

TRADE PROFILE – CALIFORNIA

INNOVATION PEI FOR TRADE TEAM PEI



Opportunities for Prince Edward Island Exporters in California

Prepared by:



On behalf of:



TRADE PROFILE: CALIFORNIA

OPPORTUNITIES FOR PRINCE EDWARD ISLAND EXPORTERS IN CALIFORNIA

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CONTENTS

- 1.0 EXECUTIVE SUMMARY 4**
- 2.0 INTRODUCTION 5**
 - 2.1 PROJECT DELIVERABLES AND METHODOLOGY 5
- 3.0 MARKET OVERVIEW: CALIFORNIA 6**
 - 3.1 GOVERNANCE 7
- 4.0 GEOGRAPHICAL & CLIMATE 8**
 - 4.1 TRADING FACTS 8
 - 4.2 CLIMATE CHANGE 9
- 5.0 POPULATION AND DEMOGRAPHIC 10**
 - 5.2 IMMIGRATION 10
- 6.0 ECONOMY 11**
 - 6.1 SECTOR HIGHLIGHTS AND ATTRIBUTES 11
 - 6.2 CANADA AND PRINCE EDWARD ISLAND TRADE PROFILE 12
 - 6.3 OPPORTUNITIES 12
 - 6.4 CHALLENGES 15
- 7.0 STRATEGIC RECOMMENDATIONS AND CONCLUSION 16**
 - 7.1 EXPAND UPON PEI’S POSITION IN THE SEAFOOD SECTOR 16
 - 7.2 LEAD MISSIONS FOCUSED ON AEROSPACE TRADE EVENTS 16
 - 7.3 DEVELOP MARKETING CAMPAIGNS AROUND TOURISM, ICT OUTSOURCING 17
 - 7.4 EXPLORE RESEARCH PARTNERSHIPS IN CROP EFFICIENCY 17
 - 7.5 CONCLUSION 17

8.0	APPENDIX	18
8.1	APPENDIX A	18
8.2	APPENDIX B	25

1.0 EXECUTIVE SUMMARY

This project consisted of an investigation into the key features of the California market, including an overview of the state's, governance, geography, demographics, industry profile, and key economic drivers. The purpose of the report is to identify potential export opportunities for Prince Edward Island companies in California.

The latter part of the report examines key California industries and looks at the export potential for PEI companies within select sectors. Through a combination of desk research and independent analysis, Kinetic Cubed has determined that seafood and aerospace represent the primary export opportunities for PEI companies in California, with biosciences, ICT outsourcing, and tourism also providing potential pathways to export growth.

Given California's drought, there is also an opportunity to transfer PEI's technological know-how in sustainable agriculture and crop efficiency to the California market, although this is probably a longer term play. California could also provide a longer term outlet to the Asia-Pacific markets, via the Ports of Los Angeles and Long Beach.

Although California is a large state with many existing players across a range of diverse economic sectors, the state imports more from Canada than it exports back, and there are opportunities for PEI exporters to grow sales to California in specific sectors of interest. Shellfish was chosen because it is already a key export to California for PEI, with room to grow further. Aerospace was chosen because PEI exports a significant amount of aerospace equipment to other US states such as Texas but hardly any to California, despite California having a rich aerospace history and maintaining a strong presence in this high-value industry.

By focusing on these sectors while at the same time exploring possibilities in other industries, PEI can expand its share of Canadian exports to California, and take greater advantage of potential sales opportunities in the largest individual market in the United States and 6th largest economy in the world.

2.0 INTRODUCTION

Trade Team Prince Edward Island (Trade Team PEI) is a partnership involving multiple federal and provincial government departments/agencies, with a mandate to support the growth and development of Prince Edward Island exporters through a program of trade and investment related activities. Initial planning meetings with Trade Team PEI officials and partners have identified the need for further market research and development of a Trade Profile for several current markets of interest.

Innovation PEI, on behalf of Trade Team PEI, has contracted with Kinetic Cubed to produce a Trade Profile for the California market. The objective is to provide background information on the market, key industries, and where there may be opportunities for Prince Edward Island exporters in California.

2.1 PROJECT DELIVERABLES AND METHODOLOGY

The current Trade Profile for California will include information addressing the following areas:

- Market Overview
- Governance
- Geographical & Climate
- Population & Demographic
- Economy
 - Sector Highlights & Attributes
 - Canada and Prince Edward Island Trade Profile
 - Opportunities
 - Challenges
- Additional Information & Considerations

Methodology

The primary methodology for this project was desk research. Sources consisted of government websites, research papers and case studies. Research sources also extended to news reports from various journalistic outlets and lastly, charts and statistics showing changes in the different industries that were analyzed.

3.0 MARKET OVERVIEW: CALIFORNIA

With \$2.5 trillion in GDP, California is the largest state economy in the United States and is ranked the sixth largest economy in the world, bigger than nearly every country in Europe. Within possible sectors of interest for PEI, the state is particularly strong in Aerospace, Information Communication Technology (ICT), and Agriculture.

Although the latter tends to be overshadowed by the more visible parts of the state's economy, California is the largest producer of fruits, vegetables, wine, and nuts in the United States. Agriculture's impact on the economy remains significant but is reducing as other industries become more important and drought conditions place pressure on the farming industry, which is mostly based in the state's interior.

