Sowing the seeds of resilience

FOR A MORE SUSTAINABLE FUTURE IN AGRICULTURE



Desjardins
Business

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Sustainable agriculture

For Desjardins, sustainable agriculture is achieved by respecting ecosystems, ensuring the well-being of producers, as well as their employees, communities and animals, while also supporting economic profitability, growth and long-term viability. It relies on the adaptation and resilience of the agricultural sector in a context of climate change, market fluctuations and evolving expectations regarding social responsibility and acceptability. It refers to the responsible use of natural resources in order to preserve their availability and quality, while remaining mindful of the land's production capacity and guaranteeing food security for current and future generations.



Île d'Orléans



Message from Desjardins

Jean-Yves Bourgeois,
Executive Vice-President, Business Services Desjardins Group

Desjardins Group is the leading financial cooperative group in Canada.[1] In that capacity, we contribute to the development of our communities and support our 10 million members and clients[2] across Canada in maintaining financial independence. Agricultural and agri-food financing has been a pillar of our business since our inception 125 years ago. We recognize the importance of these industries, which provide food security to our communities, thereby filling a vital need.

Through our commitment to responsible finance, we aim to accelerate the transition to a more sustainable economy. As a result, we were the first Canadian financial institution to join the Principles for Responsible Banking and the Business Ambition for 1.5°C[3] campaign, two initiatives led by the United Nations. These guidelines support our objective to achieve net zero emissions by 2040 across our operations (e.g., business travel, buildings and supply chain) and our financing and investment activities in three key carbon-intensive sectors (i.e., energy, transportation and real estate).

We work closely with a range of professionals in the field to better understand the challenges and opportunities facing our members and clients in the agricultural industry. Our aim is to guide and support our members and clients in integrating environmental, social and governance (ESG) criteria into their operations. We look forward to working closely with our stakeholders to facilitate the transition of farming businesses towards more resilient business models that will ensure their long-term survival.

We believe that sustainable agriculture is part of the solution to fighting climate change. We understand that farmers need access to effective financial tools that are tailored to their reality, as well as to support and incentives to implement solutions.

Given the current, highly challenging climate, Desjardins aims to be a key ally in supporting its members and clients in the agricultural and agri-food industry as they make this necessary transition to the more sustainable agriculture of the future.

1. Desjardins (2025), https://www.desjardins.com/a-propos/desjardins/qui-nous-sommes/notre-histoire-musee/ligne-temps/index.jsp
2. Desjardins (2025), https://www.desjardins.com/a-propos/desjardins/qui-nous-sommes/en-chiffres/index.jsp
3. Desjardins (2021), https://www.desjardins.com/qc/fr/nouvelles/desjardins-a-l-avant-scene-de-la-lutte-contre-les-changements-cl.html

Who is this guide for

The purpose of this guide is to help Desjardins resources and their business members and clients in the agricultural industry to adopt sustainable practices.

It's based on the best knowledge available in Quebec and Canada and provides concrete information to make it easier to implement agri-environmental initiatives.

A number of guides, portraits, surveys and studies have been produced in recent years by stakeholders in various sectors. This guide was inspired by these but is meant to be a simplified version accessible to all.

Objectives of this guide on sustainable agriculture

- **Expand your knowledge to increase your level of expertise in sustainable agriculture**
- **Explain key concepts and definitions**
- **Identify best practices, challenges and solutions**

Background on the rise in popularity of sustainable agriculture

Overview of changes in agriculture over the years

The intensive agricultural model that emerged from the Green Revolution of the 1950s, in the period following World War II, has been increasingly challenged in recent decades because of its environmental impact. Within this shifting landscape, new approaches have gained ground, including permaculture, integrated farming and regenerative agriculture. The growing popularity of organic farming over the past 40 years is part of this same movement, driven by environmental, economic and social considerations. The decision to prioritize this type of agriculture stems largely from a desire to protect soil health, reduce the use of chemical products and meet the rising expectations of citizens for sustainability and food traceability. In Canada and Quebec, the adoption of sustainable practices depends in part on meeting the current regulatory framework and in part on voluntary incentives and provincial programs such as Prime-Vert.

Portrait of sustainable agriculture in Canada and Quebec

Sustainable agriculture has become a key strategy for every player in the agri-food chain. Its purpose is to ensure that farming businesses can meet the many challenges they face today, including adapting to climate change, protecting water and soil as well as maintaining and restoring biodiversity.

Farmland occupies around 6.5% of Canadian land, with over 190,000 registered farms.[4] Although Canadian agricultural productivity has seen remarkable growth in recent decades, that growth has, in some cases, led to increased pressure on ecosystems. Given this reality, a shift towards sustainability is underway with the gradual adoption of more environmentally friendly practices.

In Quebec, this shift is also happening, thanks in particular to strategic provincial programs such as Prime-Vert, the Plans agroenvironnementaux de fertilisation and agri-environmental advisory association initiatives. In 2023, Quebec boasted more than 1,570 certified organic farms, and that number continues to grow (+85% since 2010).[5]

4. Statistics Canada (2022), https://www150.statcan.gc.ca/n1/pub/96-325-x/2021001/article/00013-fra.htm
5. MAPAQ (2023), https://www.mapaq.gouv.qc.ca/SiteCollectionDocuments/Bioclips/BioClips2023/Volume_31_no2.pdf

Other practices, such as direct seeding or reduced tillage, promote resilience in the face of climate-related hazards (e.g., droughts, heavy rainfall, floods) and contribute to long-term soil health.

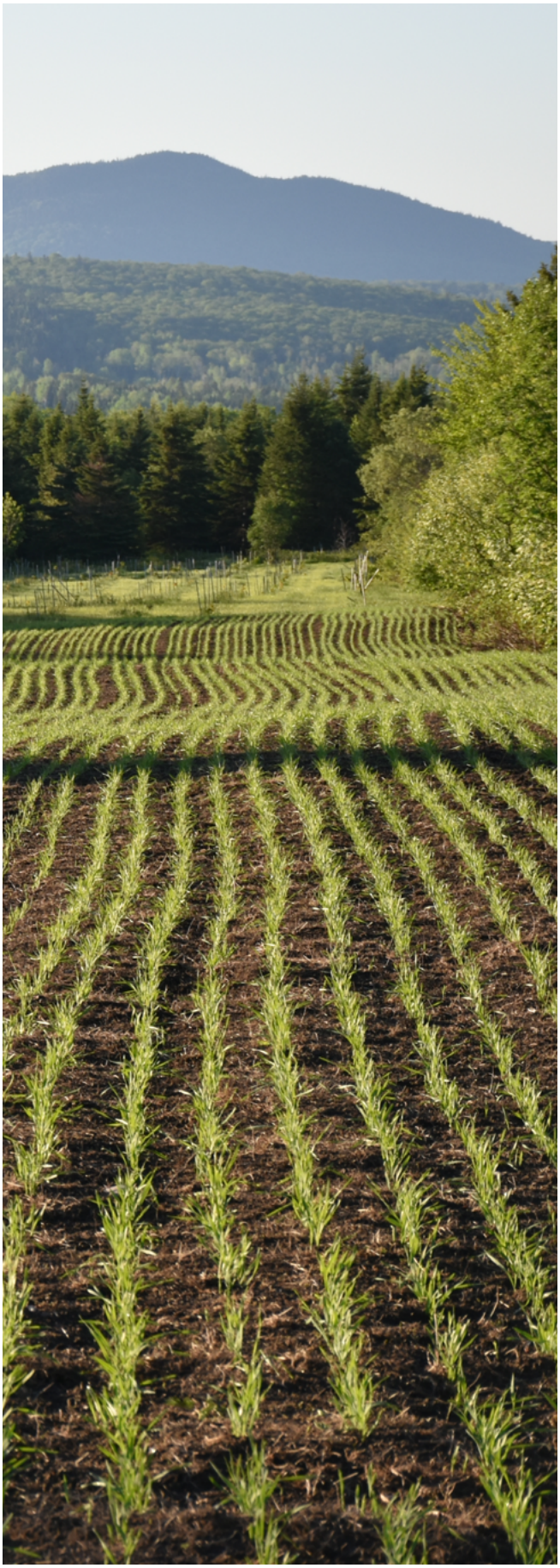
At the federal level, initiatives such as the Nature Smart Climate Solutions Fund and the Agricultural Stewardship Initiative under the Sustainable Canadian Agricultural Partnership provide financial support to farmers who adopt practices that are beneficial to the environment. However, despite this progress, the adoption of sustainable practices still varies considerably from one type of farming to another (cash crop, dairy, produce, etc.) and by farm size. Farms are often faced with obstacles, such as a lack of human and financial resources and access to training or financing adapted to the integration of these practices.



