

**Sour Grapes:
Mitigating the Risk of Overtourism in British
Columbia's Eno-tourism**

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Abstract

The economic health of regions dependent on tourism are threatened by overtourism. Through the use of sustainable development practices, this risk can be mitigated. This study examines the sustainability of the Okanagan Valley, the dominant wine tourism destination in British Columbia. Using case studies, the Okanagan is compared with wine tourism regions around the world. This study finds that there is a relatively low amount of sustainability in the Okanagan relative to other wine regions. Following this, this study finds that the Okanagan's high degree of seasonality, lack of training opportunities, and lack of standardized practices have the greatest potential for improvement. Three policies are proposed and analyzed to address these shortcomings: an expansion of educational programs, sustainability standards, and off-season event grants. As a result of this analysis, a policy package containing elements of all three policy proposals is recommended.

Keywords: tourism; wine; sustainability; Okanagan; policy analysis; policy proposals

Dedication

To my mother and Matia for being my biggest supporters, especially at times when I could not do it myself.

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List of Acronyms

BCWI	BC Wine Institute
CCTN	Canadian Council of Tourism Ministers
EI	Employment Insurance
EIT	Eastern Institute of Technology
NMIT	Nelson Marlborough Institute of Technology
StatCan	Statistics Canada
TEP	Tourism Events Program
UNWTO	United Nations World Tourism Organization
VQA	Vitners Quality Alliance

Chapter 1.

Introduction

Tourism is a booming international industry (World Tourism Organization (UNWTO), 2019b). With global incomes rising, the flow of tourism is predicted to increase dramatically in the coming decades. As the landscape of tourism changes, countries and communities around the world are grappling with the question of how to preserve local character and culture as they encounter the pressures of increased tourism. Globally, citizen opposition against tourism is growing due to fears of 'overtourism' wherein the damages precipitated by tourism are not outweighed by its benefits.

In Canada, the majority of tourism occurs in large cities with diverse and robust economies which are able to respond to tourism-damages. Conversely, rural Canadian communities are often reliant on tourism, lacking the resources and economic base of larger cities. As these communities face an increase in tourism demand, the question of how these communities mitigate the damages of tourism and ensure that the benefits of tourism are disseminated throughout the community, is of paramount importance to their long-term economic health. Increasingly, tourism is utilized as a strategy to revive rural communities once dependent on - now dried-up - resource revenues. Without policy to ensure tourism is developed sustainably, negative tourism impacts may accumulate in these communities as well as in communities with established tourism industries.

This capstone seeks to uncover policies and best practices meant to ensure the sustainable development and long-term economic health in tourism-dependent rural communities in Canada. The policy problem is: tourism dependent communities face economic risk due to perceptions of overtourism, to mitigate this risk, the benefits of tourism must be strengthened and better managed. This capstone focuses on regions of wine tourism due to the distinctive and challenging characteristics emerging from their geography. Although wine regions are analyzed as a discrete case, the findings from this study are applicable to the broader context of tourism in Canada. This capstone serves as a cross-jurisdictional examination and thus does not include interviews or survey analysis to uncover the perceptions of overtourism in the resident population in question.

By comparing the sustainability of wine regions through the use of observable metrics, it is found that the Okanagan lacks several key features of wine tourism regions that score highly in measures of sustainability, including a lack of educational opportunities for residents, a lack of standardization, and a high degree of seasonality in the region. Policy interventions proposed to deal with these problems are an expansion of the wine and tourism educational opportunities in the region, a multi-tiered and voluntary standard for wine makers and wine tourism operators, and an expansion of event grants for the off-season.

Chapter 2 introduces the concept of tourism and eno-tourism, offering a definition of each and discussing the importance of tourism to the Canadian economy. Chapter 3 discusses the concept of overtourism and its potential threat to tourism-dependent regions. Chapter 4 introduces the Okanagan as the primary wine tourism destination in BC. Chapter 5 gives the necessary context for this study, including the institutions and policies which affect tourism in the region. Chapter 6 discusses the concept of sustainability and its connection to overtourism. Additionally, this chapter introduces measures for sustainability and the outcomes for the application of these measures to selected international wine regions. Chapter 7 crystalizes the policy problem and discusses relevant stakeholders in the region. Chapter 8 discusses the analytical method used and the framework for case study analysis. Chapter 9 contains the case study analysis. Chapter 10 is comprised of a literature review focusing on wine region success factors. Chapter 11 discusses the policy options and evaluation criteria. Chapter 12 is an evaluation of policy alternatives concluded by a policy recommendation. Chapter 13 is comprised of implementation guidelines and recommendations. The limitations of this study are discussed in Chapter 14.

Chapter 2.

Tourism

In order to operationalize the concept of tourism, it is necessary to categorically define types of travel. This section introduces and defines the concepts of *tourist*, *visitor* and *tourism*, as well as the sub-categories of tourism that are relevant to this study.

As this paper serves principally as a study of tourism and the visitor economy, a well-defined conceptualization of tourism is vital. Due to the inherent complexity of tourism, there are numerous institutions and academics working in this field. Therefore, many context or institution-specific definitions of what is considered tourism exist. This study focuses on the definition in its broadest international context provided by the United Nations World Tourism Organization (UNWTO) in addition to the Canadian specific definition.

From the UNWTO (2014), a traveller is someone who moves between geographic locations for any purpose and for any duration. Visitors are defined as travellers who go to destinations other than their usual environment, for less than a year and for any reason other than employment. Tourism is a subset of travel in which the traveller spends one or more nights in any destination. Though the UNWTO definition of tourism is broad, it is encapsulating of the potential activities associated with tourism.

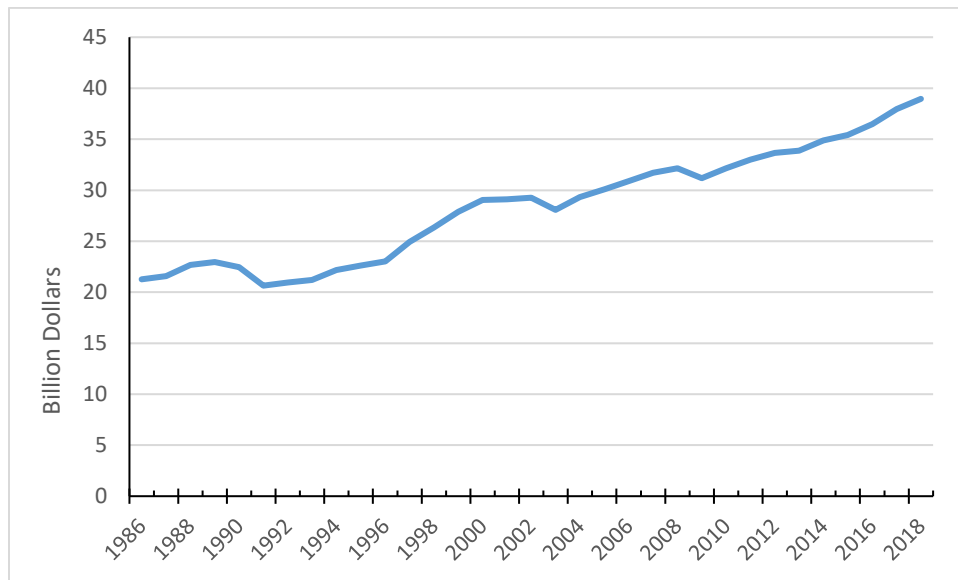
StatCan (Government of Canada, 2013) defines tourism as “the activities of persons travelling to and staying in places outside their usual environment, for no more than one consecutive year, for leisure, business and other purposes.” Visitors are defined as tourists or same-day visitors. The definitions of tourism given by Statistics Canada are largely congruent with those of the UNWTO.

The UNWTO (2019a) also offers definitions of several sub-categories of tourism. Gastronomy tourism is defined as a tourism activity which is characterized by the visitor’s experience linked with food and related products and activities while travelling. A further sub-section of Gastronomy tourism is *Eno-tourism* or *wine tourism*, which refers to tourism involving visiting vineyards or wineries for the purposes of consuming or purchasing wine. StatCan does not offer definitions for tourism sub-categories, thus a

comparison, as done earlier, is not possible in examining wine tourism. Because of the significance of the wine industry in the region under study, this study employs the concept of wine tourism to discuss the tourism activity in the Okanagan Valley.

Tourism is Canada's top service export, accounting for roughly two percent of Canada's GDP (Government of Canada, 2019, p.10). As seen in Figure 1, the tourism sector has expanded considerably in recent years, growing by 2.8% in 2018 and just over two percent on average over ten years. Tourism represented 38 billion dollars of Canadian GDP in 2018. The visitor economy directly employs over 700 thousand Canadians and indirectly impacts 10% of the Canadian workforce through induced demand (Government of Canada, 2019. p.10). Tourism is also a booming international industry, growing at around 6% globally in 2018 (World Tourism Organization (UNWTO), 2019a, p.1).

Figure 1: Tourism GDP in Canada, 2012 Dollars¹



Tourism workers are often precariously employed and underpaid, with some arguing that tourism fosters poverty among tourism workers (Robinson et al., 2019). Although tourism workers are often seasonally employed and earn lower than average incomes, there is evidence that the tourism sector serves as an important means of entry into the Canadian labour force. Tourism employs more youth, more people from

¹ (Statistics Canada, 2020h).

Indigenous communities, and more recent immigrants than the Canadian economy in general (Tourism HR Canada, n.d., p.2). Tourism is also regionally concentrated, potentially leading to a concentration of economic benefits. Although the majority of tourists visit Canada's three major cities, Toronto, Montreal and Vancouver, many smaller cities and communities throughout the country depend on tourism (Government of Canada, 2019, p.10). Although the benefits may be concentrated due to the factors discussed, there are advantages to the continuance of tourism-development in regions and communities dependent on tourism.

There is also evidence to predict future growth in the Canadian tourism sector. In 2018, the Government of Canada allocated 58.5 million dollars to the "Canadian Experiences Fund," aimed at making strategic investments in Canada's tourism destinations. Such funding signals increased governmental interest in the expansion of the visitor economy and – if continued - will no doubt increase the number of tourists coming to Canada. The UNWTO projections estimate that tourism will grow between 3 and 4 percent per year for the foreseeable future (World Tourism Organization (UNWTO), 2019b). As a result, many tourism destinations around the world, including in Canada, are beginning to feel the accumulated negative effects of tourism.

In summary, among the many classifications of human travel, eno-tourism, being tourism for the purposes of tasting or purchasing wine, is most significant to this study. The Canadian tourism sector is a significant portion of the national economy and is likely to continue its growth in the coming years. The negative impacts of increased tourism, and the concept of overtourism, are examined in the following section.

Chapter 3.

Overtourism

Overtourism refers to a situation in which the negative impacts of tourism are perceived by residents to outweigh the benefits brought by tourism. This chapter explores the contentious nature of the definition of overtourism before exploring which tourism impacts are most important. Finally, the aspects of wine tourism which lead to the susceptibility of wine tourism regions to overtourism are discussed.

The exact nature and definition of overtourism is a debated issue. The term was first used in the media to describe the negative impacts of tourism, specifically in describing situations where the -perceived to be - excessive visitors caused depreciation in the quality of life for locals (Koens et. al., 2018). There is a lack of standardized definition for the term 'overtourism,' despite its widespread use in academic literature. Within the academic field of tourism, overtourism has rapidly become one of the most studied issues.

Overtourism refers to situations in which tourism is perceived to cause undue and excessive harm to the quality of life of residents or tourists (UNWTO, 2018). Therefore, key to the concept of overtourism is the distinction between costs and benefits of tourism and the perceptions of these costs and benefits to the local residents. Impacts that may not be related to tourism activities – such as increased traffic or housing prices - may be perceived as caused by tourism, and therefore may be attributed to overtourism despite a lack of causal connection. Mitigation of overtourism, therefore, can be achieved through change in either real impacts of tourism, or those things that are perceived to be impacts of tourism.

As wine tourism may involve the activities of more than just those who come to wine regions on overnight trips, both the concept of visitor and tourists are employed to refer to impacts. Overtourism and sustainable tourism may be equally impacted by day trips and visitors than they are by overnight visits.

