APAS provides comments on the proposed federal fertilizer emissions reduction strategy

September 6, 2022 (Regina, SK) – The Agricultural Producers Association of Saskatchewan (APAS) has submitted comments on the federal government addressing concerns with the proposed 30 percent fertilizer emissions target for 2030.

"What the country – including the federal government – needs to account for is the amount of innovation that has gone on and has been applied here in Saskatchewan when it comes to applying fertilizer in the past several years," APAS President Ian Boxall said. "Producers care more about the environment than we get credit for, and it's frustrating because we are the first ones to see any type of change."

"It impacts our bottom line every day," Boxall added.

A summary of the APAS submission includes several points:

- The initial 30 percent fertilizer emissions reduction target was set without adequate consultation with producers and was based on an incomplete understanding of the technology and nutrient stewardship practices currently used on Saskatchewan farms.

- APAS strongly advocates for an "intensity-based" approach to measuring emissions, which would allow for production increases, while also ensuring continuous improvements in efficiency and a lower carbon footprint.

- Emissions reduction strategies must be based on sound science with verifiable research showing emissions savings and the benefits of adopting new practices. Measuring emissions from farm practices is an evolving area of research and Canada cannot afford to get ahead of the science when setting targets for the sector.

- Emissions measurement must be based on modeling that is clear, accurate and accounts for regional variations. The expectation that models will improve calls into question the appropriateness of setting a baseline year to measure reductions.

- Emissions reduction strategies should not interfere with Canada's contributions to global food security or introduce additional risks to family farm businesses. The submission also addresses concerns with the design of offset protocols in Canada and the competitive constraints that carbon pricing and climate change policies have on producers in world markets.

APAS' submission also highlighted the joint submission from the Saskatchewan Crop Commodity Commissions which APAS also supported during the consultations.

"It is important that the federal government recognize that Saskatchewan makes up almost 40 percent of Canada's arable land. Producers here are world leaders in the development of innovative technologies and production practices to optimize soil health and productivity," Boxall said.

For more information, please contact:

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About APAS – Founded in 2000 by farmers, APAS is Saskatchewan's democratic, non-partisan agricultural policy and advocacy organization. APAS tackles agriculture's most important problems and offers practical solutions to provincial and national decision makers.

Response to Agriculture and Agri-Food Canada
"Reducing emissions arising from the application of fertilizer in Canada's agriculture sector"
August 31, 2022

Introduction

The Agricultural Producers Association of Saskatchewan (APAS) is writing in response to the Discussion Document "Reducing emissions arising from the application of fertilizer in Canada's agriculture sector". As Saskatchewan's general farm organization, APAS strives to represent the views of Saskatchewan farmers and ranchers to positively influence agriculture and rural communities. APAS represents approximately 16,000 farm businesses and families across Saskatchewan. The Fertilizer Emissions Reductions Target has been a major policy priority for APAS members since the consultations were launched earlier this year. The publication of the discussion document and the information sessions that Agriculture and Agri-Food Canada has provided through town hall events and other engagement opportunities has allowed our members to consider the proposed strategy and provide feedback that is reflected in this submission.

The fertilizer emissions reduction strategy represents a significant policy challenge for our members because it pertains to a farm management practice that has been a major source of innovation and continuous improvement for the sector. Nitrogen is an essential input for Saskatchewan farmers and often their single largest operating expense. As price takers in international markets, primary producers seek to maximize production using the lowest inputs possible. These economic, as well as other environmental considerations such as soil conservation, have helped position Saskatchewan producers as world leaders in the development and adoption of production practices to optimize soil health and productivity. Zero-till seeding technology has been especially transformative in the sector, helping to increase production while also reducing CO2 emissions through the conversion of Saskatchewan's agricultural soil from a net emitter to a significant carbon sink. This technology has been further augmented in more recent decades with the widespread adoption of 4R practices in nutrient stewardship, such as soil testing, precision fertilizer placement, variable mapping, and the development of inhibitor compounds and other products to increase fertilizer use efficiency.

