Submission from the National Farmers Union in New Brunswick

to the

NB Select Committee on Climate Change

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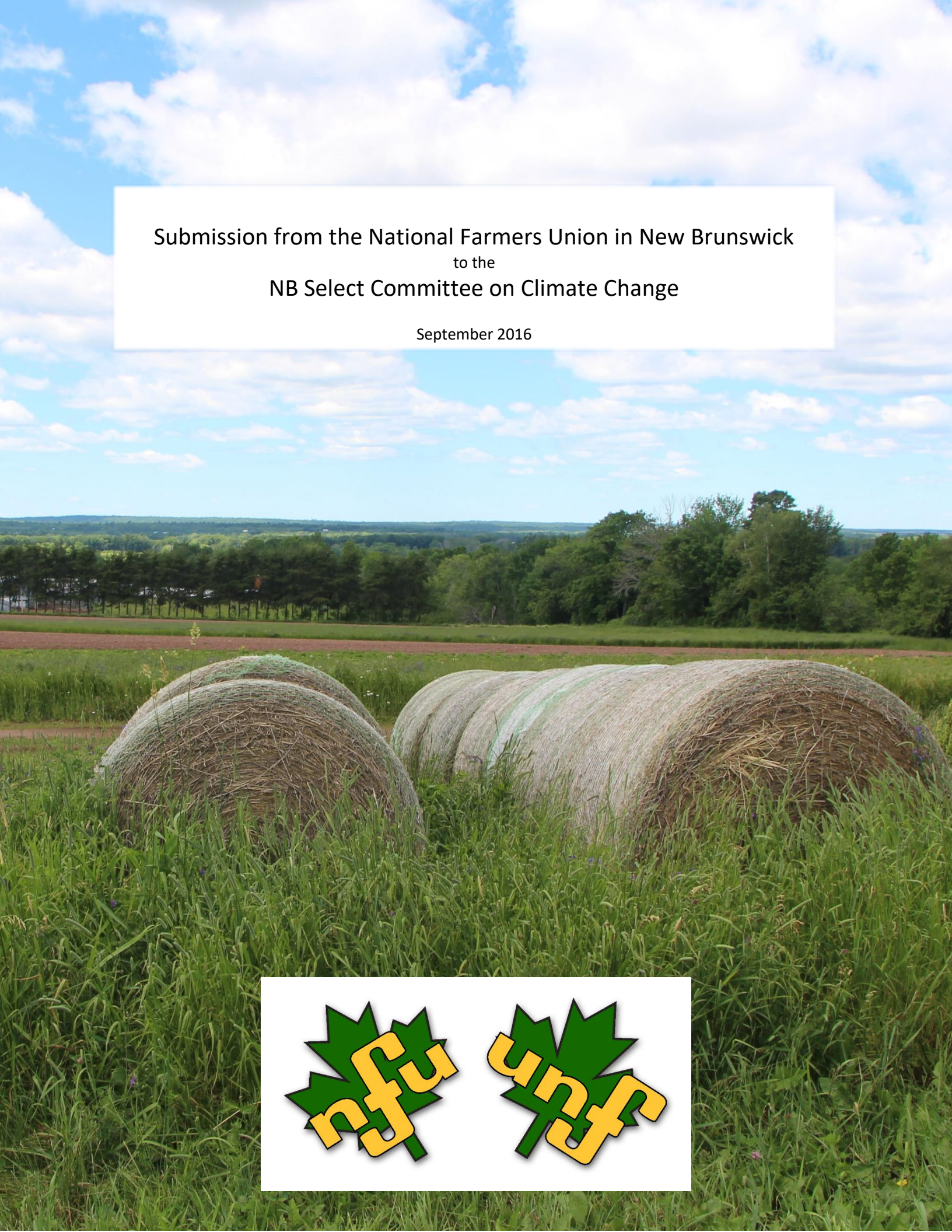