Compared to Europe, Canada has chosen more of an incentive-based approach than a coercive one. In the European Union, the Common Agricultural Policy makes a significant proportion of financial aid conditional on compliance with sustainable practices, which has encouraged more systematic adoption. For example, organic farms made up 27% of farmland in Austria and 23% in Estonia.[6] In Quebec, land managed under organic production accounts for a little over 6% of cultivated acreage.[7] In addition, mandatory measures, such as riparian buffer strips, strict crop rotation and nitrogen ceilings, are in force in several EU countries.

In this context, a player like Desjardins can take on a strategic role in accelerating the agri-environmental transition by supporting farms with customized financial products, environmental risk assessment tools and targeted support. This is crucial as it helps farms build their resilience and competitiveness as well as meet the growing expectations of consumers, export markets and public policies in terms of sustainable development.

6. Eurostat (2024), https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240619-3
7. Union des Producteurs agricoles (2025), https://www.upa.qc.ca/citoyen/centre-des-communications/nouvelles/toutes-les-nouvelles/secteur-bio-vers-une-cible-ambitieuse



Impact of decarbonization commitments among key players in the agri-food industry

Since the signing of the Paris Agreement in 2015, which aims to limit the increase in the global average temperature to less than 2°C above pre-industrial levels, the major players in agri-food processing have made ambitious commitments to reduce greenhouse gas (GHG) emissions.[8] These commitments, which are often incorporated into the companies' corporate social responsibility strategies, have a direct impact on the entire value chain, particularly on upstream agricultural producers.

Strategic commitments for the entire industry

Under pressure from regulations, consumers, investors and their own desire to remain competitive, players in the agri-food industry have set objectives to achieve carbon neutrality targets or drastically reduce their carbon footprint over various horizons, from 2030 to 2050.

8. Greenhouse gases (GHGs) are gases present in the atmosphere that absorb infrared radiation emitted by the Earth's surface, thereby contributing to global warming. https://www.connaissancedesenergies.org/questions-et-reponses-energies/quels-sont-les-principaux-gaz-effet-de-serre

However, a large part of "indirect" (scope 3) emissions come directly from agricultural practices, including the production of raw materials, the use of nitrogen fertilizers, soil management and methane due to livestock farming.

The power to reduce GHG emissions therefore lies in the hands of farmers. Consequently, it is in the interests of major agri-food players to work with farmers to achieve their decarbonization targets.



The majority of greenhouse gases (up to 85%)[9] associated with food products come from on-farm production stages (e.g., agriculture, raising livestock, primary processing).[10]

DEFINITION



Carbon footprint:[11]

The word "footprint" refers to the trace that human activities leave on the environment, taking into account their lifecycle. The word "carbon" indicates that a specific environmental issue related to climate change is being indicated, in which emissions of carbon dioxide or other GHGs play a major role. The carbon footprint is therefore an indicator of the contribution of the lifecycle of our activities to potential environmental impacts and climate change.

9. Le Soleil de Châteauguay, Fermes laitières plus écolos : une entreprise châteauguoise brille, May 29, 2025
10. Science, Reducing food's environmental impacts through producers and consumers, June 1, 2018
11. C'est quoi une empreinte carbone? - CIRAIG

Consequences and drivers for farmers

These commitments are leading to greater demands on farmers, which are reflected in measures such as the following:

- **New low-carbon agricultural practices:** Reduced soil disruption, crop diversification, permanent soil cover, agroforestry, limited chemical inputs, optimized animal feed, etc.
- **Changing specifications:** Supply contracts now include strict environmental criteria. To continue selling to these processors, farmers often have to adapt their production systems. Some go so far as to ask for the carbon footprint of a given company or product.
- **Greater demands for traceability and emissions measurements:** Agricultural entrepreneurs are increasingly being asked to provide specific data about their practices, with a view to establishing reliable carbon footprints. Data collection and data quality are currently major issues for a number of industry stakeholders.
- **Variable support from one sector to another:** While some processors, chains and agri-food industry players support their suppliers financially or technically in the transition (e.g., through investment assistance, environmental performance bonuses, advisory services, financing and/or participation in strategic projects), others pass requirements onto farmers without offering them compensation.

A major shift towards more sustainable agriculture: Challenges and opportunities

Overall, along with the growing need to adapt to climate change and the importance of maintaining public trust, the climate commitments made by major industry players are also pushing the farming world to move towards more sustainable models. This shift creates opportunities, such as recognition for more responsible practices and access to new markets, but it also brings significant challenges. The sector must become more resilient and more robust in the face of climate change by easing technical adaptation, improving economic risk management, building skills, and expanding access to expertise, investment sources and financing mechanisms. For this transition to succeed, it must be based on an equitable partnership between every link in the food chain.



Example in the agri-food industry:

In the agri-food industry, a dairy processing company that calculates its scope 3 emissions includes upstream emissions produced by dairy farms during milk production (e.g., enteric methane from cows, nitrogen fertilizers, energy used for milking) and downstream emissions due to the refrigerated shipment of its products to distributors and the final stages of the lifecycle of packaging.

Major players in the agri-food industry[12] are decarbonizing



-25% scope 3 GHGs by 2030[13]



Carboneutralité 2050[14]



-20% scope 3 GHGs by 2030[15]



Zéro émission en 2040
Devenir une entreprise régénératrice[16]



Zero emissions by 2040
Become a regenerative company[17]



The world's first major carbon-neutral food company[18]



-39% scope 3 GHGs 39% per ton fresh weight of fat-protein corrected milk by FY2030[19]



-30% scope 1 and 2 GHGs and -24% scope 3 GHGs by 2031[20]

Refer to page 29 for further details on GHG emission scopes.

Demystifying forms of agriculture

The concepts and definitions used to describe agriculture that aims to be more sustainable have multiplied in recent years, which has led to some confusion. What's more, there is still no international or standardized consensus on the definitions for sustainable, regenerative and low-carbon farming; unlike organic farming, for example. Therefore, before exploring the subject further, it's important to highlight some of the differences between them.