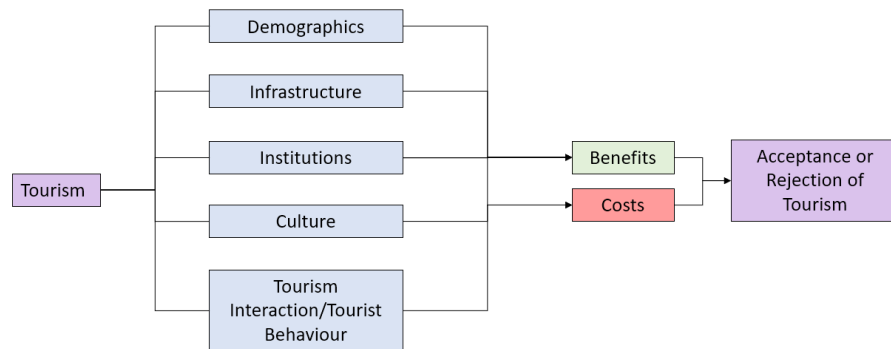
3.1. Impacts of Overtourism

Examining overtourism through a risk-based approach allows for all aspects of the tourism value chain to be examined. There is a significant base of literature outlining the impacts of tourism in communities. Koens et. Al. (2018) seek to define the impacts of overtourism in a holistic way focusing on the impacts faced by residents in thirteen large European cities. The authors conducted eighty-six qualitative interviews which serve as the basis for their analysis, finding five key areas as the key drivers of overtourism: overcrowding in public spaces, pervasiveness of visitor impact, physical touristification, resident displacement, and pressure on the environment. Of note to the study of wine tourism are the specific developments of the rising cost of living in tourist areas, the displacement of residents from public spaces and amenities, the spread of tourist areas across the tourism region, noise and disruption caused by tourists, and the increase of residents caused by seasonal tourism.

Martín et. al (2018) seek to quantify which impacts of tourism are most important to residents through the use of a survey. They find that, generally, economic considerations are the most impactful sources of overtourism, with a rising cost of living being the most strongly held negative impact of tourism. Impacts on ways of life, crowding and congestion, and drug and alcohol abuse were also important social impacts of tourism. The authors also uncover demographic factors affecting perceptions of tourism, finding that respondents who are younger, poorer, rented their primary residence, and had no direct connection to the tourism industry were more likely to have negative opinions of tourism. This has significant implications for understanding what demographic factors may cause rejection of tourism.

Based on these examples, it can be seen that tourism filters through a number of factors to generate costs and benefits, and perceived costs and benefits, within society. This is illustrated in figure 2 below. This study focuses on the factors influencing the perceived benefits of tourism, examining policies within the filters to change the amount or distribution of perceived benefits. There is also room for study of policies which will mitigate the costs of tourism through these filters, or after the tourism has happened, but this study does not examine this aspect.

Figure 2: Tourism Value Flow



3.2. Overtourism in Wine Regions

There are many aspects of wine region tourism which makes these regions suitable for studying overtourism. This section discusses three features of wine tourism regions which increase the risk of overtourism.

First, wine tourism is distinct in its spatial patterns. Most wine tourism takes place at wineries and in vineyards which are geographically peripheral to city centres or accommodations (Garibaldi et.al., 2017, p.56). This strains local infrastructure as tourists require transportation between accommodation and wineries.

Second, wine tourism is seasonally concentrated and typically takes place in rural environments due to the spatial nature of wineries (Pers̃uric et. al., 2017, p.88). This causes extreme fluctuations in population and employment within the region throughout the year, which has been identified in the literature as a cause of perceptions of overtourism.

Third, wine tourism inherently involves the consumption of alcohol. Alcohol consumption by tourists and any associated noise or disruption, such as intoxicated driving, has been documented as a driver of perceptions of overtourism. Although there may be some differences between the alcohol consumption taking place in a wine

consumption destination, as opposed to tourism destinations in which the consumption of alcohol plays a large role, there are likely impacts resulting from the consumption of alcohol in wine tourism destinations.

The factors listed in this section are disproportionately present in wine tourism regions, making them ideal candidates for studying overtourism and can also be reasonably studied using measures of sustainable tourism. The presence of these factors - that exacerbate the potential of overtourism - increases the applicability of the findings of this study to other tourism regions. Policies crafted for wine regions, therefore, have a high likelihood of applicability to other regions with minimal alterations.

Chapter 4.

The Okanagan Valley & the British Columbia Wine Industry²

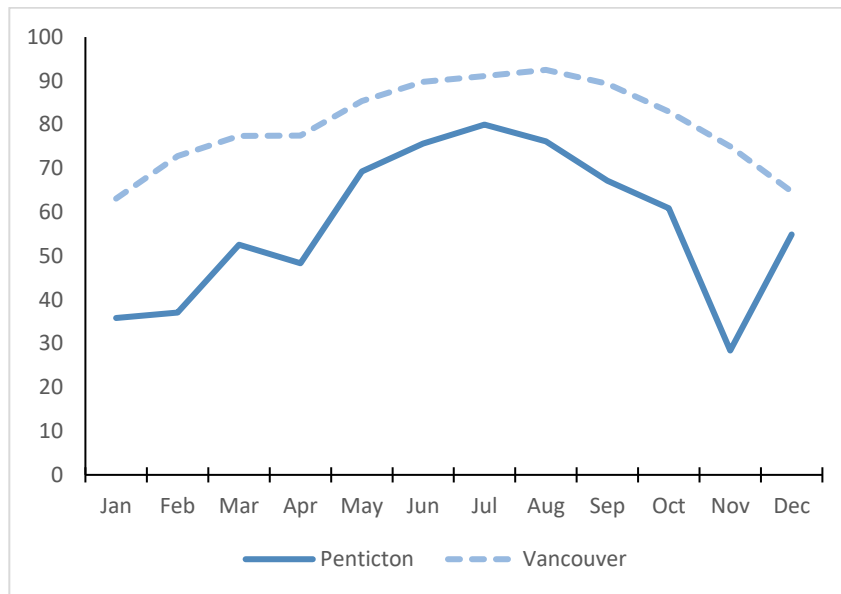
The Okanagan Valley is located approximately 300 kilometers from Metro Vancouver, the main population center in British Columbia. At its southernmost point, the Okanagan stretches beyond the Canada/United States border, although most of the population resides in Canada (Poitras & Getz, 2006). The area of consideration for this study is the wine-producing region of the valley which stretches from Osoyoos (five kilometers north of the US border) to Vernon (about 150 kilometers to the north).

This area encompasses nine separate municipalities with populations ranging from around 120,000 in Kelowna - one of British Columbia's most populous and rapidly expanding cities which has experienced one of the highest rates of population growth of CMAs in Canada - to around 5,000 in Oliver, with some smaller 'designated places' throughout (Poitras & Getz, 2006; Tourism Kelowna, 2017).

The Okanagan region is heavily dependent on tourism. Due to its warm and dry summer climate and internationally recognized wine-region status, the Okanagan sees around four million visitors annually (Tourism Kelowna, 2017). In keeping with the cyclical nature of wine tourism, over 50% of tourism in the Okanagan takes place during the summer months (Destination British Columbia, 2017). The high seasonality of tourism in the Okanagan compared to Metro Vancouver is shown in Figure 3. As pictured, Penticton experiences a large degree of variability with large drops in occupancy rate in the winter months. Roughly 60% of visitors come to the region for leisure, with 20% coming specifically to visit a winery, making the wine industry more popular than the region's beaches (Tourism Kelowna, 2017).

² Population and demographic data for this section comes from the Statistics Canada Census of Canada (2016). In this study, *The Okanagan* refers to the Central Okanagan and Okanagan-Similkameen census divisions.

Figure 3: Accommodation Occupancy Rate, 2018³



As has been identified in the literature, demographic factors have a significant effect on residents' perceptions of overtourism. Demographically, the Okanagan is much older and less diverse than the rest of British Columbia and Canada. Visible minorities represent only around 7% of the population (compared to 31% provincially), and seniors constitute around 24% of the population (compared to 19% provincially). Economically, the Okanagan performs worse relative to the rest of the province, with median incomes nearly 10% lower and a 0.35% higher unemployment rate. The economic circumstances of the Okanagan may exacerbate feelings of overtourism in residents as, despite the fact that it is one of the most popular tourism destinations in the province, their incomes and economic prospects remain relatively low.

Poitras and Getz (2006) examine the challenges and strategies adopted by Oliver, British Columbia - one of the constituent parts of the Okanagan Valley - to manage and grow the local visitor economy. They employ three pillars of sustainability to examine the viability of the local visitor economy. The study offers a framework by which to assess the stability of wine tourism, crafted from ethnographic analysis and qualitative interviews. The findings from this study suggest that there are opportunities for policy action to remedy issues faced by the region.

³ (Destination British Columbia, 2018)

The BC wine industry is economically significant to the Okanagan Valley. The British Columbia wine industry accounted for \$2.77 billion in total economic impact in 2015, including \$312 million of tax revenue (Frank, 2015). In the province, there are around 12,000 people employed in the wine industry with 84% of the wine industry and related activity situated in the Okanagan Valley (Frank, 2015, p.19).

The Okanagan wine industry is dependent on tourism for its continued survival. Due to provincial liquor law designating the provincial liquor distribution branch as the sole liquor distributor, wine producers in British Columbia rely on tourism as their singular method of selling directly to the consumer (Carew & Florkowski, 2012). This typically involves the purchase of wine by tourists at winery tasting rooms or wine shops, but can also involve specialty aggregator merchants in the Okanagan (Hira, 2013). However, the growth of Okanagan wine is limited, particularly in potential exports in the world market (Carew & Florkowski, 2012; Hira & Bwenge, 2011). Due to the high cost of land and labour, it is unlikely that British Columbia wines will be able to compete on the world market in low price segments (Hira & Bwenge, 2011, p.33-35). Therefore, for the long-term health of the industry, the continuation and expansion of the tourism industry in the Okanagan is one of the key pillars cited by the BC Wine Institute in their industrial plan.

The central topic of this study is: the economic health of the Okanagan depends on the symbiotic relationship between the wine and tourism industry, yet the growth of tourism puts the region at risk of growing perceptions of overtourism. The research question central to this analysis is: how can this growth be better managed to support sustainable growth in the future and avoid unhappy citizens and economic downturns?

There have been several instances of local opposition to tourism development and the tourism industry in the Okanagan valley in recent years. An example is opposition to the development of a water park requiring encroachment onto city park land. After several hearings the project was cancelled by the city (Miller, 2018). This underscores the fact that, despite the continued development and expansion of tourism in the region, improvements remain to be made. At the national level, there has been interest in the creation of a national park in the region for more than a decade. As well as offering the protection of sensitive wildlife species in the area, it is expected that this would create a large draw for tourists, such as is experienced by other national parks

(Findlay, 2019). However, there has been broad opposition to this project in the region, with opponents citing the strain on local communities and infrastructure that will come from the tourism created by a national park (Findlay, 2019). Polling in the region indicates that only 41% of residents support the creation of a national park, with 45% opposed (Innovative Research Group, n.d.). Examples such as the water park development illustrate how citizens will resist tourism development and the tourism industry when they perceive potential harm to their communities, or that the benefits are outweighed by the costs.

Chapter 5.

Institutional & Policy Context of the Okanagan

Tourism policy is managed at the federal level by the Minister of Economic Development. Although there is no direct jurisdiction for the federal government, there has been a renewed interest in tourism investment at the federal level. As previously mentioned, in budget 2019, 58.5 million dollars was earmarked for tourism investment alongside a renewed tourism strategy. These investments signal new interest and leadership in the tourism industry from the federal level. The federal government is also responsible for leadership in tourism through the Canadian Council of Tourism Ministers (CCTM) which gathers all provincial tourism ministers to discuss shared strategy and priorities. The federal minister also oversees Destination Canada, a crown corporation which aims to promote Canada as a destination for both domestic and foreign tourists.

As tourism policy is primarily handled at the provincial level, many provinces have tourism ministers. The Honourable Lisa Beare is the current Minister of Tourism, Arts, and Culture in British Columbia. British Columbia has recently unveiled a new tourism growth strategy centering on the sustainable expansion of BC's tourism industry. British Columbia also runs a crown corporation aimed at the promotion of BC to tourists, Destination BC.

Municipal governments are involved with the provision of public goods and infrastructure for use in tourism, locality-specific regulation of the tourism industry, and the permitting and approval process for tourism projects. As seen in the case of Penticton discussed in Chapter 4, municipal government is often a key battleground for issues of overtourism. All municipalities in the area under study operate a municipal tourism division. Typically, these are responsible for the promotion of tourism and tourism-related events within the municipality.

