



March 31, 2023

Agriculture and Agri-Food Canada  
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Submitted via email: [aaafc.sas-sad.aac@agr.gc.ca](mailto:aaafc.sas-sad.aac@agr.gc.ca)

Re: *Sustainable Agriculture Strategy: Discussion Document*

To whom it may concern,

Please accept this submission regarding your department's proposed Sustainable Agriculture Strategy (SAS). Cereals Canada has been actively engaged in the SAS since it was announced in December 2022. As a member of the SAS Advisory Council (SAS-AC) our organization has appreciated the opportunities provided by government to consult on the SAS.

Cereals Canada is the national, not-for-profit, industry association representing the Canadian cereal grains value chain. We value relationships and work with government and stakeholders to provide timely, expert technical information and deliver best-in-class customer experience. We are dedicated to supporting the Canadian cereals value chain including farmers, exporters, developers, processors and our customers around the world with a focus on trade, science and sustainability. We represent 65,000 farmers from across Canada backing an industry that supports 370,000 jobs across Canada and contributes \$68.8 billion to the Canadian economy each year.<sup>1</sup>

Canadian farmers are at the forefront of sustainable global agricultural production. They seek to use critical crop inputs effectively and efficiently and adopt technological advancements to protect their farmland for future generations. Canadian farmers' investments in their operations have already resulted in emissions reductions even as they have answered the call to increase production levels and continue feeding the world. This investment continues. For Canadian agriculture, sustainability is not a destination, it is a journey.

We are most appreciative of the government's acknowledgement that the SAS must be undertaken with economic considerations in mind.

Following up on earlier engagement opportunities, as well as our membership on the SAS-AC, and having reviewed the discussion document itself, we would like to highlight several comments and recommendations for the department.

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<sup>1</sup> LMC International. Executive Summary: The Economic Impact of Wheat, Durum, Barley and Oats on the Canadian Economy: 2022, Report for: Cereals Canada. Oxford, 2023 <[https://cerealscanada.ca/wp-content/uploads/2023/03/LMC\\_The-Economic-Impact-of-Wheat-Durum-Barley-and-Oats-on-the-Canadian-Economy\\_January-2023.pdf](https://cerealscanada.ca/wp-content/uploads/2023/03/LMC_The-Economic-Impact-of-Wheat-Durum-Barley-and-Oats-on-the-Canadian-Economy_January-2023.pdf)>

Cereals Canada would specifically highlight considerations related to:

- the importance of economic sustainability
- coordinating with existing Canadian sustainability initiatives
- the use of market-based solutions
- improving emissions modelling
- enhanced data collection
- the use of meaningful carbon intensity metrics for crop production
- Canada's role in supporting global food security
- investing in agri-innovation
- supporting Canada's brand in the international marketplace

Our industry looks forward to continuing to work closely with your department on the development of the SAS.

### *1.0 Introduction*

Consumers worldwide are turning to Canadian agriculture for assurance that our industry can sustain current production levels and uphold consistent quality, which is the essence of Canada's brand.

Work to further the sustainability of Canadian agriculture should capitalize on the opportunity presented by the SAS to strengthen Canada's reputation as a reliable producer of consistent and quality food. As part of strengthening Canada's agriculture brand, the SAS has a significant opportunity to recognize work that has gone into making Canadian agriculture one of the most sustainable production models in the world.

Government's ambitions for the SAS must be matched by new investment and enabling regulations for the sector. Further sustainability gains in Canadian agriculture must balance environmental performance with economic and social considerations.

Given the manner in which significant components of the SAS will land at the farm-gate, the strategy must be farmer-focused when considering practices and informed by scientific rigour. In tandem with this principle, streamlining public sector goals with private value chain initiatives will help reduce duplicative efforts and drive synergies.

Considering existing international sustainability best-practices, the SAS must be practice-based and focused on agriculture landscapes, not field-level. Considerations for regional variation within Canada's agriculture industry are an essential component for success.

