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Chair

Mr. Pat Finnigan

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• (1530)

[English]

The Chair (Mr. Pat Finnigan (Miramichi—Grand Lake, Lib.)): Welcome, everyone. 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 on climate change and water conservation issues.

I'd like to remind our guests today that the motion for the current study deals with how the government can help the Canadian agriculture sector better adjust to the increasing severity of issues associated with climate change and better address water and soil conservation. That's basically what we're trying to achieve here.

With that, today we have, from Fertilizer Canada, Mr. Clyde Graham, senior vice-president; and from the Grain Growers of Canada, Mr. Doyle Wiebe, director, and Mr. Tyler McCann, interim executive director.

Welcome to all. We shall have opening statements of up to seven minutes.

Do you want to start, Mr. Graham?

Mr. Clyde Graham (Senior Vice-President, Fertilizer Canada): Good afternoon, Mr. Chair and members of the committee. Thank you for inviting Fertilizer Canada to speak with you today regarding your study on climate change and water and soil conservation issues.

I'm pleased to provide the committee with information about our association's mandate and to present our recommendations to enhance the government's goal of supporting the Canadian agricultural sector to better adapt to potential impacts of climate change. This is an area of significant interest to Fertilizer Canada.

Fertilizer Canada represents the manufacturers and wholesale and retail distributors of potash, nitrogen, phosphate, and sulphur fertilizers. Collectively our members employ more than 12,000 Canadians and contribute over \$12 billion annually to the Canadian economy through advanced manufacturing, mining, and distribution facilities nationwide. Fertilizer is an important input for farmers, providing nutrients to plants that are not readily available in the soil, fostering plant growth, and increasing yields. Approximately 50% of crop production can be attributed to fertilizer use. That's on a global basis, but very similar to what we would see in Canada.

Our product has increasing importance as we seek to feed an increasing global population. In a continuously evolving climate,

Canadian farmers must ensure that crop production is sustainable. The framework we use to sustainably grow food is "4R" nutrient stewardship. It says that to utilize fertilizer properly and to achieve the benefits of an abundant and healthy crop, farmers should follow the "4Rs" of fertilizer use: using the right source of fertilizer and applying it at the right place, at the right time, and at the right rate. 4R nutrient stewardship is innovative, as it encourages an adaptive and integrative nutrient management approach that is specific to any farmer's soil and climate conditions, including the crop they're growing, while mitigating negative impacts on the climate.

We believe that 4R nutrient stewardship is an important tool for supporting the Canadian agricultural sector in the face of climate change and addressing associated soil and water concerns. While we understand that the focus of the current study is not on reducing greenhouse gas emissions, we do think it's important to note here that 4R nutrient stewardship does lend itself to addressing this environmental concern as part of the bigger picture of soil health and climate change. Our Canadian-made offset, the nitrous oxide emission reduction protocol, or the NERP, which applies 4R nutrient stewardship, is evidence of this. Recognized by the Food and Agriculture Organization of the United Nations as a climate-smart agricultural practice, this protocol can reduce on-farm emissions of nitrous oxide, which is a potent greenhouse gas, by up to 25%.

Our first recommendation to the committee is that the federal government formally recognize and endorse 4R nutrient stewardship as the leading approach for sustainable nutrient management in Canada. We have well-established partnerships with provincial governments, retailers, conservation authorities, crop advisers, and farmers themselves in the major agriculture-producing provinces—Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, and Prince Edward Island, and we're working very closely to get a program going in Quebec—for regional implementation of 4R nutrient stewardship.

We also participate in national efforts, including the Canadian round table for sustainable crops and the national environmental farm plan program, both of which are integrating 4R nutrient stewardship in measuring progress and compliance for agricultural sustainability. Additionally, the International Joint Commission, which oversees the jurisdiction of the Great Lakes, recognizes 4R nutrient stewardship as an effective method for reducing nutrient runoff.

The timing for the federal government to acknowledge this approach has never been more critical given the level of awareness and support the 4Rs have achieved over the past several years among the agricultural sector at large. The Canadian government should take advantage of this voluntary effort by acknowledging 4R nutrient stewardship, integrating it into its communications about nutrient management, and encouraging our agricultural sector to adopt its principles and practices.

