**SCENARIO NOTE – MIN 265195**

**MEETING WITH FERTILIZER CANADA TO DISCUSS CANADA'S FERTILIZER EMISSIONS REDUCTION TARGET**

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| **Date and Time:** | May 13, 2021 13:00 to 13:30 |
| **Meeting Link:** | (***please enter the direct link to the meeting here***) |
| **Connection Details:** | Link to platform<br>Meeting ID<br>Meeting Password<br><br>Teleconference information ***to be used only if having connection issues via internet:***<br>Phone number(s)<br>Conference ID |
| **Subject:** | To discuss Canada's fertilizer emissions reduction target and Fertilizer Canada's 4R Nutrient Stewardship Program. |

**Participants:**

- Marie-Claude Bibeau, Minister of Agriculture and Agri-Food;
- Tom Rosser, Assistant Deputy Minister, AAFC
- Javier Gracia-Garza, Special Advisor on Agriculture and Climate Change, AAFC
- Karen Proud, President and CEO, Fertilizer Canada (**See Biography at Annex A**)

**Objectives and Outcomes:**

- Reiterate the Government's intent to work with Fertilizer Canada and a broad set of stakeholders regarding the development of a plan to reach the Fertilizer Emissions Reduction Target.
- Reiterate the government's interest in helping advance adoption of best management practices regarding the use of fertilizers, including through the 4R program.

**Context/Overview: (Background information – Annex B )**

- Fertilizer Canada is an industry association representing manufacturers, wholesale, and retail distributors of nitrogen, phosphate, potash, and sulfur fertilizers.
- The endorsement of Fertilizer Canada's 4R Nutrient Stewardship program by the federal government is a top priority for the association; Fertilizer Canada views the adoption of its stewardship program by farmers as the best way for Canada to meet the Fertilizer Emissions Reduction Target **(Annex C)**.
- Fertilizer Canada may seek the commitment of funds from the $200 million announced in Budget 2021 as part of the Agricultural Climate Solutions (ACS) Program, to promote 4R Nutrient Stewardship and incentivize its adoption amongst farmers.

**Key Messages:**

- The Government of Canada is committed to reducing emissions across all sectors, including agriculture.
- Supporting farmers so they can help Canada meet the Fertilizer Emissions Reduction Target is a priority.

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- Agriculture and Agri-Food Canada (AAFC) is continuing its engagement process with stakeholders to understand the best paths forward for meeting the target.
- While endorsement of 4R Nutrient Stewardship must be considered alongside views from industry and provincial and territorial stakeholders, I am interested to explore how best to support this initiative to increase its adoption by the sector.

**TALKING POINTS*:***

**FERTILIZER EMISSION REDUCTION TARGET**

- **I appreciate Fertilizer Canada's participation thus far in the engagement process for the Fertilizer Emissions Reduction Target.**

- **The insight and knowledge you have provided to AAFC officials, and to my office directly, will inform the remainder of the consultation process.**

- **We see Fertilizer Canada as an important partner in this process and look forward to collaborating with your organization on the development of voluntary agreements to support Canadian farmers in meeting the emissions reduction target.**

- **The department has met with Fertilizer Canada and others informally and will start more formal consultations in the coming months.**

**ENDORSEMENT OF 4R NUTRIENT STEWARDSHIP**

- **The beneficial management practices (BMPs) promoted as part of 4R Nutrient Stewardship are essential to reducing emissions. We appreciate the role Fertilizer Canada has played in their development, as well as in their promotion.**

- **We want to see a significant increase in the uptake of BMPs, such as those included in the 4R Nutrient Stewardship program, across Canada.**

- **We will fully explore the contribution 4R Nutrient Stewardship can make towards achieving our goals during the consultation process, and take action based on input from industry stakeholders, provinces, and territories.**

- **While the consultation process is underway, we are open to considering informal opportunities to highlight 4R Nutrient Stewardship, such as through my public messaging. I would welcome any suggestions or thoughts from you.**

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***Responsive: If asked about funding 4R under the Agricultural Climate Solutions***