California's leading economic centers tend to be based in the areas around its major coastal cities (particularly the San Francisco Bay Area, the Los Angeles basin, and San Diego). World-famous Silicon Valley is located just south of San Francisco, while San Diego has a plethora of nearby military bases and has historically been a major center for aerospace. In recent years, San Diego's life sciences sector has also grown, driven by leading research institutions headquartered in the region. Los Angeles is the second-largest city in the United States and has a highly diversified economy that like San Diego is strong in aerospace, as well as professional services, particularly those associated with the city's legendary entertainment industry. Trade is also a major driver of the Los Angeles economy – the Ports of Los Angeles and Long Beach, which adjoin one another, are the two largest in the United States by total cargo volume and together account for three times the volume of the Port of New York/New Jersey, which is number three.

As one of the most progressive states in the country on energy issues, California is also a leading center of renewable energy development, with a mandate to produce 50 percent of energy from renewable sources by 2030. California is a leader in both wind and solar power, with solar panels growing in number on rooftops across the state and larger utility scale projects throughout the state's central and southern interior.

Relevant Industries

From global stalwarts like Apple and Google to newcomers Uber, Lyft, and Airbnb, to older ICT mainstays such as Cisco Systems, Oracle, and others, California hosts some of the biggest technology companies in the United States and the world. California's technology sector, which includes subindustries such as telecommunications and biotechnology, is responsible for \$732 billion in industry revenue over the past twelve months alone.

California also boasts the largest manufacturing output in the United States, generating \$255.6 billion in industry revenue in 2015.

Along with these industries, agriculture and farming still play a big role in the economy. In recent years this sector has been strongly affected by a historic drought which has showed signs of abating in 2016 but remains severe. The industry is currently suffering from water shortages, and costs are increasing. In 2015, agriculture imports from Canada accounted for 9 percent of the state's consumption, however drought and a rise in seafood consumption may portend additional growth in food imports for the state going forward.

Tourism has increased 3.4% from 2014 and spending from direct travel overpassed \$120 billion in 2015. International tourism is expected to increase 2.8% and domestic tourism is expected to increase 2.1% in 2016. Because of its diverse geography and climate California serves as an attractive destination for millions of people from around the world that can enjoy all types of weather and activities in one state.

California has served as a hub for aerospace engineering and development since the early 20th century. The state is currently the nation's center for high-tech weapons research and employs around 92,000 people in this sector. The state's southern half is considered the most beneficial for aerospace because of the combination of concentrated brainpower and favorable climate. While much of production today is done by robots and 3D printing in order to reduce cost and time of production California's strong aerospace sector still creates an opportunity for Prince Edward Island to export aerospace parts and machinery to the state. Within the aerospace sector, satellite makers and drones account for a large and growing percentage of activity.

PEI's current aerospace-related exports to California are negligible (less than \$1 million CAD in 2015) however the province does export significant amounts of aerospace parts and machinery to other US states (over \$17 million CAD to Texas alone in 2015). This should present an opportunity to develop additional aerospace business in California, as PEI boasts major advantages both in terms of raw production cost (California is one of the most expensive states in the US) as well as with respect to the current CAD/USD exchange rate.

3.1 GOVERNANCE

California and Canada are currently working together on environmental policies to address climate change. The provinces of Quebec, Ontario and Manitoba have made a commitment to partner with California on its Cap-and-

Trade program. The purpose of this program is to reduce greenhouse-gas emissions. So far, the program has been successful, reducing carbon emissions more than 3% in the first two years.

NAFTA

The North American Free Trade Agreement created the largest free trade region in the world and has led to a significant increase in trade between Canada and the United States, reflected in the more than \$1.8 billion a day in goods and services that are currently exchanged between the two countries. Although California's trading volumes with other parts of Canada currently dwarf that of PEI, there are undoubtedly additional benefits from NAFTA that can be realized for PEI where clear competitive advantages can be identified, articulated, and expanded upon.

4.0 GEOGRAPHICAL & CLIMATE

California has a very diverse climate, owing to the fact that the state accounts for nearly 2/3 of the American West Coast. For the most part, California receives abundant sunshine and moderate temperatures in the south and more rain and colder temperatures in the north especially during the winter. Multiple mountain ranges encircle the east, south, northeast, and coastal regions of the state. Melting snowpack from the mountains has historically been responsible for most of the state's fresh water supply, however warmer climates have been a big driver of the current historic drought as winter snows decline.

The interior of the state (a large basin known as the Central Valley) is arid and accounts for most of the state's agricultural production. The recent drought conditions led to an economic loss for the state of \$2.5 billion USD in 2015 alone; \$1.84 billion USD of this loss was suffered by the agriculture industry.

Given its geographic location, large in-state consumer market, and diverse mix of industry, California is the leading trading center in the United States, with access to Pacific markets as well as Canada and the European Union (via the Panama Canal). The outside role of the Ports of Los Angeles and Long Beach make California a leading port of entry for goods not only from the Pacific but from all over the world.

4.1 TRADING FACTS

California's agricultural sector is highly diversified and produces a range of high-valuated food products destined for sale in relatively high income countries. In 2015 California farms and ranches received approximately \$47 billion for their output, this represents a decrease of almost 17 percent compared to the previous year 2014. Still, California remains the leading US state in cash farm receipts. California's top-10 valued commodities for 2015 are shown under Appendix A Exhibit 3.

Japan is California's largest export partner; leading export products for the Japanese market include beef, cotton and oranges. The European Union, even though it has high trade barriers, is a major buyer of almonds and other varieties of nuts, wine and raisins. Another major trade partner is Canada, with food products and vegetables accounting for the main products traded between California and Canada as a whole. Interestingly, California has a negative trading balance with Canada, exporting approximately \$18 billion USD against \$26 billion in imports.

As shown in Exhibits 1 and 2, Southern California likely represents the most promising export market for PEI, since this region of the state consumes higher levels of PEI's leading export products. In particular, there is an opportunity to increase seafood exports to the state.

