CANADA'S FOOD ISLAND:
AN ECONOMIC IMPACT ASSESSMENT

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TABLE OF CONTENTS

TABLE OF CONTENTS (CONT.)

EXECUTIVE SUMMARY

Canada's Food Island directly supported more than 14,000 direct jobs on Prince Edward Island in 2019 (18% of all employment on the Island and 27% of all business sector employment). When adding supply chain (indirect) and induced impacts, the food economy supported more than 20,600 jobs across the province.

The food economy payroll, before indirect and induced impacts, was over $500 million in 2019. There are over 4,000 employer and non-employer establishments in the food economy and it is a top contributor to private sector capital investment on the Island each year.

Food economy segment:		**Summary impacts:**
 **Primary production: Fishing and agriculture**	➔	$160 million in capital investment (2019) 4,700+ direct jobs (7,500+ total jobs) $180+ million payroll ($299 million total labour income) Nearly 2,000 fishing establishments 1,200 crop and animal production establishments 100+ aquaculture establishments
 **Value-added manufacturing**	➔	2,240 direct jobs (4,370 total jobs) $117 million payroll ($198 million total labour income) 110+ food and beverage manufacturing operations
 **Food distribution**	➔	2,775 direct jobs (3,360 total jobs) $102 million payroll ($126 million total labour income) 150+ farm product and food wholesaling operations 200 retail stores (individual establishments)
 **Food consumption**	➔	4,350 direct jobs (5,350 total jobs) $112 million payroll ($150 million total labour income) Over 380 different restaurants and drinking places $150 million+ food-related tourist spending
 **Food economy support**	➔	Food Island Partnership – catalyzing growth Food-related startup incubator/accelerator Canada's Smartest Kitchen – food research Bio/Food/Tech – technical services UPEI/Holland College – talent pipeline Atlantic Veterinary College R&D activity (e.g. $12.5M Cavendish Farms R&D centre) Immigration – hundreds working in the food economy

EXECUTIVE SUMMARY (CONT.)

Economic impact summary

The economic impact of the food economy by sector in 2019 is summarized in the table below. The primary production segment boosted provincial GDP by $737 million, labour income by $299 million and tax revenue to government by $166 million. The value-added manufacturing sector boosted provincial GDP by $567 million, labour income by $198 million and tax revenue by $143 million.

Adding in the impacts of food distribution and consumption and the food economy on the Island contributed $1.76 billion to provincial GDP, supported $773 million in labour income and supported over 20,600 jobs. In total, the food economy boosted government tax coffers by an estimated $436 million ($283 million specifically for provincial and local governments).

Sector:	GDP	Labour income	Employ-ment	Taxes: All government	Taxes: PEI and local gov. only
Fishing	$240.8	$57.7	1,121	$30.9	$20.1
Crop production	$296.9	$145.5	3,690	$84.6	$55.0
Animal production	$124.1	$59.2	1,841	$32.9	$21.4
Aquaculture	$50.3	$24.8	634	$12.1	$7.9
Support activities for agriculture	$25.3	$11.6	272	$5.2	$3.4
Primary production: Total	$737.4	$298.8	7,558	$165.8	$107.8
Vegetable & fruit products mfg	$260.9	$71.9	1,463	$57.1	$37.1
Dairy products	$86.9	$24.7	619	$17.8	$11.6
Meat products	$22.1	$13.4	318	$10.9	$7.1
Seafood	$161.2	$69.3	1,422	$47.4	$30.8
Other food production	$24.9	$13.6	388	$6.5	$4.2
Beverage manufacturing	$10.9	$5.2	160	$2.9	$1.9
Manufacturing: Total	$566.9	$198.1	4,370	$142.6	$92.7
Food distribution (wholesale/ retail)	$202.6	$126.1	3,364	$54.5	$35.4
Food services	$248.9	$150.0	5,352	$73.1	$47.5
Total food economy	$1,755.8	$773.0	20,644	$436.0	$283.4

EXECUTIVE SUMMARY (CONT.)

Impact highlights:

Just from direct activity (without supply chain and induced impacts), the food economy contributes 16% of total Island GDP (2019) and 22%+ excluding health care, education and public administration.

On a per capita basis/compared to other provinces:

- ⇨ PEI generates more GDP from the food economy than any other province.
- ⇨ PEI ranks first for GDP from fishing and from aquaculture.
- ⇨ PEI generates more GDP from aquaculture than NL, NS and NB combined.
- ⇨ Fruit and vegetable preserving and specialty foods manufacturing GDP (on the Island this is mostly frozen potato products) is 3X higher than 2nd province.
- ⇨ PEI economy generates almost as much GDP from seafood products manufacturing as NB and NS combined.
- ⇨ GDP from dairy products ranks #1 in Canada.
- ⇨ The restaurant sector contributes 2.5 times as much provincial GDP as the accommodations services sector.
- ⇨ Food and beverage manufacturing contributes 3.9 times as much GDP as the information technology sector.

Sectors growing much faster than the economy overall (5-year GDP % ↑):

- ⇨ Crop production (↑ 27%)
- ⇨ Meat products (↑ double)
- ⇨ Seafood products (↑ 36%)
- ⇨ Beverage manufacturing (↑ 160%)
- ⇨ Restaurants (↑ 27%)

In 2019, there were 14,215 working directly in the food economy of which 7,055 were employed in fishing, agriculture and value-added food manufacturing. The food economy accounts for 27% of all business sector jobs.

Adjusted for size/compared to other provinces:

- ⇨ PEI has more employed in fishing, agriculture and value-added food manufacturing than any other province.
- ⇨ PEI ranks #1 for food manufacturing employment and ranks #2 for crop and animal production employment.
- ⇨ PEI ranks #1 for fishing vessel masters and fishermen/women; food processing occupations; and aquaculture jobs.
- ⇨ The Island workforce also had the highest share of biological technologists and technicians as well as veterinarians.

- ⇨ The $773 million labour income generated by the food economy (direct, indirect and induced) is equivalent to 24% of all employment income.

EXECUTIVE SUMMARY (CONT.)

Taxes generated for provincial and local government:

- Primary production activity: $108M
- Value-added manufacturing: $92.7M
- Food distribution (wholesale & retail): $35.4M
- Food services and drinking places: $47.5M
- Total food economy: $283M (equivalent to 24% of all PEI own-source revenue)

- Food economy: $1.57 billion of interprovincial and international exports in 2017.
- The Island ranks #1 among the provinces for the % of food-related GDP.
- The food economy accounted for 48% of all Island exports in 2017. The next closest province was SK at 31%, NS 29%, NB 19% and NL 13%.
- The Island had a $912M food trade surplus in 2017 ($1.575 billion exports vs. $663M imports) = $2.38 in exports for every $1.00 imports.
- The value of international exports rose by 29% from 2017 to 2020.
- 40% of exports to other provinces, 60% international (US = 80%+).

- The food economy is dominated by SMEs. Of the 75 manufacturing firms, 64% have less than 20 employees.
- The food economy is attracting entrepreneurs. Between 2015-2020, net growth of 36 specialty food stores, +21 restaurants, +13 food manufacturers, +12 grocery stories, +9 aquaculture firms and +5 beverage manufacturers.

- The tourism sector generated $153M in food-related exports in 2017 (restaurants and other food services).
- On a per capita basis, this was more than any other province and nearly double the amount in NS and NB.

- The Island has a strong talent pipeline for the food economy.
- Immigrants and international workers are a growing share. As of the 2016 Census, there were 1,035 immigrants working in the Island's food economy. Since 2016, hundreds more have moved to the Island to work and own businesses in the food economy.

- The Island's seafood manufacturing, dairy products, animal production and potato products manufacturing sectors have higher labour productivity than the country as a whole.
- There are multiple organizations involved in food-related R&D and support.
- There are strong synergies between the food economy and bioscience cluster.

In order to ensure continued growth:

- Foster more investment to support firms with high growth potential.
- Develop a workforce plan to replace retirees/support growth.
- Position the Island as a top location for food-related entrepreneurship.
- Focus on environmental stewardship.
- Continue to develop the support ecosystem.

1. INTRODUCTION

1.1 Purpose of this report

The objective of the project is to estimate the economic contribution of agriculture, fishing and food production to the Prince Edward Island economy including direct, indirect, and induced economic impacts. Further, the report looks at the role of the food distribution and restaurants sector to round out the total impact of food to the Island economy.

This report provides data on sector output and gross domestic product (GDP) as well as employment, labour income, taxation and consumer spending. In addition, the report includes a broader set of data to tell the story of how food is interwoven into the Prince Edward Island economy and society.

The production and distribution of food is fundamental to any economy, but certain jurisdictions benefit more than others. As this report will reveal, Prince Edward Island generates a larger share of its economy from food production, distribution and consumption than any other province in Canada. The province has a significant fishing and seafood production sector. It is Canada's largest producer of potatoes, and that crop is turned into value added products shipped across North America. The Island has other food manufacturing sectors and a growing brewery/winery sector. Adjusted for population size, Prince Edward Island generates more restaurant sales from tourists than any other province in Canada.

Crucially there is capital investment flowing into the sector. In 2019, $160 million was invested in fishing and agriculture capital and repair expenditures. As a share of total capital spending, this was higher than all other provinces in Canada.

There is considerable research and development underway as well as efforts to foster entrepreneurship and address workforce challenges. These will help shore up and expand the food economy as a driver of GDP, jobs, household spending and tax revenue.

There are, however, some potential challenges to the food economy on Prince Edward Island in the years ahead. There is increasing competition, changing consumer market preferences and technological change. The aging workforce creating the need for more workers even as the domestic supply is shrinking. A large share of the business owners in the sector are over the age of 55 and will be heading into retirement in the coming years. Climate change and related environmental considerations need to be addressed.

Food production, from fishing and farming to value added processing, has been key to the Island's economic resurgence over the past decade. If government, industry, education and other stakeholders can address the challenges, the food sector should continue to be an important source of economic growth, jobs and tax revenue for governments for decades to come.

1.2 What is the value proposition for Canada's Food Island?

Why has Prince Edward Island emerged as a top jurisdiction across North America for its food economy? There has been strong institutional and government support. The university and college sector are churning out talent the industry needs to grow. There are multiple intermediary and support organization that provide support services such as the Food Island Partnership and Bio Food Tech. The province offers food-related entrepreneurs a variety of services and is currently expanding into areas such as shared food manufacturing spaces for startups.

There are multiple organizations involved in food-related research.

This ecosystem of support builds on the Island's natural advantages for the food economy. Prince Edward Island has a well-established agriculture sector, a large fishery and an emerging aquaculture industry. For years, the province's tourism sector has been focused on food experiences.

Local and national firms are transforming fish and agriculture commodities into valued-added products and shipping them around the world.

As will be developed in this report, the value proposition for investing in the Island's food economy is strong.

2. CANADA'S FOOD ISLAND: ECONOMIC IMPACT

2.1 The economic impact model

The primary purpose of this report is to develop an economic impact model estimating the contribution of the food economy on Prince Edward Island. The economic impact model is based on Statistics Canada's Input-Output (I-O) tables that provide a detailed profile of how expenditures in specific sectors flow through the provincial and national economy as well as by international trade. The I-O tables are developed using actual spending patterns within specific industries and provinces and therefore estimates of new economic activity are based on the expenditure profile of previous activity in those industries.

The economic impact model evaluates the direct, indirect, and induced economic impacts of both the annual operating expenditures related to the cluster and its capital expenditures using the following parameters:

- *Direct impact* measures the value added to the economy that is attributed directly from the employees, the wages earned, and the revenues generated by food-related sectors.
- *Indirect impact* measures the value-added the various sectors in the food economy generate within the PEI economy through the firm and organizational demand for intermediate inputs or other support services (e.g. the supply chain).
- *Induced impacts* are derived when employees in the aforementioned industries spend their earnings and owners spend their profits. These purchases lead to more employment, higher wages, and increased income and tax revenues, and can be felt across a wide range of industries.

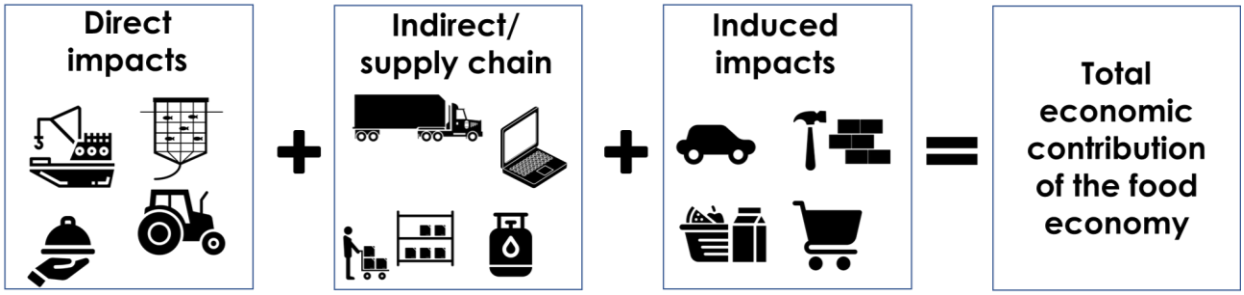
The I-O tables trace the impact of economic activity (output shock) on the provincial and national economies (including imports and exports). In addition to the output, GDP and employment impacts, the economic impact model estimates the amount of tax revenue generated by the industry as well as consumer spending impacts.

Table 1: The Economic Impact Model

Direct effect -within province (where available)	Simple multipliers (direct and indirect) - within province and rest of Canada	Total multipliers (direct, indirect and induced) - within province and rest of Canada
⇨ Output	⇨ Output	⇨ Output
⇨ GDP basic price	⇨ GDP basic price	⇨ GDP basic price
⇨ Labour income	⇨ Labour income	⇨ Labour income
⇨ Jobs	⇨ Jobs	⇨ Jobs
⇨ International imports	⇨ International imports	⇨ International imports
⇨ Export shares		

Figure 1 shows examples of the direct, indirect/supply chain and induced economic activity associated with the food economy on Prince Edward Island.

