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# Standing Committee on Agriculture and Agri-Food

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Chair: Mr. Pat Finnigan





## Standing Committee on Agriculture and Agri-Food

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• (1530)

[*English*]

**The Chair (Mr. Pat Finnigan (Miramichi—Grand Lake, Lib.)):** I call the meeting to order. Welcome to meeting number 36 of the House of Commons Standing Committee on Agriculture and Agri-Food.

Pursuant to Standing Order 108(2) and the motion adopted by the committee on Thursday, February 4, the committee is resuming its study on the environmental contribution of agriculture.

Today's meeting is taking place in a hybrid format pursuant to the House order of January 25. Therefore, members are attending in person in the room, and remotely using the Zoom application. The proceedings will be made available via the House of Commons website.

Just so that you are aware, the webcast will always show the person speaking rather than the entire committee. I will take this opportunity to remind all participants in this meeting that screenshots or taking a photo of your screen is not permitted.

[*Translation*]

To ensure an orderly meeting, I would like to outline a few points to follow.

Before speaking, please wait until I recognize you by name. If you are attending the meeting by videoconference, please click on the microphone icon to unmute yourself. For those in the room, your microphone will be controlled as normal by the proceedings and verification officer.

I remind everyone that all comments by members and witnesses should be addressed through the chair.

When you are not speaking, your mic should be on mute.

[*English*]

I will now welcome our witnesses for today's meeting.

For the first panel, we have from the Department of Agriculture and Agri-Food, Mr. Warren Goodlet, director general, research and analysis directorate, strategic policy branch; Matt Parry, director general, policy development and analysis directorate, strategic policy branch; Mr. Marco Valicenti, director general, innovation programs directorate; and Dr. Javier Gracia-Garza, special adviser, agriculture and climate change.

Also, from the Department of the Environment, we have Mr. John Moffet, assistant deputy minister, environmental protection

branch; and Tara Shannon, assistant deputy minister, Canadian Wildlife Services.

Welcome, all of you, to our committee.

We'll have opening statements of seven and a half minutes by the Department of Agriculture and Agri-Food. Whoever wants to lead can start. You have seven and a half minutes.

**Mr. Matt Parry (Director General, Policy Development and Analysis Directorate, Strategic Policy Branch, Department of Agriculture and Agri-Food):** Thank you very much, Mr. Chair.

As mentioned, I'm Matt Parry. I'm the director general of the policy development and analysis directorate at Agriculture and Agri-Food Canada.

It is a pleasure to see you all again. Thank you for the opportunity to talk about the agriculture sector's contribution as it relates to the environment.

Over the last 20 years, Canada's agriculture sector has taken important steps to reduce its environmental impacts. Efforts to date have improved production efficiency and carbon sequestration, allowing the sector to increase productivity without significant increases in emissions.

Since 2005, total greenhouse gas emissions from Canada's agriculture sector have been relatively stable. According to Canada's national inventory report, greenhouse gas emissions for this sector were roughly 73 million tonnes of carbon dioxide equivalent in 2019, compared with 72 million tonnes of carbon dioxide equivalent in 2005.

However, total emissions are only part of the picture. Over the past two decades, agriculture soils have become an important source of carbon sequestration, removing as much as 11 million tonnes in 2005.

[*Translation*]

Notwithstanding this progress, further action is needed to reduce greenhouse gas emissions and to continue to sequester carbon in agricultural lands and soils.

As highlighted in the Speech from the Throne, climate action is a cornerstone of the government's plan to support and create a million jobs across the country, and farmers and ranchers are key partners in the fight against climate change. Supporting their efforts to reduce emissions and build resilience is a key priority of the government.

Canada's agriculture sector holds the potential to play an important role in reducing Canada's net greenhouse gas emissions while achieving environmental, social, and economic co-benefits. To this end, Agriculture and Agri-Food Canada is working with the provinces and territories, farmers, and other Canadian agriculture and food stakeholders to develop and implement innovative solutions that protect the environment while supporting farmers and growing the economy.

Under the Canadian Agricultural Partnership, up to \$438 million in FPT cost-shared funding is available to farmers for the adoption of beneficial management practices that protect and build resilience in soil, water, air and biodiversity, enhance resilience, and mitigate the impacts of climate change. This funding also helps to build producer awareness of environmental risks through the use of environmental farm plans.

Agriculture and Agri-Food Canada also has a long history in conducting research on practices and technologies to reduce agriculture's impact on the environment, and transferring this knowledge to producers. This work involves identifying innovative practices that can protect soils from erosion and increase soil carbon, reduce risks to water quality, reduce greenhouse gas emissions, and improve biodiversity on agricultural lands.

This work has contributed to improvements in the quality, yield, safety, and sustainability of the food produced by Canadian farmers.

● (1535)

[English]

A number of new measures have been announced over the last six months in Canada's strengthened climate plan and in budget 2021 to expand collaboration with farmers and ranchers and to accelerate progress in the fight against climate change.

First, the government is investing \$165.7 million over seven years in an enhanced agricultural clean technology program to support the industry in developing and adopting transformative clean technologies.

Budget 2021 committed \$50 million of this program towards supporting farmers in purchasing more efficient grain dryers, and \$10 million towards powering farms with clean energy and moving away from diesel fuel. The balance of the funding under this program will support investments in sustainable technologies aimed at reducing greenhouse gas emissions.

Second, in March of this year the government announced a \$185-million agricultural climate solutions program. This program will support the development of on-farm implementation of farming practices to tackle climate change through increased carbon sequestration and lower emissions. Projects implemented through this program will also contribute to other environmental co-benefits such as protecting fresh water and biodiversity resources. For example, practices such as use the of shelterbelts or cover crops can store carbon in soils and reduce greenhouse gas emissions. The program aims to establish a Canada-wide network of regional collaboration hubs made up of producers, scientists and other stakeholders that we call living laboratories.

Third, in addition to the \$185 million previously announced for the agricultural climate solutions program, budget 2021 provided an additional \$200 million over two years to support on-farm climate action to reduce emissions through improved nitrogen management, increased adoption of cover cropping and normalizing rotational grazing. Work is currently under way to develop and launch this program as soon as possible.

Finally, the government is consulting the sector in relation to the announced target to reduce greenhouse gas emissions from fertilizer application to 30% below 2020 levels by 2030.

The department also continues to collaborate with Environment and Climate Change Canada and other partners on initiatives to enhance environmental sustainability, including, for example, through the creation of a Canada water agency to keep Canada's water safe, clean and well managed.

The department is also developing an agriculture sector species-at-risk action plan as part of the pan-Canadian approach to transforming species-at-risk conservation in Canada that aims to identify and prioritize opportunities for the sector to align with positive outcomes for species at risk and biodiversity conservation.

In closing, I would like to reiterate that the agriculture sector has a critical role in the fight against climate change and the transition to a clean economy. Agriculture and Agri-Food Canada is working to support farmers in this goal to ensure that the sector's environmental impact continues to shrink while its economic output continues to grow.

Thank you for your time, and my colleagues and I would be pleased to respond to any questions.

● (1540)

**The Chair:** Thank you, Mr. Parry.

From the Department of the Environment, there are seven and a half minutes for an opening statement from whoever wants to take it on.

**Mr. John Moffet (Assistant Deputy Minister, Environmental Protection Branch, Department of the Environment):** That will be me, Mr. Chair.

Good afternoon, everybody. My name is John Moffet and I'm the assistant deputy minister of the environmental protection branch, which is the regulatory branch for environmental protection measures. I'm here this afternoon with my colleague Tara Shannon, who's my counterpart as the ADM of the Canadian Wildlife Service.

As Mr. Parry explained, Canadian farms have an important role to play in reducing greenhouse gas emissions through the implementation of conservation activities or by adopting new management practices or technologies. I'm going to discuss one additional way in which Environment and Climate Change Canada is creating incentives for reducing greenhouse gas emissions, and that is through the development of greenhouse gas offsets.

As we indicated in our strengthened climate plan that was published in December, the government is developing a federal greenhouse gas offset system. This system will encourage cost-effective reductions of greenhouse gas emissions from activities that are not covered by the federal carbon pollution pricing system, including many potential activities in the agricultural sector. Offsets can provide a financial incentive for an activity in the form of a credit that can be sold to offset an equivalent amount of greenhouse gas emissions from another source.

We published draft regulations to establish the offset system in March, a couple of months ago, and we aim to publish the final regulations this fall.

In addition to being used as a form of compliance under the federal pricing system, we expect there will be additional demand for federal offset systems from other sources, including, for example, in helping companies reach carbon-neutral or net-zero commitments, of which we are seeing an increasing number. Because offset credits substitute for a reduction in a regulated sector, we need to establish rules to ensure that offset projects achieve real, additional, verified, quantified and permanent reductions in greenhouse gases. This means that in order for any conservation activity or land management practice to generate credits, it must essentially be above and beyond business-as-usual practices. It can't be for something that is already required by law, it can't be for something that is covered by current pricing, and it can't be for something that is a business-as-usual practice.

In order for a project to generate offset credits, the way we determine that a project is eligible is to ensure that it follows an approved offset protocol. These protocols set out a consistent approach for quantifying emission reductions and removals for eligible activities. By going above and beyond business-as-usual practices on their farms, agricultural land managers will not only benefit from the opportunity to generate offset credits, they will also benefit from enhancements in soil health and productivity.

