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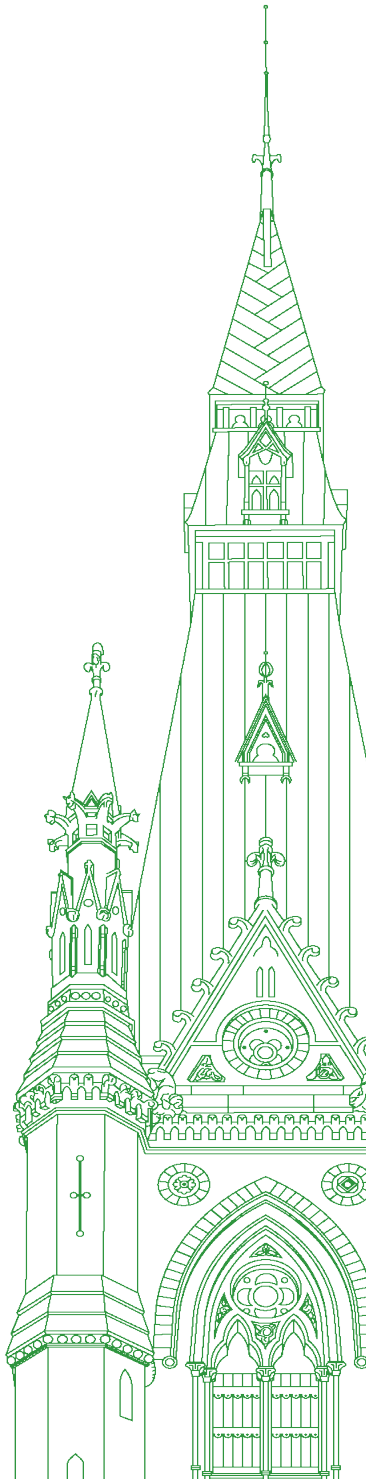

Chair: Mr. Pat Finnigan

Standing Committee on Agriculture and Agri-Food

Tuesday, June 8, 2021

● (1530)

[*English*]

The Chair (Mr. Pat Finnigan (Miramichi—Grand Lake, Lib.)): Welcome to meeting number 38 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, 2021, 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, 2021. 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.

So you are aware—

[*Translation*]

Mr. Yves Perron (Berthier—Maskinongé, BQ): Mr. Chair, we have no interpretation.

The Chair: There is no interpretation?

The Clerk of the Committee (Ms. Alexie Labelle): Mr. Chair, do you want to suspend the meeting while we sort out the interpretation issues?

The Chair: Okay, let's suspend the meeting.

[*English*]

We're going to suspend the meeting until we fix the glitch with the interpretation.

● (1530)

_____(Pause)_____

● (1530)

The Chair: I call the meeting back to order.

[*Translation*]

I will start about halfway through if that's okay. You know the guidelines pretty well, so I'll continue.

[*English*]

I would like to take this opportunity to remind all participants at this meeting that screenshots, or taking photos of your screen, are not permitted.

[*Translation*]

To ensure an orderly meeting, I would like to outline a few rules. Before speaking, please wait until I recognize you by name. If you are on the video conference, please click on the microphone icon to unmute your mike. For those in the room, your microphone will be controlled as normal by the proceedings and verification officer.

Just a reminder that all comments by members and witnesses must be addressed through the chair. When you are not speaking, your mike should be on mute.

● (1535)

[*English*]

Before we go to our witnesses, I want to remind members that the deadline for sending amendments with regard to Bill C-205 is Friday, June 11, at noon. Amendments must be sent to the clerk. If you want advice on the admissibility of an amendment, you may contact legislative clerk Jacques Maziade. If you need assistance with drafting amendments, you may contact legislative counsel Alexandra Schorah. I don't know if there will be any questions, but I wanted to remind all of you.

That being said, I will now welcome today's witnesses.

From ALUS, I believe it's Alternative Land Use Services, we have Bryan Gilvesy, chief executive officer; and from Farmers Edge Inc., we have Wade Barnes, chief executive officer, and Bruce Ringrose, head of sustainability and stakeholder relations.

Welcome to all of you. We'll go with a seven and a half minute opening statement.

Go ahead, Mr. Gilvesy.

Mr. Bryan Gilvesy (Chief Executive Officer, ALUS): Thank you very much for the opportunity to be here today.

I am a veteran farmer from here in Norfolk County, Ontario. I also serve as an executive in residence at the Ivey business school. Most importantly, today I come here as the CEO of ALUS.

To contextualize my position in ALUS, I was the third participant farmer in this program back in 2006. I've grown up with this program, through my community, to the point that I now run it.

ALUS stands for Alternative Land Use Services. The ALUS concept was born in 2008 in Manitoba farm country as the farmers' conservation plan. The acronym simply means a farmer shall use his land in an alternate way and produce a service—an ecosystem service—that we believe has market value.

ALUS has since grown into six provinces and more than 30 communities. ALUS is a Canadian charity that works with rural partners like counties, conservation authorities, watershed districts and other NGOs to help farmers and ranchers across Canada restore and enhance nature on their farmland, or in fact modify how the land is farmed.

It's important to realize that the biggest distinction of ALUS is a single one: In every community where we operate, we establish a partnership advisory committee made up of 50% farmers and other community leaders to adjudicate the program within their local area. This has become the secret sauce to delivering a robust environmental program that's growing rapidly across the country.

There is no doubt that Canada's farmers are on the front lines of climate change. Changing seasons and severe weather are all affecting the production of food and farmers' livelihoods. ALUS farmers and ranchers are fighting back against climate change. They are providing nature-based climate solutions that benefit all Canadians. Our wetland, grassland, sustainable grazing and tree projects all lower greenhouse gas emissions and sequester carbon, along with a host of other benefits, like creating new wildlife habitat—including for species at risk and pollinators—retaining and slowing stormwater to protect local and downstream communities, and improving air and water quality.

Our organization is lucky to work with many researchers across Canada who are helping us better understand the impacts from our farmers' projects. What our farmers see and what our researchers are now documenting is how quickly they get results. When projects are properly planned and managed, the benefits accrue quickly. After one year, our restoration projects can have the diversity and abundance of pollinators and species that eat crop pests equal to an undisturbed area. Better yet, we know from our research partners that converting land that isn't economic for farming back to nature helps farmers produce more food, even with less land, due to the extra pollination and crop protection that nature provides.

Researchers are also helping us identify the most promising areas for climate and water outcomes, which ensures that dollars go as far as possible. All evidence is pointing in one direction, which is that investing in nature through farmers is a smart strategy given the returns our communities receive. Turning the tide on climate change requires all hands on deck, or in this case, farmers who can put their hands in the dirt to make a difference.

Since 2015, our program has grown to now include 31 community partnerships in six provinces, including the participation to date of over 1,100 farmers and impacting over 125 square kilometres of land. As an organization, we have grown to deliver financial support to farmers, first from our humble beginnings under the umbrella of Delta Waterfowl foundation and then when we became independent as a Weston Family initiative. Now we are funded by over 30 partners. Of note, ALUS has taken great care to find market value for farmers' work, as evidenced by support from corporations such as Cargill, A&W, Danone, RBC and TD.

Obviously, over the years we have learned many lessons that I'd like to share with you today as the committee contemplates what the Government of Canada could implement in collaboration with producers to recognize the important role agriculture plays in this area.

First is that to be effective, programming must create value at the farm gate and not be seen as a temporary incentive program. These are not subsidies or incentives. We want to reward farmers for producing the ecosystem services that can solve the world's most pressing problems.

Second is to acknowledge that the creativity, skills and experience of the people on the land to manage nature-based solutions results in powerful grassroots solutions, the likes of which we have not seen before. The PAC process has proven that working through community collaboratives provides leverage and allows for local solutions that can help communities adapt to a changing climate.

● (1540)

Third, it's not only about carbon. To maximize the real value farmers can produce with their nature-based solutions, we need to recognize all the value they produce, including biodiversity, water quality and climate resilience.

Fourth, support, extension and technical advice through community contact is essential. Our farmers consistently mention this as a key to success. It's important to remember that the average age of a farmer is in my ballpark, around 56 years old, where these things are not necessarily familiar to us. Having the support of a community-based program and the technical advice is really important to bring us into this fold.

Fifth, a marketplace for ecosystem services is emerging before our eyes, and ALUS is a leader developing this space through its new acre project. Corporations will look to this marketplace for solutions for their ESG reporting and other objectives. It is essential we leverage these private dollars with public initiative for maximum effect.

Sixth, the biggest point I want to make here is that farmers need flexibility to fully engage in conservation programming, so flexible approaches towards carbon sequestration are essential. We need to develop and approve carbon offset quantification and credit issuance protocols that are very different from what we have seen to date and reflect the wishes of the farming community and the realities of farming. Putting farmers in the lead to provide environmental solutions is not only a proven analysis but highly effective.

I thank you for your time today and stand ready for your questions.

The Chair: Thank you, Mr. Gilvesy.

Now we have Farmers Edge. You have up to seven and a half minutes between the two of you.

Go ahead.

Mr. Wade Barnes (Chief Executive Officer, Farmers Edge Inc.): Good afternoon. Thank you very much for having me here today.

My name is Wade Barnes. I'm the CEO and co-founder of Farmers Edge. Farmers Edge is a technology company that operates in a majority of the key exporting nations in agriculture. We were founded here in Manitoba. Just in Canada alone, we operate on nine million acres. We go out and we connect farms. We help those farms move through digitalization. We provide analytics and help them make key decisions on their farms. Some of the by-product of that is carbon offsets and sustainability.

