



Introduction

Climate change is big, scary and happening faster than predicted. A dominant narrative that is shaping the Canadian conversation on climate change is that fossil fuels are the major contributor to emissions and yet there is little we as individuals can do to untangle ourselves from the web of fossil fuel dependency. Our governments are not doing enough to enact the policies and programs needed to reduce our collective carbon footprint to avoid catastrophic impacts. The problem feels too big for individuals to make an impact. This leaves many Canadians feeling powerless and apathetic in the face of the grave threat that we are facing.

The narrative that climate change is beyond our power to shift is incorrect. Individuals and communities are already shifting energy use and changing land management in ways that can prevent climate change from reaching its worst potential. While the majority of the conversation in Canada has focused on the fossil fuel industry's impact—which is the largest source of GHG emissions in the country—other ways to create change have received much less attention. Agriculture and food systems are one of the keys to unlocking a lower carbon future and motivating action.

In the groundbreaking book, *Drawdown—The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*, editor Paul Hawken drew from a broad coalition of researchers, scientists, policy makers, business leaders and activists to develop a blueprint for how to reverse the buildup of atmospheric carbon within thirty years. 100 solutions are presented: 3 of the top 5 most impactful solutions are found in agriculture and food systems. Among the top 25 solutions, 8 more focus on agriculture and food systems solutions. These solutions are based on practices already taking place and that are well understood through peer-reviewed science.¹

In 2019, the EAT-Lancet Commission on Food, Planet, Health brought together more than 30 leading scientists from across the globe to reach a scientific consensus that defines a healthy and sustainable diet. Their conclusion was that a diet that was healthiest for humans was also the healthiest for the planet, and that changes to improve the environmental sustainability of food production would have a remarkably positive affect on health outcomes at the same time. Meeting both the UN Sustainable Development Goals (SDGs) and the Paris Agreement to address climate change, can be done simultaneously through a shift in food production and consumption. Their report provides a case for the universal adoption of a planetary health diet that would help avoid severe environmental degradation and prevent approximately 11 million human deaths annually.² Drawing inspiration from these landmark studies, FarmFolk CityFolk is assessing the most promising opportunities to build a case for climate action through agriculture and food systems in Canada and British Columbia.

Based on data from Canada's National Inventory on GHG Emissions³ and many research studies both globally and locally, there is evidence that food and agriculture must be incorporated into the suite of policies and programs that federal and provincial governments have implemented to reduce greenhouse gas emissions. Canada has managed to stabilize GHG emissions, but we are still far from the reductions necessary to avert the worst impacts of climate change.

Importantly, bringing food and agriculture into the climate conversation also opens up a much needed opportunity for individuals and communities to have more avenues to make substantive changes to reduce greenhouse gas emissions—helping to shift the climate change conversation from abstract to tangible, inadequate to meaningful.



Climate & FOOD

Key Facts

- BC and Canada are not on track to meet government commitments to GHG emission reductions, national emissions in 2020 are expected to be nearly 20% above the target⁴
- Canada is committed through our Nationally Determined Contribution to the Paris Agreement on climate change (signed by Prime Minister Justin Trudeau in 2016), to reduce annual emissions to 30% below 2005 levels by the year 2030
- Emissions from Canada's agriculture sector (measured in CO₂ equivalents) increased 24% from 1990 to 2016, but have been relatively flat since 2005⁵
- In 2016, the agriculture sector contributed 10% of Canada's total GHG emissions through agriculture production activities and on-farm fuel use⁶
- Based on research in the US, UK and EU the total contribution of GHG emissions from agriculture and the food system (including production, transport, refrigeration, foodservice and household energy use) is at least double the agriculture sector alone⁷
- The GHG footprint of Canadian food loss and waste is estimated at 56.5 Mt CO₂e, equivalent to 75% of total agriculture sector emissions⁸
- The cost of food waste in Canada, from farms to consumers, is an estimated \$31 billion annually; consumers account for 47% of wasted food⁹
- Canada's agriculture lands could be sequestering substantially more carbon from the atmosphere and sinking it into the soil where it boosts yields and improves water management¹⁰
- Research suggests an additional 17.8 Mt C per year can be sequestered through agriculture nationwide through 2030¹¹, the equivalent of taking over 4 million cars off the road

References:

¹ Hawken, P. (2017). *Drawdown: The most comprehensive plan ever proposed to reverse global warming*. New York, New York: Penguin Books.

² Willett W, Rockström J, Loken B, Springmann M, Lang T, Vermeulen S, et al. . Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *Lancet*. (2019) 393:447–92. 10.1016/S0140-6736(18)31788-4

³ Environment and Climate Change Canada. *National Inventory Report 1990-2016 - Greenhouse Gas Sources and Sinks in Canada*.

⁴ Office of the Auditor General of Canada (2018) *Perspectives on Climate Change Action in Canada, A Collaborative Report on Auditors General*. oag-bvg.gc.ca/internet/English/parl_otp_201803_e_42883.html

⁵ Environment and Climate Change Canada (2017) *National Inventory Report, 2011 - 2016* canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/inventory.html

⁶ *ibid*

⁷ Garnet, T. (2011) *Where are the best opportunities for reducing greenhouse gas emissions in the food system (including the food chain)?* *Food Policy* 36 (2011) S23–S32.

⁸ Value Chain Management International (2019) *The Avoidable Crisis of Food Waste: A Technical Report Prepared by VCMi for Second Harvest*.

⁹ Value Chain Management International (2014) *Food Waste in Canada - \$27 Billion Revisited* vcm-international.com/wp-content/uploads/2014/12/Food-Waste-in-Canada-27-Billion-Revisited-Dec-10-2014.pdf

¹⁰ Smukler, S. (2019) *Managing Canadian Croplands to Maximize Carbon Sequestration and Minimize Other Ecosystem Service Trade-Offs*. Prepared for the Canadian Agri-Food Policy Institute.

¹¹ Fan, J., B. G. McConkey, B. C. Liang, D. A. Angers, H. H. Janzen, R. Kröbel, D. D. Cerkowski, and W. N. Smith. (2019). Increasing crop yields and root input make Canadian farmland a large carbon sink. *Geoderma* 336:49–58.