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Background

About the National Farmers Union in New Brunswick

The National Farmers Union in New Brunswick (NFU-NB) is one of two accredited general farms organizations in the province. Our members are farmers from across the province who own and operate farms of all sizes and production types. The NFU calls for food and agriculture policies that promote fair livelihoods for farmers, farm workers and people involved in the food processing system. We need agriculture policies that allow farmers to stay on the land and that allow them to use agronomic practices that support long-term soil health and water quality and reduced greenhouse gas emissions, as well as the production of nutritious, wholesome food, and which support high standards of animal welfare. We need to ensure that farming is an attractive vocation for young people to enter, and that older farmers can retire with dignity. Our agriculture policy needs to support a diversity of types and sizes of farming, so that our food system has the resilience required to survive in an increasingly unpredictable climate. Such a forward-looking food and climate policy will also ensure that our rural communities remain viable and attractive places where Canadians can raise families and live fulfilling, productive lives. To achieve these goals, we need to put our food and farmers first while upholding the right of other countries to take care of their own people in the same way.

The NFU and Climate Change

Farmers are on the front lines of climate change, as they are among those who most depend upon a favourable climate and weather conditions to earn a livelihood. We need climate stability to produce our crops, raise our livestock and maintain the health of our agriculture ecosystem – and to provide the food Canadians eat. We are also in a position to make significant impact on Canada's carbon footprint by changing our agricultural practices. Both adaptation and mitigation are required for agriculture to play its part in preventing catastrophic climate change and for food production and farmer livelihoods to be maintained into the increasingly uncertain climate future.

The NFU-NB is pleased that the Government of New Brunswick has created the Select Committee on Climate Change as a mechanism to map out and implement New Brunswick's active role in Canada's commitment to the Paris Agreement. It is most welcome that the Committee is chaired by a maple syrup producer and that it includes members from all political parties. The *Discussion Guide: Building a Stronger New Brunswick Response to Climate Change* was a helpful document that outlined many of the examples and thoughts of where the Select Committee is already headed.

The **Paris Agreement** provides direction regarding how countries are to put their GHG reduction and climate adaptation commitments into action. Points that are particularly relevant to agriculture include:

- implementing adaptation and mitigation in a manner that does not threaten food production;
- setting economy-wide emissions targets;
- recognizing the importance of integrated, holistic and balanced non-market approaches to mitigation and adaptation;
- recognizing that the greater the mitigation, the lower the requirements for adaptation;
- adaptation action should include traditional knowledge and indigenous peoples' knowledge as well as Western science;
- building the resilience of socioeconomic and ecological systems;
- minimizing losses and damage due to acute and slow onset impacts of climate change; and
- noting countries' leadership includes a significant role of public funds in mobilizing climate action strategies.

Climate Change Mitigation

Greenhouse gas emission reduction

According to *Environment Canada's National inventory report: Canada's greenhouse gas sources and sinks 1990-2014*, in 2013 less than 4% of the province's 15 million tonnes of greenhouse gas emissions came from Agriculture and Forestry combined. This number makes it appear as though agriculture is not a major GHG emitter in NB with other areas producing significantly higher GHG emissions. While this appears at first glance to be great news for NB agriculture, there are some other considerations when looking at how much NB agriculture contributes to GHG emissions.

1. The number only includes methane and from animal production, manure management and nitrous oxide emissions from agricultural soils.
2. Additional GHG emissions categorized under transportation and industrial processes are nevertheless produced by agriculture.
3. Most of the food consumed in the province is imported, meaning that the overall carbon footprint of NB's food system is likely significantly higher than 4% since the carbon footprint of the imported food and its transportation would be counted in the county or region of origin and under transportation emissions.
4. Only 5% of the province's land is currently being used for agriculture while the industry holds enormous potential to expand food production in NB. This means that mechanisms need to be put in place to minimize climate effects of Land Use Change and that wetlands or forest land are converted to agriculture on a no-net-loss basis and only when there are no other options available because we know that both forests and wetlands store more carbon than agricultural land used for annual crops.