- ***As you are aware, the Government of Canada has provided the ACS with an additional $200 million to be spent over two years to support our farmers to adopt best management practices in order to reduce emissions.***

- ***At this time, AAFC is still determining a path forward for this initiative.***

- ***Nutrient management will play an important role in reducing emissions, and I welcome Fertilizer Canada's recommendations on next steps for this program.***

***Responsive: If asked about absolute emissions vs. emission intensity***

- ***The scientific evidence indicates that in order for Canada to contribute to the global efforts to slow climate change, it must reduce emissions.***

- ***We must all do our part and, for the Canadian agriculture industry, this means reducing absolute emissions from fertilizers.***

- ***We think 4R Nutrient Stewardship plays an important role in this initiative and, together, we will work with the sector to reach our target.***

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**Annex A – Biography**

**Karen Proud, President and CEO, Fertilizer Canada**

Prior to joining Fertilizer Canada, Ms. Proud was the Chief Operating Officer of Food Health and Consumer Products of Canada; a newly created association formed through a joint venture she spearheaded between Consumer Health Products Canada, where she had been President for seven years, and Food and Consumer Products of Canada.

She was announced as the President and CEO of Fertilizer Canada on April 1, 2021.

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**Annex B – Background Information**
**Fertilizer Emissions Reduction Target**

Under the Government's Strengthened Climate Plan, *A Healthy Environment and a Healthy Economy*, the Government of Canada is aiming to build on the work done to date and underway through the Pan-Canadian Framework on Clean Growth and Climate Change to exceed Canada's current 2030 Greenhouse Gas (GHG) reduction target. Measures for the agriculture and agri-food sector are included in the new plan, including setting a national emissions reduction target to reduce nitrous oxide ($N_2O$) emissions associated with fertilizer application by 30% below 2020 levels by 2030. The target is intended to be reached through the establishment of voluntary agreements with the agriculture sector that would effectively reduce absolute emissions associated with fertilizer application.

Since the announcement of the target, AAFC has been holding informal engagement sessions with various agriculture commodity and producer associations, including Fertilizer Canada. Engagement with the provinces and non-governmental organizations is set to begin in mid-May 2021. Feedback received during the consultations has been relatively consistent and can be categorized under seven main themes: 1) Impacts of the target on yield and export growth, 2) Comments on a target set to tackle absolute emissions vs. emission intensity, 3) Canada's diverse geography and farming practices, 4) Barriers to the adoption of sustainable practices and technologies, 5) Appropriate communication of the target, 6) Development and enforcement of voluntary agreements and, 7) Incentivizing producers to adopt new practices.

Following completion of the informal engagement sessions (late May/early June 2021), AAFC officials will develop a discussion paper to guide the second phase of engagement, which will include seeking feedback from a broader set of stakeholders (including the general public). This second phase of engagement is targeted to begin in late Summer 2021.

**Fertilizer Canada**

Fertilizer Canada represents manufacturers, wholesale, and retail distributors of nitrogen, phosphate, potash, and sulfur fertilizers. Fertilizer Canada has frequently engaged with AAFC and Environment and Climate Change Canada, at both the working level and Ministerial level. Frequent topics of discussion have included endorsement of the 4R Nutrient Stewardship approach, the relationship between 4R and the federal GHG offset system, and, more recently, the Strengthened Climate Plan's fertilizer emissions reduction target of 30% below 2020 levels by 2030.

AAFC has been in regular contact with Fertilizer Canada since the announcement of the emissions reduction target. This has included multiple meetings to discuss the target and hear Fertilizer Canada's views. In April 2021, Fertilizer Canada shared an analysis (Annex C) indicating its opposition to some elements of the target, notably the focus on absolute emissions reductions. Fertilizer Canada argues that an approach based on absolute emissions reductions will result in reduced yields and income for farmers, in part by assuming that the 30% emissions reduction will equate to a 30% decrease in fertilizer application rates. Such an approach is not the intended outcome of the target, which focuses on reducing emissions, not fertilizer

application rates. In AAFC's view, such possibilities are not a guaranteed outcome. Furthermore, a target set to reduce absolute emissions is necessary in order for the Government of Canada to meet its new Nationally Determined Contribution of a reduction in GHG emissions of 40-45% below 2005 levels by 2030. A target set to reduce absolute emissions is further underscored by the data indicating that emissions related to crop production and fertilizer use are projected to continue steadily increasing, reaching an estimated 26 Megatonnes by 2030.