The federal target to reduce fertilizer emissions 30% by 2030 has raised several concerns for our members. With 40% of Canada's arable acres, Saskatchewan's agricultural sector is a strategic asset in Canada's efforts to reduce emissions and mitigate climate change. Producers participate in a wide variety of programs and initiatives to protect land resources and reduce emissions. However, APAS members

feel the 30% fertilizer emissions reduction target was established without adequate consultation and is based on an incomplete understanding of the nutrient stewardship technologies and best management practices currently used on Saskatchewan farms. APAS has also previously recommended an approach to emissions reduction strategies for the sector that targets reductions in emissions intensity over absolute emissions. Saskatchewan is a major producer of several agriculture and food products for export markets and we feel an emissions intensity measurement provides greater flexibility to increase food production to feed a growing world population while continuing to improve efficiencies and lower GHG emissions per unit of production.

Questions have also been raised with respect to the 2030 timeline. APAS Representatives have identified several concerns that strongly point to a need for improved modelling, additional research to quantify and demonstrate emissions savings, and the identification and promotion of BMPs that are supported by verifiable and regionally appropriate data for Canada's diverse growing regions. Whether these requirements can be fulfilled in only eight growing seasons was an important and recurring question that was raised in consultations with APAS members.

It is important that agricultural policy is developed with clear and achievable objectives. To this end, the APAS submission is organized around three focus areas that we'd like to see addressed in subsequent phases of these consultations. These include:

- Any business case for emissions reductions must be supported by research showing emissions savings along with economic and agronomic benefits and incentives for adoption
- The models and methodologies measuring fertilizer emissions must be clear, accurate and reflect regional variation
- Emissions reductions policy should not interfere with Canada's contributions to global food security or introduce additional risks to family farm businesses

Discussion

The following submission addresses these areas in more detail with reference to the consultation discussion questions where appropriate. In addition to these comments and recommendations, APAS also wishes to highlight the joint brief submitted by Saskatchewan commodity associations. It is important for AAFC to consider Saskatchewan's share of Canadian agricultural exports when reviewing input received during these consultations and the important role that producer organizations play in research investment and knowledge transfer in the sector.

#1. Any business case for emissions reductions must be supported by verifiable research showing emissions savings along with economic and agronomic benefits and incentives for adoption

We recognize that the fertilizer emissions reduction target is an important component of federal commitments to lower nitrous oxide emissions in order to meet Canada's international obligations under the Paris Climate Agreement. However, it is also important that we do not get ahead of the science when pursuing these objectives. This is particularly critical for a dynamic industry like agriculture in which Canada is already a world leader in technological innovation and the adoption of new production practices to

improve efficiency. Producers also base their management decisions on various environmental and economic conditions that change frequently within short growing seasons. These factors all highlight the need for a unique approach to agriculture that is based on sound science and developed in close consultation with producers.

Table 2 of the Consultation Document, in particular, suggests that more research is needed to better understand both the level of BMP adoption and the emissions reduction potential for certain management practices. APAS Representatives have noted that certain 4R practices, such as variable rate, are widely adopted generally, but the return on investment varies across different regions in accordance with expected moisture and growing conditions as well as local soil profiles that can change significantly within crop districts. The estimated emissions reduction potential of BMPs listed in Table 2 also varies considerably, with estimated emissions reduction potential ranging between 15% and 35% in the case of split applications and enhanced efficiency fertilizers.

Accurately measuring and quantifying fertilizer emissions is recognized as a complex but evolving area of science that requires multiple years of research data to validate findings and account for the wide variations in weather and production that exist across Canada. There is a role for the federal government to continue to fund and help coordinate this research, while also recognizing the need for continued support of existing research priorities, such as varietal development, that have demonstrated success in helping producers manage climate risks and lower emissions intensity in the sector.

