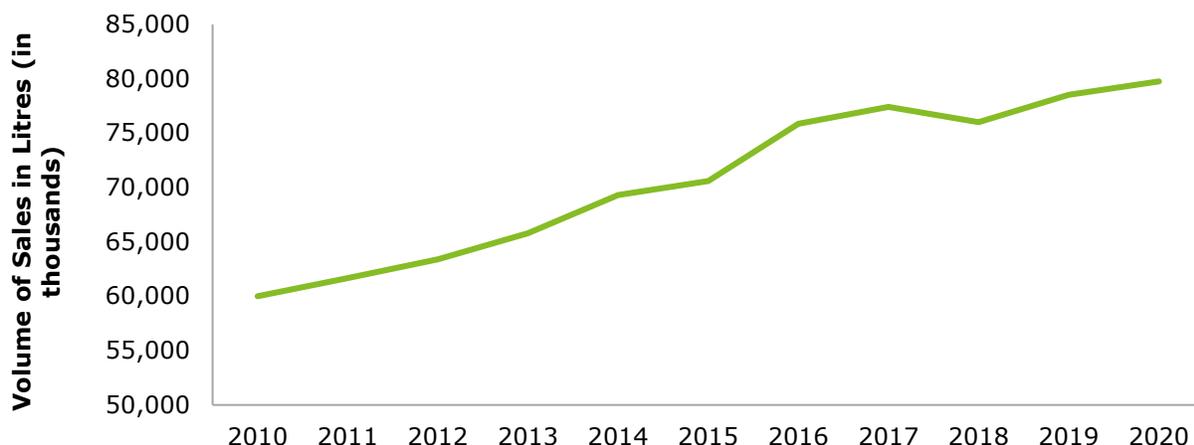
British Columbia versus Ontario

Figure 27: VQA and IDB Share Split by Volume in Ontario and British Columbia 2022



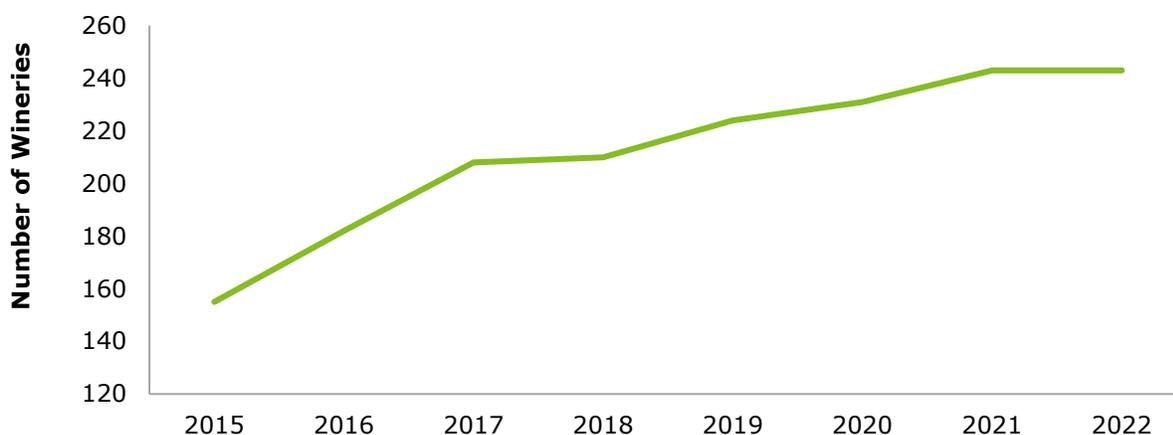
Source: Grape Growers of Ontario

Figure 28: Total Volume of Sales of Wine (British Columbia)



Source: Statistics Canada

Figure 29: Total Number of Wineries (British Columbia)



Source: Statistics Canada

Table 10: Summary of BC’s Partnerships and Policies

Relevant partnerships • Wines of British Columbia & organizations

- The Wines of British Columbia is an organization that represents the interests of BC wineries committed to producing 100% BC grape wines, as recognized by the BC wine regulatory body, through marketing, communications, and advocacy of their products to all stakeholders. They are the leading organization for the BC wine industry.²⁰⁰

²⁰⁰ British Columbia wine industry: Wine Growers BC: Wine BC. Wine BC Industry. (2022, July 8). Retrieved March 10, 2023, from <https://winebc.com/industry/>

- **British Columbia Wine Authority**
 - The British Columbia Wine Authority is an independent regulatory body delegated by the province of BC to enforce the Province's Wines of Marked Quality Regulation.²⁰¹
- **British Columbia Wine Grape Council**
 - The BC Wine Grape Council's mission is to represent growers on a range of agricultural-related issues and to coordinate, facilitate, and fund viticulture and oenology research and education for the benefit of the British Columbia wine grape industry.²⁰²

Taxation

- **Tax Regime**
 - Alcohol retail sales taxes have been enacted by all provinces and territories, including BC. In BC the tax rate sits at 10%.²⁰³

Financial intervention/producer support estimates

- **Quality Enhancement Program/VQA rebate**²⁰⁴
 - BC wines sold through government liquor stores are eligible for rebates under the Quality Enhancement Program (QEP).
 - Wines sold through government liquor stores under the Vintners Quality Alliance (VQA) will pay wineries a higher proportion of the retail price. As a result of this policy, more wineries will be encouraged to sell their VQA wines in government liquor stores. The B.C. Wine Institute established and upholds the VQA wine standard for wines made entirely from B.C. grapes.

