



HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Agriculture and Agri- Food

AGRI • NUMBER 088 • 1st SESSION • 42nd PARLIAMENT

EVIDENCE

Wednesday, February 7, 2018

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Chair

Mr. Pat Finnigan

Standing Committee on Agriculture and Agri-Food

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• (1535)

[English]

The Chair (Mr. Pat Finnigan (Miramichi—Grand Lake, Lib.)): Welcome, everyone, to our meeting. Pursuant to Standing Order 108(2) and the motions adopted by the committee on Tuesday, December 6, 2016, and Thursday, October 26, 2017, the committee resumes its study of climate change and water conservation issues.

I'd like to welcome our guests.

I apologize that I didn't have time to go to shake your hands prior, but welcome again, Mr. Kristensen and Mr. Stordy, from my beautiful province of New Brunswick. I'm so happy to see you here.

I believe we have Mr. Cedric MacLeod whom I also know. He's on the telephone from New Brunswick.

It's good to have you with us.

Mr. Kristensen, go ahead for up to seven minutes.

Mr. Hans Kristensen (1st Vice-Chair, Canadian Pork Council): Good afternoon. My name is Hans Kristensen. I'm a hog and poultry producer from New Brunswick, and the 1st Vice-Chair of the Canadian Pork Council. I would first like to thank the members of this committee for the invitation to appear before you to discuss the study on climate change and water and soil conservation.

Like all Canadians, hog producers are concerned about the implications of climate change and what impact we as food producers have on the soil and water resources that we depend on. Climate change is not a theoretical challenge for us. It impacts the crops we grow, the facilities we use to protect our animals, and the plant and animal diseases we face every day. Often our families live on our farms and, more often than not, success is measured by our ability to transition our farms from one generation to the next.

In addition to these larger considerations, we also face the practical reality of having to compete every day in a global marketplace. Canadian pork producers export almost 70% of what they produce. We operate in a very competitive global environment, and one of our key advantages is our access to high-quality soils and ready supplies of water.

We are well aware of the importance of these resources and, as a result, we work hard to ensure their long-term availability. The necessity of being globally competitive means that we must continually focus on producing more pork while simultaneously utilizing less land, water, and energy. In addition, hog producers are

keenly aware of the importance of maintaining the trust of all Canadians, not just those who consume our pork. Our social licence is very important to us.

What this means is that producers are under tremendous pressure to not only be stewards of their environment, but to be seen as environmental stewards. We accept this challenge and have started to closely track our progress. For example, Quebec producers are now routinely monitoring their improvements. In four short years, for example, the amount of water used to produce pork has declined by almost 2%. Quebec producers have also benchmarked their sector against global producers and found that their carbon footprint is 31% less than the global average.

Research shows that hog producers who utilize production systems similar to those employed in Canada have, over the past 50 years, decreased the natural resources consumed by pigs by 50% per kilogram of pork produced. Farmers are using 40% less water, 33% less feed, and as much as 59% less land.

At the national level, the pork value chain round table will be building on the work undertaken at the provincial level to complete a life-cycle assessment of Canada's pork industry. Over the years, we have embraced a number of different initiatives, often in partnership with federal, provincial, and/or municipal governments.

An early example of this was the adoption of the environmental farm plans. The environmental farm plan is an assessment completed by farmers that is aimed at identifying and mitigating potential environmental risk on the farm. These plans, coupled with technical and/or financial incentives to address the identified challenges, have served not only to raise awareness of the issues at the farm level, but also to implement actions to address them. It's a classic example of thinking globally and acting locally.

An area where our industry has gone to great lengths to develop science-based practices to reduce our impact on soil and water is in the management of hog manure. The application of hog manure to farmland is an economical and environmentally sustainable mechanism for increasing crop yields by providing inputs of nutrients and organic material. Nutrients in hog manure can replace chemical fertilizers. This results in decreased greenhouse gas emissions associated with the production of these chemical fertilizers. However, the value of manure is more important than the accumulated value of the individual nutrients. Hog manure is an excellent soil amendment that improves soil quality by building up its organic matter.

To help maximize the value of hog manure, producers across Canada have developed nutrient management plans. These plans, developed with the guidance of soil and water experts, ensure adequate manure storage is available, and that the manure is supplied in a manner that most greatly benefits the land. In many parts of Canada, producers use an injection method when spreading manure. This direct injection in soil ensures the maximum utilization of available nutrients by the crop.

Government financial support, often linked to environmental farm plans, has been very effective in helping to implement actions to better manage the storage and application of manure. Producers are also working closely with government to identify watershed-wide solutions to managing water quality. As an example, Ontario producers are actively engaged with Government of Ontario officials and other agricultural industry stakeholders on the domestic action plan for the Great Lakes watershed area.

However, there is more work that needs to be done. For this reason, producers are partnering with governments and investing heavily in research and development.

• (1540)

As an example, close to half the carbon footprint associated with raising pigs comes from the process of growing the crops the pigs eat. Improved feed efficiency provides a tremendous opportunity for reducing the overall impact of pig production and the number of acres needed to feed pigs. Research projects are under way to look at virtually all components of the question, from identifying animals with superior genetics, to the use of probiotics to help improve nutrient availability in the gut. Efforts to identify practical methods that will lead to improved feed, water, and energy efficiencies are also in place.

Given the importance of innovation, we are very pleased with the Government of Canada's focus in this area. Canadian pork producers look forward to the rollout of the new Canadian agricultural partnership. Thanks to the AgriScience program, hog producers will be able to continue their long-term partnership with Agriculture and Agri-Food Canada in utilizing research to address the fundamental challenges facing our industry.

In the case of pork, our research efforts are quarterbacked by Swine Innovation Porc. They operate from an office in Quebec City and facilitate research in the Canadian swine sector. Their main objective is to enhance the profitability and environmental sustainability of Canada's pork industry by supporting the development of

the most innovative technologies that will benefit the entire pork value chain.

While the pork sector has benefited greatly from the science cluster initiative, we are limited in the resources we can bring to the table. In 2016, the Canadian Pork Council completed the public process to establish a promotion and research agency. Creating an agency would provide producers with a new source of industry funds that could be used to expand our innovation program. This agency is absolutely critical to our future improvements. We look forward to the Government of Canada completing its review of our application and taking the measures necessary to establish the agency.

Huge strides are being made in tackling climate change as we are continuously improving the efficiency and environmental sustainability of our production by reducing greenhouse gas emissions by adopting innovative health and husbandry practices, adapting tools that support sustainable and environmentally responsible production, and utilizing fewer resources. These initiatives are lessening the environmental impact of pork production, while maximizing its contribution to our economy.

Thank you once again for the opportunity to appear before you today to speak on this important subject. I'll be happy to answer any questions the committee might have.

The Chair: Thank you, Mr. Kristensen.

Cedric, we'll give you up to seven minutes for your statement. You can go ahead.

Mr. Cedric MacLeod (Executive Director, Canadian Forage and Grassland Association): Thanks very much. I regret that I'm not able to be with you in person, to sit next to my colleagues from New Brunswick. The pork industry actually started my professional career in agriculture. I was working on climate change with the pork industry, so it's interesting how we've come back together.

I'm in Abu Dhabi this week. We're promoting Canadian export forages around the world, so I'll touch on that a bit later.

I do want to echo Hans' comments, and thank the committee for the opportunity to appear before you today. I don't believe you have my speaking notes in front of you, but they have been submitted.

I just wanted to give a bit of an overview on the scope of the Canadian forage sector. We are roughly 70 million acres strong in Canada. Roughly 34 million acres are seeded to tame hay, pasture, and forage seed crops; and the remaining 36 million are dedicated to native rangeland which is largely in western Canada.

To contrast that to the field crop sector, in 2017, according to Agriculture and Agri-Food Canada's 2017 "Outlook for Principal Field Crops", there were roughly 65 million acres of annual crops planted in Canada. The forage sector as a whole is actually five million acres more than the whole of the annual crop sector. We do cut a fair swath across the landscape in Canadian agriculture.

The uses of our forages are obviously tied very closely to the ruminant livestock industries. In Canada this includes primarily beef, dairy, sheep, goat, and bison, to a lesser extent; and the equine sector, surprisingly, consumes a lot of forage in Canada. It's surprising when you get right down to it. I know in New Brunswick there are as many horses as there are dairy cows or beef cows. It is a significant industry and it consumes a lot of Canadian forage.

Roughly 5% of production in Canada is exported to destinations in the U.S., Japan, Korea, China, and the Middle East. We're here this week representing the industry. The forages exported here are largely timothy and alfalfa hays to service the dairy, in the majority of cases, but there's a significant use by the horse, sheep, goat, and actually camel industries. I've never been to a camel farm, but tomorrow we are venturing into the desert to see one. I'm very much looking forward to that.

In terms of economic value of the forage sector, based on the 2011 census of agriculture data, the industry was pegged at about \$5.09 billion, making it the third-largest crop after wheats and canola, so it has a significant, direct impact to Canadian agriculture. Also, being the foundation crop for Canadian dairy and beef industries, we're supporting their \$11-billion industry, which in turn supports roughly \$50 billion in annual value chain economic activity in Canada. Again, in addition to being dominant across the landscape, it's also making a significant economic contribution.