The specific farming practices that will be able to generate offset credits will be established through the protocol development process. In other words, the activities that will be eligible to generate credits will depend on activities for which we have developed protocols. We've started to work on the first set of protocols, and among the first four is a protocol to support enhanced soil organic carbon. This protocol will create opportunities for farmers to generate offset credits through the adoption of sustainable agricultural land management practices that increase soil organic carbon levels.

As you would expect, this protocol is complex and requires further research and consultation with stakeholders. We've engaged an expert committee to advise us, and we expect to develop the protocol at some point in 2022.

• (1545)

We are also looking at other possible offset protocols relevant to the agricultural sector. These include activities such as livestock feed management, avoided conversion of grasslands, reduced nitrogen oxide emissions from fertilizers, anaerobic digestion and livestock manure management.

That's a quick overview of our federal greenhouse gas offset system and the way in which it might create opportunities for the agricultural sector. I would be happy to answer any further questions you have about this initiative, and my colleague will be happy to describe some of the activities that are under way in support of wildlife and biodiversity protection.

Thank you.

**The Chair:** Thank you, Mr. Moffet.

We'll now go to the question round.

Go ahead, Ms. Rood, for six minutes.

**Ms. Lianne Rood (Lambton—Kent—Middlesex, CPC):** Thank you, Mr. Chair, and thank you to the witnesses appearing today.

Mr. Moffet, you were saying that when you set protocols, you consult with stakeholders. I'm wondering if that's with actual farmers. Do you go out onto the farm, and have you been on a farm to see what farmers do right now?

**Mr. John Moffet:** Have I been on a farm? Not recently, but I'm not the one doing the work.

Initially, we undertook a survey to identify activities that should be the highest priority for us in developing protocols. That was—

**Ms. Lianne Rood:** Was it consulting with farmers? I'm sorry to interrupt you. I just want to know, was it with farmers, or who did you mean by stakeholders?

**Mr. John Moffet:** Yes, it was with farmers, agricultural academics and representatives from all of the major agricultural industry associations. It's particularly important, in the context of agriculture, to ensure that we have input from across the country, because agricultural practices and requirements vary significantly from province to province.

**Ms. Lianne Rood:** The Western Canadian Wheat Growers have calculated that the agriculture sector captures 100 megatonnes of carbon dioxide from the grain farmers grow, which amounts to about 30 megatonnes more than what the national inventory reports as GHGs emitted by the agricultural sector. The Western Canadian Wheat Growers have argued that when grain leaves the farm gate, they are net zero for GHGs. I would argue that they are a net carbon sink for 33 megatonnes of greenhouse gases, according to their report.

Could you comment on the Western Canadian Wheat Growers' calculations and also on giving credit to grain growers and the agricultural sector for constituting a net carbon sink?

**Mr. John Moffet:** I won't comment on the inventory itself. I'm wondering if my colleagues at Agriculture and Agri-Food might comment on that.

I will comment on the credit issue. The global obligation that we face is to reduce emissions so that nobody's getting a credit for something they're already doing. We have to do more. The goal of our offset system is to give credits for doing something new and additional, over and above what we're already doing.

• (1550)

**Ms. Lianne Rood:** Thank you very much.

Does anybody else want to comment on that?

**Mr. Matt Parry:** I might turn to my colleague, Dr. Gracia-Garza, to see if he has any comments regarding the national inventory report.

**Dr. Javier Gracia-Garza (Special Advisor, Agriculture and Climate Change, Department of Agriculture and Agri-Food):** Not necessarily about the national inventory report, but I will provide an observation. During the period when the plant is capturing the carbon for the production of seed and grain, as soon as the grain is used for feed, food, etc., that carbon is released. It's not something that is actually stored.

It's not like a tree that is cut and burned or used, and the carbon stays there. That carbon gets recycled as soon as we actually use it. It's released again into the atmosphere when we use it for food.

**Ms. Lianne Rood:** Thank you very much for that.

I'll go back to the report. The latest national inventory report on greenhouse gas sources and sinks in Canada was submitted to the United Nations in April 2021. I noticed, first of all, that the report indicates that GHG emissions by the agriculture sector as a whole were reported to be down by 0.83 megatonnes, or 1.4%. I have also noticed that the GHG emissions from energy used in agriculture stood at 3.7 megatonnes for 2019. These are well below most other sectors, including residential housing, for example, with GHG emissions of 42 megatonnes.

Given how little GHGs are emitted from agricultural energy use, do you not think that the Government of Canada should extend the carbon tax exemption already available for agricultural use of gasoline and fuel oils to include propane and natural gas? If not, why?

**Mr. John Moffet:** With respect, that's not a question for our officials. That's a question you need to address to the members of the government.

**Ms. Lianne Rood:** All right. I will ask my next question.

I noticed in the report in the section on land use and land-use change in forestry that in 2019, crop land was a net carbon sink at 4.2 megatonnes of GHG sequestered. In the same section, I noticed that grassland is reported as a net GHG emitter at greater than 0.5 megatonnes emitted. Again, in the same section, I noticed that wetlands are reported as net emitters of GHGs at 2.6 megatonnes.

Are you able to explain these calculations—or at least give a top-level explanation—of how these calculations would be made?

**The Chair:** Give a quick answer, please.

**Mr. John Moffet:** The short answer is that it's through data collection and modelling associated with changes in the landscape. If we lose wetlands, then we lose the sequestration that previously occurred. If we gain wetlands, we gain sequestration that occurred.

Again, it's always relative to what occurred in the past and what changes are occurring on the land, or in industrial or agricultural practices.

**The Chair:** Thank you, Mr. Moffet.

Thank you, Ms. Rood.

[*Translation*]

Mr. Drouin, you have the floor for the next six minutes.

[*English*]

**Mr. Francis Drouin (Glengarry—Prescott—Russell, Lib.):** Thank you, Mr. Chair.

I want to thank our witnesses for taking the time to come before our committee.

I have a question with regard to identifying carbon emissions on farm and whether or not we plan on moving forward or if we have identified some organizations that can help our farmers identify how to best reduce those emissions. For instance, should I increase my carbon emissions in the barn or should I increase my carbon emissions in the field? We all know that can't be done at the same time.

I know New Zealand has a plan to have these farm consultants reduce carbon emissions on farms, as I'm sure you're already aware.

Perhaps Ag Canada could help me with this. Maybe I can flip it over to Environment, if they have some comments on that.

**Mr. Matt Parry:** Thank you very much for the question.

I will perhaps make a few comments and then see if my colleagues would like to add to this.

It's very much an important part of the new programs that were announced in the strengthened climate plan and budget 2021. These look at ways to work directly with farmers through both the living laboratories program that I mentioned in my opening remarks, as well as through on-farm action through the top of the \$200 million additional funding that was announced in budget 2021.

As part of that, officials are certainly looking at options where there are opportunities to work with other groups and experts in the field to support the adoption of climate-smart farming practices.

I will perhaps see if Mr. Valicenti or Dr. Gracia-Garza have anything they would like to add to that.

• (1555)

**Mr. Marco Valicenti (Director General, Innovation Programs Directorate, Department of Agriculture and Agri-Food):** Thank you very much, Mr. Chair, for the question.

I'll just follow up my colleague, Matt Parry's, comment. Yes, absolutely, I think that one of the elements we are looking at in engaging with stakeholders, industry associations, and other stakeholders on the on-farm side is to look at those agronomic practices and whether there are opportunities to share "best practices", I will call them, or knowledge transfer. It's looking at it from various perspectives and whether we're thinking, for example, about cover cropping or nutrient management.

There are opportunities to build some of those practices, including best management practices, in the context of the living labs—which is a collaboration between farmers and academia—to look at those practices and use those BMPs to transfer the knowledge through training or agronomic services, etc.

Yes, we are looking at those elements as part of our programing package suite.

**Mr. Francis Drouin:** Great. Thank you for the response.

All of us on this committee have heard about grain drying and the price on pollution, and a fund has been announced through budget 2021. I know that the program is not up and running yet, but I'm wondering about the objectives. Are we going to identify how much carbon we want to reduce through this particular program? Are we going to identify the type of grain dryers that we will prefer? Obviously we're looking at efficient grain dryers, and we know that the price on pollution is going to rise to \$170, so I would think we would favour technologies that don't necessarily use heavy carbon technologies.

Can you give us some insight, or should we stay tuned for some news?

**Mr. Marco Valicenti:** In the context of the agriculture clean-tech program, the details haven't been announced yet. That will be done shortly. We are looking at both an on-farm element and a research component.

To the question about technology, we know there are different types of technologies currently in the market. However, we also know that there are prototypes and other elements that are coming into play. We're seeing it even with some Canadian companies that are looking at different types of technologies. For example, biomass is really going to be pushing the limits. However, who knows? The fund will be for a longer period of time—up to seven years—and we're hoping that we will continue to look at new technologies over that time span.

We are looking, as I said, at biomass. That is one of the newer technologies on the market. We're also hoping that we will continue to see evolution in grain-drying technologies over the coming years.

