



Ontario Federation of Agriculture

Ontario AgriCentre

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Senior Policy Analyst
Ministry of the Environment and Climate Change
Climate Change and Environmental Policy Division
Air Policy and Climate Change Branch
77 Wellesley Street West, Floor 10
Toronto, ON
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Dear Ms. Hering,

RE: Response to Ontario's Climate Change Discussion Paper 2015

The Ontario Federation of Agriculture (OFA) is pleased to provide our comments to the Ministry of Environment and Climate Change's recent discussion paper. We commend the Government of Ontario for its leadership in bringing forward this consultation on the important issue of Climate Change.

OFA is the largest general farm organization in Ontario, representing over 37,000 farm families across the province. As a dynamic farmer-led organization based in Guelph, the OFA works to represent and champion the interests of Ontario farmers through government relations, farm policy recommendations, lobby efforts, community representation, media relations and more. The OFA is the leading advocate for Ontario's farmers and is Ontario's voice of the farmer.

Climate and weather touches every aspect of our industry. Farmers in Ontario work with the natural environment to produce over 200 agricultural products across a diverse geography. And we have adapted to shifts and changes in that environment over time through technology, genetics, etc. However, the recent extreme weather events across Ontario and the world, including new drought and flood cycles make us take notice of how our climate is changing and the pace of change.

The OFA Board of Directors has recently adopted a position statement that acknowledges our changing climate and the implications for our sector:

The Ontario Federation of Agriculture (OFA) acknowledges that climate change is happening here and now as a result of a rise in global temperatures, and is evidenced by more frequent extreme weather events and patterns.

Ontario farmers must take action to address the causes and impacts of climate change through mitigation and adaptation.

Mitigation is the reduction of Greenhouse Gas (GHG) emissions. Mitigation can be achieved by the direct reduction of Greenhouse Gases or by increasing the content of carbon sinks.

Adaptation is preparation for future climate change impacts. Farmers need tools to apply on their own farm operations to reduce the effect of rising global temperature and extreme weather events. This includes best management practices (BMPs) that can address the high degree of variability and unpredictability associated with climate change.

The OFA believes that policies, programs and research initiatives must be developed with government and society to reduce the causes (mitigation) and to enable farmers to cope with the effects (adaptation) of climate change.

We agree with Minister Murray that the time is now to act, and there is certainly an urgency to respond to Climate Change. However, we must take practical actions that do not jeopardize a recovering economy. “Taking strong action” that is reactionary and does not take into account economic and social considerations could be as damaging as ignoring the environmental ones. A balanced approach is needed.

Agriculture in Ontario consists of a large number of small or medium sized domestically owned businesses growing and managing highly perishable products. Crops and livestock are subject to the vagaries of weather and soil conditions regardless of field or indoor production. Agriculture is impacted dramatically by the weather of each season of our temperate climate.

Agricultural production is a very mature industry in Ontario that often exists in a volatile, low-margin economy. Our farms survive by a family contribution or orientation rarely seen in other sectors. The large majority of Ontario farm products compete in a global market where developing countries are not bound by our societal or legislated standards.

Around the world, Climate Change has the potential to affect agricultural production in a number of ways, through fluctuations in average temperatures, regional rainfall amounts, climate extremes (e.g. heat waves), changes in varieties of pests and diseases, changes in atmospheric carbon dioxide and ground-level ozone concentrations, and changes in coastal areas.

OFA has heard from our members that they are concerned or very concerned about the potential effects of Climate Change on the agricultural sector. In a recent survey conducted by the OFA, our members are concerned not only about a potential increase in frequency of extreme weather events, but the shifts in weather patterns that can cause inconsistent growing seasons leading to changes in crop yields, quality, or ability to harvest. Water management is always top of mind for our members as well: too little (drought) and the crop could fail; too much and the fields may be inaccessible for planting or harvest or simply drown the crop.

Our farmers are already taking action to adapt to the potential impacts of Climate Change. Over two thirds of our members have told us that they have implemented or have considered implementing changes to their operations that reduce the effects of extreme weather events. Most of these changes are in the form of drainage improvements, different cropping practices, or increased coverage under crop insurance programs.