The Discussion Paper also includes several questions concerning barriers to adoption and potential program designs to encourage certain management practices. Firstly, it is important that recommended practices are also supported by research data that accurately measures emissions from fertilizer while addressing the agronomic and economic impacts associated with their adoption. Access to research data can help inform management decisions, but it is also important to recognize that each farm is different. Decisions are often made to manage costs and risks in a low-margin, capital-intensive business environment.

The APAS submission to the initial phase of consultations in 2021 included several recommendations to help offset costs for the purchase of new equipment and to provide credit for emissions reductions and enhanced carbon sequestration. Since that time, AAFC has continued to develop and offer cost sharing opportunities for nitrogen management, cover cropping and other BMPs through programs such as the On Farm Climate Action Fund. While these funding supports are a positive development, APAS also noted that our concerns regarding the design of carbon offset protocols were not addressed in this more recent phase of consultations.

Carbon sequestration in agricultural soils through improved tillage practices is an important contributor to the federal government's net zero emissions target that is recognized in Canada's international reporting of carbon emissions and biological sinks. At the same time, sequestration values from zero tillage are excluded from offset protocols due to the introduction of a "40% penetration factor" that is used to determine whether a practice is common within a given sector. As noted in the initial APAS

submission, this policy significantly limits Saskatchewan producers' participation in offset credit markets and has undermined confidence in Canada's approach to offset program development in the agricultural sector. One of the proposals included in the initial submission was to credit zero-tillage practices when used in conjunction with another BMP below the threshold. More generally, we feel these consultations further highlight the need for the federal government to re-examine its approach to carbon offset policies and work with producers to find ways to recognize farm practices that enhance sequestration and positively contribute to Canada's emissions reduction targets.

#2. The models and methodologies measuring fertilizer emissions must be clear, accurate and reflect regional variations

The assumptions and factors used to quantify emissions from fertilizer application were another major concern addressed in consultation with APAS members. As mentioned previously, the fertilizer emission reduction strategy represents a significant policy challenge because of the technological innovation and the significant investment that producers have made to optimize the efficient use of crop nutrients. Accurate models that account for increased fertilizer use efficiency and the variation in growing conditions across regions are critical to any credible emissions reduction targets for the sector. The lack of clarity about the current modelling and the expectation that methods will improve over time has created questions about the appropriateness of setting a baseline year to measure emissions for fertilizer application.

#3. Emissions reductions policy should not interfere with Canada's contributions to global food security or introduce additional risks to family farm businesses

Saskatchewan is a leading producer of many staple agricultural products and food ingredients in both domestic and international markets. Recent events, such as the Covid-19 pandemic and Russia's invasion of Ukraine, have underscored the importance of the province's contributions to international food security. High rates of adoption of new production technologies, together with Canada's science-based approach to food safety and environmental protection, have helped to develop Saskatchewan's reputation as a safe, reliable supplier of high-quality agriculture and agri-food products for international markets. Any government policies or initiatives concerning fertilizer use must recognize the potential implications these policy decisions have on agricultural production and food security. While AAFC has clearly stated its commitment to a voluntary approach to fertilizer emissions reduction, the decision to pursue an absolute reduction in fertilizer emissions creates a significant policy challenge when considering the pace of the technological change in the sector and need to increase production to meet a growing world population and increasing demand for agricultural products.

Potential economic risks and competitive pressures associated with the development of a federal fertilizer emissions reduction strategy were additional considerations raised in our consultations. While it was recognized that Canada is pursuing a voluntary approach to meeting these targets, there were questions raised over the possibility of other non-regulatory policy measures to encourage BMP adoption and reporting, including the need to demonstrate compliance in order to access other program funding and supports. This type of compliance approach would unduly influence on-farm

management decisions, create competitive disadvantages in the sector, and introduce new costs and risks to producers.