Figure 1: Three types of economic impact, PEI food economy



There are over 200 industries for which detailed I-O multiplier data is available. The industries directly related to the food economy were included in the analysis (using the NAICS classification system[1]) and are summarized in Table 2. There are three broad industry groups: 1) primary production which includes fishing, crop production, animal production, aquaculture and related support activities; 2) value added manufacturing which includes the transformation of fish and agricultural products into value-added products including seafood, potato, dairy, meat and other food production; and 3) the distribution of food on the Island and its consumption in food services and drinking places.

Table 2: Industries included in the food economy on PEI

Sector:	NAICS industries:
Fishing	Fishing, hunting and trapping [NAICS114]*
Crop production	Crop production (except greenhouse/related) [NAICS 111A]
Animal production	Animal production (except aquaculture) [NAICS 112A]
Aquaculture	Aquaculture [NAICS 1125]
Support activities for agriculture	Support activities for crop/animal production [NAICS 115A]
Vegetable and fruit products manufacturing	Fruit and vegetable preserving and specialty food manufacturing [NAICS 3114]
Dairy products	Dairy product manufacturing [NAICS 3115]
Meat products	Meat product manufacturing [NAICS 3116]
Seafood	Seafood product preparation and packaging [NAICS 3117]
Other food production	Animal food manufacturing [NAICS 3111] Grain and oilseed milling [NAICS 3112] Bakeries and tortilla manufacturing [NAICS 3118] Other food manufacturing [NAICS 3119]
Beverage manufacturing	Soft drink and ice manufacturing [NAICS 31211] Breweries [NAICS 31212] Wineries and distilleries [NAICS 3121A]
Food distribution (wholesale & retail)	Food, beverage and tobacco wholesalers [NAICS 413000] Food and beverage stores [NAICS 445]
Food services & drinking places	Food services and drinking places [NAICS 722]

**there is negligible activity in the hunting and trapping sector.*

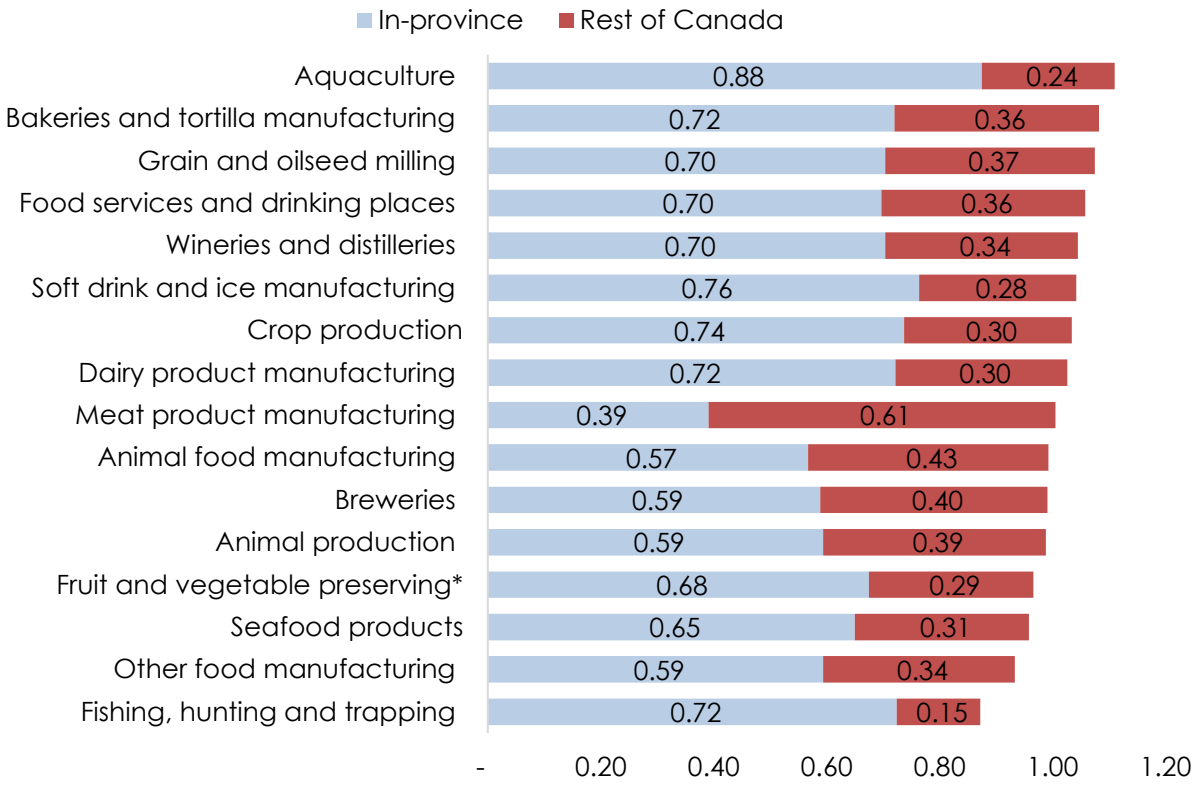
[1] North American Industrial Classification System (NAICS).

2.2 Provincial versus national economic impacts

This report covers only the economic impacts from the food economy in the province. There are additional economic impacts across Canada and beyond. Direct impacts occur in the province, but both indirect (supply chain) and induced impacts can occur in the province, across the country and around the world. For example, a manufacturing plant will employ Islanders directly (in-province impact), purchase raw materials from a supplier in Ontario (impact in Ontario) and purchase equipment from a supplier in Germany (impact outside of Canada). The only impact in the province in this example is the direct employment spending in the plant.

Figure 2 shows the total GDP multipliers for various food economy sectors on the Island. The total multipliers include direct, indirect and induced impacts. The aquaculture sector generates the highest GDP impact in the province with 88 cents worth for every dollar of direct output. However, the sector also generates another 24 cents in output outside the province. The meat product manufacturing sector generates only 39 cents of GDP for every dollar of direct output because it imports from other provinces a considerable amount of cattle for processing. The GDP, employment and other economic impacts from the production of that cattle occur in the source provinces. The fishing sector generates the least GDP activity outside the province at only 15 cents per $1.00 of direct output.

Figure 2: In-province and across Canada GDP multipliers (for every $1.00 direct output)



**and specialty food manufacturing.*

Source: Statistics Canada Table 36-10-0595-01.

2.3 Ensuring there is no double counting in the impact analysis

When analyzing the impact of a single industry, there is no concern related to the potential double counting of economic impacts. For example, an assessment of the seafood production sector would include the direct impact in the factory, the indirect impact (fishing, electricity, product transportation, etc.) and the induced effects as employees spend their labour income on groceries, entertainment, transportation, etc.

However, when combining all of the food-related sectors into a single food economy analysis, double counting becomes a challenge. Much of the indirect economic activity associated with seafood production is the direct activity in the fishing sector. Similarly, much of the indirect activity in the value-added potato manufacturing sector is the direct activity in the potato farming sector.

To account for this, the indirect multipliers in the vegetable, dairy, meat and seafood production sectors were significantly discounted (by 70%). This discount is based on a review of supply/use tables for these sectors by commodity group. For example, while fishing needs to be removed from the indirect/supply chain multiplier for the seafood production sector, other supply chain activity remains such as electricity, chemicals, repair construction, professional services, etc.

Once segmented into their proper industry group, each sector was analyzed to determine its indirect and induced employment on PEI; direct, indirect and induced gross domestic product (GDP); and other impacts.

2.4 Output, GDP and employment impacts: PEI food economy

Table 3 shows the summary economic impacts of the PEI food economy by sector. In 2019, the fishing sector generated an estimated $210.2 million in direct provincial gross domestic product (GDP) and $42.9 million worth of labour income supporting 760 direct jobs. Adding in supply chain and induced economic activity, the fishing sector boosted provincial GDP by $240.8 million and labour income by $57.7 million supporting 1,121 jobs. The impact of manufacturing companies transforming fish into value added seafood products is covered below.

With direct, indirect and induced effects, the crop production sector on the Island supported 3,690 jobs and $145.5 million in labour income. The provincial GDP contribution was $297 million. The animal production sector was also a large employer supporting over 1,800 jobs, $59 million in labour income and a boost to provincial GDP of more than $124 million.

The aquaculture sector is growing its impact on the Island. In 2019, the industry supported an estimated 634 jobs (direct, indirect and induced), $24.8 million in labour income and $50.3 million in provincial GDP.

Overall, the fishing and agriculture sectors (primary production) generated over $1 billion in output, boosted provincial GDP by $737 million and labour income by $299 million. In total, more than 7,500 jobs were supported across the province by fishing and agriculture.

The value-added manufacturing sector is dominated by vegetable and fruit products (mostly potato products) and seafood products manufacturing. These two sectors accounted for over $930 million total output in 2019. As discussed above, the indirect impacts from manufacturing in these sectors have been reduced because the impact is showing up in the primary production.

Vegetable and fruit products manufacturing supported an estimated 1,463 jobs on the Island in 2019, $71.9 million in labour income and a provincial GDP contribution of $261 million. The seafood products manufacturing sector supported 1,422 jobs, $69.3 million in labour income and a GDP boost of more than $161 million.

Value-added meat and dairy products were also an important economic engine for the Island in 2019 supporting an estimated 937 jobs, over $38 million in labour income and a provincial GDP contribution of $109 million. The beverage sector had a modest impact on the provincial economy in 2019 but has been growing strongly as discussed in Section 4.

Overall, the food manufacturing sector generated over $1.2 billion in output, boosted provincial GDP by $567 million and labour income by $198 million. In total, 4,370 jobs were supported across the province by the value-added manufacturing of food products.

The food distribution sector, which includes both wholesale and retail activity, generated over $202 million in provincial GDP, $126 million in labour income and supported 3,364 jobs in 2019.

Finally, the food services and drinking places sector (mostly restaurants) was a top employer on the Island in 2019. The companies themselves employed 4,345 people during the year and with indirect and induced effects supported 5,352 jobs and $150 million in labour income.

The total food economy, including primary production, value-added manufacturing, food distribution and food consumption, boosted the Island's GDP by $1.76 billion, generated an estimated $773 million in labour income and supported over 20,600 jobs across the province. To put this in perspective, the labour income paid as a result of the food economy (direct, indirect and induced) was equivalent to 24 percent of all employment income paid out across the province in 2017.

Table 3: Summary economic impacts by sector, Canada's Food Island (2019)

		Direct impacts			Total impacts		
Sector:	Direct output	GDP	Labour income	Employ-ment	GDP	Labour income	Employ-ment
Fishing	$329.9	$210.2	$42.9	760	$240.8	$57.7	1,121
Crop production	$392.1	$166.7	$87.4	2,295	$296.9	$145.5	3,690
Animal production	$203.5	$52.9	$25.0	980	$124.1	$59.2	1,841
Aquaculture	$55.3	$33.2	$18.7	485	$50.3	$24.8	634
Support activities for agriculture	$23.0	$19.8	$9.6	220	$25.3	$11.6	272
Primary production: Total	$1,003.8	$482.7	$183.6	4,740	$737.4	$298.8	7,558
Vegetable & fruit products mfg	$507.8	$183.8	$39.6	640	$260.9	$71.9	1,463
Dairy products	$164.4	$58.0	$13.0	255	$86.9	$24.7	619
Meat products	$83.1	$10.9	$9.0	185	$22.1	$13.4	318
Seafood	$427.1	$76.9	$41.9	760	$161.2	$69.3	1,422
Other food production	$37.1	$15.3	$9.6	290	$24.9	$13.6	388
Beverage manufacturing	$17.5	$6.6	$3.2	110	$10.9	$5.2	160
Manufacturing: Total	$1,237.1	$351.5	$116.2	2,240	$566.9	$198.1	4,370
Food distribution (wholesale & retail)	$200.9	$137.7	$102.0	2,775	$202.6	$126.1	3,364
Food services/restaurants	$340.1	$152.7	$111.5	4,345	$248.9	$150.0	5,352
Total food economy	$2,781.9	$1,124.6	$513.4	14,100	$1,755.8	$773.0	20,644

See Appendix A for sources and methodology and a detailed table of impacts.

2.5 Taxation impacts, PEI food economy

The food economy generates a significant amount of tax revenue for local, provincial and federal governments. Again, as discussed in Section 2.1, the impact model only includes taxes generated on the Island. There would be additional taxes accruing in other provinces and to the federal government from economic activity in those provinces.

The taxes include personal income tax, harmonized sales tax (HST), personal property tax and a variety of indirect taxes arising from the business activity in the supply chain and from induced economic activity. For example, the harmonized sales tax associated with tourist spending on restaurants is included in the model.

Table 4 shows the tax impacts arising from the PEI food economy by sector. The table shows both the estimated 'all government' amount and the 'PEI and local government amount'. In total, the primary production sector is estimated to have boosted government coffers by $166 million in 2019. The provincial and local governments alone received an estimated $108 million.

The value-added manufacturing sector is estimated to have boosted government coffers by $143 million in 2019. The provincial and local governments alone received an estimated $93 million.

Adding in the tax impacts from food distribution and food services, the total food economy is estimated to have boosted government tax revenues by $436 million in 2019. The provincial and local governments alone received an estimated $283 million. These tax amounts equated to approximately 25 percent of the provincial GDP contribution (all government) and 16 percent of GDP for provincial and local governments.

Table 4: Taxes induced by the PEI food economy ($Millions), (2019)

Sector:	All government	PEI and local gov. only
Fishing	$30.9	$20.1
Crop production	$84.6	$55.0
Animal production	$32.9	$21.4
Aquaculture	$12.1	$7.9
Support activities for agriculture	$5.2	$3.4
Primary production: Total	$165.8	$107.8
Vegetable and fruit products manufacturing	$57.1	$37.1
Dairy products	$17.8	$11.6
Meat products	$10.9	$7.1
Seafood	$47.4	$30.8
Other food production	$6.5	$4.2
Beverage manufacturing	$2.9	$1.9
Value added manufacturing: Total	$142.6	$92.7
Food distribution (wholesale & retail)	$54.5	$35.4
Food services and drinking places	$73.1	$47.5
Total food economy	$436.0	$283.4
% of the food economy provincial GDP contribution	*25%*	*16%*

See Appendix A for sources and methodology and a detailed table of impacts.

2.6 Household spending impacts, PEI food economy

The vast majority of the $773 million in labour income generated by the PEI food economy in 2019 becomes household spending. The rest goes to taxes, savings, etc. As shown in Table 5, an estimated $579 million in household spending on goods and services was induced by the food economy in 2019.