I do want to note that the federal government has been very good in providing us with funding for research and extension over the years, but what we're really seeking is that the federal government, through Agriculture and Agri-Food Canada, really integrates the 4Rs into the way it talks about fertilizer use and nutrient management and gives it that final push to make it truly a federal-provincial program.

• (1535)

Building on this, our second recommendation is to provide incentives or recognition to farmers who adopt 4R nutrient stewardship. Fertilizer Canada has an ambitious goal of achieving 20 million acres under 4R nutrient stewardship by the year 2020; approximately 20% of Canada's cropland.

Enabling farmers to implement 4R nutrient stewardship practices on their farms will drive greater uptake. This might be a financial incentive, a workshop, other means of engaging farmers, or just a simple pat on the back. When farmers see the co-benefits, economic and environmental, of applying the 4Rs, they are more likely to use the practice on their farm. For example, many Prince Edward Island farmers are seeing evidence of yield and environmental benefits of 4R nutrient stewardship compared to traditional practices of fertilizer application.

Fertilizer Canada also has a number of publicly available tools and resources that help farmers use the 4Rs in different Canadian landscapes, and suggests practices that can reduce the impacts on soil and waterways.

Our third recommendation is to continue to support agricultural research to better understand nutrient losses and their impacts on soil and water, and how those impacts can be measured using the 4Rs. Our industry is science-based, and is committed to research and innovation to ensure environmental stewardship when fertilizer products are being used.

Fertilizer Canada's 4R research network has nine leading Canadian scientists collaborating on innovative best management practices using 4R nutrient stewardship that demonstrate tangible environmental benefits. As an example, one researcher in the prairies is finding that in-soil placement of phosphorus fertilizer can be an effective strategy to maximize crop response and minimize the potential for phosphorus runoff.

We hope to advance this work to protect fresh water through the proposed smart agrifood supercluster; a short-listed application currently before Innovation, Science and Economic Development Canada. As Fertilizer Canada's contribution to this proposal, we seek to expand research and programming to enhance water quality in the Lake Erie and Lake Winnipeg watershed regions. We're also collaborating with other agriculture commodity groups on a fertilizer use survey, which over the past four years has been collecting data on farmer practices for source, rate, time, and place for the major Canadian crops.

With all this information there's an opportunity to understand interactions between practices, how they interact under specific climatic conditions, and how they collectively can provide benefits to improving soil and water quality.

Environmental stewardship and sustainability are not new ideas for our industry or for Canadian farmers, who have long embraced past management practices on their farms, yards, and business operations.

As we move forward, it's increasingly important to demonstrate our successes in measurable ways, and also to identify areas of potential improvement. Farmers need all of us in the agrifood sector just as much as we need them, so we can continue to have abundant and nutritious food.

The Chair: Mr. Graham, if you can wrap up, please.

Mr. Clyde Graham: We do believe that more can be done though, which is why we strongly encourage the members of the committee to consider our recommendations, which would be a formal recognition by the federal government to incentivize farmers and support research in the area of 4R nutrient stewardship.

Thanks very much.

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

From the Grain Growers of Canada, Mr. Doyle Wiebe, for up to seven minutes.

• (1540)

Mr. Doyle Wiebe (Director, Grain Growers of Canada): Mr. Finnigan and all members of the committee, thank you for this invitation today.

My name is Doyle Wiebe. I am a farmer and a director with the Grain Growers of Canada. We have 13 members representing over 50,000 grain producers from coast to coast. I'm currently chair of the Saskatchewan Canola Development Commission, treasurer of the Canadian Canola Growers Association, and past president of the Saskatchewan Soil Conservation Association. I'm also a member of a new committee formed last year by the Saskatchewan Ministry of Environment, entitled the agricultural water management policy advisory board. This committee was formed to help with the implementation of new water drainage regulations in the province, which have been brought in to support the hundreds of farmers looking for ways to deal with unprecedented water levels on their farmlands.

I'm a fourth-generation farmer in my community of Langham, near Saskatoon. This spring I will be seeding my 45th crop along with my business partner, a new, young neighbour in the community who is planning to be my successor on the 6,000-plus acres we farm together today. He has two young sons whom he hopes will succeed him in due course. We grow canola, wheat, and barley as traditional crops, but we are also working at growing new crops like peas, soybeans, and quinoa, to diversity the rotation and reduce the risks associated with variable weather patterns, which affect each crop differently.