Climate Change Discussion Questions

1. Traditional Knowledge

The OFA recognizes and respects the value of traditional knowledge from Canada's First Nations and Métis communities. As the single largest group of private land managers in the province, Ontario's farmers have knowledge of the land that can also be valuable in developing a Climate Change strategy or action plan.

Ontario farmers know sustainability. There are thousands of Century Farms in Ontario with the same family living on and actively farming a piece of land for over 100 consecutive years. The soil has been conditioned and improved over time, sustaining over 100 years of crop so far. Farmers bring a deep understanding of the land to the Climate Change discussion and hold many of the keys to our collective response.

We strongly recommend that the Ontario Government consult often with Ontario's farmers to ensure that their knowledge is heard and understood, and to increase participation as part of the solution to Climate Change.

Through the Agriculture and Agri-food Open for Business Forum, we have had the opportunity to identify immediate and impending regulatory roadblocks to Ontario's farm business operations. This Forum provides an opportunity to meet with government on a regular basis to help identify issues before they become problems. We recommend that this model of reciprocal consultation between industry and government is one to be emulated moving forward to address Climate Change.

2. Actions in Key Sectors

Ontario's farmers are managers of biological processes, producing food, fibre and fuel for the world. They are managers of the carbon and nitrogen cycles and stewards of the air, water, and soil.

According to the Ministry's *Climate Change Update 2014*, between 1990 and 2012 the agricultural contribution to Ontario's Greenhouse Gas emissions have been reduced by 6.5%. During this same time period, Ontario's agricultural production has more than doubled¹, while the amount of land used as farms has decreased roughly 6%², while the population of Ontario has increased by almost 3 million people³.

This 6.5% reduction in Greenhouse Gas emissions does not take into account the removal of carbon from the atmosphere through soil sequestration or the displacement of fossil fuels through the development and use of bio-fuels and products. Clearly, when it comes to reducing emissions and our impact on the land, water, and atmosphere the agricultural and agri-food sector in Ontario is doing more with less and is a good news story. But the story doesn't end there; we have a great potential to continue to be part of the solution to global Climate Change.

¹ Statistics Canada: Ontario's Farm Cash Receipts for 1990 – \$5.69 billion; for 2012 – \$12.05 billion.

² Statistics Canada: Ontario's Total Area of Farms for 1991 – 13.5 million acres; for 2011 – 12.7 million acres. A decrease of almost 6%.

³ Statistics Canada: Ontario's Population for 1991 – 10.4 million people; for 2011 – 13.3 million people.

Much of the increase in agricultural production has come from new innovations in seed and input technologies, but it is also driven by farmers' adoption of Beneficial Management Practices (BMPs) that help reduce inputs while boosting productivity. Agricultural BMPs offer producers a practical, affordable approach to conserving Ontario's soil and water resources without sacrificing farm productivity. In addressing a particular environmental concern, BMPs are designed to be flexible and adaptable to the wide range of farming operations. Encouraging on-farm BMPs provides an ideal opportunity to harmonize agricultural productivity and business objectives with environmental sustainability.

The adoption of on-farm BMPs is facilitated by cost-share programs funded by the federal and provincial governments. Examples include on-farm BMPs that address negative impacts of moisture deficiencies, and extreme precipitation events. The former involves the construction of off-line ponds for capturing spring runoff and precipitation to ensure irrigation water is available during droughts. With respect to the management of extreme precipitation events erosion control structures that are properly designed and located may be useful.

Farmers are innovators. The nature of markets and competition drives farmers towards innovation and efficiencies that help to reduce energy, fuel and other input costs on their operations. Many of the BMPs developed and adopted by farmers create on-farm efficiencies that have the added benefit of reducing Greenhouse Gas emissions from agricultural production. Generally, these include:

- Water and irrigation management,
- Conservation tillage practices such as no-till or minimum-till,
- Nutrient and manure management,
- Emission reduction in livestock production systems, and
- On-farm energy conservation and generation.

Many more BMPs exist that are specific to the individual industries and commodities within the agricultural and agri-food sector, each serving to help bring down the overall cost of production while reducing Greenhouse Gas emissions and environmental impact.

For example, farm businesses in Ontario have an excellent track record for seeking out and implementing energy efficiencies on the farm. Farm business customers continue to have the highest level of uptake of Hydro One conservation programs of all business customers. While farms are a small percentage of total business customers for electrical power, they now represent 35% of for business conservation program users; well over tenfold above their proportional representation in the business customer group.