When talking about agricultural GHG mitigation through carbon storage in agricultural land and further exploring soils, forests and wetlands as carbon sinks, we can and should get very specific and precise. Should this be the route chosen, it will require in-depth research and independent, transparent monitoring systems to ensure that the carbon stored is measured accurately and that it remains captured. Generalizations about how much carbon certain soil types or crops can store will result in unreliable baselines. Using such rough estimates would result in ineffective measures that do not recognize results of those who are already practicing some sort of conservation agriculture and may fail to incentivize better practices among those who are not.

We also recommend policy measures such as support for improved crop rotations and increased cover cropping to lessen the requirement for fossil fuel-based inputs, such as fertilizers and herbicides, as well as the planting of windrows to stop soil erosion while sequestering atmospheric carbon. Programs that help farmers increase their crop diversity will also help farmers weather the financial risks that come with unpredictable weather due to climate change. While these mitigation efforts will likely play an important role in helping New Brunswick meet the Paris commitments, we also need to keep in mind the overall impact of our current export-oriented food system in terms of both mitigation and adaptation.

Carbon pricing

Carbon pricing is a hot discussion topic at all political levels and seems to be an integral part of actually reducing global emissions. What is still being investigated is which carbon pricing option will be chosen. The Select Committee in the *Discussion Guide* presents a carbon tax or a cap and trade program to price carbon, with the proceeds being allocated to a Green Fund or simply added to general revenues. Below are very important considerations on how both **carbon tax** and a **cap and trade program** could affect farmers.

Canadian farms are the middle link in a food production chain with powerful input suppliers on one side and powerful processors and retailers on the other. If a **carbon tax system** is implemented, corporations that are upstream of farmers will likely use their market power to pass carbon taxes forward to the farm level in the form of higher input costs. Those downstream from the farmers will likely pass carbon taxes back to family farmers in the form of lower produce, grain and livestock prices. Thus, farmers would be forced to pay the carbon taxes from every link in the chain, intensifying the cost-price squeeze that is already harming farm incomes to the extent that approximately 80% of family farm income in Canada is now obtained through off-farm jobs.

The **cap and trade carbon market** is particularly troublesome for farmers. The *Discussion Guide* describes a scenario where a cap is placed on emissions from one or more industrial plants or types of industries. Those subject to the cap can either lower their emissions to meet the requirement or purchase emission allowances (also known as quotas, permits or credits) from those who are emitting less than the cap allows. Under this model, the emissions reductions are known while the carbon price is uncertain and subject to market fluctuations. There have been suggestions that a cap and trade system would work best by including all of Atlantic Canada and possibly even New England.

In many **cap and trade carbon** scenarios, the market could pay farmers for sequestering carbon in soils. However, there are serious concerns about this approach. Carbon sequestration in soils is temporary – it can easily be released back into the atmosphere -- and has limits – eventually the sink will become full. Re-release of soil carbon into the air could result in a financial debt if farmers were required to repay their past credits and/or failure to accomplish the task of balancing emissions with carbon sinks. A legitimate market would require independent third parties to accurately measure and transparently report soil carbon additions and losses. This is both difficult and expensive, and would divert needed resources from funding effective action. Finally, a cap and trade carbon market would primarily benefit the financial sector by providing a new type of derivative to trade. Direct funding of effective mitigation and adaptation measures for agriculture that will also build soil carbon and reduce GHG emissions (including methane and nitrous oxide, not just CO2) would be a better use of limited resources.

Under the cap and trade approach large emitters would make important decisions about mitigation by using their ability to purchase carbon credits or offsets. These entities, mostly private corporations, are not accountable to the public and their focus is on maximizing the private benefit of their owners. These private interests may not align with public policy goals. In contrast, all decisions about how to spend carbon tax revenues would be made by the government which is publicly accountable.

With these considerations in mind, the NFU-NB recommends that a carbon tax pricing system with revenues directed into a Green Fund and dedicated to increase on-farm mitigation and adaptation measures as ultimately the most effective and fair option.