**Endorsement of 4R Nutrient Stewardship**

Fertilizer Canada's 4R Nutrient Stewardship program is a suite of best management practices which encourages the sustainable use of fertilizer by applying the Right Source (type) of fertilizer, at the Right Rate, the Right Time and the Right Place. This approach aims to reduce GHG emissions from fertilizer application. The endorsement of Fertilizer Canada's 4R Nutrient Stewardship program by the federal government is a top priority for the association. The organization views the adoption of this program by farmers as the best way for Canada to meet the Fertilizer Emissions Reduction Target.

AAFC supports the principles of 4R Nutrient Stewardship but has not formally endorsed it. Provinces and territories (PTs) have authority for management practices on private land, including practices related to fertilizer, and as a result should be consulted in any discussions around endorsing and/or supporting any one single nutrient management concept, including 4R Nutrient Stewardship. Several provinces (including Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and Prince Edward Island) have various types of agreements with Fertilizer Canada regarding the 4R Nutrient Stewardship approach, such as memoranda of understanding or provincial offset protocols.

AAFC's recognition of 4R Nutrient Stewardship, and/or other similar initiatives, is expected to be discussed as part of the fertilizer target engagement process. Such a position could be put forward by the sector following the engagement process. Furthermore, it will also be important to engage the PTs on the idea of the federal government endorsing 4R Nutrient Stewardship during the planned engagement process, given their role in relation to fertilizer use and land management practices. In the meanwhile, AAFC is open to considering informal opportunities to highlight 4R Nutrient Stewardship, for example through public messaging by the Minister.

In addition to a request for a formal endorsement of 4R Nutrient Stewardship, Fertilizer Canada has also begun to request that funding from the ACS program be prioritized toward the promotion of 4R Nutrient Stewardship to help support adoption of these practices. The ACS, which had previously been granted $185 million, received an additional $200 million of funding under Budget 2021 to be spent over two years (2021-22, 2022-23) to help support on-farm climate action to reduce emissions through improved nutrient management, increased adoption of cover cropping and normalized rotational grazing.

The details of how funding under the ACS will be distributed are under development and will be communicated over the coming weeks and months. However, AAFC welcomes Fertilizer Canada's recommendations on how the program could be used to improve nitrogen management.

# Fertilizer: Reducing Emissions, Increasing Competitiveness

## The Government's New Climate Plan

Agriculture is the cornerstone of Canada's food and nutrition security. Reductions in emissions cannot come at the cost of reduced output of food. Reconciling the dual objectives of increased food production and reduced emissions requires increasing the efficiency of agricultural practices so farmers can get more out of all the inputs and resources they use – thereby minimizing greenhouse gas emissions while maximizing soil carbon sequestration potential of agriculture soils.

In December 2020, the Government of Canada released *A Healthy Environment and a Healthy Economy* – a plan which pledges to reduce emissions from fertilizer by 30% below 2020 levels.

In initial conversations with Agriculture and Agri-Food Canada (AAFC), the government has stated their intention to pursue an absolute emissions reduction of 30%, rather than an emissions intensity reduction of 30%. This short-sighted approach to reducing emissions will result in the need to reduce nitrogen fertilizer use and will have considerable impact on Canadian farmers' incomes and reduce overall Canadian exports and GDP.

Canada's fertilizer industry has a significant role to play in achieving both the government's target to net-zero emissions by 2050 and reaching $75 billion in agri-food and seafood exports by 2025.