**Mr. Francis Drouin:** In another part of budget 2021, we announced some dollars to go towards helping farmers make some of that land more profitable by keeping wetlands and keeping forestry on land, and I think we mentioned using a reverse auction. Have we

started to think about what that will look like shortly given the objectives of that particular program?

**The Chair:** I'd like a quick answer, please.

**Mr. Francis Drouin:** Is there such a thing?

**Ms. Tara Shannon (Assistant Deputy Minister, Canadian Wildlife Services, Department of the Environment):** I think the question on the reverse auction is for me.

The short answer is that the work is still ongoing, so the details still need to be worked out. As with any of the programs described, we're going to need to work with the stakeholders to define that.

• (1600)

**The Chair:** Thank you, Ms. Shannon.

[*Translation*]

Mr. Perron, you have the floor for six minutes.

**Mr. Yves Perron (Berthier—Maskinongé, BQ):** Thank you very much, Mr. Chair.

I thank the witnesses for taking the time to be with us today. We are very grateful to them.

Ms. Shannon, I'd like to give you the opportunity to finish your last response, because you were forced to answer in a few seconds. I'd like to hear the long answer, please.

**Ms. Tara Shannon:** Thank you very much.

[*English*]

There isn't too much more for me to add, except I note that the budget did identify up to \$60 million to support a number of initiatives on farms and agricultural lands, including a reverse auction. A reverse auction is a way for the Government of Canada to support farmers who wish to set aside lands for wetlands, habitat conservation or grassland redevelopment, among other reasons.

Details do need to be worked out. The budget was just announced and we're pleased, but we have to continue with some work to define that.

[*Translation*]

**Mr. Yves Perron:** Thank you.

Mr. Valicenti, I'd like to come back to your last response. You spoke of knowledge transfer between academia and the farming community. What is happening with investment in research and development for new technologies? You spoke of grain dryers, for example. I'd like you to talk about budget estimates. We've heard from people in universities that university infrastructure is underfunded. Do you have anything planned for that?

When you talk about new technologies for grain dryers, \$50 million might seem like a pretty small amount. The witnesses we had talking about this issue said that the current alternatives were not economically viable. These are the areas in particular where the federal government could make a difference. I'd like to hear from you about that.

[English]

**Mr. Marco Valicenti:** Thank you very much, Chair. I would make two comments.

On the grain drying, again, I would remind the committee that in budget 2021 as part of the \$165 million agriculture clean-tech program, \$50 million was carved out for this as well as \$10 million for fuel switching, which was another component that was deemed to be part of the \$165 million.

We are pretty active with Canadian companies as well in looking at those new technologies. This is a fund will exist for a number of years, seven years, and we know that there is a need now. We are looking at new technologies, as I mentioned, such as biomass. But it does allow for companies to think about building some of those newer prototypes whereby we can fund the research and the innovation component of green efficiency, or grain drying or barn heating, as well. The program will allow both immediate...as well as thinking about new prototypes in this area.

With regard to academia, I wanted to mention again, on the agriculture climate solutions, that it's a \$185 million, 10-year program, the living labs component. Within these groups of individuals, we will have producers, academia, and NGOs as well developing within their landscape, within their project proposal, new BMPs that will support more efficiency in the greenhouse gas reduction components. That's going to be an element where academia will play a part of that.

[Translation]

**Mr. Yves Perron:** That's good. Thank you.

I was just talking about that \$50 million over seven years that you mentioned.

Given that it's a difficult area in which to turn a profit, could that amount possibly be increased?

Has anything been planned? Is it just a preliminary sum that can be increased based on policy decisions down the road?

[English]

**Mr. Marco Valicenti:** Thank you, Mr. Chair.

Unfortunately, the level of funding is not a question for officials. We have \$50 million, and I think we're going to play with that money, for sure.

• (1605)

[Translation]

**Mr. Yves Perron:** Thank you very much.

I'd like to turn to Mr. Moffet now. I will proceed quickly and, if necessary, I will come back to him in the second round.

Mr. Moffet, you mentioned in your remarks that we need to move beyond the status quo, that is, excluding what was already being done. At previous meetings, we've seen people who have been farming organically for over 20 years. They are pioneers who have developed techniques.

Do you have a plan for including those individuals in your offset system to recognize what they are doing?

Even though it's not new, what they are doing is still very positive in terms of environmental protection. It's pretty hard not to recognize that. Encouraging a producer who is an extremely big polluter to pollute less is fine, but is there no way to include those who have already done a lot of the work in your process?

**Mr. John Moffet:** That's an excellent question, and it's a big challenge for us.

[English]

The reality, however, is that what we need to do is to focus on creating incentives for new or changed behaviour so that we increase sequestration or reduce emissions relative to their current levels.

There are some practices where there are some farmers working on the cutting edge in experimenting with doing things differently. To the extent that we can identify those activities and develop a standardized approach to measuring the impacts of those activities, if those farmers and other farmers undertake those activities they would be considered beyond business as usual and could be eligible for an offset.

The challenge for us comes in determining when an activity that once was new is now close to business as usual in Canada. That's the challenge that we have in determining exactly what qualifies for an offset.

**The Chair:** Thank you, Mr. Moffet.

[Translation]

Thank you, Mr. Perron.

[English]

Right now we will have Mr. MacGregor for six minutes.

**Mr. Alistair MacGregor (Cowichan—Malahat—Langford, NDP):** Thank you, Mr. Chair

Thank you to our departmental witnesses for engaging with us on this study.

I'm not sure if Mr. Parry or Mr. Moffet will be best suited to answer a question regarding the soil organic carbon change indicator. It is on AAFC's website, and the last data that we have is 10 years old.

I want to know about the progress being made on that and about some of the methodology that you're using, because if we want to know where we're going, we have to know where we're at currently.

I know Canada is a very regional country. Our agricultural soils are very different, depending what region you're in, but is there a sense of just how much carbon our soils can absorb on a per-hectare basis in different regions? Is there a maximum amount? How much carbon generally do you think our soils are capable of taking out of the atmosphere through these beneficial farming practices?

**Mr. Matt Parry:** Thank you, Mr. Chair, for the question. It's a very good question.



I will turn to Javier from our science and technology branch to respond to this one.

**Dr. Javier Gracia-Garza:** Yes. Thank you, Mr. Chair, for the question.

Indeed, the information that is available right now, as you pointed out, is dated. It was collected in the census back from 2011. This census is done every five years, so we are in the process of updating that with information up to 2016.

That said, we do have information, and it's a system that records that...between the census and internal modelling that we do for each of the difference practices—the crops, etc.—that are developed throughout the country. The figures will be updated soon, and we're working to actually change this scheduling to be more frequently reporting on the soil carbon that is in our soils.

The methodologies that we follow are pretty much standardized around the world, using the kinds of models or systems that are approved through international standards.

Now, on your last question about the diversity of different soils that we have in the country and the different geographic sorts of conditions, we have different coefficients and models for each of the different areas. We are in the process of establishing, through some of that activity, the differences of what different soils in different regions of the country are capable of storing.

That being said, the carbon cycle is a very dynamic system, and what is possible biologically is something that needs, I would say, continuity in maintaining practices. It is not something that I can define as a very stable thing, but it's a dynamic system.

I'll stop there.

• (1610)

**Mr. Alistair MacGregor:** Okay. Understood. Thank you so much.

Mr. Parry, at an earlier meeting last month, one of our witnesses was Danone, a big multinational company that is investing a considerable sum of its own funding into regenerative agriculture. They have received feedback from the farmers involved, who have reported lower input costs, better yields and overall soil health. There's an accumulating body of evidence out there showing that this is not only going to be good for our environment, but it's also going to benefit our farmers' bottom line.

Is there any kind of data similar to what Danone is engaging in that AAFC is also using to help develop some of these programs? I know that farmers know a lot of this already, but there's always room for improvement in any kind of a system you're operating in, and that knowledge transfer I think is a really important part of it. Is there anything you can contribute on that?

**Mr. Matt Parry:** I think my answer would be a fairly general one in the sense that the government has made it very clear that it intends to work closely with farm groups, producer organizations, the food industry and other stakeholders to very much explore these opportunities and look for ways to address environmental issues, such as climate change, while at the same time expanding and growing businesses. I would make the point that there have been several references to the living labs work, which is intended to

bring together different perspectives and really look at those projects or activities that can really provide a win-win-win scenario.

I'll just check if any of my colleagues want to elaborate on that.

**Mr. Warren Goodlet (Director General, Research and Analysis Directorate, Strategic Policy Branch, Department of Agriculture and Agri-Food):** I would just add briefly that, as part of the living labs, there's also looking at the socio-economic factors of it, including the economic barriers and benefits that the farmer sees. Therefore, there is a bottom-line economic aspect to that work, as well as the scientific angle to the living labs. Both sides are being looked at there.

**The Chair:** Thank you, Mr. Goodlet.

Thank you, Mr. MacGregor.

Now we'll go to the second round, starting with five minutes for Mr. Epp.

**Mr. Dave Epp (Chatham-Kent—Leamington, CPC):** Thank you, Mr. Chair.

Again, thank you to the departmental witnesses for joining us today.

