August 30, 2022

Agriculture and Agri-Food Canada
1341 Baseline Road
Ottawa, ON K1A 0C5

Re: Discussion Document – Reducing emissions arising from the application of fertilizer in Canada's agriculture sector

Via Email – aafc.fertilizer-engrais.aac@agr.gc.ca

To whom it may concern,

On behalf of the Grain Growers of Canada (GGC), I am pleased to provide feedback to the Government of Canada's discussion document on the proposed reduction of emissions from fertilizer use on Canadian farms.

GGC represents over 65,000 grain, pulse and oilseed farmers across Canada through our 14 provincial, regional, and national member organizations. Canadian grain farmers are ready and willing to do their part to fight climate change. That's why this past spring, we announced a commitment to achieve net zero emissions through our *Road to 2050* climate solutions initiative. GGC is actively developing policy and program recommendations for government that present a practical and proactive approach for the grain sector to reach net zero by 2050.

Farmers have been on the leading edge of innovation for decades. From the latest crop genetics to crop protection products and beneficial management practices, farmers invest in tools that are good for their bottom line, their soil, and the sustainability of their land.

Not only are Canadian farmers are on the front line of climate change, their on-farm practices are vital to domestic and international food security. In light of geopolitical circumstances, farmers face the challenge of balancing the demand for increased productivity and value added opportunity capacity with the need for greater sustainability. We believe that necessary on-farm practices can be made more sustainable through innovation – but all innovation needs research, investment, and ultimately time. With the threat of global food insecurity looming, we must develop an approach that aligns the imminent need for increased food production with the long-term goal of increasing on-farm sustainability.

Nitrogen fertilizer is essential for the crop, the success of individual farm operations and, in turn, the Canadian economy. On a grain farm, one of the largest annual expenses is the fertilizer bill. It's an expensive risk to outlay so much money months before farmers know it will pay off, and is not taken lightly, but its proven worthwhile as it consistently increases yields and improves profit potential. As such, it is an input expense that is used carefully and efficiently. Canadian farms have a track record of continuous improvements in sustainability, and that will continue. Best management practices like 4R Nutrient Stewardship have existed for over a decade and have established practical considerations for fertilizer use that achieve verifiable emission reductions.

We appreciate that the discussion document highlighted farmers' stewardship, and the vital role they play for our economy. We also appreciate the inclusion of farmers' concerns surrounding the proposed reduction in fertilizer use (as described in Annex A of the discussion document). However, we are concerned that to achieve a 30 per cent reduction in absolute emissions from fertilizer use within the next eight years, government will inevitably seek to limit usage, should progress not be made at the pace required. **We cannot stress our opposition to such a policy enough.**

We recognize that you cannot hit what you do not aim at, but such a target must be practical, measurable and achievable, without adverse economic impacts.

Economic realities and on-farm agronomic necessities dictate what is feasible and focusing solely on absolute reductions are not. Instead, we recommend targeting reductions in intensity relative to production to reflect the needs of the entire value chain.

We understand the need to hasten the adoption of technologies and practices that could reduce emissions. Developing federal policy and programs that can achieve widespread success will not be easy. Agriculture and Agri-Food Canada (AAFC) must work closely with farmers throughout policy development. There is no one-size-fits-all approach to meeting this target, and many individual farm-level variables will impact what solutions work for each farmer.

Government must not develop policies that impact Canadian farmers without consultation. The discussion paper references the ongoing development of a *Green Agricultural Plan (The Plan)*. While we have heard reference to the development of *The Plan*, we have yet to see consultations on what it might entail and fear that we will be left out of the decision-making process.

We urge AAFC to work with the sector to develop policies that reflect our shared goals. GGC is committed to being a sustainability leader and finding solutions that align Canada's goal with the unique needs and opportunities of the sector. We believe in stronger relationships with our government partners and look forward to engaging in policy development across all issues impacting producers, especially as we prepare to release our *Road to 2050* recommendations.

Below you will find responses to the specific questions outlined within the discussion document. I trust AAFC will consider our comments and continue engaging with stakeholders throughout the weeks and months ahead.

Sincerely,

Andre Harpe, Chair
Grain Growers of Canada

Discussion Questions- Issue 1

- **What are the biggest barriers to the adoption of practices that reduce emissions from fertilizer application and how can these best be overcome?**

Like all businesses, farming is one of margins; the reality is that margins have been thin year after year for many operations. What profit is made is generally returned to the operation in investments in machinery or updated technologies and practices. 2022 has been the most expensive crop many farmers have ever planted. As of 2022, over $129 billion in agricultural debt is held. As interest rates rise, the ability of farmers to take on additional debt diminishes and increases the challenge of investing in technological advancements and new fertilizer products. The cost barriers that remain limit the pace of adoption and widespread use, especially true for products that offer a slow or controlled release of nitrogen.