Table 5: Induced household spending ($Millions), PEI food economy (2019)

Sector:	
Fishing	$43.2
Crop production	$108.9
Animal production	$44.3
Aquaculture	$18.5
Support activities for agriculture	$8.7
Primary production: Total	$223.7
Vegetable and fruit products manufacturing	$53.8
Dairy products	$18.5
Meat products	$10.0
Seafood	$51.9
Other food production	$10.2
Beverage manufacturing	$3.9
Value added manufacturing: Total	$148.3
Food distribution (wholesale & retail)	$94.4
Food services and drinking places	$112.3
Total food economy	$578.6

See Appendix A for sources and methodology and a detailed table of impacts.

The breakdown by major spending category is shown in Table 6. The labour income generated by the food economy boosted food expenditures on the Island by over $94 million in 2019, shelter spending (mortgages, rent, maintenance, utilities, etc.) by more than $143 million, transportation by over $121 million, health and personal care by $37 million and recreation by nearly $34 million.

Table 6: Induced household spending ($Millions), PEI food economy (2019)

	Primary production: Total	Manu-facturing: Total	Food distribution (wholesale & retail)	Food services	Total food economy
Total current consumption	$223.7	$148.3	$94.4	$112.3	$578.6
Food expenditures	$36.4	$24.2	$15.4	$18.3	$94.3
Shelter	$55.5	$36.8	$23.4	$27.8	$143.5
Transportation	$47.0	$31.1	$19.8	$23.6	$121.5
Health and personal care	$14.3	$9.5	$6.0	$7.2	$37.0
Recreation	$13.0	$8.6	$5.5	$6.5	$33.6

See Appendix A for sources and methodology and a detailed table of impacts.

3. CANADA'S FOOD ISLAND: FARMS, FISHERS AND FIRMS

3.1 Business counts review

Each year Statistics Canada provides detailed information on the number of businesses located on Prince Edward Island by employment level, detailed industry group and municipality. This data provides a good portrait of the number and size of firms by region within the province. There are both employer and non-employer businesses in the database. To be included in the analysis, a non-employer business must have at least $30,000 in annual sales.

3.2 Agriculture and fishing

There were 481 establishments with employees in the agriculture and related support services as of June 2020 (and other 728 non-employers). Most of them are relatively small, with 75 percent having fewer than 10 employees. There are five with more than 50 employees. Potato farming is by far the largest sector (included in the table as vegetable and melon farming) and there are also 132 employer establishments in cattle ranching and farming.

There were fewer establishments in the crop production sector in 2020 compared to 2015. However, the number with 50 or more employees rose from only one in 2015 to three in 2020 indicating some potential consolidation in the sector.

The same trend occurred in the animal production sector, with a small decline in the overall number of establishments but an increase of three in the number with 50 or more employees.

Table 7: Crop and animal production establishments by employment level (2020), PEI

Sector:	Without employees	Total, with employees	1-4	5-9	10-19	20-49	50-99	100+
Oilseed and grain farming	92	42	33	8	1	0	0	0
Vegetable and melon farming	80	173	41	45	66	18	2	1
Fruit and tree nut farming	42	29	20	6	3	0	0	0
Greenhouse, nursery and related	9	16	9	0	4	2	1	0
Other crop farming	99	18	11	5	2	0	0	0
Cattle ranching and farming	261	132	95	33	3	1	0	0
Hog and pig farming	7	8	4	2	2	0	0	0
Poultry and egg production	11	8	5	0	3	0	0	0
Sheep and goat farming	11	1	0	0	1	0	0	0
Other animal production	69	28	20	4	3	1	0	0
Support activities - crop prod.	35	19	7	7	2	2	1	0
Support activities - animal prod.	12	7	6	0	1	0	0	0
Total	728	481	251	110	91	24	4	1

Source: Statistics Canada location counts, June 2020.

Most of the establishments in the fishing sector were non-employers (1,668 in June 2020) but there were 277 employer businesses, of which almost all had less than five employees. There were three with 20-49 employees. There were 35 more establishments in the fishing sector (with employees) in 2020 than in 2015.

There were 46 aquaculture establishments with employees in 2020, no change from 2015. However, in 2020, there were three more with at least 50 employees compared to 2015.

Table 8: Fishing and aquaculture establishments by employment level (2020), PEI

Sector:	Without employees	Total, with employees	1-4	5-9	10-19	20-49	50-99	100+
Fishing	1668	277	259	12	3	3	0	0
Aquaculture	58	46	27	5	6	3	4	1
Total	1726	323	286	17	9	6	4	1

Source: Statistics Canada location counts, June 2020.

3.3 Value-added food manufacturing

There were 75 food manufacturing firms with employees across the Island as of June 2020 and another 38 non-employers. The non-employers could be startups or very small firms with at least $30,000 in sales, but no formal employment. The largest sectors are potato product manufacturing (included in the fruit and vegetable preserving and specialty food manufacturing sector) and seafood products manufacturing. There were also seven dairy product manufacturers, all with at least 10 employees.

The Island is home to four meat product manufacturers, one with 20-49 employees and one with more than 100 employees. As of June 2020, there were also eight bakeries of which three had between 20-49 employees. There were eight more in the food manufacturing sector including four more with between 50-99 employees.

There were 12 beverage manufacturing firms with employees in June 2020 including six breweries, three wineries and two distilleries with employment[2]. All of the operations are small, but there was one brewery with at least 20 employees. There were seven more beverage manufacturers with employees in 2020 compared to 2015.

[2] Statistics Canada classifies firms based on their primary industrial activity. There could be restaurants with a small brewery operation or farms with a winery operation that are classified as restaurants or farms.

Table 9: Food and beverage manufacturing establishments by employment level (2020), PEI

Sector:	Without employees	Total, with employees	1-4	5-9	10-19	20-49	50-99	100+
Animal food manufacturing	0	1	0	0	1	0	0	0
Grain and oilseed milling	2	4	4	0	0	0	0	0
Sugar/confectionery products	0	1	0	1	0	0	0	0
Fruit and vegetable preserving and specialty food mfg	1	7	1	0	1	0	2	3
Dairy product manufacturing	5	7	0	0	4	2	0	1
Meat product manufacturing	2	4	1	1	0	1	0	1
Seafood products	11	20	5	3	1	1	4	6
Bakeries and tortilla mfg	5	8	0	1	4	3	0	0
Other food manufacturing	8	11	4	5	0	1	0	1
Soft drink and ice mfg	1	1	1	0	0	0	0	0
Breweries	2	6	1	1	3	1	0	0
Wineries	1	3	2	0	1	0	0	0
Distilleries	0	2	2	0	0	0	0	0
Total food and beverage mfg	38	75	21	12	15	9	6	12

Source: Statistics Canada location counts, June 2020.

3.4 Food distribution

In June 2020, there were 229 employer businesses in the food distribution sector on the Island including 86 in the wholesale sector and 143 in the retail sector. There were a number of large firms including six food merchant wholesalers and seven grocery stores with at least 100 employees. Most of the liquor stores on the Island have at least 100 employees.

Table 10: Wholesale and retail food distribution by employment level (2020), PEI

Sector:	Without employees	Total, with employees	1-4	5-9	10-19	20-49	50-99	100+
Farm product wholesalers	5	7	3	2	2	0	0	0
Food merchant wholesalers	67	73	32	7	9	15	4	6
Beverage merchant wholesalers	0	6	3	0	0	2	0	1
Grocery stores	18	81	32	16	11	10	5	7
Specialty food stores	45	43	23	11	9	0	0	0
Beer, wine and liquor stores	1	19	0	0	0	0	3	16
Total	136	229	93	36	31	27	12	30

Source: Statistics Canada location counts, June 2020.

3.5 Food consumption

There were 322 food services and drinking places on the Island in June 2020. There were 306 restaurants, 14 more in 2020 compared to 2015. There were a number of larger restaurants as 26 had at least 50 employees.

Table 11: Food services and drinking places by employment level (2020), PEI

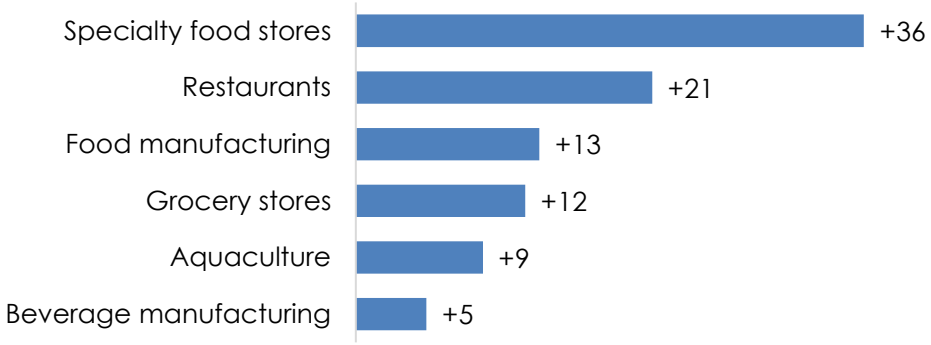
Sector:	Without employees	Total, with employees	1-4	5-9	10-19	20-49	50-99	100+
Special food services	21	13	7	4	2	0	0	0
Drinking places (alcoholic bev.)	4	3	1	2	0	0	0	0
Restaurants and limited-service eating places	68	306	55	49	75	101	19	7
Totals	93	322	63	55	77	101	19	7

Source: Statistics Canada location counts, June 2020.

3.6 Entrepreneurship on Canada's Food Island

Entrepreneurship is driving a lot of new growth in the Island's food economy. Statistics Canada publishes data on the net change in the number of businesses by sector. In just the five-year period between 2015 and 2020, there was net growth of 36 firms in the specialty food store sector, 21 more restaurants, 13 more food manufacturing companies, 12 more grocery stores, nine more aquaculture firms and five more beverage manufacturers.

Figure 3: Net growth in the number of firms, selected food-related sectors, 2015-2020*



*firms with or without formal employment.
Source: Statistics Canada location counts, June 2015, June 2020.

3.7 Canada's Food Island and the biosciences cluster

Prince Edward Island has a thriving biosciences cluster with over 60 firms and organizations. The cluster contributed an estimated $256 million to provincial GDP in 2018, an 83 percent increase between 2012 and 2018. Direct employment in biosciences-related activities was 1,700 in 2018 and total employment supported by the cluster was nearly 2,600.

There is considerable synergy between the food economy and the biosciences cluster. In fact, the biosciences cluster on the Island emerged out of a plan to "consider new life-sciences commercialization opportunities related to agriculture and food"[3]. In 2005, Agriculture and Agri-Food Canada expanded its research activity related to sustainable crop production, collaborating with the NRC and UPEI to create value-added bio-based products and processes from new and current crops. At the same time, the PEI Food Technology Centre successfully expanded its expertise and capacity for novel extraction technologies[3].

Today, a number of firms in the cluster are involved in the development of natural and organic products for nutraceuticals and functional foods. Along with the federal government and university-based research centres, BIO | FOOD | TECH bridges the food economy and the bioeconomy by providing professional technical services to food and bioprocessing companies.

[3] Source: The Prince Edward Island BioAlliance story.

4. CANADA'S FOOD ISLAND: GDP CONTRIBUTION

4.1 Compared to the rest of Canada

Gross domestic product (GDP) is the broadest measure of economy activity. Overall output represents the amount of spending in a given sector. The GDP impact represents how much of that spending remains on the Island.

The GDP figures discussed in this section are somewhat different than the figures included in the 2019 economic impact assessment developed in Section 2. The figures in this section are shown in chained (2012) dollars to adjust for inflation and, therefore, a more relevant assessment when looking at changes over time.

As shown in Table 12, the food economy's GDP contribution has been growing strongly across almost all related sectors. On a per capita basis, the Island ranks top among the 10 provinces for six export-focused food economy sectors and second or third for most others.

The Island has rocketed past New Brunswick and now generates the most GDP per capita from the aquaculture sector (double the amount in New Brunswick) by far. In fact, adjusted for population size, PEI generates more GDP from aquaculture than Newfoundland and Labrador, Nova Scotia and New Brunswick combined.

Per capita GDP from animal production on the Island is 65 percent higher than in Nova Scotia and 2.2 times as much compared to New Brunswick. Per capita GDP from the fishing sector in Prince Edward Island is more than double the amount in Newfoundland and Labrador.

In the area of manufacturing, the per capita GDP contribution from fruit and vegetable preserving and specialty foods manufacturing (on the Island this is mostly potato products) is three times higher than the nearest provincial competitor (New Brunswick).

Only Newfoundland and Labrador generates more per capita GDP from seafood products manufacturing compared to the Island (only one percent more). Adjusted for population size, the PEI economy generates almost as much GDP from seafood products manufacturing as New Brunswick and Nova Scotia combined. Over the 2009-2019 timeframe, real GDP from seafood products manufacturing rose by 148 percent on the Island while increasing by only 17 percent in Nova Scotia and 63 percent in New Brunswick. Real GDP from seafood products manufacturing increased by only five percent in Newfoundland and Labrador over the same timeframe.

Per capita GDP from dairy products is also top in the country well above Quebec and Ontario. The real GDP contribution from the dairy products manufacturing sector declined in most provinces between 2009 and 2019. By contrast, real GDP from this sector on the Island increased by 36 percent.

Table 12: Real GDP and related measures, selected food economy sectors, PEI (2019)

Food economy sector:	Real GDP $M	10-year % change	Provincial rank (GDP per capita)
Fishing	$106.6	+35%	1
Aquaculture	$31.3	+13%	1
Crop production	$203.9	+37%	3
Animal production	$72.5	+4%	2
Support activities for crop and animal production	$16.5	+68%	1
Food manufacturing	$266.4	+66%	1
Fruit and vegetable preserving and specialty foods	$114.3	+56%	1
Dairy product manufacturing	$44.5	+36%	1
Meat product manufacturing	$9.4	+169%	8
Seafood product preparation and packaging	$77.5	+148%	2
Beverage product manufacturing	$6.3	+31%	9
Farm product merchant wholesalers	$3.6	+414%	6
Food, beverage and tobacco wholesalers	$41.7	+28%	2
Food and beverage stores	$85.1	-3%	3
Food services and drinking places	$134.9	+57%	3

Direct GDP only. Chained (2012) dollars. Source: Statistics Canada Table: 36-10-0402-01.

