

Agriculture's Connection to Health: A summary of the evidence relevant to British Columbia

Executive Summary

April 2016



Prepared for the Population and Public Health Program Provincial Health Services Authority (PHSA)

Lydia Drasic, Executive Director, British Columbia Centre for Disease Control (BCCDC) Operations and Chronic Disease Prevention, BCCDC and Provincial Health Services Authority

Authors:

Lisa J. Powell, PhD, Postdoctoral Researcher, Agriburban Research Centre, University of the Fraser Valley and University of British Columbia

Lenore Newman, PhD, Canada Research Chair in Food Security and the Environment, University of the Fraser Valley

Melanie Kurrein, MA, RD, Provincial Manager Food Security, Population and Public Health, Provincial Health Services Authority

Contributors:

Aleck Ostry, PhD, Canada Research Chair in the Social Determinants of Health, University of Victoria

Dawn Morrison, Secwepemc, Director, Working Group on Indigenous Food Sovereignty

PHSA contact:

This report can be found at: www.phsa.ca/populationhealth

For further information contact:
Provincial Health Services Authority
Population and Public Health Program
#700 - 1380 Burrard Street
Vancouver, B.C. V6Z 2H3
pph@phsa.ca

Suggested citation:

Provincial Health Services Authority. (2016). *Agriculture's Connection to Health: A summary of the evidence relevant to British Columbia*. Vancouver, B.C.: Provincial Health Services Authority, Population and Public Health Program.

Executive Summary

The relationship between agriculture and human health in British Columbia (BC) is complex and multifaceted. The availability of healthy food is an important determinant of health, but only one of many connections between agriculture and health. Agriculture influences food choices and healthy eating patterns, and impacts a variety of social, environmental and economic determinants of health (Appendix 1). In other words, agriculture's relationship to the environment and its role as an economic driver have implications for human health.

The purpose of this document is to present the evidence on associations between agriculture and health. The Provincial Health Services Authority (PHSA) Population and Public Health program commissioned the review because BC health authorities expressed a need for consolidated evidence on current issues related to BC agriculture and its connection to health. This review aims to assist health authorities in supporting local governments in evidence-based planning and decision-making.

With guidance from an advisory group of health authority staff and local government planning staff, researchers searched for peer-reviewed journal articles using identified keywords in a variety of databases. A manual search of reference lists found further relevant documents. All articles were assessed for applicability to the BC context, scientific rigour and political neutrality before inclusion in this evidence review.

Of all the land in British Columbia, only half has any kind of agricultural capability, and nearly 40% is suitable only for grazing. A very small proportion of land (0.2%) is capable of supporting the widest range of crops. Within this landscape, BC supports diverse agricultural production. All regions of the province have some agricultural activity, although regional practices and products vary due to factors such as climate and terrain.

Certain small areas, including the Fraser Valley, Okanagan and Southern Vancouver Island, are extremely productive and produce many varieties of crops. In fact, BC leads Canadian provinces in the production of several types of fruits and vegetables.

Agriculture directly impacts health by influencing food choices and healthy eating patterns.

The current evidence on locally produced and organic foods is mixed.

- Both locally produced and organic foods are often perceived as healthier by consumers but scientific evidence does not support these perceptions
- Greater availability of locally produced fruits and vegetables may increase their consumption

Availability of culturally appropriate and Indigenous foods plays an important role in supporting cultural identity and healthy food choices for British Columbia's diverse population.

- The availability of culturally appropriate/traditional fresh fruits and vegetables can be an important part of healthy eating for immigrant populations
- Indigenous foods, foodlands and waters contribute to healthy eating and physical health and are core parts of culture and identity for Indigenous populations

Incorporating agriculture into schools and other institutions may influence food choices and health.

- Farm-to-school initiatives have the potential to contribute to healthy eating
- There is widespread interest in connecting farms with institutions, but regulations may hinder these efforts
- Farm-to-school and farm-to-institution programs may provide economic benefits to local farmers

Agricultural self-sufficiency can support healthy eating and food security for British Columbians.