The need for more international and jurisdictional comparisons of fertilizer emissions reduction policies was also raised as another important consideration in our consultations. While the Discussion Paper notes the absolute targets being pursued in European countries, there is a lack of recognition or discussion about the US approach to emissions reduction and carbon credit policies for agriculture. Canada's agricultural sector is highly integrated with U.S. markets for both input supplies and end-use demand. The U.S is also a major competitor in several key international markets. Recent APAS submissions to federal consultations on carbon pricing and border carbon adjustment policies have noted the importance of ensuring a consistent approach with US carbon and climate change policy for agriculture to mitigate the competitive risks that producers face when purchasing and selling commodities in integrated world markets.

For more information

Please contact the APAS Policy Department with any questions or to receive more information about any of the comments and concerns addressed in this submission.

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Thank you for the opportunity to provide input.

Written Submission for Agriculture and Agri-Food Canada's Fertilizer Emissions Reduction Target Consultation

SaskCrops & APAS

August 31, 2022

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Introduction

The Saskatchewan Crop Commissions (SaskCrops) comprised of SaskBarley, SaskCanola, SaskFlax, SaskOats, Saskatchewan Pulse Growers, and Sask Wheat, along with the Agricultural Producers Association of Saskatchewan (APAS) welcomes the opportunity to provide feedback to Agriculture and Agri-Food Canada (AAFC) on the Government of Canada's Fertilizer Emissions Reduction Target.

Our organizations represent over 24,000 grain, pulse, and oilseed growers in Saskatchewan. The common goal of our organizations is to ensure that Saskatchewan farmers remain competitive and profitable. We support and advocate for science-based policy to support the competitiveness of Saskatchewan growers.

Agriculture is a critically important segment of Canada's economy, and Saskatchewan plays a vital role in Canada's agriculture sector, accounting for 43 percent of Canada's cropland[1] and 23 percent of total Canadian agri-food exports.[2] Saskatchewan's agricultural exports are not only a key driver of the Canadian economy but are also crucial to maintaining global food security.

Saskatchewan farmers have been and remain at the forefront of innovation in agricultural production globally and have long been early adopters of technologies that have greatly lowered our emissions compared to other regions of Canada.[3] Saskatchewan farmers as a group are unique among the provinces in their low emission intensity coupled with high agricultural intensity. This clearly indicates the meaningful contributions Saskatchewan is making and can continue to make to help other jurisdictions meet their environmental goals and increase the resiliency of Canadian agriculture.

Prior to development of the current discussion document, the Government of Canada endorsed a goal of achieving $85 billion in agri-food exports by 2025 and $140 billion in

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[1] Statistics Canada, 2022. Canadian Agriculture at a Glance. Saskatchewan continues to live up to the title of breadbasket of Canada https://www150.statcan.gc.ca/n1/pub/96-325-x/2021001/article/00008-eng.htm

[2] Government of Saskatchewan, 2021. Saskatchewan Agriculture Exports 2020.

[3] Agriculture and Agri-Food Canada, 2021. Agricultural Greenhouse Gas Indicator. https://agriculture.canada.ca/en/agriculture-and-environment/climate-change-and-air-quality/agricultural-greenhouse-gas-indicator

domestic sales by 2025.[4] Recently, through the agreement in principle for the Sustainable Canadian Agricultural Partnership, the federal, provincial, and territorial Ministers of Agriculture set targets for $250 billion in sector revenues and $95 billion in sector export revenues by 2028.[5] The current AAFC discussion document further supports an increase of production as these goals require but specifically constrains it within an overarching goal of reducing GHG emissions when it states, "the defining challenge for Canadian agriculture in the 21st century will be to reduce absolute GHG emissions, and ultimately reach net-zero emissions by 2050, while finding ways to increase yields and economic growth- all while feeding a growing global population." Given the short timeframe to 2030, a major increase in production and exports as well as a 30 percent reduction in fertilizer emissions presents significant challenges and it is improbable to achieve these goals simultaneously.