4.2 CLIMATE CHANGE

While California's location is very convenient for trade, currently, the lead exporter of agricultural products is suffering because of climate change. Impacts of climate change on agriculture vary by region but are dependent on temperature and precipitation as well as geography and mixed crops. California's ongoing drought will make it difficult for the state's farmers to keep production as high and costs as low as they currently are. When considering irrigation and water impacts it is also important to take a view toward the market impacts that will be caused by this change and other agricultural practices or growers behaviors that will evolve as a result of this.

In 2016, regions in California that face water shortages are expecting a decrease in crops, reduced revenues and employment and possibly higher prices. While it is unfortunate for the United States that the country's biggest producer of agricultural products will continue to be affected by this challenge going forward, it creates an opportunity for other producing countries to export their products to California.

Appendix A, Exhibit 5 offers an interesting visual for the dependency of California's Consumer Price Index on drought conditions. Exhibit 6 displays additional details regarding economic losses due to drought.

5.0 POPULATION AND DEMOGRAPHIC

California is the most populous state in the United States, currently with a population of over 38 million. Were it an independent nation, California would be the 34th most populous country in the world, and the 8th most populous in Europe. The median age in the state is 35 years, and there are about the same number of males and females. The state is majority-minority, with the population of Whites roughly equaling that of its Hispanic community. Large communities of African- and Asian-Americans and smaller groups of American Indians and Pacific Islanders round out the state's demographics. About 43 percent of California residents speak a language other than English, with Spanish being the second-most spoken language.

5.2 IMMIGRATION

Immigration contributes significantly to California's culture and economic prosperity, accounting for more than half of the state's population and labor force growth. Immigrants account for over a quarter of California's population (the state was home to 10.5 million immigrants in 2015), and tend to be clustered at either end of the economic and educational spectrum. In 2011, nearly 40 percent of immigrants to California had not completed high school; between 2007 and 2011 47 percent of immigrants to the state arrived with a bachelor's degree or more.

Due in part to an improved economy south of the border, immigration from Mexico to the United States has actually decreased since 2009, lessening the growth in California's immigrant population as well given the state shares a long border with Mexico. While California's established immigrant communities are more likely to hail from various parts of Latin America, over half of recent arrivals to the state have come from Asia against just 30 percent from Latin America.

California's diverse culture and large communities of both established immigrants and new arrivals create a robust environment for many types of products. Whether for food, retail goods, or other products destined for the consumer market, California offers many opportunities for products targeted toward specific demographic communities. At the same time, it is important for companies entering California with consumer products to be aware of various demographic sensitivities and the fact that the state is significantly more diverse than the United States population as a whole.

6.0 ECONOMY

California's leading industries are agriculture, advanced manufacturing, aerospace, energy, and tourism. Being the largest economy in the United States, the state boasts diverse markets and opportunities. Given Canada's trade surplus with California, Canadian provinces like Prince Edward Island can take advantage of this relationship especially in sectors where clear value can be defined and taken advantage of.

California's top goods exports to Canada by industry are: equipment & machinery (42%); agriculture (23%); transportation (9%); minerals and metals (6%); chemicals (4%); and apparels and textiles (4%).

On the import side, Canada's leading exports to California by industry include: transportation (57%); agriculture (9%); chemicals (9%); equipment & machinery (6%), minerals & metals (4%); and energy (4%).

Import and export values vary slightly in Northern versus Southern California, however the industry profile is more or less the same. The figure below shows *PEI's* leading exports to California in 2015:

Product (value in CAD)	California
Lobsters – Frozen	7,841,233
Lobsters – Prepared or Preserved	2,437,635
Turbo Propellers – Power Not Exceeding 1,100 Kw	939,886
Composite Diagnostic or Laboratory Regents	918,886
Mussels	667,682

As can be seen above, 2015 exports were dominated by shellfish, with aerospace parts and life science materials playing a small but supplementary role.

6.1 SECTOR HIGHLIGHTS AND ATTRIBUTES

Currently, total trade between Canada and California in goods is equal to \$44.8 billion. As noted above, most of this trade involves tourism, chemicals, agriculture, equipment and machinery, and transportation.

However, some Canadian companies in the energy and environmental sectors have decided to explore the California market given the state's water challenges as well as its commitment to finding solutions in the areas of energy and climate change.

There are a handful of Canadian clean tech companies that work in Southern California on water purification as well as various solar and wind power projects. There is also a Canadian incubator working on a state-of-the-art water purification system. Lastly, we came across another Canadian company that helps strawberry farmers reduce water waste through advanced soil monitoring technology. Canada's contribution to California's efforts

to fight climate change and adapt to its effects extends to infrastructure projects, battery powered vehicles, and non-profit environmental initiatives across the state's different regions. To the extent that Canadian know-how can surpass what is available within the state, there may be additional opportunities for exporters from throughout the country within the above mentioned sectors.

6.2 CANADA AND PRINCE EDWARD ISLAND TRADE PROFILE

Overall trade between Canada and California is already significant and there appear to be opportunities for it to grow further. Although PEI remains a bit player when it comes to trading with California, PEI's export sectors of interest align well with California's current import profile relative to Canada as a whole. Additionally, while California does boast significant in-state capacity and know-how when it comes to clean energy and climate change, Canadian firms have had success introducing their own solutions into the California market where they have the ability to offer something unique and innovative.

There are several potential areas of interest that California and PEI have in common. Currently, PEI is working on building on long-established industries (agriculture, fisheries and tourism) as well as capturing the potential of new industries such as aerospace, bioscience, ICT, and renewable energy.