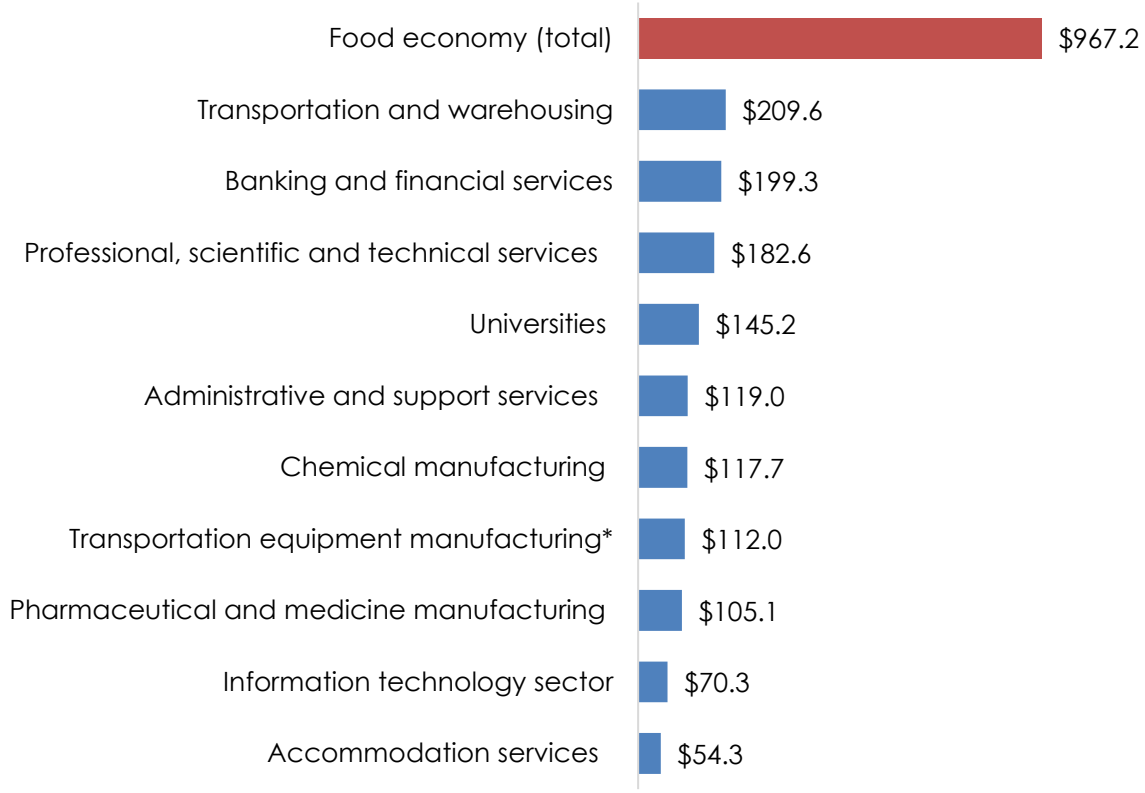
4.2 The food economy and Island GDP

From just direct activity (without supply chain and induced impacts), the food economy contributed 16 percent of total Island GDP (in 2019) and over 22 percent of Island GDP excluding health care, education and public administration. The food economy overall contributed $967.2 million in real GDP ($2012) in 2019, more than transportation, banking, professional services, administrative and support services, transportation equipment manufacturing, the IT sector and accommodation services combined.

Excluding the public sector (public administration health care and education), food-related sectors dominate provincial GDP. Fishing, aquaculture and agriculture combine to generate more GDP than the chemical manufacturing, transportation equipment manufacturing, pharmaceutical and medicine manufacturing and information technology sectors combined.

Food services and drinking places contribute 2.5 times as much GDP as the accommodations services sector. Food and beverage manufacturing contributes 3.9 times as much GDP as the information technology sector.

Figure 4: Real GDP by sector, $Millions, PEI (2019)



**includes most of the direct GDP attributable to the aerospace sector. Aerospace parts and product manufacturing contributed $93 million to provincial GDP in 2019).*
Direct GDP only. Chained (2012) dollars. Source: Statistics Canada Table: 36-10-0402-01.

5. CANADA'S FOOD ISLAND: WORKFORCE

5.1 Defining the food economy workforce

In 2019, there were 14,215 people working in the food economy including fishing, farming, value-added food manufacturing, food and beverage wholesale/retail, and food services and drinking places. Eighteen and a half percent of everyone working on the Island in 2019 worked in the food economy as defined here. As a share of business sectors only, over 27 percent of all workers on the Island worked in the food economy. Primary food production (fishing and agriculture) and value-added food manufacturing employed over nine percent of all workers and 13.5 percent of business sector employees in 2019.

Table 13 shows a summary of employment in the food economy across the Island in 2019. Over the past 10 years, employment across the food economy has expanded by 14 percent. Just the primary production and value-added manufacturing sectors have added over 12 percent to total employment in the past decade. As of 2019, there were approximately 1,600 more people working in the food economy compared to 2009 and 765 more in just the production and manufacturing sector.

Table 13: Food economy employment and trends, PEI (2019)

	All food economy	Production and manufacturing only
2019 employment	14,215	7,055
10-year growth rate	14.1%	12.2%
% of total PEI employment	18.5%	9.2%
% of business sector employment	27.2%	13.5%

Source: Statistics Canada Table: 36-10-0480-01.

5.2 Food economy employment by sector

Table 14 below shows the detailed employment breakout for the food economy by sector. The crop and animal production sector had 3,945 workers in 2019, a number that increased by over 23 percent in 10 years. The fishing sector had 760 workers in 2019 (not including seafood processing or supply chain jobs), a number that is down over the decade. There were 220 people working in support activities for agriculture, a sharp increase between 2009 and 2019.

The value-added food manufacturing sector employed 2,130 in 2019 registering a modest increase over the past decade. The significant increase in output and GDP combined with the modest increase in employment translate into a sector that is becoming more productive over time (see Section 9.1). The fruit and vegetable preserving and manufacturing sector (mostly potato products) increased total employment by over 24 percent in 10 years. Dairy product manufacturing has shed employment, but meat products' employment increased by more than double. In 2019, there were 760 working in seafood processing up slightly since 2009.

The food and beverage wholesale sector on the Island employed 770 people in 2019 and the retailing of food and beverage products employed 2,045. Both the wholesale and retail sectors significantly expanded the total number of workers in the past decade.

Table 14: Detailed food economy employment by sector, PEI (2019)

	Employ-ment	10-year growth rate	% of total PEI employment	% of business sector employment
Primary production:				
Crop and animal production	3,945	+23.5%	5.1%	7.6%
Fishing, hunting and trapping	760	-13.6%	1.0%	1.5%
Support activities for agriculture	220	+69.2%	0.3%	0.4%
Value-added food manufacturing:	2,130	+2.2%	2.8%	4.1%
Fruit and vegetable preserving/manufacturing	640	+24.3%	0.8%	1.2%
Dairy product manufacturing	255	-45.7%	0.3%	0.5%
Meat product manufacturing	185	+131.3%	0.2%	0.4%
Seafood product preparation and packaging	760	+2.0%	1.0%	1.5%
Beverage product manufacturing	110	+100.0%	0.1%	0.2%
Wholesale and retail:				
Farm product wholesaler-distributors	40	+166.7%	0.1%	0.1%
Food, beverage and tobacco wholesalers	730	+6.6%	0.9%	1.4%
Food and beverage stores	2,045	+9.4%	2.7%	3.9%
Food services and drinking places	4,345	+20.7%	5.7%	8.3%
All food economy	14,215	+14.1%	18.5%	27.2%
Food production and manufacturing only	*7,055*	*+12.2%*	*9.2%*	*13.5%*

Source: Statistics Canada Table: 36-10-0480-01.

Over the 2009-2019 timeframe, employment in the food economy on the Island has grown faster than the national average and faster than six other provinces. In just the primary production and value-added manufacturing sectors, total employment increased 4.9 times faster than in the rest of the country. Only Quebec and British Columbia had a faster growing primary food production and value-added manufacturing workforce over the decade.

The most impressive measure illustrating the importance of the food economy to Prince Edward Island is how the concentration of food-related employment compares to the other nine provinces across the country. Across all sectors of the food economy, PEI ranks first by a wide margin. As a share of the total workforce, there are 21 percent more people employed in the food economy on the Island compared to Saskatchewan, the province with the second largest food economy workforce. For the primary food production and value-added manufacturing workforce only, there are 37 percent more people employed on the Island compared to Saskatchewan, again the province ranking second.

Compared to the average across Canada, the PEI workforce has 52 percent more employed in the food economy and three times as many employed in primary food production and value-added manufacturing (9.2% on the Island compared to only 3.0% across the country).

Table 15: Detailed food economy employment by sector, PEI (2019)

Food economy sector:	PEI rank among 10 provinces
All food economy	1
Food production and manufacturing (combined)	1
Support activities for agriculture	1
Food manufacturing	1
Fruit and vegetable preserving/manufacturing*	1
Dairy product manufacturing*	1
Food, beverage and tobacco wholesalers	1
Crop and animal production	2
Fishing, hunting and trapping	2
Seafood product preparation and packaging*	4
Food services and drinking places	5
Meat product manufacturing *	6
Farm product wholesaler-distributors	6
Food and beverage stores	7
Beverage product manufacturing	9

*Sub-sectors of the food manufacturing sector. Source: Statistics Canada Table: 36-10-0480-01.

5.3 The food economy workforce, by occupation

Section 5.2 looks at employment by industry in the food economy. This section considers employment by occupation in the food economy. It looks at 24 occupational groups (three and four digit NOC occupations[4]) that are related to fishing, agriculture, food processing and downstream in food and beverage consumption.

What is the difference between the food economy workforce by industry and by occupation?
Food-related industries (food manufacturing, restaurants, grocery stores, etc.) have people employed in food-related occupations such as cooks, farm workers, food servers, etc. but also non-food related occupations such as administration, transportation, marketing, etc. Food-related occupations are those that are directly involved in growing/harvesting of food, the manufacture of food products, food preparation, etc. They are mostly employed in food-related industries but not all.

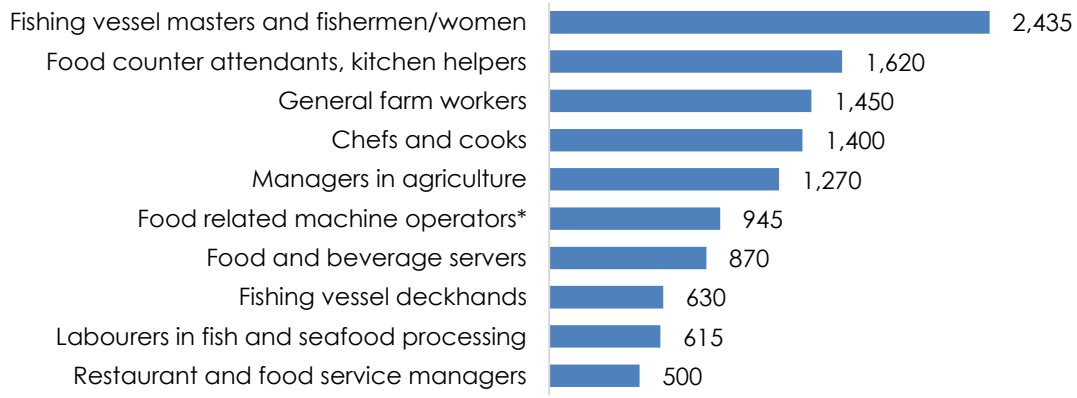
[4] National Occupation Classification (NOC) system.

This approach also confirms the dominance of the food economy on the Island. There were 13,970 people employed within these 24 occupational groups or 18 percent of all employment on the Island as reported in the 2016 Census. Among these 24 occupational groups, PEI has the highest concentration of workers among the 10 provinces in 11 of them (46%) and ranks in the top three in 18 of the 24 (75%). No other province comes close to having as many top ranked occupations.

At the time of the Census, there were 2,435 working as fishing vessel masters or fishermen/women on Prince Edward Island. Adjusted for the size of the workforce, this was more than any another province.

There were 945 people working in food processing as machine operators and related occupations. Again, this was the largest workforce in this occupational group among the 10 provinces relative to the size of the overall workforce. There were 1,450 working as general farm workers and 1,270 working in the occupational group managers in agriculture (encompassing farmers and farm managers).

Figure 5: Top ten occupations by employment, PEI food economy

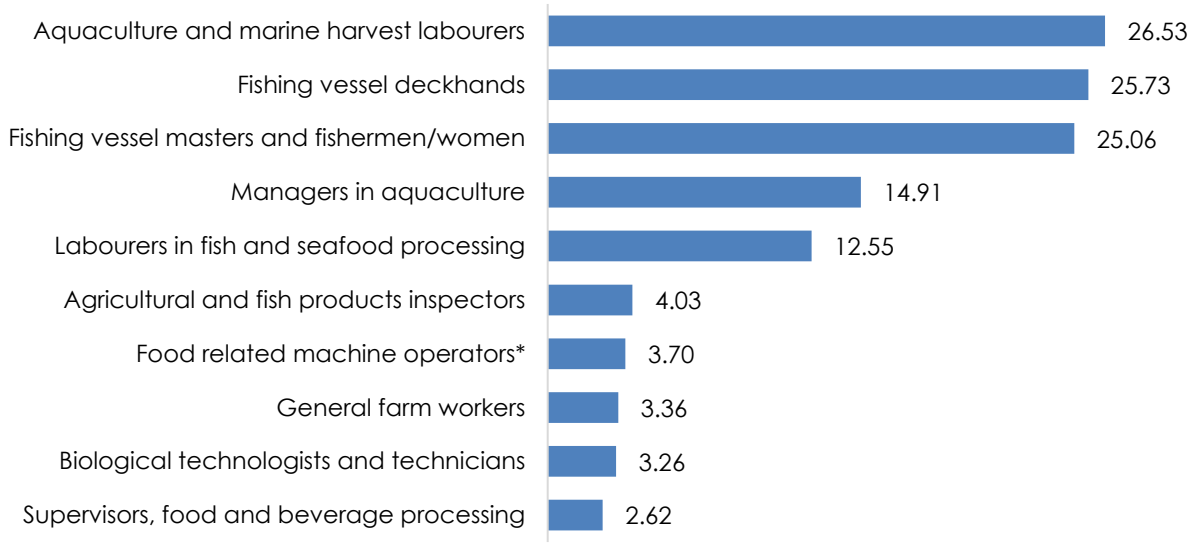


** Machine operators and related workers in food, beverage and associated products processing.*
Source: Statistics Canada 2016 Census.