Our industry has a consistent track record of reducing its environmental impact. Over the last two decades, per tonne of production, Canadian cereals producers have consistently reduced emissions, fertilizer use, as well as pesticide use. These accomplishments have been achieved while consistently increasing yields, year over year. Further reductions in emissions and inputs



may be possible. However, Canadian agriculture cannot achieve reductions for metrics which are not currently being tracked. Finally, any reduction goals that the SAS may choose to pursue must be based on protection goals that are grounded in science.

### *2.0 Economic Sustainability*

Our organization is pleased to note that Agriculture and Agri-Food Canada (AAFC) has included the importance of economic considerations in the SAS. The Canadian cereals supply chain is committed to sustainability, understanding that each of the three pillars of sustainability (economic, environmental, and social) cannot be advanced without maintaining the viability of the others. It is encouraging to see that the discussion paper for the SAS has highlighted the importance of science-based approaches in meeting its goals. As it moves forward, we would stress the importance of the SAS only targeting practices and goals that will ensure farmers remain whole.

While it is critical to note the importance of economic considerations, in order to successfully match the ambition of the SAS's goals, government will need to undertake new and substantial investments in monitoring for, and generation of, new data. Several priority areas of the SAS including soil health, adaptation and resilience, and biodiversity, are areas of academic study in agriculture which are either still developing in Canada or underfunded. Goals related to these priority areas should not move forward without proper academic grounding and related data.

In embarking upon the implementation of this proposal, our industry will look to accomplish these goals where they are economically viable. Examining and building out the economic considerations associated with the SAS is essential as government moves forward with this proposal.

### *3.0 Existing Sustainability Initiatives*

The Canadian cereals industry has been focused on the imperative of sustainability for many years. Numerous initiatives regarding topics as varied as benchmarking, data collection, best practices, water quality and quantity, carbon offsets and biodiversity have been undertaken in the last decade. The variation across initiatives speaks to the diversity in production practices and farming models across the country. The Canadian Roundtable for Sustainable Crops (CRSC) and the National Index on Agri-Food Performance (the Index) are two initiatives that Cereals Canada is currently participating in, where our organization sees opportunity for meaningful progress within our industry.

#### *3.1 Canadian Roundtable for Sustainable Crops*

The Canadian Roundtable for Sustainable Crops (CRSC) is a national industry-led organization formed in 2013 to facilitate cross-commodity collaboration on sustainable agriculture issues and opportunities facing grains sector participants. The CRSC membership is composed of grains sector value chain associations such as Cereals Canada and many of its members in other categories such as grower associations; grain handlers and exporters; input suppliers of seed, fertilizer and agro-chemicals and financial services; food and feed manufacturing, distribution and retail; environmental associations; sustainability certifiers and services, and research and academic institutions. Organizations involved are committed to participating in Canada's national forum for addressing environmental, social, and economic sustainability issues and opportunities relevant to the sector's stakeholders.

This industry-led forum engages value chain stakeholders in assessing and responding to marketplace demands and showcasing Canada's performance in the area of agricultural



sustainability, including the development of a sustainability best-practices initiative for the Canadian grains and oilseeds sector. This work will help address growing questions about sustainability in Canada, across the value chain, as well as communicate on sustainability practices being used in Canada.

The work of the CRSC is foundational to the work of the SAS. As the SAS moves forward it must do so in consultation with the CRSC, given the significant effort that has gone into building the CRSC's metrics platform and ongoing work related to the grains sustainability best-practices initiative.

### *3.2 National Index on Agri-Food Performance*

The Index is being developed by a growing coalition of private-public partners to develop an integrated picture of sustainability for Canada's agri-food sector from food production to retail. This "made-in-Canada" measurement of sustainability covers the full supply chain from farming to processing to retail and food service.

The Index is being built using science-based metrics and will span four sustainability priorities: environment, economic, food integrity and societal well-being. Demonstrating sustainability credentials presents opportunity for value-added within the sector. The goal is for Canada to have a sustainability index in hand so it can demonstrate its track record and leadership going forward.

Given the breadth of participants involved in the Index, with more than 100 partner organizations, across Canada's agriculture supply chain, it is important to ensure that as the SAS considers embarking upon very ambitious goals that it does so with consideration of ongoing work being undertaken by the Index.