Given California's economic profile, all of these industries have the potential to grow exports to the state. However, for the purpose of this assignment there will be focus on the industries that are most likely to yield relatively immediate benefits. These areas of focus will be food and drink (potatoes as well as seafood/shellfish), aerospace, bioscience, tourism, and ICT.

6.3 OPPORTUNITIES

As shown in Appendix A/Exhibit 10, PEI exports to California in 2015 totaled \$16.5 million CAD, of which lobsters, frozen as well as processed/preserved, accounted for 50 percent. The remainder of exports are a mix of many other areas including agricultural produce, aerospace components, life sciences products, and other minor categories.

Given California is a huge market in comparison to PEI, it should have the capacity to easily consume double the current exports from PEI.

Based upon our analysis, we see a number of areas where PEI can boost earnings from California:

1. Food and Agriculture Exports

Clearly shellfish is a key export for PEI, and with a larger population than the rest of Canada, California should have the capacity to consume more. Given relatively modest exports of circa \$8 million CAD, it should be

possible to increase this value, both for raw product and also for value added product, such as convenience products eg 'cook in the bag'.

Potatoes may also present an opportunity, given PEI's status as Canada's leading producer of potatoes. Although potatoes are grown in California as well as in many other parts of the US, this could be a possible export opportunity for PEI if prices are competitive and demand remains high (demand for sweet potatoes, in particular, is growing). Given the aforementioned favorable USD/CAD exchange rate, it may be possible for PEI potatoes to compete on price with domestically-produced potatoes in the United States.

Perhaps more relevant (and higher up the value chain) would be PEI's use of technology in order to improve cultivation and agriculture of vegetables and fruits. As a leading agricultural exporter, PEI has developed notable expertise around minimizing the environmental impact associated with crop cultivation. Despite California's agricultural history and current efforts in the areas of climate change and environmental mitigation, the state remains somewhat lacking in terms of sophisticated solutions for dealing with its ongoing drought.

In 2014 voters approved an \$8 billion USD public bond intended to fund innovative water supply solutions, and is actively looking outward to help pioneer new technologies for helping its agricultural industry cope with the effects of drought. When it comes to land use and farming techniques, the state may be able to make additional use of agricultural know-how focused on maintaining high levels of agriculture production high while maximizing resource and land use efficiency, considering that the water situation in the state is unlikely to improve any time soon. To the extent that PEI is able to provide this know-how, this may present a high-value export opportunity.

On the seafood side, opportunities should be pursued that focus on maximizing existing trade flows to California. This can probably be done fairly easily through conventional means. Possible export interventions might include:

- An outward seafood mission to meet with key importers in California, maybe with value-added products as an additional offering; and
- An inward buyer mission, perhaps coinciding with events like <http://peishellfish.com/food-drink/> in September 2017 (given PEI's natural beauty, such a mission could also help to stimulate future tourism opportunities)

Possible trade events in-state: [Sustainable Seafood Expo](#)

2. Aerospace Exports

The aerospace sector in PEI has developed into one of the fastest growing industries in the province, fueled by close partnerships between industry, government and training institutions. Today PEI has notable capabilities in machining components, and exports significant amounts of aerospace parts and machinery to other US states including Texas (the current export value of aerospace components alone from PEI to Texas is greater than PEI's entire existing exports to California).

Given that airplanes are California's leading export, as well as the long and well-established tradition of the aerospace industry in California, PEI should be able to make inroads within California aerospace supply chain by positioning its companies as potential component suppliers either for larger aerospace contractors or even for smaller SMEs working on smaller scale production and assembly. Aerospace is a high-value sector and the fact that PEI has advantages both in terms of lower production costs and the USD/CAD exchange rate should be a major advantage when it comes to working with potential partners in the California aerospace market.

The client might want to think about taking their companies to meet maintenance, repair, and overhaul operators in California, along with aerospace component distributors, to explore opportunities.

Possible trade events in-state: [Space Tech Expo](#), [California Aircraft Expo](#), [SoCal Aerospace Expo](#)

3. Bioscience

A number of the PEI companies in this sector are connected to agri-industry/acqua-culture companies in the province, like Solarvest who have a process to manufacture Omega 3, from Algae, making it suitable for vegetarians. Such products should be of interest to California, which is a diverse market, thus presenting opportunities for almost everything of this nature.

The client might want to consider conducting a handful of one-on-one export assessments for the most innovative PEI companies in this sector, in order to investigate the market potential for their product in California.

Possible trade events in-state: [BioCom](#), [2017 BIO International Convention](#)

4. ICT Outsourcing

PEI's ICT industry has been experiencing sustained growth across many verticals including healthcare, independent software vendors, financial services, aerospace, wireless and mobile applications and gaming. Although California's ICT sector is legendary, and would probably not be the destination for original products/platforms or know-how from PEI, the state's sky-high costs could create an opportunity for outsourcing of software development and other ICT tasks from California to Prince Edward Island.

The province has successfully employed a similar model of domestic outsourcing for Canadian tech companies in Toronto, and could look to California as an opportunity to further develop its outsourcing sector a bit further afield. Companies like Accreon and Worklinks are successful examples of such companies using PEI as a development base.

The client might want to help potential outsourcing providers to create marketing collateral that can then be shared with target companies in California, perhaps those operating at a small to medium scale (given capacity constraints in PEI).

Possible trade events in-state: [List of Top Tech Conferences](#) (CIO)

5. Tourism

PEI is a well established tourism destination for Canadians and for some Americans, full of natural attractions and close to the US-Canada border. However, PEI is a long way from California – and there are many other vacation destinations in the United States to compete with, to say nothing of places like Hawaii and other destinations in the Pacific.