The soil in my area is considered marginal. It is quite sandy and prone to salinity, which is exacerbated when soil moisture levels are high. Historically, this type of soil was prone to wind erosion in fallow years, which is mostly done to conserve moisture for the next year's crop, as sandy soil does not hold a lot of moisture. In the most recent years, however, we have seen a complete shift from the driest conditions in my father's lifetime to the wettest. Currently, it is quite dry again.

In the last 10 years, crop insurance programs in Saskatchewan and Manitoba have paid out more due to excess moisture than due to dry conditions. In my own case, five years ago I lost 25% of my cultivated acres due to excess water levels. Just imagine how losing 25% of the productive assets of any business and leaving most costs untouched will affect the profitability of that business. It's not sustainable.

Yes, climate change is real. With warmer winters and generally more moisture, fungal diseases, insects, and surface water issues in areas where there is nowhere to drain it have required new ways of thinking.

I tell my non-farming friends that I do not gamble; I manage risk. I mentally take stock of all the risks I need to manage each year, and I determine what strategy is best to mitigate them and yet remain profitable. Weather, which farmers talk about every day, is the single largest risk to any dryland grain producer in the world. Because of this, farmers themselves have been incredibly innovative and proactive in adapting to the changing climate. Many have worked with equipment manufacturers to deal with wetter soil conditions.

For example, it was quite rare 10 years ago to see dual wheels on combines. Now it is mostly standard equipment. There are even tracks on some. Dual wheels on wet soil help to spread the weight of the equipment, reducing soil compaction, preserving soil health, and not getting stuck in the mud.

Off the farm, farmers are also leaders in developing proactive approaches to this issue. As I said earlier, I am involved with several organizations that work to mitigate the impacts of climate change on our operations. The Saskatchewan Soil Conservation Association is a great example of a group that has been around since the mid-eighties, promoting conservation and agriculture systems to improve the land for the future. In addition, Grain Growers of Canada is a member of the Canadian Roundtable for Sustainable Crops, whom you heard from here in December. The CRSC is working within the industry to develop and measure sustainability metrics for Canadian grain in a proactive way.

While farmers are working hard to find solutions and are investing time and money in research and innovation, they cannot do it alone. As such, one of the areas where government investment would go a long way is in research and innovation. The federal government already has a track record of supporting and nurturing agricultural innovation through Growing Forward and Growing Forward 2. This is a natural fit. Potential partnerships already exist for government and industry. Public research is crucial to developing crops that will allow us to adapt to climate change.

Plant breeding efforts have needed to shift focus to try to address disease and insect issues and other stresses. There has been some success, and we have embraced these solutions whenever possible to improve performance and avoid pesticide applications. As a result, new drought and disease-resistant varieties are having a real, positive impact on the environment.

These efforts in both the public and private sectors need to be strengthened and enhanced if we are to continue to increase our production as costs continue to escalate. This requires investment by government in public sector research.

● (1545)

It is also essential to have a regulatory and policy environment that allows private sector research to thrive and new technologies to become available to farmers who need them. All of this work is intended to help me manage the risks in front of me as best I can. However, there's only so much a farmer can do when nature works against all odds. That is why strong business risk management programming is an important tool for managing and adapting to changing climates. Crop insurance with premiums cost-shared by governments and producers is an essential risk management tool for grain growers across Canada.

While BRM programs should only pay out assistance when truly required, it is essential that tools be available and meaningful when risks can no longer be managed by the farmers themselves. However, every farmer has a different financial risk, and risk profiles have been changing over time. Mine is quite different from my business partner's and BRM programming must be improved to help ensure his little boys will have the opportunity to continue his legacy.

The federal, provincial, and territorial governments are currently undertaking a comprehensive review of BRM programming. We have a unique opportunity to take a close look and develop programs that work for the future. Grain growers look forward to working with the government and committee to ensure that the review is meaningful and puts everything on the table. That is the only way we can ensure that BRM programs will be the backstop growers need as they face increasing risks in the future.