The other part of what I do is that I'm a farmer, born and raised on the family farm in Manitoba, right along the Saskatchewan border, on the right side of the border to cheer for the right and winning football team, mind you—no offence to any of the folks from Saskatchewan on the line. I'm also a trained agronomist. I've worked in the industry for close to 20 years. We have a unique perspective on how agriculture and sustainability will play out.

There are really four key initiatives we want to drive home.

The first one is collaboration. There does not need to be a difference between economic development and the environment. As most farmers know, it is good business to be environmentally sustainable. I think the majority of farms we operate within Canada—and we operate in Ontario and western Canada, not yet Quebec, but hopefully in the future—are doing the right things to essentially create sustainability. They have a natural attachment to this land, but they have a real focus around productivity.

One thing we hear from an agronomic standpoint that concerns us is the view around a reduction in nitrogen. I can tell you that a lot of the things that Farmers Edge does from a company's perspective is to enhance farmers' use of crop inputs, specifically around nitrogen. Our view is that, if government goes in and reduces the amount of nitrogen that is used on the farm, you'll essentially reduce productivity. If I use my own example as a farmer on my own farm, if we reduce nitrogen by 30%, we'll reduce my productivity by 25%, which will really end up costing me, on the canola that I grow, somewhere around $225 an acre. If you multiply that across 20 million acres of canola, it's a huge amount of revenue that will be pulled out of the farming community.

From my agronomic side, my concern is that a reduction of nitrogen may not give the reduction in nitrous oxide that people may be looking for, and that's the real concern. I think we have significant opportunity to enhance and help farmers move towards sustainable practices like the 4R program. What this really enables is not a give on productivity. You can have your cake and eat it to. You can have maximum productivity with, essentially, the most environmentally sound applications of crop input out there in the marketplace.

One way we can move toward this, from a Farmers Edge perspective, is that Canada has a unique opportunity—and you have to remember that I've worked in many markets around the world—to be a powerhouse in digital agriculture. There would be an opportunity to connect farms and utilize technology to be a world leader. That will enable farms to utilize technology, to go out and implement tools like the 4R program and to create much more sustainability on those farms, which will create significant opportunities beyond just producing grains, and have that ability to connect with that end consumer, which is, I think, really important and could be a unique opportunity.

With that, if we think about it, if we can enhance farms and motivate them to move towards adoption of technology, there's a huge opportunity around the creation of offsets. Today Farmers Edge, on the nine million acres we work with, will create over $3 million to $4 million in offsets, whether it be through nitrogen management, no tillage or cover crops, and we'll be utilizing those offsets and selling them on the voluntary market.

● (1545)

Our view is that there's a huge opportunity here to create value beyond just growing grains as a commodity by utilizing the tools we have to create offsets and allow Canada to be a powerhouse in sustainability.

With that, as farmers implement technology, the ability to create carbon offsets on the farms creates significant opportunities downstream when you think about how the majority of food companies are now looking at their own zero-emissions goals. Many of them are looking to source low-carbon grain. Again, the Canadian farmer can be a world leader in that. We have the opportunity to capture that value and capture it now.

The other thing I wanted to touch on is that, when we utilize carbon offsets to create value for the growers so that they invest in technology, it creates a much broader ecosystem. When you think about government's role in risk management and how the government funds risk management and how it helps support lending programs, and you think about how implementing technology can allow farmers to go out and create opportunities whereby they can get better insurance products, better risk management and better lending opportunities, that starts to take some of the risk off government and puts it towards private industry. Private industry can go out and utilize the data that farmers are creating and essentially provide those better management practices.

Right now, we see in Canada, but specifically in western Canada where most of our customers are, that there's a lot of concern around government coming in with environmental restrictions. We see that as an opportunity. Again, if they do it in the right way, farmers can create significant value out of these offsets. Utilizing technology and digitalizing agriculture can then allow for better risk management, crop insurance and lending.

I want to leave you with the idea that Canada has a tremendous opportunity here if things are done in the right way, using a collaborative approach that includes industry, farmers and the government.

I'm excited to answer any questions. Thank you.

● (1550)

The Chair: Thank you very much, Mr. Barnes.

Before we go to the question round, Mr. Gilvesy, there was an issue with your sound. The interpreters were able to translate because they had your notes, but it has been suggested that perhaps you could turn off your camera. It's not that we don't want to see you, but if you turn off your camera, all the energy will go to.... Hopefully that will improve the poor sound quality. We'll try that and hopefully it will work.

With that, we'll go to our first question round. We have six minutes and we'll start with Mr. Epp.

Go ahead, Mr. Epp, for six minutes.

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

Thank you, witnesses, for your excellent testimony.

Also, thank you, Mr. Chair and my colleague Richard. There are no brooms in your background right now that I can see, so I will extend congratulations for your cheering. With that we will carry on.

Let me start with you, Mr. Gilvesy, even though I can't see you. It is good to see you again. I believe I saw you just at the end of my tenure at the Agricorp board. Agricorp was the adjudication body as ALUS got off the ground. It's good to see you again.

I lifted one quote from the materials you forwarded to us. It was "Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest." That's by Aldo Leopold.

Can you comment further? Many changes have been made at the farm level. You've outlined some there. I'm familiar with many. Can you talk about how agriculture has not necessarily been credited with those? What do you mean exactly by that statement?

Mr. Bryan Gilvesy: Aldo Leopold was a great figure to follow because he recognized the stewardship role.

The idea for our program came from Ian Wishart, who was a potato farmer in Manitoba at the time and who now sits as the environment minister of Manitoba.

His notion was that the farm can be a multi-functional place and that the farm can produce more than just food and fibre. It doesn't need to be at the exclusion of the food and fibre, but ecosystem services that are valuable to all Canadians, including those involving biodiversity and at-risk species and wetlands, are worth rewarding. If we don't look to the agricultural community and reward it for this, we will miss the biggest opportunity in Canada.

All of southern Canada where we live, work and play is managed and maintained by farmers. If we want to maximize the quality of our life and what we get from those farms, we need to look at them differently and consider rewarding them for the extra things that they produce over and above the food and fibre. I think that's where that comment comes from.

Mr. Dave Epp: Thank you very much.

I'm going to ask Farmers Edge to weigh in on the same thing. I'll lift one quote from your materials, "Net gains in sequestered carbon have gone unrecognized for 20 years. It represents an untapped opportunity for millions" and so on. Can you make comments along a similar vein?

Mr. Wade Barnes: Yes. I mean, look, of those nine million acres we operate on, the majority of those farms are either using no-till technology today, variable application of fertilizer or specifically placing fertilizer in the right spots. They are making a huge contribution right now.

A lot of this is due to the fact that it's good business to implement these types of technologies. It saves the soil, and it saves moisture to place nitrogen in the right spots. You don't want to waste money, so you essentially create a higher productivity. There doesn't have to be a win-lose when it comes to the farm and the environment.

I think what needs to go forward is how farmers are rewarded for this and also to entice them to invest more in this, to actually go further and see what other things they can do to find more efficiencies when it comes to potentially drying grain or better efficiencies with farm equipment.

● (1555)

Mr. Dave Epp: Thank you.

We recently heard testimony here at committee from the National Farmers Union that really warned us in the farming community—I still lump myself in there because I'm part of a farm at home—to be careful of how embedded we become with multinationals and how embedded we become with data. It would be an oversimplification to say that they were advocating a return to a simpler form of agriculture, but they were very wary of digitizing and becoming wedded to large multinationals.

Can you comment, please?

Mr. Wade Barnes: Is that directed towards me, sir?

Mr. Dave Epp: Yes, please.

Mr. Wade Barnes: Look, I'm a farmer. I'm also the CEO now of a publicly traded company. The way that we look at data and information is similar to the way my grandfather would have looked at oil. If the oil stays in the ground, you can't create value out of it. Data's no different on the farm. We want to utilize data in an effective manner so that farmers can make decisions on it. We've been able to prove that when farmers have the right information, the use of crop inputs will go down.

I would say that being afraid of digitalization would be a giant step backwards in the farming community.

Mr. Dave Epp: Thank you.

Canada's track record, as testified to us by AAFC officials, is that greenhouse gas emissions from agriculture have remained steady since 2005 despite production increases.

If carbon taxes were further exempted, as proposed under Bill C-206, for grain drying and things like that, would you expect greenhouse gas emissions to increase all of a sudden? What would you expect to happen over time, given the adaptation of the 4Rs and things like that?

Again, this is to Farmers Edge, please.

Mr. Wade Barnes: Look, my view on greenhouse gases, based on farmers that are utilizing the 4R approach, would be that I don't think they'll go up. I think that the more efficiency you can create, the less you'll see an increase in greenhouse gases.

I think technology will only enhance this in other aspects of the farm, rather than just focusing on nitrogen application or fuel use.

Mr. Dave Epp: Thank you.

I'd like to get one more question in if I can to Mr. Gilvesy. What would be ALUS's position on cross-compliance between BRM programming and environmental initiatives?

Mr. Bryan Gilvesy: One of the things that farmers have told us in the design of our program is that we need to be voluntary. That means that we operate in a space that is neither a regulatory one nor a legal one. Our farmers' actions are operating in an additional nature. In other words, they're providing environmental services over and above what any regulation or compliance might require.