With that being said, one potential tourism opportunity could be to build on the many Japanese and South Korean tourists who already flock to PEI to make ‘pilgrimage’ tours related to the ‘Anne of Green Gables’ literature and film series. Japanese- and Korean-Americans are well-represented amongst California’s demographic mix and could be targeted for potential tourism promotion.

6. Additional Opportunities in Distribution

One final opportunity for PEI to consider would be to use California as a launch point for boosting exports to the Asia-Pacific. With the size and significance of the Ports of Los Angeles and Long Beach, it may be possible to build supply chain and distribution relationships that would help PEI exports to more easily reach China, Japan, and Korea, as well as Australia, New Zealand, and the emerging Southeast Asian economies.

Although this is a less immediate export opportunity, should the Trans-Pacific Partnership be approved Canada will find itself part of a free-trade zone stretching from Newfoundland to Vietnam. In the future, improve trade relations with California could act as a catalyst for further export growth.

6.4 CHALLENGES

While there may be opportunities in PEI’s current trading position relative to California, it is also important to be aware of the challenges, namely with finding an appropriate niche for PEI products in California’s large and dynamic economy.

Currently, the main products exported from Prince Edward Island to California are lobsters and other shellfish. These exports can continue and even increase as demand has increased through the years. However, it is important to consider that other types of seafood can be more easily exported to California from Alaska as well as from Asian markets. When it comes to agricultural technology and know-how, although PEI may well have something to offer California given its current drought and PEI’s demonstrated expertise, there will be a need to build PEI’s “brand” around these solutions before they are readily accepted in-market.

In higher value sectors such as aerospace, biosciences, and ICT, PEI must find a way to differentiate itself either on the basis of either cost or value. PEI will be a relative unknown to most California companies, so the province

needs to ensure that its companies approach the market armed with effective case studies, references, and branding to demonstrate how their solutions can add value above and beyond what is already available within California.

7.0 STRATEGIC RECOMMENDATIONS AND CONCLUSION

California's economy is international, dynamic, and already full of high-value solutions across a range of sectors. Nonetheless, there are opportunities for PEI exporters, particularly given that Canada as a whole already boasts a trade surplus with the state.

The sectors noted in the previous section represent Kinetic Cubed's recommendations for which industries PEI should focus on, given the market fundamentals outlined in this report. The four recommendations below highlight our suggestions for unlocking opportunities within the target industries:

7.1 EXPAND UPON PEI'S POSITION IN THE SEAFOOD SECTOR

By far, PEI's strongest current export sector in the California market is seafood and shellfish. This has the advantage of being a product relatively unique to PEI, with additional value-adding opportunities (for example in processing and preparation).

With California's population continuing to increase, and with American seafood consumption on the rise, there should be opportunities for PEI to grow its seafood exports. We suggest targeting seafood importers and wholesalers based in California (90 percent of seafood consumed in the United States is imported) as a means of boosting exports to the sector as a whole.

This can be done via expos (although Seafood Expo US takes place in Boston), but there are probably enough seafood importers in California to put together a trade mission independent of any official industry event. San Francisco and Los Angeles are two of America's most expensive cities, each with an extensive fine dining scene large enough to accommodate a significant amount of seafood distributors. These distributors will be in near-constant need of suppliers, particularly for rarer product varieties such as shellfish.

From a food processing perspective, products intended for grocery store shelves provide an additional stream of potential opportunities.

Another option, as mentioned in the previous section, is to organize an inward buyer mission, inviting seafood wholesalers to PEI to view the product and become more acquainted with the local industry in PEI.

7.2 LEAD MISSIONS FOCUSED ON AEROSPACE TRADE EVENTS

Where PEI's market position may be less obvious (as opposed to in seafood, where there is a stronger existing brand), expos are a good idea for building connections with distributors and other supply chain players.

As an aerospace center, California is host to many aerospace trade events, with a wide range of participants from throughout the industry. A mission focused around one of these expos would be a great way to put PEI suppliers of aerospace components in front of a receptive audience, where companies can promote their advantages in cost and/or quality and share aerospace export case studies between PEI and other US states such as Texas.

7.3 DEVELOP MARKETING CAMPAIGNS AROUND TOURISM, ICT OUTSOURCING

Seafood and aerospace are in an ideal position for PEI to take a more proactive approach to developing exports within these sectors. While there may be opportunities in the other sectors examined in this report, unfortunately they are probably not quite yet at the same stage.

Nonetheless, there are potential advantages that PEI can exploit in the meantime. For the moment, we recommend taking a somewhat more passive – yet still visible – role to promoting PEI as a tourism location and possible ICT outsourcing base.

7.4 EXPLORE RESEARCH PARTNERSHIPS IN CROP EFFICIENCY

As noted above, California's drought has motivated the state to seek new solutions, not only with respect to its water supply but also when it comes to improving agricultural land-use efficiency.

While it may be unlikely for PEI to create immediate export value from promoting its technological know-how in this area to California's agricultural sector, there may be space for the province to at least initiate research partnerships and agreements with California universities and other relevant institutions. As a progressive state, California is not shy about spending public money on worth initiatives, particularly where serious issues like drought are concerned. With the right relationships in place, PEI can take a low-cost and relatively low-maintenance approach to putting its agricultural sector in position to capitalize on potential opportunities down the road for transferring high-value agricultural knowledge and expertise.

7.5 CONCLUSION

California is a massive, highly advanced economy, most likely with little knowledge of PEI (apart from perhaps when it comes to tourism or shellfish). At the same time, the state imports more than it exports from Canada and there are clear opportunities for additional import growth in two sectors where PEI has historically been strong: shellfish, which it already exports in large volumes to different parts of the United States including

California; and aerospace materials and componentry, which the province also already exports to other US aerospace centers such as Texas.