### *4.0 Market Based Solutions*

While considering policy mechanisms by which to accomplish the SAS, it should be noted that whenever possible Cereals Canada supports market-based solutions.

Several of the goals of the SAS related to adaptation and resilience, biodiversity, mitigation, and soil health directly align with market-based solutions. Undertaking new research to value associated practices and outcomes will strengthen the imperative of the SAS. The Canadian agriculture industry is built around commodity markets. Aligning the SAS with successful and established market dynamics would greatly assist its development and goals.

The development of federal offset protocols focused on fertilizer emissions reductions, enhanced soil organic carbon, wetlands, and biodiversity, available for use and credit within the federal offset market, and other offset markets, will assist the aims of the SAS. Our organization is prepared to support and assist with the development of these initiatives.

### *5.0 Emissions Modelling*

In assessing not only the viability, but also the feasibility of the SAS and its ambition related to emissions reductions, it is important to highlight the data gaps that persist throughout the proposal. The National Inventory Report (NIR) is an important tool to track national emissions. However, as a tool to assess sector-specific and sub-sector-specific emissions, the NIR remains a blunt instrument. Considering the example of fertilizer emissions modelling, ongoing work in this area has been positive. It is encouraging that the methodology related to direct fertilizer emissions was strengthened and refined to a Tier 2 assessment in the 2022 NIR, resulting in an



annual “emissions reduction” of nearly 2 million tonnes of CO<sub>2</sub>e.<sup>2</sup> However, the confidence and certainty that can be assigned to this refined methodology remains variable, within an annual range of 6.8 million to 15 million tonnes of CO<sub>2</sub>e.<sup>3</sup>

The same must be noted when examining the Tier 1 methodology for indirect fertilizer emissions. The confidence and certainty available given the methodology used allow for notional interpretations of possible indirect emissions, at best. A possible range of 640,000 to 6.4 million tonnes of CO<sub>2</sub>e emissions from indirect fertilizer emissions<sup>4</sup> is a significant range. Basing an emissions reduction proposal for fertilizer on this methodology would be concerning, especially given that there is very limited published scientific data that actually determine N<sub>2</sub>O emissions in this instance, and that there are difficulties in defining the duration and boundaries for this source of emissions.<sup>5</sup>

The International Panel on Climate Change (IPCC) fertilizer emissions methodology used in Canada’s NIR was derived in 2006. The study of nitrogen emissions has grown significantly since 2006. Newer, more robust data sources and methods should inform the establishment of SAS practices and goals when considering possible emissions reductions within the sector.

Characteristic of the ambition and associated data gaps within the SAS is the example of fertilizer-use rates within the NIR. Basing fertilizer use rates on bulk provincial sales does not accurately capture use rates.<sup>6</sup> Given current limitations, much more work needs to be done to accurately capture fertilizer use rates. Furthermore, modelling needs to be able to accurately capture the impact of emissions reducing practices, like 4R nutrient stewardship. The incorporation of these emissions reducing practices into modelling needs to be accelerated. Validating existing industry data sets will help address this data gap.

Given the important role that soil organic carbon, and soil health in general, have in the SAS our organization strongly recommends updating the Century Model used to model carbon stores in Canadian soil. New funding and updates to the model will more accurately capture Canadian agricultural production realities and practices. Ensuring that the model is strengthened in the initial phases of the SAS will help drive its potential for success as the strategy moves forward.

## *6.0 Data Collection*

### *6.1 Addressing Acute Data Gaps*

It is challenging to reduce what we are not currently measuring. We would posit that new and increased funding for research related to field-level and landscape-level direct and indirect emissions is needed (both within and outside of the AgriScience cluster funding envelope) to advance the SAS. This research will directly inform and assist the work required to accurately model agricultural emissions.

We recommend the development of a survey involving AAFC, industry, and academia to identify and resolve these data gaps. Exploration of results measurement for this initiative using the Farm Management Survey or the Census of Agriculture, warrants further investigation and may

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<sup>2</sup> Environment and Climate Change Canada. National Inventory Report 1990-2020: Greenhouse Gas Sources and Sinks in Canada, Part 1. Gatineau, 2022, at 157

<sup>3</sup> *Ibid* at 156

<sup>4</sup> *Ibid* at 166

<sup>5</sup> *Ibid* at 164

<sup>6</sup> Environment and Climate Change Canada. National Inventory Report 1990-2020: Greenhouse Gas Sources and Sinks in Canada, Part 2. Gatineau, 2022, at 130



create efficiencies and synergies for this type of work. We would welcome the opportunity to work with AAFC and other relevant departments on this recommendation.