Moving Forward

While the agriculture and agri-food sector has already taken great efforts to create efficiencies and reduce environmental impacts, there remains great untapped potential. We have a demonstrated capacity to reduce and sequester greenhouse gases while maintaining Ontario's diverse and robust food supply. And we can do more.

To encourage industry to further increase rates of innovation, government needs to invest in efficiencies, research, and knowledge translation and technology transfer. Towards greater greenhouse gas reductions from agriculture, we suggest:

- Research into new technological innovations that reduce or eliminate emissions, while investigating the adaptability of existing, underutilized technologies,
- Continued improvement to agricultural BMPs that couple reduced costs and efficiency with emission reduction and elimination,
- Expanding research and development of renewable biofuels and incentivize their use by industry,
- Supporting research, development, and commercialization in Ontario's bio-economy that seeks to replace fossil-fuel based energy and energy with those derived from renewable plant sources,
- Building the capacity of government institutions and non-governmental organizations to respond to new innovations and streamline regulatory approvals processes for adoption,
- Increasing efforts to facilitate knowledge transfer and exchange, particularly among farmers and rural residents,
- Promoting educational opportunities,
- Strengthening data collection and dissemination of information among researchers and users, and
- Developing risk assessment and audits tools to assist farmers in evaluating the potential Climate Change impact on their operations.

Ontario farms provide ecological goods and services (EG&S) that benefit the public. Where an activity on a farm serves to potentially reduce or remove atmospheric Greenhouse Gases and it is not the result of a cost saving efficiency, programs that incentivize these activities should be created. Payments for EG&S delivery will serve to compensate a farm operation for actions taken. EG&S payments can be generated from either private or public funds. For example, a farmer who is able to provide offsets under a cap and trade program will ultimately be paid by a large final emitter having a regulatory requirement to reduce Greenhouse Gas emissions. Cost-share programs funded by government are an example of making public funds available to farmers adopting BMPs that reduce Greenhouse Gas emissions, and therefore can be characterized as EG&S payments.

Impact on our food system

We know that more extreme weather has significant potential to negatively impact Ontario's food system. In fact, those sectors within agriculture that have the capacity to do so have already taken some action to protect themselves from the impacts of higher temperatures or extreme weather events. With proper planning and effective support programs, all of Ontario can feel secure that efforts are being taken to build the resiliency of farm production.

Ontario's Agriculture and agri-food system must hold a position of primary importance in the Province's climate strategy. Any policy directions or decisions must consider potential impacts to farm businesses and agricultural production. We stress the importance of on-going and meaningful consultation between the Ontario Government and the agricultural industry to cooperatively achieve agreed upon environmental goals.

Investment in Climate Change adaptation for agriculture

There remains a great deal of variability and uncertainty around the impacts of global Climate Change – the agricultural sector has the potential to be both a beneficiary and a casualty. If Agriculture and Agri-food Canada's climate model predictions are correct, with an increase in temperature we can generally expect better growing conditions, a northward expansion of farmland, an increase in the effective growing degree days, and a longer growing season for much of Ontario. However, with the increase in temperature, we may also experience new plant and animal diseases and pest, increased transpiration, changes to water management, less reliable weather forecasting and increased potential for drought and moisture stress.

The overall impact of Climate Change to Ontario's agricultural sector depends largely on the quality and scale of the adaptation measures taken. An Ontario Climate Change Strategy must include an understanding of the adaptation challenges for the agriculture and agri-food sector, and provide a means to support continued research for short and long-term adaptation solutions. This includes, but is not limited to, research into increasing the impact of existing beneficial management practices, and discovering new ones; risk assessment tools to understand the costs and benefits of various adaptation strategies; creating dynamic and responsive crop insurance programs; and investing in scientific research for new drought and pest resistant crop varieties.

Including agricultural adaptation in Ontario's Climate Change Strategy will help to ensure the conditions for competitive and sustainable domestic production will thrive while working towards emission reduction targets.