Other policies & regulations

- **The British Columbia Liquor Distribution Branch (LDB)**
 - The LDB is British Columbia's government run liquor board that controls the distribution and sale of wine within the province.
- **Hybrid Market Model**²⁰⁵
 - Only Alberta and British Columbia, have transitioned away from total government oversight and have easier distributional access to different markets. All other provinces, like Ontario, have tougher distributional access to different markets.
 - Currently, British Columbia is the only province with a hybrid model. The state-run section of the stores is known as BC Liquors, and it collaborates with independent retailers.

²⁰¹ British Columbia Wine Authority. BCWA. (n.d.). Retrieved March 10, 2023, from <https://bcvqa.ca/>

²⁰² British Columbia Wine Grape Council. BCWGC. (n.d.). Retrieved March 10, 2023, from <https://www.bcwgc.org/>

²⁰³ Alcohol tax rates by province and territory in Canada. Canadian Partnership Against Cancer. (2022, December 8). Retrieved February 9, 2023, from <https://www.partnershipagainstcancer.ca/topics/alcohol-policies/alcohol-tax-rates/>

²⁰⁴ Ministry of Justice Liquor Distribution Branch. (2014). Overview of the Quality enhancement program.

²⁰⁵ Admin. (2022, November 28). The LCBO and the case for a privatization of alcohol sales in Ontario • the gentleman's flavor. The Gentleman's Flavor. Retrieved March 13, 2023, from <https://thegentlemansflavor.com/the-lcbo-and-the-case-for-a-privatization-of-alcohol-sales-in-ontario/>

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- Private businesses in British Columbia are required to purchase their inventory from the state-run British Columbia Liquor Distribution Branch (LDB).
 - The LDB collaborates with the BC Liquor Alliance, which speaks for BC's independent liquor stores.
-

8.2.3. California

California was chosen as a peer jurisdiction as it represents an economic benchmark where the premium wine-based economies is thriving. Napa Valley and its communities have been transformed by their wine sector.

Decanter Awards ²⁰⁶ – Best in Show



Decanter – 1 Best in Show Wines in 2022 competition year



Decanter – 2 Best in Show Wines in 2021 competition year

Decanter Awards – Platinum



Decanter – 4 Platinum in 2022 competition year

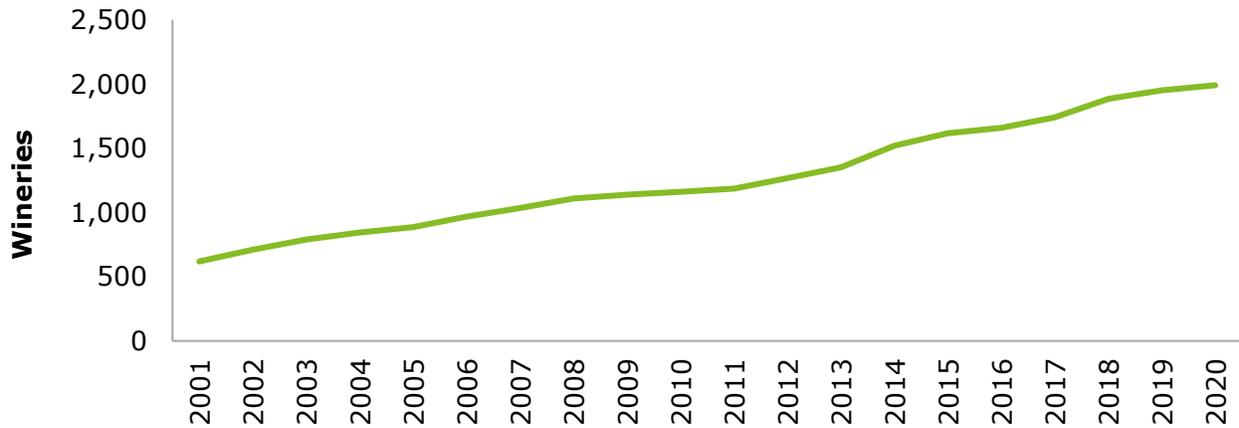


Decanter – 5 Platinum in 2021 competition year

Data for a time series for the sales volume of wine for California is not available in the public domain.

²⁰⁶ Decanter world wide awards. Decanter World Wide Awards. (n.d.). Retrieved March 15, 2023, from <https://awards.decanter.com/>

Figure 30: Total Number of Wineries (California)



Source: US Bureau of Labour Statistics

Table 11: Summary of California’s Partnerships and Policies

Relevant partnerships & organizations	
• The National Association of American Wineries ²⁰⁷	<ul style="list-style-type: none"> – WineAmerica’s mission to develop better policies that govern wine production, sales, and distribution. – Group includes the WineAmerica Board, State and Regional Associations Advisory Council, Government Affairs Committee, Membership & Marketing Committee.
• Wine Institute ²⁰⁸	<ul style="list-style-type: none"> – The Wine Institute represents wine in the United States when it comes to state, federal, and international policy. – They pool the resources of 1,000 wineries and affiliated companies to support programs that are beneficial to the entire California wine industry, including media relations, scientific research, international market development, and education.
• California Association of Winegrape Growers (CAWG) ²⁰⁹	<ul style="list-style-type: none"> – The California Association of Winegrape Growers protects and promotes the interests of California wine grape growers by giving its members a unified voice, strong advocacy, and solid leadership. – CAWG works to advance the long-term success of the winegrowing industry by promoting the adoption of sensible public policies, fostering awareness of and understanding of winegrape growers’

²⁰⁷ Good, T. (2023, February 3). America's wine industry's voice in Washington DC. WineAmerica. Retrieved March 13, 2023, from <https://wineamerica.org/>

²⁰⁸ About Us. Wine Institute. (n.d.). Retrieved March 13, 2023, from <https://wineinstitute.org/about-us/>

²⁰⁹ Advanced Solutions International, I. (n.d.). History. Retrieved March 13, 2023, from https://www.cawg.org/Wine1/About/Shared_Content/About/History.aspx?hkey=34a4bd5d-396c-43a3-8387-f11394efe194

contributions to the economy, environment, and communities in California.