Sustainable development

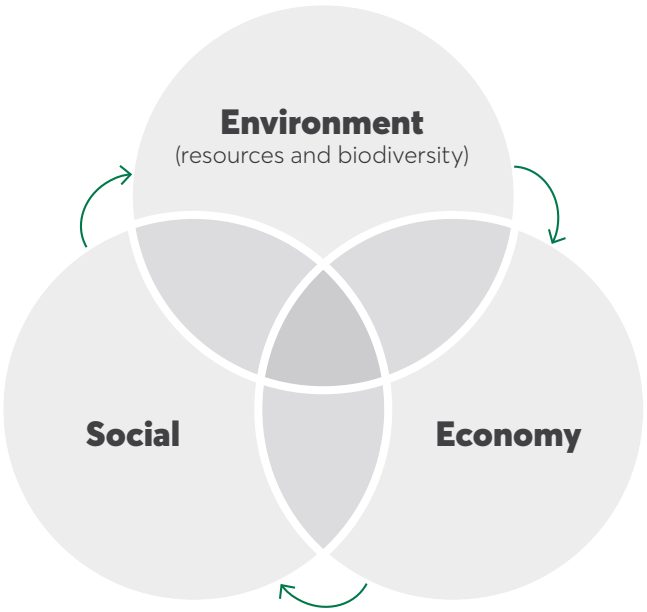
First, since we're talking about sustainable agriculture, let's go back to the global definition of sustainable development, which was first adopted in 1987 in the Brundtland Report: "Sustainable development means development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development is based on a long-term approach which considers the inextricable nature of the environmental, social and economic dimensions of development activities."[21]

12. These commitments may change or evolve over time.
13. Environnement | Metro
14. News Releases - EmpireCo
15. p. 9 du rapport : 5a Climate Action Plan FY24
16. Zero Emissions
17. Sustainability - Smart & Sustainable Farming | McCain Foods
18. World's first carbon neutral food company | Maple Leaf Foods
19. https://www.saputo.com/en/our-promise/environment/energy-ghg
20. Agropur commits to reducing GHG emissions 30% by 2031 Agropur
21. Gouvernement du Québec, À propos du développement durable

ESG: environmental criteria, social and governance criteria

ESG criteria (or ESG factors) are analytical criteria used to assess a business's non-financial performance, particularly in terms of sustainability, social responsibility and sound management. This approach emerged in the early 2000s, amid a growing global awareness of the issues surrounding sustainable development, the climate crisis, human rights and financial scandals. The expression was formalized in 2005 in a UN[22] report that called for the financial institutions to incorporate ESG factors into their investment decisions. Since then, the inclusion of ESG criteria has become an international frame of reference in sustainable finance, public policies and corporate practices.

The pillars of sustainable development





Example of how to incorporate ESG criteria into your agricultural business decisions

Environmental

- Greenhouse gas emissions (GHGs)
- Biodiversity
- Renewable energy
- Waste

Social

- Mental health of farmers
- Occupational health and safety (OHS)
- Social acceptability
- Conditions for foreign workers

Governance

- Transparency of business practices
- Business succession and transfer plan
- Business ethics and organizational equity
- Regulatory compliance

22. UN Global Compact (2005), https://www.ifc.org/content/dam/ifc/doc/mgrt/whocareswins-2005conferencereport.pdf

Agricultural models associated with sustainability

For more comprehensive definitions, please refer to the appendix on **page 35**.

Sustainable agriculture
An economically, environmentally and socially viable approach

Regenerative agriculture
A method that improves soil and ecosystem health

Integrated farming
An optimized practice that reduces the use of inputs

Agroforestry
A system that combines forestry and crop growing

Carbon farming
A practice that involves sequestering carbon in the soil

Permaculture
A system inspired by natural ecosystems

Agroecology
An integrated approach combining agriculture and ecological principles

Organic farming
An approach based on respect for the environment, biodiversity and animal welfare



The future of farming: Analysis of issues and solutions

Environmental issues

SOIL DEGRADATION

This is a process that has a significant impact on the environment and compromises the soil's essential environmental functions.



"If nothing is done, the land that produces half of Quebec's vegetables could disappear in the next 50 years."[23] "Two centimetres of this precious soil is lost every year, while an average of one metre remains. At this rate, it will have completely disappeared in a half a century. This would be a catastrophe, since the region (Montérégie) grows 35% of Quebec's produce in terms of volume, and 50% in terms of its value."[24]

Issues :

- **Erosion (water and wind):** Caused by excessive tillage, overgrazing, crop-growing on unprotected slopes, deforestation and a failure to integrate windbreaks.
- **Loss of organic matter:** Caused by intensive farming practices, burning of crop waste and a lack of organic inputs (e.g., compost, manure).
- **Chemical contamination:** Caused by the excessive use of pesticides, chemical fertilizers or industrial pollution.
- **Compaction:** Caused by the repeated passage of heavy farm machinery or overgrazing, reducing pore space in the soil.
- **Impermeability:** Caused by increased urbanization and the artificialization of farmland.

Solutions :

- **Adopt sustainable agricultural practices:**
  - Integrate conservation agriculture (e.g., reduced tillage, cover crops, crop rotation).
  - Plan a regular supply of organic matter (e.g., compost, green manure).
  - Adopt agroforestry (integration of forestry into the farming system)
  - Adjust the weight distribution of rolling equipment to prevent soil compaction.
- **Efficiently manage water:**
  - Introduce integrated irrigation techniques (drip, drainage).
- **Combat erosion:**
  - Identify non-harvestable plots for reforestation.
  - Plant windbreak hedges and grass strips.

23. Québec Science, Montérégie : le garde-manger des Québécois se meurt, October 12, 2019.
24. Radio Canada, Les terres noires de la Montérégie en voie de disparition, July 26, 2018.

- **Involvement of political power and incentives:**
  - Accessibility to compensation/payment programs for ecosystem services.
  - Introduction of regulatory frameworks promoting soil preservation (collective heritage).
- **Education and technical support:**
  - Training for farmers in sustainable soil management techniques.
  - Development and investment in agronomic research and local, sustainable innovation.
  - Reinforcement of training programs on sustainable agriculture in schools specializing in the agricultural sector to adequately train the next generation.

In short, soil degradation is a critical issue for the environment, agriculture and the climate. It is primarily the result of inappropriate human practices, but can be reversed through consistent agronomic, technical and political solutions.

In 2021, 24% of Canadian field crop farms used mixed crops, fall or winter cover crops or green manure crops as a land management practice, an increase of 2% from 2017. Nearly half (49%) of field crop farms in Quebec used one of these crop management techniques, compared to 38% in 2017.[25]

Further information

The compensation program for agro environmental practices offered by **MAPAQ** (the ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec) encourages Quebec farmers to adopt agri-environmental practices that benefit soil health, water quality, biodiversity and the fight against climate change. The program offers financial compensation (payment) for implementing these practices. Stay tuned and be prepared!

Earthworms are considered to be indicators of soil health. Also known as "soil engineers," they're used in vermicomposting to transform organic waste into natural fertilizer. The tunnels they create increase aeration, drainage and water retention, helping to limit the development of pathogens in the soil. They reduce the need for chemical fertilizers. In short, they're a great asset for adapting to climate change and can help Canadian farms better withstand droughts and floods.

25. Statistics Canada, , Enquête sur la gestion des fermes, 2021.

LOSS OF BIODIVERSITY

Biodiversity refers to the diversity of living organisms in all its forms, including species and ecosystem diversity, as well as the organisms found in soils. In the agricultural industry, it's crucial for the proper functioning of production systems: "75% of our food crops and nearly 90% of wild flowering plants depend at least to some extent on animal pollination, and a high diversity of wild pollinators is critical to pollination even when managed bees are present in high numbers."[26]

Issues:

- **Intensification of agricultural production:**
  - Simplification of agricultural landscapes: replacement of mosaics of crops and natural meadows with standardized fields.
- **Excessive use of pesticides and herbicides:**
  - Alarming extinction of pollinating insects (e.g., bees and butterflies) and indirect impact on birds and small mammals.
  - Disturbance of natural cycles and environmental balances.
- **Intensive plowing and loss of cover crops:**
  - Soil erosion.
  - Loss of microfauna essential for the biological functioning of land.
- **Standardization of seeds and livestock:**
  - Abandonment of traditional varieties and local breeds in favour of a few highly productive cultivars or lines, reducing genetic diversity, as well as the loss of intellectual property rights to seeds.
- **Climate change:**
  - Modification of flowering, migration and reproduction cycles, affecting environmental interactions between crops and wild biodiversity.
  - Introduction of new invasive species or diseases that affect natural balances.

Solutions:

- **Incorporate practices from agroecology and regenerative agriculture:**
  - Integration of perennial crops or permanent grasslands on the Canadian Prairies.
  - Rotation of crops, including legumes (e.g., peas, beans and alfalfa) to enrich soils and reduce pests.
  - Creation of biodiversity islands.
  - Restoring marginal lands.