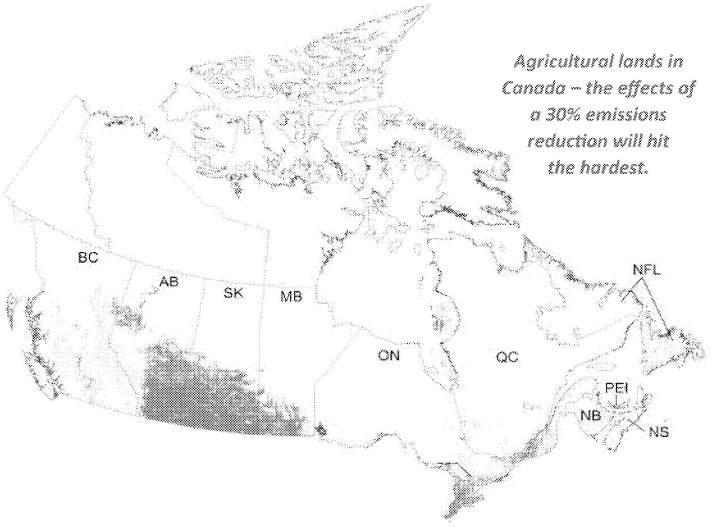



Fig. 1. The extent of agricultural land in Canada in 2016. Source: derived from AAFC Annual Crop Inventory data (AAFC, 2016a,b). BC: British Columbia; AB: Alberta; SK: Saskatchewan; MB: Manitoba; ON: Ontario; QC: Quebec; NB: New Brunswick; NS: Nova Scotia; PEI: Prince Edward Island; NFL: Newfoundland and Labrador. Agricultural land includes the following crop inventory categories: grassland, agriculture (undifferentiated), pasture/forages, too wet to be seeded, fallow, cereals and all crops categories (categories 110-199 inclusive).

- 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.

## What's the Difference Between Absolute Versus Intensity?

**Any federal emissions reduction target must be based on emissions intensity and consider emissions per unit of crop produced to maintain growing agricultural exports.**

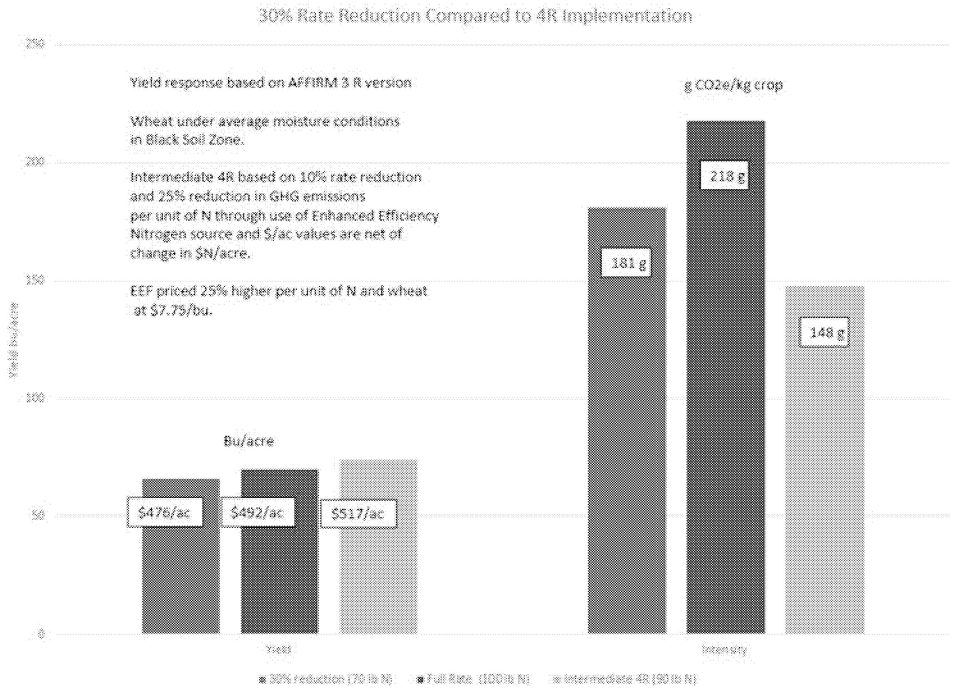
**Focusing on absolute emissions from the sector will have severe consequences to the competitiveness of farmers and the fertilizer industry.**

**Total Emission Reduction** puts a cap on the total emissions allowable from fertilizer at 30% below 2020 levels. As the yield of Canadian crops is directly linked to proper fertilizer application this creates a ceiling on Canadian agricultural productivity well below 2020 levels.