- California Sustainable Winegrowing Alliance ²¹⁰
 - The California Sustainable Winegrowing Alliance (CSWA) is a San Francisco-based non-profit organization incorporated in 2003 created by Wine Institute and the California Association of Winegrape Growers to promote the benefits of sustainable winegrowing practices, enlist industry commitment and assist in implementation of the Sustainable Winegrowing Programs.
- California Department of Alcoholic Beverage Control ²¹¹
 - The California Department of Alcoholic Beverage Control is a government agency of the state of California that regulates manufacture, distribution, and sale of alcoholic beverages.

Taxation

- **Tax Regime** ²¹²
 - In California alcoholic beverages are subject to a per-gallon excise tax when they are sold, distributed, or imported.
 - Wine is currently taxed \$0.05 per litre of alcohol.

Financial intervention/producer support estimates

- **The California wine industry is supported by various programs/institutes and government initiatives such as**
 - The Wine Institute ²¹³
 - The California Sustainable Winegrowing Alliance ²¹⁴
 - California Association of Winegrape Growers (CAWG) ²¹⁵

8.2.4. Oregon

Oregon was chosen as a peer jurisdiction as it represents an example of a fast-growing wine-sector. The number of vineyards in Oregon has nearly doubled since 2005 ²¹⁶

²¹⁰ Benefiting the environment, the community and high quality grapes and wine. California Sustainable Winegrowing Alliance. (n.d.). Retrieved March 13, 2023, from <https://www.sustainablewinegrowing.org/>

²¹¹ California, S. of. (n.d.). Trust - Innovation - Professionalism. Alcoholic Beverage Control. Retrieved March 13, 2023, from <https://www.abc.ca.gov/>

²¹² ag infinity CVA. (2017). Study into the relative tax treatment of Canadian Wine.

²¹³ About Us. Wine Institute. (n.d.). Retrieved March 13, 2023, from <https://wineinstitute.org/about-us/>

²¹⁴ Benefiting the environment, the community and high quality grapes and wine. California Sustainable Winegrowing Alliance. (n.d.). Retrieved March 13, 2023, from <https://www.sustainablewinegrowing.org/>

²¹⁵ Advanced Solutions International, I. (n.d.). History. Retrieved March 13, 2023, from https://www.cawg.org/Wine1/About/Shared_Content/About/History.aspx?hkey=34a4bd5d-396c-43a3-8387-f11394efe194

²¹⁶ Industry statistics. Oregon Wine Resource Studio. (2022, June 23). Retrieved March 20, 2023, from <https://trade.oregonwine.org/resources/oregon-wine-industry-statistics/>

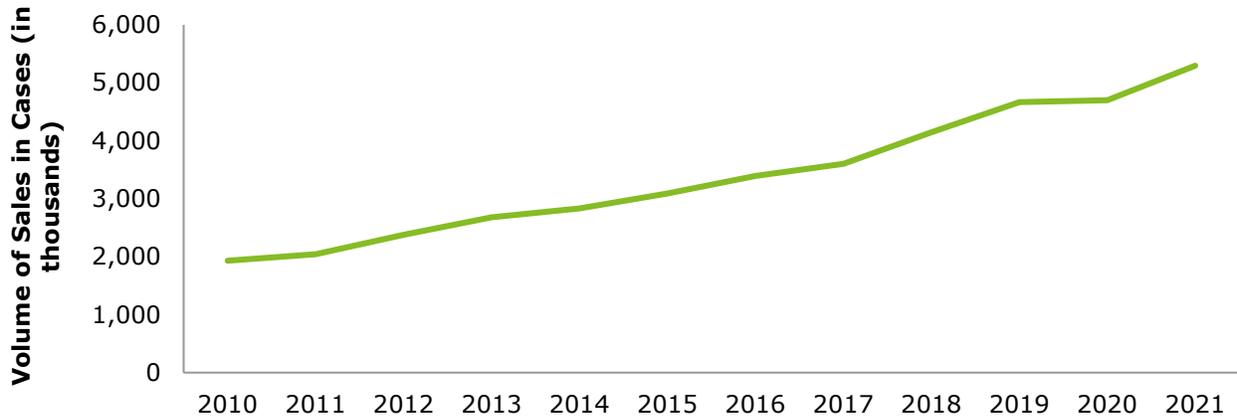
Decanter Awards ²¹⁷ – **Best in show** – *No awards*

Decanter Awards – Platinum



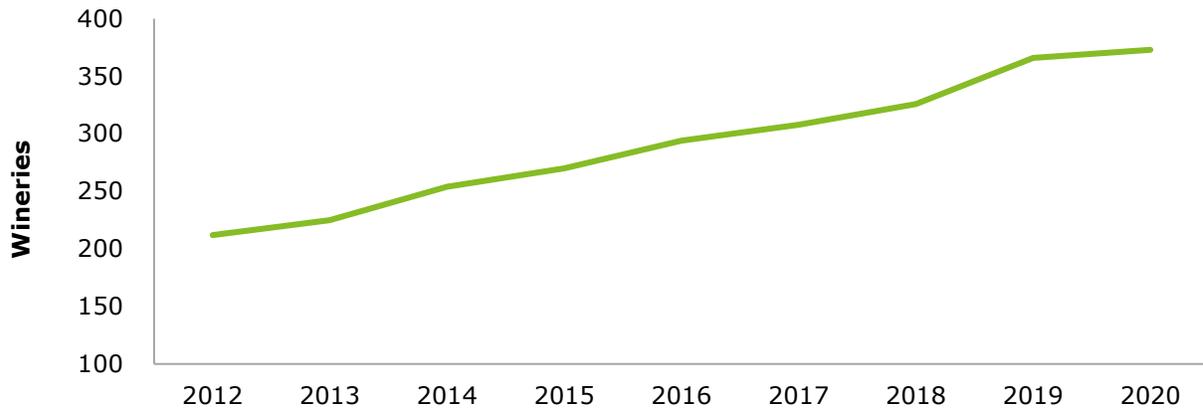
Decanter – 1 Platinum in 2021 competition year

