

food for thought

This is one of four summaries of the latest research on key issues affecting our access to safe, nutritious and affordable food.



A Sustainable Harvest: Weathering the Impact of Climate Change on BC's Food Supply

Climate change is a reality, already affecting our food supply. What happens both globally and locally affects our access to safe, nutritious and affordable food – necessary for our health and well-being. The impact of climate change, such as rising temperatures or increasing droughts is challenging food producers around the world, forcing us to consider changes to a system that we have taken for granted in the past.

Developing a more sustainable and secure food system will require choices and actions by the food industry, public policy makers and consumers alike. While there are no easy answers, this summary culled from the latest research offers some food for thought to put these issues in a new light.

"It is better to know some of the questions than all of the answers."

James Thurber

Where our Food Comes From

The portion of food we produce in BC is just over half – approximately 55 percent – of what we consume. While it is difficult to calculate precise figures, Industry Canada data for 2007 suggests that BC:

- produced about \$3 billion worth of the food we eat
- imported about \$2.1 billion worth of food
- exported about \$1.6 billion worth of food.

The remaining 45 percent of our food supply comes from other provinces and/or other countries. This includes:

- fruits and nuts (95 percent of consumption is imported)
- vegetables (75 percent is imported)
- fish (65 percent is imported).

The majority of our food imported from other countries comes primarily from the US, China, Mexico and Chile. In fact:

- the US supplies 70 percent of our vegetables and 60 percent of our fruit
- Mexico supplies 20 percent of our vegetables, and
- China, Mexico and Chile provide 20 percent of our imported fruit.

Since climate change is both a global and a local phenomenon, anything affecting the ability to produce food in any of these regions is a threat to our food supply and the overall sustainability of our food system.

How Climate Change Affects our Food Supply

Foreign Food Producers

California currently supplies the majority of our imported fruits and vegetables. It also supplies Americans with half of their fruits and vegetables and exports to many other parts of the world. Yet California's main agricultural region is faced with a number of challenges, including:

- forecasts for higher average temperatures and lower rainfall
- a 30 percent decrease in rainfall predicted for the Central Valley and Pacific Coast growing regions, and
- a 36 percent increase in California's population over the next 20 years.

These conditions exert increased pressure on California's limited water resources, and in time could seriously affect its agricultural producers. A decline in agricultural productivity can increase competition for fruits and vegetables; and when supplies dwindle, result in higher prices for these foods in our stores.

California is only one such example. More extreme weather events have been documented world-wide and are projected to increase in frequency and severity.

Local Food Producers

Current research shows that BC's climate has warmed in recent decades, and this trend is likely to continue. Most areas of the province are experiencing weather-related symptoms that include:

- wetter winters and drier summers, particularly for the coastal and southern part of the province
- a decline in glaciers, meaning earlier spring run-off
- invasive new plants and insects such as the Mountain Pine Beetle which has already destroyed sizeable tracts of BC forests, and
- changes in weather events with winds, fires, floods and dry spells occurring more often and with more intensity than in the past.

For example, from 1999 to 2002 climate-related natural disasters such as droughts and floods cost BC an average of \$10 million per year. From 2003 to 2005 the average yearly cost of these types of disasters increased more than eight fold – to \$86 million. While some of the increase is due to re-construction and insurance costs, most is a direct result of frequent and severe weather events.

More frequent and prolonged droughts during peak summer months are predicted for key agricultural regions like the Okanagan, a major fruit-producing area. Such a scenario





would elevate competition for limited water supplies and potentially reduce agricultural output in these regions. This is a critical issue for food security, especially when you consider that BC imports 95 percent of all the fruit and nuts we consume – a “must have” for a healthy diet.

The good news is that, if climate changes within a very narrow range, the predicted warmer, drier growing season could boost agricultural productivity in areas like the Peace Region in the north and the Fraser Valley in the south. Additional crops or new types of crops could be grown that would help reduce our dependence on imported foods. Continuing or expanding the protection of BC farmlands from development for other purposes – already an important role of BC’s Agricultural Land Commission – becomes vital to the future of our food security.