According to the most recent estimates, over half of the world's GDP, or US$44 trillion,[27] is moderately or highly dependent on nature and its services. In Canada, nearly 20% of GDP is directly or indirectly tied to the exploitation of natural resources and services provided by nature. That means that 58% of the value of Canadian exports is dependent on nature.[28]

26. IPBES, Assessment Report on Pollinators, Pollination and Food Production, p. 3, 2016.

27. World Economic Forum, Half of World's GDP Moderately or Highly Dependent on Nature, Says New Report > Press releases | World Economic Forum, January 19, 2020.

28. Government of Canada, 10 Key Facts on Canada's Natural Resources – 2023 – Natural Resources Canada, 2023

- **Use crop protectants responsibly and focus on integrated pest management:**
  - Use physical weed control techniques (e.g., weeding, thermal weeders) and insect pest control (e.g., insect netting).
  - Use the concept of cover crops and intercropping.
  - Application outside flowering periods to limit pollinators' direct exposure to chemicals.
  - Use integrated pest management. For example, for apple production in British Columbia and Quebec, use pheromone traps instead of insecticides.
- **Create and maintain favourable habitats:**
  - Reintroduce windbreaks, flower strips and buffer zones to protect riparian buffer strips and provide refuge and food. Create green corridors for insects, birds and small mammals.
  - Leave certain areas of the farm fallow or seed them with nectar plants to encourage biodiversity.
  - Install hives in or near crops to improve pollination by supporting bee breeders.
- **Check for available financial assistance programs or incentives:** stay on the lookout for federal or provincial grants. For example, at the federal level, Agriculture and Agri-Food Canada offers a co-financing program for agri-environmental practices (Agricultural Climate Solutions). There are also inter-provincial initiatives, such as ALUS, which is very active in Manitoba, Alberta and Ontario.

Some farmers in Montérégie use sterile onion flies to control the population of this pest in their fields. Factory-raised sterilized flies are released into the fields. When male flies mate with females in the crops, the females lay empty eggs, preventing the pests from multiplying.[29]

In short, the loss of agricultural biodiversity in Canada is mainly tied to the intensification of farming practices, the destruction of natural habitats and genetic standardization. However, with the help of incentives, appropriate agronomic research and a growing commitment to sustainable practices on the part of farmers, it's possible to reverse this trend and make agriculture a driving force in restoring biodiversity.

29. Sollio Agriculture, Integrated pest management: sterilized pink onion flies in onion crop, August 18, 2023.

REDUCE GREENHOUSE GAS EMISSIONS

GHGs in the agricultural sector represent a major climate issue in Canada and elsewhere. The sector accounts for about 10 percent of total GHG emissions nationwide.[30] For further details, see the Carbon market section on page 31.

Solutions:

- **Manure and slurry management:** An important measure to reduce greenhouse gas emissions by limiting methane and nitrous oxide production through practices such as installing a lagoon cover, separating slurry, composting and anaerobic digestion of manure.
- **Sequester carbon in soil** through regenerative agriculture, such as sequestration via perennial plants.
- **Reduce tillage**, which helps capture carbon in soils (creation of carbon sinks).
- **Use genetic selection to identify cattle and improve herd feed** to reduce methane emissions linked to enteric fermentation.
- **Use fertilizers more specifically** to reduce losses and emissions of N_2O, and use sensors, agronomic models and digital precision.
- **Use renewable energy sources** for farm buildings and equipment.

30. Agriculture and Agri-Food Canada, https://agriculture.canada.ca/ en/ environment/greenhouse gases, August 28, 2025.

WATER QUALITY AND MANAGEMENT

Agriculture consumes water and is a source of pressure on water resources. We must reduce the pollution of groundwater and waterways by nitrates, phosphates and pesticides.

Issues:

- **Water contamination:** Excessive or poorly managed use of chemical fertilizers (e.g., nitrogen, phosphorus) and pesticides can contaminate groundwater and waterways. This causes phenomena such as eutrophication (harmful algal blooms) and harms aquatic biodiversity.
- **Intensive irrigation in some areas** can lead to lower water tables or reduced river flows.
- **Soil erosion and runoff:** Poorly covered or tilled soil can promote surface runoff, carrying sediment, nutrients and chemicals to waterways.

Solutions:

The most sustainable and effective solution is integrated water management, which combines several practices.

Here are a few examples:

- **Cover crops:** Reduce erosion and improve soil water retention.
- **Vegetated riparian buffer strips:** Filter pollutants before they reach rivers.
- **Efficient irrigation:** Drip systems or humidity sensors to prevent water waste.
- **Buffer zone development:** Artificial wetlands to capture and filter runoff.
- **Nutrient management:** Spreading the right amount of fertilizer at the right time.
- **Soil conservation:** Reduced tillage to prevent erosion.



Social issues

ANIMAL WELFARE

Animal welfare is a core dimension of sustainable agri-food systems. It is championed by civil society, government bodies, industry stakeholders and farmers. This shared commitment reflects evolving public expectations shaped by scientific advances and citizen movements.

In this context, animal welfare has been increasingly regulated over the years in Canada. Today, every link in the production chain—from livestock rearing to transportation and slaughter—is governed by a combination of federal and provincial laws and regulations. In addition, codes of practice for the care and handling of farm animals (codes), developed by the National Farm Animal Care Council, set minimum on farm requirements along with recommendations aimed at improving animal welfare, based on the five fundamental freedoms of animals. In most sectors (e.g., dairy, beef, poultry, pork) these codes are built into compliance programs that include external audit processes.

ANIMAL WELFARE (cont.)

Issues:

- **Compliance costs:** Costs tied to meeting animal welfare standards can be a barrier for some producers (for example the shift from gestation stalls to group housing in the pork industry).
- **Balancing outcomes:** Although some animal welfare practices can generate positive economic returns for producers, others may reduce yields or create additional side effects (for example biosecurity, herd management, workload), which requires identifying practical compromises.
- **Rapid evolution of expectations and standards for animal welfare:** Consumer expectations and the requirements set by industry stakeholders and government bodies (regulation) can change quickly. These shifts create logistical and operational challenges for producers.

Solutions:

- **Monitoring and training:** As producers, staying informed about emerging trends and new requirements while also training employees in good animal welfare practices.
- **Use of guides and codes:** Ensuring compliance with the requirements
- set out in the codes of practice while also considering the adoption of recommended practices that go beyond the minimum standards to support continuous improvement in livestock operations.
- **Progressive approach:** Adapting infrastructure and work methods gradually while taking the economic realities of the operation into account.
- **Certification:** Considering taking part in the industry's voluntary initiatives (e.g., Certified Humane, VBP+).

The health and welfare of cows have a direct impact on milk production and therefore on farm profitability. More specifically, the study revealed that for every percentage increase of lameness in a herd, an additional 12 kg of milk per year was lost. The study also showed milk losses of 7.4 kg for each percentage of cows with knee lesions, and losses of 3.6 kg for each percentage of cows with a pen that was ill-suited to their needs.[31]



31. Journal of Dairy Science, Associations between on-farm animal welfare indicators and productivity and profitability on Canadian dairies : I. On freestal farms, May 2019.

FARMERS' PHYSICAL AND MENTAL HEALTH

Often working in isolation, under financial pressure and in unpredictable weather conditions, many farmers experience high levels of stress, anxiety and psychological distress. A reality that has long been taboo in the farming world is now better recognized, although much remains to be done to identify situations and offer appropriate support.



The suicide rate among farmers in Canada is nearly three times higher than the national average. In fact, 31.4 out of every 100,000 farmers commit suicide, compared to the national average of 11.4. The same study revealed that an increase in the drought index would cause a 15% rise in suicidal risk.[32]

Issues:

- **Financial stress:** High levels of debt, fluctuating agricultural prices, sales prices of certain products such as grains, and pressure over profitability put farmers under constant pressure.
- **Excessive workload:** The long hours, lack of time off and dependence on external conditions (e.g., weather, animal diseases, labour) can lead to physical and mental exhaustion.
- **Stigma around mental health:** In many farming communities, mental health remains a difficult subject to talk about, which hinders detection and prevents people from seeking help.