Figure 31: Total Volume of Sales of Wine Cases (Oregon)



Source: Oregon Winery and Vineyard Report

Figure 32: Total Number of Wineries (Oregon)



Source: US Bureau of Labour Statistics

Table 12: Summary of Oregon’s Partnerships and Policies

²¹⁷ Decanter world wide awards. Decanter World Wide Awards. (n.d.). Retrieved March 15, 2023, from <https://awards.decanter.com/>²¹⁸ Oregon Wine Council. (n.d.). Retrieved March 13, 2023, from <https://www.oregonwinecouncil.org/>

Relevant partnerships & organizations • Oregon Wine Council ²¹⁸

- The Oregon Wine Council was founded in late 2019 and seeks to serve as an industry leader, advocate and resource for every wine grower and producer in Oregon, large and small.
- Some of their most important achievements include successfully defeating legislation that would have negatively impacted Oregon wineries and growers by creating new taxes on grape sales, new requirements for wine labelling standards and increasing stringency of varietal and geographical purity requirements.

• **Oregon Wine Board ²¹⁹**

- The Oregon Wine Board is a semi-independent state agency established in Oregon statute. The Oregon Wine Board manages marketing, research and education initiatives that support and advance Oregon’s state-wide wine and wine grape industry.

• **Sothern Oregon Wine Institute ²²⁰**

- Located in the Umpqua Valley, the Southern Oregon Wine Institute makes and sells award winning wines and is also the home of the Viticulture & Oenology program at Umpqua Community College.

• **OLCC: Oregon Liquor and Cannabis Commission**

- Agency responsible for regulating the sale and service of alcoholic beverages in Oregon by administering the state's Liquor Control Act. ²²¹

Taxation

• **Tax Regime**

- Oregon has tax rates on wine that are comparable to other states in the US with an excise tax of \$0.18 per litre of table wine. ²²²

Financial intervention/producer support estimates

• **Small Winery Exemption program**

- The Oregon state government operates a Small Winery Exemption program under the control of the Oregon Liquor Control Commission which exempts small US-based wine producers (i.e., those producing less than 100,000 gallons per annum) from state privilege tax on the first 40,000 gallons of wine sold in Oregon.

²¹⁸ Oregon Wine Council. (n.d.). Retrieved March 13, 2023, from <https://www.oregonwinecouncil.org/>

²¹⁹ Oregon wine. Oregon Wine Board. (2022, March 14). Retrieved March 13, 2023, from <https://www.oregonwine.org/>

²²⁰ Lucero, A. (2022, October 3). Southern Oregon Wine Institute. Umpqua Community College. Retrieved March 13, 2023, from <https://www.umpqua.edu/sowi>

²²¹ Oregon Liquor and Cannabis Commission : State of Oregon. (n.d.). Retrieved March 13, 2023, from <https://www.oregon.gov/olcc/pages/default.aspx>

²²² Oregon: Alcohol excise taxes. SalesTaxHandbook. (n.d.). Retrieved March 13, 2023, from <https://www.salestaxhandbook.com/oregon/alcohol#:~:text=Oregon%20Wine%20Tax%20%2D%20%240.67%20%2F%20gallon&text=In%20Oregon%2C%20wine%20vendors%20are,taxes%2C%20for%20all%20wine%20sold.>

8.2.5. France

France was chosen as a peer jurisdiction as it represents a best-in-class wine region which attracts a significant proportion of tourists in the region. France accounts for 15.2% of the European wine market value.²²³

Decanter Awards²²⁴ – Best in show



Decanter – 10 Best in Show Wines in 2022 competition year



Decanter – 15 Best in Show Wines in 2021 competition year



Decanter – 12 Best in Show Wines in 2020 competition year



Decanter – 13 Best in Show Wines in 2019 competition year



Decanter – 12 Best in Show Wines in 2018 competition year

Decanter Awards – Platinum



Decanter – 38 Platinum in 2022 competition year



Decanter – 38 Platinum in 2021 competition year



Decanter – 34 Platinum in 2020 competition year



Decanter – 32 Platinum in 2019 competition year

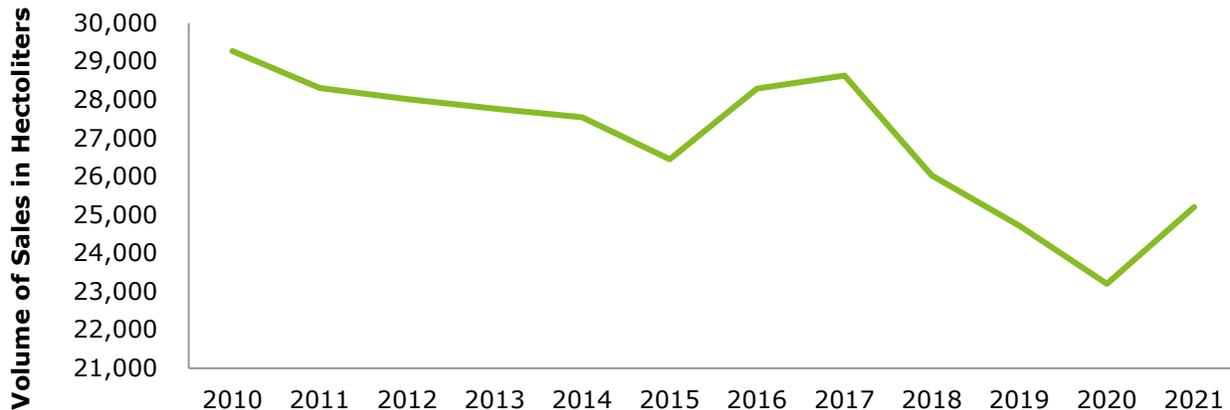


Decanter – 22 Platinum in 2018 competition year

²²³ Market Line. (2022, August). France Wine. Retrieved January 20, 2023.