The environmental contribution which we're speaking about today is also fairly impressive. When we talk about environmental contribution, we talk largely about the ecological goods and services, EG and S, provided; and those would include, but are not limited to erosion control, flood control, improved surface water quality, wildlife habitat, pollination services, and soil carbon sequestration, which has been a major focus for us over the last couple of years. I'll describe a large project we have on the go in a few moments.

Dr. Doug Yungblut, in 2012, did a study on the full economic value of the industry and the ecological goods and services value, and the suggestion from this report is that in Saskatchewan alone, the EG and S value contribution is somewhere between \$895 million to \$1.9 billion, and in Alberta, respectively, \$390 million to \$1.3 billion.

●(1545)

The high estimate for Alberta and Saskatchewan alone is over \$3 billion in ecological goods and services annually. It's a significant contribution.

One of our challenges is that we don't have a comprehensive market process that allows us to monetize even a portion of that EG and S value that is provided by Canadian forage producers to the Canadian public at large. That is having an impact on the prevalence of forage across the landscape. We are certainly seeing forage acres decrease over time, which is largely following the decrease in the beef sector output. As you're aware, that industry has been shrinking somewhat, year over year, for the last number of years. There are a number of regional programs, however, that are working to incentivize forage inclusion in crop rotations. I'll talk about those in a few moments as well.

I want to touch briefly on some of the challenges we have, particularly as a national industry. Again, we're 70 million acres and very diverse. Coming from eastern Canada myself, and working largely through Quebec and into Ontario, the prevalence of confined feeding systems means that most of our forages are harvested from the field, stored, and then fed in confinement-type situations. The beef industry does still employ grazing during the summer. This means that we're seeing forages that are intermixed with annual crops. From a sustainability perspective, it's very important for us to pay close attention to soil conservation and livestock manure management practices so that we're ensuring that long-term soil health is maintained and manure nutrients are managed effectively and responsibly.

Hans mentioned in his statement as well the importance of soil health and responsible manure management use. I echo that wholeheartedly.

●(1550)

The Chair: I'm sorry to interrupt, but we've gone a bit past seven minutes. I'll have to ask you to conclude very rapidly. We'll have lots of questions, so you'll probably have a chance to elaborate on your presentation.

Mr. Cedric MacLeod: Excellent. I have some summary comments. I was almost done, so thanks for that.

I have a couple of recommendations for continued development in the forage sector. We certainly want to move down the road of developing methods to quantify ecological goods and services. It's very important to be able to put a few dollars back into producers' jeans.

We are focusing heavily on quantifying soil carbon sequestration rates under Canadian forages, which will help to monetize those EG and S values.

We want to continue to promote the use of conservation cropping measures that will maintain soil health and help us to use our manure resources effectively so that we have resilient cropping systems.

The Chair: Thank you, Mr. MacLeod.

Now we'll go to questions. I just want to highlight the fact that Mr. Raj Saini is here today, replacing Lloyd Longfield.

Again, the focus of our study, just to make sure we stay within that, is how the government can help the Canadian agriculture sector better adjust to the increasing severity of issues associated with climate change and better address the water and soil conservation issues. That was part of our motion, so just keep that in mind.

We shall start our question round.

Monsieur Berthold, you have the floor for six minutes.

[*Translation*]

Mr. Luc Berthold (Mégantic—L'Érable, CPC): Thank you very much, Mr. Chair.

I would like to thank our witnesses for being here.

I have two questions.

Mr. Kristensen, I would like to congratulate your industry for greatly improving how it does things in recent years. The efforts of Canadian producers to take care of their land, their environment and the resources available to them often don't get enough recognition. Your experience or your example of recent years is very interesting to see.

If I understand correctly, you want to go even further and, for you, this means allocating more funds from the government to your research agency. If we left more money to producers by not imposing a carbon tax on them, do you think your industry would be able to go further?

[*English*]

Mr. Hans Kristensen: It's the perfect question: what do I need? I love to answer that one.

The progress we've made over the last several years has been substantial, and I would like to thank the federal government for that, because a lot of that wouldn't have been possible without the financial partnership we have with Swine Innovation Porc in Quebec City. That's funded jointly by producers and the federal government, and we're very much looking forward to seeing that funding level continue.

When we ask about what we need tomorrow, in my mind it is an easy ask. I mentioned in my presentation that the Canadian Pork Council has completed the public process to establish a promotion and research agency. This is essentially a no-cost ask to government. It will give us a check-off on pork that's being imported into the country. To be clear, all pork producers in Canada pay a check-off, and that check-off goes toward research to help us with environmental sustainability and also to promote the entire efficiency of our industry. What we're asking for is that imported pork be treated the same way, that there is the same check-off paid for any imported pork.

This is exactly the same as in the U.S. When I export live animals or pork to the U.S., I pay the national check-off in the United States. We're simply levelling that playing field. This is just an action we need the government to take. The process is in place. It's on the desk of government. We're simply asking the government to finish this, because that will provide us with an additional source of revenue to continue our research and take us to the next level.

• (1555)

[*Translation*]

Mr. Luc Berthold: Thank you very much, Mr. Kristensen.

Mr. MacLeod, you made some recommendations for recognizing the forage industry with regard to improving the environment.

I have a quick question. With climate change, there is now one more forage harvest per year compared to the last few years. We are seeing a lot of that in Quebec. This must have had a major impact on the results of your industry.

[*English*]

The Chair: Was that question directed at Mr. MacLeod?

Mr. Luc Berthold: Yes, sorry.

Mr. MacLeod, did you hear the question?

Mr. Cedric MacLeod: I heard right up until you said that Quebec has been growing more forage year over year, and that it must have made a significant impact. Then the translation cut out for a second.

Mr. Luc Berthold: Okay, I'll try that later, because I have to give the rest of my round to Mr. Barlow. He has something to address.

Mr. John Barlow (Foothills, CPC): Thank you very much, Mr. Berthold, for sharing some time with me.

Mr. Chair, I want to bring forward my motion that I brought notice of on Monday. I would like to bring that forward for discussion now, if I may, please.

My motion read:

That, pursuant to Standing Order 108(2), the Standing Committee on Agriculture and Agri-Food undertake a study of the Canada Food Guide and hear specifically from agriculture and agri-food stakeholders; and that the Committee report its findings to the House prior to the release of Part 1 of the new dietary guidance policy report.

I'd like to take a few moments, if I may, just to speak to that motion, Mr. Chair, and to my colleagues on the committee. I apologize to our witnesses, but I think this is something very important and certainly important to our witnesses; it's apropos that these are the ones who are with us today.

I'm pretty confident that my colleagues on both sides of the floor and from all the parties have heard quite loudly from their constituents on the concerns and the direction that the Canada food guide and the national food policy are going in. Certainly it was quite evident for those of us who were at that breakfast yesterday, when Dr. Samis was talking about concerns he was raising, namely—according to several doctors we've spoken with—that this is not only going in the wrong direction, but actually could be counter-productive in terms of what we're trying to accomplish.

The part of that food guide that we need to be concerned about is where it's encouraging people to stop eating what doctors, physicians, nutritionists, dieticians, and our stakeholders believe are healthy animal proteins, as well as dairy products.

Our job here as the agriculture committee, Mr. Chair, is to represent our stakeholders from all areas of agriculture: our farmers, our ranchers, agrifood, our processors, and those businesses who rely on that. I was quite dismayed when the health committee brought this forward and committed just two meetings to the food guide, without inviting a single farmer, rancher, processor, agribusiness representative, medical professional, nutritionist, dietician, or physician who would have brought a different perspective and different studies and science to that report.

It behooves us a great deal to bring this forward and study it at this committee. It's to ensure that our stakeholders feel they've had a voice in this process; right now they haven't. As I said, I know you guys have heard the same messages as we have on this side of the table. They feel extremely frustrated that they are not being given a voice in the direction of a document that will impact them more than any other sector of the economy.

Not only will it impact them—their livelihood as farm families and businesses—and the economy, but I'm worried about the broader message this is going to be sending. We talk about protecting our agriculture sector, our agribusinesses, and supply management on the international stage. We're in the middle of NAFTA negotiations. I'm very excited that the trans-Pacific partnership—the CPTPP—is going to be signed, hopefully, in the next few months. These are amazing opportunities.

However, how can our stakeholders—our farmers, ranchers, and producers—trust us to protect their best interests on an international stage, when we are not even protecting them here at home in a domestic document that the government has full control over? How can we say to our stakeholders, absolutely, we're going to ensure that these trade agreements...and you have these markets that will be available to you, but we're not going to give you the same support here at home?

We talk about non-tariff trade barriers, and what's going on in Italy and India right now. How can we profess that our food is the safest in the world and processed under the strictest regulations? How do we sell that internationally when we are telling our own Canadian consumers to be eating less of these products because they're not good for you? That sends a very mixed message, not only to our potential markets around the world, but certainly to our stakeholders here at home.

• (1600)

I'm very concerned about that, especially when our number one job here, in my opinion, is to be the voice of our agriculture sector across the country, and I don't think any one of us can argue that it's very clear that Health Canada is going in a direction that is detrimental to our agriculture sector and to food processors, as well as the producers on the ground.

I put out a statement on Monday after I tabled that motion, and it did not take very long to get a stack of letters of support from stakeholders who want us to study this issue. I want to really stress this point: these letters are not only from the livestock industry or the dairy industry. There are letters from grain growers and horticulture associations. None of them want us, as a government, to be picking winners and losers in this food guide document. They all want to be successful. They see that the Canada food guide and some of the

food policy when it comes to front-of-package labelling... Again, it goes to this: how do we talk about food safety when we're telling Canadians that the food we produce here on the farm is unhealthy?