Reducing transportation emissions in the food system

The same powerful actors that can off-load carbon taxes onto farmers have also constructed the energy-intensive structure of Canadian agriculture. Farmers protested when grain companies and railways took out country elevators and tore up branch line tracks, forcing farmers to use less energy efficient trucking to move grain longer distances. Local fruit and vegetable production has been hampered by food retailers and manufacturers that increasingly centralize food processing and distribution within Canada, or move it to countries with lower costs and lax regulations. These are only a few examples of large-scale changes farmers have resisted and which have also increased the food system's energy intensity.

In the short term, farmers cannot respond to carbon taxes by significantly changing the energy use on their farms or in the food system. But in the medium and long term, farmers, working with governments and citizens, want to dramatically restructure the food system to cut emissions and create a more local, more sustainable food system.

While NB agriculture is only responsible for 4% of the province's GHG emissions, it is worth noting that number does not fully reflect the GHG cost related with NB's food supply. Some estimates go so far as to say that 95% of the food consumed in NB is imported. In 2013, only 7% of the vegetables consumed in NB were actually grown in NB. The GHGs related to producing NB's food are being counted in other regions or countries and then are being transported to NB for sale. On a regular basis one can find lamb from New Zealand, apples from Chile, and frozen peas from Guatemala in our grocery stores. The transportation miles required to bring in these types of foods that can easily be grown in NB far outweigh the GHGs required to transport produce from an NB farm to a consumer within the province. We currently, however, have a disjointed distribution and storage system that does not allow for a smooth process in the province.

Climate mitigation measures for NB farms that do not include in-depth studies to look at the overall impacts of an export driven food economy and the benefits of import replacement production would be missing out on important opportunities. How a localized food system affects climate adaptation will be further discussed below.

Maintaining current farmland vs clearing new lands

The Department of Agriculture, Aquaculture and Fisheries is currently undergoing an Agricultural Land Policy process, which will provide enforceable mechanisms to encourage continued production on NB farmland. Currently around 5% of the province is used for agricultural production. There is a lot of talk of how to best expand production, as farmland is a natural resource that NB has in abundance. There is farmland that is abandoned or unused that could easily be put back into production. There is also the real logistical challenge where farmers own land and woodlot and would like to continue clearing their own land to farm there. The funds available to help farmers with the cost of land clearing are highly sought after and used up every year. We also know that forests store more carbon than agricultural land, especially when that land is being used for annual crops.

A database of unused agricultural land needs to be compiled and made available for farmers who are looking for additional cleared farmland in their area that they could rent, lease or purchase. To be most effective this would have to be a fairly comprehensive listing, particularly including land that is under the FLIP program and receiving deferred taxes but is not actually being farmed or being made available for lease.

NB has the potential to increase agricultural activities that focus on perennial production systems including fruiting trees and bushes, and maple production. Perennial systems, like forests store more carbon than annual production systems. Funds need to be made available for farmers to include or integrate more perennial, mixed food systems into their current farm practices.

Climate Change Adaptation

Building a local food system

As outlined above, the accounting of GHG emissions from agriculture only refer to a portion of direct farm emissions and does not reflect the overall emissions of an import and export based food system. Mitigation measures and research areas were proposed above. In terms of adaptation, having a local food supply and storage system that makes NB foods available for as many months of the year as possible is essential. Severe weather events will continue to become more frequent and may lead to interrupted transportation, prolonged power outages and an overall food shortage in NB. During hurricane Arthur when grocery stores lost power and had to discard most of their stock, there were lean days while waiting for trucks to bring in more food from out of province.

The challenge of losing power and therefore losing food stored at warehouses or other storage facilities in the province could be mitigated by adopting the measures proposed in the next section.

On farm electricity generation

During Hurricane Arthur, many farms were without power for two weeks. As a general business precaution, most farms already have an energy back-up system in place, such as a generator. In most cases generators are the most affordable back up system to have on hand, but not the most energy efficient or affordable to run. Until recently, NB Power has had very strict rules around individuals generating their own electricity and selling it back to the grid, making solar panels very expensive to put in place and maintain for use as an emergency back-up system. Many barns have very wide roof areas that could be used to mount solar panels, if farmers could sell this electricity back to the grid under normal circumstances and as an emergency supply in case of an extended power outage.. While solar panels are becoming more affordable, they are still a significant investment. Other provinces offer incentives programs to help offset the initial start-up costs and we would recommend such programs in NB as well.

