

## 1. What is food security?

The [Food and Agriculture Organization's food security definition](#) is when “all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”

<https://www.worldvision.ca/stories/food/the-basics-of-food-security>

Food insecurity in America

According to the USDA's latest Household Food Insecurity in the United States report, **more than 35 million people in the United States experienced hunger in 2019**. Households with children are more likely to experience food insecurity.

Millions of children and families living in America face hunger and [food insecurity](#) every day.

- Due to the effects of the coronavirus pandemic, [more than 42 million people may experience food insecurity](#), including a potential 13 million children.
- The pandemic has [most impacted](#) families that were already facing hunger or one paycheck away from facing hunger.
- According to the USDA's latest *Household Food Insecurity in the United States* report, more than 35 million people in the United States experienced hunger in 2019.
- Households with children are more likely to experience food insecurity. Before the coronavirus pandemic, more than 10 million children live in food-insecure households.
- [Every community in the country](#) is home to families who face hunger including [rural](#) and suburban communities.
- Many households that experience food insecurity do not qualify for [federal nutrition programs](#) and visit their local food banks and other food programs for extra support.
- The rates of food insecurity are much higher for [African American](#), [Latino](#), and [Native American](#) families because of systemic racial injustice. To achieve a hunger-free America, we must address the root causes of hunger and structural and systemic inequities.

<https://www.feedingamerica.org/hunger-in-america>

Canada is currently the fifth-largest exporter and fifth-largest importer of agricultural goods in the world (Mussell et. al 2020). This integrated food system allows for a continuous supply of food to Canadians throughout the year and generates billions of dollars for the Canadian economy (AIC 2017). However, this means that how food systems adapt in other countries will impact our food supply in the months ahead.

<https://www.policyschool.ca/wp-content/uploads/2020/06/Food-Security-Holland.pdf>

[https://wits.worldbank.org/CountryProfile/en/Country/CAN/Year/LTST/TradeFlow/Import/Partner/by-country/Product/16-24\\_FoodProd](https://wits.worldbank.org/CountryProfile/en/Country/CAN/Year/LTST/TradeFlow/Import/Partner/by-country/Product/16-24_FoodProd)

# U.S. Agricultural Exports to Canada

- Canada is the 2nd largest market for U.S. agricultural exports.
- In 2016, Canada imported \$20.2 billion in agricultural products from the U.S. – a 16% market-share of U.S. total agricultural exports.
- Since 2000, U.S. agricultural exports to Canada increased from \$7.6 billion (2000) to \$20.2 billion (2016), representing a nearly 165% growth.
- Processed food is Canada's No. 1 agricultural import from the U.S., which accounts for 61% of the U.S. total ag exports to Canada.
- Canada is among the top export markets for U.S. major ag and food products: - No. 1 in processed food, wheat products, oats, vegetable oils, sugar and sweeteners, biofuels; - No. 2 in dairy, feed, barley, animal fats, poultry and turkey, live animals; - No. 3 in soybean meal, hides/skins; - No. 4 in pork; and - No. 5 in beef, DDG.

<https://www.mda.state.mn.us/sites/default/files/inline-files/profile-canada.pdf>

What are Canada's main food imports?



Among the top fresh fruit imports was **bananas**, followed by watermelons, apples, lemons, oranges, strawberries and pineapples. Mexico is a top supplier, especially for lemons and Costa Rica exported the most pineapple. Other Latin countries that Canada imports food from are: Guatemala, Chile, Ecuador and Colombia.

<https://bestfoodimporters.com/food-importers-and-food-import-trends-in-canada-2020/>

## Total Canadian Farm Animals Slaughtered in 2018

Type	2018
Cattle <sup>[38]</sup>	3,230,200

## Total Canadian Farm Animals Slaughtered in 2018

Type	2018
Calves <sup>[38]</sup>	234,300
Pigs <sup>[39]</sup>	21,561,500
Sheep and lambs <sup>[39]</sup>	704,000
Chickens <sup>[40]</sup>	775,196,000
Turkeys <sup>[40]</sup>	20,243,000

## Canadian Livestock, 1951 to 2016 (from Statistics Canada<sup>[41]</sup>)

Type	Unit of Measure	1951	2016
Cattle and calves	Number of cattle farms	452,480	75,307
	Number of animals	8,370,991	12,530,730
	Average number of animals per farm	17	166
Number of animals	4,915,987	14,091,503	
Average number of animals per farm	14	1,677	
Horses	Number of horse farms	451,647	39,164
	Number of animals	1,306,634	291,561
	Average number of animals per farm	3	7
Sheep and lambs	Number of sheep farms	62,566	9,390
	Number of animals	1,478,737	1,054,260
	Average number of animals per farm	24	112
Chickens	Number of chicken farms	427,317	23,910
	Number of animals	64,615,025	145,519,566
	Average number of animals per farm	151	6,086