I'd like to begin with some basics. Agriculture's fairly positive environmental record since 2005, particularly with greenhouse gases, has come from many, many different things, but one of those things is a basic toolkit called the 4Rs.

I'd like to begin with AAFC. For the record, so it's not me or one of my colleagues reading it in for the report, can you talk about the 4Rs—define them and talk about your view of them?

**Mr. Matt Parry:** The 4R process refers to a set of practices and activities that I believe has been developed by Fertilizer Canada. It is very much about practices that farmers can undertake to improve the application of fertilizer.

I'll turn to one of my colleagues who may be able to speak in a little more detail on the four elements that were noted.

Dr. Gracia-Garza.

• (1615)

**Dr. Javier Gracia-Garza:** Sure.

Very quickly, the 4R process is this: done at the right rate, at the right time, at the right placement and with the right type of fertilizer. I think it is a set of different practices that is attempting to use the inorganic fertilizers in the most efficient possible way. Independently, each of these different points—rate, etc.—is something that's scientifically—academics, our own scientists within Agriculture and Agri-Food Canada.... It's research that has been going on for many years and is now packaged by, as my colleague said, Fertilizer Canada to advance it as a package. It is a group of different principles that farmers should be applying to make good use of fertilizers.

**Mr. Dave Epp:** Thank you.

I'll go back to Mr. Parry.

You talked about the different programs targeted at environmental initiatives. What percentage of AAFC's budget is directed toward environmental initiatives and support? Just give me a rough ballpark percentage.

**Mr. Matt Parry:** Unfortunately, I'd have to follow up on that. It is part of the existing Canadian agricultural partnership, so there's both funding that is cost-shared with the provinces and territories, as well as specific programs that are—

**Mr. Dave Epp:** Maybe, then, you can submit that in writing so that I don't lose more time.

Thank you.

**Mr. Matt Parry:** Certainly.

**Mr. Dave Epp:** Biomass was mentioned earlier as a particular option, as an alternative, to fossil fuels for grain drying and possibly for barn heating and other sources. I'm going to need some help here. By the time we gather biomass—at times, we might have to dry it—by the time we store it and then when we burn it and re-release the greenhouse gases, what is the promise in this technology for—particularly with regard to greenhouse gas emissions—replacing specifically natural gas and propane for grain drying?

Mr. Valicenti, I think you spoke about biomass and the research there.

**Mr. Marco Valicenti:** Unfortunately, I'm not an expert on biomass, but can I say that it's one of the elements that we're looking at. There are Canadian companies that are fully engaged in using biomass as a clean fuel—if we're thinking of wood pellets and of oat pellets—for grain drying. I'm not an expert on the technology behind it, but it is one of the promising areas of focus in the context of grain drying vis-à-vis the traditional grain dryers that we see on the market currently. As I said, there are Canadian companies that are very, very active in this place and that will be supporting producers on new technologies in grain drying.

**Mr. Dave Epp:** Thank you.

I'd like to switch to the Department of the Environment, please, and Mr. Moffet.

Our briefing note from the Library of Parliament talks about the nitrogen and phosphorus balances for agriculture, and it's a fairly good news story with their improvement over time, particularly when we are compared with our fellow OECD members.

You mentioned earlier with respect to our environmental targets that we can't go back. We're not going to get credit for back.... We need to move forward.

Can you put that into perspective, particularly in the case of phosphorus, agriculture is phosphorous loading compared to...? We hear about municipal sewage discharges. Are those also improving?

What is agriculture's share of this problem that we need to focus on and improve compared with other areas?

**The Chair:** Give a very quick answer, please.

**Mr. John Moffet:** The short answer is twofold.

First, I'll have to get back to you with the precise data; we do have that data.

Second, the data will show that the relative contribution, of course, varies from area to area and ecosystem to ecosystem. We have some ecosystems that continue to be significantly impacted by agriculture, whereas in others it's primarily an industrial and municipal effluent issue.

**The Chair:** Thank you, Mr. Moffet.

Thank you, Mr. Epp.

Now we go to Mr. Blois for five minutes.

**Mr. Kody Blois (Kings—Hants, Lib.):** Thank you, Mr. Chair.

Thank you to our witnesses.

Mr. Moffet, I'll start with you.

Around offset protocols, you certainly teased this out in some of your earlier answers. We're trying to reward behaviour that was not necessarily already being undertaken, to be able to continue to reduce emissions.

Do you have a sense, as they relate to the offset protocols for soil, from what year we are going to start calculating? What baseline are we working from when rewarding those who are using different techniques?

• (1620)

**Mr. John Moffet:** I think we're looking at activities. We will not be giving credits for anything that occurred before 2018. That's in terms of the activity.

As for defining what constitutes beyond business as usual, that is something that will vary depending on the activity.

**Mr. Kody Blois:** I appreciate that—that's helpful.

So there's not necessarily going to be one benchmark if we're talking about no-till agriculture. For example, business as usual would be a certain threshold, like once an industry hits this, it would be deemed business as usual.

Is that my understanding?

**Mr. John Moffet:** That's exactly right.

**Mr. Kody Blois:** Has there been any...? I apologize, because there's a lot going on in the federal government. As a member of Parliament, I haven't got into the depths of the Canada Gazette. Relating to offset protocols for soil, have we set what that benchmark is, or is that still to be determined?

**Mr. John Moffet:** That's still to be determined on a protocol-by-protocol basis.

We have draft regulations that set the basic rules for developing the protocols and then using the credits. We're now in the process of developing those protocols, and, as I said, one of the first four that we're working on involves organic soil, carbons.

**Mr. Kody Blois:** As I understand it, there's not something set that says that, once an industry hits x percentage in using these certain types of procedures, or it hits business as usual, that's not been publicized yet; it's an ongoing conversation.

**Mr. John Moffet:** That's correct.

**Mr. Kody Blois:** Okay. Thank you.

This might be out of your realm of expertise, Mr. Moffet, but I'll ask it anyways.

Again, I think there are a lot of opportunities here. My colleagues have talked about the things that are going on in agriculture. We're certainly talking about things that we can do to continue to advance work with industry. We've pointed to investments in the budget that are going to help that.

Are there conversations being held at the ministerial level, or certainly within department to department and internationally, about ways that we can try to get to a standard price on pollution or these mechanisms? Obviously, if Canada adopts a certain approach, but other jurisdictions are choosing not to ask their domestic producers to be part of climate solutions, it could create an imbalance in trade. Are those conversations being held, or is that outside the scope of what you work on in the department?

**Mr. John Moffet:** This is directly within the scope of what we work on, because, of course, this is a challenge for Canada and other countries that are taking action to reduce greenhouse gases. We need to do so in a way that both reduces emissions and that doesn't adversely impact our economic activity, and that certainly doesn't simply lead to transferring that activity to another jurisdiction with less stringent standards.

There are a number of ways to do that. One is in the way we design pricing. I can get into that.

**Mr. Kody Blois:** Mr. Moffet, I'm sorry—

**Mr. John Moffet:** We are looking at it. That's the short answer.

**Mr. Kody Blois:** I don't mean to interrupt you. I have only so much time for questions, and this could be a long one.

I would be interested in knowing, to the extent that you could share with the committee, some of the work that's going on to try to find that harmonization. I would be interested in knowing that, if possible, speaking as a member of Parliament. I'll leave that with you.

I have about 55 seconds left in my time, so I'll go quickly to you, Mr. Valicenti. As it relates to the clean fuel standard, these are opportunities that exist for our sector. You talked about wood pellets, for example. As it relates to using wood pellets for grain drying, is it the idea that it would be an end-use fuel switch or that we'd be using wood pellets to blend in with the types of fuels that are already being used?

**Mr. Marco Valicenti:** It's to use that as a fuel for the grain drying, as part of the new biomass technology. Again, there are different elements, different types, but that's the intent.

**Mr. Kody Blois:** In my last 10 seconds—perhaps the chair will permit me this—as I understand it, then, this would be an end-use

fuel switch on a stationary application to try to help support reduced emissions but still have the activity continue.

• (1625)

**Mr. Marco Valicenti:** That's correct.

**Mr. Kody Blois:** Thank you, Mr. Chair.

**The Chair:** Thank you, Mr. Blois and Mr. Valicenti.

[*Translation*]

Mr. Perron, you now have the floor for two and a half minutes.

**Mr. Yves Perron:** Thank you very much, Mr. Chair.

Mr. Moffet, I'd like to pick up where we left off earlier.

You mentioned that it was a challenge to recognize the good environmental practices used in the past.

In your discussions with my colleagues, one thing you mentioned was no till agriculture, a practice that could be encouraged. However, if I understood your answers correctly, someone who has practised no till agriculture for the past five years would be left with nothing. Objectively, I feel it would not be a good idea to do that.

Wouldn't there be a way to average greenhouse gas emissions or pollution per farm or per area? I don't pretend to be a scientist or a departmental policymaker, but I'd like to propose an idea. An average could be set, and those who fall below that could get offsets and transfer them to other producers. That could be a major incentive to follow the pioneer model, rather than penalizing the pioneers.

I'd like to hear what you think about it.

[*English*]

**Mr. John Moffet:** The approach you describe is one that we use where we regulate a sector. They have to achieve a certain standard. In doing that, we can reward companies or farmers for doing better than average. An offset is something that you're not required to do.