As seen in this chapter, the tourism sector is managed by a complex and interconnected system of governments. All levels of government take some degree of responsibility for the promotion and deliverance of tourism in Canada.

Chapter 6.

Sustainability & its Links to Overtourism

This chapter defines three pillar sustainability and illustrates how it can be applied to tourism, as well as a discussion on how the sustainability of tourism is connected to overtourism. The literature is then reviewed to develop specific measures of sustainable tourism that are used in the following chapters to compare wine regions around the world on aspects of sustainability.

6.1. Sustainability

Related to the discourse surrounding the conceptualization of tourism and overtourism, the concept of sustainability is also debated. The vagueness of the term 'sustainability' has led to issues in applicability. Using the term sustainability in the context of tourism has come to generally refer to environmental concern. For example, British Columbia's new tourism strategy explicitly includes sustainability as a key concept (Government of British Columbia, 2019). However, throughout this strategy only the *environmental* sphere of sustainability is given due focus. This study employs the three pillared approach to sustainability used by Poitras and Getz (2006) in their study of the region. Under three pillared sustainability, there are three main considerations: environmental sustainability, economic sustainability, and sociocultural sustainability.⁴

Environmental sustainability is concerned with the long-term sustainability of the environment and environmental capital. As tourism, specifically tourism that interacts with the natural environment, often has negative environmental consequences, sustainable tourism must ensure that environmental resources are not degraded. As wine production relies on the natural environment for the production of wine grapes, the most pertinent environmental consequences to wine tourism regions is from rising temperatures due to climate change.

⁴ For a more detailed description of three-pillar sustainability in the context of Okanagan wine tourism, see (Poitras & Getz, 2006)

Economic sustainability aims for indefinite economic prosperity and equitable distribution of benefits among stakeholders. For tourism regions, economic sustainability requires that tourism development not seek short term gain at the cost of long-run economic prosperity. Economic sustainability can be endangered through overtourism and a local rejection of tourism, as it may cause tourism regions to recede in terms of prosperity.

Sociocultural sustainability requires that culture, heritage, values, and ways of life of communities are respected as conserved indefinitely. There are significant socio-cultural impacts of tourism, as discussed in section Chapter 3. Locals may feel that physical touristification negatively impacts their way of life, or visitors' desires for authentic cultural experiences may be disrespectful or harmful to the culture and values of local communities.

Sustainability and sustainable development have a long history of being used in support of sustainable tourism development (Poitras & Getz, 2006, p. 426). Although the context of sustainable tourism varies greatly depending on the jurisdictional context, as there may be profoundly different impacts in jurisdictions of differing levels of development, the concept of sustainable tourism is relevant in some way to every tourism destination. The UNWTO (2019a) defines sustainable tourism as tourism that makes optimal use of environmental resources while maintaining the natural environment, respects the society and culture of host communities, and ensures viable, long-term prosperity with an equal division of benefits among the host community.

Many of these concepts are closely related to the impacts of overtourism as discussed in Chapter 3. For instance, environmental degradation is both a significant negative impact of tourism and is encapsulated by sustainability theory. Sociocultural sustainability is also linked to overtourism. Citizens who perceive tourists as not acting in accordance with, or respecting, local life-ways are more likely to hold anti-tourism views (Koens et al., 2018). Therefore, increasing the sustainability of tourism regions may lessen the risk of overtourism. The sustainability of a tourism region may therefore be examined as a relative proxy for the risk of overtourism within that region.

6.2. Measures of Sustainable Tourism

To assess the sustainability of tourism objectively and cross-jurisdictionally requires specific metrics. These include an explicit definitional list of the elements of sustainability. There have been several studies outlining frameworks for indicators meant to assess the sustainability of tourism at a local level which this study draws upon.

Torres-Delgado and Palomeque (2014) develop a framework of sustainable tourism indicators for municipalities in Spain. These metrics are the result of a survey of fifty-four subject matter experts. This process was developed using the Delphi method which is meant to generate a consensus among experts concerning what factors should be included in the metrics. The result of this method is a system of twenty-six indicators divided into three sustainability categories (environmental, economic and sociocultural dimensions) and divided further into driving forces (pressure indicators, state indicators, impact indicators and response indicators). As the metrics developed in this study are contextually dependent and specific to a European context, they require adaptation for this analysis.

Choi and Turk (2011) also employ a Delphi study of sustainable tourism metrics. Their study develops a more substantial list of metrics - 125 in total. These are divided according to six dimensions: economic, social, cultural, ecological, political, and technological. The indicators in each category are further subdivided by major themes.

6.3. Measures Used to Compute Sustainability

This study employs only a small portion of the measures introduced by Choi and Turk and Torres-Delgado and Palomeque to compute the sustainability of tourism. Although this is not exhaustive, the measures employed provide a reasonable estimate of sustainability. The measures are divided according to the three main pillars of sustainability. The exact measures used are detailed in Appendix C.

Environmental indicators assess the extent to which activity in a region is deleterious to the environment or conducted in ways that will cause harm to the environment.

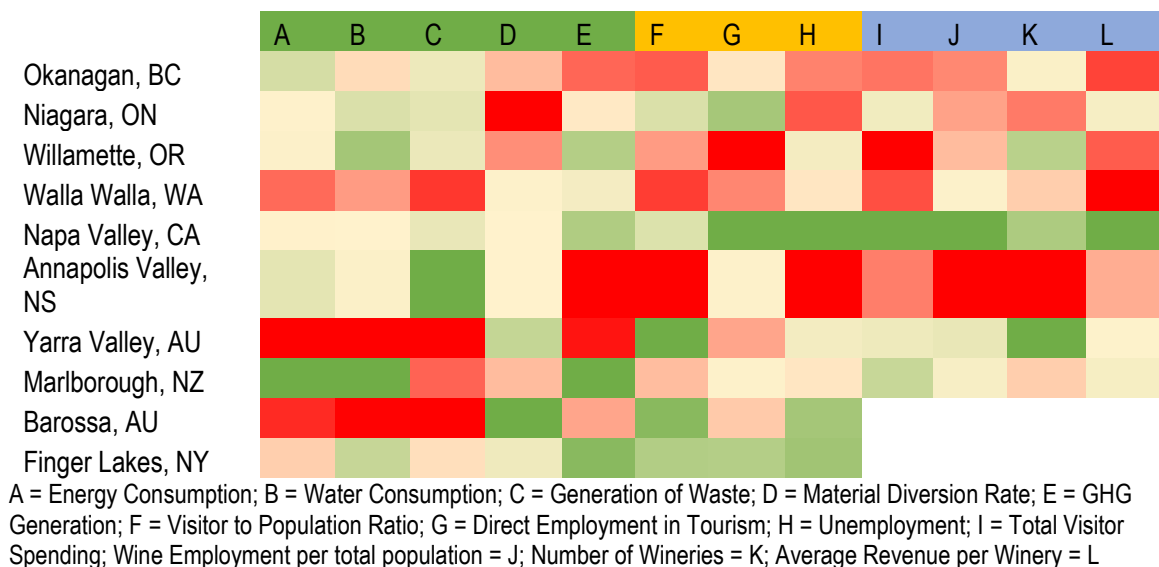
Sociocultural indicators are meant to assess how well tourism serves local communities. If tourism is sustainable, the resources and capital of the residents of the host community hold constant or increase. These indicators are utilized in measuring the interaction between visitors and the local residents, and as determinants of overtourism.

Economic sustainability refers to the capacity for long-term prosperity and its measures are meant to assess the economic health of the region. Some measures of the economic sustainability mentioned in the literature on measures of sustainable tourism are used, and additional measures are added to capture aspects unique to wine regions, primarily in the measurement of wine industry workers and revenue per winery.

6.4. Results of Sustainability Measurement

The indicators discussed in the preceding section are employed to display a relative comparison of regions in terms of sustainability. The measures chosen are not meant to provide a thorough picture of the sustainability of a region, but rather are meant to provide an impetus for the choice of case studies for the case study analysis. The result of the measurement is displayed as a graphical heat map in Figure 4. The indicators corresponding to each letter are detailed in Appendix C. Measures in green are viewed as better, while measures in red are relatively poor. Due to the lack of available data, the Barossa and Finger Lakes regions are excluded from certain measurements.

Figure 4: Sustainability Measurement



In terms of environmental aspects of sustainability, it can be seen that Marlborough, New Zealand, performs well while the Okanagan is somewhere in the middle of the regions examined. This placement indicates that some improvements remain to be made in the Okanagan. The inclusion of, and importance placed on, the environmental sustainability of tourism development by the government of British Columbia will likely improve systemic issues over time. In the Okanagan valley, waste generation and the material diversion rate are the environmental aspects wherein the region performs the worst. Relative to the rest of British Columbia, residents of the Central Okanagan produce 736kg of waste per person, making the Central Okanagan the fifth-worst performing region in the province in terms of waste generation (Environmental Reporting BC, 2019). Waste generation rates in the Okanagan-Similkameen region are 522kg per person, which is slightly above the provincial average of 506kg per person. It is possible that this is attributable to tourism, but could also be due to other, unrelated factors.

The Yarra Valley exhibits higher scores in demographic and visitation related variables than the other regions. The Okanagan ranks poorly in several measures of demographic-related measures of sustainability, with a low visitor-to-population ratio and low amounts of employment in wine and tourism relative to the regions studied, stemming from the demographic features discussed in Chapter 4.

Napa Valley has the strongest measurements in several categories assessing economic strength. The Okanagan performs relatively poorly in these areas, with a high number of wineries, but a relatively low revenue per winery of the regions observed. Due to their high scores, Marlborough, the Yarra Valley, and the Napa Valley are chosen for case study analysis.

Chapter 7.

Policy Problem and Stakeholders

Simply stated, the central policy problem of this analysis is: The policy problem is: tourism dependent communities face economic risk due to perceptions of overtourism, to mitigate this risk, the benefits of tourism must be strengthened and better managed. Overtourism puts the long-term economic health of tourism-dependent communities and regions at risk by way of citizen back-lash against the tourism industry. Overtourism and sustainability are clearly linked and, by using developed measures of sustainability, this capstone assesses wine tourism in British Columbia - specifically, the Okanagan Valley -relative to the most sustainable wine regions.

There are several large, national-scale, stakeholder groups in the tourism sector. These include groups such as the Hotel Association of Canada and the Tourism Industry Association of Canada. There are also several stakeholder groups at the national level focused on more narrow subsets of the tourism industry, such as the Indigenous Tourism Association of Canada and Tourism Human Resources Canada.

There are also several industry associations at the provincial and municipal level that are relevant to the study of tourism. Most municipalities in the Okanagan have a municipal association of accommodations operators as well as several food and beverage operator associations.

There are also important stakeholders in the BC wine industry.⁵ The BC Wine Institute (BCWI) is the largest body responsible for the brand development of BC wine through the Vintners Quality Alliance (VQA) system. The BCWI coordinates the marketing efforts of producers across the province. The VQA system is meant as a marker of quality to inspire confidence in consumers. Membership in the VQA system is voluntary, but around half of the BC wine sold in BC is VQA certified.

The BC Wine Grape council is a collective of wine producers meant to promote scientific research and education within the BC wine industry to encourage the

⁵ For more information on BC wine industry stakeholders, see (Hira, 2013)

development of the industry. The BC Wine Grape Council runs the largest annual conference of wine producers in BC and is a significant contributor to the Sustainable Winegrowing BC program.

Wine grape growers in BC are represented by the BC Grapegrowers' Association. The BC Grapegrowers' Association is primarily concerned with agricultural issues relating to the production of wine grapes. The BC Grapegrowers' association also runs several small events throughout the year to foster collaboration among the members.

Citizens groups are of particular interest to the study of overtourism due to the fact that they are often the largest opponents of tourism development. However, there are no permanent citizen groups in the Okanagan Valley wine regions specifically concerned with the tourism sector.

The most important stakeholders to this study are those at the provincial and municipal level. Since this study leads with the benefits and costs borne and perceived by private individuals, the extent to which citizens and citizen groups agree with proposed policy is of paramount importance.

As seen in this chapter, tourism, overtourism, and sustainability are of key import to the continued success of regions dependent on tourism. Particularly, wine regions such as the Okanagan Valley may be at risk of overtourism. The diverse institutional and stakeholder network underlying the visitor economy complicates policy action, but also provides several avenues for policy that increases the sustainability of the tourism industry. The following chapters comparatively assess wine tourism regions across the world as a means for uncovering policies and characteristics in which the Okanagan Valley can improve upon. This is achieved through a case study analysis and literature review.