[https://en.wikipedia.org/wiki/Agriculture\\_in\\_Canada](https://en.wikipedia.org/wiki/Agriculture_in_Canada)

**Industrial agriculture** is a form of modern [farming](#) that refers to the [industrialized](#) production of [crops](#) and [animals and animal products like eggs or milk](#). The methods of industrial agriculture include [innovation](#) in agricultural machinery and farming methods, [genetic technology](#), techniques for achieving [economies of scale](#) in production, the creation of new markets for consumption, the application of [patent](#) protection to genetic information, and [global trade](#). These methods are widespread in [developed nations](#) and increasingly prevalent worldwide. Most of the [meat](#), [dairy](#), [eggs](#), [fruits](#), and [vegetables](#) available in [supermarkets](#) are produced using these methods of industrial agriculture.

## Society

The major challenges and issues faced by society concerning industrial agriculture include:

Maximizing the benefits:

- Cheap and plentiful food
- Convenience for the consumer

- The contribution to our economy on many levels, from growers to harvesters to processors to sellers

while minimizing the downsides:

- Environmental and social costs
- Damage to fisheries
- Cleanup of surface and groundwater polluted with animal waste
- Increased health risks from pesticides
- Increased ozone pollution via methane byproducts of animals
- Global warming from heavy use of fossil fuels

Very roughly:

- 30,000 years ago [hunter-gatherer](#) behavior fed 6 million people
- 3,000 years ago [primitive agriculture](#) fed 60 million people
- 300 years ago [intensive agriculture](#) fed 600 million people
- Today **industrial agriculture** attempts to feed 6 billion people

Estimated world population at various dates, in **thousands**

Year	World	<a href="#">Africa</a>	<a href="#">Asia</a>	<a href="#">Europe</a>	<a href="#">Central &amp; South America</a>	<a href="#">North America*</a>	<a href="#">Oceania</a>	Notes
8000 <a href="#">BCE</a>	8 000							<a href="#">[7]</a>
1000 BCE	50 000							<a href="#">[7]</a>
500 BCE	100 000							<a href="#">[7]</a>
1 <a href="#">CE</a>	200,000 plus							<a href="#">[8]</a>
1000	310 000							
1750	791 000	106 000	502 000	163 000	16 000	2 000	2 000	
1800	978 000	107 000	635 000	203 000	24 000	7 000	2 000	
1850	1 262 000	111 000	809 000	276 000	38 000	26 000	2 000	
1900	1 650 000	133 000	947 000	408 000	74 000	82 000	6 000	
1950	2 518 629	221 214	1 398 488	547 403	167 097	171 616	12 812	
1955	2 755 823	246 746	1 541 947	575 184	190 797	186 884	14 265	
1960	2 981 659	277 398	1 674 336	601 401	209 303	204 152	15 888	
1965	3 334 874	313 744	1 899 424	634 026	250 452	219 570	17 657	
1970	3 692 492	357 283	2 143 118	655 855	284 856	231 937	19 443	
1975	4 068 109	408 160	2 397 512	675 542	321 906	243 425	21 564	
1980	4 434 682	469 618	2 632 335	692 431	361 401	256 068	22 828	
1985	4 830 979	541 814	2 887 552	706 009	401 469	269 456	24 678	
1990	5 263 593	622 443	3 167 807	721 582	441 525	283 549	26 687	
1995	5 674 380	707 462	3 430 052	727 405	481 099	299 438	28 924	
2000	6 070 581	795 671	3 679 737	727 986	520 229	315 915	31 043	
2005	6 453 628	887 964	3 917 508	724 722	558 281	332 156	32 998**	

## Environment

Main article: [Environmental science](#)

Industrial agriculture uses huge amounts of [water](#), [energy](#),<sup>[11]</sup> and [industrial chemicals](#); increasing [pollution](#) in the [arable land](#), [usable water](#) and [atmosphere](#). [Herbicides](#), [insecticides](#), [fertilizers](#), and [animal waste products](#) are accumulating in [ground](#) and [surface waters](#). "Many of the negative effects of industrial agriculture are remote from fields and farms. Nitrogen compounds from the Midwest, for example, travel down the Mississippi to degrade coastal fisheries in the Gulf of Mexico. But other adverse effects are showing up within agricultural production systems -- for example, the rapidly developing resistance among pests is rendering our arsenal of herbicides and insecticides increasingly ineffective."<sup>[12]</sup> Chemicals used in industrial agriculture, as well as the practice of monoculture, have also been implicated in [Colony Collapse Disorder](#) which has led to a collapse in bee populations. Agricultural production is highly dependent on [bee pollination](#) to pollinate many varieties of plants, fruits and vegetables.

[https://en.wikipedia.org/wiki/Industrial\\_agriculture](https://en.wikipedia.org/wiki/Industrial_agriculture)