They want to ensure that we're successful and that we're championing our agriculture sector. I truly believe the direction that Health Canada is going in with the food guide is based on some sort of activism and some sort of ideology and is not based on good science. Again, I think it's our job here to ensure that there's a balanced approach to the food guide and that all stakeholders have a voice, and not just industry. We should ensure that we invite medical professionals who are going to give us a balanced view on what the food guide should be, what should be included, and what is best for Canadians.

From what I've seen in that first draft of the food guide, and certainly from the feedback I've had from our stakeholders, the direction the food guide is going in is extremely one-sided. It is not balanced. Again, I think it is our job to make sure that we stand up for our stakeholders, that we stand up for our farmers, our ranchers, and our food processors. I'm asking for your support on this motion.

I would like to add, if I may—I apologize again for taking some time, but I do believe this is an important issue—that the Minister of Agriculture.... I would never profess that the minister should instruct us on what to do. We are an independent body, and I think that's very important. The Minister of Agriculture, in a meeting with the Dairy Farmers of Canada this morning, did say that he would not oppose the agriculture committee's studying of this issue. I think that's a good sign: we have some support from the minister to take this on.

Again, I'm hoping for your support on this issue. I think it's extremely important. If we do not agree to do this study and to do it right, my question to you and my colleagues who are on this committee is, what are we here for? What are we here for if we are not going to take an opportunity to stand up for our stakeholders and be their voice at the table? Whatever the results of that study may be, I think it is our job to ensure that we take a balanced approach. That report is given to the Minister of Agriculture who can then be at the cabinet table with the Minister of Health to ensure there is a much broader vision on what that food guide should entail.

I thank you again for giving me this time, and again I thank our witnesses who are here today. I truly believe this is of the utmost importance. It's very timely. We only have a finite amount of time to ensure that our message, the message of our agriculture community, is brought to the forefront.

Thank you, Mr. Chair.

• (1605)

The Chair: Thank you, Mr. Barlow.

Is there any discussion?

Monsieur Breton.

[Translation]

Mr. Pierre Breton (Shefford, Lib.): Thank you, Mr. Chair.

I don't disagree with what Mr. Barlow mentioned, but today I move that this debate be adjourned.

The Chair: Mr. Breton moves that the debate be adjourned.

[English]

There's no debate on that. Unfortunately, that's the rule.

The motion is that debate be adjourned on the motion.

We shall vote on the motion presented by Monsieur Breton. All in favour of the motion that the debate cease?

Mr. Earl Dreeshen (Red Deer—Mountain View, CPC): Could we have a recorded vote, please?

(Motion agreed to: yeas 5; nays 4)

The Chair: We shall continue. We had 4:21 on the clock. We have about a minute and 40 seconds.

Go ahead, Mr. Berthold.

[Translation]

Mr. Luc Berthold: Thank you very much, Mr. Chair.

I understand, based on the decision made by my colleagues opposite, that the motion we presented to study Canada's Food Guide...

This time is allotted to me and I can do exactly what I want, Mr. Breton. I have one minute and thirty seconds to express myself. I can continue to talk as much as I want.

I see that with this tactic, the Liberals are preventing the committee from studying Canada's Food Guide here, despite the fact that we have received I don't know how many letters from people in our sector, namely farmers, who are really very worried.

I'm talking about the Canadian Produce Marketing Association, the Canadian Horticultural Council, and the Food and Consumer Products of Canada. The Liberals have just said no to all these people today.

There is also the National Cattle Feeders Association, the Egg Farmers of Canada, the Chicken Farmers of Canada, and the Dairy Farmers of Canada.

I absolutely cannot understand this decision, especially since the Minister of Agriculture himself said today favourable to the idea of the committee's studying Canada's Food Guide. Indeed, he understood that the Food Guide could have a major impact on Canadian farmers.

The Chair: Thank you, Mr. Berthold.

Mr. Drouin, you have six minutes.

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

[English]

Thanks to our witnesses for being here.

Just to get back to the topic that we're here to discuss, I know we're not going to have as much time to discuss this issue, but you've talked about your environmental farm plan. Can you discuss what's been developed, over the past five years, with that particular plan? Also, where do you see the industry moving—obviously, with the right resources—in the next five years?

• (1610)

Mr. Gary Stordy (Director, Public and Corporate Affairs, Canadian Pork Council): I would say that the environmental farm plan has been a great success for agriculture, in general. From farm to farm, it's specific as to how the producers go through the process of looking at the land, their facilities, and whatnot, and look at where they can mitigate any environmental impact. That's overseen many times, by an expert or somebody more familiar, who can go farm to farm and help the producer maybe see something that they didn't recognize or didn't understand had an impact.

In our industry, there have been on-farm programs for probably the last 15 years. Cedric MacLeod, who is on the phone, has certainly helped deal with what are called shelterbelts. Cedric is more informed than I am. There have been trees placed next to the farms, which had benefit for two reasons. First, it helped with an odour issue, but it also helped with blockages of wind to prevent any soil erosion, in certain areas. Frankly, let's face it, croplands can be relatively flat and exposed to air and whatnot. That's only one area. There are opportunities where identifying wetlands or grassy areas next to waterways and appropriate setback from those rivers should be examined every five years.

In our industry and in some parts of Canada, I do know that they need to reinvest in their lagoons that store the manure product that comes from the farms. That's not insignificant, just due to construction. They maybe need to update it or upgrade it, but all this process would be recognized through the environmental farm plan when someone external comes in and reviews their operation.

Mr. Francis Drouin: I'm just looking at what you guys in the pork industry have done. You're using 40% less water per kilogram of pork. You're using 33% less feed than you were before, and you're using 59% less land than you were 50 years ago. I think that is a great news story you have to tell.

I'm just wondering, Hans. You talked a little bit about Swine Innovation Porc and the research that is happening. Can you elaborate a little bit more on what they'll be working on in the near future?

Mr. Hans Kristensen: Swine Innovation Porc is basically the hub of all of our innovative research in the swine industry.

Mr. Francis Drouin: Is that of all the research that's happening throughout Canada?

Mr. Hans Kristensen: Yes, it is coordinated in Quebec City.

Our focus going forward is on anything that's going to improve the overall efficiency and sustainability of the industry. Feed efficiency, as I mentioned, is a really big one, because to us that's like low-hanging fruit. Fifty percent of the energy we use to produce pork goes into growing the crops we feed them, so if we can do a better job with that and utilize that better, that will have a huge impact for us.

We also look at water consumption. We look at energy consumption and adaptation of new technologies. We had environmental farm plans when I was a young farmer, more years ago than I would care to admit today, but now we need to redo them and we need to look at energy audits, LED lighting, and things like that on our farms. These are the types of things we'll be concentrating on going forward.

•(1615)

Mr. Francis Drouin: You said that energy put into feed plays a major role, so is your industry looking at precision farming as well and using all the tools available to minimize environmental impact but also optimizing all the tools that you have?

Mr. Hans Kristensen: Absolutely. In our industry there is a phrase I like to use, which is that there are two types of environmentalists: environmental activists and active environmentalists. Hog producers are active environmentalists, not only because it's the right thing to do but also because it's absolutely necessary to compete globally. If I reduce my water usage, if I improve my feed conversion efficiency, if I reduce my energy footprint, those things are also making me a more efficient producer of my product. I'm producing a greener product, a more efficient product with a greater social licence, and that allows me to compete globally.

It is in our own best interests to make sure we do the very best we can, and we want to make sure we ensure continued partnership with the federal government in funding that program and also in moving forward and establishing the agency for which we have already done the public process.

Mr. Francis Drouin: Great.

Not that I want to talk about manure, but since you brought it up in your testimony, I think the beef guys were sort of working with specific types of feed that would reduce methane outputs from manure. Is your industry doing the same thing? Are you aware? I'm not aware, and that's why I'm asking.

Mr. Hans Kristensen: We're constantly looking at all aspects of that, not only methane production. Another big one for us is to focus on phosphorous output, so reducing the amount of phosphorus in manure as well.

We look at feedstocks. We look at genetics, different classifications of genetics of animals, anything that will improve the bottom line. It is a big focus of our industry.

The Chair: Thank you.

Mr. MacGregor, go ahead for six minutes.

Mr. Alistair MacGregor (Cowichan—Malahat—Langford, NDP): I just want to start off by thanking Mr. Barlow for bringing forward that motion. I'm a little confused as to why my Liberal colleagues have voted that way. I know some of them were at the Dairy Farmers of Canada breakfast yesterday, and there was a very

good presentation by the doctor. One of the notable things I took away from that presentation was the fact that the McGovern committee in the 1970s, which influenced, for three decades or more, all kinds of development of food policies, was based on incomplete science, and I thought all of us who attended had learned a lesson there.

I think that as a committee, we do ourselves a disservice and we do Canadians a disservice if we don't try to hear from a multitude of voices. You may have already made a decision as to which way you want to go on the food guide, but I think having those voices on the record is an important part of what we do here.

I just wanted to get that onto the record.

Now, I'd like to turn to our guests.

