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Re: Response to Saskatchewan Offsets Discussion Paper

On behalf of Fertilizer Canada and our members, thank you for the opportunity to respond to the Government of Saskatchewan's Offset Discussion Paper. We would also like to thank the Government of Saskatchewan for appropriately referencing the Nitrous Oxide Emission Reduction Protocol (NERP) as a possible offset framework in Saskatchewan.

Fertilizer Canada is an industry association which represents manufacturers, wholesale and retail distributors of nitrogen, phosphate, potash and sulphur fertilizers. Fertilizer is a significant contributor to Saskatchewan's economy, both from the production of potash and nitrogen fertilizers and use of fertilizers on-farm. Responsible for half of the world's current food production, fertilizer is fundamental to the future of agriculture and farmers' ability to feed a growing global population.

As the world seeks to sustainably grow food from a decreasing land base, farmers will continue to rely on fertilizer to increase production efficiency while conserving our soil, water and air. To meet this challenge, farmers will require more than just new and innovative technologies; they will require a new framework for understanding and implementing the core principles and practices of sustainable agriculture.

4R Nutrient Stewardship has been designed for this purpose. For more than a decade, Fertilizer Canada has worked with Canadian farmers and the fertilizer industry to promote 4R Nutrient Stewardship - a science-based approach to fertilizer management that involves applying the Right Source @ Right Rate, Right Time, Right Place ®. Use of the 4Rs optimizes plant nutrient uptake, maximizes yield and increases profitability, while also minimizing fertilizer runoff, leaching and nitrous oxide emissions.

4R Climate Smart Protocol

The 4R Climate-Smart Protocol (previously known as the Nitrous Oxide Emission Reduction Protocol, or NERP) is a science-based protocol for improving nitrogen management in cropping systems and estimating the nitrous oxide reduction associated with better nitrogen management. It is a robust protocol designed to meet international standards for estimation and verification of carbon offsets but is simple in concept and is driven by data that producers are either already collecting or are interested in collecting to improve their overall farm management system.

Fertilizer Canada has led and continues to support the development of the 4R Climate-Smart Protocol on behalf of our members as a tool to help ensure the economically efficient and environmentally responsible use of fertilizer. The protocol was developed using a consensus approach with input and review from Canada's top scientists in greenhouse gas (GHG) emissions and abatement from cropping systems as well as leading agronomists from government and industry.

As the 4R Climate-Smart Protocol uses a modification of Canada's internationally accepted and peer reviewed Tier II inventory method to estimate nitrous oxide emissions at the farm enterprise level, it is

readily applicable as a tool for improving nitrogen management and estimating on-farm emissions from cropping systems throughout Canada.

The protocol was originally approved for use within Alberta's GHG management framework as a protocol for delivery of compliance quality offsets for Alberta's regulated large final emitters however can be adapted to fit other jurisdictions. Through review of identified obstacles faced in Alberta, the Government of Saskatchewan can avoid such challenges to ensure successful application and uptake of the developed protocol. In Alberta, it was found that without consideration and incorporation of the following criteria, it was virtually impossible to successfully apply the protocol on the ground (these listed considerations are discussed further in the recommendations below).

- Development and adoption of a dynamic baseline
- Sign off by land owner transferring credits to farmer
- Protocol qualification on a field by field basis

4R Nutrient Stewardship – the Driving Force Behind Practice Change

Improved nitrogen management within a 4R Climate-Smart Protocol is delivered through the implementation of a 4R Nutrient Stewardship Plan on the farm. Producers wanting to participate in a project using the 4R Climate-Smart Protocol develop a 4R Plan with an accredited professional advisor (APA) – Certified Crop Advisor (CCA) and/or Professional Agrologist (P.Ag.) with approved training. The APA helps the producer develop a set of sustainability goals that incorporate GHG emission reduction measures as well as other issues that are specific to the farm into their nutrient management. Reducing GHG emissions per unit of crop produced, generating carbon offsets to help society adapt to climate change, and improving the return of dollars spent on fertilizer are examples of environmental, social, and economic goals that might be included in a 4R plan under a project.

The APA also helps the farmer develop a suite of practices that integrate the Right Source @ Right Rate, Right Time, Right Place ®. These BMPs must meet certain thresholds to be 4R eligible at basic, intermediate, or advanced levels.

A 4R Climate-Smart Protocol project begins when the APA signs off on the 4R Plan and verifies that it has been put into practice. An important point is that while a producer can implement 4R improvements on their own, involvement and sign-off on the 4R plan by an APA is a required element of a farm's participation in a 4R Climate-Smart Protocol project and is viewed as beyond business as usual in the context of additionality.

Incorporating the 4R Climate-Smart Protocol into Saskatchewan's Offset Framework

Fertilizer Canada would like to thank the Government of Saskatchewan for including 4R Nutrient Stewardship as an indicator of sustainability in their Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy. Capturing 25 per cent of provincial crop acres under 4R Designation by 2025 represents a significant step towards creating a sustainable future for Saskatchewan and all of Canada. Our association stands ready to work with your government and other stakeholders to achieve this ambitious target.

Fertilizer Canada is pleased to have been working with the Government of Saskatchewan on this through a Memorandum of Cooperation (MOC) since 2016. Extended last year, the MOC supports the continued implementation of 4R Nutrient Stewardship and 4R Designation in the province, through extension, training and education.

The 4R Climate Smart Strategy, which incorporates the 4R Climate Smart Protocol into a 4R Nutrient Stewardship plan, can help growers reduce on-farm GHG emissions by up to 35 per cent. It is Fertilizer Canada's hope that the Government of Saskatchewan will be leaders in the adoption of the 4R Climate Smart Protocol to help produce these tangible reductions – an estimated 420,000 metric tonnes of CO2e per year.