²²⁴ Decanter world wide awards. Decanter World Wide Awards. (n.d.). Retrieved March 15, 2023, from <https://awards.decanter.com/>

Figure 33: Total Volume of Sales of Wine (France)



Source: International Organization of Vine and Wine

Table 13: Summary of France’s Partnerships and Policies

Relevant partnerships & organizations • UMVIN ²²⁵

- UMVIN is the union for wine houses and wine brands with 17 regional and producer syndicates that together represent all French wine regions and every segment of the French wine market, from AOCs to Vins de France table wines.
- UMVIN members are committed to upholding the values vested in the terms "Maisons" (long-standing, capital-intensive wine houses) and "Marques" (brands created to satisfy market demand and build customer loyalty). The wine houses account for the marketing of at least two thirds of all French wines and are widely regarded as the driving force behind French wine sales.

• The CNIV (the trade association for appellation wine marketing boards) ²²⁶

- The CNIV is an association under the 1901 Law, brings together all the French regional inter-professional associations of wines and eaux-de-vie of France.

• ANIVIN, the trade union for Vin de France. ²²⁷

- Anivin de France is a group that the government has recognised as a collective interest trade body. Its job is to advertise Vin De France both inside and outside of France.

²²⁵ Union des Maisons & Marques de Vin. UMVIN. (n.d.). Retrieved March 14, 2023, from <https://www.umvin.com/>

²²⁶ French winegrowers and wine houses - union des maisons de champagne. (n.d.). Retrieved March 14, 2023, from <https://maisons-champagne.com/en/industry/organisation/wine-growers-and-houses-in-france-and-europe/article/french-winegrowers-and-wine-houses>

²²⁷ Anivin de France. Anivin de France: National Wine Trade Organization for Vin De France wines. (n.d.). Retrieved March 14, 2023, from <https://www.vindefrance.com/wines/pro/anivin-de-france>

- Members include: UMVIN (represents companies and negociants), VIF (represents independent wine growers), VCF (represents co-operatives, formerly CCVF).
- **FranceAgriMer** ²²⁸
 - FranceAgriMer's responsibilities include managing national and EU funding, fostering dialogue between the agricultural and fishing industries, and improving understanding of markets (i.e., how they work, and how to manage national and EU funding).
- **INAO (national institute for origin and quality)** ²²⁹
 - INAO is a public body with particular responsibility for regulating quality signs and labels including Appellation d'Origine Contrôlée (AOC), Protected Designation of Origin (PDO), Protected Geographical Indication (PGI), Traditional Specialty Guaranteed (TSG), Label Rouge (LR) and organic farming (Agriculture Biologique or AB).

Taxation

- **Tax Regime**
 - Of the countries included in the jurisdictional scan, France has by far the lowest rate at 0.04\$ per litre. ²³⁰
 - In addition, some drinks are subject to taxes due to specific public health concerns.
 - This is particularly the case for the contribution on alcoholic beverages whose ABV is more than 18% (the so-called "premix tax").

Financial intervention/producer support estimates

- **French Public Funding** ²³¹
 - Even in light of the industry's overall size, the amount of public funding provided to the French wine industry is noteworthy.
 - Import tariffs are less prominent form of funding for the industry. In FY2017, 316 million euros were provided to the industry from the EU CAP budget.
 - Over three-quarters of the EU CAP budget that is allocated to the wine industry each year is devoted to restructuring assistance for modernizing vineyards and capital investments to increase winery productivity. This demonstrates how industry profitability varies greatly, with many producers lacking the resources to reinvest in their companies and adapt to a changing market and industry environment.
 - The French government will provide up to 160 million euros of national and EU aid this year to help wine producers in regions like

²²⁸ Accueil. Page d'accueil de FranceAgriMer. (n.d.). Retrieved March 14, 2023, from <https://www.franceagrimer.fr/>

²²⁹ Actimage. (n.d.). The National Institute of Origin and Quality - Institut National de l'origine et de la qualité (INAO). INAO. Retrieved March 14, 2023, from <https://www.inao.gouv.fr/eng/The-National-Institute-of-origin-and-quality-Institut-national-de-l-origine-et-de-la-qualite-INAO>

²³⁰ Asen, E. (2023, March 9). Wine taxes in Europe. Tax Foundation. Retrieved March 13, 2023, from <https://taxfoundation.org/wine-taxes-in-europe-2021/>

²³¹ Study into Global Wine Industry Support Measures. (2018). Infinity.

Bordeaux offload surplus supplies. The measure is taken in response to declining consumption of red wine in France, as well as the closure of French bars and restaurants due to the COVID-19 pandemic.