The Chair: Thank you, Mr. Gilvesy. We have to move on to the next questioner.

Thank you, Mr. Epp.

Now it's Mr. Blois for six minutes. Go ahead.

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

Thank you to our witnesses for their testimony here today.

The big take-away, from what I've heard as a member of this committee, is that there's huge power in looking at the natural solutions that are offered and the work that farmers can continue in this space and, of course, augment within their existing practices.

My first question is for Farmers Edge and Mr. Barnes.

I had the opportunity to visit your website—very well indeed. One of the titles is “Enrich Soil and Your Bank Account”, and you spoke to this in some of your testimony. I assume that you're working directly with farmers to create programming to enable them to verify some of their results such that they can take advantage of some of the corporate opportunities that are out there and, of course, the offset by ECCC in the days ahead. Is that fair?

Mr. Wade Barnes: Yes, absolutely. Our focus right now is the voluntary market. There is a significant number of corporate clients on both sides of the border that are focused on their zero emissions. Agricultural offsets are the most sought-after offsets, but they're also the most concerning because of the lack of transparency. When a farm is digitalized and they have an electronic record, suddenly companies feel much more secure in acquiring those offsets so that it's not “greenwashing”, if I can say that. With that, they're willing to pay a premium for those offsets. Regardless of whether they come from Alberta, Ontario or Quebec, I think there's a huge opportunity.

The second part to that is, beyond just the sale of the offset, what can be created around premiums for low-carbon grain and products that are coming off that farm, because that is the next wave.

● (1600)

Mr. Kody Blois: Okay.

I want to get into verification. When I have conversations with stakeholders across the country, that becomes a big piece. Obviously, your company is in that space. I presume there are others who might also be in that realm in the private sector.

Do you see it as government's role to play a helping hand with farmers, or is this something that the private sector can take a leading role in, in terms of the verification of farmers' meeting some of these protocols, to take advantage of these opportunities?

Mr. Wade Barnes: We've had experience in both the regulatory market in Alberta and now the voluntary market. In both cases, you need an independent verifier in order to ensure that these credits are credible.

Government can play a role to ensure that a third party is verifying it. That would be helpful when it comes to even corporate clients buying those offsets and having some governance around that.

Mr. Kody Blois: Mr. Barnes, beyond the regulatory approach of actually auditing the pieces, it's the tools, on farm, for farmers to be able to illustrate some of this work that you're talking about.

I hear you on the regulatory piece, but in terms of the actual tools on farm, is that best delivered by private companies like yours that can help digitize some of this, or does government have a role in incentivizing that behaviour?

Mr. Wade Barnes: It depends on how you look at it. One, the investment on the farm, to be able to digitalize that, to get that data so that data is verifiable, is critical and Canada can play a huge role in that.

The question is that our friends south of the border are essentially using crop insurance as a way to incentivize farmers to implement those practices.

Does government have a role to play? Possibly. If you want to speed up the digitalization at the farm level, it could. The other side of it is to not get in the road of a transaction between a farmer and a corporate client to create value, because they'll make those investments on their own.

Mr. Kody Blois: Okay.

Mr. Gilvesy, I appreciate your testimony. One of the things you talked about is that we need to make sure there is technical advice in our local communities. You obviously highlighted the work that ALUS is doing in that domain. If there isn't an ALUS, let's say, perhaps in my own community in Nova Scotia, how do we make sure that the technical expertise exists? What advice would you have for government to ensure that happens?

There was a lot in the budget and the fall economic statement around supporting the types of efforts that you're undertaking as an organization, but how do we get that expertise such that, if I am a farmer, I can turn to someone if there is no ALUS in my backyard?

Mr. Bryan Gilvesy: My answer is twofold. First, we'd love to bring ALUS to your community.

Mr. Kody Blois: Sure.

Mr. Bryan Gilvesy: There's that.

In my history as a farmer, the biggest missing thing for us has been the loss of extension for farmers. The role of extension has been taken over largely by the suppliers who sell the inputs for farms. This is a bit of a missing link, because that knowledge about what we're embarking on here today has to come from somewhere credible. It has become the backbone of our program and I cannot stress enough the importance of it. The government does have a role to play to provide this extension that we've lost over time.

Mr. Kody Blois: Okay.

Mr. Barnes, I want to go back to you with one more question. I have about 45 seconds as per my clock.

You talked about BRM, and of course, you mentioned the United States using their crop insurance program to incentivize that digitization. I heard from your comments more that this is not only good for the environment, but it can include reduced risks by shoring up margins and protecting the overall viability of farms.

Is that what you were getting at in your comments?

Mr. Wade Barnes: Yes, absolutely, the ability of digitalization, using data.

Right now, we have reinsurers who are looking to go to work directly with growers, because they can actually do a better job of risk management at a lower cost for the grower than the grower utilizing subsidized insurance. I think governments can utilize that data the same way to provide better products to their farmers and put less risk on the taxpayer.

Mr. Kody Blois: Thank you very much.

I think that's my time, Mr. Chair.

● (1605)

The Chair: Yes, that's your time. Thank you so much.

We'll go to our next questioner.

[*Translation*]

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

Mr. Yves Perron: Thank you very much.

My thanks to both witnesses for your testimony. How passionate you were!

Mr. Barnes, I would like to continue talking about how the business risk management (BRM) programs can support the digitization of data. You mentioned the U.S. example, if I'm not mistaken, that is being used as an incentive. Can you tell us more about that? What tangible steps could the government take?

[*English*]

Mr. Wade Barnes: If I can look back to my history, when our company was first founded, the government came out with what they called environmental farm plans. As part of that, there was an incentive for farmers to utilize GPS equipment, variable rate application equipment and private consultants to help them with their 4R program. Farmers were very concerned at the beginning about providing this type of information to government, but once they got over those fears, they overwhelmingly used that program.

That is the foundation of technology on the farm, specifically in western Canada. I see the digitalization no differently. As farmers move from precision agriculture to digital—and digital is the use of data to help make decisions—I think that the government could use a similar playbook to what they had with the environmental farm plans years ago.

[*Translation*]

Mr. Yves Perron: Thank you very much.

My second question is for Mr. Gilvesy.

You mentioned that it's not just about carbon capture, and that it's important to encourage producers to invest more and to move forward, while keeping this process as voluntary as possible. Here's my question: in setting up an incentive program, how do we recognize the achievements of producers who have already been working hard? We have talked about establishing offsets. Last time, officials told us that it would be done starting in 2018, but there are producers like you who have been making those efforts for a long time. How could the government take that into account?

[*English*]

Mr. Wade Barnes: I think the reality of it is that there might be a short window to look back. You're not going to be able to, most likely, provide value to the time that the grower started these processes, but I think we should at least look forward and incentivize on an ongoing basis.

Again, some of this can be done through a reduction in the cost of crop insurance or lending to implement some of the technology that's required to create the sustainability processes on the farm. Again, I think the government has done this in the past and it's been successful.

[*Translation*]

Mr. Yves Perron: Thank you very much.

Mr. Gilvesy, along the same lines, how could we recognize work that has already been done?

[*English*]

Mr. Bryan Gilvesy: This is a very challenging question and, fortunately, we have 31 farmer-led PACs across the country that have addressed it. What they feel is that it's important to recognize a farmer's contributions dating all the way back to the Kyoto protocol. We recognize, within our programming, something we call “by your own hand”. For farmers who have gone before and provided stewardship activities for which they have some evidence that they've provided, we work hard to enrol those in the program. That's a classic farmer solution by the leaders in the landscape analysis. We need to recognize those who have gone forward first. Otherwise, we'll be setting very bad precedents where people will tear down trees in order to get carbon credits to plant new ones.

That's where we landed on that.

[*Translation*]

Mr. Yves Perron: Thank you.

I really liked your statement earlier. You talked about creating value on the farm, about rewarding growers. You also talked about the fact that ecosystem services should have a market value, and that there are other uses for the tax. It's not just about agricultural production. If you make a contribution to environmental protection, it has to be calculated, it has to be considered. But it's very complex for a government to come up with numbers like that. Would you like to make some concrete recommendations perhaps?

[*English*]

Mr. Bryan Gilvesy: We do. Our partnership advisory committees have landed a way of pricing projects across the country, but it's through research that we will determine their true value.

We work with Dr. Wanhong Yang at the University of Guelph, who has provided some very impressive IMWEBs models on some of the watersheds where we operate. This model will generate quite specific quantities of how much water those farm sites will filter, how much more biodiversity will come, how much more resilience there is for the downstream communities and how much carbon gets sequestered.

There are ways to get at these numbers and understand the true value. We've learned over the years that some of the early adopters in our program are municipalities, because they know when they invest in farmers upstream they can save a tremendous amount of money on roads not washing out, because we've done wetland programming, for instance.

There's a marketplace for all this work. We can figure that out by comparing the work that farmers do through nature-based solutions to built infrastructure, and then the mathematics become easy.

● (1610)

[*Translation*]

Mr. Yves Perron: Thank you, Mr. Gilvesy.

When you say that you have recommendations and such, if you have documents that you have not already provided to the committee, I would encourage you to do so and I will come back to you during the next round of questions before the chair scolds me.

The Chair: There's no scolding here, Mr. Perron.

Thank you very much.

[*English*]

We'll move on to Mr. MacGregor.

Go ahead for six minutes.

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

Thanks to our witnesses for helping with our study today.