How our Food Supply Affects Climate Change

On the flip side, as climate change is affecting food producers in BC and around the world, so too does agricultural activity contribute to climate change. Agriculture produces large amounts of methane and nitrous oxide emissions, Greenhouse Gases (GHG) that are more harmful to the environment than carbon dioxide. Livestock farming generates more of these emissions than other types of farming. Agriculture accounts for:

- approximately 10 percent of the total global GHG emissions
- approximately 3.5 percent of BC’s total GHG emissions.

“Food miles” – the distance food must travel from the farm to the consumer also contributes to climate change. At present, the best reliable guide for the most sustainable choice is to “buy local”, or as local as possible. Whether you are an individual, a food service provider or an institutional

purchaser, buying local food can support BC farmers, help expand agricultural production in the province and reduce our dependence on foreign food sources.

What is important, however, is that we continue to look beyond the simple concept of food miles. If we truly want to reduce the impact our food system has on the climate, we need to consider the total GHG emissions – or “carbon footprint” – of the food products we buy. This includes looking at each phase of production, including the methods for processing, packaging, refrigeration, shipping and mode of transportation. Unless local food is produced, processed and distributed using sustainable practices, we run the risk of promoting local food that could prove to be more costly to the environment than imported food. For example:

- A field-grown tomato ripened under the sun hundreds of miles away could actually create fewer GHGs than a tomato grown in a local greenhouse if that greenhouse was heated with fossil fuels, rather than clean energy sources.
- A fresh tomato eaten raw may have a lower carbon footprint than an identical tomato processed for canned soup.
- A tomato purchased by an individual who walks to the store or farmers’ market may have a lower carbon footprint than a similar tomato bought by someone who drives to the same store or market.

The issues are complex and there are no easy answers. In the meantime, “buy local” still provides a good rule of thumb as new solutions are sought. Local food production, supported by public policy and thoughtful consumer food decisions, can lead to a more sustainable food system and greater food security.





Food for Thought

Climate change is a reality and a key threat to the food supply British Columbians depend upon and even take for granted. Sustainable food solutions are neither clear nor easy. It will take action from individuals, communities, policy makers and the food industry to find the right mix of solutions. We all have an opportunity to make a difference. Getting informed is the first step.



For More Information

This information sheet provides a summary of evidence drawn from current published studies and research papers. Please refer to Chapters 2-5 of the document *Food for Thought* for detailed information, available on the Provincial Health Services Authority website at www.phsa.ca/PopulationHealth (under Food Security), along with the following research summaries:

- *New Ideas for Healthy Communities: The Link between Food, Health and Prosperity*
- *Bridging the Gap: Improving the Food Environment for BC Students*
- *Planting Seeds for Solutions: Building Communities with Food in Mind.*

Here are some additional resources, including ideas for action.

- **Food Security Gateway:** This web portal provides links to projects, initiatives, organizations and resources to support action that can help build a food secure and healthy British Columbia. www.phabc.org/foodsecuritygateway
- **WhyHunger:** Food Security Learning Center – Climate Change and the Food System. www.whyhunger.org/programs/fslc/topics/climate-change-a-the-food-system/introduction.html
- **The BC Agriculture and Food Climate Action Initiative:** Provides information on climate change adaptation and greenhouse gas reduction for agriculture in BC. www.bcagclimateaction.ca

- **The BC Ministry of Agriculture and Lands Statistics:** Provides statistics on BC's agriculture industry. www.agf.gov.bc.ca/stats/index.htm
- **The Agricultural Land Commission (ALR):** For information about BC's Agriculture Land Reserve - land protected for priority use for agriculture. www.alc.gov.bc.ca/alr/alr_main.htm
- **United Nations Climate Change Science Compendium:** The United Nations Environment Program provides an extensive list of scientific papers on the subject of climate change. www.unep.org/compendium2009
- **What will global warming look like?:** An interesting article from the Los Angeles Times about how climate change is impacting Australia. www.latimes.com/news/nationworld/world/la-fg-climate-change-australia9-2009apr09,0,65585.story
- **Identifying our Climate Footprint:** An information sheet on how to support a climate friendly food system. www.iatp.org/iatp/publications
- **A Seat at the Table:** Resource guide for local governments to promote food secure communities. Showcases examples of food security projects in BC with ideas to stimulate action for creating more food secure communities. www.phsa.ca/PopulationHealth (under Food Security)