**Emissions Intensity Reduction** focuses on reducing the emissions it takes to produce a bushel of crop. This definition of emissions reduction does not put any restrictions on Canadian farmers, rather it allows crop yields to continue to grow while progressively minimizing the emissions from each crop.

## What are the Consequences of Absolute Reductions?

Policies that discourage fertilizer use can actually increase GHG emissions. A reduction in grain production in Canada through less fertilizer use, would not only have a significant negative impact on soil organic carbon, but would lead to carbon leakage to other jurisdictions. Investments aimed at sustainable agricultural intensification to improve crop yields per unit of existing land area should be at the forefront globally. The concept of sustainable intensification has been endorsed by the United Nations through FAO's Climate-Smart Agriculture strategy as well as sustainable supply chains that are looking for low intensity supply – an absolute emissions reduction is out of step with this global direction.




*Data compiled using Alberta Farm Fertilizer Information and Recommendation Manager (AFFIRM) - an application that helps land managers evaluate fertilizer management options and formulate programs that fit their farm budget. It creates estimates of yield and cost based on soil zones. Results shown would generally apply to the Black and Dark Brown soils zones in Alberta and Saskatchewan.*

**It is estimated that a 30% absolute emission reduction for an a farmer with 1000 acres of canola and 1000 acres of wheat, stands to have their profit reduced by approximately $38,000 - $40,500/ annually.**

**In 2020, Western Canadian farmers planted approximately 20.8 million acres of canola. Using these values, cumulatively farm revenues from canola could be reduced by $396M - $441M on an annual basis. Wheat famers could experience a reduction of $400M.**

The chart above demonstrates three scenarios and the impact on both crop productivity and the associated emissions. Implementation of intermediate 4R practices increases crop productivity and farmer profit, while also significantly reducing emissions, compared to a 30% N rate reduction that only has marginal impacts on intensity of emissions, and negatively impacts farmer profits. While implementing a total emissions reduction strategy based solely on reduced use of nitrogen fertilizer will reduce emissions, our initial analysis suggests that adoption of an intermediate suite of 4R practices reduces the emissions intensity by almost double. While the price of the crop remains the same, as these are set by market forces, cropping system productivity for each model changes significantly.

**The difference in profit between a per acre emissions reduction based on a 30% reduction in nitrogen rate and implementation of intermediate 4R practices is approximately $41 per acre.**

# Fertilizer: Reducing Emissions, Increasing Competitiveness

## What is 4R Nutrient Stewardship?

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. Use of 4R Nutrient Stewardship optimizes plant nutrient uptake, increases yield and maximizes profitability, while also minimizing nitrous oxide emissions.

4R Nutrient Stewardship is an innovative solution to support the government's agricultural goals of reducing greenhouse gas emissions and increasing the efficiency of agricultural practices for enhanced food production. Through 4R Nutrient Stewardship, our industry can positively contribute to, and achieve tangible and verifiable results.

| BMPs that Reduce GHGs | |
|---|---|
| **Source** | **Rate** |
| • Avoid nitrate sources in fall<br>• Use Enhanced Efficiency Nitrogen<br>• Include legumes in rotation<br>• Balance nutrition | • Soil test for residual N<br>• Account for mineralization<br>• Set realistic target yields<br>• Adopt variable rate |
| **Time** | **Place** |
| • Fall apply after soil cooled<br>• Split apply | • Band N<br>• Adopt controlled traffic |

## What is the 4R Climate Smart Protocol?

The 4R Climate-Smart Protocol was developed with input and review from Canada's top scientists in GHG emissions, as well as leading agronomists from government and industry. The Protocol allows for farm-specific measuring and reporting of emission reductions. Improved nitrogen management within the Protocol is delivered through the implementation of a 4R Nutrient Stewardship Plan at the farm level. Farmers wanting to participate in a project develop a 4R Nutrient Stewardship consistent plan with an accredited professional advisor (APA) such as a Certified Crop Advisor. The APA helps the farmer develop a set of sustainability goals that incorporate GHG reduction measures and BMPs that must meet certain thresholds into a plan.