Chapter 8.

Analytical Method

This study uses two analytical methods to analyze and identify gaps in the Okanagan. The primary analytical method used in this study is case study analysis. The goal of this analysis is to uncover policies and factors in wine tourism regions that are associated with greater sustainability. The results of this analysis form the basis for the policy proposals and evaluation in the following sections and are confirmed by a literature review.

8.1. Case Study Selection

The regions selected for case study analysis are those regions which perform best on each metric of sustainability computed in the preceding sections. The regions used for case studies are the Marlborough region, the Napa Valley, and the Yarra Valley. As the comparative development of wine regions is very important to the determination of current outcomes, the following sub-sections serve as a brief history and introduction to the regions used in the case study analysis.

8.1.1. Marlborough

As seen in Chapter 7, Marlborough is a leader in the environmental sustainability of its wine industry. Marlborough is a unitary authority with a population smaller than the Okanagan (around 50,000). Despite its small size, Marlborough is the country's top producing wine region, producing around 70% of the total wine production and accounting for around 85% of the total wine exports from New Zealand (New Zealand Winegrowers Inc., 2018, p39;41). Marlborough and the Okanagan have a similar number of wineries, but the competitiveness in global markets enjoyed by Marlborough wineries translates to a total revenue more than double the Okanagan's.

The wine industry in New Zealand dates back to its colonial era, but production in Marlborough began in earnest in 1973 with the planting of Sauvignon Blanc (Hira & Benson-Rea, 2013, p.338-339). Significant industry innovation and development have led to Marlborough's international reputation as the preeminent source for Sauvignon

Blanc (Hira & Benson-Rea, 2013, p.339). Today, the New Zealand wine industry represents around 1.6 billion dollars in total export revenue alone (New Zealand Winegrowers Inc., 2018, p.2).

8.1.2. Yarra Valley

The Yarra Valley is the highest-ranking wine region in the areas of sociocultural sustainability as measured in section 6.4. The Yarra Valley is one of the oldest wine-producing regions in Australia, but - as with Marlborough - the modern wine industry in Australia only began increasing production during the latter half of the 20th century due to technological advancement (Hira & Aylward, 2013, p. 401). Today, Australia is one of the world's top exporters of wine and boasts a healthy wine tourism industry (Hira & Aylward, 2013).

The Yarra Valley is located just outside Melbourne, Australia's second-most populated city with just under five million estimated residents. This gives the Yarra Valley access to city resources, increasing its sustainability in several measures. Melbourne is one of Australia's top tourist destinations, with over 10 million visitors annually (City of Melbourne, 2016, p.15). Unsurprisingly, the Yarra Valley enjoys a visitor to population ratio almost two-times the average in this study along with a relatively low rate of seasonality.

8.1.3. Napa Valley

Located about 150 kilometers North-East of San Francisco, California, the Napa Valley is among the world's most well-known wine regions. Although the Napa Valley began producing commercial yields of wine sometime in the mid 1800s, it was not until the 1970s that the valley gained recognition among wine consumers (Anil Hira & Swartz, 2014, p.49). Within a few decades, producers in Napa Valley propelled the image of the industry from a low-quality producer to that of a preeminent North American wine region (Anil Hira & Swartz, 2014, p.49-50).

The reputation of the Napa Valley has created a booming tourism industry in the region seeing nearly four million annual domestic and international visitors with a resident population of only 140,000. The reputation of the Valley has created an

immensely profitable wine industry with the total revenue of Napa Valley wineries exceeding \$10 billion in 2018.

8.2. Case Study Evaluation Framework

The case study evaluation framework is developed to capture policies and practices which lead to more sustainable outcomes. There are many complicating factors and policies which may determine sustainability and, therefore, this analysis examines broad areas of standards, public spending, planning criteria, training programs, and seasonality. These themes and the specific characteristics examined are summarized in Table 1.

Table 1: Case Study Analysis Framework

Theme	Characteristic	Definition
Standards	Wine Industry Standards	Presence of sustainability standards in the wine industry.
	Tourism Sector Standards	Presence of sustainability standards in the tourism sector.
Public Spending	Public Investment	Presence of agency responsible for managing public investment in tourism.
	Public Marketing	Presence of agency responsible for managing public marketing of tourism.
Training Programs	Wine Production Training	Presence/location of post-secondary institution offering education in wine making or wine business.
	Tourism Training	Presence/location of post-secondary institution offering tourism-tailored education.
Seasonality	Seasonality of Tourism	Portion of visitors in the off-season compared to during the busy season.
Planning	Environmental Criteria	Inclusion of Environmental Criteria in sub-national tourism planning.
	Sociocultural Criteria	Inclusion of Sociocultural Criteria in sub-national tourism planning.
Other	Tourism Tax	Tourism tax levied in jurisdiction.

Standards are regulations that aim to change the behavior of market actors to align with social goals. In this regard, standards are well-aligned with sustainability as they can encourage more sustainable practices. This study examines standards in both the wine industry and tourism sectors as a means to encourage sustainable practices in wine tourism regions.

Public spending in tourism is channeled through two means: the provision of public grants and investment in tourism businesses or events, and the marketing of a destination to potential domestic and international visitors. The presence and strength of these agencies is examined in the case studies to determine how much effect public investment has in increasing the sustainability of wine tourism regions.

Training programs are means by which the local population may invest in education. Through this investment - and the increase in tourism quality and efficiency resulting - workers hope to earn more, thereby increasing their available resources and resiliency. This study examines the presence and sophistication of post-secondary educational programs aimed at both the wine industry and tourism sector to determine the correlation between the presence of these programs and sustainable outcomes.

The inclusion of sustainability-focused criteria in the planning of tourism likely has a significant impact on the ultimate outcomes. This study examines: first, whether or not the sub-national jurisdiction has an official tourism strategy, and second, whether that official strategy includes sustainability-focused evaluation criteria.

Tourism is prone to seasonal fluctuations and most tourism in Canada takes place during the summer months: April to October. However, this seasonality strains local communities and regions as employment typically follows this fluctuation. Regions that are heavily reliant on tourism may experience significant changes in productivity depending on the time of year. This study measures seasonality using hotel occupancy rates, computing a measure between zero and one, with values closer to one representing less seasonality in tourism.

Tourism taxes or other taxes levied at tourism or tourists are also examined to determine what effect this has on sustainability. Many jurisdictions, including British Columbia, have implemented a tourism tax, such as an accommodations tax. Often the revenue from these taxes is used for environmental remediation or other measures to

mitigate the damages of tourism. This study examines the correlation between tourism tax and sustainable outcomes.

Chapter 9.

Case Study Analysis

This chapter is comprised of a case study analysis examining how each region compares in the metrics discussed in the previous chapter. The results of this analysis are summarized in Table 2, located in section 9.10.

9.1. Wine Industry Standards

The New Zealand Wine industry is covered by the Sustainable Wine New Zealand program which has a high rate of subscription amongst the country's wine producers. It is reported that 98% of New Zealand's wine producers and wine growing area is covered by the Sustainable Wine New Zealand program (New Zealand Wine, n.d.). Sustainable Wine New Zealand primarily incorporates practices which encourage environmental sustainability. In the Yarra Valley, wine producers are covered under the national Sustainable Winegrowing Australia program, which is a voluntary standard. With 2019 being its first official year of operation, it is not possible to determine the efficacy of the Sustainable Winegrowing Australia program. The California Sustainable Winegrowing Alliance (CSWA) is a sustainability standard that covers a relatively small portion of the market, with only around 1,500 subscribers (California Sustainable Winegrowing Alliance, n.d.). As with the other sustainability standards discussed, the CSWA uses the same three-pillared approach to sustainability used by this study.

9.2. Tourism Sector Standards

In the Yarra Valley, Australia's Quality Tourism Framework offers accreditation to businesses that are exemplary in customer service and operating procedures, including employee training and benefits (Quality Tourism Australia, n.d.). In New Zealand, the Qualmark program distinguishes businesses that meet sustainability standards. Businesses are audited and given either a bronze, silver, or gold rating depending on their performance (Qualmark, n.d.). There are no visible tourism industry standards in California or the Napa Valley.

9.3. Public Investment

The government of Victoria has given considerable financial support, through Visit Victoria, to tourism infrastructure and events during 2018, of which a number could be identified simply by a scan of their government website (Government of Victoria, n.d.). No programs representing investment in tourism events or infrastructure in California could be identified. Significant investment in tourism takes place from the government of New Zealand through the Tourism Industry New Zealand Trust grant program (Tourism Industry New Zealand Trust, n.d.).

9.4. Public Marketing

All three regions have public agencies responsible for the marketing of the destination to potential visitors at the sub-national level. These are Visit Victoria, Visit California, and Destination Marlborough. Visit California has an annual budget of around 100 million and is funded through taxation of tourism businesses (Visit California, 2019). Destination Marlborough has an annual budget of just under one million New Zealand dollars and is government funded (Tourism New Zealand, n.d.). Visit Victoria has an annual budget of around 100 million Australian dollars (Visit Victoria, 2019).

9.5. Wine Production Education

All three regions studied have access to wine-making training at the post-secondary level at the undergraduate level or higher. Napa Valley boasts one of the world's preeminent winemaking teaching and research institutions in the University of California Davis (Anil Hira & Swartz, 2014, p. 47). In Marlborough, the Nelson Marlborough Institute of Technology (NMIT) offers a Bachelor of Viticulture and Winemaking degree (Nelson Marlborough Institute of Technology, n.d.). Graduate level training is available at institutions a few hundred kilometers from the region, at the University of Auckland or the Eastern Institute of Technology (EIT) (Eastern Institute of Technology, n.d.). For residents of the Yarra Valley, undergraduate level training is available at Melbourne Polytechnic (Melbourne Polytechnic, n.d.).

9.6. Tourism Education

The tourism educational training available in these three regions is more varied. Near the Yarra Valley, Victoria University and La Trobe University offer several undergraduate and graduate level programs in tourism management, as well as a few schools that offer courses at the undergraduate level (Australian Education Network, n.d.). In Marlborough, tourism training is only available at the diploma level, through NMIT and EIT. In Napa Valley, tourism management education is available only at the diploma level through Napa Valley College (Napa Valley College, n.d.). However, due to the close proximity to San Francisco, residents have opportunities for a more general business education.

9.7. Seasonality

Of the regions examined, Napa Valley has the lowest amount of seasonality in its tourism industry, with off-season activity estimated at just under 70% of peak-season. The Yarra Valley is not far behind Napa Valley, with off-season activity estimated at 64% of peak-season. Marlborough falls considerably behind the others, with off-season activity at merely 38% of peak-season.⁶

9.8. Planning

Tourism planning in Marlborough is well developed and complex. Their plan was developed as a result of extensive consultation and therefore contains consideration for a wide variety of aspects of society (Ministry of Business, Innovation, and Employment, 2019). The tourism plan in Victoria, Australia, contains considerations primarily for tourism workers and communities (Victoria State Government, 2016). California lacks an official tourism plan and, therefore, does not have consideration for either aspect of sustainability examined as criteria.

⁶ See Appendix A for seasonality results and citations.

9.9. Tourism Tax

New Zealand has implemented an International Visitor Conservation Tourism Levy of thirty-five New Zealand dollars (Ministry of Business, Innovation, and Employment, n.d.). This money helps fund conservation efforts around the country and ensures that tourism's effect on the natural environment is managed. Accommodations are taxed in California under what is called the Transit Occupancy Tax. The tax is currently set to 12% of the price of lodging for stays of less than thirty days (Betty Yee, 2012).

9.10. Conclusions of Analysis

Table 2: Case Study Analysis Results

Theme	Characteristic	Marlborough	Yarra Valley	Napa Valley	Okanagan
Standards	Wine Standards	Yes	No	Yes	In Development
	Tourism Standards	Yes	Yes	No	No
Public Spending	Public Investment	Yes	Yes	Yes	Yes
	Public Marketing	Yes	Yes	Yes	Yes
Training Programs	Wine Training	Undergraduate	Graduate	Graduate	None
	Tourism Training	Diploma	Graduate	Diploma	Certificate
Seasonality	Seasonality	39%	64%	70%	35%
Planning	Environmental Criteria	Yes	No	No	Yes
	Sociocultural Criteria	Yes	Yes	No	No
Other	Tourism Tax	\$35 levy	None	12% Accommodations tax	8% (additional 1%) PST

The results of the case study analysis are summarized in Table 2. None of the regions studied score consistently high on all aspects of sustainability, but what has been demonstrated is that in Marlborough, Napa Valley, and the Yarra Valley, there are specific, concerted efforts by industry or government which have led to their distinct areas of high performance in sustainability. In New Zealand, government standardization

schemes have led to high levels of environmental sustainability. In the Yarra Valley, programs focusing on the training of workers has led to residents benefiting from the tourism industry. In Napa, the proliferation of locality specific knowledge and efforts to promote tourism in the off-season have led to an economically sustainable wine tourism region.