I'll start with Mr. Gilvesy with ALUS. I was struck by your comment in your opening remarks that “programming must create value at the farm gate”.

My wife and I have a small farming property, and it was pretty much a bee desert when we first had it. We had some apple trees, and we took some time to plant a lot of flowering plants all over the place and slowly brought the bees back. We had the benefit of a huge apple crop in subsequent years.

Can you expand on that comment and maybe put it in the context of some specific recommendations you would like to see in our eventual report to the government?

Mr. Bryan Gilvesy: We are farmer-led. Our whole program is developed from the farmer's perspective. I'm trained as a business person, and I think first and foremost what ALUS attempts to do is to make sure that a significant amount of the value that that farmer creates stays with the farmer. As we've seen in the past, with carbon in particular around the world, so much of the money has disappeared into verification and trading, and all those sorts of things. The money went to Bay Street rather than downtown main street in Tillsonburg, for instance. I would hate to see that.

I think it is important to recognize that this is a unique role—the one I'm talking about—that only farmers can play. When farmers participate in this marketplace it can be much more rewarding than a single-dimension solution, like just paying for one dimension of their work.

Again, I stand for finding value for the farmer. Our new acre project provides a transactional vehicle so that corporations can see their outcomes performed by farmers on the landscape in a way that provides for shared value for the farmer and for the corporation. Ultimately, we hope they all have an epiphany like you had, that by doing activities like this they'll have more pollinators on their land and they'll have bigger crop yields and better fruit.

Mr. Alistair MacGregor: You should have seen the collective light bulbs that went off for my wife and me. We've been learning every single year on our property.

Thank you for that.

Mr. Barnes, I'll turn to you. I was also looking, as Mr. Blois was, at the Farmers Edge website. I was looking at the soil sampling services that your company provides. I know a lot of it is looking at the proper mix of nutrients, making sure they're applied at the right time and using that new and emerging technology so that farmers are really not paying more than they need to and are applying the right amount.

Do your soil sampling services also look at soil ecology? Plants have an amazing and very complex relationship with the bacteria in the soil as well, and there's a very interesting interplay between the two. Are you doing anything on soil ecology services?

Mr. Wade Barnes: We're not doing it for soil sampling at this time, but I will say that there is a significant movement around biologicals in mainstream agriculture across North America. They're going to use the application of biologics to help reduce the amount of nitrogen. I would say that the jury is still out on how effective that will be, but there's a lot of promise around that.

Again, a big part of the use of new technologies like that is being able to measure how effective they are. I can tell you that farmers like to call it pixie dust. Lots of salesmen come down the road, knock on the door, and try to sell a farmer a solution to a problem that he probably doesn't have. Then farmers will use it and believe that it works. How do you validate it?

It's no different from implementing management processes on the farm. How do you know what happened? You need to have a way to record that. It's no different with the use of these types of technologies. I can tell you that farmers are great business people. If there's a way to get more yields with less cost, they'll do it.

● (1615)

Mr. Alistair MacGregor: I was reading up on nitrogen-fixing bacteria. Is that what you're specifically referring to there?

Mr. Wade Barnes: Yes, absolutely.

Mr. Alistair MacGregor: That brings me to something that the Government of Canada can maybe play into. I've had the privilege of touring AAFC's research station in Summerland, British Columbia. They have a very dedicated team of scientists there.

In terms of maybe looking at what might be considered pixie dust at the moment, do you think the Government of Canada should be devoting more research dollars into those areas? Is that one of the recommendations we can make as a committee?

Mr. Wade Barnes: If I look at the biological market, the majority of those are start-ups, start-ups that have come from people who have worked in the industry in big fertilizer companies or big agriculture that have been funded by venture capitalists to go out and do the research to create these products.

No offence against government research, but if there was a path to enhance investment into private start-ups, I think you'd see much quicker movement towards solutions. We're seeing a lot of those come out of the U.S., where the U.S. investors have more courage when it comes to investing in start-ups.

Mr. Alistair MacGregor: I think that takes my time, Mr. Chair.

Thank you.

The Chair: Thank you, Mr. MacGregor.

We'll start our second round.

[*Translation*]

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

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

My question will go first to Mr. Gilvesy.

Mr. Gilvesy, what could the federal government do to provide greater support to organizations like yours?

[*English*]

Mr. Bryan Gilvesy: There's a role for the government to obtain from organizations like ours the delivery of services that are important to Canadians. That delivery forms part and parcel of the funding envelope that drives an organization like ALUS.

We not only expect to deliver on behalf of Canadian, provincial and municipal governments, but we also work hard to unearth every possible marketplace to support our programming for maximum effect. That means reaching out to the philanthropic community for our developmental work and, indeed, making sure that we are the leaders in making relationships with corporate Canada to drive money to the farm gate. I think this is a proper role for the public and private to work together.

[*Translation*]

Mr. Richard Lehoux: You mentioned [*Technical difficulty—Editor*] at the outset.

Do local co-operatives work with local producer organizations? Does this collaboration need to be improved and enhanced if we really want to get the whole producer community on board?

● (1620)

[*English*]

Mr. Bryan Gilvesy: I think it's absolutely vital. The more people we can collaborate with in rural Canada, the better solutions we will find. Our program in Quebec, in Montérégie, for instance, is rooted with the UPA. They administer the program there, together with other partners, including the Port of Montreal and others, to bring programming to bear in that particular community.

Yes, it is the way to go forward. It's collaborative in a way we've not typically seen before, where we're working with communities on the landscape.

[*Translation*]

Mr. Richard Lehoux: You anticipated my question, Mr. Gilvesy.

You answered it in part when you talked about your collaboration with the Union des producteurs agricoles au Québec in the Saint-Hyacinthe area, which is already under way and which the Union is working to improve and expand.

Let me turn to you, Mr. Barnes. Have you approached the Union des producteurs agricoles au Québec or any other organizations?

[*English*]

Mr. Wade Barnes: We are currently in discussions with some very important agricultural players in the marketplace in Quebec. Hopefully, we will be able to form partnerships by this fall and start to implement some of our programs into that marketplace.

[*Translation*]

Mr. Richard Lehoux: We are trying to follow the philosophy you are advocating, but what impact do you think it has on the import and export of agricultural products?

[*English*]

Mr. Wade Barnes: As I said before, I think Canada has a unique opportunity to take the world lead when it comes to sustainability and the growth of commodities that have a sustainability footprint. I have worked in the United States. I have worked in Latin America, eastern Europe and Australia. I think the Canadian farmer is unique. No other farmer in any other country has to work under the types of conditions we operate in to grow a crop, harvest it and get it to market. Our infrastructure here is set up to be a world leader. I think an investment in digitalization could be significant to place the farmer closer to the end-user.

[*Translation*]

The Chair: Thank you, Mr. Lehoux.

[*English*]

Thank you, Mr. Barnes.

[*Translation*]

Mr. Richard Lehoux: Before the chair calls me to order, I'll stop here.

The Chair: Everything is fine.

[*English*]

Mr. Louis, you're up for five minutes.

Go ahead please.

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

Thank you to both of our witnesses. I find it fascinating that you're both here. I believe it was Mr. Barnes who mentioned that agriculture and sustainability go hand in hand. The work that you're both doing, the agroecology and the agrotechnology, also go hand in hand. I find it very helpful today.

I will start my questions with you, Mr. Gilvesy. First, I want to say hello from rare Charitable Research Reserve. I am down the road from you in Kitchener—Conestoga, in the Waterloo region. They were very happy to know that you were here. They spoke highly of you, and I can certainly see why.

We were talking about these nature-based climate solutions, specifically flood mitigation and how municipalities and other levels of government can work together and actually save on infrastructure in terms of flood washouts and so on. Can you give some examples from your region, which is the same area as mine, of where we can protect our infrastructure with some climate solutions?

Mr. Bryan Gilvesy: The ecotype I will point to here is the tall grass prairie, which you're familiar with at rare. I think in my home county, tall grass prairie was the ecotype that was here at the beginning of time. It's a really unique, diverse set of grasses rooted extremely deeply, up to 16 feet, in the ground. They love drought and they love heat.

This plant has come to have maximum utility for us in providing erosion control, as you might imagine, and also in the research Andrew MacDougall has done at the University of Guelph outlining how much nutrient these plants take up during the summer season. Barely a nutrient gets past them and into the water courses. They provide an enormous impact in terms of erosion control, especially on highly erodible landscapes like those we have here in southern Ontario, where I live, and of course keeping the nutrient on the field, where it belongs.

● (1625)

Mr. Tim Louis: I also believe from research that some of the tall grass prairie buffer zones can be used to surround cornfields in some of the areas that might be shaded or next to woods or something.

Is that something that we can look into as well?

Mr. Bryan Gilvesy: Exactly.

Again, back in my home county, the county's largest farmers are active participants in our program. They use their yield monitors to identify lands that aren't particularly economic for them to farm. Invariably when we're working in and around the treed areas, that shaded area, the first few feet is often an opportunity to put those grasses back and increase the productivity of the whole farm so that it becomes more environmentally productive and more crop productive at the same time.

These are the types of perfect solutions that our farmers on our PACs come up with all the time.

Mr. Tim Louis: I look forward to hearing more and keeping in touch, because as I said, I'm just down the road.

With the amount of time I have, I thought I would switch gears and talk to Mr. Barnes. Here in the Waterloo region, Kitchener—Conestoga represents the agriculture sector, but at the same time we're basically the tech sector of Canada as well. Tech and agriculture seem to naturally go hand in hand. I'm down the road from the University of Guelph, and I'm down the road from the University of Waterloo.