Saskatchewan farmers continue to increase grain production, largely through per hectare (acre) yield increases, while at the same time adopting a variety of environmentally sustainable practices, but we cannot afford to get ahead of the science as we pursue these parallel lines of action. Calling for an increase in reliable food production and, at the same time, developing fertilizer emission targets without the support of accurate measurement techniques and protocols that yield sound, adequate, and representative data, will limit Canada's ability to meet the challenges of sustainably feeding the world. Our organizations strongly believe that any agricultural environmental policies and targets need to be grounded and supported by science and verifiable data.

In particular, nitrogen fertilizer as a vital input for Saskatchewan, Canadian, and international field crop production will remain essential for increasing production to meet rising global food demand. It is, thus, imperative that the fertilizer emission reduction target takes into account increases in fertilizer use efficiency.

We appreciate AAFC's recognition that there is no one-size fits all approach to meeting this target as there are many variables at the regional and individual farm level that will impact what solutions work for each farmer. It is crucial that any recommended or incentivized

[4] Innovation, Science and Economic Development Canada, 2018. Report of Canada's Economic Strategy Tables: Agri-food. https://www.ic.gc.ca/eic/site/098.nsf/eng/00022.html
[5] AAFC, 2022. Annual Meeting of Federal, Provincial and Territorial Ministers of Agriculture. https://www.canada.ca/en/agriculture-agri-food/news/2022/07/annual-meeting-of-federal-provincial-and-territorial-ministers-of-agriculture.html

practices are economically, operationally, and environmentally feasible for farmers. Additionally, we are only eight growing seasons away from 2030, and this short time frame will also make it challenging for farmers to evaluate Best Management Practices (BMPs) for their farm and possibly make large capital investments in equipment and technology.

We have provided further comments below on the three issues/themes outlined in the discussion document.

Issue 1: Developing a Strategic Approach to Meeting the Fertilizer Emissions Target

After water, nitrogen is the most limiting factor in crop production in western Canada; therefore, nitrogen fertilizers are fundamental to optimizing production levels[6]. However, nitrogen fertilizer often represents the highest input cost for farmers; therefore, farmers rely on BMPs to apply nitrogen fertilizer in the most efficient way possible to maximize production subject to the economic returns to the farm.[7] Aside from the cost of purchasing the fertilizer, there are many other factors that each farmer needs to take into consideration to determine the most efficient and cost-effective way to apply fertilizers, including available equipment and technology, time and labour availability, crop rotation, and soil and weather conditions. Farmers also rely on soil testing to quantify the available nutrients in relation to the specific needs of each crop before considering any application. This further highlights the point that there is no one-size fits all solution to lowering emissions from nitrogen fertilizer application. Farmers are already constantly evaluating their fertilizer application practices ensuring they are optimizing their use and maximizing the return on production. Additionally, farmers evaluate production practices to ensure the sustainability and productivity of their land for generations to come. As new technologies and recommendations are developed, farmers will evaluate their potential and implement solutions that are economically and environmentally beneficial for their own farms.

Enhanced Efficiency Fertilizers (EEFs) are identified in the discussion document as one technology that may help to improve the efficiency of nitrogen fertilizer application. However, further research and knowledge transfer is needed so farmers can make

[6] Farrell et al, 2020. Environmental and Agronomic Benefits of Enhanced Efficiency Nitrogen Fertilizer. https://harvest.usask.ca/handle/10388/12764

[7] Government of Saskatchewan, 2022. Crop Planning Guide and Crop Planner. https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/farm-business-management/crop-planning-guide-and-crop-planner

informed decisions supported by science whether a product might be a good fit for their operation. Saskatchewan crop commissions continue to fund research projects in this area, to ensure farmers have local, unbiased research results available to them.