Mr. Kristensen, in your presentation you talked about the efforts to identify practical methods that will lead to improved feed, water, and energy efficiencies, and those are being worked on. Ultimately this study is happening in the context of what we can eventually recommend to the government, so can you provide a little bit more detail as to some ways that the government can help with respect to those specific areas?

Mr. Hans Kristensen: Absolutely. As I stated a bit in my testimony, Swine Innovation Porc and the research that's being done there is absolutely essential to us, and ensuring that we maintain the funding levels for that. That organization is currently funded on a 25:75 split between producers and government funding. It's absolutely essential that we maintain that level of funding going forward so we can continue the research.

Again I'll go back to our new agency, our check-off agency that we want to have developed. To be perfectly blunt, as a member of the hog industry, I'm disappointed at this point that it hasn't moved forward faster than it has. We have the public process done. This is nothing more than levelling the playing field between us and our American counterparts. I'm not asking anything more of them than what we do when we export pork their country. All stakeholders are in favour of this. This is essentially not a financial request from the government, this is a call for action. If I could leave this committee with one thing today, it would be to do whatever it can to move that process forward. If the government made this a priority and wanted to move forward with it, there's no reason that we could not have the rest of the process done, the public hearings done, and have this fully implemented and in place by the end of the year.

Mr. Alistair MacGregor: Mr. MacLeod, you provided us with some amazing statistics. I don't think many people are really aware of just how vast Canada's forage area is. You talked a bit in your opening statement about programs to incentivize forage. I would like to hear a bit more about that.

Also, on a previous day, earlier this week, we had a presentation from Fertilizer Canada. That industry is trying to go forward using less fertilizer, using it at the right time and in the right place, and so on. What is your association's relationship like with fertilizer? I'd like to hear more about your efforts to reduce it, or are there efforts being made to actually go to a more natural method altogether?

• (1620)

Mr. Cedric MacLeod: In terms of programs, Hans and Gary had mentioned environmental farm plan programs and some of the incentives that become available for producers once those environmental farm plans are completed. Those are important programs for the forage industry, as well as in terms of the adoption of innovative technologies.

We're also seeing private sector investment-type programs, such as ALUS Canada and Ducks Unlimited Canada, on the landscape promoting the use of perennial forages in our annual cropping systems to provide habitat for wildlife and maintain wetland systems across Canada, which we know are natural filters for nutrients on the landscape. Those programs are there, and we would certainly encourage the government, as we move into the Canadian agricultural partnership, to keep investment in those conservation programs top of mind and to continue those funding levels, because they do have a significant impact on conservation, for sure.

As you'll read later in my statement, the forage industry plays a very important role as a buffer along all our annual crop acres. With water that's coming off our annual cropping systems, either across our pastures or into our grass waterways, those are all providing filters for nutrients. We know some of the unique challenges that agriculture faces, such as what has happened with Lake Winnipeg.

The Chair: Thank you, Mr. MacLeod. Unfortunately we've run out of time.

[Translation]

Mr. Breton, you have six minutes.

Mr. Pierre Breton: Thank you very much, Mr. Chair.

I would also like to thank the witnesses today.

I was just reading about the various improvements that have been made in the pork industry. I say congratulations! I tip my hat once again to all these improvements.

Mr. Kristensen, I'm particularly interested in the promotion and research agency that you mentioned. I haven't heard about this file yet, and I apologize for that.

When did you do this and submit your application?

[English]

Mr. Hans Kristensen: I'll let Gary answer that question. You're getting into technical policies.

Mr. Gary Stordy: We've been working internally with our industry for well over the past seven years to try to build some

consensus within our industry about how we can move forward. By industry, I mean producers and the provincial pork associations.

We put together a proposal that would be brought forward to the federal government through the farm.... I apologize, I'm having an escape of the name, but there's a process to go through to apply to develop an agency, and that requires a public hearing where stakeholders and other people who are interested move forward. This has been under review for the past two years and we'd like to see this move forward. This review is internal to government, to ensure what we're proposing is essentially legal and fair to those who would be contributing to it. If that is successful, it is required to go through a proclamation, which is a process of government.

[Translation]

Mr. Pierre Breton: In your presentation, Mr. Kristensen, you mentioned that this agency would provide the organization with new possibilities or new opportunities to raise funds for your industry. I understood from a response you gave earlier that these funds were not necessarily government funds. Can you tell us where these new funds would come from?

• (1625)

[English]

Mr. Hans Kristensen: Absolutely. This agency is a check-off agency on imported hogs and pork products. Roughly about 35% of the pork consumed in Canada is actually imported from other countries, predominantly the U.S. and the EU. This will be a check-off agency so that, when that product is imported, there would be a small check-off charge applying to that product. That money would then be funnelled into research and marketing development for our domestic product.

It is essentially asking those people who are importing product to put up the same check-off that we do as domestic producers. When we export to the United States, I pay that in the U.S., so it's exactly the same system that exists in the United States and has for years.

[Translation]

Mr. Pierre Breton: Thank you very much. This is very clear.

You may continue, Mr. Stordy.

[English]

Mr. Gary Stordy: I apologize, but I'll just to add this. The way our industry is currently set up, we have nine provincial members that have their own organizations and they have their own authority to collect a levy, so there's some level of co-operation. The establishment of this agency would increase that level of co-operation, similar to what we're doing with Swine Innovation Porc, but also do that to apply to promotion and research.

It's taking what funds are already being used domestically and providing more efficiency. Frankly, some of the issues that are in, we'll say, Alberta are very similar to New Brunswick or Quebec, and we use in this case the environment aspect, so there's part of that. There are domestic producer funds going to support the initiatives that Hans outlined: research, promotion, and whatnot.

However, in the pork industry we import a significant amount of pork globally, not just from the U.S. but also from Poland, the EU countries, and others. Because Canadians enjoy ribs, we need more and we mostly import. However, they enjoy the benefits of the work that the Canadian industry is doing at little to no charge, but when we export product—in this case to the United States—we contribute funds to the U.S. program. We're looking to set that up here in Canada.

It's not new. The beef agency has been operating for essentially the past three years, and it is a similar model that we're following, where they collect a domestic levy but also a levy on imported products. We're just looking for the same treatment, similar to our Canadian beef counterparts, but also to bring a level of balance and fairness in the Canadian domestic market for pork.

[Translation]

Mr. Pierre Breton: Thank you. That was extremely clear.

I only have 30 seconds left, so I will give that time to the next speaker. That's fine, it would be too short for Mr. MacLeod to answer a question.

Thank you.

[English]

The Chair: Did you have something you wanted to add?

Mr. Gary Stordy: Yes, the name of the organization that we apply to, to initiate this process, is the Farm Products Council of Canada. I apologize, I should know that.

The Chair: Thank you.

This completes our first hour of witnesses, so I want to thank Mr. Stordy and Mr. Kristensen again for being here, and of course Mr. MacLeod on the other end of the video. Your testimony will certainly be taken into consideration in our report.

We will suspend.

- _____ (Pause) _____
-
- (1630)

The Chair: We will continue our second hour.

[Translation]

This hour will focus on climate change. For the second hour, we will have

[English]

Canadian Organic Growers. We have Dr. Avinash Singh, Director, and Ms. Kimberly Cornish, Director of the Food Water Wellness Foundation.

With the Canada Organic Trade Association we have Ms. Tia Loftsgard, Executive Director; and with the Organic Center, Dr. Tracy Misiewicz, Associate Director of Science Programs.

Welcome to all of you.

We'll start with an opening statement of up to seven minutes.

Dr. Singh.

Dr. Avinash Singh (Director, Canadian Organic Growers):

Good afternoon, Mr. Chair, and members of Parliament on this committee. Thank you for inviting me here to be part of today's hearing. While I have the floor I also want to thank all of the members of this committee for being vocal supporters of Canada's organic industry. This interest in and commitment to organics resulted in funding recently announced by the Honourable Minister MacAulay for the Canadian organic standards. Thank you for being a part of that and recognizing that Canada is and should continue to be a world leader in organic food and farming, and that organic standards are integral in achieving that.

As a professional agronomist specializing in organic agriculture, I am pleased to speak to you today about the energy efficient and climate-smart practices used in organic agriculture that mitigate climate change, enhance soil health, and protect water resources.

Organic agriculture combines tradition, innovation and science to benefit the environment and our economy. A key aspect of these techniques is that they allow a farmer to enhance soil health and fertility, and retain soil carbon, without the need for external inputs such as nitrogen fertilizers, which, as we know, contribute to over 70% of total noxious oxide greenhouse gas emissions. The largest terrestrial storehouse of carbon is soil organic matter. In fact, a protein produced by a mycorrhizal fungi called glomalin is integral in accumulating soil organic carbon.

A number of studies have shown that organic practices such as longer crop rotations and the use of perennial legumes and green manures lead to a greater organic soil matter and therefore greater carbon sequestration, which is important in climate change mitigation. This addition of soil organic matter also drives soil health. As a result, organic systems have been found to perform particularly well under environmental stress. For example, organic systems have enhanced yield stability under periods of drought because water and soil erosion is reduced and water retention and plant-available water is improved.

There is much more to say on the benefits of organic agriculture, but the point I wanted to make is that the agronomic practices used by organic farmers build soil organic matter, which leads to greater carbon sequestration, better soil health and improved water conservation. These are principal components of climate-smart agricultural strategies that are being promoted globally, because they mitigate climate change and create farming systems that are more resilient in the face of more extreme weather events.