You mentioned encouraging the next companies, start-ups in the industry. As I mention the universities, maybe I'm thinking now of some of our youth.

How can we encourage this next generation of farmers, who naturally seem to embrace some of these ideas, and help them enter a market and work with technology in ways that can help?

Mr. Wade Barnes: I could spend a whole hour discussing this, but in brief, when Farmers Edge started up, we had a terrible time seeking out capital specifically from the Canadian market.

Our first big capital injection came from Silicon Valley. At the time, that company was focused on moving Farmers Edge out of Winnipeg and into Silicon Valley. Luckily, we had a board of directors that was strong enough to hold us in this market and we were lucky enough to become a publicly traded company this year.

Once you create this ecosystem in technology and agriculture, it feeds off itself. At Farmers Edge, we're probably the first one to do an IPO, but with that, there are more and more companies that can play into it. We've see huge benefits out of the supercluster, specifically the protein cluster in Saskatchewan. They've been a huge supporter, not only of Farmers Edge but the splinter companies that will come out of that.

It's a change of culture and I'm seeing now much more focus on supporting these types of start-ups today than what there was when we started.

Mr. Tim Louis: Thank you, Mr. Barnes.

We'll continue to support our tech and our ag sector. I appreciate it.

The Chair: Thank you, Mr. Louis.

[*Translation*]

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

Mr. Yves Perron: Thank you, Mr. Chair.

Mr. Gilvesy, if you agree, we'll pick up where we left off.

In your introduction, you talked about aspects that are important to me, namely flexibility and the importance of recognizing local innovation and creation. How can the Canadian government help in this regard?

[*English*]

Mr. Bryan Gilvesy: I think we have to recognize the power of grassroots solutions.

I've seen so many creative solutions from across the countryside where we operate, where farmers from P.E.I. are terracing their fields to hold the water and the topsoil on their fields by using fast-growing grasses, then harvesting those grasses to feed the cattle while the manure goes back on the field to feed the fields.

There are ways to recognize that grassroots solutions matter. There are a lot of relatively simple things that people with their hands in the dirt for a lifetime can offer as enormously powerful solutions.

● (1630)

[*Translation*]

Mr. Yves Perron: Concretely, Mr. Gilvesy, how can we integrate this into a Canada-wide program? Generally speaking, we try to base ourselves on science and use validated methods. In your opinion, what mechanism could be put in place so that people can submit the innovations they have designed and have them measured scientifically?

[*English*]

Mr. Bryan Gilvesy: Our program is very good at aggregating within our catchment areas.

We are entering into a moment of scale for our organization where we will grow more rapidly across the country, but of course, it takes a very big listening ear to open yourself up to all these solutions.

[*Translation*]

Mr. Yves Perron: In terms of flexibility, when someone proposes a solution, the scope of the project would be measured and the government would use a sort of scoring system to determine its effectiveness.

Is that your idea, more or less?

[*English*]

Mr. Bryan Gilvesy: There's research that we are doing to measure the performance of these things, including our IMWEBs platform, including calculating carbon in the future and including counting biodiversity through different research platforms, so yes, the answer is that we try to apply the research to all these innovative ideas as quickly as we possibly can.

However, know this: One of the principles of ALUS is that there must be some scientific evidence to support the activities that we're going to do, so having something rooted in science is a pretty good place to begin.

The Chair: Thank you, Mr. Gilvesy and Monsieur Perron.

Now we have Mr. MacGregor for six and a half minutes.

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

Mr. Barnes, you said in your opening comments that it's good business to be environmentally sustainable. I think we've seen that backed up by ALUS saying that, by employing some of these ecosystem-saving projects on your land, it does have a material benefit in how a farm operates in its output.

I also wanted to look at the consumer demand side of things, because, in one of our previous meetings, we had Danone as a witness, and they were talking about how they were investing a considerable sum of their own private money to help farmers transition to regenerative agriculture. They said that it was primarily because consumers are looking to have a lot more information on how their food is grown, the techniques that are used and so on. That's why Danone saw that as a smart investment, because of the consumer demand.

In some of the relations with some of the companies that you do business with, are you seeing a trend in that direction? Is there anything you can tell us about that?

Mr. Wade Barnes: Yes, this is where I think technology is going to be a huge factor, and it could enhance Canada's lead. The consumer today wants to have more connectivity to who's growing their food. Historically, there have been multiple different parties between the consumer and the farmer. Technology essentially allows the consumer to have that direct relationship, understand how the food is grown, where it's grown, how it's produced and know what the carbon footprint is.

I think to be able to implement that type of digital infrastructure, create that connectivity to the consumer and create that trust, technology will enable the consumer to trust that. If Canada is the leader in that space, they're going to pull companies, whether they be General Mills, PepsiCo, Danone, McCain or Maple Leaf, to do business with those Canadian farms.

I just think it's a significant opportunity that shouldn't be overlooked right now. If we don't take advantage of it, I can guarantee you that the Brazilians are moving. We operate into that market. In the U.S.—people might find this strange—there's more openness towards some of these changes in management, as there is in Australia, so this opportunity is time limited. I would really suggest that we focus on how to take advantage.

The Chair: Thank you, Mr. Barnes.

Thank you, Mr. MacGregor.

That will conclude our first panel. I'd like to thank, from ALUS, Mr. Bryan Gilvesy, and also, from Farmers Edge, Mr. Wade Barnes and Mr. Bruce Ringrose. Thank you so much for appearing.

To the members, it will be a quick return, because we're a little bit tight on time. After two minutes, we'll be right back.

We'll just suspend for two minutes. Thank you.

● (1630)

_____(Pause)_____

● (1645)

The Chair: We'll go on with our second hour, as we work on connecting Ms. Donnelly.

I want to welcome, from the Canadian Cattlemen's Association, Mr. Duane Thompson, chair of the environment committee. Also, we have Fawn Jackson, director of policy and international affairs.

[*Translation*]

Welcome.

[*English*]

From Terramera Inc., we have Aldyen Donnelly, special adviser, carbon markets.

Hopefully we can get your sound corrected.

In the meantime, we'll start with an opening statement from the Canadian Cattlemen's Association for up to seven and a half minutes.

The floor is yours. Thank you.

Ms. Fawn Jackson (Director, Policy and International Relations, Canadian Cattlemen's Association): Good afternoon and thank you for the opportunity to appear before the committee to discuss the environmental contributions of Canada’s beef sector.

My name is Fawn Jackson, and I’m the director of policy and international affairs with the CCA. With me today is Duane Thompson, a beef producer from Saskatchewan and the chair of CCA's environment committee.

The CCA represents Canada's 60,000 beef producers. The beef industry contributes $22 billion to Canadian GDP while supporting 348,000 jobs, but of great importance to our conversation today is that the beef industry is also a hidden gem when it comes to the environment and green jobs. While perhaps not as well-known outside of this committee, which knows this, in fact beef production in Canada is one of the best tools we have to reach our shared conservation goals and climate change goals, while also providing good-paying jobs for Canadian families.

Canada is a leader when it comes to sustainable beef production. The Canadian Roundtable for Sustainable Beef was created to advance sustainability within the beef industry and includes a collaborative community of stakeholders. Through the CRSB, Canada was the first to create a certified sustainable beef framework, which is used today by smaller direct marketers, as well as companies such as McDonald’s and Chop Steakhouse. Since Canada’s leadership, now other jurisdictions have also replicated the CRSB model, and we're pleased to share that.

I am pleased to have Duane Thompson join me today to offer further insights into how beef production can be a key partner in achieving Canada’s environmental goals.

Please go ahead, Duane.

Mr. Duane Thompson (Chair, Environment Committee, Canadian Cattlemen's Association): Thank you, Fawn.

Our family runs a beef cattle and cropping operation near Kelliher, Saskatchewan, northeast of Regina. We take pride in caring for the environment as part of our role as ranchers. In this country, cattle producers care for 35 million acres of temperate native grasslands, and while it doesn't often make the headlines, this grassland ecosystem is disappearing faster than the Amazon rainforest. Since the 1970s we've seen a staggering loss of nearly 75% of native grasslands through land conversion.

When the grasslands are lost, so too are the species that depend on the grasslands for their habitat. There are currently over 60 species at risk in Canada's grasslands, species that only exist because of continued beef production on native grasslands. Beef farmers and ranchers work closely with conservation partners on grassland habitat and biodiversity maintenance and enhancement to protect the grassland ecosystem. Cattle grazing and the continued presence of livestock on these working landscapes support the conservation of species that depend on native grasslands, like the greater sage-grouse, the burrowing owl and many songbirds.

In the North American Bird Conservation Initiative, 2019, “The State of Canada's Birds” report, it notes that Canada's grassland birds have declined by 57% since 1970, and emphasize that “Beneficial grazing on public and private lands is critical for the creation and maintenance of grassland bird habitat.” As a conservation action, the report recommends supporting sustainable range-fed beef, including beneficial pasture and hay management. Without beef production, these threatened native grasslands are at risk of conversion and these at-risk species suffer the consequences.

Since 2015, our industry has worked through Environment and Climate Change Canada's species-at-risk partnerships on agricultural lands, known as SARPAL. We work directly with beef producers to promote and enhance habitat for a multitude of species at risk. SARPAL has proven to be a great environmental program through collaboration with the beef sector and conservation organizations.