The majority of research on the use of EEFs has been conducted in areas outside of western Canada and involves cropping systems that are significantly different than those in Saskatchewan. Research completed at the University of Saskatchewan has shown the environmental benefits of using EEFs with reduced nitrous oxide emissions; however, no significant agronomic (i.e., yield) benefits were detected.[6] Further research is ongoing to determine how best to optimize the agronomic benefits of using an EEF in prairie cropping systems. Until then, the uncertain comparative economic benefits of using more expensive EEFs will be a disincentive for adoption. Fertilizer Canada's 4R Nutrient Stewardship program holds great potential to lower fertilizer emissions, and many Saskatchewan farmers are already following the 4R principles of right source, right rate, right time, and right place. Although most farmers do not have a certified 4R plan, these principles and the practices supporting them are widely recommended as BMPs by researchers, producer commissions, agronomists, and retailers.

As the cost of new products, equipment, and technology is often one of the largest barriers to adoption, cost-sharing programs should continue to be explored. We recognize that the government is developing funding programs; however, the practices/technologies available for funding need to be flexible and suitable for various and diverse regions across Canada. Ultimately, government needs to ensure that incentivized practices have been broadly tested at the farm level to ensure they are practical and beneficial for farmers in the region they are being promoted in. While the Living Labs program aims to fill some of this knowledge gap, the results from these projects will not be available for several years. In addition, the number of projects is small with the risk of the results being very location specific, thus perhaps only providing limited information for a broad-cross-section of farmers. This highlights the need for increased data collection, reporting, and monitoring from a wide range of locations and conditions as discussed in the next section. Governments, producer groups, academics, and other stakeholders need to continue to work together to ensure that applicable research is designed, funded, completed, and shared that accurately measures emissions and the impact of technologies and on-farm practices on reducing emissions across all of western Canada. Saskatchewan crop

commissions are committed to continuing to fund and communicate research needed to inform farmers on BMPs and to assist with knowledge and technology transfer.

Overall, more research is not only needed on the environmental impact of possible emission reducing technologies, but also on the economic and agronomic impacts. Farmers need accessible, unbiased research to assist them to trial and evaluate practices and technologies to understand what will work for their farm.

Finally, we appreciate the discussion around economic implications in the document and the recognition that "depending on the characteristics of the individual farm, the economic costs of adopting different fertilizers or fertilizer management practices may outweigh any potential yield increase." While cost, especially relative to expected returns is often a large barrier to adoption, other factors such as time and labour availability, and weather also impact adoption choices and can be nearly impossible to overcome.

Issue 2: Data, Reporting and Measurement

Current modelling of emissions and the impact of management practices at the farm level is a large concern for farmers. It is crucial to be able to accurately measure the impact of on-farm practices on emissions reduction to not only understand current emission levels, but also to correctly measure progress towards the target. Many farmers are already implementing 4R and other BMPs, and those need to be accurately measured and accounted for. Without improved data collection and accurate modelling to measure emission levels, we risk developing policies that will negatively impact our ability to feed the world.

Saskatchewan producer groups are willing to work with governments and researchers to ensure necessary and adequate research is undertaken to reliably measure emissions from nitrogen fertilizer. Tracking fertilizer application practices and modelling emissions is certainly no small feat; however, it is absolutely vital if the government is serious about fully understanding emissions from fertilizer application and the impact BMPs have on mitigating emissions. We also believe there is an opportunity to strengthen existing surveys, such as Fertilizer Canada's Fertilizer Use Survey and Statistics Canada's Farm Management Survey, to provide better data on detailed fertilizer use and practices.

Furthermore, improving data collection and modelling should not create additional reporting burdens for individual farmers. Surveying a representative sample of Canadian

farmers, reflective of diverse regional production conditions and levels, on fertilizer management practices should not create any more of a burden for respondents than current government or industry survey collection does. Compensation for participation in the survey should also be considered.