As identified in Chapter 6, there are many areas for potential improvement in the Okanagan. There is evidence from this analysis that the wine industry in the Okanagan is healthy, with a relatively high number of wineries and an average winery revenue consistent with other wine tourism regions. The significant seasonality in the Okanagan tourism industry - with most tourists visiting within a short window - leaves the region without a key piece of its economy for eight months of the year. As a result, a relatively high rate of unemployment is observed. The lack of advanced training opportunities for residents of the Okanagan results in few options for residents hoping to invest in human capital. Consequentially, this lack of training could indicate that the region will not remain competitive in the future and will require an influx of skilled labour to increase productivity. From this analysis, it is concluded that the top issues facing the Okanagan Valley that can be addressed with policy intervention are: seasonality, lack of training opportunities, and a lack of standards.

Chapter 10.

Literature Review of Wine Region Success Factors

This chapter consists of a review of relevant literature that highlights reasons for wine region success. This analysis supports the conclusions drawn from the analysis undertaken in Chapter 9.

10.1. Standards

As previously mentioned, the most popular environmental standard in the New Zealand wine industry is the Sustainable Winegrowing New Zealand (SWNZ) program (Baird et al., 2018, p.8-9). The standards include seven key pillars: biodiversity, soil, water and air, energy, chemicals, by-products, people and business practices. As well, larger wineries in New Zealand have been able to apply for ISO 14000, which is a rigorous environmental management standard (Dodds et al., 2013, p.168). There is evidence suggesting that tourism workers in Victoria are better trained than counterparts in other regions as the result of the programs discussed in Chapter 9 (Williams, 2013, p.101).

10.2. Training Programs

The proximity to the city of Melbourne contributes significant positive influences in shaping the dynamics of the tourism industry in and around the city. The city of Melbourne has partnered with the government of Victoria to develop a retail and hospitality strategy that aims to increase the capacity of local residents and communities through the investment in, and retention of, skilled personnel (City of Melbourne, 2016, p.41). Additionally, educational institutions have played a key role in the development and market position of the Australian wine industry (Andy Hira & Aylward, 2013, p. 414).

Napa Valley's economic success can be attributed largely to the reputation of its wine industry and efforts to increase the economic viability of the region led by key industry stakeholders (Anil Hira & Swartz, 2014, p.51). The advanced wine-making education available to the residents of the Napa Valley has allowed for the maturation of

the wine region and the propagation of the region's reputation (Anil Hira & Swartz, 2014, p.47). This access to winemaking training, along with the California-focus of UC Davis, translates into resident expertise and specialization and is argued to be a key factor in the success of the region (Anil Hira & Swartz, 2014).

10.3. Seasonality

Napa Valley is the most economically sustainable region examined in this study and exhibits the lowest rate of seasonality. To combat seasonality, *Visit Napa Valley* maintains several unique festivals and events during the winter season and has stopped promoting tourism during the peak-season (Visit Napa Valley, 2019b).

10.4. Other Dynamics

The high degree of environmental sustainability in the New Zealand wine industry can be partially attributed to the fact that New Zealand has developed an international reputation as a leader in environmental sustainability (Dodds et. al, 2013, p.178). Winery operators see environmental stewardship as a responsibility and wine consumers in New Zealand are increasingly focused on wines which subscribe to rigorous environmental standards (Baird, et. al., 2018, p.17). It is difficult to say whether environmental sustainability comes from consumer preferences as there have been several studies on the price premium effects of sustainably produced wine that have produced no tangible results (Baird et al., 2018, p.8). This suggests that government action and New Zealand's international reputation for sustainability have caused such strong environmental sustainability within the wine industry. In turn, this sustainability has led to a comparative advantage for the New Zealand wine industry, as no other wine region can boast such strong environmental attributes (Zahraie et. al , 2016, p. 43-44). Thus, it is leadership from the government - combined with a cultural commitment to sustainability - which has led to strong environmental sustainability in New Zealand's wine industry.

Despite its economic sustainability, there are considerations of overtourism in Napa. As a result, the visitor economy is strictly regulated and debated (Veseth, 2017). Visit Napa Valley, the county destination marketing and development agency, has promoted the importance of tourism to the local populace, signalling that they are aware

of potential overtourism in the region (Visit Napa Valley, 2019a, p.9). It is evident that economic prosperity alone cannot sustain the tourism industry and that even the most economically prosperous of regions face the potential of overtourism due to a lack of coordination to ensure tourism benefits are equally distributed.

Chapter 11.

Policy Options and Evaluation Criteria

This chapter proposes three policy options and introduces the framework that is used to analyze these proposed policies. The long-term policy goal is to reduce the perceptions of overtourism in the population of the Okanagan. In the short-term, the goal of proposed policy is to increase the sustainability of the wine tourism industry in the Okanagan in order to facilitate and allow for the long-term prosperity of the wine tourism industry in the region. Policy options proposed should, therefore, be aimed at increasing the sustainability of the Okanagan in measures in which it performs relatively poorly. Thus, the specific goals of policy proposals should be to reduce the seasonality of tourism, increase the number of tourism arrivals and amount of tourist spending, and increase training opportunities available to the public. Through increasing the sustainability of wine tourism in the region, the risk of overtourism will be minimized and the long-term economic health of the region is likely to be maximized.

11.1. Policy Options

This section presents three policy proposals that have been derived from the analysis covered in the previous chapters. Where possible, policies are tied directly to the facet of sustainability they are meant to enhance.

11.1.1. Policy Option 1 – Expanded Educational Programs

Throughout the analysis conducted, enhanced access to education programs was correlated with higher levels of sustainability. This option would see the educational capacity of the Okanagan increased through the expansion of the current certificate level programs or the adoption of four-year, or beyond, education programs targeted at the wine and tourism industries.

This policy option features the enhancement of both tourism and wine-making educational programs in the Okanagan. Both tourism education and wine-making education would have impacts on the sustainability of the region, but it is argued that the greatest success will emerge from a combination of the two. As previously discussed,

the wine and tourism industries are dependent on each other in the Okanagan. As such, the greatest possible impact is likely to come from a combination of educational programs.

The Okanagan is home to two different institutions which are well-positioned to offer post-secondary training. UBC currently houses BC's only wine research centre within a post-secondary institution. This centre is located in UBC's Vancouver campus - rather than UBC's Kelowna campus which would be well-centred in the heart of BC's wine country - and only two wine-related courses are offered at the undergraduate level. This is a meagre offering compared to the Oenology and Winemaking undergraduate program offered by Brock University in Ontario's Niagara region, which offers more than a dozen courses spanning all levels of the wine-making process and includes a co-op component (MDB Insight, n.d., pp. 14–16). The authority of the BC government, however, is limited in pursuing the relocation of the UBC wine research centre to the Okanagan and the development of an Oenology undergraduate program. As in the case of Napa Valley, expanded wine research capabilities would allow for the development of Okanagan wines through the development and proliferation of locality-specific knowledge.⁷ As well, Okanagan College offers several programs related to wine business and vineyard management that can be expanded. Based on enrollment at Brock University, around twenty full-time equivalent students could graduate from the program in a given year.

As the other facet of this policy proposal, the expansion of tourism-related courses and training can be expanded to meet the needs of the region and promote specialization within the labour force. Similar to wine-making education expansion, the provincial government would partner with Okanagan College to achieve this goal. Currently, there are tourism-tailored business programs offered at Okanagan College only, with no specialized wine tourism content (Okanagan College, n.d.). The programs implemented would be region-specific courses and certificates tailored to meet the needs of tourism workers and businesses in the Okanagan.

⁷ Although wine production is very local in scale, local geography plays a large role in the quality of wine production. Hira, 2014 argues that locality specific knowledge is critical to increasing the quality of wine produced in the region.

Of the methods discussed, this policy proposal focuses on the short-term goal of increasing the delivery of programs at Okanagan College with the long-run goal of moving UBC's wine research centre to the Okanagan and the development of an undergraduate wine-making curriculum. The expansion of current programs at Okanagan College could be seen as a more feasible method of improving the education capacity of the region but will not offer the same opportunity in terms of research capability that would be found in UBC. For purposes of viable estimation, policy option costing and analysis focuses on the expansion at Okanagan College only.

11.1.2. Policy Option 2 - Shoulder Season Promotion

Seasonality is one of the most pressing issues affecting the sustainability of the tourism industry in the Okanagan. This means that – more so than any other wine region examined in this study - the Okanagan experiences the highest concentration of tourism activity during the peak months. Solving tourism seasonality is a problem around the world, yet there are instances where jurisdictions have successfully decreased seasonality through policy intervention (Lee, 2008, p. 2). The reduction of seasonality is currently an explicit focus of the official tourism plans of both the Canadian federal government and the British Columbia provincial government. Tourism operators cannot simply lower prices in the region to attract more tourists, as the fixed cost involved with transportation (typically flight prices) mean that decreases in seasonality must be accomplished through increased demand. However, there is opportunity for greater leadership in tackling the seasonality of wine tourism in the Okanagan. As seen in the case study of the Napa Valley, industry can have a role in creating and promoting events during the off-season to increase tourism during this time. Currently, there is a mixture of small events in the valley which could be expanded or leveraged to draw more tourists to the region in the winter months. Alternatively, new draws could be created.

This policy option would manifest in provincial grants towards events and institutions which would enhance the tourism draw of the Okanagan in the shoulder season. Destination BC currently administers the Tourism Events Program (TEP) which provides funding to tourism events in the province. However, this program funds a negligible number of wine-tourism related events (only one in 2019) and requires that provincial funding amount to a relatively small percentage of the event budget (Destination BC, n.d.). Relaxing the criteria for event funding during the off-season

would allow events that would not otherwise qualify for TEP funding to take place. Alternatively, a separate program, allowing funding for off-season events, with more relaxed criteria, would achieve the same outcome. TEP funding is contingent upon budget size, granting a maximum of \$250,000. Thus, it is estimated that a budget of \$250 000 or less would be sufficient to meet demand for events which would not take place under the current system during the shoulder season. Following the initial call for project proposals, industry associations, individual stakeholders, and citizen groups could submit project proposals which could then be awarded funding on a competitive basis - similar to how the funds were distributed for the Canadian Experiences Fund in 2019.

11.1.3. Policy Option 3 - Voluntary Standards

As seen in the case of the Marlborough wine tourism region, there is no doubt that the environmental sustainability standards put in place in the New Zealand wine industry have had a positive impact on the sustainability of the region and its international reputation. Additionally, tourism standards have been effective in both New Zealand and Australia.

This policy option is modeled after the programs in these jurisdictions. For the purposes of keeping this policy option comparable with the other options proposed in terms of scale, a regional, Okanagan-specific standard is proposed. This would entail a standard for tourism operators in the region managed by an independent association that is closely connected with the stakeholders in the region. Operators would submit to audits of their facilities and practices in order to receive certification. Typically, a small fee is paid to the administrators of the program to cover administration and auditing costs, and the administrator of the program is an agency outside of government. Although the tourism industry is complex, the success of other programs demonstrates the potential success for this policy. Although there is unlikely to be significant change in the environmental sustainability of the region as a result of changes made in the tourism industry, there may be an advantage to BC tourism operators in adopting more sustainable practices through the enhanced reputation of the community in the competitive tourism market. Additionally, social and economic sustainability aspects should be included in this standard. For example, the standard could require that employees are given access to formal training and are given access to benefits. As there

is a growing knowledge of sustainability and sustainable practices among tourists, the adoption of sustainable business practices would be approached as a method to increase tourism visits to the region.

It is essential that this process be completely voluntary, used as a way to distinguish a firm in their use of sustainable practices. As mentioned, the significant costs associated with sustainability standards in New Zealand limit the effectiveness of the program. Therefore, to minimize this issue, a three-tiered system is proposed in order to ensure all operators benefit. At the most basic level, firms would only have to commit to basic sustainability practices (such as practicing landfill diversion) which would have a very low overall impact on the operating expenses of the firm. This voluntary system would allow firms to choose which level of subscription maximizes their total benefit. A well-designed system will have few abstainers; therefore, a relatively high level of adoption can be expected. Beyond the most basic sustainability practices, practices that are more costly can be included higher tiers of the certification. Similar programs have been identified as drivers of sustainability, despite their voluntary nature, and provide a standardized method for businesses to communicate values to consumers (Gabzdylowa et al., 2009, p. 995).