### *6.2 Leveraging Existing Data Sets*

While broadly speaking there are data gaps within the proposed focus areas of the SAS, it is important to highlight areas where existing government initiatives can be leveraged to support the data needs of the SAS.

The proposed Canada Water Agency (the Agency) will look to compile and rationalize data related to water quality at the national level, collected from a variety of provincial partners. Working with the Agency to feed water quality monitoring data into the SAS will be important as AAFC looks to build out these metrics.

StatsCan currently collects significant data related to Canadian agriculture that it does not publish. Work with this agency to mine relevant data to feed into the SAS and strengthen current models is an area that will yield significant gains for both industry, and government.

Additionally, partnering with provincial governments on data collection and aggregation to support the SAS will help build out many of its ambitious components.

Finally, validating industry data that is currently being used to underpin a number of initiatives will go a long way in demonstrating meaningful intent for partnerships with industry as the SAS moves forward.

### *6.3 Data Protection*

The Canadian agriculture industry has a breadth of experience related to data collection, data protection, and data use. Data collection takes place behind the farm gate by original equipment manufacturers, agronomists, retailers, and other private firms. Post-farm gate, the supply chain generates data at elevators, while in-transit, and at port. Given the number of stakeholders, legal responsibilities and obligations, and touch points surrounding farm level and supply chain data it is of critical importance that initiatives related to data-sharing are done with significant consultation and buy-in from all concerned parties.

### *7.0 Carbon Intensities*

It is a fact that carbon is emitted when producing crops that feed Canadians, and the world. These emissions can be reduced, but they cannot be eliminated. It is important to note that Canada's crop yields have increased at a rate greater than fertilizer use. Accepting these truths, one must ask what level of emissions reductions within the current production model is reasonable, and what level of reductions is achievable without threatening food production and food security.

The robust study of emissions associated with crop production is guided by ISO standards for Lifecycle Analysis (LCA). The consideration of LCA studies that do not follow ISO standards when building a SAS does a disservice to Canadian agriculture and public policy.

Studies conforming to ISO standards generated for the EU Commission show that Canadian canola has a 42% smaller carbon footprint than its international competitors, including those in Europe.<sup>7</sup> A recent study for the Canadian Roundtable for Sustainable Crops following ISO

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<sup>7</sup> European Commission. Biofuels. Brussels, 2022 <[https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/biofuels\\_en](https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/biofuels_en)>





methodology highlights that Canadian durum wheat has an emissions intensity of 102.9 kg CO<sub>2</sub>e/tonne of production.<sup>8</sup> Data presented by RBC indicates wheat produced in the US and Australia could be being produced with an emissions intensity as high as 130 kg and 190 kg CO<sub>2</sub>e/tonne of production, respectively.<sup>9</sup>

When looking to reduce emissions inherent in Canada's world class cropping systems, it is important to consider our existing competitive advantage regarding emissions intensity and ensure that the work of the SAS is focused in areas that will yield meaningful sustainability outcomes.

### *8.0 Global Food Security*

In the last 13 months global food insecurity has increased at rates not seen in a century. Countries around the world are looking to Canada as a safe, reliable supplier of staple foods such as cereals. The Canadian agriculture industry is ready to help feed the world. Much of the world relies on cereals as their primary source of protein. Nitrogen is the primary source of plant protein and without nitrogen Canadian farmers cannot maintain the protein content or yield of their crops. The Canadian agriculture industry is ready to help feed the world. In order to continue this work, our industry needs continued access to nitrogen fertilizers and new technologies that enable our sector to grow abundant and nutritious cereals.