There needs to be a broader understanding of the variances that exist in Canadian farmers. Let us take adjusting fall application of fertilizers as an example. Farmers must consider various factors when deliberating on application timing, from higher costs for spring application to moisture considerations. Increasing engagement with farmers is critical to improving overall buy-in and understanding, but it needs to go both ways; such broad proposals fail to acknowledge the nuances within the Canadian agricultural landscape.

For instance, in Manitoba this year, many farmers struggled to access fields in time to seed due to excess moisture, and many have been unable to apply certain fertilizers. Whether it be regional, climactic or soil characteristics, no practice works effectively everywhere, every year, and federal policy must reflect that.

Farmers need investments in programs and research for projects that examine practices and technologies that protect yield increases and emit less. Government support would aid in hastening the adoption of practices like 4R Nutrient Stewardship. One area of program consideration could involve financial support towards soil testing more frequently to ensure the right rate of application is clearer to producers.

To see increased public buy-in from farmers, government needs to consider what the current reporting methodology doesn't capture, i.e., N2O emissions and 4R Nutrient Stewardship Practices. 4R, for instance, optimizes plant nutrient uptake and increases yield while reducing emissions. These stewardship practices are not captured in the National inventory (NIR), so their results are overlooked in the reporting. If we do not factor in these efforts, we fail to capture an accurate picture of on-farm sustainability.

- **What steps can be taken to increase the adoption of practices or the use of new, enhanced efficiency fertilizer products that hold the potential to reduce emissions from fertilizer application?**

Farmers generally use products that offer a positive return on investment. Ensuring knowledge of new practices or product availability can be challenging, so support for knowledge extension activities by crop commissions is critical.

Programs that offset additional charges are necessary when new products like slow-release fertilizers come with a hefty price tag. However, these programs will only be effective if they can provide timely reimbursement without onerous administrative requirements and constraints on operational independence. Further, government must recognize that there are significant costs associated with this approach, impacts on market dynamics, and may require ongoing funding in order to realize meaningful impacts.

Public and private research continues in this space, but rigid regulatory requirements often stifle progress toward the commercialization of new products. Broadly offering flexibility and regulatory certainty would encourage expanded investment in research and an earlier opportunity for experimentation by farmers at scale.

- **In addition to existing programs, how can governments best work with industry and producers to mobilize increased adoption of emissions-reducing practices? What are the appropriate roles for the agriculture sector, governments and other partners and stakeholders in meeting this target?**

Numerous crop commissions represent Canadian farmers through check-off systems, with farm organizations as regional agents. The best way for government to work with industry is through open and honest dialogue with these groups. Government sets the priorities that shape our industry. Too often, government-industry engagements or consultations are through extensive, multi-sector, multi-stakeholder discussions. Smaller-scale consultations are necessary to maximize investments and buy-in from those who ultimately participate in government programs. Grain sector representatives offer a much-needed perspective and must be considered trusted partners and resources in these efforts.

Discussion Questions- Issue 2

- **How can important data on the changes in emissions from fertilizer application be more consistently and comprehensively collected, analyzed and reported?**

Moving forward, we must expand the National Inventory's measurement tools. Emissions data contains potential flaws; provincial sales data does not accurately reflect total application or the variability in moisture conditions. As well, we must consider the distinction between direct and indirect emissions. Until we understand the impacts of indirect emissions, we cannot place a 30 percent reduction solely on the shoulders of agriculture. More accurate data reported through the NIR must be government's priority in order to understand the actual outcomes of emission reductions from 4R and other beneficial management practices.

- **What would be the most effective way for Government and industry to work in partnership to collect and make public detailed fertilizer use and 4R-related data to better understand areas where there has been success, or opportunities for improvement?**

The current measurement methodology for reporting fertilizer emissions relies heavily on sales reporting rather than actual application data. On-farm needs and moisture conditions dictate fertilizer use. As a result, farmers often store fertilizer, meaning the total purchase does not reflect the total application. Overlooking these factors leads to conflated application estimates that are only elevated with rainfall amounts as a determining factor.

Frequent surveys with more questions regarding the application of fertilizers could elucidate more accurate data collection. However, farmers often feel bombarded with surveys leading to a reduced response. Government surveys are often quite administratively burdensome, are sent out during busy seasons, and do not entice farmers to complete them. Providing incentives could encourage more engagement and would go a long way in improving data collection.

- **What considerations need to be taken into account to ensure better and more accurate reporting of farm-level data while minimizing the reporting burden at the individual farm level?**

In Canada's national inventory, N2O emissions are not measured directly but are estimated based on nitrogen input sales. The National Inventory Report (NIR) does not capture 4R Nutrient Stewardship practices and therefore does not present an accurate estimate of the nitrous oxide emissions from agriculture in Canada. Integration of 4R Nutrient Stewardship into the NIR is necessary to ensure that we appropriately monitor progress towards our target.