As mentioned, administration and auditing responsibilities are best left to an independent agency. Municipal governments of the region will have to support the creation of this agency and cover the administrative budget while consultations are undertaken the standardization scheme is codified. After this the administration and auditing can be paid for by the subscription fee collected.

Sustainable Winegrowing BC is a voluntary standard aimed at wine growers in the region that is slated to launch in the growing season of 2020. This program has been developed over the last few years following consultations with winegrowers in the province. The standards proposed in this section would be a complimentary program to these standards but administered separately. This program could likely benefit from the consultations done by Sustainable Winegrowing BC in the development of standards to decrease the time it would take to get to market.

11.2. Evaluation Criteria

To assess and measure policy options against each other, a number of criteria applicable to all proposed policy options are used. These criteria fall under the broad societal goals of equity, sustainability, efficiency and development. Concurrently, these societal objectives must be balanced with governmental priorities such as cost, administrative complexity, and stakeholder/public acceptance. In the following chapters the pros and cons of each policy - with respect to the evaluation criteria - will be discussed.

Table 3: Policy Evaluation Criteria

Societal Objective	Criteria	Definition	Measure
Sustainability	Incremental sustainability	Degree to which there are improvements in measures of sustainability arising from policy action	Decrease in sustainability (1) Increase in one aspect (2) Increase in two or more aspects (3)
Equity	Distributional impacts	Degree of concentration of benefits arising from policy intervention.	Increased concentration of benefits (1) No distributional impacts (2) Increased diffusion of benefits (3)
Development	Human capital impacts	Change in human capital experience by residents due to policy intervention.	Human capital decrease (1) No impact/small gains in human capital (2) Significant gains in human capital (3)
	Community development impacts	Change in the level of 'community capital' resulting due to policy intervention.	Community capital decrease(1) No impact/small gains in community capital (2) Significant gains in community capital (3)
			Total /2
Cost	Cost to government	Governmental budgetary impact of policy intervention.	\$1 million or more (1) Cost of less than \$1 million (2) No cost to government (3)

Societal Objective	Criteria	Definition	Measure
Efficiency	Efficiency loss to business	Increases in cost to businesses that is not recouped.	Decrease in efficiency (1) No change in efficiency (2) Increase in efficiency (3)
Administrative Complexity	Levels of government involved	Which governments would be involved in implementation of policy?	No governmental involvement (3) One level of government involved (2) More than one level of government involved (1)
	Complexity of program administration	Complexity of program start-up and on-going administration.	Complex, on-going implementation by government (1) Complex, on-going implementation by third-party (2) Simple implementation or inclusion with existing programs (3)
			Total /2
Stakeholder Acceptance	Acceptance of industry associations	Estimated degree to which industry associations would support policy intervention.	Expected stakeholder resistance (1) No strong stakeholder position expected (2) Stakeholders expected to embrace policy (3)
	Acceptance of citizen groups	Estimated degree to which citizens would support policy intervention.	Expected citizen resistance (1) No strong citizen position expected (2) Citizens expected to embrace policy (3)
			Total /2
			Total /28

11.2.1. Sustainability

The primary objective of this study aims to uncover policies and programs that will increase the sustainability of the wine tourism industry. Therefore, the paramount societal goal considered for policy analysis will be the effect to which the policy

increases the sustainability of the region. This is achieved by extrapolating the effect of policies on the metrics examined in the measurement of sustainability.

11.2.2. Equity

As the metrics of sustainability covered do not tackle the distribution of resources, yet equal and fair distribution is a key consideration of sustainability, the degree of equity is also considered, with a more equitable distribution of benefits from proposed policies seen as more desirable.

11.2.3. Development

Development is an important component of sustainability that is also not covered in the metrics of sustainability employed by this study. As well, due the nature of the policies proposed by this study, there will be a significant variance in the developmental outcomes should proposed policies be enacted. Therefore, the development of human and community capital is included in this analysis. It is assumed that a higher level of development is better.

11.2.4. Cost

The cost to government is an important facet of policy analysis. This category of criterion includes only the cost to government. This is measured as accurately as possible, but - due to the estimation involved – likely does not fully reflect the outcomes. Effort is made to ensure policy proposals are costed to within an order of magnitude of each other in order to avoid the issue of widely disparate scopes.

11.2.5. Efficiency

As the policies proposed aim to change the current state of human behaviour and the economic practices in the region, it is important to consider the efficiency impacts of policy proposals. Policies should not have too deleterious and effect on the economy of the region caused by undue costs or restrictions placed on residents or firms. This study examines only the effect of additional spending that must be incurred

by businesses as a result of policy intervention that is, or is potentially, not recouped as a result.

11.2.6. Administrative Complexity/Intergovernmental Issues

As nearly every level of government is involved in tourism policy to some degree, the complexity of administering and implementing policy change can vary greatly depending on the policy and the level of government involved. This criterion examines how many levels of government would be involved in the implementation and administration of policy proposals, and the general regulatory and administrative complexity involved.

11.2.7. Stakeholder Acceptance

The final set of criteria revolve around the acceptability of policy action to different groups of stakeholders. For policy action to be successful it will require the acceptance of both business and citizen groups. This is extrapolated based on the observed stakeholder acceptance from previous government initiatives or policies.

Chapter 12.

Evaluation of Policy Alternatives

This chapter evaluates the three presented policy options. The analysis is divided by the evaluation criteria discussed in Chapter 11. A discussion of the costs and benefits of each policy proposal is presented, with a quantification offered in Appendix D.

12.1. Analysis of Option 1: Education Capacity Expansion

The expansion of education programs will increase sustainability primarily through increasing opportunities for residents of the Okanagan to invest in human capital. Even a small program will make progress in closing the employment gap in the region. Educational programs will also increase the quality of tourism offering in the region, potentially increasing the number of visitors coming the region and the spending of those visitors.

Educational program capacity expansion will have a disbursed benefit to the region as it will primarily benefit those residents who cannot afford to relocate for training. The training received by residents will, in the long-term, increase the wages they receive in the labour market, strengthening the flow of resources to some of the poorest in the community. A positive return to education, in the form of increased wages, has observed in the hospitality industry (Marchante et al., 2005).

There will also be a positive effect on the efficiency of the region due to an increase of skilled labour in the region. Current labour shortfalls curtail the potential economic output in the region and limits the ability of the region to expand tourism (Thom, 2019; Tourism HR Canada & The Conference Board of Canada, 2019). The increased pool of available labour and the increased skills of those labourers will increase productivity and allow the region to operate at full capacity. Additionally, employers will have expanded access to training opportunities for staff already employed.

This policy option has its greatest potential effect in human capital. As previously mentioned, even a modest expansion of educational programs will be a significant

improvement for the capacity for human capital development in the region. This policy will allow for hundreds more students per year to attend education or training which would not otherwise be available, or accessible, without policy intervention.

Cost to government will come in the form of grants required to run this program. Providing conditional funding of \$1 million will increase the total operating revenue of the college by about 1% (Okanagan College, 2018). This represents space for an additional 90 students annually based on the current enrollment of the school. This is a very simplistic costing, as there are likely some returns to scale of Okanagan College, but the cost is controllable. The mechanics of this policy option allow the cost of the grants to be fixed, while the increased enrollment varies around that. Although this is a small increase in the overall operations of Okanagan College, the wide breadth of courses offered at the institution means that this would represent a significant investment in wine-tourism-focused offerings at the college.

This policy option is moderately complex, as there will be a requirement for strong leadership from the provincial government in the development and funding of these programs. Additionally, it will place additional administrative burden on Okanagan College (and eventually UBC) as they increase student intake. However, as these are both large institutions, this policy option represents only a small increase in the overall number of students.

Stakeholder acceptance of these programs is expected to be high. Industry groups across the country have shown support for educational programs aimed at increasing the competencies of Canadian workers (Mallett, 2019). This is particularly true in tourism industries, where there is a low level of education among the workers and a lack of a consistent, recognized standard for tourism education. There has also been considerable media attention placed on labour shortfalls in tourism industries in recent years. These factors increase the chance that this policy will be well-received by the public.

12.2. Analysis of Option 2: Shoulder Season Promotion

Off-season promotion would have a limited effect on the sustainability of tourism in the Okanagan Valley. This policy proposal impacts the high rate of seasonality in the

Okanagan. Although it only impacts a singular issue, the importance of this issue to the long-term economic health of the region puts it on par with the other policy options considered which only minimally address the seasonality of tourism. Even a modest increase in the number of visitors coming from January to March - the slowest quarter in the Okanagan - by 10% will reduce the seasonality by 17%, assuming summer visitation remains unchanged.

Off-season promotion is not expected to have significant distribution impacts. Those workers who are unable to collect employment insurance or do not collect employment insurance during the off-season, who instead work a reduced schedule or make other concessions during the tourism off-season will benefit from any decreased seasonality. Employment Insurance claims in the region increase in the region by around 30% in January compared to just after the tourism season, meaning that a reduction in seasonality would likely reduce this spike in EI claims (Statistics Canada, 2020g).

There are no impacts to human capital as a result of off-season promotion. Community capital is unlikely to be affected, although there is potential for the co-development of events and the use of community facilities between the wine industry, tourism industry, and community organizations due to the need for indoor space during the winter months.

As these events would be industry run and promoted, there are efficiency considerations for this policy alternative. Typically, these events are held in collaboration between the wine industry and tourism stakeholders. Thus, financial contribution would be required from industry stakeholders to implement the events. This may result in a loss of efficiency as the contribution amount from stakeholders may be greater than the benefits received through the events. There is potential for the free-rider problem, as wineries and tourism businesses who do not participate will still receive some benefit from the increased number of tourists in the region.

The cost to government would be limited to the financial contribution made to the events in the form of grants. The exact nature and size of the grant funding is adjustable but should be continued on an annual basis to ensure societal goals are met. As mentioned, based on the budget of the TEP, additional program funding of \$250 000 should be sufficient to meet demand in the short run. Small events receive \$10,000-

35,000, with large events receiving up to \$250,000. As only a few small incremental events are expected, additional funding of \$250,000 should meet demand in the short-run. As a reduction in seasonality will lead to an increased demand for program funds in the future it is recommended that the funding amount be periodically assessed. However, there could be some savings to government coming from a reduction in EI claims as a result of this program. Additionally, there is the potential for the use of existing public space under this scheme. This would increase municipal government revenue by increasing the revenue from public spaces during times they are not typically under use.

This policy is the least administratively complex of the policies examined, requiring government to only disburse funding to successful applicants. There will be complexities surrounding the decision process, but this is already managed by Destination BC. Stakeholder acceptance is expected to be high based on findings from similar programs in Canada.⁸

12.3. Analysis of Option 3: Voluntary Standards

There is a high degree of uncertainty on the efficacy of this policy option. The degree to which voluntary standards would affect sustainability is dependent entirely on the standards that are developed during the consultation process and uptake among the industry. As mentioned in the introduction to this policy option, a multi-tiered model will likely receive relatively high adoption. If properly designed, standards will include measures aimed at increasing all three aspects of sustainability and, thereby, will increase sustainability in multiple facets.

There are equity considerations due to this policy, with small positive gains in equity coming from stipulations of the standards. Conditional upon both human capital (i.e. mandatory employee training) and community capital (i.e. contributions to a community investment fund) requirements being included in the standards, there will be

⁸ This is based on the stakeholder opinions of the Canadian Experiences Fund announcement in 2019. Additionally, as this type of program is already underway with the TEP, stakeholder opposition is not expected.

definite positive gains in both human and community capital as a result of this policy initiative.

Subsequent to the voluntary nature of the program, there will be minimal loss of efficiency as operators are free to opt-out of the program altogether or choose not to pursue higher standards if the benefit of doing so outweighs the perceived cost. The fee charged for subscription to the program will be incremental to the subscribing firm, but the benefit of subscription should outweigh this. If this is not the case, there may be some loss of efficiency, but subscription will likely not continue in this circumstance.