### *9.0 Agri-Innovation*

#### *9.1 Investing in Sustainable Research and Programming*

Our industry needs new and increased government investment in plant breeding and agronomy research to succeed. Recently shifted policy priorities within AAFC's Science Strategy, and several Sustainable Canadian Agriculture Partnership programs set a concerning precedent.

The SAS cannot be funded by re-assigning, re-allocating or re-tooling existing programs and budgets. In order for the SAS and our industry to become more resilient and ultimately continue to succeed, the funding imperative presented by these challenges must be made clear to central agencies.

Canadian agriculture has successfully increased protein content and achieved consistent yield growth over the last two decades thanks to a number of agri-innovations. We are regarded around the world as a success story thanks to our cropping systems, which have developed a unique growth model focused on sustainable, quality crops. These have developed thanks to fertilizer use, plant science, and agronomic innovations. For example, a 2018 study on the carbon benefits of introducing pulses into regular rotation in Western Canadian cropping systems shows they significantly reduce synthetic nitrogen requirements for the whole rotation.<sup>10</sup> Furthermore, recent areas of research in plant breeding innovation have explored nitrogen-use efficiency traits. Government should look to include new research funding on these subjects as part of the strategy. This is especially important, considering Canada currently

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<sup>8</sup> (S&T)2 Consultants Inc. for Canadian Roundtable on Sustainable Crops. *Updated Carbon Footprint for Canadian Durum Wheat*. Ottawa, 2021, at iv

<sup>9</sup> RBC Economics and Thought Leadership. *The Next Green Revolution: How Canada can produce more food and fewer emissions*. Toronto, 2022 at 6

<sup>10</sup> MacWilliam, et al. *A meta-analysis approach to examining the greenhouse gas implications of including dry peas and lentils in crop rotations in western Canada*. *Agricultural Systems* 166 (2018) 101



accounts for less than 1% of global investments in crop genetics; well behind Brazil, Mexico and China.<sup>11</sup>

Cereals Canada would recommend the SAS highlight the importance of research and investment in these areas, as well as others that result in practice changes increasing sustainability on farm. When considering on-farm research and investment in these areas, it is also critical to highlight the importance of meaningful program design to ensure inclusive subscription. Producers can find themselves on the margins of, and excluded from, programming initiatives. Broadening eligibility criteria will allow for more producers to make use of program funding.

Agronomic innovation is aided by cluster programming, academia and professorships, as well as capacity building through sources like the Western Grains Research Foundation. Ensuring sustainable funding investments in these areas is essential to the success of the SAS.

The importance of these kinds of investments is highlighted by one of our industry's greatest economic and sustainability accomplishments, zero and low tillage seeding. This practice began at the field level, on individual farms. Initial steps were undertaken because they were sound from an agronomic, business, and environmental standpoint. Thanks to sustained and significant public investment over many years, this practice was scaled and widely adopted across Western Canada.<sup>12</sup> Applying this model to the SAS will ensure that where ambition is met by proper investment, success can follow.

In line with this, an area where the SAS could further advance and assist agri-innovation while achieving emissions reductions is by funding weather station and sectional control upgrades, across Canada. Government weather stations have been one of the key components of Canada's agricultural success. Farmers rely on them to make seeding, fertilizer, pest control, and harvest decisions. Investments to make weather data more precise will help in all of these areas. This will help farmers seed and apply fertilizer more efficiently and effectively at the right time, reduce pest pressures by ensuring that applications are made within the clearest window of operation, and assist at harvest to make sure that crops are being taken off fields in the best quality. These investments will contribute to additional reductions in fertilizer emissions, and the economic co-benefits cannot be overstated. We welcome AAFC advocacy to Environment and Climate Change Canada (ECCC) on this initiative, as well as recent related announcements in Budget 2023.

Sectional control upgrades are also an area that can assist in the overall sustainability of Canadian farms. Sectional control is a fertilizer application technology that allows farmers to place the optimal amount of fertilizer on targeted areas of a grain field thereby ensuring fertilizer is only used where it is needed. A program incentivizing the adoption of sectional control upgrades will help the government achieve its goals within the SAS.