Discussion Questions- Issue 3

- **What is the best way for governments and industry to support the emergence of new and innovative solutions to address climate goals, such as emissions reductions?**

Canada's federal government sets the tone for many important discussions in civil society and can be an influential participant in the public's understanding and opinion regarding our food system. Canada's regulatory system is world-class and respected by our trading partners. Innovations, such as the genetic modification of plants, gene editing, or crop protection products, are frequently opposed, without merit, in the public space, despite receiving thorough examination and approvals from those same regulators. A federal government that enunciates its support for research and investment in new technologies would encourage the private sector and aid in public support for their use.

Advancements in chemistry have allowed for widespread adoption of minimum tillage practices, which have yielded tremendous emission reductions. This practice has been a win/win in terms of carbon sequestration and soil health. However, it relies on crop protection products to limit the growth of weeds competing with the early-stage growth of seeded crops. Not only are farmers responsibly using these products, which have undertaken rigorous scrutiny by regulators before entering the market, but they are also sequestering carbon, limiting their passes across the field and emitting less carbon. The science-based decisions of our regulators should be respected, defended, and supported by government. Particularly given the reality that limiting such products' use would result in increased emissions.

Government often expresses the intent to embrace a “whole of government” approach. Environmental policies that affect Canadian farmers should be undertaken in such a manner. Through improved engagement with farmer-led organizations, decision-makers would better understand the impacts of potential policies, beyond just potential emission reductions.

Beyond improved communications regarding regulatory decisions and policies that support innovation, government should provide creatively considered instruments that could incentivize private investment in research and development aimed at sustainable innovation and increased production.

As for the industry’s role, the free market will continue to drive innovations that reduce costs, decrease emissions, and increase productivity. For decades, farmers have shown a willingness to embrace new technologies and make significant investments to improve their operations’ economic and environmental outcomes. As technologies develop, scale, and prove to provide a return on investment, they will be adopted.

- **Are there opportunities not listed in this discussion document that you think should be considered as potential pathways for achieving the emissions reduction target for both 2030 and 2050?**

Innovation is the best pathway to success. Plant breeding techniques such as gene editing could offer the potential for certain commodities to fix nitrogen, require fewer inputs, or increase sequestration. While Health Canada recently provided regulatory clarity for gene editing, CFIA still has not. Canada must provide a more timely and responsive regulatory system to enable private investment in exploring these potential solutions.

We simply cannot use fewer crop inputs; this only leads to reduced production, higher prices, and greater food insecurity globally. We should instead encourage investments in the research and development of projects that improve sustainability and productivity.

For example, through gene editing, scientists in China have recently made advancements that could increase rice yields by 40% while vastly increasing nitrogen use efficiency. These innovations will take many years to reach market, but an agile regulatory system can hasten the pace of lab-to-field advancements, meaning that we can feed more people using fewer inputs.

Conclusion:

On-farm practices are constantly evolving. It is undeniable that climate change poses an existential threat; however, geopolitical circumstances have hastened the threat of global food insecurity. We must balance these realities and solve both simultaneously.

Fertilizer is critical to the success of Canadian farms. Without detailed measuring tools, recognition of emission reductions through 4R practices, and accurate reporting, no target will ever be met. Farmers ask that government develop metrics that better reflect the variability in the Canadian agricultural landscape; this includes examining: N2O emissions, 4R Nutrient Stewardship practices, and the differences between indirect and direct emissions. We must move away from using sales data and adjust the methodology to factor in moisture conditions and the variables that determine actual fertilizer use. We must also find a way to account for the past and future adoption of 4R practices in the NIR, or risk not being recognized for the advancements being made in actual emission reductions. When we account for the broader picture, it is clear that the government's objective must be to reduce emission intensity.

Farmers have a clear financial incentive to produce more food with fewer inputs, but using less at the expense of yield and margin increases is not realistic. Focusing on total emission reductions allowable from fertilizer use will not increase food production in Canada. Given that yields of Canadian crops are directly linked to proper fertilizer application, this reduction would put a ceiling on grain productivity. These initiatives will seriously harm global food security and the Canadian family farm's economic viability, especially while facing record debt and rising service costs. Both of these potential outcomes go directly against the Government of Canada’s goals as provided in the Guelph statement. For Canadian family farms to succeed, they must be economically and environmentally sustainable. Farmers are more than willing to be climate solution providers. However, government programs and incentives will be critical to removing the financial barriers to the widespread adoption of sustainable technologies and practices. Carrots, not sticks, will be the only successful approach.

Farmers want to be active, engaged, and trusted government partners as we work to achieve our shared goal of reducing emissions. In turn, government must listen to the needs of farmers, respect the realities they face on the ground, and work with them in developing goals, strategies and pathways to success.