We work closely with our conservation partners, including Ducks Unlimited Canada, Nature Conservancy of Canada, Birds Canada and others to promote and deliver the beneficial management conservation solutions on the ground for our producers. Recently, Ducks Unlimited Canada launched its Beef Belongs website, highlighting the critical role beef cattle play in the health and enhancement of grasslands, wetlands and soil biodiversity in Canada. In its words, “Raising beef in Canada is good for the environment.”

Grazing by livestock is essential for the complex native grasslands to flourish. These grasslands left without grazing are essentially lost by natural progression to habitats with a lower conversion value, for example, brush and tree encroachment. By generating revenue through sustainable grazing practices, ranchers help ensure native grasslands are not converted to other uses.

With respect to climate change, rangelands and wetlands managed by beef producers in Canada are carbon sinks that store, conservatively, about 1.5 billion tonnes of carbon. The Canadian beef industry's greenhouse gas emissions account for only 2.4% of Canadian total greenhouse gas emissions and 0.4% of global greenhouse gas emissions.

Our industry's greenhouse gas footprint is less than half that of the world average and one of the lowest in the world. Today, the beef industry is producing more beef with less greenhouse gas emissions, less land and less water. The reductions in the beef industry's environmental footprint have largely come through genetics, animal health and technologies that improve production efficiencies.

We're very proud of this, but we're not sitting on our laurels. Producers across Canada continue to innovate and look for new ways to be sustainable and help the environment.

In British Columbia, cattle producers are conducting pilot studies on the use of cattle grazing to reduce fuel loads under forest canopies to mitigate the risk of wildfires. The studies are developing virtual fencing technology that will be an innovative game-changer for rotational grazing strategies, wildfire management and the enhancement of species habitat in remote grazing landscapes.

Food loss and waste continues to be a large discussion in Canada’s food system. Cattle are wonderful upcyclers. For example, the by-products of the grains we produce on our farm, such as the stems and stalks after harvesting grain, can be fed to cattle, and so can grains that are headed for food markets but perhaps don’t meet the high standards needed for the grain market because they are spoiled or have been heated.

● (1650)

This example goes much further than within our own farm. Cattle also eat by-products of wine and beer production, wilted produce and by-products of canola production. This last year when COVID hit, there were many potatoes that weren’t going to restaurants and they were able to be fed to cattle instead of going to the landfills.

Last, it's worth noting that in the past year, the Canadian beef industry has set ambitious 2030 goals related to greenhouse gas and carbon sequestration. Among other targets, our industry has committed to safeguarding the existing 1.5 billion tonnes of carbon stored on landscapes. We will also sequester an additional 3.4 million tonnes of carbon every year to reduce primary production greenhouse gas emission intensity by 33% in 2030.

The Chair: Thank you, Mr. Thompson.

We'll give it a try with Ms. Donnelly. Hopefully, it'll work.

You have up to seven and a half minutes, if you want to give it a try. We'll see how it comes out.

Ms. Aldyen Donnelly (Special Adviser, Carbon Markets, Terramera Inc.): You could just pretend it's not working and kick me out if you don't like what I'm saying.

The Chair: We'd certainly like to have you for your testimony and questions. If you want to give it a try, hopefully, it will work.

Ms. Aldyen Donnelly: Thank you, Mr. Chair and committee members, for the invitation to speak with you today.

My name is Aldyen Donnelly and I'm joining you remotely from my home, which is in the traditional territory of the Squamish, Musqueam and Tsleil-Waututh nations.

I am the senior adviser, carbon markets, at Terramera, a B.C.-based ag-tech company. I am also a co-founder and major shareholder of Nori, Inc., a three and a half year old blockchain-based start-up that is building a transparent, credible and farmer-accessible carbon removal marketplace in the United States. Nori's head office is in Seattle, Washington.

Also, from the mid-1990s through 2000, I was the founder of the Greenhouse Emissions Management Consortium, or GEMCo. GEMCo's membership included, over time, 14 of Canada's then 20 largest corporate greenhouse gas emitters. In that capacity, I raised the private funding that spawned the launch of Canada's prairie soil carbon balance project, a private sector and public sector partnership under the AAFC's original matching investment initiative. In October 1999, acting on behalf of the Canadian large emitters, I signed the world's first agreement to purchase emission reduction credits from farmers. I guess that means I've been around this for a while.

Terramera's work centres on how to enable farmers to unlock the intelligence in nature to inform their land management decisions. We develop software and analytical tools to empower our food and fibre producers to increase soil health and nutrient productivity, mitigate climate change risk, realize more stable on-farm financial returns and build a more resilient soil layer for future generations. Building up soil organic carbon stocks is one of the very few measures that we can pursue that both mitigates the risks of climate change while building a natural system that will also be more resilient and productive in the event of climate change.

I wish to stress that it's essential for Canadian policy-makers and influencers to embrace this opportunity to show the rest of the world a new path forward to the realization of a true market for natural climate solutions. Canada led the world with the Montreal protocol. This is our next chance to lead the world to essential and workable climate risk mitigation and adaptation solutions.

According to the UN Food and Agricultural Organization, Canada ranks among the top five countries in the world, along with Russia, the U.S., China and Brazil, for potential to draw heat-trapping gases out of the atmosphere when the recovered carbon is stored in soils and root systems. Some assessments rank Canada number two.

A recently published analysis by leading Canadian scientists suggests that our croplands and grazing lands have the capacity to sequester an incremental 78 million tonnes of CO2 equivalent per year by 2030. That's 25% to 35% of the nationwide reduction we must achieve relative to actual 2019 emission levels to meet our 2030 Paris Agreement goals.

What's the reality? After 18 years of experiments, the voluntary and compliance offset credit market experiments that have been launched in other nations have failed to mobilize any significant investment in greenhouse gas reduction and sequestration. That's across all sectors, not just agriculture.

Since 2002, all existing voluntary and compliance offset initiatives have combined to issue and retire less than 2.5 billion credits. That sounds like a lot, but even if 100% of these credits had the true underlying value of one tonne carbon dioxide equivalent reduced or sequestered, those retired credits equate to only 10% to 15% of one year's worth of the greenhouse gas emissions discharged by the top 50 corporate emitters in the world, so this is a statistically insignificant experiment so far.

Canadian policy-makers and stakeholders must work together to show a new path forward. This can be Canada's next Montreal protocol moment. It is time for us to step up and show the world what getting this right looks like, as we did when it came to figuring out how to work out of our supply chains the use of substances the release of which were causing the hole in our ozone layer.

Canada is positioned to develop and demonstrate the world's first efficient and truly functional natural climate solutions voluntary and compliance markets. We are trying to foster new markets that reward ecosystem services, not more underfunded subsidy programs that dictate land management practices to farmers.

● (1655)

I do have in my opening remarks six specific recommendations on what we need to do, but I think I'll cut off here to save time and invite you to look at my documentation when it's available to you.

The Chair: Thank you very much, Ms. Donnelly. So far, so good, I think.

We'll go to our question round and we'll start with Ms. Rood. I also want to welcome Mr. Alex Ruff as part of the panel. I believe you will be sharing your time.

Go ahead, Ms. Rood, for six minutes.

Ms. Lianne Rood (Lambton—Kent—Middlesex, CPC): Thank you very much, Mr. Chair.

Thank you to the witnesses for appearing here this afternoon.

Ms. Donnelly, last week we heard officials from Environment Canada say that farmers should only be given credit for practices that they have not already put in place, but I believe you said that early adopters of CO2 mitigation and capture should not be penalized.

To be clear, I'm wondering if you agree with Environment Canada officials that farmers should not be given credit for things they have already done or would have done.

Could you maybe comment on how a carbon credit market should be set up to give farmers financial incentives for capturing carbon in the soil?

● (1700)

Ms. Aldyen Donnelly: I must respond by saying no, I do not agree with the position that farmers should not get credit for early action, but I also totally empathize with the officials and understand why that's their starting place. We just have to give them the tools they need to make sure that's not where they end up.

There are a couple of things. First, in terms of solution, in the Nori marketplace any decision you make or anyone makes will be a compromise. We surveyed a bunch of very interested market buyers and secured support among that buyer community for the idea that we would issue credits, and there are two tests. For soil carbon, a stock change is arising from changes in practices that might have been implemented any time after December 31, 1999. I like Bryan Gilvesy's Kyoto 1997 start date a lot. We picked 1999 in the U.S. just because we found we had data availability issues before that and that was our binding constraint, but we also said we would only issue a maximum of five years' worth of grandfather credits to any project.

When you're doing that design, separate the question of what the "not before" date is for the investment that triggers the incremental carbon stock change versus how many years of crediting you are getting. Any decision we'll make will be arbitrary, but I think it's really important that we struggle with that and reach consensus on a decision that does give early adopters credit.

The other point I'd like to make is that in every—outside Canada, anyway—variation on cap and trade rules, any oil producer or refinery operator that has an emissions intensity that's lower than their peers gets surplus and marketable allowances in exchange for that performance, even if they have been performing in that manner for 25 years.

Why would we give credit for early action to oil refineries and not to farmers? I don't get that one.

Ms. Lianne Rood: Thank you very much.

I'll cede my time to Mr. Ruff.

Mr. Alex Ruff (Bruce—Grey—Owen Sound, CPC): Thanks for having me here at the agriculture committee. My questions will be directed to the Canadian Cattlemen's Association.