The Census counted 70 veterinarians in the Island workforce, more than any other province, adjusted for size. Compared to the other provinces, PEI had the most aquaculture/marine harvest workers and biological technologists and technicians (relative to the size of the workforce).

Table 16 shows the employment in the province for each of the 24 occupational groups (at the time of the Census). It also shows the Location Quotient (LQ) value for each occupation. The LQ value is the relative difference in employment on PEI compared to the national level of employment in each occupation as a share of the total workforce. The Canadian level of employment is set at an index value of 1.00. On PEI, there are 25 times as many people employed as fishing vessel masters and fishermen/women and 26 times as many employed in aquaculture and marine harvest labourers. The Island workforce has 15 percent more employed as chefs and cooks compared to the country overall and 64 percent more veterinarians.

Figure 6: Top ten occupations by Location Quotient, PEI food economy (Canada employment level = 1.00)



** Machine operators and related workers in food, beverage and associated products processing.*
Source: Statistics Canada 2016 Census.

Among the 24 food economy-related occupations, the Island workforce has a lower-than-average level of employment in only five.

Table 16: PEI employment in food-related occupations, 2016 Census

Occupational group:	Employment	LQ value (CAN=1.00)	Provincial Rank:
Fishing vessel masters and fishermen/women	2,435	25.06	1
Food counter attendants, kitchen helpers and related	1,620	0.99	5
General farm workers	1,450	3.36	2
Chefs and cooks	1,400	1.15	2
Managers in agriculture	1,270	1.98	3
Machine operators and related workers in food, beverage and associated products processing	945	3.70	1
Food and beverage servers	870	0.91	6
Fishing vessel deckhands	630	25.73	1
Labourers in fish and seafood processing	615	12.55	3
Restaurant and food service managers	500	0.92	6
Labourers in food and beverage processing	480	1.51	1
Butchers and bakers	295	1.11	4
Aquaculture and marine harvest labourers	245	26.53	1
Food service supervisors	240	1.37	1
Bartenders	170	0.99	7

Table 16: PEI employment in food-related occupations, 2016 Census (cont.)

Occupational group:	Employment	LQ value (CAN=1.00)	Provincial Rank:
Supervisors, food and beverage processing	145	2.62	1
Biological technologists and technicians	140	3.26	1
Agricultural service contractors, farm supervisors and specialized livestock workers	110	2.51	2
Biologists and related scientists	85	0.94	6
Managers in aquaculture	80	14.91	1
Agricultural and fish products inspectors	75	4.03	1
Veterinarians	70	1.64	1
Agricultural representatives, consultants and specialists	65	2.20	3
Harvesting labourers	35	1.28	3

Source: Statistics Canada 2106 Census.

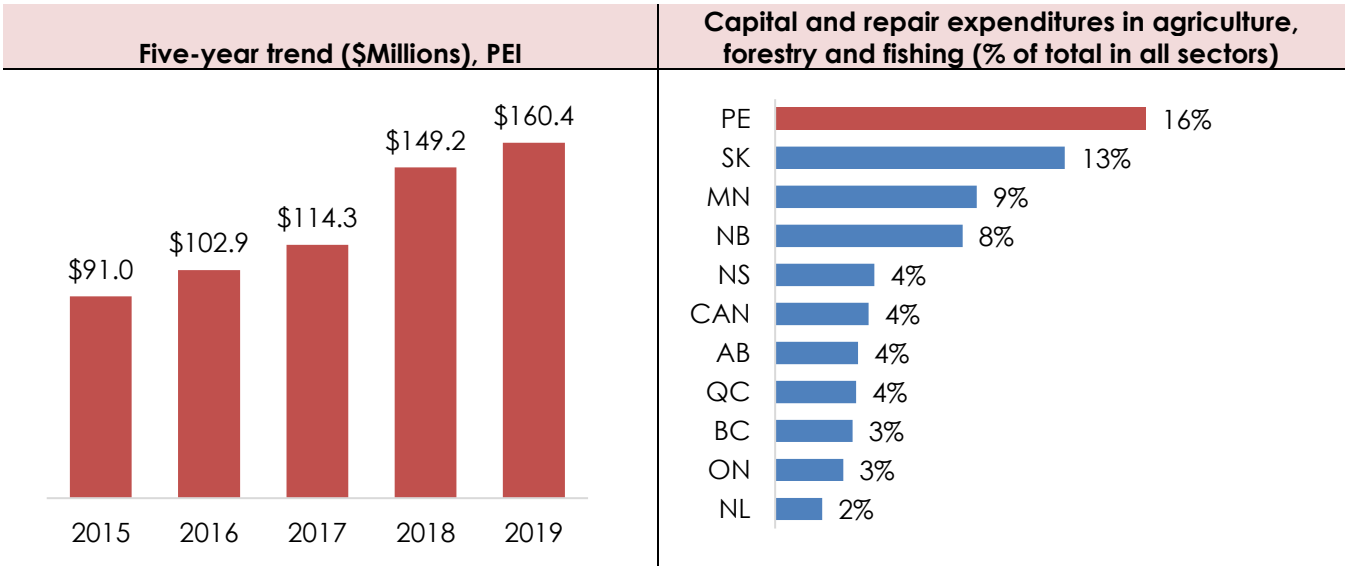
6. CANADA'S FOOD ISLAND: CAPITAL INVESTMENT

Firms are investing in the PEI food economy. A considerable amount of capital investment data from Statistics Canada is suppressed for confidentiality purposes, but at a broader level, total capital and repair expenditures in agriculture, forestry and fishing on the Island exceeded $160 million in 2019 and nearly $620 million over the five-year period, 2015-2019 (Figure 7).

This private sector investment in agriculture, forestry and fishing represented 16 percent of all capital and repair expenditures across all industries (public and private sector combined). As shown in the chart, the investment in agriculture, forestry and fishing as a share of total investment on PEI was higher than all other provinces by a wide margin.

Unfortunately, the Statistics Canada figures for investment in food and beverage manufacturing for the Island are suppressed.

Figure 7: Capital and repair expenditures in agriculture, forestry and fishing ($Millions), 2019



Source: Statistics Canada Table 34-10-0035-01.

7. CANADA'S FOOD ISLAND: AN EXPORTS POWERHOUSE

The main reason why the food economy is such a large part of the Island's GDP and employment is that it is not just serving Islanders. The food economy accounts for half of the value of the province's total goods and services exports. In 2017, the value of food-related exports from the Island was $1.57 billion or $10,400 per person. Exports are critical to the prosperity of Prince Edward Island. Because it is a small jurisdiction, much of the goods and services consumed on the Island are imported. In 2017, the province imported $4.4 billion worth of goods and services from other provinces and other countries. The food economy helps offset this loss of domestic economic activity.

Why 2017?
Because international goods exports are assessed as they cross the border, the value of *international* goods exports from the Island is available right up to early 2021. However, information related to *interprovincial* exports and *services-based* exports is only available for 2017 because of the time required for Statistics Canada to gather the needed information from firms and governments. As a result, most of the review of exports here covers the period through 2017. Section 7.6 provides a review of international food-related exports through 2020.

7.1 Defining food economy exports

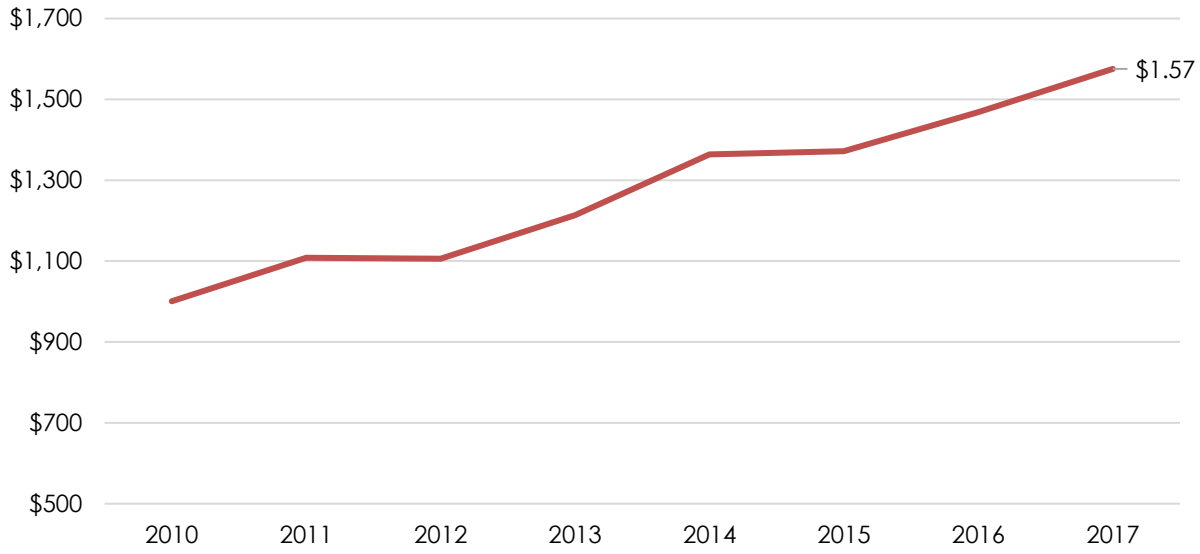
The following commodities and services are included in food economy exports:

- Grains and other crop products
- Live animals and other farm products
- Fish, crustaceans, shellfish and other fishery products
- Food and non-alcoholic beverages
- Alcoholic beverages and tobacco products
- Wholesale margins – food, beverages and tobacco products (on PEI-based wholesaler activity outside of the province)
- Retail margins - food and beverages (on PEI-based retail trade activity with customers outside the province)
- Prepared meals and alcoholic beverages for immediate consumption. Tourist/visitor spending on food when they visit the province. This is an 'export' because it is money from outside the province being spent on services in the province. The only difference is that instead of the goods being shipped to customers outside the province, the customers come to the province to consume the products and services.

7.2 Scope and growth of food-related exports

Figure 8 shows the change in the value of total food-related exports from the Island by year between 2010 and 2017. Over the seven-year period, the value of total interprovincial and international exports rose by 57% or more than $570 million.

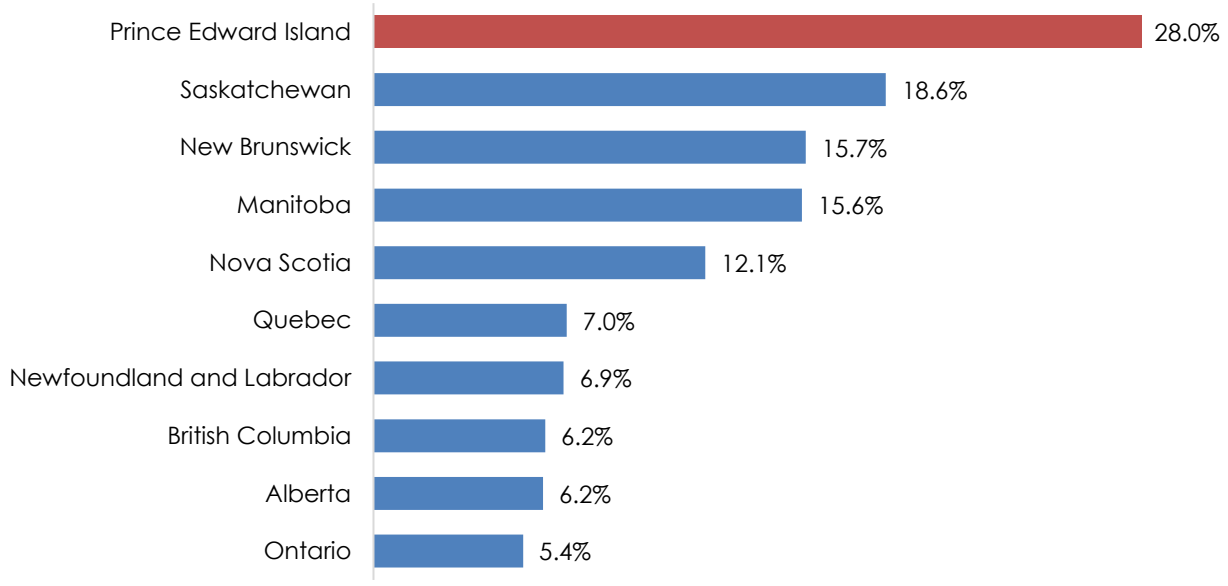
Figure 8: Value of all food-related exports by year ($Millions), PEI



Source: Statistics Canada Table 12-10-0088-01.

To put this into a provincial perspective, Figure 9 shows the value of exports adjusted for population size. Food-related exports from PEI in 2017 represented an amount equivalent to 28 percent of the province's total GDP. The next closest province was Saskatchewan where food-related exports represented an amount equivalent to less than 19 percent of total GDP.