- A crisis committee has been set up in Bordeaux to look into strategies such as pulling up some vineyards to counter disease.
 - The government will also study longer-term measures for the wine industry to adapt to climate change, consumer trends and export demand.
-

8.2.6. Australia

Australia was chosen as a peer jurisdiction with Canada as the structures of their economies are similar. Australia accounts for 10.7% of the Asia-Pacific wine market value.²³²

Decanter Awards²³³ – Best in show



Decanter – 6 Best in Show Wines in 2022 competition year



Decanter – 2 Best in Show Wines in 2021 competition year



Decanter – 6 Best in Show Wines in 2020 competition year



Decanter – 6 Best in Show Wines in 2019 competition year



Decanter – 6 Best in Show Wines in 2018 competition year

Decanter Awards – Platinum

²³²Market Line. (2022, August). Australia Wine. Retrieved January 20, 2023

²³³ Decanter world wide awards. Decanter World Wide Awards. (n.d.). Retrieved March 15, 2023, from <https://awards.decanter.com/>



Decanter – 15 Platinum in 2022 competition year



Decanter – 12 Platinum in 2021 competition year



Decanter – 17 Platinum in 2020 competition year

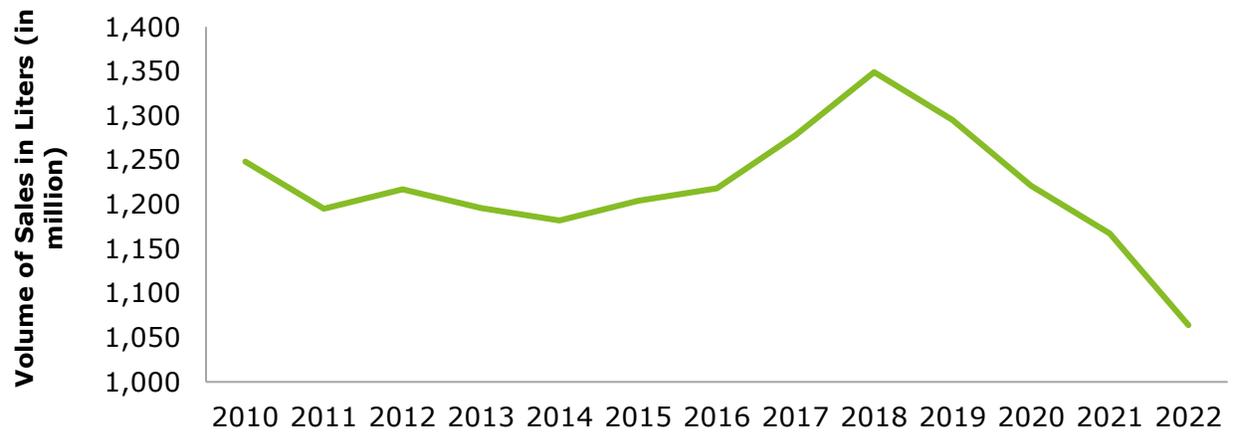


Decanter – 16 Platinum in 2019 competition year



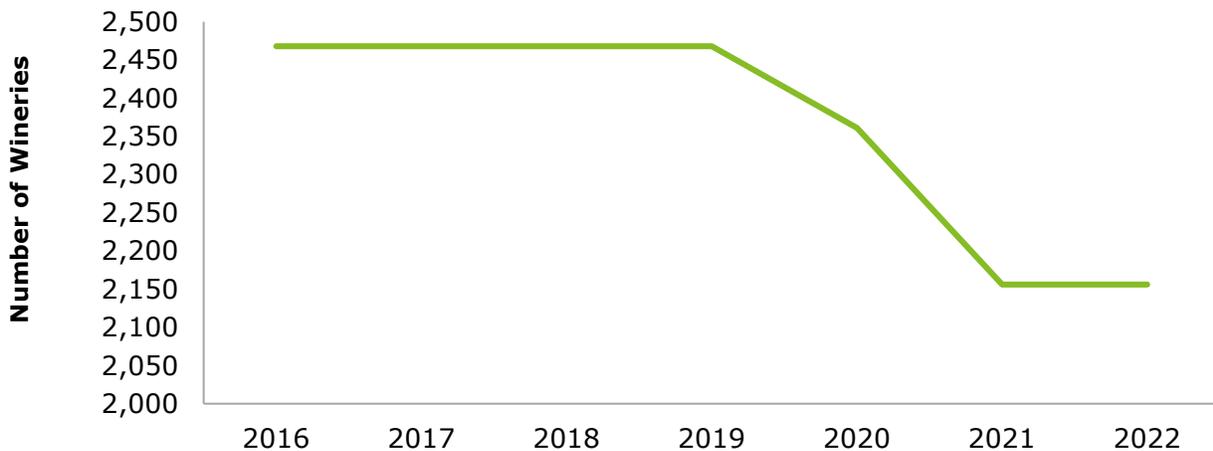
Decanter – 20 Platinum in 2018 competition year

Figure 34: Total Volume of Sales of Wine (Australia)



Source: Australian Wine Production, Sales and Inventory

Figure 35: Total Number of Wineries (Australia)