First off, I'd like to say I agree with your testimony, as do a multitude of farmers in my riding of Bruce-Grey-Owen Sound. I'd say are the best beef producers in eastern Canada—just so I don't get into a fight here with my western colleagues.

In your testimony, you talked about how essential providing habitat for species at risk that rely on those grasslands is by our beef producers. I'd like to give you a minute to further expand on how those pastures benefit both the species, biodiversity in general and even the health of the grazing cattle.

Ms. Fawn Jackson: Thanks. I'm going to take some of the questions, and then pass it over to Duane.

Certainly what we see is that, when grazing is done well, we're really able to stack the benefits that come with that. You could have a biodiversity benefit, a wetland restoration, flood mitigation, all of these different stacking benefits, and I think that's really exciting, particularly to those in the market who are certainly interested in greenhouse gases but are also interested in the rippling effects that go along with them.

Australia, for example, had a project with Microsoft where they purchased carbon offsets, but then also had these biodiversity pieces that went through it as well.

I would say that it's been really exciting over the last number of years, where conservation organizations and the farmer and rancher community have really hit our stride in how we work together. Bringing the expertise of the producer, who knows that land, and the expertise of biologists and riparian specialists together has just really resulted in some amazing results. I think we need to keep on replicating that.

Mr. Alex Ruff: Thanks so much for that response, Ms. Jackson.

My next question would be for either you or Mr. Thompson. You mentioned how important beef farmers are for carbon sequestration, but unfortunately, that's not necessarily what ends up in the headlines or in the media sometimes.

What can we do as parliamentarians to help combat and dispel the bad headlines and just re-emphasize the importance of cattle producers for climate change and for the environment in general?

● (1705)

Ms. Fawn Jackson: I certainly appreciate that question, and I must admit that I think we perhaps took it for granted for a bit too long that Canadians were connected to the farm and really understood what was happening on the farms. We are fully aware that we need to have very serious conversations with Canadians to help them understand that beef production in Canada preserves a native ecosystem, one that's endangered and one that is very integrated with the success of the cropping ecosystem in Canada too, so we're certainly fully in on this.

We partnered, for example, on a film called, *Guardians of the Grasslands*. Please, everybody watch it. Please share it through your networks. That's something, and thanks for the question.

The Chair: Thank you, Ms. Jackson. We're out of time.

Mr. Ellis has the floor for six minutes.

Go ahead, Mr. Ellis.

Mr. Neil Ellis (Bay of Quinte, Lib.): Thank you, Chair.

I thank the witnesses for attending. My first question goes to both of the witnesses.

The Agriculture and Agri-Food Canada report entitled “Environmental Sustainability of Canadian Agriculture” explains that the provinces, supported by the federal government, have been working with farmers to help them implement environmental farm plans in order to reduce the environmental impact of their activities since 2005. However, the report notes that farmers often fail to fully implement the beneficial management practices identified in their plans because of economic pressures and lack of time.

What could the federal government do to support farmers in implementing environmental farm plans, and in what ways can economic pressures deter farmers from implementing these environmental farm plans?

Ms. Aldyen Donnelly: Should I start?

Mr. Neil Ellis: Yes, you can start.

Ms. Aldyen Donnelly: Farmers need revenues from new sources, not just inside the food supply chain but outside the food supply chain. This opportunity for them to coincidentally sequester carbon in their soils while they're adopting practices that reduce water pollution, increase water filtration and retention rates and deliver all sorts of other biodiversity benefits, might be, in fact, a one-time opportunity to provide the financing or spawn the financing that farmers need to adopt the changes in land management that are being recommended by the experts at this time.

Ms. Fawn Jackson: I would add that through the Canadian Roundtable for Sustainable Beef certified sustainable program—it's outcome-based, so farmers can choose how they would like to deliver on the outcomes that we're looking for—the use of environmental farm plans has been very helpful for some producers in proving what they've been able to do.

It's certainly been a helpful tool, but I would echo that it's one tool in the tool box. We need to make sure that we have a number.

Mr. Neil Ellis: Canadian Cattlemen's Association, you kind of touched on your 2030 goals, and I just wanted to know if you could explain your goals. If you had goals before this, are there targets that were set before 2030?

Ms. Fawn Jackson: We do have a number of goals. I'm really happy to share them and how we plan on achieving them. A few of them are to safeguard the 35 million acres of native grasslands. I would note that those are the native grasslands, but there are, of course, all the tame grasslands and the hay lands that also offer pollinator habitat and all the other benefits too. The goal is to safeguard those and to safeguard the carbon that is stored in them.

We also want to sequester an additional 3.4 million tonnes of carbon every year and to reduce our greenhouse gas intensity by 33% by 2030.

I think it's really important that we look at the broad array of government policies that are being brought forward right now on climate change and make sure that they don't have unintended consequences in how they interact. I do want to make that point.

Mr. Neil Ellis: Ms. Donnelly, you ran out of time, and you weren't able to touch on your six recommendations.

Could you explain any of them to us?

Ms. Aldyen Donnelly: Sure.

The most important one is the opportunity. The necessity here is to develop carbon offset quantification and credit issuance protocols that are in fact very different, but reflect the lessons learned from the experiences in other jurisdictions. Those existing offset markets have failed. They've taught us a lot. Now it's time for us to build the system that's really going to work.

Of the six, the second really important thing is that, back in the 1990s, the experts, the community and AAFC agreed that critical to making this market work is building and sustaining a network of experimental sites across the country where we're doing robust soil and plant nutrient testing and publishing the data so that the whole agriculture community can see what's been proved in those soils. In fact, Canada committed to building and maintaining that network back in the 1990s. The funding for it fell apart in the mid-2000s.

The USDA did the same thing. They got funding in place in 2002. They agreed that it was a key backbone. They got all the funding in place to do what was required in the United States in funding submissions that said that Canada's doing it right so the U.S. needs to do it right too. By 2009, their funding was cut.

From those lessons, I think we've learned we need to build that backbone—that network of experimental sites. We need to build it in such a way that it's seen as key infrastructure and will attract private financing, so that we don't yet again go down a path of depending on government revenues that'll be cut in five to seven years and have it fall apart again.

● (1710)

Mr. Neil Ellis: My last question is to the Canadian Cattlemen's Association.

Since the implementation of a price on pollution, what steps has your organization or the sector taken to facilitate a transition to greener alternatives?

Ms. Fawn Jackson: Our environmental goals are certainly a portion of that. Right now, though, we're particularly focused on carbon markets and the development of protocols so that meaningful protocols will be put in place to recognize the practices done by beef producers so that we can further our contribution.

Those are a couple of the examples. I could go on for a long time, though.

Mr. Neil Ellis: Thank you, Chair.

The Chair: Thank you, Mr. Ellis.

Thank you, Ms. Jackson.

We'll go to Monsieur Perron for six minutes.

Go ahead, Monsieur Perron.

[*Translation*]

Mr. Yves Perron: Thank you, Mr. Chair.

My thanks to the witnesses for joining us today. I'll start with Ms. Jackson.

Ms. Jackson, you talk about the very interesting aspect of preserving native grasslands, natural species and such. How does that preservation help create a balance with the production of gas by livestock? We are often presented with those arguments. How do you strike a balance? Is there a way to measure it?

[*English*]

Ms. Fawn Jackson: Yes, absolutely. We've been going to great lengths to make sure that we can measure it so that we can set goals to reduce it.

As Duane mentioned in his comments, we already have a footprint that is 50% of the world average. Our producers, in partnership with veterinarians, nutritionists and researchers who keep on driving it forward, are certainly focused on that reduction of the greenhouse gas emissions.

Also, on the other side of the ledger is this amazing store of carbon. I think it wasn't fully appreciated previously how stable it is and also that there's the opportunity to increase the carbon sequestration in those grasslands through very targeted grazing management practices. I think lots of people have really heard about the emissions side of beef production, but they really haven't heard about this other side. We need to make sure that we're understanding it as a whole picture.

[*Translation*]

Mr. Yves Perron: Thank you.

I'd also like you or Mr. Thompson to tell me more about the experimental grazing areas that have been able to prevent forest fires in British Columbia. Can you give me a little more detail on that?

[*English*]

Mr. Duane Thompson: I'm no expert on it, but the cattle in a forest environment have the ability, between grazing, tramping and inhabiting those areas, to keep the underbrush down to a minimum and keep that fuel source down, so it doesn't present the risk of the major fires that we've had in the past.

In the past, there were small fires that kept those covers of understorey in check. Because it's closer to urban areas now, small fires are not acceptable. Cattle can come in to replace that, keep some of that undergrowth in check and hopefully mitigate some of the fire risk.

● (1715)

[*Translation*]

Mr. Yves Perron: Thank you.

It's a good example of interaction between types of environments.

Ms. Donnelly, when my colleague asked questions earlier, you emphasized the importance of units of measurement and of recognizing the contribution of previous producers.

You claim that, based on land area, we are able to measure the state of production, the level of innovation of producers and thereby have a fair starting point for everyone, for those who are still major polluters and for those who have already made efforts in the past to obtain credits.

Did I get that right?

[*English*]

Ms. Aldyen Donnelly: You did. You will hear that I rarely use the term “measure”. I default to “estimate”. We are estimating the impacts of changes in practices, changes in soil treatment and management techniques, relative to a baseline, and there are uncertainties that are quite substantial associated with those estimates. However, if we're comparing trends over time, using techniques we know now, we can come up with a reliable enough credit quantification and issuance procedure to build a market in which there is confidence, as long as we are producing our estimates with uncertainty intervals. That's the big change. Getting a soil test result out of a lab with estimates that include uncertainties requires the labs to operate differently in the future from how they typically operate now, but we know how to do that. That's the first thing.