Figure 9: Value of all food-related exports by province, relative to GDP (2017)

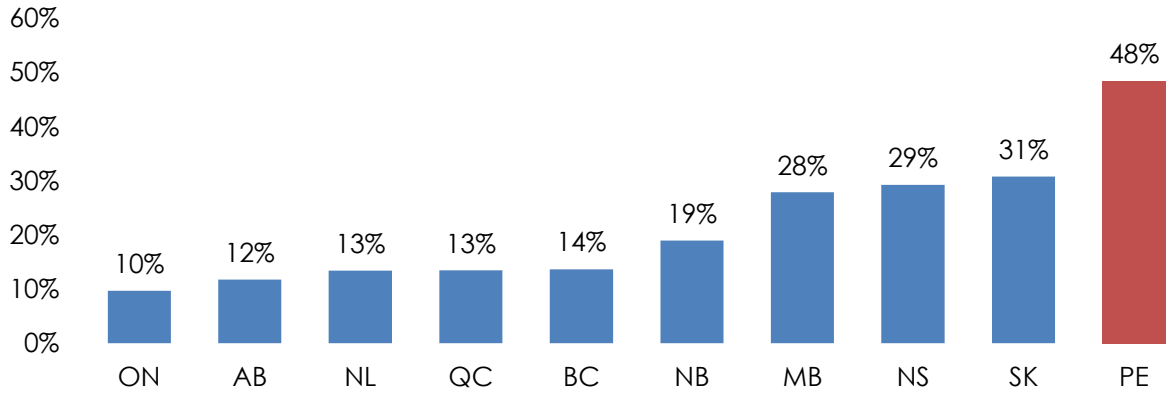


Source: Statistics Canada Table 12-10-0088-01.

7.3 Importance of food-related exports

As a driver of export revenue, the food economy on the Island is more important than in any other province by a wide margin. Figure 10 shows food economy exports as a share of the total provincial exports of goods and services. For the Island economy, food-related exports represented 48 percent of the total in 2017. This was the largest share by far among the 10 provinces.

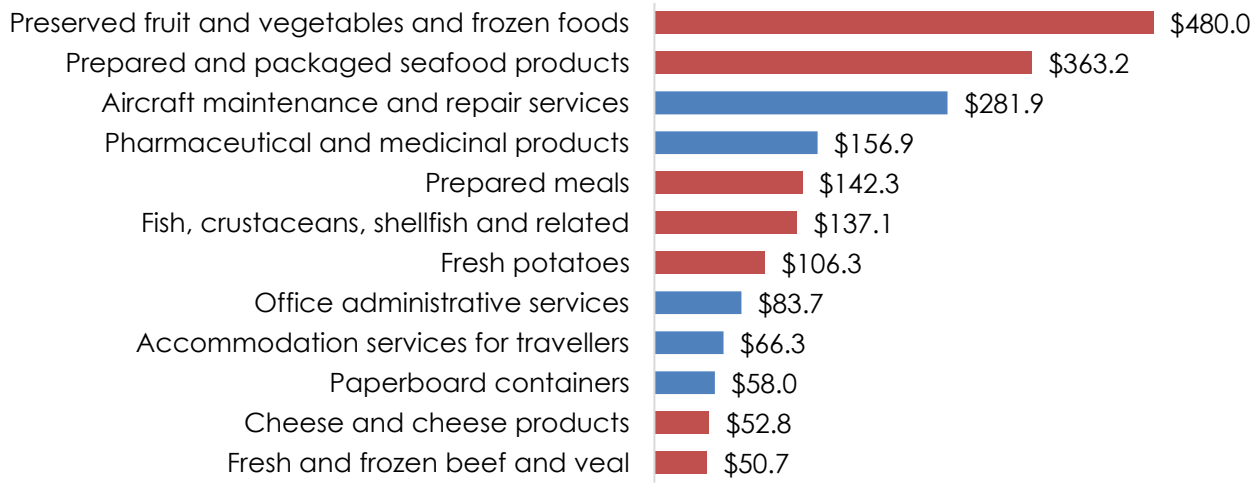
Figure 10: Food-related exports as a share of total exports, by province (2017)



Source: Statistics Canada Table 12-10-0088-01.

Compared to other Island export sectors, food-related exports dominate. Of the top 12 export commodities by value in 2017, seven were related to the food economy (Figure 11). The top two export sectors by value (preserved fruit and vegetables and frozen foods; prepared and packaged seafood products) generated more export revenue for the Island than aircraft maintenance and repair services, pharmaceutical and medicinal products, office administrative services, accommodation services for travellers and paperboard containers combined.

Figure 11: Top 12 interprovincial and international exports from PEI, by value ($Millions), 2017



Source: Statistics Canada Table 12-10-0101-01.

7.4 Food economy exports by commodity

Manufactured food, mostly seafood and potato products, accounts for the bulk of all food economy exports from the Island. In 2017, the food and non-alcoholic beverages category generated exports worth $1.02 billion, 65 percent of the total. The export of commodities such as fish, crops and live animals (without any value-added manufacturing) was worth over $300 million, and the tourism sector generated $153 million worth of exports for the province. Food and its impact on the tourism sector is discussed further in Section 8.

Table 17: Food-related exports by commodity group and market ($Millions), PEI (2017)

	Interprovincial exports	International exports	Total	% intl.
Fish, crustaceans, shellfish and other fishery products	$68.9	$68.2	$137.1	50%
Food and non-alcoholic beverages	$395.4	$622.7	$1,018.1	61%
Crops and grains	$72.7	$88.3	$161.0	55%
Live animals	$30.1	$0.1	$30.2	0%
Other farm products	$7.1	$7.0	$14.1	50%
Prepared meals and alcoholic beverages for immediate consumption	$116.0	$37.0	$153.0	24%
Wholesale and retail margins - food and beverage	$13.8	$38.7	$52.6	80%
Total food-related exports	$704.1	$862.0	$1,566.1	55%

Source: Statistics Canada Table 12-10-0088-01.

7.5 Where do PEI food exports go?

PEI food products and services are exported across Canada and around the world. The rest of Canada is an important market accounting for 50 percent of the value of fish exports (excluding processed fish), nearly 50 percent of frozen potato product exports, nearly all milk and cheese exports and all fresh and frozen beef exports. By contrast, nearly all of the processed seafood exports go to international markets along with 78 precent of the value of fresh potato exports.

PEI food products are exported to more than two dozen countries around the world, but the United States is the dominant export market accounting for 83 percent of the value of all international exports in 2019.

7.6 The PEI food economy: A significant trade surplus

Like other jurisdictions, Prince Edward Island imports a considerable amount of food products and related services each year. In 2017, the value of interprovincial and international imports was $663 million including $315 million in food and non-alcoholic beverages (e.g. fresh fruit, packaged goods, etc.), $95 million wholesale and retail margins on food products and $101 million in prepared meals and alcoholic beverages for immediate consumption. This last category represents the amount of money Islanders spend on prepared meals and alcoholic beverages when they visit other jurisdictions. This is considered an 'import' as it involves Islanders spending money on products and services outside the province.

Comparing import values to export values shows the food-related trade balance for the province. By any measure the figures are impressive. In 2017, the Island imported $663 million in food related goods and services but had exports worth $1.58 billion. This meant the Island had a $912 million food-related trade surplus in 2017. For every dollar of food-related imports, there was $2.38 worth of exports.

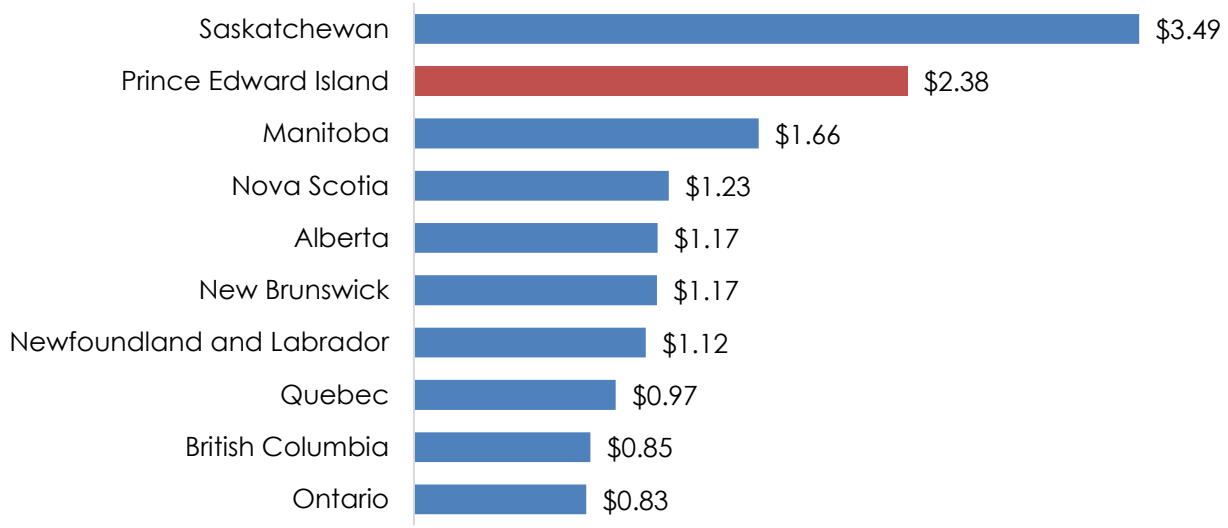
Table 18: Food-related trade balance ($Millions), PEI

	2010	2011	2012	2013	2014	2015	2016	2017
Food-related imports	$420	$439	$429	$549	$621	$657	$652	$663
Food-related exports	$1,001	$1,108	$1,106	$1,213	$1,364	$1,372	$1,469	$1,575
Food economy trade balance	+$581	+$669	+$677	+$664	+$744	+$714	+$817	+$912
Exports per $1.00 of imports	$2.38	$2.53	$2.58	$2.21	$2.20	$2.09	$2.25	$2.38

Source: Statistics Canada Table: 12-10-0088-01.

When compared to other provinces, the smallest province in Canada ranks second among the 10 provinces for its positive food-related trade balance. As shown in Figure 12, only Saskatchewan generates a higher ratio of food-related exports to imports.

Figure 12: Food-related trade balance by province, 2017
Value of interprovincial and international exports per $1.00 of imports



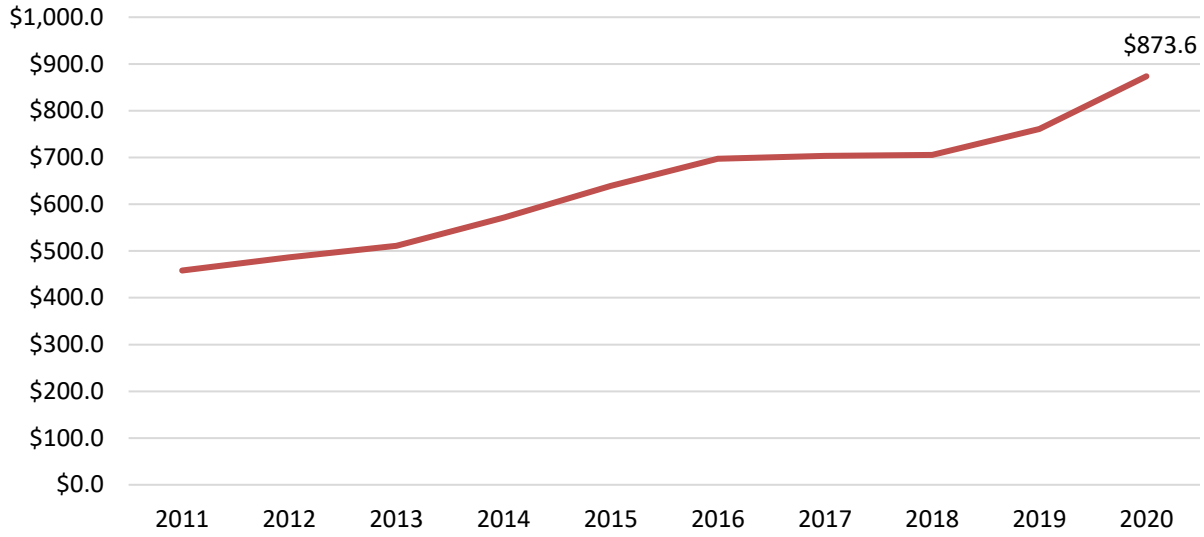
Source: Statistics Canada Table: 12-10-0088-01.

Why is it important to have a positive food-related trade balance? As a small province, Prince Edward Island is heavily dependent on imports of most manufactured goods, many food products and many services. For example, in 2017, the province imported nearly $200 million in cars and other vehicles, $90 million worth of electricity and nearly $75 million of electronics and computer products. The $900+ million trade surplus helps to offset the value of these imports and ensures the province has a strong economy.

7.7 International exports through 2020

The international exports data for the Island's fish, agriculture and value-added manufacturing sector shows the positive momentum in exports from 2010 to 2017 has continued through 2020, despite the pandemic. Overall international food-related exports (excluding services) rose to $873.6 million, up 24 percent between 2017 and 2020.

Figure 13: International fish, agriculture and food production exports by year ($millions), PEI



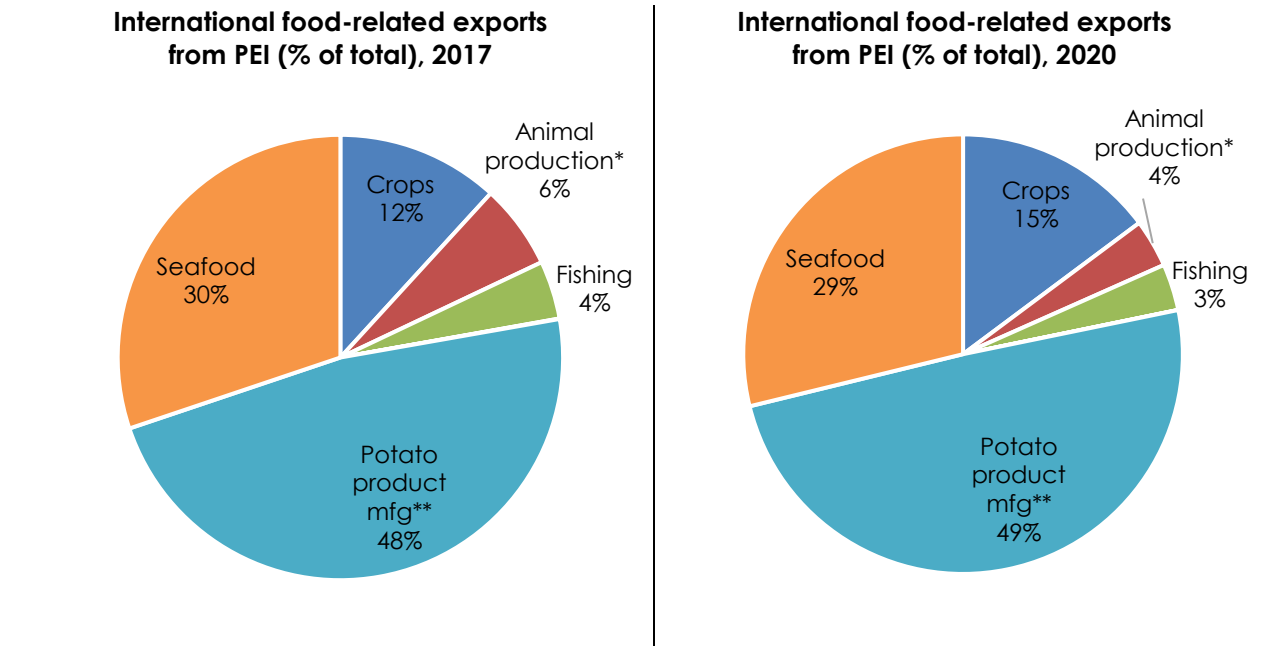
Source: Trade Data Online.