Reflecting on this and on behalf of the Canadian Organic Growers, I strongly recommend that the Government of Canada continue to make strategic investments in soil carbon studies and measurement tools along with organic research, knowledge transfer, and standards maintenance in order to continue driving the adoption of climate-smart organic farming practices in Canada.

Now I'll pass over to Ms. Cornish for more on carbon sequestration.

• (1635)

Ms. Kimberly Cornish (Director, Food Water Wellness Foundation, Canadian Organic Growers): Good afternoon, Mr. Chair, and members of the committee.

Thank you so much for inviting me to speak to you about this potential game-changing initiative for Canadian farmers and ranchers.

I'm the Director of Food Water Wellness Foundation; and we're based in Olds, Alberta.

Canada's 159 million acres of agricultural land represents a powerful, yet largely underutilized, tool in the fight against climate change. The same soil that produces our food has an ability, through photosynthesis and biological systems, to draw carbon dioxide, or CO₂, from the atmosphere and lock it in the ground in a process called sequestration. Once in the soil, the CO₂ is converted to soil organic carbon, or SOC, a crucial element for soil fertility and health.

However, Canadian agricultural producers who prioritize the building of the soil organic carbon receive little recognition and support for the carbon offset they provide. Current agricultural offsets such as the Alberta system are based on conventional cropping practices that are rigidly defined. Producers who are seeking to improve their land and sequester carbon are excluded if they do not comply with the practices outlined in the protocols. Also, all 70 million acres of pasture land in Canada are excluded from the protocols, greatly limiting the offsets available for sustainable development of Canadian industry.

The federal government can play a critical role in establishing a carbon offsets framework to incentivize all producers to sequester carbon on their land. This would be a game-changer for Canada's agricultural producers currently facing narrowing profit margins, and a win-win for all Canadians. As Dr. Singh mentioned, carbon-rich soil can absorb and hold more water, mitigating extreme weather events like droughts, floods, and wildfires; and rebuilding SOC restores degraded soil and increases food security as healthy soil improves crop yields and reduces the need for high-emitting, high-cost agricultural inputs.

Unfortunately, many of our agricultural practices conventionally do not promote the carbon sequestration because they're antagonistic to the biological systems that are critical to the process. Regenerative and organic practices that support the biology in the soil, like those mentioned by Dr. Singh, as well as carefully planned grazing, conservation cropping, and cover cropping increase the soil's natural ability to sequester carbon. Using these practices and numerous others have the potential to increase soil organic carbon by as much as three billion tonnes per year globally.

Climate stability could be achieved if enough land, including the massive tracts in Canada, was sequestering carbon. We could see atmospheric CO₂ reduced by 50 parts per million to 350 parts per million by 2100. We are asking that you consider supporting biodiversity monitoring in concert with broad-scale, in situ soil research. Such research would measure soil carbon in all types of agricultural land under a broad spectrum of management and would remeasure to see the amount of CO₂ sequestered in the soil.

The research would capture innovation that is happening on the ground by producers to create data-driven management tools and enable farmer-to-farmer knowledge transfer, hopefully resulting in all 159 million acres actively sequestering carbon.

For this reason, I would ask you to support the provinces and territories in expanding their agricultural carbon offset programs to include this learning, and to develop performance protocols based on soil carbon sequestration. Action is critical at this time to help farmers to improve their soil and generate revenue through carbon offsets to help them deal with planned increases in carbon pricing and tight margins. As well, creating offsets will help industry comply with the emissions targets Canada's agreed to as part of the Paris agreement. Taking action would be a win-win-win for the planet, industry, and agricultural producers.

Thank you so much for the opportunity to speak to you today.

• (1640)

The Chair: Thank you, Ms. Cornish.

Now, Ms. Loftsgard, for up to seven minutes.

Ms. Tia Loftsgard (Executive Director, Canada Organic Trade Association): Thank you for inviting the Canada Organic Trade Association to speak with you today.

I have invited Dr. Tracy Misiewicz to join me. She's the associate director of science programs for The Organic Center, which is based in the United States. Dr. Misiewicz holds a Ph.D. in integrative biology from the University of California, Berkeley, and a master's degree in plant biology and conservation.

Dr. Tracy Misiewicz (Associate Director of Science Programs, The Organic Center, Canada Organic Trade Association): Good afternoon honourable members of the committee. Thank you for the invitation to speak about the opportunity of organic systems to increase agricultural resilience to climate change and promote soil health.

Because the success or failure of agriculture is highly dependent on the weather, climate change is expected to present farmers with substantial agronomic challenges.

Projected temperature increases, changes in precipitation patterns, and increases in the frequency and severity of extreme weather events such as drought and flooding are expected to reduce agricultural productivity.

Warmer, wetter climates and increases in carbon dioxide also favour many agricultural weeds, pests, and pathogens. The geographical range of both invasive weeds and insect pest populations is expected to shift and expand as increasing temperatures enable them to survive over the winter.

Research also demonstrates that rising carbon dioxide levels are likely to have a positive effect on the establishment and persistence of invasive weed species and that commonly used herbicides such as glyphosate show reduced efficacy in settings with elevated carbon dioxide. Increased pest, pathogen, and weed pressure may also have numerous environmental and human health implications if increasing the toxicity of pesticides and the frequency of their application are considered to be the primary solutions to these challenges.

Organic agriculture is founded on the principles of soil health and resource conservation and takes a whole-systems approach to management, utilizing a wide range of farming practices that protect the environment and promote ecosystem services. For instance, organic farms utilize techniques that reduce soil erosion and nutrient runoff pollution, and they support a diversity of wildlife, including pollinators and beneficial insects. In return, the farm benefits through improved pollination of crops, higher water quality, better pest control, and healthier soils.

Soil health is considered by many to be the basis of organic systems, making them particularly well positioned to adapt to many of the challenges associated with climate change. Organic farmers tend to use cover crops and crop rotations in place of monocropping, and to utilize compost, legumes, and manure in place of synthetic fertilizers. These management techniques not only lead to reduced greenhouse gas emissions and increased energy efficiency; they increase soil organic matter, the foundation of healthy soils.

Soil organic matter has a positive impact on the physical, chemical, and biological soil properties. It provides structural stability to the soil, reduces erosion, protects against soil compaction, and improves aeration, water infiltration, and soil water-holding capacity, all key characteristics that will be particularly important in times of drought or flooding. Soil organic matter also serves as a

reserve for nutrients essential to plant growth, including nitrogen, phosphorus, and sulphur, and it makes up the base of the soil food web, providing a foundation for all soil life.

A growing body of research from around the world demonstrates that organic farms often have higher levels of soil organic matter, greater beneficial soil biodiversity, and overall improved soil health when compared to their conventional counterparts. One of the most recent studies to examine soil organic matter between organic and conventional farms compared over 1,000 soil samples from across the United States and found that, on average, soils from organic farms have 14% more soil organic matter than soils from conventional farms.

Soil quality results from the Long-Term Agroecological Research experiment in Iowa, which compares plots under organic and conventional management, found that after 15 years, organic soils were significantly healthier than conventional soils, based on a combination of chemical, biological, and physical soil health metrics.

Results from this study also suggest that improvements in soil health through the employment of organic farming techniques can provide exceptional benefits to farmers during extreme climate events. In 2012, despite serious drought conditions during the growing season, organic management enhanced agro-ecosystem resilience and maintained the capacity to supply nutrients to the crops.

In addition to promoting healthy soils, organic systems also utilize integrated pest, weed, and disease management. By omitting synthetic fertilizers and most synthetic pesticides, organic farmers are able to maintain higher levels of micro-biodiversity and macro-biodiversity in the soil and field.

Numerous studies have demonstrated that by supporting beneficial biodiversity, farms can considerably reduce the negative impacts of pests and pathogens. Thus, instead of relying solely on pesticides, organic farming provides multiple lines of defence to address emerging pest challenges.

Organic farmers are innovative. Many practices that have been long-standing tenets of organic production are now recognized as key management techniques for building climate resiliency and soil health across all of agriculture. What's needed is further research investment to continue to advance the development of sustainable organic practices.

Now I'll turn the floor back over to Tia to provide recommendations on what the industry feels is needed to unlock the potential of organic agriculture to foster healthy soils and contribute to climate change adaptation in Canada.

● (1645)

Ms. Tia Loftsgard: Thank you, Tracy.

Organic production methods and standards fit perfectly into the national food policy pillar of conserving our soil, water, and air. In order to ensure that organic can prosper, lending its successful model to creating healthy soil and addressing climate change—adaptation as well as mitigation—the approach to agriculture of the federal and provincial governments needs to, number one, be more inclusive of all sectors, scales, methods of production, and market channels.

In order to be inclusive, the next agricultural policy framework must include a review of industry program cost-sharing, the application process, funding eligibility criteria, and what areas should be covered by government—not industry—in order to uphold the integrity of the “Canada Organic” logo, which is owned by the Canadian government.

The number two recommendation is to invest in organic research and innovation. Continued research in organic agriculture is required to further unleash innovation in technologies and techniques that will result in greater productivity, more efficient resource use, and improved sustainability of agro-ecosystems. There's a need for research that is designed to fit the specific needs of Canadian agriculture systems to address these various challenges. We recommend that more provisions be made for long-term research, greater than five years, and consideration of the nature of the research being done—commercial intellectual property versus the public good—when there is a requirement for industry matching funds.