32. Gouvernement du Québec, Les personnes œuvrant en milieu agricole

Further information

Travailleur de rang program: Inspired by outreach programs in the street, social workers work with the farming population. Using a preventive approach, they head into the fields to meet with farmers, gauge their mental health and, if necessary, help them and their families. They provide them with the support they need and point them to appropriate resources, whether in the health care network or in the community.

Sentinelle program: A network of sentinels across the province aims to reach farmers who have been identified as at risk in terms of their mental health. Training equips sentinels to recognize the signs and behaviours of suicidal farm workers so they can better direct them to appropriate resources.

Au cœur des familles agricoles program: Offers front-line psychosocial services to promote the well-being of farm families in Quebec.



FOREIGN WORKERS

Foreign workers play a key role in Canada's agricultural sector. Every year, tens of thousands of temporary foreign workers meet seasonal and daily labour needs. Although this system has been around for some time, and is indispensable to the viability of many farms and to our food security, it raises a number of social and economic issues.

According to Statistics Canada, approximately 70,000 temporary foreign workers were employed in the Canadian agricultural industry in 2022. In Quebec, temporary foreign workers account for around one in three farm workers. Without foreign workers, the economic losses for the Canadian agricultural sector could be upwards of $2.9 billion a year, according to the Canadian Agricultural Human Resource Council (CAHRC). What's more, the proportion of foreign workers in the agricultural industry continues to rise. In 2005, foreign workers accounted for 6.2% of workers in the industry. That percentage grew to 13.2% by 2014 and has continued to increase, reaching 16.1% in 2017.[33]

33. Statistics Canada, Foreign workers in the Canadian agricultural industry, April 28, 2021.

Issues:

- **Increased reliance on the foreign worker programs:** Many farms rely heavily on foreign workers to carry out farm operations, making the agricultural industry vulnerable to administrative delays and border restrictions (e.g., during the COVID-19 pandemic).
- **Working conditions:** Despite controls and audits, some workers live in overcrowded accommodations or work in difficult conditions, raising human rights and safety concerns.
- **Administrative challenges for employers:** The hiring process (work permits, standards compliance, inspections) is complex and costly, especially for smaller operations.
- **Financial education and technical resources:** For a majority of workers with low levels of education and limited access to the banking system, increased support in terms of financial education is needed.



Contact us

Desjardins has a dedicated team and offers services to its members to facilitate and assist their foreign workers with financial management.
Find out more by writing to
accompagnement-ri@desjardins.com

Further information



Resources are available to support businesses and temporary foreign workers (TFWs) in completing various government forms.

The UPA also provides a dedicated phone line for temporary foreign workers in Quebec to answer questions about their rights, taxation and labour standards, and to help them report any difficulties they may experience with their employer. Do not hesitate to share any useful information with them.

Services aux travailleurs étrangers temporaires – UPA

Governance issues

BUSINESS TRANSFER AND SUCCESSION

The Canadian agricultural industry is at a generational turning point. With over 60% of farmers aged 55 or over,[34] renewing the workforce and passing down farms to the next generation of farmers are urgent issues. However, fewer than 1 in 10 farmers have a formal business transfer plan. In Canada, farms are often family-owned and capitalized at several million dollars, so transferring a business represents a major challenge from a human, legal and financial standpoint.

Issues:

- **Family and emotional tensions:** Transferring a business also affects family dynamics (e.g., conflicting expectations, feelings of injustice among family members, values or emotional attachment of the generation leaving the business).
- **Lack of young farmers:** Few younger Canadians are choosing a career in agriculture. Despite the industry's strategic importance, the long hours and economic instability aren't very attractive.
- **Access to financing:** The cost of a farm makes transfers difficult without significant financial support (e.g., credit, grants and loans). Young farmers face significant barriers when it comes to borrowing, particularly due to their lack of credit history and collateral.
- **Tax and legal complexity:** Transfers entail complex tax implications (e.g., capital gains and estate taxes). Without specialized advice, many farming families delay the transfer or make decisions that jeopardize the farm's viability.

Solutions :

- **Early transfer planning:** Encourage farmers to plan their business transfer at least 5 to 10 years in advance, in collaboration with agricultural, financial, tax and legal advisors.
- **Government and business transfer support:** Various federal and provincial programs offer assistance.
  - The Facilité de crédit à la relève agricole program of Farm Credit Canada (FCC)
  - The Support Programs for Quebec's Next Generation of Farmers program (Quebec)
- **Mentoring and coaching initiatives** are also available through agricultural industry associations.
- **Recognition of non-family models:** Encourage transfers to outside parties, who are often overlooked but motivated, through specific training sessions and pairing initiatives (e.g., directories of aspiring farmers).
- **Access to gradual transfer mechanisms:** Some approaches allow for a slower transition and on-the-job training for young people.
- **Offer options such as:**
  - Gradual partnership
  - Lease-to-own
  - Agricultural cooperatives or trusts

34. Statistics Canada, Canada's 2021 Census of Agriculture: A story about the transformation of the agriculture industry and adaptiveness of Canadian farmers, https://www150. statcan.gc.ca/n1/daily-quotidien/220511/dq220511a-eng.htm, May 11, 2022.

Services offered by the Desjardins Business Transfer team

Support every step of the way

We will guide you through the four main stages of the process of transferring or taking over an existing business.

Analysis

To start off on the right foot, take stock of your situation and motivations, and assess the value of the business you plan to take over or transfer. Whatever your sector, we can support you through the process.

Planning

Our team will help you develop a structured transfer plan that takes into account all of its human, financial and strategic aspects. Have you thought about the financial package and the balance of sale price? We're here to answer your questions and help you set realistic deadlines.

Transaction

It's important to negotiate terms that satisfy both parties. Establish a clear vision and objectives to secure the business's future and avoid costly mistakes. Our team will help you develop a complete picture of the transaction and ensure coordination with the right specialists at the right time.

Transition

Taking the time to plan the transfer will allow you to focus on your new role or your upcoming projects. We will remain by your side throughout this transition, and you can count on our team's expertise for all your future needs, including wealth management.



GOVERNANCE STRUCTURE AND PROCESSES

Defining a governance structure or process for an agricultural business is essential to ensure its sustainability and competitiveness. Clear governance promotes transparent decision-making and a fair division of responsibilities, and it helps prevent conflicts, particularly in family businesses. It also makes it possible to integrate a long-term strategic vision that considers the environmental, social and economic issues affecting the agricultural industry. Lastly, well-defined governance bolsters regulatory compliance, stakeholder confidence and the business's ability to adapt to market fluctuations and societal expectations regarding sustainability.

Issues:

- **Strategic vision and commitment to sustainability:** Absence or lack of clear integration of sustainability principles into the business's mission, values or strategic plan.
- **Stakeholder involvement on the farm:** Decision-making and strategic choices are often too centralized or opaque. This includes the next generation of farmers, farm workers and specialists. This situation creates communication challenges as well as a loss of efficiency.
- **Business ethics and organizational fairness:** Poorly documented practices regarding workers' rights, complaint mechanisms, fair compensation or conflicts of interest.
- **Regulatory compliance and risk anticipation:** Reactive rather than proactive approach to environmental or social standards (e.g., crop protectants, animal welfare, GHGs).

Through its agricultural offer, Desjardins can advise its agricultural members and clients on how to address their financial situation and challenges, including the farm's profitability. Please refer to your account manager and see page 34 for a summary of our agricultural offer, which is available to you and designed especially for you.