The challenge we have with offsets is that there is no regulated requirement. We're giving somebody an economic benefit. As a matter of policy, the government has decided, consistent with basic international practice on offsets, that offsets should only recognize changed behaviour going forward and not be a reward for early action.

[*Translation*]

**Mr. Yves Perron:** I invite you to consider it. I don't want to spend all of my time on it.

With respect to leveraging innovation, do you plan to give producers more flexibility, in business risk management programs, for example, to use the money when they are ready to use it? Do you plan to recognize innovation?

One witness who appeared before this committee told us about “biochar”, which could replace some fertilizers.

[*English*]

**Mr. Marco Valicenti:** In the context of the agriculture clean-tech program, yes, we are looking at both an on-farm adoption and also an innovation component. I should say that part of the dollars will also be used for agri-food processing. There is an opportunity to get and use those dollars to support increased innovation technologies with regard to some of our environmental goals.

So yes, both components will be part of the agriculture clean-tech program.

[*Translation*]

**Mr. Yves Perron:** Thank you very much.

**The Chair:** Are you finished asking questions, Mr. Perron?

**Mr. Yves Perron:** Yes, unless I have some time left.

You told me I had two and a half minutes left three and a quarter minutes ago.

**The Chair:** I may have made a mistake. I apologize.

Thank you, Mr. Perron.

**Mr. Yves Perron:** If you're offering me two more minutes, I'll take them. You know me.

**The Chair:** It will have to wait until the next round.

**Mr. Yves Perron:** Okay.

**The Chair:** Thank you, Mr. Perron.

[*English*]

Mr. MacGregor, you have for two and a half minutes.

**Mr. Alistair MacGregor:** Thank you, Mr. Chair.

My next question will go to AAFC. Our first report as a committee was, of course, on the suite of business risk management programs. We all know that farmers face a multitude of risks: price volatility, changing international relationships, but also, increasingly, climate change. Your own website details the risks associated with a changing climate. There certainly are a few opportunities but also a whole boatload of risks.

I have a two-part question. First of all, has AAFC looked at what the projected expenditures will be for the suite of business risk management programs in the context of a changing climate? Do we have an analysis of what our expenditures might end up being in terms of tax dollars?

Secondly, is there any kind of movement afoot to look at whether sound management practices are going to be including anything related to farmers adopting climate change adaptation measures?

• (1630)

**Mr. Matt Parry:** Thank you for the question. I'll start a response, but again I'll look to my colleagues to supplement if they wish.

I would note that there are regular assessments of the environmental impact of the Canadian agricultural partnership's business risk management programs. These periodic assessments take place

every five years, I believe, and since the coming into force of the Farm Income Protection Act, there have been seven environmental impact assessments conducted. There is a periodic review of these programs and how they operate and how they reflect the conditions.

I can't speak specifically to the costs in the question that was posed, but I would note that there is a regular discussion, and obviously, there are also ongoing discussions with the provinces and territories about the functioning of these programs.

I'll just check whether any of my colleagues want to add to that.

**The Chair:** If you want to reply, give a quick answer.

**A voice:** No. I think we're good.

**The Chair:** Thank you.

I know we're out of time, but I'm just curious. I think Mr. Valicenti has said that carbon in the soil is not static, so it can be released at any time through different practices. How are we going to regulate if another person owns a farm and starts plowing instead of doing direct seeding and stuff like that? Are there going to be regulations? How would you regulate that?

Does anyone want to answer? Maybe there's no one. We'll leave it at that.

I thank the Department of Agriculture and Agri-Food, Mr. Goodlet, Mr. Parry, Mr. Valicenti and Dr. Gracia-Garza; and from the Department of Environment, John Moffet and Tara Shannon. Thank you all for this very interesting conversation.

With that, we'll suspend the meeting for now. We'll be back soon and go to our next panel. Thank you, all.

• (1630)

(Pause)

• (1635)

**The Chair:** I want to welcome today the following panellists.

[*Translation*]

We are scheduled to have Pierre Lampron, the president of Dairy Farmers of Canada, but we're still waiting for him.

We're also having David Wiens, vice-president of Dairy Farmers of Canada.

[*English*]

I should say that with today being World Milk Day, the timing is good to have you on our committee. Also, from the National Farmers Union, we have Mr. Darrin Qualman.

[*Translation*]

He is director of climate crisis policy and action at the National Farmers Union.

[*English*]

Welcome, Mr. Qualman.

If you want to start, Mr Qualman, you have seven and a half minutes for your opening statement. You have the floor now.

**Mr. Darrin Qualman (Director of Climate Crisis Policy and Action, National Farmers Union):** Thank you, Mr. Chair and committee members.

I'm pleased to appear before you today.

When I received your invitation, I was very happy to see that you want to investigate ways to reduce agricultural greenhouse gas emissions, promote soil health, reduce the agriculture sector's dependence on fossil fuels and encourage farmers to adopt environmentally friendly practices. These are precisely the right questions and the right aims. Thank you for pursuing this work.

In the seven minutes I have left, I will share with you seven points that can contribute to the foundations of your work.

First, your work is important, timely and will build upon and, most importantly, will advance the work that is under way in parallel. Work to develop on-farm measures and government policies to reduce greenhouse gas emissions is advancing, but it can benefit from your support and assistance. I'll mention three pieces of work under way, as examples.

In 2019, the National Farmers Union produced the report, "Tackling the Farm Crisis and the Climate Crisis". That report contains a detailed plan to reduce agricultural emissions by 30% by the mid-2030s to improve soils and to provide other environmental co-benefits.

In 2020, more than a dozen organizations came together to form Farmers for Climate Solutions. The Farmers for Climate Solutions task force has provided recommendations to the Government of Canada, and some of those recommended programs were included in budget 2021. Thank you for that.

In 2021, the NFU published its report, "Imagine If... A Vision of a Near-Zero-Emission Farm and Food System for Canada". That very positive and very readable report provides details on how farmers and policy-makers can co-operate to achieve ambitious and rapid emissions reductions in the coming decades. Your study will build upon work already under way. I mention the NFU's report so that you might have a sense of some of the research and resources that are available and that we are happy to share.

My second point is that in terms of reducing agricultural greenhouse gas emissions, the most important thing you can know is that agriculture does not produce greenhouse gas emissions. Agricultural inputs produce greenhouse gas emissions. We know this for sure because we have 10,000 years of data. For 10,000 years, farmers farmed and they did not affect the atmosphere or the climate. That remained true until the early 20th century. Then, as farmers adopted a growing array of farm inputs, emissions soared. It follows inescapably that any low-emission farmer food system will be a low-input system.

My third point is that measures to reduce emissions can increase net farm income. Farmers' margins have decreased steeply. Another way of putting this is that for every dollar that farmers earn, a larger and larger share goes to pay for inputs. Farmers' increasing over-dependence on purchased inputs is driving emissions up and driving

margins down. Thus, reducing dependence on purchased inputs can have the double benefit of reducing emissions and increasing incomes.

My fourth point is that nitrogen fertilizer is a huge environmental problem. Nitrogen fertilizer is unique among all human products and processes in that it is a major source of all three of the main greenhouse gases—carbon dioxide, nitrous oxide and methane. In its manufacture, nitrogen fertilizer is a major source of carbon dioxide. For example, the largest single source of greenhouse gas emissions in Manitoba is the Koch brothers' fertilizer plant in Brandon.

In its use in farm fields, nitrogen creates emissions of nitrous oxide, and nitrogen fertilizer produces significant sources of methane from its natural gas feedstock. In Saskatchewan, where I am from and where I farmed for many years, nitrogen fertilizer tonnage has quadrupled since 1991. There is a wide range of damaging environmental impacts from nitrogen overuse, including ocean dead zones, acidification and nitrate pollution of groundwater. We must soon decrease our use of nitrogen fertilizer.

Again, agriculture does not create environmental problems. Overuse of agricultural inputs creates environmental problems. Thus, low-input approaches are a key to environmental solutions.

My fifth point is a request that you not support the wrong solutions. Under the guise of fighting climate change, there is a struggle for control of Canadian farms. We have a climate crisis. As is often the case in a crisis, some are looking for ways to profit.

• (1640)

Agribusiness corporations have come forward with technologies they say can reduce emissions, technologies such as data platforms, artificial intelligence, precision agriculture, sensors, drones, bots, driverless tractors, etc. However, these technologies threaten to entangle farmers in a vast web of data flows, patents, software licences and technology platforms. This web of technology will reduce farmers' control and their margins. There is an alternative, namely, measures that focus on soil health, biodiversity, resilience, farm-supplied solutions and working with nature.

As you undertake your study, please remember that there are two competing solution frameworks: in one, farmers are made ever more dependent on industry; in the other, farmers get more of what they need from biology.

My sixth point is to please advance justice, diversity, equity and inclusion. In thinking about ways to make our farms less environmentally damaging, please also ensure that the programs and policies you advocate benefit all farms, of all scales and all production methods. Please look for ways to support small and medium-sized farms, young farmers, new farmers, BIPOC farmers and the full diversity of Canadians who want to produce food for our tables.

