

Canada's fertilizer emissions reduction target

AMBITIOUS AND ACHIEVABLE



CANADIAN FARMERS are key partners in the fight against climate change

They lead by...

- ▶ taking action to reduce greenhouse gas (GHG) emissions; and by
- ▶ improving the sustainability of their farming operations.

Tackling climate change will enable long-term vitality of the sector – while positioning producers and processors to seize economic opportunities from evolving consumer demands.

Fertilizers are vital for producers, and vital for global food security, but their use results in the release of nitrous oxide – a powerful GHG.

Many producers are already using approaches that reduce GHG emissions – but there are ways to support farmers in using new technologies, practices and approaches to further reduce GHG emissions. Our target to reduce fertilizer emissions by **30% by 2030** is ambitious,

and achievable. The target was established to help encourage more farm-specific approaches to reverse the trend of increasing emissions arising from fertilizer use.

We will work together to reduce emissions. Our **voluntary** approach is flexible, collaborative, and based in science.

Our goal is to reduce harmful emissions while supporting fertilizer efficiency and increasing yields.

We will support by

- ▶ helping producers reduce fertilizer emissions in a way that will not compromise yields
- ▶ building on the innovation, expertise, and ingenuity of Canadian farmers
- ▶ investing \$1.5B to help producers reduce GHG emissions including improved nitrogen management
- ▶ establishing the Sustainable Canadian Agricultural Partnership and investing \$250M through the Resilient Agricultural Landscape Program

What's next?

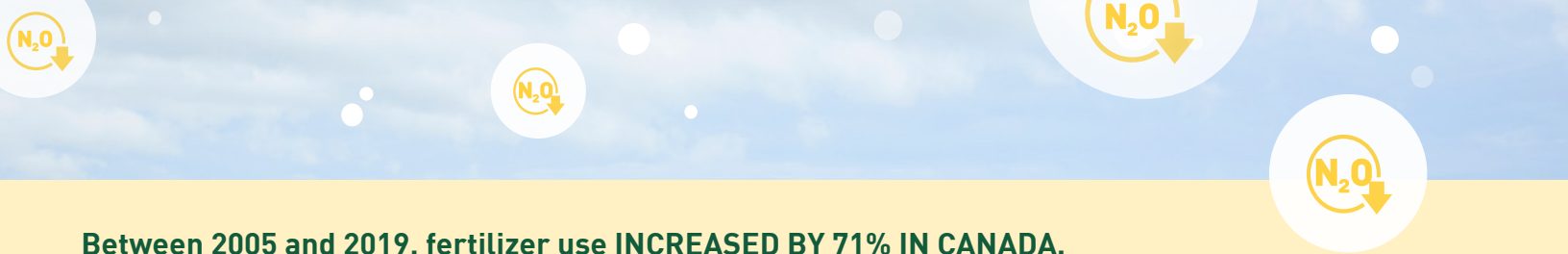
Agriculture and Agri-Food Canada's consultations were completed **August 31, 2022** – but the discussion continues. As we analyze feedback, please read our [Discussion Document](#) outlining our objectives, the case for action, practices, and activities to reduce fertilizer emissions – including the 4R Nutrient Stewardship approach – and an overview of opportunities for the agriculture sector.



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

Canada



Between 2005 and 2019, fertilizer use **INCREASED BY 71% IN CANADA**, while N₂O emissions from **FERTILIZER APPLICATION INCREASED BY 54%**.

What's the approach to meet the target?

▶ Scientific research and internal analysis shows us that reducing fertilizer emissions using various practices and technologies, when appropriately integrated into nutrient management plans, can further optimize nitrogen fertilizer use.

Why a target?



Improve farming sustainability

What's the target's goal?



Maximize fertilizer efficiency



Reduce greenhouse gas emissions



Maintain or increase yields

Building on what producers are already doing to improve their nutrient management:

- ▶ Timing their fertilizer application to match crop demand.
- ▶ Using a urease and nitrification inhibitors in combination is one way to reduce unintended nitrogen losses in the form of nitrous oxide and ammonia emissions, ensuring that nitrogen goes to the growing crop and not to the atmosphere. **(15-35% potential emissions reduction)**
- ▶ Using livestock manure as fertilizers, as well as using composts, digestates, biosolids and biochar, which provide a stable source of nitrogen and provide soil organic matter, building soil carbon while enriching soils and generating economic benefits. **(10-20% potential emissions reduction)**
- ▶ Using legume cover crops that capture nitrogen from the air, that later decompose and feed the soil, while reducing the need for synthetic fertilizers, as well as growing catch crops after harvest to use leftover nitrogen and avoid its release into the environment. **(15-25% potential emissions reduction)**
- ▶ Carefully choosing crop rotations to reduce fertilizer use, including integrating pulses and other legumes in rotations that do not require nitrogen fertilizer in the year they are grown, and that can leave a nitrogen credit in the soil for the subsequent crop, reducing the need for as much nitrogen in the following year. **(15-25% potential emissions reduction)**
- ▶ Applying 4R Nutrient Stewardship– right source, right rate, right time, right place – and other holistic nutrient management approaches to improve sustainability of their crops.
- ▶ Using precision agriculture technology to tailor fertilizer application rates based on in-field variability to optimize crop uptake.



AS FARMERS CONTINUE TO LEAD

WE WILL CONTINUE TO SUPPORT THEIR EFFORTS