Solutions :

- **Developing a sustainability plan for the business:** Draw up a sustainability plan and add it to the business's strategic plan. Set measurable objectives and implement an action plan. Several reference models are available, as well as advisory services.
- **Creating formal communication and consultation mechanisms:** Initiate regular meetings with the parties concerned. Encourage the participation of employees and foreign workers in decisions that affect them.
- **Adapting practices regarding pay equity and working conditions:** Develop a code of conduct that includes the principles of fairness, respect for human rights and business integrity. Distribute it to all team members. Ensure equal access to vacations, stable working hours, training and safety equipment.
- **Implementing or referring to partners for regulatory and strategic monitoring:** Regularly review compliance with standards (e.g., animal welfare, environment, workers' conditions). Identify areas at risk or in need of improvement. Participate in agricultural networks or watchdog groups (e.g., Réseau Agriconseils, Équiterre, Union des producteurs agricoles).

Economic issues

Canada's agricultural industry plays a key role in the country's economy. In an era marked by climate change, and in light of the other realities mentioned above, the transition of farming businesses towards more sustainable practices is crucial. Yet it also raises several economic challenges.

Issues:

- **Farm profitability:** Sustainable practices (e.g., organic, regenerative farming, reducing inputs, crop rotation) often require more time, labour and investment. The return on investment is uncertain or only becomes evident over the long term.
- **Limited access to funding for sustainable practices:** Farmers looking to adopt green technology (e.g., energy-efficient equipment, soil sensors, composting) may have difficulties getting suitable loans and grants.
- **Competition with agricultural models that meet lower standards:** Products resulting from sustainable agriculture can be more expensive to produce. They have to compete with products that meet less stringent standards on the market, making it difficult to highlight the economic value of environmental and social efforts.
- **Certification and transition costs:** Obtaining certifications (e.g., organic, eco-responsible, carbon-neutral) entails administrative costs and inspections, which are often difficult for small farms to afford.



Solutions :

- **Surrounding yourself with strategic partners:** A strong network of specialized professionals is an essential asset for supporting producers as they manage their wide range of responsibilities. Whether it involves a farm management consultant, an accountant or tax specialist or experts in business transfer, human resources management or other key fields, these partners help maximize profitability and support well informed decision making.
- **Adapting practices to save money:** There are a number of ways to balance sustainability and competitiveness. Industry resources can support you by helping optimize energy efficiency, adopt suitable cropping practices and apply strategic management to strengthen the resilience of your business.
- **Finding financing solutions tailored to your needs:** Desjardins has specialized teams dedicated to the agricultural sector, which puts it in a strong position to offer producers a customized financial structure that fits the realities and demands of the industry.
- **Taking advantage of available support programs:** A number of grants are available to help farming businesses enhance the way they operate. Governments and para-public organizations provide financial assistance tailored to the specific needs of producers, thus fostering their development and profitability.

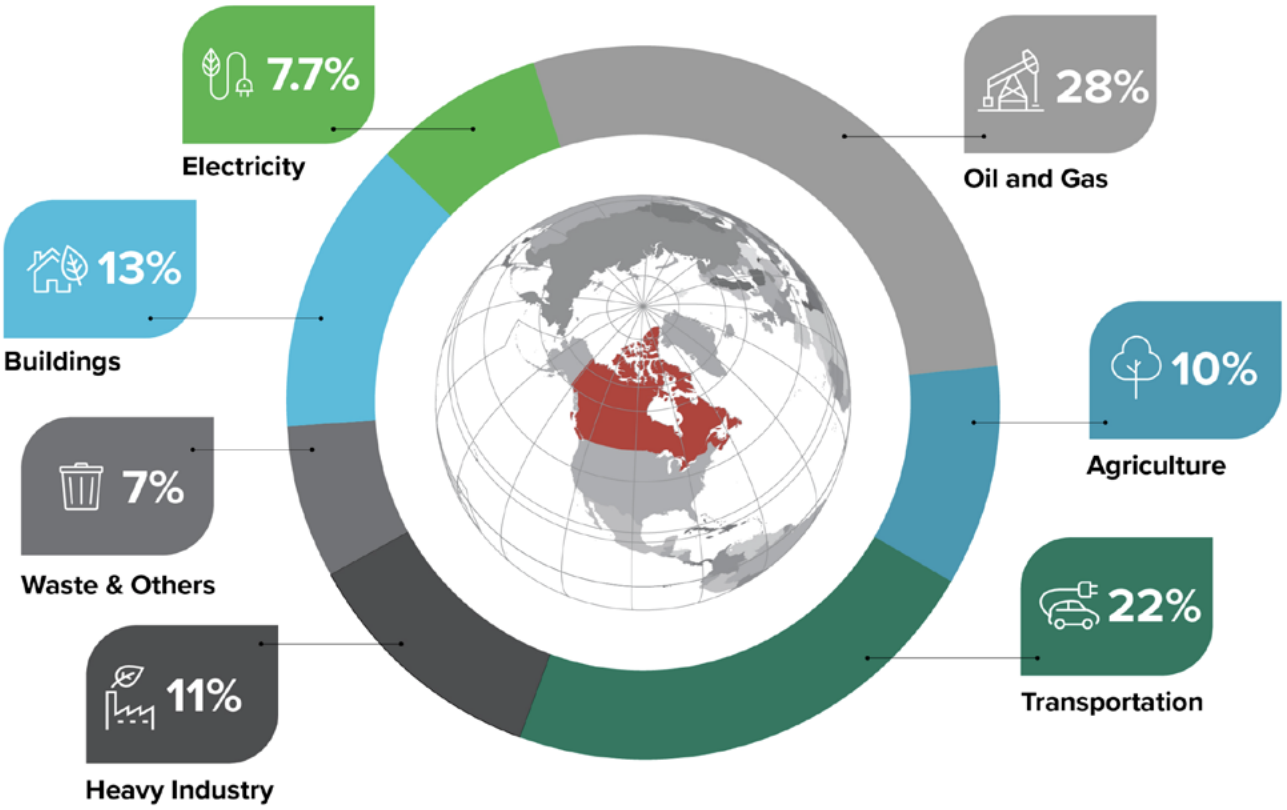
The agricultural industry and GHGs: What you need to know



A brief overview of GHG emissions

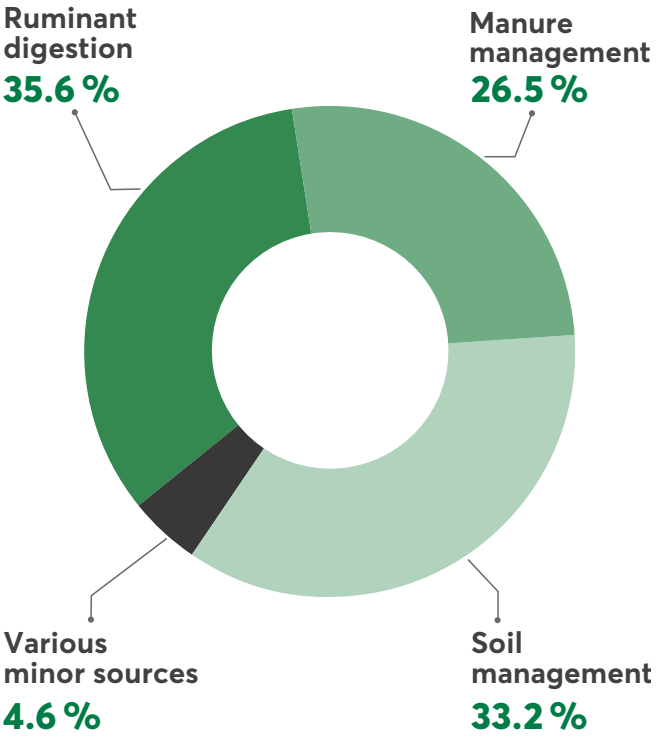
The agricultural industry is responsible for nearly 10% of Canada's GHG emissions and 9.6% in Quebec.[35]

Canada's GHG emissions by economic sector (2021)



35. Government of Canada, Canada's National Greenhouse Gas Inventory (1990-2021), April 14, 2023.

On average, a farm's greenhouse gases come from:



L'Union des producteurs agricole, Les gaz à effet de serre (GES)

Agriculture produces three types of GHGs: carbon dioxide (CO^2) from soil, nitrous oxide (N_2O) from manure management, storage and spreading, and methane (CH4), which is primarily formed during ruminant digestion.