The value of international crop production exports rose 56 percent between 2017 and 2020, from $83 million to over $129 million. The top export sector by value, fruit and vegetable preserving and specialty food manufacturing (shown in the table as potato product manufacturing as that accounts for almost all the value of exports), benefitted from a 29 percent increase in the value of international exports. Seafood products and production (value-added fish products) witnessed an increase in the value of exports from $212 million in 2017 to $252 million in 2020 (a 19% increase). Overall, all fish, agriculture and value-added food production international exports increased by 24 percent or $171 million between 2017 and 2020.

As shown in Figure 14, in 2020, the value-added potato manufacturing exports (and related) accounted for nearly half the value of all international exports, whereas seafood exports accounted for 29 percent, followed by crops at 15 percent, animals/aquaculture at four percent and international fish exports at three percent.

Between 2017 and 2020, international crop exports have increased from 12 percent to 15 percent of the total.

Figure 14: International exports by top product group, % of total, PEI

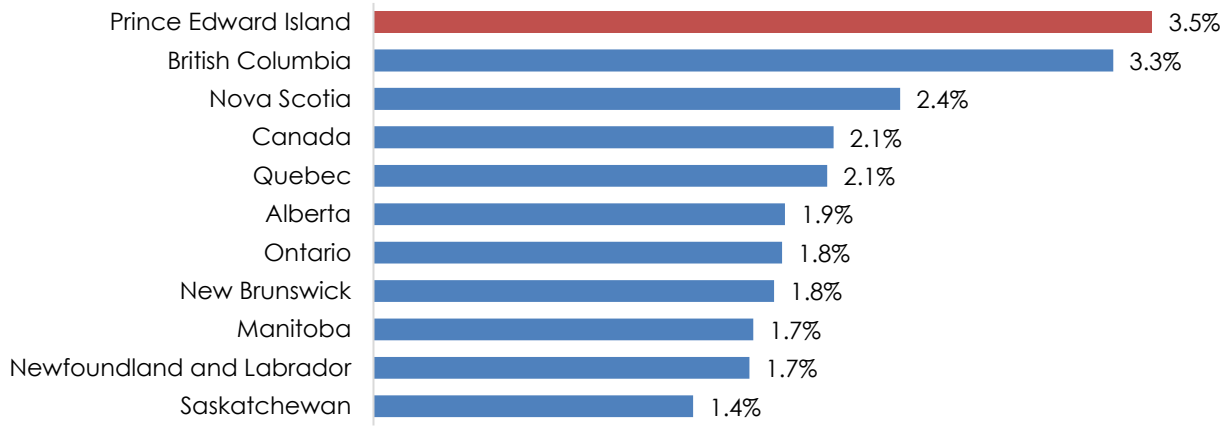


*Includes aquaculture.
**Other fruit and vegetable manufacturing included here.
Source: Trade Data Online.

8. CANADA'S FOOD ISLAND: ATTRACTING TOURISTS

As a share of the economy, no other province has a larger tourism sector than Prince Edward Island. According to Statistics Canada, the tourism sector supports over 2,200 jobs on the Island and $217 million in provincial gross domestic product (GDP). This represents 3.5 percent of the total economy. Relative to the size of the economy, the Island's tourism sector is nearly twice as large as in New Brunswick (Figure 15).

Figure 15: Tourism-related GDP by province, as a % of total provincial GDP (2017)

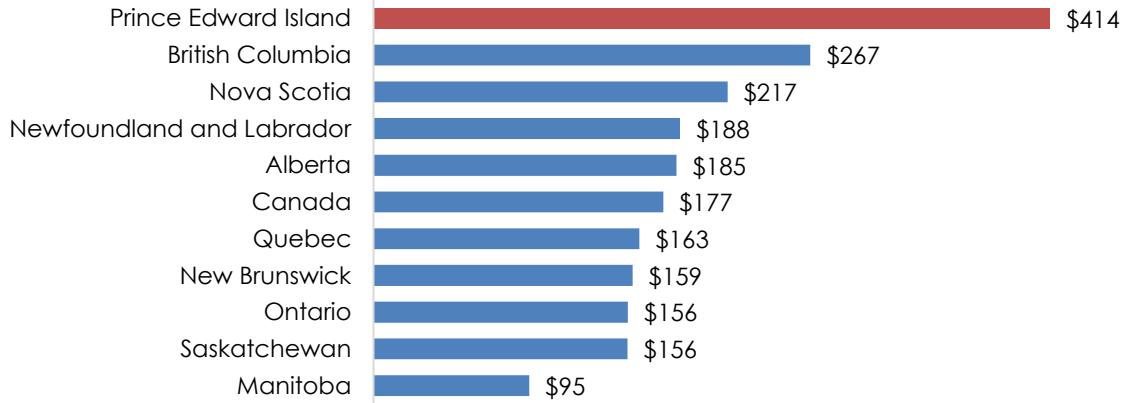


Source: Statistics Canada Table: 24-10-0042-01.

One of the main reasons for the strength of the tourism industry on the Island is the food and beverage sector. In 2017, food and beverage services accounted for over 30 percent of all tourism-related GDP. As a share of total provincial GDP, PEI generated more than double the amount from food and beverages as did its nearest competitor, British Columbia.

Figure 16 shows the tourism-related food and beverage GDP on a per capita basis (adjusted for population size). The Island generates 2.3 times as much food and beverage services GDP per capita compared to the country overall. The province generates more than four times as much compared to Manitoba.

Figure 16: Tourism-related food and beverage services GDP, per capita (2017)

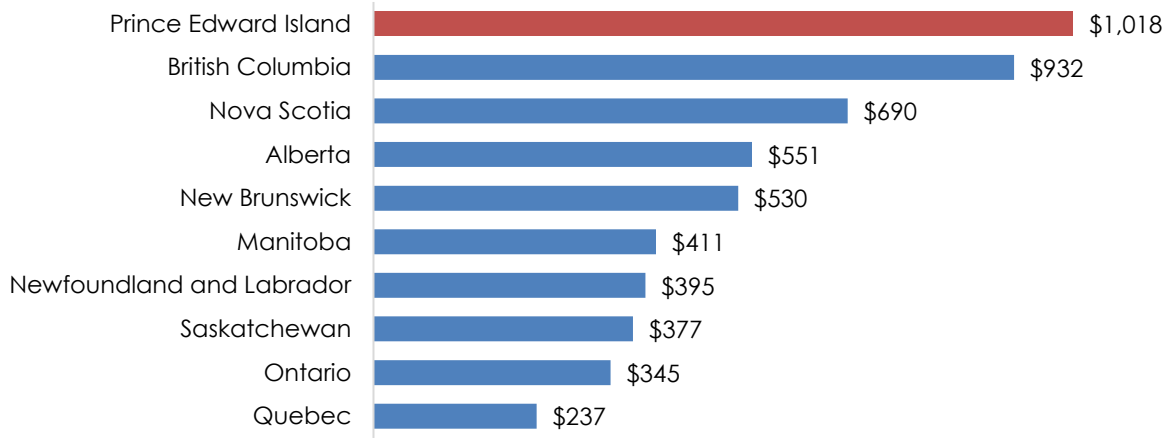


Source: Statistics Canada Table: 24-10-0042-01.

Another way to assess the importance of the food and beverage sector to the tourism economy is to consider the interprovincial and international export value. The two commodity groups are prepared meals and alcoholic beverages for immediate consumption. These two commodities generated $153 million worth of exports in 2017. This is the amount people from off-Island spent in the province on meals and alcoholic beverages for immediate consumption. That equates to over $1,000 worth of meals/drinks sold to tourists for every single person living on the Island in 2017.

As shown in Figure 17, no other province, except British Columbia, comes close to generating as much revenue from tourist spending on food and beverages. Compared to New Brunswick, as an example, the Island generates nearly twice as much revenue adjusted for population size.

Figure 17: Tourism-related food and beverage export revenue, per capita (2017)



Source: Statistics Canada Table: 24-10-0042-01.

One final basis for comparison is the food and beverage-related tourism trade balance. Islanders visiting other places in Canada and around the world spent an estimated $100.7 million on food and beverages outside the province in 2017. Because tourists in the province spent $153 million, the Island had a large food and beverage-related tourism trade surplus (over $52 million). Adjusted for size, only two other provinces had a larger food and beverage-related tourism trade surplus than did Prince Edward Island that year.

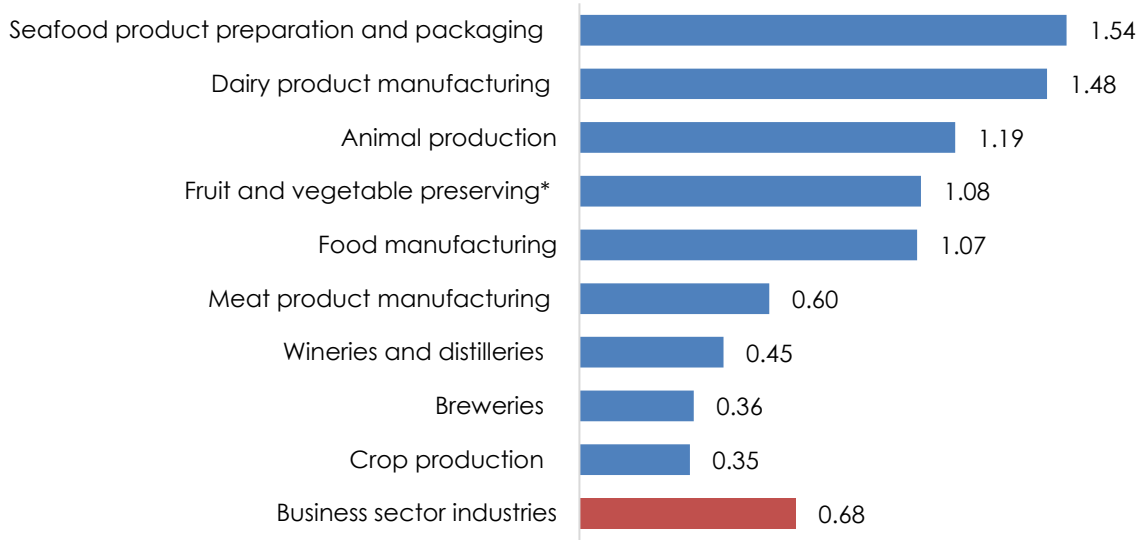
9. CANADA'S FOOD ISLAND: INNOVATION HUB

9.1 Labour productivity in the food economy

Labour productivity represents the amount of gross domestic product (GDP) per hour of labour worked. It is a measure of efficiency and important particularly for traded industries that compete with firms outside the province. It is difficult to compare disparate industries on labour productivity. Take the example of crop production. Prince Edward Island has a much lower labour productivity level compared to the rest of the country. As shown in Figure 18, labour productivity is 65 percent below the national level. Across the country, $107 worth of GDP is generated per hour worked compared to $37 per hour worked on PEI. However, the large industrial scale farming operations and the crops involved are substantially different in Saskatchewan than the farming operations and crops in Prince Edward Island.

However, for most export-focused sectors of the food economy, the Island economy has higher productivity than the country overall. For all business sectors, labour productivity on the Island is 32 percent below the Canadian level (Index = 0.68). By contrast, the seafood products sector is 54 percent more productive, and the potato products sector is eight percent more productive than the national level. Because there are no large-scale breweries or wineries on the Island, labour productivity is lower in this sector but is consistent with the craft brewery/winery sector in other provinces.

Figure 18: Labour productivity for selected food-related sectors on PEI (2019)
Canadian productivity = 1.00



**and specialty food manufacturing.*
Source: Statistics Canada Table 36-10-0480-01.

9.2 Organizations supporting food-related innovation

The Food Island Partnership is an industry-led organization tasked with growing the food industry through food company and food cluster development on Prince Edward Island. The organization has been leading the focus on food-related startups by providing acceleration and support programs. It is now developing a food manufacturing scale up facility where food-entrepreneurs will be able to incubate their ideas with limited upfront cost. After becoming viable they then expand out of the facility.

In its strategic plan for 2021-2024, the organization is focusing on strengthening the food economy ecosystem and support, raising awareness of "Canada's Food Island" and encouraging industry and government to be nimble in an everchanging world.

A number of other organizations are mandated to support the development of the food economy on Prince Edward Island including:

- The food-related startup incubator/accelerator.
- Canada's Smartest Kitchen – a multidisciplinary team delivering market-validated solutions to food companies of all sizes.
- Bio/Food/Tech – provides professional technical services to food and bioprocessing companies. The organization provides services from idea generation to pilot-scale to commercialization and marketing new products.
- UPEI - Atlantic Veterinary College – involved in a wide range of agriculture, fish and related research including aquatic animal health, veterinary epidemiology, biomedical research and infectious diseases. AVC has six different Centres of Research Expertise.

The private sector is also active in food-related research. A recent example is the $12.5 million Cavendish Farms R&D centre which includes:

- A $7.0 million new Potato Research Centre (2019/2020) – includes a main building with office space, conference room, laboratory, three high-tech greenhouses and storage rooms.
- $2.0 million invested in three additional high-tech greenhouses (2020/2021).
- $2.5 million invested in a new Potato Breeding Storage Facility (2020/2021).
- $1.0 million invested in Laboratory & Equipment.
- The facility will spend an estimated $2.4 million each year on plant breeding and research and have a full-time staff of seven and a seasonal workforce of eight.