Finally, point number seven is that we must pursue emission reduction with near wartime levels of intensity, effectiveness and speed. Climate change is the most serious crisis ever to face humanity. Despite this, we're moving too slowly to counter its intensifying effects. I ask you to proceed as if faced with a massive emergency, because we are. Please be ambitious and courageous.

Thank you. The National Farmers Union, the Farmers for Climate Solutions coalition, and others have prepared plans to reduce agricultural greenhouse gas emissions, increase resilience and reduce environmental impacts. I look forward to sharing those with your committee as you move forward in developing your report.

Thank you very much.

• (1645)

**The Chair:** Thank you very much, Mr. Qualman.

Madam Clerk, do we know if Mr. Lampron is back?

[*Translation*]

**The Clerk of the Committee (Ms. Alexie Labelle):** Mr. Lampron is not with us right now.

We're sending him some other codes so he can join the meeting.

[*English*]

**The Chair:** Mr. Wiens, do you want to do the opening statement for the milk producers of Canada?

**Mr. David Wiens (Vice-President, Dairy Farmers of Canada):** Thank you, Mr. Chair.

I can get started. I'll cover off some of the comments that Pierre was going to begin with. I know that you're all very familiar with Pierre Lampron, the president of DFC. I am the vice-president of DFC and I farm in southern Manitoba, and this is a good opportunity here to speak on some of the ongoing sustainability efforts of Canadian dairy farmers.

Of course, I don't want to miss out on talking a little bit about the pleasure of speaking with you on World Milk Day, as you mentioned earlier. It's a day established by the Food and Agriculture Organization of the United Nations to recognize the importance of milk as a global food. This year's theme is sustainability, and that's an area where our sector has made some tremendous strides, and farmers across the nation are embracing technology to help us create that low-carbon future for dairy. We'll talk a little bit about that.

We are proud to say that the Canadian dairy sector already has one of the lowest carbon footprints in the world. Producing one litre of milk in Canada emits less than half the greenhouse gas emissions of the global average, and that's a statistic that comes with great pride to us. In addition, from 1990 to 2016, the carbon footprint of

a litre of milk produced in Canada has decreased by 23% according to government data.

Over the years, dairy farming has made great strides in cutting emissions and the land and water required to produce each litre of milk. A life-cycle analysis conducted by independent experts showed that from 2011 to 2016 the Canadian dairy sector reduced its carbon footprint by 7%, water consumption by 6% and land use by 11%. There are few sectors in Canada or around the world that can match this kind of progress.

In 2019, the Dairy Farmers of Canada received international recognition from Unilever for its commitment towards sustainable milk production practices. In that context, our presentation today focuses on how our sector is moving the needle, and the role that government can play.

For me, like many dairy farmers who grew up on multi-generational farms, sustainability is really a part of my DNA. On my own farm, my mother started the practice of planting shelterbelts some 50 years ago, which greatly reduces soil erosion by wind. I've continued this practice to this day and sought to build on this with other sustainable practices, and if we had time I could talk about some of those.

That said, our sector continues to make extraordinary progress, and at the heart of it is really our proAction initiative. This is a program that is mandatory for all dairy farms in Canada and it provides an efficient and coordinated national framework for dairy farmers to demonstrate and document best practices and how to show responsible stewardship of the land and, of course, the animals that are under our care.

This fall, our sector will reach another significant milestone on the path to a more sustainable future when the environment module of our proAction initiative is fully implemented. This module's foundational requirement is the environmental farm plan or equivalent. This requirement enables farmers to develop and implement individual action plans evaluating areas of strength while addressing areas of opportunity. Of course, that's really important because we are so diverse across the country and across the regions, which is something that the environmental farm plan really acknowledges and addresses in recognizing the unique situations on farm.

As part of our environment module, farmers are also required to safeguard soil, groundwater and surface water through responsible management of waste water and manure. Another key factor in our progress has been our continued investments in research. Canadian dairy farmers allocate more than \$2 million annually to dairy nutrition and production research projects.

• (1650)

In addition, many farmers work with a ruminant animal nutritionist to develop tailored diets for their herds to reduce methane that is emitted naturally through the process of digestion. Indeed, among agricultural sectors, dairy farms host the largest number of biodigesters. This technology can both reduce methane emissions from manure storage by up to 60%, and also produce renewable energy, which can be used on farm and sold back into the local power grids.

The key obstacle preventing the wider use of biodigesters is the associated cost, which can be in the millions. While farmers currently absorb the majority of these costs, government funding for biodigesters, as well as other forms of renewable energy, would certainly be welcomed by our industry.

Furthermore, as new feed and additives are being developed, with a goal of reducing enteric emissions, funding for research and prompt approval processes to bring them to market would really be of a great benefit to us.

Dairy farmers are also working to improve biodiversity. In a 2017 DFC survey, 55% of producers had increased conservation tillage practices, 11% had decreased summer fallow and 16% had begun planting perennial crops in the preceding five years.

Furthermore, in 2020, DFC worked with Ducks Unlimited Canada and researchers at the University of Guelph to better understand biodiversity practices on Canadian dairy farms.

On average, the farmers surveyed were implementing five to six practices on their farms, such as crop rotations, reduced tillage, reduced use of chemical pesticides and fertilizers and also the restoration of wetlands. Thanks to these innovations, the industry has become more efficient, making for a smaller environmental footprint for every litre of milk that we produce.

Canadian dairy farmers are increasingly adopting new practices in soil health and carbon sequestration, and have been building soil and capturing carbon on their farms for decades.

It'll be critical for our work to be recognized as the Government of Canada seeks to develop a federal greenhouse gas credit system. However, in the current proposed regulations, carbon offset activities that began on January 1, 2017, will not be recognized as they will be considered business as usual. However, best management practices that reduce emissions and sequester carbon involve a deliberate choice by the farmer each year at planting and harvest.

• (1655)

**The Chair:** Mr. Wiens, could you conclude quickly, please? We are past the time.

**Mr. David Wiens:** As such, these practices continue to become an important part of Canada's sustainability strategy. It will be critical to develop recognized and science-based tools to adequately measure carbon sequestration in the soil.

Dairy farmers also participate in a variety of initiatives to help responsibly manage and recycle plastics used on farm. We work with Cleanfarms, a non-profit environmental stewardship organization. DFC is supporting these take-back programs and other local

initiatives to help our farmers participate in the circular economy for agricultural plastics.

DFC also supports the further development of these kinds of initiatives in collaboration with government, particularly in more rural and remote areas that do not currently have access.

**The Chair:** Mr. Wiens, unfortunately, I have to go to the question round. You might provide further information at that time.

[*Translation*]

We will now go to the first round of questions.

Mr. Lehoux, you have the floor for six minutes.

**Mr. Richard Lehoux (Beauce, CPC):** Thank you, Mr. Chair.

I thank the witnesses very much for being with us.

Mr. Wiens, you mentioned many very interesting things, but we discussed them very quickly. I'd like us to take the time to say more about some of them. For example, you talked about a significant 60% decrease in methane emissions. I understand that that the government is in the process of putting offsets in place, but the offsets don't recognize work already done.

Could you tell us a little more about that?

[*English*]

**Mr. David Wiens:** Thank you for that question.

Certainly, what has helped us reduce our methane emissions, in part, has been to increase our production per cow. Today we are producing considerably more milk with fewer animals than we have in the past. There are many reasons for that. Partly, it's genetics. Of course, we know that Canadian genetics are recognized around the world for the good-quality animals that come out of here. Also, there's so much focus on the way we feed our cows. As farmers, each one of us works with a ruminant nutritionist to develop the kind of diet for the cows that is very productive, that increases the production per cow. Of course, we focus on animal comfort, animal care. The kinds of facilities that cows are kept in today are quite luxurious compared with what was seen in the past. All of these things have contributed to a reduction in overall methane emissions.

I would say there's also the focus on particular feeds that actually create less methane emissions.

I'm not sure, Pierre, if you wanted to add to that.

[Translation]

**Mr. Richard Lehoux:** I may ask Mr. Lampron if he has anything to add about that, but I could also continue with you, Mr. Wiens, on the “biodigester” issue. You said a lot of work and investment have been done, but that federal government support was lacking and that the federal government would have a role to play.

Have you ever approached the department about it?

[English]

**Mr. David Wiens:** We've had some discussions, but there's no agreement on how we're going to.... We're looking at different ways to encourage more biodigesters across the country. In some areas it's feasible, because the utilities in some provinces may offer a better return in buying back energy than other provinces. That will vary considerably.

I believe there have been some individual projects where grants have been made available for producers to make this possible, but it's not been across the board, so that more farmers could pursue that. There are still a lot of barriers that exist to our moving forward.

• (1700)

[Translation]

**Mr. Richard Lehoux:** Thank you.

Good afternoon, Mr. Lampron. Did you want to add anything about it?

**Mr. Pierre Lampron (President, Dairy Farmers of Canada):** I'm sorry I'm late. It's almost more tiring than a day of haying, all of this.

We don't have anything concrete, but clearly the government wants to move in that direction. To achieve its goals, which are the same as ours, I believe we will continue discussions, but we have nothing concrete yet. It seems like we're moving in the same direction, so we should find some common ground.