We can talk about it more if you'd like, but I also think it's not hard, once the private sector knows what the uncertainty intervals are, to construct financial rewards and contracts that reimburse the farmer or rancher initially, based on a conservative interpretation of the estimate, and supplement the payment to the farmer over time as uncertainty declines over time.

You can build incentives for investment in innovation and new technology into the crediting market from day one.

[*Translation*]

Mr. Yves Perron: That's fine.

Thank you very much.

That's a very clear answer.

In your remarks, you mentioned that voluntary programs do not work very well. However, a number of witnesses have told us that it is important to free up local creativity, to give producers flexibility, so that there can be specific innovations. I don't see how that could be done in a mandatory program.

Can you elaborate on that?

[*English*]

Ms. Aldyen Donnelly: Whether the program is voluntary or mandatory, the key is to not prescribe practices to land managers. It's to come up with those estimation and crediting methods that I just referred to in order to reward outcomes and to build the reward in such a way that the farmers, the landowners, get more with better numbers.

The Chair: Thank you. I have to jump to the next question.

Mr. MacGregor, you have six minutes. Go ahead.

Mr. Alistair MacGregor: Thank you, Chair.

I'll start with the Canadian Cattlemen's Association. Maybe I'll just make a couple of quick comments.

Mr. Thompson, in a former life I worked as a tree planter for eight years. One of my big contracts was at the Douglas Lake Ranch in British Columbia, so I've certainly seen how cattle keep the forest fire danger down through that rotational grazing through their lands.

One other thing is that the B.C. Cattlemen's Association were very kind to invite me out to the Okanagan in September of last year. I visited two ranches that had previously won the Ranch Sustainability Award. I went to the Clifton Ranch in Keremeos and the Casorso Ranch in Oliver. It was very educational to actually speak to the ranchers themselves, to actually go and visit the grasslands and to see the relationship between cattle and grass, because of course, this relationship is thousands of years old. Before we had cattle, we had bison there. We have to remember that the best farming practices mimic what's already going on in nature, so you need to have that relationship between plant and animal and mimic what has been going on for thousands of years.

Ms. Jackson, you've already given the committee a lot of information, but in one minute or so, is there anything else that you want to cover maybe in the context of the recommendations you'd like to see in this kind of report to the federal government specifically?

● (1720)

Ms. Fawn Jackson: I would like to reiterate that having those be outcome-based and letting the producers figure out what the solution is, that is really important. Enabling them to do that is key.

I'll continue on the forestry example. If you want to do fencing in British Columbia, it's somewhere upwards of $20,000 per kilometre. We need to do the virtual fencing, then, to be able to...so we need investments there to drive that innovation, to enable the practices that help us all.

Mr. Alistair MacGregor: Absolutely. I was very interested in that. That's the first time I've heard of the virtual fencing solution, but, no, our province is not the easiest one to get around in. It looks like a carpet that's been bunched up. We'll just keep on running into a mountain range.

Thank you for that answer, Ms. Jackson.

Maybe I'll turn to Ms. Donnelly. Your website refers to the 78 gigatonnes of CO2 that can be pulled out of the atmosphere and sequestered in our soil carbon. I've been wondering. I guess that's an annual figure you're referring to, the potential we have every year.

Ms. Aldyen Donnelly: Yes, it takes a while to build up to that. The current estimate of the science community in a publication that was just released last Friday says we could get up to 78 million tonnes per year by 2030, and it will take the next nine years to build up to that, with a lower than 78 million tonne average.

The thing that's really interesting is that the theoretical capacity for us to store incremental carbon in our soils is about equal to what our current estimates of the soil organic carbon stocks are. In theory, you can't build up soil carbon stocks faster than nature is willing to, but that capacity to sequester an incremental 70 million to 80 million tonnes per year persists for hundreds of years.

Mr. Alistair MacGregor: Yes, I've been wondering about that. When I've previously spoken to Agriculture and Agri-Food scientists, they have made mention that it would be nice to get updated soil maps for Canada.

Ms. Aldyen Donnelly: Oh, yes.

Mr. Alistair MacGregor: I can see you nod your head on that, so perhaps you'd like to add to that. Also, I know that Canada's soils are very diverse, but is there an idea of what the maximum storage capacity of soil is, where it's just not possible to store any more? I know it's a process. The soil takes some in, but it also gives some away as you're growing plants.

Ms. Aldyen Donnelly: I can't answer that clearly. There's a theoretical maximum, which is.... I'm not going to do the arithmetic right in my head. It's the CO2 equivalent of 80 billion tonnes.

Mr. Alistair MacGregor: Okay, on the updated soil maps, would you like to speak about that? Could you lend us words as to what you would like to maybe see in a recommendation?

Ms. Aldyen Donnelly: There are lots of good reasons that have nothing to do with carbon for updating the soil maps, and I'll leave those aside right now. I'm just going to go really sort of lazy on you, as someone who is trying to build a market. In real life and nature we know that there is a maximum theoretical annual increase possible, and in soil carbon stocks that's about 1% per year of the background stock. If I'm trying to build a market and figure out how to monetize all the information I have, if I have a good soil map in the background, I can introduce the test well. If my calculation says it's more than 1% per year, it's probably wrong.

If I'm working in a marketplace where I have good background soil mapping, I can bring financing in because I have a sort of insurance number in the background. If I haven't seen that soil map updated since 1991, I don't have the 1% QA/QC rule that I can stick into my financing story.

● (1725)

Mr. Alistair MacGregor: You have to know where you are if you want to know where you're going.

Ms. Aldyen Donnelly: Yes.

The Chair: Thank you, Mr. MacGregor. Those are good, wise words.

Thank you, Ms. Donnelly.

We will go to Mr. Steinley for five minutes.

Go ahead, Mr. Steinley.

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

Thank you to the witnesses for being here.

Ms. Jackson, you said something that really stuck with me when you said government policies have “unintended consequences”. We just did a study on MP Lawrence's bill about exempting some fuels from the carbon tax.

Would you say that's one of the unintended consequences, a catch-all policy? There aren't, for example, alternatives to barn heating or irrigation pump running or grain dryers. Could you talk about some of that from a producer standpoint? Maybe Mr. Thompson could as well.

It's nice to have some more Saskatchewan common sense here at the committee. Perhaps you guys could just expand on some of those unintended consequences that government policies sometimes lead producers to have to undergo?

Ms. Fawn Jackson: Our position has been that the reason we exempt agriculture is that we don't have options. We just end up pushing food production to other jurisdictions through leakage. Really, the place to invest is on the innovation and technology front to help producers make changes when they're available and to invest in that research portion.

I'm going to hand it over to Duane, because, of course, he has both a grain and a cattle operation, to talk about the impact of carbon taxes on his operation.

Mr. Duane Thompson: The unintended consequence of the tax is that it hits home pretty hard, because when we have to operate under.... We can't change our market prices. We take the prices we get, and we get the extra taxes it costs us.

Agriculture is a system, and we talk about the systems that link everything together. When we're added on an extra tax.... I'm not really familiar with some of the other things, because we don't use some of the fuel for heating barns and things in our operation.

When it comes to carbon, one of the questions earlier was how much we can store. There is maybe a finite amount of carbon that we can store, but there's no finite amount of soil we can build in our systems.

I don't think that links into the unintended consequences question, but those are my thoughts.

Mr. Warren Steinley: I appreciate that very much. Thank you.

On behalf of my caucus colleague, Mr. Scheer, he would like to say hi, as you're a constituent of his out in Kelliher.

Mr. Ellis asked about EFPs, environmental farm plans. He said something about farmers not having a follow-through. I have a personal relationship with EFPs. My cousin did about 10,000 environmental farm plans in southwest Saskatchewan, and he said there was substantial farmer follow-through, because the ranchers and producers knew that making these changes and investments in the environmental farm plan and doing these policies were better for the soil and, in the long run, what's better for your soil is better for your grasslands. It's better for your farm's bottom line.

I'd just like your comments on some of the follow-through you've seen from environmental policies and some of the plans by producers from the Canadian Cattlemen's Association. Maybe I'll hear from Ms. Donnelly as well, because I believe that Canadian ranchers and producers are doing more than is known with environmental practices. I'd just like to have your comments on that.

Mr. Duane Thompson: That strikes a cord with me, personally, certainly. When we talk about sustainable farm practices and our environmental farm plan and some of the encouragements we get to apply the best management practices, those have been very effective.

When we look at our operation, the things that we've been able to take advantage of by having an environmental farm plan and our verified beef production plus system are all good for our marketing, but they are also good for us in our systems. By being able to be verified and have an environmental farm plan, we can prove to our consumers that we are committed to the environment.

● (1730)

The Chair: Thank you.

I'm sorry, we are out of time. Thank you, Mr. Steinley.

We have to work with a hard stop. They need the room for other committees, so we'll have to stop it here.

I'd like to thank, from the Canadian Cattlemen's Association, Mr. Duane Thompson and Ms. Fawn Jackson. Thank you also to Aldyen Donnelly from Terramera Inc. Thank you all for participating. That will conclude our study for today.

We shall see the rest of the committee on Thursday. Thank you, and have a good day.

The meeting is adjourned.