### *9.2 Sustainable Regulatory Frameworks*

The consultation document states "The challenges facing the agriculture sector are significant and innovation will be vital to inform and support the magnitude of the changes required to ensure food production systems will be profitable, sustainable and resilient . . . such as gene editing." Canada needs access to plant breeding innovation, and every available tool to help address our production challenges and meet our sustainability goals.

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<sup>11</sup> *Supra*, note 9 at 17

<sup>12</sup> Awada, Gray and Nagy. *The Benefits and Costs of Zero Tillage RD&E on the Canadian Prairies*. Canadian Journal of Agricultural Economics 64-3 (2016), 417-438





Our sector is still awaiting the publication of the Canadian Food Inspection Agency's (CFIA) Guidance for Plants with Novel Traits (PNT) (the Guidance). It has now been over seven years since our broader industry first requested the guidance be reviewed and over four years since work began. Health Canada published its updated guidance on this subject in May of 2022 and the CFIA's guidance has been anticipated to follow since October 2022.

Since a single new plant variety may be regulated by both the CFIA and Health Canada, innovators will continue to be restricted until both organizations have finalized their guidance. All that remains is for CFIA to publish its updated guidance. Canadian scientists and growers are being hindered by unclear regulatory guidance. This ongoing delay in publication limits growers' ability to choose the tools that will support their endeavors to address serious environmental, economic and food security challenges that face Canada and the world today.

Our international counterparts in the United States, Australia, New Zealand, Japan, Argentina, Brazil, Paraguay, Chile, Philippines, India, and most recently the United Kingdom, among others, have all completed their guidance updates and are benefiting from increases in investment and innovation as a result.

Releasing this guidance is consistent with the government's own goals, priorities and independent reports including the Guelph Statement agreement between the federal government and federal, provincial, territorial partners where "accelerat(ing) the development and adoption of new technologies" was highlighted, alongside "reducing red tape".

In a highly complex and dynamic marketplace, Cereals Canada manages and responds to potential trade risks and opportunities as part of our commitment to the value chain through a scientific risk-based approach. The alignment of the new guidelines and regulations on plant breeding is critical for our trading partners. For Canada to continue to produce the highest quality cereals grains, Canadian farmers need choice to remain competitive in the global marketplace. Plant breeding innovation will provide access to new, safe and beneficial crop varieties.

#### *10.0 International Competitiveness and the Canada Brand*

Our industry exists in a global marketplace. We compete using different metrics in different markets. Increasingly the environment is being used as a metric by which to distinguish the efforts and brands of different exporting countries. In 2021 the US Department of Agriculture (USDA) branded any farm that practices reduced and no-till seeding as "Climate-Smart".<sup>13</sup> By this definition, over 80% of Canadian farms are climate-smart. This kind of recognition and branding opportunity is incredibly exciting and would be welcome in Canada.

Canada's cereal exports must also be price competitive with other export origins. This is equally important when considering both our industry's own domestic competitiveness as well as our 84 separate export markets. The work of the SAS must support our industry's existing competitive advantages, not create or intensify competitive disadvantages. Our organization supports efforts across our value chain to further the sustainability of Canadian agriculture and is committed to working with the government on climate-related goals. However, these goals must be balanced

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<sup>13</sup> US Department of Agriculture. Climate-Smart Agriculture and Forestry Strategy: 90-Day Progress Report. Washington DC, 2021, at 2 <<https://www.usda.gov/sites/default/files/documents/climate-smart-ag-forestry-strategy-90-day-progress-report.pdf>>



with the need to maintain and sustainably increase crop production as we look to feed the world.

#### *11.0 Conclusion*

The Canadian agriculture sector has welcomed the government's goal to achieve \$95 billion in agriculture and agri-food exports by 2028. In order to continue feeding the world with reliable exports of high-protein, safe, staple foods such as cereals, our industry requires a SAS that highlights our strengths and enables our capacity to succeed.

Thank you for considering this submission on behalf of Cereals Canada. Canadian agriculture, and the members we represent, are important contributors to the Canadian economy. We are committed to working with you to ensure that our sector remains productive and competitive while also making meaningful contributions to Canada's sustainability.

Please contact us if you require additional information.

Sincerely,

Dean Dias  
Chief Executive Officer  
Cereals Canada