Number three, adapt business risk management programs to be more inclusive of producers of all scales, types of production, and market challenges. BRMs should be adapted to serve all types of farming, including low-input and diversified farms. The AgriInsurance suite also needs to be expanded to include production insurance that is suitable for organic and transitioning producers across all provinces and protects organic premiums on export markets to zero-tolerance countries such as those in the EU.

Number four, incentivize and reward best environmental and climate-resilient practices. Programs should include incentivizing the use of techniques that will promote soil health, such as cultivation of more legumes and perennial crops, soil health and watershed conservation, long-term crop rotation and intercropping, biodiversity and habitat creation, rotational grazing, and the use of locally adapted organic seed.

Thank you very much for hearing our recommendations. We hope you take them into consideration.

The Chair: Thank you very much for your opening statements, all of you.

Now we'll go into our question rounds.

[*Translation*]

Mr. Berthold, you have six minutes.

Mr. Luc Berthold: Thank you very much, Mr. Chair.

I would like to thank the witnesses for being here today.

Since I have had the opportunity to hold this magnificent position of official opposition critic for agriculture and agri-food, I have discovered an extraordinary world. I have had the opportunity to

meet some of you. When I talk to other people, I am surprised to see how organic is not always considered an agricultural sector. It is as if it is a separate sector because of the green, ecological and biological side. Yet the need exists. There are consumers who want organic agricultural products.

So I think you play an important role in our production chain and you too can contribute to achieving Canada's export objectives, exports that we want to see increased. This role is evident on a smaller scale because the scales of production are not the same. However, I am very pleased that you are here today to talk about water and soil conservation.

My first question may seem really straightforward, and I would like you to answer it in turn.

More often, we see the impact of climate change on large productions, but less so on small ones. In recent years, have you noticed any significant changes in how your producers do things?

Mr. Singh, do you want to answer first?

• (1650)

[*English*]

Dr. Avinash Singh: What we've actually seen is that the impact on small-scale farmers with respect to climate change has been minimal, in the sense that their systems are robust. When you have an extreme event such as flooding, their soils are able to drain properly, and they're able to benefit from having a better system. We've also seen that many small-scale farmers are quite diversified, so that in response to a lot of climate adversity, if one crop fails there are other crops that are able to support those challenges.

Where small-scale farmers have probably had the least benefit from climate change is in the fact that we have very little research that supports how small-scale farmers should be transitioning to adapt to the fact that our winters are no longer stereotypical winters. They should have other structures so that they may be able to capitalize better on some of the changes in the weather.

Ms. Tia Loftsgard: I've worked with small-scale farmers in international settings, as well as in Canada. In Canada, we don't have as many small-scale organic farmers, which is interesting, because that's a popular misconception. I have census data right here that shows that we don't have that many small hobby farmers in organic, but I can tell you from an international perspective, small farmers on an international scale are generally more well adapted to work with their local environment in a biodiverse atmosphere and also grow their own food.

[*Translation*]

Mr. Luc Berthold: I have one last question.

The minister recently announced that he would provide the funds needed to review the standards of the entire organic farming industry. It appears, however, that the minister's announcement is not quite up to the cost requirements. When I had meetings with you, it was said that this review would cost about \$1 million. The minister mentioned a \$550,000 investment in his announcement.

Ms. Loftsgard, do you believe that the industry will be able to find the necessary amounts, the amounts that are missing, to conduct this review?

[*English*]

Ms. Tia Loftsgard: The actual announcement by the minister, who we thank very much, is \$250,000. That is to cover the Canadian General Standards Board's administrative costs. On the last review, \$1 million was what it cost. As we've learned since, that's because it had to go back to 2006, before we even had the national program in place.

We're in discussions. No, we didn't get what we asked for. We asked for permanent funding so that we don't have to do this every five years. It's a requirement by WTO for the Canadian government to make sure that their standards are up to speed. We'll continue the discussions. We're looking for some immediate solutions, because we have to start the review in March. That's next month.

[*Translation*]

Mr. Luc Berthold: Thank you.

Mr. Dreeshan, do you have anything to add?

[*English*]

Mr. Earl Dreeshen: Thanks very much.

Ms. Cornish, coming from Olds and Olds College, that community is where I've been my whole life. I really think, too, when we talk about zero tillage, carbon sequestration, and so on, and programs that are out there, one of the concerns is how many passes you are going to have over the land. We really are talking about farms there that are 1,000, 2,000, or 5,000 acres in many cases. With the number of times you go over the land and the width of the openers you're using, these are definitions that go between, is it zero till, minimum till, or maximum till? Then if you go into agreements, you get paid, more or less, for the way you have done that farming.

How does organic farming deal with that, where in a lot of cases what you have is a green crop that you're going to plow under in order to make sure you have nutrients for another year? How does that really tie into the discussion?

Ms. Kimberly Cornish: What we've been looking at is actually developing a baseline of what the soil carbon is at this time, and then being able to track it in the future. Definitely emissions are an issue that we need to talk about in terms of passes of the land, but what we're finding is that a lot of the organic processes are regenerative processes, almost offsetting extra passes of the land. The emissions that you get from the tractor are so because you have a healthy, vibrant microbiology in the soil that's able to do its thing, so much more than you can if you're just doing the Alberta protocol that is—

• (1655)

The Chair: Thank you, Ms. Cornish. It's very interesting. I'd like to hear the rest, hopefully.

Mr. Peschisolido.

Mr. Joe Peschisolido (Steveston—Richmond East, Lib.): Thank you to the witnesses.

Madame Cornish, would you like to continue?

Ms. Kimberly Cornish: Yes, thank you.

When you're actually building soil carbon, there's a huge distinction in my mind between soil carbon sequestration and the elimination of emissions from the soil by tilling. If we're not tilling the land, it definitely helps, but if we can be building those biological systems and supporting that, it can definitely mitigate. That's the need for large-scale research on a whole bunch of different practices.

Mr. Joe Peschisolido: Dr. Singh, my area, Steveston-East Richmond, has a very large organic sector, very large farms. For example, Mr. Falcon and his son have a 20-acre farm with organic blueberries, and then another 300-acre farm in the valley. What can the government do to expand the sector?

Dr. Avinash Singh: I find that one of the biggest challenges we have is that farmers do not have enough champions to promote the innovative practices, so we're lacking in a lot of extension. Great research is being done at the university level and being done in other parts of the world, but how do we transfer that knowledge from the universities onto the farms? Once we get that information to the farmers, we will have champion farmers who then can deliver that to the rest of the farming community.

Mr. Joe Peschisolido: Madam Cornish and Dr. Misiewicz, after hearing your presentations, I'm thinking I should have taken fewer economics and history classes in university and maybe an ecology and chemistry class. I may open my old textbook from high school.

You said something that intrigued me. You said that carbon sequestration is a game-changer. Can you elaborate a little bit on that?

Ms. Kimberly Cornish: I think right now we have so many issues between economic development and climate-smart practices. It seems to be an either-or scenario. I think, if we can really understand the capabilities and the how of soil carbon sequestration, we can open up more possibilities for the sustainable development of industry, because we know exactly how much we can sink into the land.

Mr. Joe Peschisolido: Dr. Misiewicz, can you explain to me a little bit about the difference between synthetic pesticides and what is done in the organic sector?

Dr. Tracy Misiewicz: Absolutely. I'll be speaking from a U.S. perspective on this one.

In the United States, there are over 900 synthetic pesticides approved for use in agriculture, and about 20 synthetic pesticides that are approved for use in organic agriculture. Organic farmers are allowed to use those 20 pesticides that have been deemed to be non-toxic, and they are added to our approved list. Otherwise, the majority of pesticides that are used by organic producers are considered by the USDA and FDA to be grass or generally regarded as safe. They include things like oils or insecticidal soaps. That's the primary difference.

Mr. Joe Peschisolido: You mentioned soil organic health. Can you elaborate a little bit more on how that is helpful to the environment and the soil?

Dr. Tracy Misiewicz: A pesticide is a pesticide. We know from research that many of the synthetic pesticides that are commonly used are more persistent and more toxic than most of the organic ones, but the thing that really makes a difference in organic systems is that organic farmers are required to use integrative pest management techniques first. They are required to use techniques that establish beneficial predator populations on their farms, and they use pesticides as more of a last resort.

• (1700)

Mr. Joe Peschisolido: Doctor, you mentioned pesticides. I really don't know what a pesticide is, and I'm assuming a lot of laymen don't either. Can you explain what it is?

Dr. Tracy Misiewicz: Yes. A pesticide is something that you apply to either kill an insect, weed, fungus, or pathogen that's attacking your crop, deter it, or reduce the population size.

Mr. Joe Peschisolido: Isn't that a good thing, because we're killing bad things?

Dr. Tracy Misiewicz: It is a good thing, but it can also disrupt many of the natural ecosystem processes that occur. Most pesticides have bad effects for their target populations but also for non-targeted populations. If we can control pests by increasing populations of beneficial predators like ladybugs, they eat the bad pests, and we won't have to use those extra inputs. It saves money for the farmers, and it's better for the environment.

Mr. Joe Peschisolido: You mentioned the various lines of defence. Can you elaborate on that?