It's important to recognize climate impacts agriculture more than any other industry and we are motivated to work with government and other industries to identify common problems and seek out innovative and effective solutions. While the potential impacts of rising temperatures and extreme weather events on field production are clear, we must also consider the rest of the food value chain. Government and the agri-food sector have a responsibility to work together to ensure our food supply is resilient to the production impacts of Climate Change and prepared to adapt to changes in global markets.

Rural infrastructure and transportation are vital to maintaining our food system. Efficient transportation infrastructure is the key to productive supply chains. The entirety of our agri-food value chain depends on the successful operation of our transportation system. From the flow of inputs to producers, to the delivery of products to processors and ultimately the consumer, we rely on an effective and efficient water, road and rail transportation system. Our energy and water infrastructure will face a number of future challenges from increased demand from a growing population, and from damage caused by extreme weather events.

Building on the Ontario Government's commitment to supporting local food systems, Climate Change mitigation activities must include collective efforts towards reducing Greenhouse Gas emissions from food waste and food transportation. The Value Chain Management Centre estimates "\$27 billion in Canadian food annually finds its way to landfill and composting, creating unnecessarily high levels of carbon and methane"⁴. More efficient movement and marketing of the food products would significantly benefit our economy and reduce environmental impacts.

⁴ Martin Gooch, Abdel Felfel, Nicole Marenick (2010) Food Waste in Canada: Opportunities to increase the competitiveness of Canada's agri-food sector, while simultaneously improving the environment. Value Chain Management Centre. <http://vcm-international.com/wp-content/uploads/2013/04/Food-Waste-in-Canada-112410.pdf>

Furthermore, facilitating regionalized food hubs to more efficiently distribute local and regional agricultural products will help shortening the distance between producers and consumers. Expanding and scaling-up the food hub concept will make it possible for Ontario farmers to access new market opportunities by connecting them with regional wholesale, commercial, and institutional buyers. By keeping more of the retail food dollar circulating in the local economy, food hubs stimulate regional economic development, create jobs, and encourages a lower-carbon, more efficient food system.

In October of 2013, Premier Wynne issued a challenge to the agriculture and agri-food sector to double its annual growth rate and create 120,000 jobs by the year 2020. This challenge was picked up by our farmers and processors and we are working towards reaching this end. In assessing our options to mitigate Climate Change, we must adopt strategies and policies that do not negatively impact agricultural competitiveness or stifle future growth.

3. Communities & Built Form

Urban expansion to accommodate population growth is taking farmland out of production at an alarming rate. Based on the 2006 and 2011 Census data, the annual loss of farmland over that period was roughly 125,000 acres/year. We stress the need for urban intensification, hard boundaries and setting targets for higher density development to reduce Greenhouse Gas from personal transportation and the movement of goods and services.

The OFA has long advocated more stringent urban boundaries to slow the process of urban expansion and farmland loss. Growth plans that maintain agricultural lands in production help mitigate the impacts of extreme weather events on urban landscapes by moderating water flows, providing groundwater recharge, and carbon sequestration.

These ecological and environmental goods and services (EG&S) are not free – Municipalities are well suited to develop regional programs that recognize the contributions of agricultural land managers and the services they provide to the urban landscape. Provincial and federal programs also need to be established to maximize scale while recognizing regional connections.

4. Price on Carbon

The OFA agrees that to help drive a transition towards a low-carbon society we must begin with a market mechanism that places a price on carbon emissions. Putting a price on carbon generates a cost to regulated industries for emitting GHGs to the atmosphere, thereby creating an economic motivation to reduce further GHG emissions.

In order for Ontario to reach our emission reduction targets, the OFA favours a well-designed Cap and Trade System with offsets. We believe a Cap and Trade System that allows for offsets from the agricultural sector provides the most certainty in ensuring Greenhouse Gas emission reductions while also providing needed flexibility to regulated sectors to meet their new obligations. Cap and Trade would provide documented reductions in Greenhouse Gas emissions compared to carbon tax which is based on using consumer price increase to incent reductions.

While we recognize early Cap and Trade Systems have experienced operational problems, Ontario can benefit from over ten years of significant lessons-learned moving forward. In terms of design, we have several models currently in place in Alberta and Quebec from which to draw. Harmonizing an Ontario Cap and Trade System with these would be advantageous. These established systems, as with those around the world, recognize the incredible importance of agriculture and the role farmers play in the carbon and nitrogen cycles. They incentivise the existing good work that farmers are doing to mitigate emissions and facilitate the development of sinks to remove carbon from our atmosphere.

