

Unpredictable Elements: WHAT DOES CLIMATE CHANGE MEAN FOR FARMERS?

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Sarah Smith leading a farm tour about her experiences with climate change at an ACORN workshop.
PHOTO: ACORN

Climate change is top of mind for many farmers in Atlantic Canada as they experience less predictable growing seasons and stronger and more frequent weather events. Over the last year, the Atlantic Canadian Organic Regional Network (ACORN) has begun engaging farmers about climate change. Many are worried about how these changes already have and will continue to impact their farmland, infrastructure, and crop production.

Farmers are experiencing long periods of drought and heat waves, punctuated by heavier rains and flooding. Some are having to seriously think about water management for the first time, both for too much and too little water in the same growing season. This past year, a cold spring with a late frost, followed by an early fall frost and winter made it difficult to plan in advance for seeding and harvesting, and caused significant crop loss for some. Warmer annual temperatures and warmer winters also bring concern about new pests and diseases. Unpredictability is the central theme to the changes that farmers are experiencing.

Storms are also increasing in frequency and severity. Low pressure systems and strong winds cause unusually high tides, also known as storm surges, which can result in coastal flooding. Sea level rise compounds the risk of coastal flooding and farmers located near the coast are worried about what this means for their farmland and the coastal routes they rely on for transporting food to market.

Speaking on their experience with changing and sometimes extreme weather conditions, Claire May and Mark Trealout from Hayes Farm in Fredericton, New Brunswick, stress that these events have made farming more challenging, less predictable, more risk averse, and, ultimately, less profitable.

Learning about the impacts of climate change, adapting to changing and unpredictable growing conditions, and preparing for an increased level of risk is an immense burden for farmers. Guy Gautreau, from Ferme Jolivent in Memramcook, New Brunswick, has expressed wanting more opportunities to talk about these new challenges. "Climate change is actually something I think about on a regular basis, but striking up a conversation with someone about it is not always easy to do," Gautreau says.

TAKE ACTION

Learn about farmer experiences with climate change and continue to support local organic and ecological farmers throughout the challenges ahead. If you are interested in learning more about climate resilient farming, subscribe to ACORN's climate e-news, which includes experiences and perspectives from local farmers in each issue. acornorganic.org

To encourage these conversations, ACORN is facilitating opportunities for farmers to share their experiences with climate change and adaptation methods they are implementing. Through their Regenerative Farming Certificate program, Hayes Farm is teaching new farmers practices that help mitigate and adapt to climate change.

Improving the climate resilience of farms - the ability to withstand, respond, and adapt to changes - is a key piece of being ready for the challenges ahead. One fundamental part of resilience is soil health. Increasing soil organic matter can improve soil health and the farm's ability to withstand both wet and dry conditions. To improve soil structure, farms are experimenting with decreasing the amount they till their land. These practices are called no-till, low-till, or conservation tillage. Covering the soil with cover crops, planted specifically to protect the soil from erosion, add nutrients back to the soil, and improve soil structure, is another important part of building soil health. Increasing soil organic matter can also increase the amount of carbon stored in the soil, ultimately contributing to climate mitigation.

Sarah Smith runs Sweet Soil Organic Farm in the Tantramar region of New Brunswick. Smith deals with low-lying and wet heavy clay soils. Wet conditions have shortened her growing season as she cannot work in the fields when there is standing water or wet soil. To manage this, Smith is planning on increasing drainage on her farm, building high raised beds, and pathways to access the gardens in wet conditions. She is also focused on increasing soil organic matter by using cover crops or harvest waste to cover the soil. Gautreau has experienced similar challenges. He has built a pond and added drain tiles under their fields to improve soil drainage.

Strong storms and winds have damaged greenhouses, tunnels, and other infrastructure. To protect farms from increasingly strong winds, farmers are creating windbreaks by planting trees and shrubs along fields. They are also investigating how to better protect their infrastructure, particularly tunnels and greenhouses.

While storm and precipitation events are becoming more intense, farmers are also experiencing longer periods of drought in between rains. To prepare for dry periods, Hayes Farm and others are catching rainwater and increasing water storage to use for irrigating crops. Ponds also help to trap and store water during heavy rains, which can then be used for irrigation when needed. Improved soil health also helps to increase the water holding capacity, ultimately making farms more resilient to changes in precipitation.



Pond built to improve water management at Ferme Jolivent.
PHOTO: Ferme Jolivent



Waterlogged soil at Hayes Farm.
PHOTO: Hayes Farm

Organic farmers already think of their farms as agro-ecosystems and prioritize soil health, both of which are fundamental tenets of organic agriculture, and this approach aids them in being more resilient. "Small scale farmers are at an advantage in being more adaptable and better able to react to the effects of a changing climate," say May and Trealout. Nonetheless, farms will have to invest money and labour in changes in production, infrastructure, and technology for adaptation, and will need support in doing so - from government, farmer organizations, each other, and consumers.

Farmers have expressed that they see community awareness and support as a key piece of resilience. Continued commitment to purchasing from local farms, despite possible changes in produce availability, will give farms the financial stability necessary to weather these new challenges. Purchasing from local farms reduces the distance travelled and amount of greenhouse gases emitted for food to get to our plates. Supporting farmers who use organic practices also means supporting farms that are prioritizing the long term health of farmland and soils. Essentially, buying from local and organic farms helps both mitigate and adapt to climate change.

Brittany Maguire is the Environmental Projects Coordinator for the Atlantic Canadian Organic Regional Network (ACORN) and has been consulting farmers on climate change and building a program in response to their identified needs.