- Food self-sufficiency can support healthy eating and food security in BC
- Factors including the presence of suitable farmland, population distribution, global markets and climate change can affect food self-sufficiency in BC
- Agricultural policy in BC contributes to food availability by preserving farmland and regulating the supply of some agricultural products

Agriculture influences a broad range of factors that affect people's mental and physical health.

There is limited evidence on whether agriculture influences the social environment.

- Rural communities tend to have stronger social networks compared to urban centres but more research is needed on social networks in farming communities

Agriculture influences people's health by supporting the economic environment and generating jobs.

- Primary agriculture (production) constitutes 0.6% of BC's GDP, including a total of \$2.9 billion in farm cash receipts in 2014
- BC agrifood exports (excluding seafood) were valued at \$2 billion in 2014
- In 2014, the agriculture sector employed 22,937 people in BC

Agriculture shapes the physical environment in ways that impact overall health.

- Spending time in green environments, which could include agricultural areas, may contribute to positive mental and physical health outcomes
- Agriculture can negatively affect surface and ground water quality through nutrient, sediment, bacteria and pesticide contamination
- Agriculture can negatively affect air quality through contributions to particulate matter, odours and volatile compounds
- Pesticides are associated with both negative health impacts (e.g. impaired neurobehavioural function) and positive health impacts (e.g. prevention of disease outbreaks)
- Buffer areas between farmland and residential areas can help to mitigate complaints of noise, dust and odours, but do not completely eliminate the impacts associated with farm activities

Climate change will likely impact agriculture and, in turn, food security.

- BC will experience increases in temperatures and frequency of weather events, which have the potential to negatively impact crop yields in some regions of the province; however, other regions may experience increased food production capacity
- Flooding and salination may impact land quality and negatively affect crop growth; in turn, decreasing food production
- BC's main fruit- and vegetable-producing regions are some of the most vulnerable to the effects of climate change

Conclusion

The most direct link between agriculture and health is that agriculture provides the major source of food that supports British Columbians in meeting the recommendations outlined in *Eating Well with Canada's Food Guide*. However, the connection between agriculture and health is more complex than simply providing healthy food.

Although the current evidence does not support the perception that local or organic foods are healthier, the literature does show that healthfulness is only one aspect of people's decision making. Individuals' knowledge and perception of the safety of local food, and the perceived better taste, also influence their decisions to buy local food and consume fresh fruits and vegetables. Public health programs such as farm-to-school that connect farm-fresh foods to schools may also contribute to healthy eating both at school and at home.

The availability of culturally appropriate foods also influences individual decisions to eat healthier foods. BC's agricultural lands and surrounding areas were, and continue to be, important sites for accessing Indigenous foods, which contribute to health and wellbeing of Indigenous communities. Land not typically considered as food-producing, such as surrounding or unused farmland, may provide Indigenous peoples with greater access to their traditional foods.

Numerous factors affect food security in BC. Changes in climate, the value of the Canadian dollar, agricultural policy and population distribution all affect food availability and cost at the provincial, regional and individual level. Creating a resilient food system in BC can help to mitigate the effects of these factors on food security, and support access to, and availability of, healthy foods, particularly fruit and vegetables. For example, understanding BC's food self-sufficiency and the expected impact of climate change on food production, in BC and elsewhere, may help with agricultural planning.

In addition to influencing healthy eating and food security, BC agriculture affects various determinants of health such as the economy and the physical environment. For example, agriculture has a significant impact on BC's gross domestic product and provides thousands of employment opportunities. Farms can also provide greenspace, which may positively influence mental and physical health.

This evidence review highlights the need for continued research into the connections between agriculture and health. The strength of the evidence varies depending on the topic and while there is strong evidence for some topics, there is either a lack of, or inconclusive, evidence for others. Furthermore, topics such as the relationship between aquaculture, wild fishing and health, as well as Indigenous foodlands and food sovereignty, deserve greater investigation than what was possible within the scope of this review.

Appendix 1