Source: Wine Australia

Table 14: Summary of Australia's Partnerships and Policies

Relevant partnerships & organizations • Wine Australia ²³⁴

- Wine Australia is the official marketing, research and development, and regulatory organization for the Australian wine industry. Among its regulatory duties are:
 - Administering the Label Integrity Program.
 - Wine export licensing provide export data, and market intelligence to the Australian wine industry and managing the Register of Protected Geographical Indications.
 - Funding for Wine Australia is derived from levies, user fees, and matching funding from the Australian government.
- **The Australian Wine Research Institute (AWRI)** ²³⁵
 - The Australian Wine Research Institute through top-notch research, useful solutions, and knowledge transfer, supports a successful and sustainable grape and wine industry. The AWRI was founded in 1955 and is a part of the Wine Innovation Cluster at the Waite Research Precinct in Adelaide. It is governed by an industry-led, skills-based board.
- **Australian Grape & Wine Incorporated (AGW)** ²³⁶
 - The national sector organization Australian Grape & Wine Incorporated speaks for Australia's wine and grape producers on political, social, and regulatory issues affecting the entire production and supply chain.
- **Wine Industry Suppliers Association (WISA)** ²³⁷
 - WISA is dedicated to strengthening the capability, competitiveness, and reputation of Australian grape and wine producers, and is a strong advocate on matters that affect their value chain supplier partners. WISA is the national organization that represents the suppliers to the Australian grape and wine community.
- **The National Grape and Wine Industry Centre (NWGIC)** ²³⁸
 - The National Wine and Grape Industry Centre (NWGIC) carries out top-tier research in the fields of grape and wine science, including studies on plant pathology, vine physiology, fruit development, the composition of fruits and wines, sensory aspects of wine, and consumer preference.

²³⁴ Wine australia. Wine Australia | Wine Australia. (n.d.). Retrieved March 14, 2023, from <https://www.wineaustralia.com/>

²³⁵ The Australian Wine Research Institute. (2022, November 7). Retrieved March 14, 2023, from <https://www.awri.com.au/>

²³⁶ Home. Australian Grape & Wine. (2023, March 7). Retrieved March 14, 2023, from <https://www.agw.org.au/>

²³⁷ Wine Industry Suppliers Association. WISA. (2023, March 10). Retrieved March 14, 2023, from <https://www.wisa.org.au/>

²³⁸ User, U. L. D. A. P. (2021, May 4). What we do. About Us - National Wine and Grape Industry Centre. Retrieved March 14, 2023, from <https://www.csu.edu.au/nwgic/about-us>

- **New South Wales Wine Industry Association** ²³⁹
 - The New South Wales Wine Industry Association represents the New South Wales wine industry at a federal level with national industry bodies like Wine Australia and Australian Grape & Wine. It also serves as an advocate and a conduit between business and the New South Wales (NSW) Government and the 16 NSW wine regions.
 - **The Department of Agriculture, Fisheries and Forestry** ²⁴⁰ assist the Australian wine industry by advising the Australian government on issues pertaining to wine.
 - This includes advice on:
 - International market access,
 - Policy settings and
 - Responding to issues affecting the industry.
 - The department provides this support and advice by working with:
 - Australian winemakers and grape growers
 - Industry representative bodies
 - Other government agencies and international organizations.

Taxation

- **Tax Regime** ²⁴¹
 - Australian alcohol excise tax laws are among the strictest in the world. In particular excise taxes on beer and spirits rise twice a year in accordance with the CPI.
 - Wine in Australia is taxed on an ad valorem basis (29% of the wholesale value of wine) and therefore most of the wine sold on the market is taxed a lot less than full strength beer and spirits.

Financial intervention/producer support estimates

- **Significant public financial support** ²⁴²
 - While taxation is high, the level of public financial support given to the Australian wine industry is significant, especially by 'New World' wine country standards.
 - The vast majority of support comes in the form of a wine excise rebate which is estimated at AUD 327 million in FY2017, net of the benefit accruing to NZ wine producers.
 - Additionally, Australian brewers and distillers are also eligible for a rebate of up to 60% of excise taxes paid, with a maximum annual rebate of \$30,000. Other state-based grants also exist for local producers, estimated at roughly AUD 8 million per year.

²³⁹ New South Wales Wine Industry. NSW Wine. (n.d.). Retrieved March 14, 2023, from <https://nswwine.com.au/>

²⁴⁰ Homepage -. Home - DAFF. (n.d.). Retrieved March 14, 2023, from <https://www.agriculture.gov.au/>

²⁴¹ ag infinity CVA. (2017). Study into the relative tax treatment of Canadian Wine.

²⁴² Study into Global Wine Industry Support Measures. (2018). Infinity

-
- R&D is a significant focus for the Australian wine industry, having invested heavily in the past in building the institutions and resources that place it at the forefront of global grape and wine research.
 - The public matched funding contribution to industry R&D is also directed into significant market promotion efforts. Import tariffs do provide some limited support to local wine producers in the absence of a free trade agreement with the EU, although tariff rates are relatively low.
-