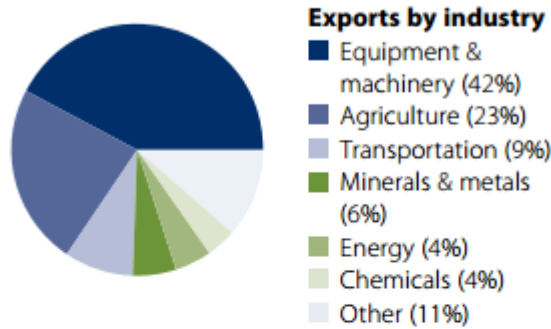
With a focus on these two sectors, as well as an awareness of the other opportunities outlined above, Prince Edward Island has the chance to significantly improve its trading relationship with California, creating new opportunities for PEI companies and new wealth for the province as a whole.

8.0 APPENDIX

8.1 APPENDIX A

Trading facts for **Southern California**

California exports \$18.8 billion to Canada



California imports \$26.3 billion from Canada

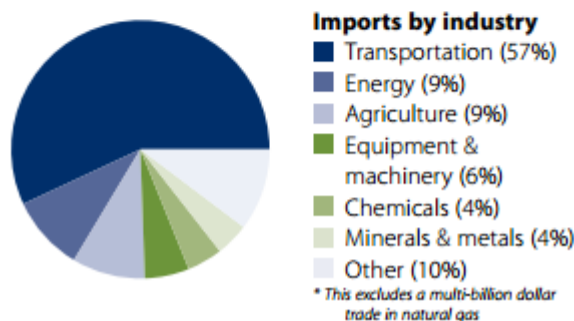
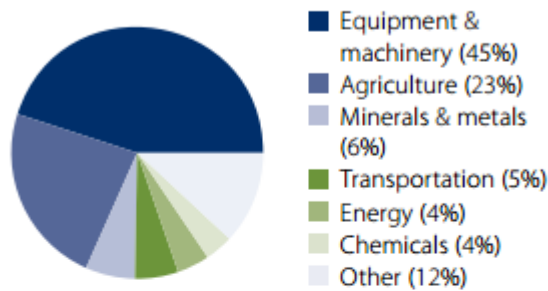


Exhibit 1

Trading facts for **Northern California**

**California exports
\$17.3 billion to Canada**



**California imports
\$25.8 billion from Canada**

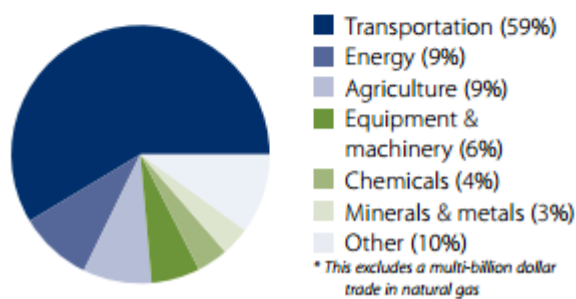


Exhibit 2

California Top-10 valued commodities 2015

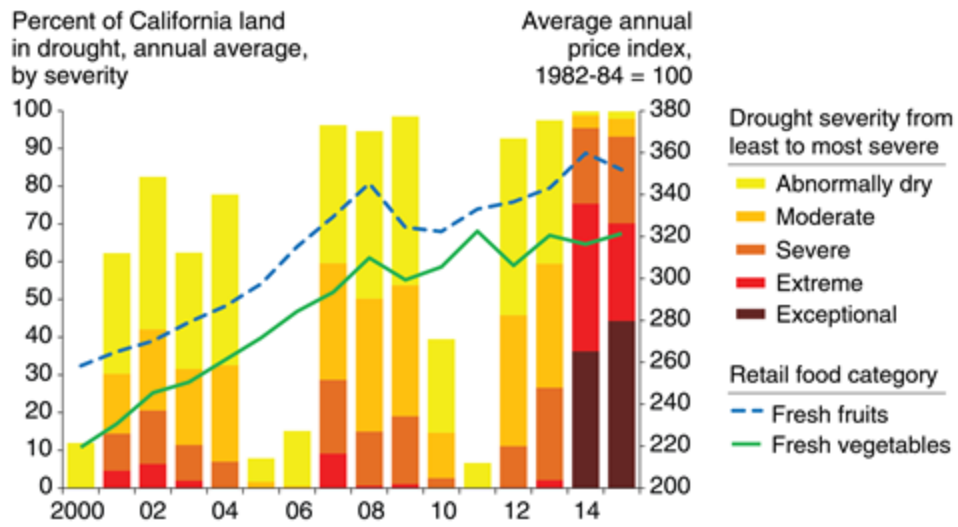
- **Milk — \$6.29 billion**
- **Almonds — \$5.33 billion**
- **Grapes — \$4.95 billion**
- **Cattle, Calves — \$3.39 billion**
- **Lettuce — \$2.25 billion**
- **Strawberries — \$1.86 billion**
- **Tomatoes — \$1.71 billion**
- **Poultry/Eggs — \$1.7 billion**
- **Walnuts — \$977 million**
- **Hay — \$945 million**

Exhibit 3

California–Canada facts (2012 data)	
<p style="text-align: center;">Foreign export markets</p> <p>% foreign-bound goods sold to Canada.....11%</p> <p style="text-align: center;">Goods trade</p> <p>California exports to Canada.....\$17.3 billion California imports from Canada.....\$25.8 billion Bilateral trade.....\$43.1 billion</p>	<p style="text-align: center;">Jobs*</p> <p># jobs that depend on trade with Canada.....1,121,300 # employed by Canadian-owned businesses.....41,200 <i>*Job numbers from trade (2010 data) and Canadian-owned businesses (2009 data) are from a 2012 study commissioned by the Government of Canada</i></p> <p style="text-align: center;">Tourism</p> <p>California visits by Canadians.....1,842,100 \$1.5 billion spent California visits to Canada.....955,900 \$603 million spent</p>

Exhibit 4

California drought severity and change in Consumer Price Index (CPI) for fresh fruits and vegetables, 2000-15



Average drought severity from Jan. - Mar. 2015. Average annual price index was calculated using USDA forecasts for fresh fruits and vegetables.
 Source: USDA, Economic Research Service using data from the National Drought Mitigation Center and the U.S. Bureau of Labor Statistics.