10. CANADA'S FOOD ISLAND: TALENT PIPELINE

An important reason why the food economy has been able to grow in recent years has been access to a strong talent pipeline. This talent pipeline includes post-secondary educational institutions and a demonstrated ability to attract people from off Island to come and work in the food economy.

10.1 Post-secondary education

UPEI

The University of Prince Edward Island offers a number of courses that support the food economy on the Island including the Food and Nutrition program in the Faculty of Science.

The Harry W. MacLauchlan Entrepreneurship Program hosts the annual Panther Pitch where young entrepreneurs promote their startup ventures and look for support. Of the 25 teams competing in the 2021 Panther Pitch, seven were directly related to the food economy.

UPEI - Atlantic Veterinary College

The AVC is one of only five veterinary colleges in Canada and the only one in Atlantic Canada. The AVC is a key asset in the province's food economy by turning out graduates in related fields and supporting related research.

Holland College

Holland College is a top provider of talent for the food economy on the Island. The Culinary Institute of Canada is Canada's premiere culinary school. The college offers multiple courses related to the food economy such as:

- Culinary business
- Culinary essentials
- Baking fundamentals
- Cold cuisine, pasta, and pulses
- Stocks, soups and sauces
- Meat, poultry and seafood butchery
- Protein, vegetables and farinaceous cookery
- Culinary trends and international cuisine
- Advanced butchery and modern charcuterie
- Canadian and regional cuisine
- Catering operations and special events
- A la carte production and service
- Wine, beer, spirits and infusion
- Food, beverage and labour cost control
- Standard first aid and CPR/AED level C
- Workplace hazardous materials information systems
- Knife skills
- Culinary arts internship
- Nutrition I: foundations of nutrition
- Nutrition II: principles of nutrition in food preparation

In addition, the college is a partner in efforts to encourage food-related startups and research.

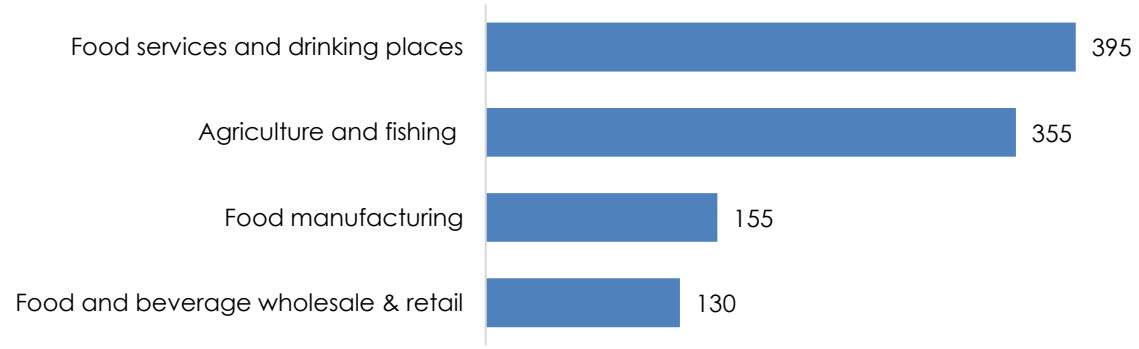
10.2 Immigration and the food economy

Over the past decade, Prince Edward Island has attracted thousands of immigrants to settle in the province. These newcomers have started new businesses, purchased existing firms and taken jobs in all sectors of the economy. Hundreds of international students enroll in the Island's post-secondary education system each year.

Immigrants are also playing a key role in the food economy on the Island. In addition to the dozens of immigrant entrepreneurs investing in the province's food economy, there were 1,035 immigrants and non-permanent residents working in the food economy at the time of the 2016 Census. Figure 19 shows the breakdown by sector.

Since 2016, hundreds more have moved to the Island to work in the food economy. In 2019 alone there were at least 220 permanent residents admitted to Prince Edward Island to work in food-related occupations including fish plant workers, cooks, restaurant managers and supervisors and agricultural workers. There are many more that come each year as temporary foreign workers in fish plants, agricultural labourers and other occupations. The workforce data from the 2021 Census that will be published in early 2022 should show a marked increase in the number of immigrants working in the food economy on Prince Edward Island.

Figure 19: Immigrants working in PEI's food economy*



**Includes non-permanent residents.*
Source: Statistics Canada 2016 Census.

CONCLUSION: CANADA'S FOOD ISLAND AND THE FUTURE

Food has been central to the development of the Island's economy and people for generations. The province's abundant fish stocks, agricultural land, entrepreneurial ingenuity combined with support from government and support organizations have led to the food economy becoming more dominant on the Island than any other province. No matter which measure considered (GDP, exports, employment), Prince Edward Island has a larger food economy than anywhere else in the country.

The future of the food economy is bright. The population across Canada and in the province's top export markets continues to grow and demand for food products continues to rise. The opportunity for food-related tourism is poised for rapid growth after concerns related to the Covid-19 pandemic recedes. The increasing demand for local food and value-added niche products such as the Atlantic Mustard Mill in Murray Harbour North will mean more opportunity for entrepreneurs.

The impact of Covid-19 on the food economy

For the most part, the food economy held up strongly during the Covid-19 pandemic. The notable exception was the tourism sector. Also, certain fish, crop and value-added products did better than others. Many private sector businesses were supported through federal Covid-19 funding programs. The Canadian Emergency Wage Subsidy (CEWS) program alone contributed $190 million directly to firms and organizations between March and November 2020. The program has been extended into 2021. It is likely that many firms in the food sector relied on government support to get through the pandemic. How many will emerge strong from the pandemic and how many will struggle?

Recommendations

The GDP from the food economy increased by 38 percent between 2009 and 2019. There is significant potential for the sector to continue that robust rate of growth into the future.

- **Role of government.** Government should embrace the potential of the food economy and target ways to support its growth and continue the positive momentum moving forward.
- **Attract more investment. It will be key to driving growth in the sector.** Attracting national and international investment is important, but so is the fostering of local investment. Growth capital will be needed to ensure that high growth potential food economy firms can expand markets beyond the borders of the province. As older business owners look to retire, a large share of those firms should remain in local hands, but that will also require investment.
- **Position the Island as the top location in Canada for food-related entrepreneurs.** Access to a full range of support services and capital will help achieve this vision.
- **Focus on environmental stewardship.** It will be important for the Island to continue to focus on environmental stewardship, particularly in a time of climate change.
- **Develop the food economy workforce.** There are more than 14,000 working directly in the food economy and thousands of them will be retiring in the near future. Ensuring a strong talent pipeline will be key to continued private sector investment in the Island's food economy.

APPENDIX A: THE ECONOMIC IMPACT MODEL AND SOURCES

Statistic:	Description:
Employment by industry	Statistics Canada Table: 36-10-0480-01.
Employment by occupation	Statistics Canada 2016 Census.
Direct, indirect and induced GDP, employment and income multipliers	Uses Statistics Canada Input-Output multiplier and impact estimates at the M industry level. Provincial Input-Output Multipliers, 2017. Catalogue no. 15F0046XDB. Industry Accounts Division. Statistics Canada. Sectors used in the analysis listed in Section 1 above.
Taxes induced by the Food Economy	HST paid: Based on the ratio of HST collected to total provincial personal income in 2019 (Source: provincial budget documents and Statistic Canada). Personal income taxes paid. Derived using several sources including Statistics Canada personal tax-related tables and its Survey of household spending (SHS) for 2019. Property taxes paid (from employment income). Derived using Statistics Canada CANSIM Table 203-0022 - Survey of household spending (SHS) for 2019. Indirect taxes Source: Statistics Canada Input-Output tables. These indirect taxes are levied on the business activity (not employment income) and include such tax areas as: business property taxes, fuel taxes, vehicle license fees, land transfer taxes, and any sales taxes arising out of the corporate activity.
Estimated consumer spending impacts	Derived using Statistics Canada Table 11-10-0222-01 - Survey of household spending (SHS) for 2019.
Food economy-related immigration trends	IRCC annual reporting on permanent resident admissions and temporary foreign workers.

PEI Food Economy: Summary economic impacts by sector

	Fishing	Crop production	Animal production	Aquaculture	Support activities for crop and animal production	Animal food manufacturing	Grain and oilseed milling	Fruit and vegetable preserving and specialty food manufacturing	Dairy product manufacturing	Meat product manufacturing	Seafood product preparation and packaging	Bakeries and tortilla manufacturing	Other food manufacturing	Soft drink and ice manufacturing	Breweries	Wineries and distilleries	Food and beverage stores	Food services and drinking places	Food, beverage and tobacco merchant wholesalers	Totals
Industry output	$329.9	$392.1	$203.5	$55.3	$23.0	$2.0	$2.5	$507.8	$164.4	$83.1	$427.1	$13.6	$19.0	$0.5	$16.3	$0.7	$144.5	$340.1	$56.4	$2,781.9
Direct impacts (provincial)																				
GDP	$210.2	$166.7	$52.9	$33.2	$19.8	$0.5	$0.5	$183.8	$58.0	$10.9	$76.9	$7.0	$7.3	$0.3	$6.0	$0.3	$93.6	$152.7	$44.0	$1,124.6
Labour income	$42.9	$87.4	$25.0	$18.7	$9.6	$0.3	$0.4	$39.6	$13.0	$9.0	$41.9	$5.7	$3.3	$0.2	$2.8	$0.2	$61.3	$111.5	$40.7	$513.4
Employment	760	2,295	980	485	220	10	15	640	255	185	760	200	65	10	90	10	2,045	4,345	730	14100
Indirect impacts (provincial)																				
GDP	$21.8	$80.0	$53.1	$8.9	$1.6	$0.5	$0.9	$37.9	$14.8	$5.0	$53.2	$0.9	$2.8	$0.0	$2.5	$0.1	$19.5	$45.6	$3.9	$353.2
Labour income	$12.2	$43.1	$28.9	$3.6	$0.9	$0.2	$0.5	$20.6	$7.6	$2.6	$18.1	$0.6	$1.4	$0.0	$1.5	$0.1	$9.7	$23.5	$2.2	$177.2
Employment	290	998	717	84	21	5	12	512	253	84	413	13	32	0	35	1	210	604	50	4336
Induced impacts (provincial)																				
GDP	$8.9	$50.2	$18.1	$8.2	$4.0	$0.2	$0.3	$39.1	$14.0	$6.2	$31.2	$2.3	$1.6	$0.1	$1.5	$0.1	$25.4	$50.7	$16.1	$278.0
Labour income	$2.6	$14.9	$5.3	$2.4	$1.2	$0.1	$0.1	$11.7	$4.1	$1.8	$9.4	$0.7	$0.5	$0.0	$0.4	$0.0	$7.5	$15.0	$4.7	$82.5
Employment	70	397	144	65	31	1	2	311	111	49	249	19	13	1	12	1	202	403	128	2208
Total impacts (provincial)																				
GDP	$240.8	$296.9	$124.1	$50.3	$25.3	$1.2	$1.8	$260.9	$86.9	$22.1	$161.2	$10.3	$11.7	$0.4	$10.0	$0.5	$138.5	$248.9	$64.1	$1,755.8
Labour income	$57.7	$145.5	$59.2	$24.8	$11.6	$0.6	$1.0	$71.9	$24.7	$13.4	$69.3	$6.9	$5.2	$0.2	$4.8	$0.2	$78.4	$150.0	$47.7	$773.0
Employment	1,121	3,690	1,841	634	272	16	30	1,463	619	318	1,422	232	110	11	137	12	2,457	5,352	907	20644
Household spending	$43.2	$108.9	$44.3	$18.5	$8.7	$0.4	$0.7	$53.8	$18.5	$10.0	$51.9	$5.2	$3.9	$0.2	$3.6	$0.2	$58.7	$112.3	$35.7	$578.6
Taxes induced (all government)	$30.9	$84.6	$32.9	$12.1	$5.2	$0.3	$0.5	$57.1	$17.8	$10.9	$47.4	$2.9	$2.9	$0.1	$2.6	$0.2	$34.2	$73.1	$20.4	$436.0
Taxes induced (PEI and local only)	$20.1	$55.0	$21.4	$7.9	$3.4	$0.2	$0.3	$37.1	$11.6	$7.1	$30.8	$1.9	$1.9	$0.1	$1.7	$0.1	$22.2	$47.5	$13.2	$283.4

APPENDIX B: COMPARISON WITH THE RECENT POTATO SECTOR ECONOMIC IMPACT REPORT

The Strategic Policy and Evaluation Division of the Prince Edward Island Department of Agriculture and Land recently published a report entitled "The Prince Edward Island Potato Sector: An Economic Impact Analysis".

There are some differences in the economic impact methodology in this report. First, the potato impact report is using figures from 2016 whereas this report is based on 2019 data. Second, the current report is using a more recent set of economic multipliers (2017) which can vary modestly from year to year. The government report includes national economic impacts whereas this report is based only on the economic impacts to the Island economy.

Indicator:	**PEI gov. report:**	**This report:**
Total GDP	$527 million	$558 million
Full-time equivalent (FTE) jobs	5,016	5,153
Total labour income	$240 million	$217 million
Provincial taxes	$48.9 million	$92 million

Despite these differences, both reports estimate a similar GDP and employment impact. The big differences are labour income and provincial tax impacts. While not stated, the PEI government report could be reporting farmer surplus income as labour income which would account for the difference in the income figures ($240 million versus $217 million in the current report). Technically, this type of income is not considered labour income (wages plus non-wage benefits).

The biggest difference is in the estimated provincial and municipal taxes generated by the industry. The PEI government report estimated total taxes raised by the direct, indirect and induced activity of the industry would be equivalent to nine percent of the provincial GDP contribution whereas the current report estimates taxes raised at 16 percent of provincial GDP contribution.

While the wages in certain occupations such as general farm labourer are considerably below average, on the production side the typical wage is above average. The Government of PEI generates 'own-source' revenue each year in an amount equivalent to 16 percent of GDP. This report is suggesting that adding up all the personal income taxes paid, the provincial portion of the HST paid, property taxes, taxes on profits, dividends paid and other taxes and levies (such as fuel taxes) arising from the potato industry, the total will be in the range of 16 percent of the industry's GDP contribution – similar to the industry average across the province.