8.2.7. Ontario

Decanter Awards ²⁴³ – Best in show



Decanter – 1 Best in Show Wines in 2022 competition year



Decanter – 1 Best in Show Wines in 2021 competition year



Decanter – 1 Best in Show Wines in 2018 competition year

Decanter Awards – Platinum



Decanter – 3 Platinum in 2021 competition year

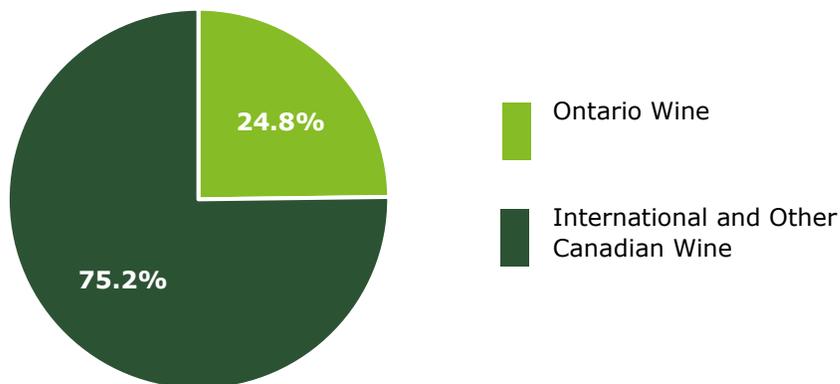


Decanter – 1 Platinum in 2020 competition year



Decanter – 4 Platinum in 2018 competition year

Figure 36: Ontario Wine Sector 2022 LCBO Net Sales Market Share



Source: 2021-22 Annual Report LCBO

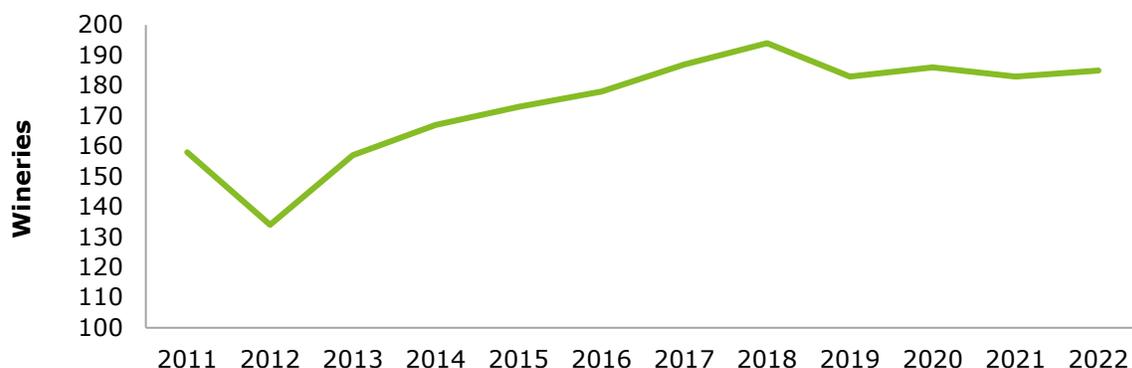
²⁴³ Decanter world wide awards. Decanter World Wide Awards. (n.d.). Retrieved March 15, 2023, from <https://awards.decanter.com/>

Figure 37: Total Volume of Sales of Wine (Ontario)



Source: Statistics Canada

Figure 38: Total Wineries (Ontario)



Source: Statistics Canada

Table 15: Summary of Ontario’s Partnerships and Policies

Relevant partnerships & organizations

- **Grape Growers of Ontario**²⁴⁴
 - The Grape Growers of Ontario is the official organization for the more than 500 growers who produce grapes for processing on 18,000 acres of vineyards in Ontario, Canada.
- **Ontario Craft Wineries**²⁴⁵

²⁴⁴Grape growers of ontario. Grape Growers of Ontario. (n.d.). Retrieved March 14, 2023, from <https://grapegrowersofontario.com/>

²⁴⁵ Ontario craft wineries. Ontario Craft Wineries. (n.d.). Retrieved March 14, 2023, from <https://ontariocraftwineries.ca/>

- Over 100 VQA wineries in Ontario are represented by the Ontario Craft Wineries. Their goal is to support and promote the expansion and prosperity of Ontario VQA wine producers.
- **Brock University Cool Climate Oenology and Viticulture Institute** ²⁴⁶
 - The Ontario Wine Council, the Ontario Winery & Grower Alliance, and Brock University collaborated to create the Cool Climate Oenology and Viticulture Institute (CCOVI), which was founded in 1996. The Canadian Grape and Wine Institute (CCOVI) is a well-known research organization that focuses on the needs of the local community in terms of outreach and ongoing education.

Taxation

- **Tax Regime** ²⁴⁷
 - In Ontario, wine tax includes:
 - Wine basic tax
 - 6.1% of retail price of wine at winery retail store
 - 9.6% at wine boutiques
 - Volume tax
 - The wine volume tax is calculated based on the volume of wine and whether the beverage is wine or a wine cooler.
 - For wine the rate is 29 ¢/L and for wine coolers the rate is 28 ¢/L.
 - Environmental tax
 - The environmental tax is 8.93 cents for each non refillable container in which the wine or wine cooler bought is packaged.

Financial intervention/producer support estimates

- **VQA Wine Support Program** ²⁴⁸
 - The Ontario budget for 2022 increased funding for the VQA Support Programme from \$7.5 million to \$10 million and extended it through 2024–2025. ²⁴⁹
 - The VQA Wine Support Program assists Ontario wineries in becoming more innovative and competitive so that more of their wines can be sold at the LCBO. The program offers grants to wineries to support their investments in expanding their VQA wine business, including tourism-related initiatives.
 - Investments in marketing, labour, and capital will be made possible by the increased funding for Ontario's VQA Wine Support Program. The multi-year commitment will also assist Ontario wineries in

²⁴⁶ Cool climate oenology and Viticulture Institute. Brock University. (n.d.). Retrieved March 14, 2023, from <https://brocku.ca/ccovi/>

²⁴⁷ Ontario.ca. (n.d.). Beer and wine tax. ontario.ca. Retrieved February 13, 2023, from <https://www.ontario.ca/document/beer-and-wine-tax#section-1>

²⁴⁸ Overview. (n.d.). Retrieved March 14, 2023, from <https://www.agricorp.com/en-ca/Programs/VQA/Pages/Overview.aspx>

²⁴⁹ WINE GROWERS ONTARIO. (n.d.). WINE GROWERS ONTARIO Annual report. Annual Report 2021-2022.

developing multi-year plans for spending on marketing and promotion at the LCBO, a crucial ally in the continued success of the sector.²⁵⁰

²⁵⁰ Ontario's Grape and Wine Industry Thanks the Ontario Government for Extending the VQA Wine Support Program and Renewing the COVID Recovery Funding. (2022). Ontario-Grape-and-Wine-Industry-Press-Release-April-28-2022. Retrieved from <https://www.winegrowersontario.ca/wp-content/uploads/2022/04/Ontario-Grape-and-Wine-Industry-Press-Release-April-28-2022-.pdf>.

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