Exhibit 5

Table ES-1. Summary of impacts of the 2015 California drought

Description	Impact	Base year levels	Percent change
Surface water shortage (million acre-ft)	8.7	18.0	-48%
Groundwater replacement (million acre-ft)	6.0	8.4	72%
Net water shortage (million acre-ft)	2.7	26.4	-10%
Drought-related idle land (acres)	540,000	1.2 million*	45%
Crop revenue losses (\$)	\$900 million	\$35 billion	2.6%
Dairy and livestock revenue losses (\$)	\$350 million	\$12.4 billion	2.8%
Costs of additional pumping (\$)	\$590 million	\$780 million	75.5%
Direct costs (\$)	\$1.8 billion	NA	NA
Total economic impact (\$)	\$2.7 billion	NA	NA
Direct job losses (farm seasonal)	10,100	200,000#	5.1%
Total job losses	21,000	NA	NA

* NASA-ARC estimate of normal Central Valley idle land.

Total agriculture employment is about 412,000, of which 200,000 is farm production.

Exhibit 6

TITLE	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16
Civilian Labor Force	19,019,100	19,045,700	19,059,300	19,085,500	19,076,700	19,101,700	19,161,600	19,231,000
Civilian Employment	17,929,700	17,991,800	18,038,500	18,071,700	18,081,700	18,078,600	18,113,000	18,170,300
Civilian Unemployment	1,089,300	1,054,000	1,020,800	1,013,700	995,000	1,023,000	1,048,600	1,060,600
Civilian Unemployment Rate	5.7%	5.5%	5.4%	5.3%	5.2%	5.4%	5.5%	5.5%
Total Farm	426,900	435,000	440,600	445,100	430,200	420,500	422,100	428,700
Total Nonfarm	16,270,100	16,316,700	16,321,900	16,391,900	16,419,400	16,452,600	16,471,200	16,534,300

Exhibit 7

California

State Population by Race and Latino Origin, 2014

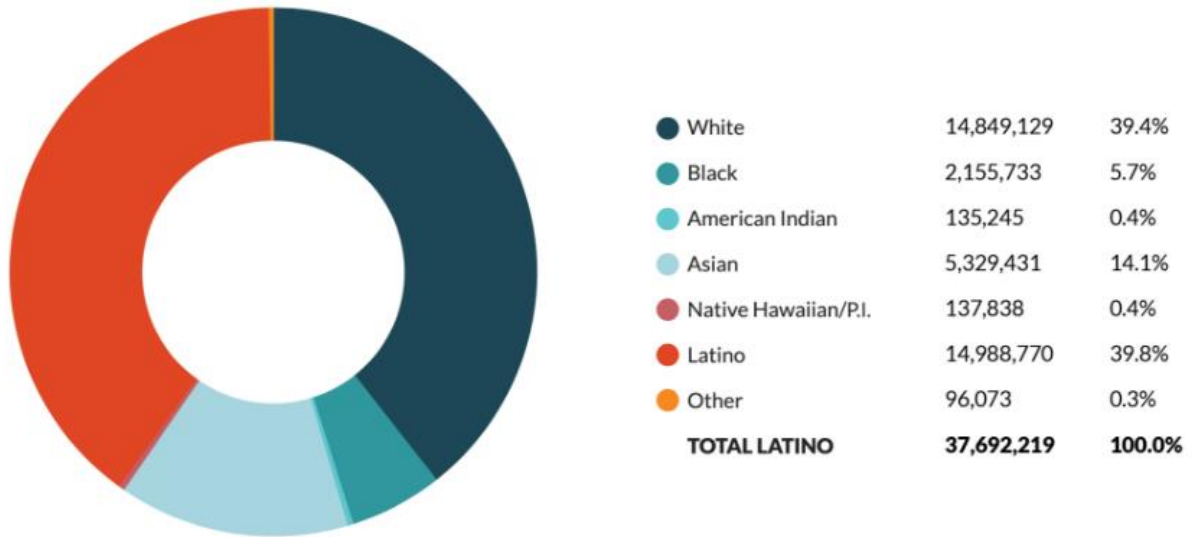
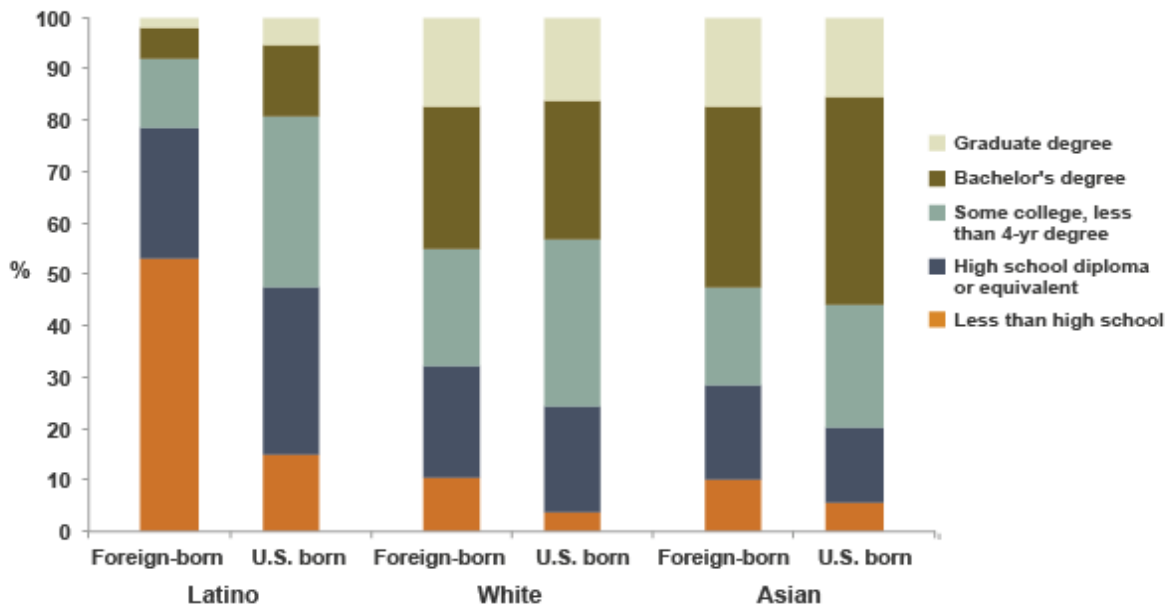