While we recognize there are challenges in developing internationally acceptable measures, the uniqueness of Canadian crop production, and specifically from the prairie provinces, which account for over 80 percent of Canada's farmland, needs to be accounted for in Canada's metrics. Similar to the need to recognize that there is no one-size fits all solution to reducing emissions across Canada, Canada must advocate for flexibility internationally for the acceptance of the accuracy of its measurement of Canadian emissions when other regions are not using the same production practices or technologies. This has been a problem for international comparisons of GHG emissions of individual crops as, unlike Canada, most countries do not include GHG reductions from carbon sequestered through zero-till practices. Therefore, in direct comparisons of Canadian emissions to other countries, the impact of zero-till on carbon sequestration and overall GHG emissions is left out. As Saskatchewan farmers have adopted production practices such as zero-till and continuous cropping that have significantly reduced our carbon footprint, this needs to be considered in international GHG emissions comparisons to present an accurate reflection of GHG emissions for Canadian crop production and not put us at a disadvantage.

Issue 3: Innovation and Transformation Opportunities

Our organizations view research and variety development as the primary way to increase agricultural sustainability and resiliency. As climate change and environmental protection are main priorities of the Sustainable Canadian Agricultural Partnership, we believe breeding activities that develop trait technology and innovation 'ingrained' in the seed will help the government meet their sustainability goals by providing farmers with higher yielding varieties with improved nutrient use efficiency, reduced herbicides needed, and better ability to withstand abiotic and biotic stressors. Therefore, it is vital that the Government of Canada continue to fund breeding activities through the Agri-Science Cluster Program and at the same level as other sustainability work being considered.

Continued research into new technologies and production practices for use on-farm is also crucial to ensuring the sustainability and resiliency of Canadian field crop production.

Agronomic research can identify BMPs that result in reduced GHG emissions, more effective input use and more efficient carbon capture, furthering farmers' contribution to Canada's climate change and sustainability goals. However, there are many variables at the regional and individual farm level that will impact what solutions work for which farmer. It is critical that any recommended or incentivized practices are both economical and environmentally feasible for farmers. Wide scale testing at the regional and farm level is needed to assist in the adoption process.

Conclusion

Saskatchewan farmers have been and remain at the forefront of innovation in global agriculture. Through innovations, farmers have been making meaningful emissions reductions on-farm for decades, while consistently growing more food. Saskatchewan farmers' already low emission intensity levels show that we have meaningful contributions to make as governments determine how best to manage environmental and agricultural policy issues in the ever more turbulent future, as we look to ensure global food security for a growing population.

Saskatchewan crop commissions will continue to fund research that supports the economic and environmental sustainability of Saskatchewan farms. We believe the unique experience and expertise of Saskatchewan farmers can be an invaluable resource for the government. Saskatchewan farmers want to be involved early in discussions with the government on environmental policy, emissions reduction, and the path to net-zero and hope their positive contributions to date and future opportunities specific to their diverse on-farm production environments will be acknowledged and reflected in current and future government policy in this area. Finding solutions that work for both farmers and the government is vital to ensure farmers remain competitive and profitable while at the same time ensuring a healthy, sustainable environment for future generations.

Overall, more research and data collection are needed to accurately measure emission levels and understand the impact of on-farm practices on emissions reductions. Additionally, more research is not only needed on the environmental impact of possible emission reducing technologies, but also on the economic and agronomic impacts.

We appreciate the opportunity to provide feedback on AAFC's Fertilizer Emissions Reduction Target and invite you to reach out to us to further discuss any points we have raised. Additionally, we would welcome an opportunity to show AAFC officials the

technologies and practices being implemented on our farms to ensure nitrogen fertilizer is used by crops in the most efficient way possible.

We look forward to future consultations and discussions with AAFC on emissions reduction including the Green Agricultural Plan.

Sincerely,

Ian Boxall
President, APAS

Keith Rueve
Chair, SaskBarley

Charlene Bradley
Chair, SaskCanola

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