Dr. Tracy Misiewicz: The things that organic farmers do to encourage beneficial insect populations would be planting hedge-rows or buffer strips, rotating their crops to create more diverse food for those beneficial predators, using native plants, and intercropping. All of those strategies will basically create food and habitat sources. This is in addition to using fewer pesticides, because, again, you don't want to accidentally kill your beneficial insects.

Mr. Joe Peschisolido: Tia, how would you respond to those who say that organic is just a fringe thing, that it's too expensive, and that it will never hit the economies of scale to feed people?

The Chair: Unfortunately, we'll have to leave that.

Thank you, Mr. Peschisolido and the panel.

Mr. MacGregor, you have six minutes.

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

I like the comment that was made, that there are not enough champions to help farmers change. I understand that for those who are going organic, they're very much swimming against the current. There's a paradigm that exists. Farming has been done in a certain way for so many decades. It has usually involved a lot of fertilizers and the intensive use of massive monocultures. As we've seen, that farming technique has not been very good for our soil and our water, and I think farmers are starting to realize that.

On Monday we had a representative from Fertilizer Canada here. I started off by saying that if we're looking at ways to lessen our impact on the environment, it seems our use of fertilizers is a good place to start. They require fossil fuels to be made, to be transported, and to be applied, and of course we've had dead zones created from too much runoff.

They have taken some steps to have more targeted use, but their contention is that you simply cannot get the same yield without the use of synthetic fertilizers with those kinds of inputs. I know that a lot of organic farmers are challenging that paradigm. I'm wondering, if we're looking for the research on the economies of scale where organic agriculture can work to.... We used Africa, for example, and the farmer who has two to three acres. He was saying that without fertilizers, they simply cannot make a profit.

Are there any specific examples you could point us to that challenge that existing way of thinking and say, "No, actually, we can do it"? I'll open it up to anyone who wants to start.

Dr. Tracy Misiewicz: I can start.

Dr. Avinash Singh: It's probably the U.S. example.

Dr. Tracy Misiewicz: Studies show that basically the longer a farm is in organic production, the higher the yields are. A study that recently came out showed that we've lost 133 billion tonnes of carbon from our soils worldwide over the last 1,200 years due to agricultural production, so a lot of farmers are starting on soils that have already been incredibly degraded due to poor agricultural practices.

I think that to say that we can't increase yields without synthetic fertilizers is false. I think there is a role for synthetic fertilizers to play, generally, in agriculture, but I think there are a lot of practices we can use over time that are going to build the health of the soil, build that organic matter, and build that nutrient base so that we do see over time that yields are rising. But we need to invest in getting there first. If you take degraded soils and you stop using fertilizers, you're not going to have a good yield.

• (1705)

Mr. Alistair MacGregor: Is there anything you'd like to add, Mr. Singh?

Dr. Avinash Singh: I'll just mention once again that, if we're talking about a more adverse climate, the smaller-scale farm has the ability to be far more robust. When we think of yields, when you have average climate, they can be fine. But when you have drought or flood conditions, that's where the organic farming systems tend to rise to the occasion, and their yields are equal if not greater.

Mr. Alistair MacGregor: You mentioned in some of your testimony the ability to withstand changing patterns, the built-in resiliency model. It will affect farmers' bottom line if they don't need to buy synthetic fertilizer or use as much. Am I going down the right road here?

Dr. Avinash Singh: There's that, in combination with the fact that unfortunately most fertilizer companies recommend that a far greater rate of fertilizer is required, because they view the soil as being dead. If we start to understand that soil is living and can actually do a better job of holding on to those fertilizers, and then provide those fertilizers in a timely way to the plant, then even a responsible use of synthetic fertilizers is a way of maintaining good soil health and getting a bigger bang for your buck.

Mr. Alistair MacGregor: In terms of the investments you would like to see made in research, in practical applications, does that mean you'd like to see the federal government set up specific test farms to use as a case study over multiple years? Is that kind of stuff going on? Do we need more of that?

Dr. Avinash Singh: There's no question that on most university campuses we will not find a field dedicated to organic research. It would be a great benefit to do some dedicated work on an organic farming system, because organic practices are one thing, but a system is a better representation of something more robust.

Mr. Alistair MacGregor: The relationship between soil microorganisms and the fungi that are in there is very complex. How has the heavy use of fertilizers impacted that in the past? What are some of the efforts being made in the organic sector to revive the complex web that exists?

Ms. Kimberly Cornish: The application of fertilizer basically stops the process of the development of that web. The plants get what they need on the surface, their roots don't have to go down, and they don't develop the soil carbon through photosynthesis. The plant feeds the biology through liquid carbon, and that's what feeds the bacteria.

The Chair: Thank you, Ms. Cornish.

Mr. Alistair MacGregor: Thank you.

[*Translation*]

The Chair: Mr. Poissant, you have six minutes.

Mr. Jean-Claude Poissant (La Prairie, Lib.): Thank you for your comments and presentations. It's always interesting.

You know that you are also part of the recipe. We want to export up to \$75 billion of food by 2025. I often wonder if there is a craze, if there is enough education with young people to recruit them and encourage them to get into organic farming.

I don't know who to ask the question. Whoever feels comfortable answering can do so.

[*English*]

Ms. Tia Loftsgard: I can start and then you can go?

Dr. Avinash Singh: Okay.

Ms. Tia Loftsgard: We've mentioned that there are a few universities that are teaching it, and we are seeing that a lot of new farmers are interested in sustainable agriculture, whether it's organic all the way, or what have you. On the transition of farms, we're seeing a lot of people saying they will take over dad's farm if there's some sustainability component to it. Now, who's going to teach them? There are short-term funding proposals that exist to the end of the year through the prairie organic grain initiative, which has extension specialist services as part of a training program. But once these short-term funding solutions run out, then what? It's a constant struggle for us as an industry—and as a sector that deeply believes in our own education and success—to make sure that these resources are going to be sustainable.

Dr. Avinash Singh: In respect of small-scale agriculture and small-scale farmers, recent studies have shown that the majority of new entrants are female and have a university education. What we're looking for is alternative ways of educating these small-scale farmers, because most of the information they will require for their farms will not be gained at a university level. So we're looking at more alternative ways of learning and educating those new entrants.

• (1710)

[*Translation*]

Mr. Jean-Claude Poissant: Okay.

I would like to ask you another question.

Are there easier crops? Be it vegetables, cereals or berries, are there products that adapt more easily to organic farming?

[*English*]

Ms. Tia Loftsgard: That's a good question.

Dr. Avinash Singh: To answer that question in the opposite direction, some of the more challenging crops would be those like corn, which may require a lot more nitrogen fertility. This can be done by using longer rotations. There are great crops like hemp, which is a tremendous crop that builds soil organic matter. It's more about the techniques used by organic farmers that would allow pretty much any crop to be grown.

Dr. Tracy Misiewicz: For larger-scale commodity crops such as corn, organic farmers often use varieties developed for conventional systems, because there hasn't been much research and investment in organic. This is another challenge they face—they're using a crop variety developed for a system completely different from an organic system.

[*Translation*]

Mr. Jean-Claude Poissant: Okay.

One of the difficult aspects in just about every field of agriculture is recruiting the labour. Is finding labour a problem for you?

Is it the same with automation?

A lot of research has been done on conventional precision farming technologies. Is there any research in the area of organic farming with respect to mechanization?

[English]

Dr. Avinash Singh: In terms of labour, many of our small-scale organic farms have a human-scale approach. Therefore, they are able to find adequate labour. It's when you scale up that you're going to have a harder time finding adequate labour.

In terms of precision agriculture, we are starting to see an increase. As some of our farms get to a larger scale, you're starting to see equipment that collects the proper data to allow for precision agriculture. I can see how a farmer would be using the information that's gained from precision agriculture to hone in and properly make the best of the inputs they put into their farm.

Ms. Tia Loftsgard: I'll answer in regard to what attracts people to go into any type of career. It's money. There was a study done by Statistics Canada on the net operating income of organic farmers from gross farm receipts. This is your data that I'm sharing. There's a 68% higher income for people between \$10,000 and \$99,000. I'll go to the other extreme. Those over \$1,000,000 in income, compared to their conventional counterparts, are making 18.9% more income. Yes, there's more labour required, but there's also more income, and that's drawing people towards organic.

[Translation]

Mr. Jean-Claude Poissant: We often hear about crops without inputs, which is close to organic farming.

Could you tell us more?

In my industry, many growers start farming without using inputs. This adds value to their products. Is there a big difference between these two modes of production?

The Chair: Answer quickly, please.

[English]

Ms. Kimberly Cornish: I think when the soil is improved and healthy, then that's exactly when you can grow crops without inputs because the biology is actually taking care of the fertility that we normally put on when using fertilizer.

The Chair: Thank you.

Mr. Saini for six minutes.

Mr. Raj Saini (Kitchener Centre, Lib.): Thank you very much for coming today. I have a very interesting question. It's something maybe you can educate me on.

I'm a pharmacist by profession, and one of the things that I did in my pharmacy is I expanded the scope of practice. It wasn't just pharmaceuticals but it was gluten-free grocery, some organic products, and some products.... We found that there were a lot of people who maybe weren't allergic to certain foods but who had an intolerance to certain foods.

One of the things I found when purchasing certain products.... They were labelled. Some labels said the product was gluten-free and it was certified as gluten-free. One of the things I had difficulty with, either as a result of sourcing or not being able to define clearly, was whether something was organic or not.