**Mr. Richard Lehoux:** All right.

Mr. Lampron, I'd like to hear from you about the practices that you and many farms in Canada already use, which make our agriculture contribute more to reducing emissions and protecting the environment.

**Mr. Pierre Lampron:** I'd be happy to share that.

I employ a young man who just graduated from university and is working hard in that respect. We've been planting trees for two years now. Last year we planted 2,000, and this year we planted about 1,000 trees. They serve as shelterbelts, they catch all kinds of things and they produce fruit for the birds.

Our farm is organic, so we do a lot of open houses and tours to encourage other farms to adopt organic farming practices. We belong to several agri-environmental groups and they help us adopt farming practices that are better for the environment, especially in terms of carbon sequestration.

Using the best practices we can is part of being a farmer. I believe we can be part of the solution.

**Mr. Richard Lehoux:** Exactly, do you find that right now you're not part of the solution, in that the important work that's been done on this over the last 10, 15 or 20 years is not being recognized?

**The Chair:** Please provide a quick response, Mr. Lampron.

**Mr. Pierre Lampron:** I feel we are partly to blame. Perhaps we didn't make our success stories well enough known, so we'll try to make up for it.

Many of the people I see here are working with us to help us showcase what we do. Thank you very much.

**The Chair:** Thank you, Mr. Lampron and Mr. Lehoux.

I'd like to take this opportunity to welcome you, Mr. Lampron, as I know we had some technical difficulties. We're happy to have you here.

[English]

We'll go to Mr. Louis for six minutes.

**Mr. Tim Louis (Kitchener—Conestoga, Lib.):** Thank you very much, Mr. Chair.

I want to thank all of the panellists.

It's only fitting, on World Milk Day, that I start with the dairy farmers.

I appreciate your being here today on this World Milk Day, where, as you said, we recognize milk as a global food. I appreciate that. I also appreciate some of the examples that you gave to lower your carbon footprint. I was specifically interested if you could expand on the feed that you're talking about. You're saying that particular feeds can create less methane emissions.

Can you expand a bit more on that?

I would leave it to either of you—I'm not sure.

I've known Mr. Wiens longer.

**Mr. David Wiens:** Thank you. I could certainly start on that.

One thing they're finding is that by having high-quality forages...corn silage, for example, is a feed that helps to reduce it—and also just by increasing the production. Our quotas are based on butter fat, for example, so we feed the cows in such a way that we can get the right balance between butter fat and protein so that it takes less milk to fill our quotas.

There are some really interesting things that are happening out there. It's really more in the developmental stages, but there are certain kinds of seaweed, for example, that are known to considerably reduce methane emissions in cattle. I think there are opportunities. Obviously, we don't all live by the sea, so we don't have access to it, but certainly we feed additives, right? So we'll feed things.... We have the basic diets, but what really boosts our production are things like wheat distillers, grain distillers, canola meal and all of these good things that create more efficiency.



Also, through research, I think it's really important to continue to look for those various kinds of plants and feed additives that would help us to further reduce our methane emissions. In a sense, we've begun that, and I think there's a lot more potential out there.

• (1705)

**Mr. Tim Louis:** I appreciate that.

You mentioned biodigesters. I have a biodigester company here in my riding in Kitchener—Conestoga.

You mentioned that right now the associated costs are higher. You'll be happy to know that we were talking to department officials just in the last hour, and they're looking at ways of setting up a system of offset credits. They specifically mentioned biomass and biodigesters.

Are there other practices that you might be more incentivized to do if you could receive offset credits like that?

**Mr. David Wiens:** Yes. We see some things, for example, like the solar panels. We see some farms that have installed them and can operate completely with the panels, and then at times they can put energy back into the grid.

Those are all huge investments on the farm. The payback probably takes close to 15 years, so it's a significant investment. I think something like that is something that would be well received by farmers, and there's also potential with scaled wind turbines and so on, to farm size.

I think maybe Pierre would have some further comments on that. I think there are some things happening there too.

[*Translation*]

**Mr. Pierre Lampron:** I'd like to thank Mr. Wiens.

Regarding the grain issue, the solution lies in the ration calculation. You can choose different grains, but the key is to calculate them properly so that you don't waste anything. You mentioned research into forage quality. That's surprising.

I'd like to come back to the credits. Farms capture carbon, and they do that from generation to generation. All the projects done before 1977 have not been accounted for. Some farms have been doing it for several years in some forests and plantations. It would be appropriate to recognize what is already being done and not set a date that only takes new projects into account.

[*English*]

**Mr. Tim Louis:** I don't have as much time as I'd like, but I would like to talk to Mr. Qualman.

I appreciate the reports, both "Tackling the Farm Crisis and the Climate Crisis" and "Imagine If...". I really enjoyed them; they were great. We very briefly talked about low input and low emissions, and we talked a lot about tech solutions. However, I love that your reports are very agroecology-oriented.

Can you tell us about enhanced soil health and what kinds of things we can do to lower the nitrogen, in the very short time I have? Then maybe we'll set up a meeting after because I'd love to talk more.

**Mr. Darrin Qualman:** We really believe that soil health is key to reducing input use; increasing resilience, water, filtration and drought resistance; and maintaining yield, farm productivity and profitability as we move into a future where we have to use fewer inputs. As you may know, soil with a lot of organic matter and carbon absorbs more water and holds it. It is really a key thing as we move into a future where rainfall will be less predictable and more intense, with more drought and more floods. We think the way to make our farms more resilient so they maintain their output and profitability moving forward is to really focus on the health of the soil, because that's the key to our output.

**The Chair:** Thank you, Mr. Qualman.

[*Translation*]

Thank you, Mr. Louis.

Mr. Perron, you have the floor for six minutes.

**Mr. Yves Perron:** Thank you very much, Mr. Chair.

I thank our witnesses for being with us today.

I'd like to say a special hello to the dairy farmers on this World Milk Day.

I'd like to speak to Mr. Lampron.

You just mentioned that we should find a way to recognize what's been done in the past, as Mr. Lehoux pointed out. Environment and Climate Change Canada officials on the previous panel told us that this was an issue and that it didn't seem to be included in their plan for the time being.

In your opinion, would there be a way to measure farms' greenhouse gas emissions and compare them to an average, to determine whether they are performing well or not? While we may not be able to look at everything, would you have any solutions for the government in that respect?.

• (1710)

**Mr. Pierre Lampron:** Since most farms have some wooded land, essentially it's a matter of recognizing what trees, crops, pastures, forage fields and ground covers capture in carbon. In my opinion, carbon capture could be recognized in several ways.

**Mr. Yves Perron:** Setting up a calculation system is likely to be quite complex and controversial.

Are there groups working on this at Dairy Farmers of Canada?

**Mr. Pierre Lampron:** Yes, it is indeed complex. That's why I'm not really going into it.

Based on what I've read in the reports I look at, I understand that we don't always consider what nature has been doing all along in agriculture. That's the important thing.

**Mr. Yves Perron:** Without looking at absolutely everything that's been done in agriculture, we could consider a certain time period or developments over the past 20 years, for example, to recognize the pioneers in the field.

How would you feel if we were to continue with the approach that doesn't recognize anything done before 2018?

**Mr. Pierre Lampron:** What's always been done should be recognized. It would affect producer motivation. It would be a little disappointing.

**Mr. Yves Perron:** All right, thank you.

I'd like to ask Mr. Qualman about this matter.

In your opinion, is there any way to establish some sort of baseline and look at where each farm stands? This could be done through credits for some, and debits for others, as an offset credit exchange.

[English]

**Mr. David Wiens:** We do have a life-cycle analysis that's being done already. That is available for individual farms to work out what that life-cycle analysis looks like on their farm. I certainly think that's an area that would help us identify where the individual farms are at.

[Translation]

**Mr. Yves Perron:** Mr. Qualman, I'd like to hear your thoughts on the matter.

[English]

**Mr. Darrin Qualman:** As for paying farmers for their past work and their ongoing work, there's nothing wrong with that. That's a very, very good thing. It should be done. However, doing it within the offset credits system is really disastrous. When you credit someone for doing something they've already done or would have done anyway, at the very same time you're giving a large emitter a licence to continue emitting in excess.

So there's nothing wrong with the idea that farmers should be recognized, but it shouldn't be done within the offset credits system.

[Translation]

**Mr. Yves Perron:** In that case, how would we recognize them?

Earlier, you talked about respecting soils and characterizing them. We've had other witnesses from the organic farming community. They told us about microbiological characterization of soil. That might be a solution.

Is there another way to establish a baseline?

[English]

**Mr. Darrin Qualman:** Not within the offset credits system; there are just so many problems with that. For instance, if you credit farmers with putting carbon into the soils within the offset credits system, the regulations as they're written call for 100 years of monitoring and reporting. That's potentially 100 years of liability, possibly unlimited liability, and possibly 100 years of locking farmers into farming in a certain way.

All of these things need to be incentivized—cost-sharing, incentive payments, and we'd need a large suite of agro-environmental incentives—but the offset credits system is not the right way to get this done.

[Translation]

**Mr. Yves Perron:** Based on your approach, we need to reduce the number of inputs on farms. The unit of measurement could be the number of inputs on each farm. That would therefore provide a benchmark for people to improve upon.