The NFU-NB recommends working with NB Power to allow and encourage farmers to produce electricity and sell it back to the grid to transition away of coal-powered electricity and to increase farm resiliency for climate change adaptation. In addition, because dairy farms use a significant amount of hot water on their farms, programs to encourage solar hot water should be made available to farms across the province.

Another example of on farm electricity generation in NB is on-farm methane production and capture. LaForge Bioenvironmental is a successful example of bio fuels produced from food waste and manure in NB. Even without close proximity to a major food processor granting easy access to tonnes of food waste daily, many farms could put in smaller bio-digesters to process farm waste and turn it into electricity or heating/cooking fuel for their farm or home.

Renewed public research stations & local on-farm trials

Over the past decades research dollars for public purposes have been cut in favour of providing grants to private firms to test and sell their products. To be a climate change leader, NB needs to become pro-active and help farmers adapt now with new crops that will grow under new temperatures and changing weather patterns. Government needs to be significantly renew the funding of public research stations and local on-farm trials.

Locally adapted seed has been essential in working with changing climates in other parts of the world. As the NB climate changes we may see that our local varieties fare the best or there may be opportunities to grow new varieties from warmers climates or areas with different weather patterns. It is a huge financial risk for farmers to do crop or variety trials on their own farms with no supporting information about the likelihood of success.

In order for on-farm experimentation to be a success there needs to be a renewed commitment to providing regional extension agents so that government is more acutely aware of the emerging needs and challenges farmers are facing. Extension services would also ensure that farmers have a more direct connection with the Department of Agriculture and can begin rebuilding a relationship of trust, knowing that the government has their needs, their livelihoods and their best interests at heart.

Summary of Recommendations

While the *Discussion Document* separates out mitigation and adaptation as separate areas of focus, it is fairly challenging to work on one without the other. By and large the adaptation measures will also contribute to mitigation by reducing overall greenhouse gas emissions and enhancing carbon sequestration.

Farmer livelihoods and food production are at the forefront of climate change. While on-farm practices need to be adapted to ensure that every farmer has the knowledge and opportunity to farm in the most climate friendly way, the climate is already changing and will continue to do so over the coming years.

Adaptation measures and supports need to be put in place quickly so that farmers have the tools and knowledge they need to continue to produce healthy food, maintain strong ecosystems and make a living from their work. Adaptation research has taken place extensively in other provinces and needs to be analyzed, trialed and launched in NB.

Government policies from all departments need to come together to focus on building a better food system for New Brunswick that is based on the principles of food sovereignty and there needs to be supports for farmers and consumers to successfully transition to a low-carbon food production model.

Conclusion

The National Farmers Union has been advocating for policy changes and support for farmers in the face of climate change for many years. The NFU is keenly interested in being a leader in the transition to a carbon-neutral economy. We are working across Canada on a detailed research project and policy plan to identify ways to reduce farm and food system GHG emissions. Results and recommendations will be published in early 2017. We also have many members already putting low-carbon production into action on their own farms. We seek to share our knowledge and experience as a resource for policy makers as we embark on this important journey.

Respectfully submitted,

The National Farmers Union in New Brunswick
NFU Region 1, District 2

Resources:

NFU Submission to Federal Pre-Budget Consultation, February 2016. www.nfu.ca
Letter to PM about meeting Paris Agreement commitments, March 2016. www.nfu.ca
Climate Action Plan for New Brunswick, June 2016. Conservation Council of New Brunswick.
National Inventory Report 1990 – 2013, Greenhouse Gas Sources and Sinks in Canada, 2015. Minister of the Environment
Building a Stronger New Brunswick Response to Climate Change, May 2016. Province of New Brunswick.
Presentation by the Department of Agriculture, Aquaculture and Fisheries to the Select Committee on Climate Change, Aug 17, 2016.