The Protocol's accounting of GHG emissions is comprehensive, using a series of emission factors which were developed by AAFC.

The protocol, combined with an increase in the carbon price, can create a significant market opportunity for farmers, an important advantage for Canada's trade exposed cropping industry, and an important step forward in Canada's GHG policy framework.

**The 4R Climate-Smart Protocol results in a reduction in greenhouse gas emissions by as much as 35%.**

**If this were implemented across Western Canada, it would reduce emissions by 2-3 MT $CO_2e$ annually.**

**A benefit analysis of 4Rs for Saskatchewan based on this protocol provided $237 million in credits at $150/t.**

**Provincial:** Fertilizer Canada has existing 4R agreements with major crop producing provinces - Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and Prince Edward Island. Saskatchewan, Manitoba and Ontario have included 4R Nutrient Stewardship in their official climate plans. A Made-in-Saskatchewan Climate Change Strategy has set a target of 25% of Saskatchewan's cropland under 4R Designation by 2025.

**National:** The Canadian Canola Growers Association has set a target of 90% of canola under 4R Nutrient Stewardship by 2025.

4 million acres are certified under the 4R Designation program for agri-retailers. This is out of a total of 80+ million acres of Canadian cropland – so the program has more to accomplish, but is also stringent on what is being captured as 4R compliant.

**International:** The Food and Agriculture Organization of the United Nations, the United Nations Global Compact, the World Business Council and the International Joint Commission have endorsed the 4R framework as a measure for sustainable nutrient management.

## What is the Solution?

Carbon is a farm commodity, and we must act quickly to embed this in policy. Including this year, there are only nine growing seasons remaining to 2030. Solutions such as 4R Nutrient Stewardship and 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.

Our research shows that implementation of basic practices under the 4R Climate-Smart Protocol can reduce nitrous oxide emissions by 15% - our survey tells us that 45% of canola farmers surveyed are *potentially* implementing a basic or *near* basic level of 4R practices on their farms. When estimating nitrous oxide emission reductions on the Canadian Prairies with 4R adoption, our study shows that a 30% reduction in emissions below 2020 levels is possible with between 80 - 90% adoption of *intermediate* 4R practices.

While 57% of farmers surveyed believe their fertilizer practices follow the 4Rs to at least a basic level, only 26% of growers surveyed report they have worked with a 4R Designated or certified agronomist and only 6% have a 4R Plan in place. There is clearly an opportunity to increase the adoption and sophistication of 4R implementation on Canadian Farms.

Canada has the opportunity to become a world leader in reducing greenhouse gas emissions on farms by helping growers become climate-smart. We believe that proactive efforts made by Canada's fertilizer 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.

### To reduce agricultural emissions, the Government of Canada must:

1

## Focus on Emissions Intensity

A focus on absolute emissions is short-sighted and threatens the agricultural community, and the provincial economies that rely on them. We cannot meet our export or growth targets with this mindset. Focusing on emissions intensity will deliver outcomes that are better for the environment and for farmers.

2

## Recognize 4R Nutrient Stewardship

The Federal Government must recognize 4R Nutrient Stewardship as the solution to managing agricultural emissions. The government should immediately create a National Committee for 4R Nutrient Stewardship, working with farmers and the fertilizer industry to increase uptake of the program. We cannot wait until the federal strategy is complete.

3

## Implement the 4R Climate-Smart Protocol

Farm organizations across Canada have asked the Government of Canada to implement the 4R Climate-Smart Protocol. Thus far, it has not been prioritized. With very few growing seasons between now and 2030, the protocol must be implemented as soon as possible to ensure targets are met.

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## Fix the National Inventory Report

In Canada's national inventory, $N_2O$ emissions are not measured directly but rather are estimated based on nitrogen inputs. 4R Nutrient Stewardship best management practices are not being captured in the National Inventory Report (NIR) 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 progress towards a target can be monitored appropriately.