[English]

**Mr. Darrin Qualman:** As for reducing inputs, the key is giving people alternatives. That's why it's so important to not just ask people to use less of something but to also show them how to use crop rotations, biological soil, nitrogen fixation, intercropping, cover crops and a whole suite of enhanced management techniques so that they can maintain the same output while using fewer and fewer inputs. That's where these agro-environmental programs could help to do the research, demonstrate, and then incentivize and make these practices common in the countryside.

● (1715)

[Translation]

**Mr. Yves Perron:** Mr. Lampron, you reduced your inputs by increasing forage quality, adding algae as inputs and so on.

Could you tell us about that quickly?

**The Chair:** Your response will have to be brief, Mr. Lampron.

**Mr. Pierre Lampron:** I'd like to go back to what Mr. Wiens said.

Life cycle analysis includes lots of things. It's an internationally recognized standard. Of course, it's not perfect, but it's constantly improving. We need to take stock of what's going in and what's going out. Maybe that's a solution to consider.

**The Chair:** Thank you, Mr. Lampron and Mr. Perron.

Mr. MacGregor, you have the floor for six minutes.

[English]

**Mr. Alistair MacGregor:** Thank you very much, Chair; and thank you to our witnesses.

I'll wish the Dairy Farmers of Canada a Happy World Milk Day. It seems appropriate to do that right off the bat.

Mr. Qualman, I'll start with you. I thought it was quite illuminating that you made the comment that agriculture is not the problem; it's our inputs. That struck me.

We have had previous testimony in May from Danone, which has invested some of its own money in helping farmers change their practices into regenerative agricultural methods. They have reported that those farmers have enjoyed the benefits of better soil health, lower input costs and higher yields. There seems to be a holy trinity right there.

It seems from your perspective, and I've read a lot of the literature from the NFU, that what is needed is a paradigm shift. As this committee is going to be writing its report and making its recommendations to the federal government, could you expand on some of the ways that the federal government can best serve in helping with that paradigm shift?

I know farmers already have a lot of base knowledge. They are quite independent and we don't want an Ottawa-knows-best approach, but we do want to identify those particular methods out there that are working in those three specific areas.

If you can expand on that concept, I think that would be quite helpful. Thank you.

**Mr. Darrin Qualman:** Thank you for the question.

Indeed we do need a paradigm shift. We need a real transformation in agriculture and in just about every sector to make them less dependent on fossil fuels and to lower emissions. Agroecology is a key part of that, a focus on working with nature, getting more of what we need from biology and less from industry, on fewer petroindustrial inputs and more of what we need from biodiversity, soil organisms, and so on.

As for some of the ways the government can support that and really take an ambitious run at this idea of transformation, we've proposed a new agency, called the Canadian farm resilience agency, or CFRA. It's patterned on the PFRA.

The last time we had a massive environmental disaster in agriculture was the 1930s and the dust bowl. Coming out of that, the government created the Prairie Farm Rehabilitation Administration to work with farmers to really change how things were done, to work on water supply, tillage, everything around the farm, putting in trees, and so on.

We think that was a very good model. Here we are in the 21st century and we have another climate crisis. We think CFRA could provide free soil testing, as well as independent extension agrologists—that is, agrologists who aren't focused on just selling more inputs, but instead, helping farmers to transition to a low-input, low-emission model. They could run demonstration farms where low-input, low-emission practices were refined and showcased, and so on.

The CFRA is an example of how government could lead that kind of transformation and how it could engage in what we talk about in terms of near wartime levels of work and effort on this front.

• (1720)

**Mr. Alistair MacGregor:** Yes, and one where farmers are the active participants and very much co-drivers in this kind of change.

You also took some time to make comments about the major problems associated with use of nitrogen fertilizer. We certainly are acquainted with Fertilizer Canada. They have been a regular witness before our committee and much has been made about their 4R certification program. I would agree with them that it has led to significant improvements. What I'm concerned about is whether there is too much industry-led research out there vis-à-vis public research into this area.

One of the struggles you have when trying to explain this paradigm shift is that farmers might be comfortable with the way things are being done now. They know how to apply their fertilizer. They know approximately the yields they will get.

What are some of the struggles we have in trying to show them that alternative methods in fact can have these improvements?

**Mr. Darrin Qualman:** Yes, the 4R efficiency measures are important. They do a lot, but efficiency alone won't get us to where we need to go. The federal government very wisely put in a target of a 30% reduction in nitrogen-related emissions by 2030. Efficiency will get us part of the way, but really reducing absolute tonnage is going to be needed in order to meet that target. Tonnage is going the other way. I mentioned that in Saskatchewan we've quadrupled fertilizer use in just three decades. In Canada, it's doubled over about the same period of time. Those trend lines are going in the wrong direction.

We need 4R, but we need much, much more. Again, that's for things like these independent extension agrologists actually coming to the farm, standing in the field with the farmer and taking a whole-farm, whole-system look—not just at how much fertilizer is going onto a field of canola, but at how that canola works within a larger cropping system of rotations, cover crops, soil health plans and all of that.

**The Chair:** Thank you, Mr. Qualman. I'm sorry, but we're out of time.

Now we'll go to the second round with Mr. Steinley for five minutes.

Go ahead, Mr. Steinley.

**Mr. Warren Steinley (Regina—Lewvan, CPC):** Thank you very much.

I appreciate the witnesses' being here today.

My first question is for Mr. Qualman.

We've had Mr. Parry come in from Agriculture and Agri-Food Canada and say that agricultural emissions have remained steady from about 2005. Would you agree with that statement?

**Mr. Darrin Qualman:** I would, but I would add that emissions are up by about 23% since 1990.

**Mr. Warren Steinley:** Okay, but since 2005 they've remained steady.

I agree with you that there are a lot of practices.... I'm from Saskatchewan. I grew up on a dairy and beef farm around Swift Current, Saskatchewan, so I know that we've been doing cover crops, tree rows, crop rotation and rotational grazing for years now as good practices to help conserve our soil.

You did make mention of the 100-year carbon, I guess, journey that's supposed to be part of the offset program. Could you imagine locking in farm practices from 1921 until 2021 and what that would do? Do you have any comments around the carbon-offset framework and how trying to lock farmers into certain practices is just not the right path to go down with this particular policy?

**Mr. Darrin Qualman:** I completely agree. Briefly, the liability problem is huge because a farmer could sell a bunch of offsets now, and the price might be pretty low at, say, \$10 a tonne. However, that carbon might for some reason get released decades from now, and the price might be \$50 or \$100 a tonne, so they might end up having to pay back many, many times more than they received, so there's a long-term unlimited liability problem.

**Mr. Warren Steinley:** Thank you very much for that.

I'm going to switch directions to the Dairy Farmers of Canada.

Thank you for being here today, and happy World Milk Day. I'm a big proponent of milk and always have been.

One thing that I've asked and talked about during the carbon-offset framework is the idea that, basically from 2018 and prior, you're not going to get credit for your good environmental practices. We talked about biodigesters, which are different from biomass. Biodigesters were put in place for manure handling. Could you give kind of an idea of why you should be given credit for those biodigesters and an idea of the amount of money it costs to put those on your farms?

• (1725)

**Mr. David Wiens:** I would begin by saying that biodigesters.... As I said earlier, a project like that is into the millions. Biodigesters are more involved than simply putting the manure into them and away you go. Feeding a biodigester is like feeding a cow. You have to be very specific. They require certain rations to work successfully.

For a farm, there is risk in doing that. We know what the benefits are, but first of all, it's a huge financial investment, and you sure hope that everything goes right with the digester.

Maybe you want to clarify part of your question there.

**Mr. Warren Steinley:** For sure, it's a huge upfront investment. What I'm saying is how unfair it is that this government is putting forward the idea of business as usual, that practices that have been done up to 2018 aren't going to get the environmental credit they deserve. I think there's a big push-back against that. We've heard from soil conservation groups in Saskatchewan that farmers should be given credit for the good practices they have done within this carbon-offset framework. For some reason, the Minister of the Environment and the Minister of Agriculture have picked this 2018 deadline for business as usual.

I think this area is just an example of how much money dairy producers have put up front for some of the better technologies they have adopted to lower their carbon footprints, and the gist of my argument is that they should get credit for that.

**Mr. David Wiens:** Certainly, it's a challenge when improvements made in best management practices and investments on farm are not acknowledged, because in a sense some farmers may actually be waiting until this thing happens, rather than... It's also important to reward early adopters.

**Mr. Warren Steinley:** I have one quick question. I hope you put forward a submission saying that we should move that date of 2018 and really look as a committee at the business as usual practices. I hope you can put forward a submission to make sure that that is looked at as a committee going forward.

**Mr. David Wiens:** Thank you.

**The Chair:** Thank you, Mr. Steinley.

Unfortunately, we have a hard stop at 5:30 today. We're going to have to cut it off here. I see that people would have another hour of questions for these witnesses.

[Translation]

Mr. Lampron, president of Dairy Farmers of Canada, thank you for being with us today.

[English]

Mr. Wiens, vice-president, thanks for being here with us.

Mr. Qualman, from the the National Farmers Union, you have a very interesting way of looking at this.

Perhaps we can invite all of you a second time.

Thanks everyone. We shall see you all on Thursday.

The meeting is adjourned.







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