Scope 1, 2 and 3 emissions

Unlike Scope 1 emissions, which are direct emissions linked to agricultural facilities (e.g., fuel consumption in machinery, fertilizer use), or scope 2, which are emissions linked to electricity consumption, scope 3 emissions are all indirect emissions that occur in the business's value chain, upstream and downstream, including those associated with the purchase of goods and services, transportation, waste, the use of products sold and end-of-life of products.[36]

The agricultural industry's natural capturing power

The agricultural industry has the potential to naturally capture GHGs. It has the power to act as a major carbon sink, thanks in particular to agricultural soil. Hence the strong interest shown by many stakeholders in this sector for decarbonization. In agriculture, a carbon sink is an ecosystem or a practice that captures more carbon dioxide (CO^2) from the atmosphere than it emits, and stores carbon in the soil, plant biomass or organic matter, thereby helping to reduce greenhouse gases. In Canada, agricultural soils, forests, grasslands and certain practices, such as cover cropping, direct seeding, agroforestry and increasing the organic matter in soil, are considered potential carbon sinks.

36. Greenhouse Gas Protocol – Corporate Value Chain (Scope 3) Accounting and Reporting Standard (World Resources Institute & World Business Council for Sustainable Development, 2011).

Carbon market: Carbon farming

Desjardins is a partner of the AgroCarbone Grandes Cultures initiative led by Coop Carbone: The aim is to develop business models that can spur the development of better agricultural practices aimed at reducing GHG emissions and/or sequestering carbon.[37]

Further information

Explanatory sheets on carbon market provided by the Union des producteurs agricoles (in French only).

Vers une agriculture bas carbone : agir avec prudence!

Carbon credits: An opportunity for farmers

In the agricultural context, carbon sinks play a key role. These are practices or systems that naturally capture CO_2 from the air and store it in the soil or biomass. For example, cover crops, hedges, agroforestry techniques and regenerative agriculture are all practices that can help farmers sequester carbon and generate carbon credits.

DEFINITIONS

Carbon credit:
A carbon credit is a certificate representing one ton of greenhouse gas (GHG) avoided or removed from the atmosphere. These credits can be sold on specialized markets to companies wishing to offset their own emissions. They are also sometimes referred to as offset credits.[38]

In Quebec, farmers can adopt practices that reduce GHG emissions, such as improving fertilizer management or crop rotation, in order to generate carbon credits. Those credits can then be sold, generating additional income.

It is important to point out that projects must be validated by specialized and recognized firms to guarantee the quality and value of the credits generated. As this can be a challenge, a cautionary approach is recommended. Farmers should research and validate the credibility of their partners.

37. https://coopcarbone.coop/projet-phares/agrocarbone-grandes-cultures/

38. Autorité des marchés financiers (2025), https://lautorite.qc.ca/en/general-public/investments/eight-questions-and-answers-a-se-poser-sur-les-credits-carbone-et-dautres-concepts-lies#c81305

Carbon market: Two possible avenues

In Quebec, there are two types of carbon markets:

- **The regulated market:** Reserved for large polluting industries that are legally required to offset their emissions.
- **The voluntary market:** Open to any business or individual wishing to offset their emissions on a voluntary basis.

For farmers, the voluntary market holds the most appeal. It can be a source of financing for eco-responsible projects on the farm, with a potential return on investment. Producers can also take part in regulated markets if they use the protocols recognized by the GHG emission cap and trade system (C&T system).

Key points: Two distinctive approaches – insetting and offsetting

- **Insetting:** Consists of reducing GHG emissions directly in a business's supply chain and value chain. For example, an agri-food processor might work with its producers to finance more sustainable farming practices. That partnership benefits all parties by strengthening business ties while reducing the overall carbon footprint. For example, Logiag's Dedicated Dairy Farms project is a climate transition program that supports Quebec dairy farms in reducing their GHG emissions through insetting.[39]
- **Offsetting:** Consists in neutralizing one's own emissions by financing GHG reduction or sequestration projects elsewhere. This is done by purchasing carbon credits. A farmer can therefore generate credits by adopting sound practices and sell them to a business wishing to offset its emissions.

However, it's important to consult the right resources if you plan to use the offsetting approach for buying or selling credits. Quality is extremely important. In other words, the credibility of a carbon credit is influenced by the type of project that generates it, the reputation of the firm inspecting the project and the market in which it will be sold. All of these factors influence the value your credit will generate for you.

Remember: Be well-informed before taking the plunge

A well-structured credit facility can have an attractive economic value as well as strengthen the farm's environmental resilience. Agricultural carbon sinks, particularly through soil health and sustainable plant practices, are true drivers for positioning your business in the emerging green economy.



Once a carbon credit has been sold as part of an offsetting approach, it no longer belongs to the farmer and therefore cannot be used to offset their own emissions or those of their supply chain. This is despite the fact that a number of sectors, including dairy and egg, have made commitments to achieve carbon neutrality by 2050.

39. LOGIAG, Dedicated Dairy Farms

Conclusion

Capitalizing on the strength of our partnership to ensure a sustainable future

Sustainable agriculture is the future of farming in Quebec and Canada, as it will enable us to meet our growing need for food while adhering to environmental and social imperatives. It isn't just about producing food, but about protecting the health of our soil, water, ecosystems and communities. This approach has the power to sequester carbon in the soil and play a leading role in reducing greenhouse gases. It has the potential to ensure food security for all of us.

Current experiments show that our over-reliance on chemical inputs, pesticides and intensive practices is jeopardizing long-term land fertility and food security. Conversely, forms of sustainable agriculture, including organic farming, permaculture, agroforestry or regenerative agriculture, as well as practices such as direct seeding, crop rotation, the use of green manures, vermicomposting and the enhancement of biodiversity (e.g., earthworms, pollinators, soil microorganisms), are strengthening the resilience of farming businesses in the face of climate change and are ensuring sustainable production for future generations.

Desjardins aims to play a key role by supporting its members and clients and the agricultural industry as well as all its stakeholders in helping farming businesses build their resilience to climate change and extreme weather events.

A shift to an innovative, agro-ecological model that combines science and cutting-edge technology, would represent a promising path for agriculture in Quebec and Canada. The future of the industry hinges on a transition that is focused on productivity, sustainability and social equity.

Tomorrow's agriculture will be an economic driver and an environmental and social pillar, ensuring food security for future generations while respecting nature and those who work the land.

Together, we can take steps today to ensure a transition to a sustainable agricultural model that holds promise for the future.

Sustainable development support

The Desjardins Business team is available to assist you in shifting to or accelerating your adoption of sustainable development. As a member, you gain access to professionals in agriculture and agri-food who are known for their deep expertise and sharp insight into sustainability challenges.

Sustainability support designed specifically for farming businesses



Get expert guidance on integrating sustainable initiatives into business practices.



Access references, tools, diagnostics and sector reports.



Explore the financial assistance programs available, along with the financing options offered by Desjardins, to support your sustainability initiatives.



Leverage our expertise in market trends and ESG regulations in your sector.



Connect with our partners and get referrals to specialized consulting services.



Discover other high-impact projects in your sector.

Desjardins offers its members and clients access to a team of sustainability professionals.
Contact financementdurable@desjardins.com for support.

Our agricultural offer

Unique financial support and tailor-made solutions

A vast network at your service

Our account managers are available throughout Quebec and Ontario to offer you personalized advice and solutions that are tailored to your needs. Access references, tools, diagnostics and sector reports.

