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Fertilizer Canada Draft Recommendations (Executive Summary) Federal Spending to Improve Nitrogen Management

In *Budget 2021: A Recovery Plan for Jobs, Growth, and Resilience*, the federal government allocated \$200 million over two years starting in 2021-22 to launch immediate, on-farm climate action under the Agricultural Climate Solutions program.

“This will target projects accelerating emission reductions by improving nitrogen management, increasing adoption of cover cropping, and normalizing rotational grazing.”

This funding announcement is meant to initiate actions towards the Government of Canada’s *Healthy Environment and a Healthy Economy* plan released in December which identified the following commitment: “Set a national emission reduction target of 30% below 2020 levels from fertilizers and work with fertilizer manufacturers, farmers, provinces and territories, to develop an approach to meet it.”

We recommend that the Government of Canada set aside \$100 million from the new Agricultural Climate Solutions program for the following three projects:

- Accelerate 4R Nutrient Stewardship Certified Crop Advisor (CCA) Training - \$5M
- Farmer Incentives for 4R Nutrient Stewardship Uptake - \$92M
- Advancing Measurement & Tools - \$3M

Ultimately for these funds to have the biggest impact, this initial funding support must act as an instrument to build long-term revenue benefits for farmers in order to drive real change. This is why solutions such as the 4R Climate Smart Protocol must be at the core of any plan to reduce agricultural emissions to ensure that farmers are rewarded, not punished. Including this year, there are nine growing seasons remaining to 2030. Development of the 4R Climate Smart Protocol nationally within the federal framework needs to be immediately prioritized.

For more than a decade, Fertilizer Canada has worked with Canadian farmers and the fertilizer industry to develop and promote 4R Nutrient Stewardship - a science-based approach to fertilizer management that involves applying the Right Source of fertilizer at the Right Rate, Right Time and Right Place. Nitrogen-based fertilizers are highly effective and necessary for achieving economically sustainable production and when applied using the principles of the 4Rs can reduce N₂O emissions.

4R Nutrient Stewardship is an innovative solution for increasing the efficiency of agricultural practices for enhanced food production while reducing greenhouse gas emissions. Through 4R Nutrient Stewardship, the industry can help Canada achieve its Paris Climate goals of net-zero

by 2050. A combination of 4R practices will allow us to achieve the greatest productivity and the greatest reductions.

- Agricultural productivity of major field crops in Canada has increased by about 34% since 2005 through agricultural intensification and adoption of new, innovative technologies. Production of canola, Canada's most valuable and nutrient intense crop, has increased by about 80% in that same timeframe.
- Fertilizer consumption in Canada has remained on the rise over the past two decades in support of these increased crop yields and global demand for food is still increasing at a record rate. With approximately 50% of global food production attributable to fertilizer, agricultural productivity must focus on increased efficiency through intensification and decreased environmental losses.
- Within Canada, as crop productivity has increased, nitrogen use efficiency has remained high.

Increasing nutrient use efficiency (NUE) is a key component of sustainable agricultural intensification. The greatest challenge is to improve NUE for reduced N₂O emissions while also achieving greater nutrient use effectiveness in crop and livestock production. The 4R Nutrient Stewardship approach to nutrient use places significant emphasis on the ability of suites of 4R practices to optimize the selection and application of nutrients resulting in both improved NUE and crop productivity.

Canadian farmers are not overapplying nitrogen fertilizer. Canadian farmers use nitrogen (N) efficiently compared to their competitors in Europe. In countries where over application of N has been the norm, reducing N rates will not reduce yield. Canada is not one of those countries. Nutrient use efficiency in Canada already exceeds the world average and ranges between 66% and 78%. Canada is accomplishing this while also increasing productivity as a net positive contributor to world food security. The opportunity to improve nitrogen use efficiency is smaller in Canada than it is in other places in the world.

This is a multi-jurisdictional issue. We are supportive of the government's desire to include farm organizations, provincial governments, and the fertilizer industry in this process. Canada has the opportunity to become a world leader in reducing greenhouse gas emissions on farms by helping farmers become climate-smart. We believe that proactive efforts made by the agriculture industry will not only support Canada's targets, but will help position the Government of Canada with a leading example on the international stage in climate change adaptation, resilience, and mitigation.

It is imperative that programs for improved nitrogen management are developed in collaboration with Canadian farmers and the fertilizer industry moving forward.

Sincerely,



Karen Proud
President & CEO, Fertilizer Canada

Overall Recommendations

We recommend that the Government of Canada set aside \$100 million from the new Agricultural Climate Solutions program for the following three projects:

- **Accelerate 4R Nutrient Stewardship Certified Crop Advisor Training - \$5M**
 - **Funds would support:**
 - The development of required additional training in Atlantic Canada and Quebec (Les Agronomes) as well as updated training in Ontario and the Prairies.
 - Specific training development for Certified Crop Advisors for Protocol participation.
 - Incentives for CCAs to cover the cost of acquiring the 4R Specialty Certification - incur the costs of the exam and the study material for those looking to obtain this 4R designation.

- **Farmer Incentives for 4R Nutrient Stewardship Uptake - \$92M**
 - **Funds would support:**
 - The creation of a fund that offsets the cost of initial and ongoing costs of climate-smart agriculture programs, like the 4Rs.
 - Additional grants to incentivize a relationship between a farmer and 4R CCA.

- **Advancing Measurement & Tools - \$3M**
 - **Funds would support:**
 - Integration of nitrogen management techniques into the NIR
 - The creation of an activity data set to update inventory estimates, which at present does not exist. A cooperative approach with industry and provincial/federal governments to collect farm activity data is needed. Modeling will need to be considered in order to address this challenge.
 - The development and incorporation of EEF products within the NIR, as per the IPCC 2019 guidelines, which have a consistent effect on reducing emissions from nitrogen fertilizer under a range of conditions and thus generalizable (20% - 40%).
 - Supporting and expanding the Fertilizer Use Survey
 - The continued collection of on-farm data for crops and fertilizer management practices to 2030.
 - The expansion of the survey beyond its current stakeholders, reaching a larger audience of farmers, crops, practices and regions.
 - 4R integration into traceability platforms
 - The Integration of 4R Nutrient Stewardship into traceability platforms, tools, calculators that estimate GHG reductions so Canada's agricultural sector can demonstrate its stewardship. Funds would support integration, development and testing within these verification systems.