As we have stated earlier, we believe that the agricultural sector has a much greater potential to be part of the solution to Climate Change than we are part of the cause. As with other jurisdictions using a Cap and Trade System, agriculture can provide offsets to regulated (capped) industries through carbon sequestration or changes to agricultural practices that eliminate emissions. Recognized agricultural offsets include:

- Conservation tillage – no-till, reduced-till; decreases soil erosion, decreases CO₂ emissions through lower fossil-fuel energy, increases soil organic matter effectively storing more carbon.
- Manure management – methane reduction or elimination from livestock production
- Livestock feed management – changes to feed regimes to maximize efficiencies
- Anaerobic decomposition of agricultural materials
- Nitrous Oxide emissions reduction in agriculture
- Energy generation from the combustion of biomass

Cap and Trade Systems can offer an option for capped emitters to also purchase compliance from a technology fund that will provide money to research future emission reductions and to encourage innovation in industry. This is a key design feature that should be adopted in an Ontario Cap and Trade System.

5. Science & Technology

Ontario is well positioned to capitalize on global Greenhouse Gas mitigation and Climate Change adaptation. We have a flourishing bio-economy in Ontario that is developing opportunities and innovative solutions to a wide range of environmental challenges, including energy and resource efficiency and food security. The bio-economy involves the production of renewable biological resources and their conversion into food, fibre, and fuel, while achieving economic growth. The bio-economy creates a socio-economic system based on sustainably sourced and produced fuels, chemicals and materials and provides an alternative to one based on finite fossil-fuel resources.

The bio-economy is not a standalone solution to the challenges we face, but it is an important key in unlocking a more sustainable future where resources are used efficiently and our environmental impact is diminished. It brings together people including farmers, scientists, technology providers, retailers and consumers to create strong and diverse value chains built on bio-based product development, while achieving economic growth.

The Province of Ontario must invest in research and innovation in the bio-economy to further reduce our reliance on fossil fuels and meet our energy and Climate Change targets. Ontario is global a leader in the development of the bio-economy. We need to focus on growing the skills

and infrastructure necessary to ensure that Ontario continues to grow its jobs and scientific excellence in the bio-economy.

Final Remarks

OFA appreciates the opportunity to comment on this discussion paper. Climate Change is an important issue to us and we have made it a priority to have an OFA Director at each of MOE&CC's regional stakeholder meetings. We recognize there is a need to take action against Climate Change and that a market mechanism to regulate further emissions is an appropriate response. We believe a Cap and Trade System that allows for offsets from the agricultural sector is the best system to achieve verifiable reductions in Greenhouse Gas emissions. A Cap and Trade System also provides a mechanism to invest in innovation and encourage greater efficiencies.

We recognize that Climate Change will have an impact on Ontario's food supply and value chain. The agriculture and agri-food sector is fueling Ontario's economy and must hold an important place in our Climate Action Plan. While we realize the need to mitigate Greenhouse Gas emissions, we cannot ignore the need for agricultural adaptation to Climate Change related events we are already experiencing. The degree to which Climate Change will impact our food system depends largely on the quality and scale of the adaptation measures taken.

Agriculture has taken steps to reduce Greenhouse Gas emissions and can do more with continued investment in research. Ontario has the strategic advantage of having a burgeoning bio-economy that has the potential to allow agriculture to further increase our contribution to Greenhouse Gas reductions. The bio-economy will increase efficiencies, create jobs, and help Ontario towards meeting our emission reduction targets. This sector is a vital component of our response to Climate Change and is worthy of support.

Ontarians can feel proud of the efforts our farmers have taken to lessen their impact on our environment and there is more good work to come. As technologies that couple Greenhouse Gas reduction with cost savings become available, we can be certain that Ontario agriculture will be at the forefront of adoption.

OFA looks forward to working with the Ministry of Environment and Climate Change to develop a Greenhouse Gas mitigation mechanism and create strategies for agricultural adaptation to Climate Change.

Sincerely,



Neil Currie
General Manager

cc: Hon. Glen Murray, Minister of Environment and Climate Change
Hon. Jeff Leal, Minister of Agriculture, Food and Rural Affairs