Exhibit 8

EDUCATIONAL ATTAINMENT IN CALIFORNIA BY NATIVITY & RACE/ETHNICITY, 2012



Source: Current Population Survey, Annual Social and Economic Supplement, 2013 - CPS Table Creator.
 Note: Asian includes Native Hawaiian and Pacific Islander.

Exhibit 9

PEI-California Exports 2015

	2015
030612 - Lobsters, (Homarus Spp) - Frozen	6,131,844
160530 - Lobsters - Prepared or Preserved	1,906,231
841121 - Turbo-Propellers - Power Not Exceeding 1,100 Kw	735,040
382200 - Composite Diagnostic or Laboratory Reagents, Nes (Excl Those from Blood, Antisera and Microbes)	718,569
160553 - Molluscs: Mussels	522,127
903289 - Automatic Regulating or Controlling Instruments and Apparatus Nes	489,161
300210 - Antisera, Other Blood Fractions and Immunological Products	443,997
841191 - Parts of Turbo-Jets or Turbo-Propellers	410,701
300490 - Medicaments Nes - in Dosage	380,326
841111 - Turbo-Jets - Thrust Not Exceeding 25 Kn	342,840
848180 - Taps, Cocks, Valves and Other Similar Appliances, Nes	229,210
854430 - Ignition Wiring Sets and Other Wiring Sets Used For Vehicles, Aircraft or Ships	148,812
151590 - Vegetable Fats & Oils, Nes & their Fractions, Refined or Not, But Not Chemically Modified	144,546
070110 - Potatoes - Fresh or Chilled - Seed	110,845
160510 - Crabs - Prepared or Preserved	103,262
051191 - Products of Fish, Crustaceans, Molluscs and Other Aquatic Invertebrates	83,931
030711 - Oysters: Live, Fresh or Chilled	71,620
030731 - Mussels - Live, Fresh or Chilled	69,262
820890 - Knives and Blades For Leather, Paper, Tobacco Machines and Other Industries	59,053
350790 - Pure (Isolated) or Prepared Enzymes Nes	54,308
030739 - Mussels - Frozen, Salted, Dried or in Brine	53,372
030614 - Crabs - Frozen	50,721
040299 - Milk and Cream Sweetened - Concentrated - Not in Powder	48,866
230910 - Dog or Cat Food Put Up For Retail Sale	48,544
200410 - Potatoes, Frozen - Prepared/Preserved Without Vinegar/Acetic Acid	29,657
Sub-total	13,386,845
Others	3,110,507
Total (All Products)	16,497,352

Exhibit 10

8.2 APPENDIX B

List of Appendix sources:

- <http://advocacy.calchamber.com/wp-content/uploads/international/portals/NorCal-Canada-2013.pdf>
- <http://advocacy.calchamber.com/wp-content/uploads/international/portals/SoCal-Canada-2013.pdf>
- <http://almanac.usli.org/wp-content/uploads/2016/02/California-Race-Population.png>
- http://www.can-am.gc.ca/business-affaires/fact_sheets-fiches_documentaires/cas.aspx?lang=eng
- <http://www.ers.usda.gov/topics/in-the-news/california-drought-farm-and-food-impacts/california-drought-food-prices-and-consumers.aspx>
- <http://www.gov.pe.ca/agriculture/AgonPEI>
- <https://www.ic.gc.ca/app/scr/tdst/tdo/crtr.html?naArea=P11&searchType=Top25&customYears=2015&productType=HS6&reportType=TE&timePeriod=%7C%20Custom+Years¤cy=US&toFromCountry=CDN&countryList=specific&areaCodes=SCA&grouped=GROUPED&runReport=true>
- <http://www.labormarketinfo.edd.ca.gov/data/employment-by-industry.html>
- <http://www.opportunitiespei.ca/choosepei-economy>
- <http://www.ppic.org/main/keystat.asp?i=1264#4>
- <https://www.princeedwardisland.ca/en/topic/exporting-pei>
- <https://www.princeedwardisland.ca/en/news/measure-pei-progress-statistical-review>
- <http://www.state.gov/r/pa/ei/bgn/2089.htm>
- https://watershed.ucdavis.edu/files/biblio/Final_Drought%20Report_08182015_Full_Report_WithAppendices.pdf