Personalized support

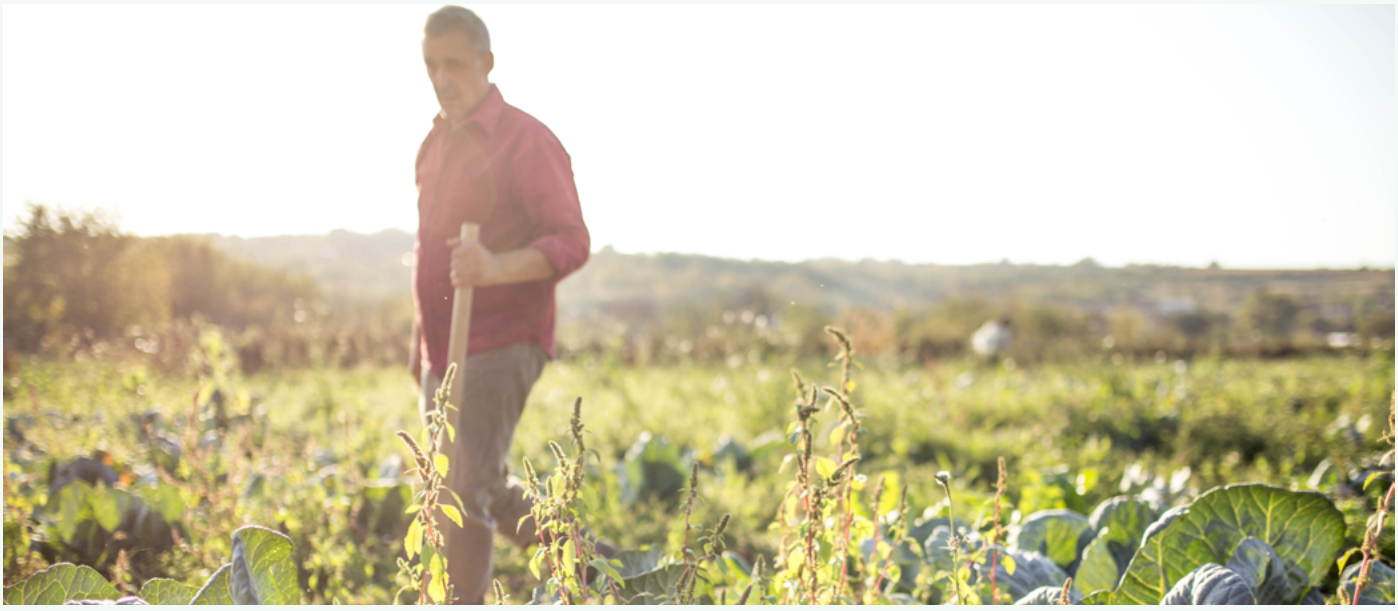
Whether you're expanding, modernizing, transferring or starting up your business, our agricultural account managers will be there for you every step of the way, from the planning stage through to completion. Leverage our expertise in market trends and ESG regulations in your sector.

Desjardins, your trusted partner

As North America's leading cooperative financial group,[40] we have in-depth knowledge of the agricultural sector, and we're here to support you at every stage of your project.

Our services are available in Quebec and Ontario at our Desjardins Business Centres and by phone at 1-888-233-3473.

With our AccèsD Affaires app, you can carry out transactions in just a few clicks, 24 hours a day, 7 days a week. Feel free to contact one of our advisors if you have any questions about our products and services that are essential to your farm.



40. Desjardins (2025), https://www.desjardins.com/ca/about-us/desjardins/who-we-are/our-history-museum/timeline/index.jsp

Appendix

Glossary of sustainable agriculture terms

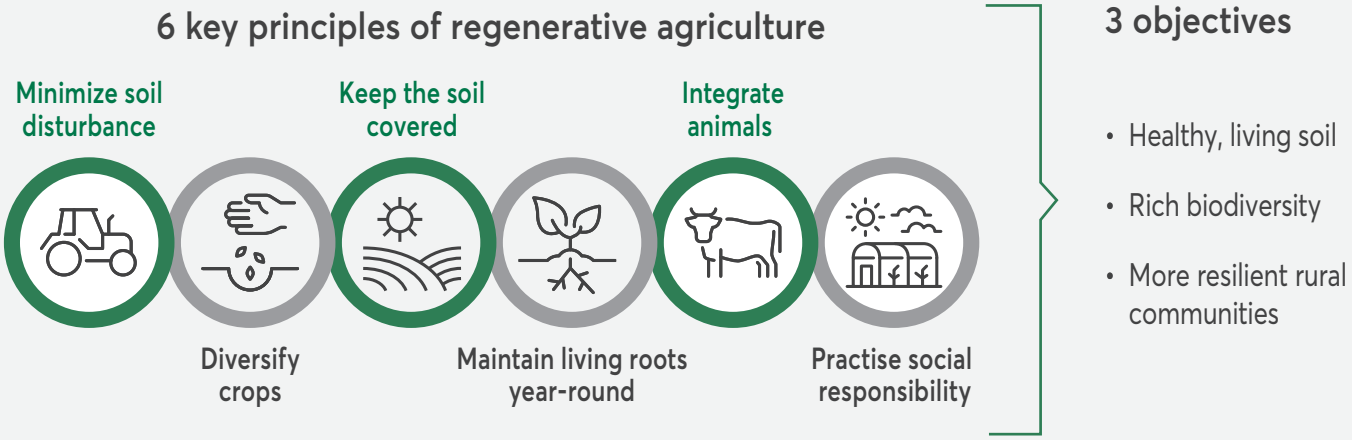
Carbon farming

Carbon farming is based on the concept of carbon markets. The idea is to pay farmers for adopting sustainable agricultural practices. That means practices that reduce GHG emissions, sequester carbon in agricultural soils, or both.

Source : What is carbon farming? | Sollio Agriculture

Regenerative agriculture

Regenerative land management is a set of principles and practices which reverse current trends of degradation in soil, water and air quality by enhancing the soil ecosystem and restoring its biology.



Source : Why soil? – Regeneration Canada
Image source : https://www.agoterra.com/articles/quest-ce-que-lagriculture-regeneratrice

Organic farming

Organic farming focuses on protecting the environment, maintaining biodiversity and respecting natural cycles. This farming approach favours the use of renewable resources, recycling, improvements to soil fertility and quality, animal health and welfare. In Quebec, the use of the following products and techniques is prohibited in organic food production and processing: synthetic pesticides and fertilizers, genetically modified organisms (GMOs), growth hormones and antibiotics, irradiation and synthetic preservatives. To be certified organic, producers must meet specifications and be inspected by a third party, unlike for other types of farming.

Source : https://www.quebec.ca/agriculture-environnement-et-ressources-naturelles/agriculture/agriculture-biologique

Type of organic certification



Integrated farming

Integrated farming, which presents itself as an alternative to intensive farming, is an agricultural production system that optimizes a farm's economic performance while respecting animal welfare, the environment and consumer health.

Source : Agriculture raisonnée : définition et label - Crédit Agricole

Permaculture

A system that promotes sustainable agriculture, without depleting the soil or polluting it, by limiting waste production. To achieve these objectives, crops are diversified and adapted to local conditions. The use and enhancement of the surrounding biodiversity is one of the building blocks of permaculture.

Source : Permanent agriculture: Dictionary of agroecology

Agroforestry

Land use that incorporates trees into annual crops and domestic livestock, and allows trees, crops and animals to be produced on the same land.

Source : 1.1 Définition de l'agroforesterie – ENV 3114

Agroecology

Agroecology is a method for designing production systems based on the features offered by ecosystems. It amplifies them while aiming to reduce pressure on the environment (e.g., reducing greenhouse gas emissions) and preserve natural resources. The goal is to make maximum use of nature as a production factor, while maintaining its capacity for renewal.

Source : Qu'est-ce que l'agroécologie ? | Ministère de l'Agriculture et de la Souveraineté alimentaire

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