As previously mentioned, the cost to government will come in the form of initial set-up costs and fees of administrators until the program is running. It is difficult to estimate how long this process will take and therefore how much the cost to government will be, as there is an uncertain amount of time needed to develop the standardization scheme. As there are potentially hundreds of businesses in the region that would be affected by this, the program would likely require significant administrative staff. However, it appears that the Sustainable Winegrowing BC program has been developed with only one full-time staff member and the support of already existing institutions and stakeholder groups. Therefore, although this program would be wider in scope, a large administrative staff is not predicted until the program is up and running. It is estimated that a budget of \$250,000 will be sufficient for the start-up costs of the program. This will provide for staffing and office-space costs of the program before the roll-out.

This policy would require significant coordination between municipal governments. A regional standard that is developed within and that incorporates the unique nature of wine regions is recommended, thus the main leadership on this policy would be expected to come from the municipality of Kelowna. Municipalities in the region will have to come together to form the standards association.

Standards have the potential to be viewed by industry as onerous regulation requirements. The voluntary nature of this program will reduce the possibility of this policy being seen as such. Additionally, the requirement for consultations to be part of the process of development for these standards increases the potential favourability of this policy to industry.

There is not likely to be any significant citizen reaction to tourism industry standards, as these standards are primarily used in marketing to visitors to the region. As the development and future shape of the standards will be led by industry it is unlikely that any support against this government action will form.

Chapter 13.

Recommendation and Implementation

This chapter summarizes the evaluation of policy options conducted in the previous chapter. A final policy recommendation is then given as the conclusion of this chapter.

13.1. Policy Recommendation

Table 4: Evaluation of Policy Alternatives

Criterion	Opt. 1: Education	Opt. 2: Off-season grants	Opt. 3: Standards
Sustainability	Increase in resident resiliency, some increase in visitation	Decrease in seasonality, driving total visitation and revenues up	Small increases in all categories of sustainability
Equity	Impacts low-income residents who are unable to relocate for education	Precariously employed workers and those receiving EI during the off-season benefit most	Likely equity gains depending on standards
Human Capital	Significant gains in human capital due to the increased availability of relevant education	No impacts beyond the status quo	Likely some gain for wine industry employees depending on standards developed
Community Capital	No impacts beyond the status quo	Potential gain due to lower seasonality and engagement of community spaces	Likely some gain depending on standards developed
Cost to Government	\$1 million	~\$250 000	~\$250 000
Efficiency	Increase due to larger labour pool and better skill matching coming from specialized labour	Potential decrease as operators may not realize gains from investments made	Potential decrease depending on the burden placed on operators by the developed standards
Governments Involved	Provincial and Federal	Provincial	Will require coordination between municipalities for establishment of program

Criterion	Opt. 1: Education	Opt. 2: Off-season grants	Opt. 3: Standards
Complexity of Administration	Complex, long-term administration and development	Simple, fits well with existing programs	On-going auditing by and engagement managed by third party association
Industry Acceptance	Current labour shortages would be filled by a larger and more specialized labour pool	Decreased seasonality benefits all stakeholders in the region	Potential for stakeholder consultations to cause tensions or perceptions of undue burden
Citizen Acceptance	Program is aimed at a public that is underemployed and under-skilled compared to the rest of the province	Program will not have effects very visible to the public but due to demographics there may be a perception that money is being wasted	Unlikely to have much public visibility, primarily used by businesses to market to visitors

Table 4 summarizes the evaluation of the proposed policy alternatives. A quantification of this is offered in Table D.1 located in Appendix D.⁹ Based on the analysis undertaken in Chapter 12, as all policy proposals offer worthwhile and effective means of achieving the stated goals, a policy package containing elements of all three proposed policy options is recommended for future action.

First, regional governments should begin working on a collaborative framework for a regional tourism standards organization to promote sustainable outcomes. Such voluntary standards would help differentiate the Okanagan as leading region in sustainability. Similar to other initiatives in New Zealand in Australia, the Okanagan tourism industry could benefit from the adoption of a broad-based definition of sustainability for the basis of these standards. The voluntary nature, tiered model and stakeholder engagement process proposed by this study ensures that such standards would not burden the industry while increasing its public image. Consultations conducted

⁹ Employing satisficing in the quantification, all policy options are found to provide a positive net benefit and are relatively close in this regard, with scores of 17, 17.5, and 17 respectively. This leads to the outcomes discussed this chapter, and is confirmed by the qualitative summaries (Table 4) in which it is seen that there are benefits to all policy proposals in different areas.

will also aid in understanding the goals and capacity difference among regional stakeholders as the industry plans for future development.

Second, British Columbia should ensure that funds are set aside from the TEP specifically for winter programs and events in the Okanagan. This can be achieved through either relaxing the application requirements during the winter months or setting aside a new tranche of funding specifically for these events. This will support the shift of the Okanagan from a summer destination to one which is attractive to tourists year-round, by contributing to lower seasonality in the region.

Lastly, the BC government should offer funding to support the creation of a wine tourism-focused program at Okanagan College and the expansion of current offerings in tourism or wine making education. In the long-term, the BC government should support the creation of a four-year wine making program at UBC's Okanagan campus. Although this policy intervention is not covered in this analysis, this will ensure the long-term health of the wine industry by giving the region a path by which to mature while ensuring that the surrounding tourism industry is well-equipped for the future.

13.2. Further Implementation Considerations

As the goal of this study and policy recommendation is to lessen the risk of overtourism in the population of the Okanagan, it is imperative that all policy action be the result of consultation. Meaningful consultation with the public may present challenges, but it will provide increased efficacy in the long run if citizens feel that their opinions have been accounted for in the process. To this effect, it is also essential that stakeholders in both the wine industry and tourism industries be consulted during the design of program specifics and implementation phases.

As mentioned in the description of the policy, the municipal governments of the region must consult thoroughly with tourism operators but should ensure that standards are impactful in sustainability and the auditing organization is independent. If left only to industry input, it is likely that ineffective standards will be developed that have no impact on the region. As discussed in the evaluation of policies, it is important that all three pillars of sustainability be incorporated in the developed standards. Additionally, any

expanded curriculum should be the result of consultation with industry stakeholders to determine the knowledge gaps that exist within the industry.

Chapter 14.

Limitations

This study serves as a broad overview only and, due to this scope, did not include consultations with subject matter experts or industry stakeholders. This limits the applicability of the conclusions to the circumstances examined in the Okanagan Valley. As discussed, however, the rural nature of the Okanagan, combined with the high amount of people who do not rely on the wine nor tourism industries means that there is likely some applicability to other tourism regions in Canada.

Although the measurement and cross-jurisdictional comparison of sustainability is not integral to the outcomes of the study, the methods used to compute the measures of sustainability suffer from the availability of data and measures employed. Sustainability is a concept without a concrete measurement, and although this study aimed to use measures developed by consensus method, the measures employed are adapted to suit the availability of data. Nonetheless, there are inconsistency in the availability of data across jurisdictions which had to be reconciled through computation. Further, there are instances where more general, sub-national measures are substituted for region specific measures.

Due to the limited scope of this study and time considerations, interviews with residents of the Okanagan nor a survey are included in this study. Studies aiming to uncover the realized costs of tourism in the region should include interviews and survey findings to uncover. Due to the nature of sustainability and the requirement for community consultation, there exists uncertainty surrounding the specifics of policy proposals. Proposed policies may be vastly different once implemented, should implementation take place.

Chapter 15.

Conclusion

This paper conducts an international, cross-jurisdictional study of the sustainability of wine tourism regions with the goal of understanding policies and practices which may lessen the potential for perceptions of overtourism in residents. The policies proposed tackle disparate aspects of sustainability but all endeavor to encourage the public perception that tourism is working for the people of the region and providing adequate benefits. This study demonstrates that small improvements could be made to the distribution and institutions associated with the benefits of tourism in the Okanagan to increase the sustainability of regional tourism and lessen potential feelings of overtourism.

This study shows that there is likely to be an increase in the prevalence and penetration of tourism across the country, despite tourism's already significant role in Canada. Tourism is a competitive industry and there is a need for governments to promote the development of tourism to ensure that regions dependent on the tourism industry are not left behind. However, the problem of overtourism must be addressed through the sustainable development of tourism across the country. Although most studies of overtourism focus on urban European contexts (where there is a critical mass of tourists) this study shows that there are also gains to be made in rural areas and that the sustainable development of tourism is equally important to these regions. Regional studies are essential in understanding the unique problems which exist within regions and this study provides an example of such.

Increases in sustainability are a dynamic, iterative process. Thus, there is room for further study in this area. This study focuses on a relatively small geographic region and further study should investigate other regions dependent on tourism, identifying factors which may lead to perceptions of overtourism in different contexts to broaden the knowledge base on this issue. Due to the importance of the views of resident populations in overtourism, a study using survey methods would be more able to accurately predict citizen sentiment on policy interventions or gaps existing within a given region.

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Appendix A:

Variables Measured and Results

Table A.1: Sustainability Results Table 1

	Energy consumption (GJ per person)	Water consumption (Liters per person per day)	Generation of waste (tonnes per person)	Material Diversion Rate	GHG generation (CO2 equivalent tonnes per person)
Okanagan	80.30 ¹⁰	503.00 ¹¹	0.67 ¹²	40.00 ¹³	14.86 ¹⁴
Niagara	101.00 ¹⁰	355.00 ¹¹	0.65 ¹²	26.00 ¹³	11.29 ¹⁴
Willamette	100.00 ¹⁵	290.00 ¹⁶	0.67 ¹⁷	36.60 ¹⁷	9.30 ¹⁸
Walla Walla	138.00 ¹⁴	797.00 ¹⁵	1.09 ¹⁹	44.60 ¹⁹	10.80 ¹⁸
Napa	102.00 ¹⁴	403.00 ¹⁵	0.66 ²⁰	44.00 ²⁰	9.20 ¹⁸
Finger Lakes	111.00 ¹⁴	331.00 ¹⁵	0.75 ²¹	48.00 ²¹	8.30 ¹⁸
Annapolis Valley	88.10 ¹⁰	394.00 ¹⁰	0.39 ¹¹	44.00 ¹²	17.61 ¹³

¹⁰ (Statistics Canada, 2020c)

¹¹ (Statistics Canada, 2020a)

¹² (Statistics Canada, 2020d)

¹³ (Statistics Canada, 2020e)

¹⁴ (Statistics Canada, 2020f)

¹⁵ (Crees, n.d.)

¹⁶ (Dieter et al., 2018)

¹⁷ (Oregon Department of Environmental Quality, n.d.)

¹⁸ (U.S. Energy Information Administration, 2019)

¹⁹ (Washington State Department of Ecology, n.d.)

²⁰ (CalRecycle, 2019)

²¹ (New York Department of Environmental Conservation, 2019)

	Energy consumption (GJ per person)	Water consumption (Liters per person per day)	Generation of waste (tonnes per person)	Material Diversion Rate	GHG generation (CO2 equivalent tonnes per person)
Yarra Valley	166.00 ²²	1500.00 ²³	1.20 ²⁴	58.30 ²⁴	17.08 ²⁵
Barossa	155.00 ²¹	1492.00 ²³	1.20 ²⁴	78.30 ²⁴	13.16 ²⁵
Marlborough	29.00 ²⁶	227.00 ²⁷	1.00 ²⁸	40.00 ²⁸	7.69 ²⁹

Table A.2: Sustainability Results Table 2

	Total visitors	Resident population	Direct Employment in Tourism
Okanagan	3721000 ³⁰	362258 ³⁰	14200 ³⁰
Niagara	12950000 ³¹	463219 ³²	39995 ³¹
Willamette	6800000 ³³	432102 ³⁴	6740 ³³
Walla Walla	468000 ³⁵	60922 ³⁴	1786 ³⁵
Napa	3850000 ³⁶	139417 ³⁴	15872 ³⁶
Finger Lakes	5560000 ³⁷	168505 ³⁴	7000 ³⁷
Annapolis Valley	2400000 ³⁸	971395 ³²	31569 ³⁸

²² (Australian Government Department of the Environment and Energy, 2019)

²³ (Australian Bureau of Statistics, 2019)

²⁴ (Pickin et al., 2018)

²⁵ (Australian Government Department of the Environment and Energy, n.d.)

²⁶ (WorldData, n.d.)

²⁷ (LEARNZ, n.d.)

²⁸ (Stats NZ, n.d.-b)

²⁹ (New Zealand Government Ministry for the Environment, 2019)

³⁰ (Destination British Columbia, 2017)

³¹ (Niagara Economic Development, 2018)

³² (Statistics Canada, 2016)

³³ (Travel Salem, n.d.)