By implementing 4R Nutrient Stewardship at a basic level on the major crop rotations in Saskatchewan (Canola, Corn, Wheat, Flaxseed, Barley and Oats), there is a potential GHG emission reduction of approximately

420,000 Metric Tonnes CO_2e

per year

This theoretical maximum emission reduction, calculated using data from the national inventory methodology on total nitrogen fertilizer (non-manure) applied, is a conservative estimate based on the implementation of a basic level of 4R Nutrient Stewardship best management practices (BMPs).

Implementation of intermediate or advanced practices in one to all four areas would increase the potential GHG emission reductions accordingly (see detailed estimates). It is also important to highlight that not only would these practices reduce emissions but would also increase revenue per acre. The average crop value of the harvest from the 4R demonstration farms increased by $87 per acre compared to the standard practice plots due to better crop yield and quality.

There is a significant opportunity to realize these benefits. Fertilizer Canada has participated in a Fertilizer Use Survey project over the last four years to fill the gap of publicly available data for commercial fertilizer use and help us understand the current state of fertilizer management in Canadian crop production and fertilizer management trends over time.

The Fertilizer Use Survey indicates 27% of Saskatchewan growers are both implementing basic 4R Nutrient Stewardship practices and are either familiar with 4R Nutrient Stewardship or working with a certified professional who has been trained in 4R Nutrient Stewardship. Quantification of reductions by this grower group through a certified professional, would result in an estimated 113,000 metric tonnes of CO_2e reduction per year.

27%

of Saskatchewan growers* implement basic 4R practices

10 million

Saskatchewan cropland acres* implement basic 4R practices

This results in a reduction of GHG emissions by

113,000

metric tonnes CO_2e

per year

*includes major crop rotations (Canola, Corn, Wheat, Barley, Oats, Lentils and Soybeans)

Recommendations

The development of an offset system represents an important option for the regulated community and an opportunity to realize additional GHG reductions through protocols like the 4R Climate Smart Protocol. We stand ready to work with the Government of Saskatchewan as this process advances and provide the following recommendations for consideration:

- **Adoption of the 4R Climate Smart Protocol.** Adoption of this protocol (known as 'NERP' in Alberta, or a similar nitrogen management offset protocol) for the production of tangible reductions in agricultural emissions can assist the Government of Saskatchewan in achieving its emissions reductions goals.

- **Consider emission reduction activities for protocols outside of Canada's National Inventory Report.** Utilizing the quantification methodologies and activities used in the National Inventory Report (NIR) is important for a multitude of reasons (fungibility, best available science, etc.). However, adhering strictly to the Government of Canada's criteria in Appendix B would also limit a host of offset protocol opportunities. This is the paradox between ensuring offset activities are additional and not business as usual, and wanting them to be captured in the NIR for Article 6 purposes. Innovative activities likely are not going to be captured in the Inventory due to its accounting requirements such as the need to track activities from 1990 onwards. Some of the innovative activities for the Agriculture sector, like 4R Nutrient Stewardship, are not reflected in the inventory. We recommend that the Saskatchewan offset program develop a vetting process to consider protocols outside of the NIR.
- **An aggregator is required**. For smaller tonne land-based offsets, aggregation is a necessary part of managing transaction costs and increasing the viability of offset projects which has been demonstrated in many markets. It is the aggregator who takes on the risk and liability of meeting all the requirements of the Offset System at hand; and developing robust data management and record collection systems to meet verification and auditing of projects. With a well-designed framework, the beneficial role of aggregators can be realized, and this has been recognized in other jurisdictions. For example, Alberta has built in safeguard language in protocols to ensure the balance of responsibilities between the farmer and aggregator exists.
- **Verification should be a critical component of the Saskatchewan Offset program**. It will be prudent to align with Federal requirements (i.e. ISO 14064-3 standard by a member of the International Accreditation Forum) for third-party verification. Accreditation of verifiers is recommended, particularly during the development of Saskatchewan's Offset program. Given acceptance under the federal guidelines and ISO 14064-3 standard, it is recommended that verification of on-farm, agricultural GHG emission reduction offsets be done by a team which includes Professional Agrologists.
- **Government audits take place in the first year of the project.** If the government is going to reserve the right to audit verified projects, we recommend that the audit be completed in the first year of a multi-year project for consistency. Alberta can provide a lesson as the deployment of government audits was not well planned and continues to cause consternation to this day.
- **Development and adoption of a dynamic baseline**. As baselines are closely related to additionality, Fertilizer Canada supports the development of baselines intended to consider what the GHG emissions or reductions would have been if no offset project was implemented. Having said that, there may be specific project types where a project-specific baseline may be needed because of lack of regional data and information. Fertilizer Canada recommends consideration of ecodistrict baselines developed with Crop Insurance or other data sources as a practical approach to baseline development for on-farm yield data.
- **Sign off by land owner transferring credits to farmer**. In the case of projects that only have emission reductions (i.e. N_2O reductions from soils) the person taking the action (land manager/lessee or the land owner) is the 'owner' of the reduction. As carbon is not being stored in the soil and the emission reductions take place the year in which they occurred, this ownership eliminates possible double counting and reversals.
- **Protocol should be on a field by field basis**. For N_2O reductions from soils we recommend that deviations in fields that do not meet the protocol should result in the field being excluded from the protocol for that season, not the whole farm.

Through continued partnership, the Government of Saskatchewan has the opportunity to take advantage of the advancements that have been made by the Canadian fertilizer sector. We encourage and welcome continued consultation with industry to ensure successful development and implementation of a 4R Climate Smart Protocol for the province of Saskatchewan.

Sincerely,

Cassandra Cotton
Vice President, Policy and Programs
Fertilizer Canada