I know there's an organic standards association, but how strong is that? I want to get an idea of the strength of the testing or certification. People can say something is organic, but as an ordinary Canadian, what sort of confidence do we have that it is organic? As you know, there's a price differential between the products. I know for gluten-free there are certain manufacturers that we know have been certified in one way. However, one of the things I found, especially in procuring organic products, was that a lot of times I wasn't sure as to the certification or viability of a product. Can you just give us an idea of how the process works?

• (1715)

Ms. Tia Loftsgard: I'll answer this question. I did a presentation to AFC staff this morning.

The standards development process was voluntary up until 2009, and then our trading partners said we couldn't trade to Japan, the EU, and the U.S. if we didn't actually standardize the definition and get regulated by government. We are standards-incorporated reference in law. This is owned and enforced by the CFIA. This is a government initiative, which is why the industry is saying, we need to work in better partnership because this is your system that we're a part of and we're working on it together. Hopefully you believe in the enforcement of it because it's enforced by the CFIA.

Mr. Raj Saini: Is that something new?

Ms. Tia Loftsgard: No. It's since 2009.

Mr. Raj Saini: If I'm a producer or farmer of organic produce, then I would submit an application to the CFIA?

Ms. Tia Loftsgard: No. You would submit it to a certification body, which is a third party provider overseen by the CFIA. The CFIA manages the certification bodies to make sure they are performing their role, which comprises annual inspections, paper trail, traceability, sourcing all-organic, and making sure that if there are any fraudulent claims, they are followed up with.

Mr. Raj Saini: So the third party is going to—

Ms. Tia Loftsgard: They'll do the inspections, but ultimately, they'll report to CFIA anybody who is becoming suspended or decertified, and that's listed on the CFIA website.

Mr. Raj Saini: Thank you very much for that clarification.

I have a second question, and this is probably more about trade. I think the organic sector in Canada has a lot of potential, especially when we're dealing with trade regimes, either CETA or CPTPP. What advice would you give or what do you think is the potential now that you have an opportunity to sell to between a billion and a billion and a half people? You are selling in parts of the world where the agriculture regime may not be as stringent as it is here, so Canadian farmers really have an opportunity going forward with that.

Can you comment on that?

Ms. Tia Loftsgard: Yes. We work to represent the Canada organic brand internationally. There is a heck of a lot of export going on. I would say most of our trading partners have a more rigid regime than ours on zero tolerance of glyphosate or—

Mr. Raj Saini: European partners—

Ms. Tia Loftsgard: Europe, Japan, South Korea. Some of them won't enter into equivalency arrangements with us because we don't have enough rigour in our system. Ninety percent of our organic trading partners do, and that's been the success of our Canadian regime.

When it comes to the opportunity, I think standards are number one. They have to be funded by the government; that is not an industry initiative. The only requirement out there...why it needs to be run through government is so that we can trade internationally, and we want to take advantage of that opportunity. It's been quoted in the Barton report. We do have an organic stakeholder on the economic round table. They are filtering that information upwards, that although we might be 2.2% of farms, our industry is the next generation and the wave of the future for agriculture.

Mr. Raj Saini: Are you saying there's not much more that we have to do to get to a certain standardization that would be accepted in Japan or Europe?

Ms. Tia Loftsgard: We currently are great with those trading partners. The problem is that if our standards don't get reviewed every five years.... That is the million dollars that we were talking about, which right now we've been told industry should fund—except for the \$250,000 we just got.

Mr. Raj Saini: The reason I suggest that is that in the CPTPP, there are 11 countries, and in CETA, there are 28. If you look at other potential trade deals, maybe with the ASEAN countries, you'll see another 10 or 12 countries. You talked about the Canadian reputation, and that stands on its own, so there would be a greater potential, specifically in terms of trade, compared to that of other countries. So you're saying...a little bit more, and we would be in the game?

• (1720)

Ms. Tia Loftsgard: Yes. I think the contamination issue is a huge trade barrier for our industry unfortunately. When we get zero tolerance happening, they're testing it at the border. They're saying, "Ship back that you're an organic product, because we won't take that as organic in XYZ country" or that they have to sell it as conventional.

They've gone through all the rigour, but there is some unintentional contamination that's happened. That's where we need to work together with all of agriculture to make sure that those opportunities for our sector are not in opposition to anybody else's.

Mr. Raj Saini: Thank you very much.

The Chair: Mr. Barlow, for six minutes.

Mr. John Barlow: Thank you very much, Mr. Chair. I appreciate the witnesses. There's been some great testimony, very interesting.

I want to bring up an initiative that we've talked about a few times during this study. You brought it up, Ms. Cornish, when you were

talking about in situ soil monitoring. I'd like you to explain that a little bit more if you could.

We've had discussion on how difficult it is for us when we talk about soil conservation and soil health. I know many of us in our rural municipalities, our counties, and MDs talk about 3T and 4T soil and trying to protect it, but development comes, and it isn't as protected as we would like.

Do you know, on the organic side, whether some of the provinces...? I think we need a national initiative to get a sense of where we are right now in terms of our soil health. From what I've heard from the Soil Conservation Council of Canada and some of these other groups, a really detailed study on the status of Canada's soils across the country has not been done in more than 30 years. Would that be helpful, or is it maybe too broad for us to take on? Would there be some benefits to putting some real work and funding behind that to get a starting point of where we are now? Then we can figure out where we need to be. It would be good to have a good understanding of where we are now.

Ms. Kimberly Cornish: I think a baselining project is absolutely critical.

Mr. John Barlow: Thank you: "baselining", here we go.

Ms. Kimberly Cornish: I think if we can do a broad-spectrum baselining project, we will learn so much. We'll have not just that baseline and be able to see where we are in the future, but we'll also have a compare and contrast. If you have really beautifully adaptive multi-paddock grazed land next to heavy conventional cropping, you'll get to see what the soil health looks like. You'll be able to contrast the biological communities, the levels of soil carbon, right across the board. That will give us a huge clue into who's going to be able to adapt better and what practices might help with climate mitigation and adaptation. I think that would be incredibly helpful.

In terms of technology, with the Alberta protocols we always say that we can't measure; it's too expensive. That was true 10 years ago, but now with algorithms, mapping, and monitoring, there is so much technology that's just burgeoning. What we're planning on doing, or what Food Water Wellness is trying to get off the ground, is a project that would use the conventional methods to actually use combustion to test soil carbon. We'd also be using spectroscopy to correlate that, and then correlate that with microbiological health. It is much more efficient now that we have genomics easily accessible. We hadn't been able to type the genes before in the microbiological community.

Yes, I think a baseline study would be incredible. The way I look at it is that if you can bring the opportunity for offsets in it, then you can actually have private industry help pay for part of that baselining study. It could be a co-operative process between large emitters and the government.

Mr. John Barlow: You bring up a good point in terms of the difficulties and the effort that would go into it. I think you're right that maybe 10 or 20 years ago it would have been difficult. Now with technology and innovation, with the drones and X-rays, I think the ability for you to do it quickly is certainly much different from when you were going out there physically trying to test soil. I think you're right.

Can you explain to me a little bit more about the in situ soil monitoring? That's something I have not heard before.

• (1725)

Ms. Kimberly Cornish: It would basically be looking at farm scale across a broad spectrum. Richard Teague out of Texas A&M has done a huge amount of study on soil carbon sequestration rates. There's always a disconnect between what has come up in research plots and what's actually happening on the ground, because it hasn't been at a broad enough scale. The institute is about going out to the actual farms and ranches to see what's happening on the ground instead of trying to find some sort of version of it that we can study on a university campus or at a research centre.

Mr. John Barlow: I appreciate that.

I appreciate the messages that you're all bringing forward, too, that we need to have a balance between traditional methods of agriculture and organics. I think they both have a very important role to play. It's great to see the growth in organics. I have several organic beef producers in my constituency who have gone in that direction for various reasons, but they still embrace traditional agriculture on the grain side or on the corn side, or vice versa. I think when you look at the innovation, whether it's zero tillage or the use of some pesticides, we are able to grow significantly higher yields on even less land.

I appreciate the perspective that you're coming from. I think there is a role for both to play. If we're going to feed the world and have \$75 billion in agricultural exports in the next five years, we have to ensure that we have the tools to do that. Organic agriculture certainly has an exciting future, and it's great that we want to try to support that as well.

The Chair: We're just about out of time, Mr. Barlow.

Mr. John Barlow: I was going to ask about interprovincial trade issues when it comes to organics, but we can touch on that another time.

The Chair: That wraps it up.

Just to add my two cents, being a certified organic grower and a conventional one, I know that both have learned from each other. I've done it with both hands. The organic farming that my great-grandfather used to do has learned a lot from the conventional, but also the conventional, I can tell you, is quite a rigid system. To answer Mr. Saini, when inspection day comes around, you're quite nervous.

At any rate, Mr. Singh, Ms. Cornish, Ms. Loftsgard, and Ms. Misiewicz, thank you for your appearance here today.

To the committee, you will get a copy of the draft on Friday, I think. We have our analysts working very hard. We want to thank both of them. On Monday we'll have the instructions to give to the analysts about the drafting process. We will also have a second hour of subcommittee on agenda and procedure, if there's a.... Okay.

Thank you very much, everyone, and have a good day.

The meeting is adjourned.

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