³⁴ (US Census Bureau, n.d.)

³⁵ (Visit Walla Walla, 2019)

³⁶ (Visit Napa Valley, 2019a)

³⁷ (Travel Market Insights, 2019)

³⁸ (Tourism Nova Scotia, n.d.)

	Total visitors	Resident population	Direct Employment in Tourism
Yarra Valley	6587000 ³⁹	159180 ⁴⁰	6600 ³⁹
Barossa	949000 ⁴¹	24808 ⁴²	900 ⁴¹
Marlborough	809058 ⁴³	43416 ⁴⁴	3429 ⁴³

³⁹ (Tourism Victoria, 2015)

⁴⁰ (forecast.id, n.d.)

⁴¹ (Tourism South Australia, n.d.)

⁴² (The Barossa Council, n.d.)

⁴³ (Destination Marlborough, n.d.)

⁴⁴ (Stats NZ, n.d.-a)

Table A.3: Sustainability Results Table 3

	Tourism Seasonality	Total Visitor Spend (B)	Unemployment Rate	Employment in Wine Industry	# of Wineries	Winery Revenue
Okanagan	0.36 ³⁰	1.41 ³⁰	6.10 ⁴⁵	11975 ⁴⁶	185 ⁴⁶	2E+08 ⁴⁶
Niagara	0.62 ⁴⁷	2.40 ³¹	6.70 ⁴⁵	11561 ⁴⁶	88 ⁴⁶	2.63E+08 ⁴⁶
Willamette	0.40 ⁴⁸	0.57 ³³	4.35 ⁴⁹	12144 ⁵⁰	450 ⁵⁰	5.29E+08 ⁵⁰
Walla Walla	0.42 ³⁵	0.13 ³⁵	4.70 ⁴⁹	2484 ⁵¹	140 ⁵¹	1.15E+08 ⁵¹
Napa	0.70 ⁵²	2.30 ³⁶	2.20 ⁴⁹	46000 ⁵³	500 ⁵³	1.01E+10 ⁵³
Annapolis Valley	0.47 ³⁸	2.60 ³⁸	7.90 ⁴⁵	711 ⁴⁶	11 ⁴⁶	16352000 ⁴⁶
Yarra Valley	0.64 ³⁹	0.87 ³⁹	4.34 ⁵⁴	12995 ⁵⁵	747 ⁵⁵	1.5E+09 ⁵⁵
Marlborough	0.39	0.39 ⁴³	4.70 ⁵⁶	2240 ⁵⁷	140 ⁵⁷	4.19E+08 ⁵⁷

⁴⁵ (Statistics Canada, 2020b)

⁴⁶ (Frank, 2015)

⁴⁷ (Niagara Region, 2019)

⁴⁸ (Dean Runyan Associates, 2019)

⁴⁹ (U.S. Bureau of Labor Statistics, n.d.)

⁵⁰ (Full Glass Research, 2018)

⁵¹ (Beyers & Morgan, 2019)

⁵² (The North Bay Business Journal, n.d.)

⁵³ (Stonebridge Research Group, 2012)

⁵⁴ (.id, n.d.)

⁵⁵ (Wine Australia, n.d.)

⁵⁶ (Infometrics, n.d.)

⁵⁷ (New Zealand Winegrowers Inc., 2018)

Appendix B:

Other Regions Examined

Regions of Study

This appendix contains information about the regions used for analysis that are not covered by in-depth case study analysis. The ten regions studies are divided into three subchapters: regions in Canada, the USA, and Australia and New Zealand. Each section will contain a brief introduction to the region, it's history as a wine tourism region, and the reason for its inclusion in this study. For data collection and case study analysis, region selection was limited to those countries with English as an official language. This study contains information on regions located within most countries with established wine tourism regions that use English as an official language.

Canada

The Niagara Peninsula and the Annapolis Valley provide informative examples of Canadian wine tourism markets as Canada's largest, and one of Canada's smallest, wine regions respectively. The Niagara region is one of Canada's top tourism destinations and includes Canada's top wine region, while the Annapolis Valley provides an example of a region that is smaller than the Okanagan.

Niagara Peninsula

The Niagara Peninsula is Canada's largest wine producing region and Canada's largest wine tourism region. It is located about 150 kilometers from Canada's largest population centre. About 60 percent of Canada's total wine production comes from Ontario and the Niagara Peninsula is the highest producing wine region in Ontario (Frank, 2015, p. 6).

The Niagara region is also home to one of Canada's largest tourism centres (Frank, 2015, p.6). Due to its proximity to major population centres in Canada and the United States, the Niagara region has long been a popular tourism region. It is home to Niagara Falls, one of Canada's top attractions and an internationally recognized

UNESCO world heritage site. The falls alone attract 14 million visitors to the region each year (Niagara Falls Canada, n.d.). As a result, the region is heavily dependent on tourism, and the Niagara wine industry has a natural geographical advantage compared with other wine regions in Canada.

Annapolis Valley

The Annapolis Valley is a small wine producing region in Nova Scotia. Despite its small size, it is one of Canada's largest wine regions and a significant driver of tourism for the province of Nova Scotia (Frank, 2015, p. 25). Tourism in Nova Scotia is managed by Tourism Nova Scotia, under the purview of the provincial Minister of Business and Trade. Nova Scotia sees about 2.4 million tourists annually, similar in numbers to the Okanagan Valley (Tourism Nova Scotia, n.d.). However, there are around eleven wineries in the Annapolis Valley, which is less than ten percent of the amount found in the Okanagan (Frank, 2015, p. 26). The Annapolis Valley, therefore, represents a small wine region operating within Canada, providing insights into how size effects sustainability. However, due to the region's small size, much of the data gathered for the Annapolis Valley must be examined at the provincial level.

United States

Walla Walla County

Washington State is the second largest state in terms of the production of wine. Walla Walla county is one of Washington States largest producers of wine. However, this wine region represents a wine region that is, comparably, not as dependent on tourism (Carew & Florkowski, 2012, p.28). Although there is a considerable tourism industry in Walla Walla county, the relatively large amount of wine exported from Washington to other countries means that the wine industry in Washington is less susceptible to changes in the tourism industry (Carew & Florkowski, 2012, p. 40). Walla Walla county sees only around half a million tourists annually (Visit Walla Walla, 2019, p.20). However, the wine industry in Walla Walla is similar in size to that of the Okanagan, making this a useful comparison case.

Willamette Valley

Oregon ranks just below Washington State in terms of wine production per state. The Oregon wine industry is sizeable and diverse, including over 500 wineries (Institute for Policy Research and Engagement, 2019, p.5). However, the revenue per winery is the closest to the Okanagan of the regions studied. Unlike the Okanagan, the wine industry in Oregon has specialized and the quality of Oregon Pinot Noir is internationally recognized (Carew & Florkowski, 2012, p.32). The Willamette Valley is comprised of Marion and Polk county, with Salem being the largest city in the region. Tourism is of great importance to the Willamette Valley, seeing over seven million domestic and international visitors annually (Dean Runyan Associates, 2019, p.17).

Australia

Barossa Valley

The Barossa Valley is one of the oldest wine producing regions in Australia (Wine Australia, 2016). The Barossa Valley owes its unique character to the large amount of German immigration to the region in the 19th century (Wine Australia, 2016). Today, South Australia is responsible for about fifty percent of total Australian wine production (Wine Australia, 2019). Barossa has become known in recent years for specialization in Shiraz (Andy Hira & Aylward, 2013, p.412). Despite the relatively small population of the Barossa Valley, it contains both strong a wine industry and a large visitor economy, as evidenced by the data in Appendix A.

Appendix C:

Sustainability Measures Examined

Environmental Indicators

Energy Consumption (A)

Energy consumption, as well as other consumption indicators, is a useful proxy to assess environmental harm as well as stressors on the environment caused by settlement. As with all measures of consumption used in this study, this is measured in consumption per person in order to reduce the effect population size has on energy consumption in a given area. As municipal-level data is typically not available, this study will use consumption statistics on a sub-national level. Although measuring in this manner is not specific to wine regions, it allows for an analysis of the broader environmental context. Comparing this on a per person basis allows for comparison between regions of different size. Energy consumption is an important indicator of sustainability, especially given the unique challenges of wine regions as mentioned.

Water Consumption (B)

Water consumption is included as a measure of sustainability for two key reasons. First, the sustainability of water as a resource is of paramount importance to the long-term health of a community or region. Second, as wine regions are located, by definition, in agricultural areas, there is an increased importance placed on water resources. As with other measures of consumption, water usage is measured in average consumption per person. Water consumption is also measured at as restricted a geographic area as possible, as with energy consumption.

Generation of Waste & Material Diversion (C & D)

The generation of waste is measured in tonnes per person with smaller amounts of waste generation per person assumed to be more sustainable. As the amount of waste generated by tourists must be disposed of by the host community and may contribute to feelings of overtourism, this factor is relevant to tourism. As with other

environmental measures, waste generation is measured per person to allow for comparison between regions of differing size.

Material diversion rate is also measured. Although related to the generation of waste, the material diversion rate is not directly related to the generation of waste. The diversion rate refers to the amount of potential waste that is diverted from landfills into recycling, composting and generally more sustainable disposal methods.

GHG Generation (E)

To capture the environmental damage caused by climate change and the impact on air quality caused by emissions from transportation, the GHG emissions will be used. As with previously mentioned environmental attributes, GHG generation is not measured at the local level but at the sub-national level.

Sociocultural Indicators

Visitor to Population Ratio (F)

The sustainability of a tourism region is highly contingent upon its population and the magnitude of tourism happening. To facilitate comparisons between regions, the visitor to population ratio is used. Disproportionately high visitor to population ratios are undesirable, as issues of congestion and friction between tourists and locals emerge. Disproportionately low visitor to population ratios are also undesirable, suggesting that the productive capacity of the region is not being fully utilized.

Direct Employment in Tourism (G)

Direct employment in tourism is measured as the percentage of the population employed in the tourism sector within the region. As noted in the literature review of overtourism, local residents' perceptions of tourism are more likely to be positive if they are employed in the tourism sector. Therefore, a higher proportion of the population employed in the tourism sector is more sustainable.

Unemployment (H)

An economically sustainable rate of unemployment is one that is as close to the natural rate of unemployment as possible. In other words, the sustainable rate of employment is neither too high nor too low. The unemployment rate is measured as the annual average unemployment rate for each region in 2018. Although these parameters ignore the possibility of differences in the natural rate of unemployment between regions, it is assumed that the natural rate of unemployment is consistent across regions.

Economic Indicators

Total Visitor Spending per Population (I)

Total visitor spending is measured to capture the volume of trade occurring as a result of tourism. This is measured as the total annual visitor spending divided by the population of a region. The amount spent by visitors in the region is a measure of the total flow of benefit to the community but is distribution agnostic.

Wine Industry Health (Wine Employment per total population = J; Number of Wineries = K; Average Revenue per Winery = L)

As this is a study principally concerned with wine regions, three variables are included to measure the strength and health of the regions wine industry. It is assumed that large, competitive industries are more sustainable and will deliver the maximum benefit to the region in the long run. In order to determine community benefits, the total regional employment in the wine, the number of wineries operating in the region, and the average revenue received by each winery are measured. Although most regions compared in this study are comparable within their tourism market, there are distinctions in the size of the wine industry between regions.

Appendix D:

A satisficing approach is taken to policy evaluation. Due to the measures employed, scores of 2 represent no or very little meaningful change from the status quo. Therefore, policy options scoring more than a 14, representing net neutrality, are considered to have a positive net benefit and should be adopted. As all three policy proposals score 17 or more, a policy package containing elements of all three is ultimately proposed.

Table D.1: Policy Evaluation Quantification

	Criterion	Opt. 1: Education	Opt. 2: Off- season grants	Opt. 3: Standards
Sustainability	Sustainability	3	3	3
Equity	Equity	3	3	2
Development	Human Capital	1.5	0.5	1
	Community Capital	0.5	1	1
	Total /3	2	1.5	2
Cost	Cost to Government	2	3	3
Efficiency	Efficiency	3	2	2
Administrative Complexity	Governments Involved	0.5	1	1
	Complexity of Administration	0.5	1.5	1.5
	Total /3	1	2.5	2.5
Stakeholder Acceptance	Industry Acceptance	1.5	1.5	1
	Citizen Acceptance	1.5	1	1.5
	Total /3	3	2.5	2.5
Total		17	17.5	17