Grain farmers have adapted to many challenges and are leading in environmental stewardship. They are in business for the long term, and therefore look at the long-term impacts of their practices. Farmers are increasingly asked to do more with less, and they have become very efficient at using the most modern technologies. We are only now getting a clear picture of just how much carbon is being sequestered in the soil thanks to modern farming practices, and it is much more than was theorized 30 years ago. It is imperative that the positive impacts of this are passed on to farmers when government puts climate change initiatives like carbon prices into place.

There's a lot of public good in what we do. Added costs in the value chain trickle down to farmers, and we cannot pass these on. Grain farmers' contribution to cleaner air, water, and removal of greenhouse gases from the environment, while building healthier soil for the next generation, is part of the legacy we are leaving today. We are proud of that legacy and want to work with government to ensure a strong future for our industry.

Thank you for having me, and I look forward to your questions.

The Chair: Thank you very much, Mr. Wiebe, for your presentation.

Now we shall move into the question rounds.

Mr. Barlow is going to lead us off.

Mr. John Barlow (Foothills, CPC): Thank you very much, Mr. Chair.

First, I want to read a motion I'd like to discuss later on in the week at a future meeting, if I can. I don't want to discuss it now, just in the future.

The notice of motion I've tabled is:

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.

Thank you, Mr. Chair.

My thanks to our witnesses for being here. I apologize for being late, but I had a rancher in my riding who had some issues, and I had to take that call. I appreciate that you have taken the time to be with us today.

I'd like to start with Mr. Wiebe. Thank you for sharing some personal anecdotes with us about what's going on at your farm. Those are always heartfelt, and I think they have a strong impact on us when we hear how these decisions actually affect people on the ground.

I'm curious. With grain growers, we have Health Canada and PMRA reviewing 11 or 12 neonics, including imidacloprid and similar products. These help ensure that our producers are spraying less and that you can grow crops you normally wouldn't have been able to grow. I'm talking about quinoa and pulses you maybe couldn't have grown in other places.

What would be the impact on the amount of time that you're actually in your fields if some of these products were decertified? Have you done any work on that?

Mr. Doyle Wiebe: From what I'm aware of, the pesticides now being reviewed would actually increase if they were decertified or taken off the list of products available to me. I would probably have to spray other things that are more harmful to the environment and use up more of my time, fuel, and effort. It would make my job that much more difficult. Right now there are risk management strategies for dealing with certain insects that affect certain crops. The most common crop that would be affected is canola, which is my go-to crop.

• (1550)

There's a particular insect that is there when the crop comes out of the ground, generally, and if you miss that two-day window of spraying it when it comes up, you're done.

It would be quite costly, not just to me, but to the environment as well.

Mr. John Barlow: I think you hit it right on the head. This allows you to be very specific on where you spray and not just massively spray a whole field. You can be very specific on where you go, and it ensures you're on the soil less often. I appreciate that.

We had a report that came out last year that showed the difference in tillage—and we've heard it a couple of times in this committee—between western and eastern Canada. In some of our western provinces, zero tillage is a normal part of the discussion, whereas in eastern Canada not quite so much, for various reasons. A report also came out about the impact the carbon tax will have on agriculture. When you look at western Canada, for example, where zero tillage is almost a normal part of business—not so much in eastern Canada—do you think issues like that should be brought into consideration when the federal government is implementing a carbon tax?

Should farmers and ranchers be able to perhaps get credits or be exempt from the carbon tax if they are implementing those types of soil conservation methods and practices in their operations?

Mr. Doyle Wiebe: Yes, you've touched on a topic I've been working on for a number of years, and the position that a group of similar-minded organizations, including Grain Growers as the national body, but also a number of provincial groups where I'm from in Saskatchewan....

Just to put it in perspective, it's not an east-west thing. Yes, there are different climates—somewhere between Thunder Bay and Winnipeg it changes or something. It's also the fact that western Canada is home to somewhere around 75% of the grain production acres in Canada, so it's a much more dominant part of our landscape, literally. We are one of the few places in the world where our climate is such that we can sequester carbon.

I'm not trying to get into a debate so much about how a carbon tax might impact us on the cost side. We just know it's likely going to filter down into some costs. Regardless of that, there should be recognition of the great good we're doing with that sequestration. It's not trivial. It's millions of tonnes, every year, not just once in time. The minimum tillage practices are the primary driver of that, but also other things too.

The fact is we are doing those things, and yes, we're benefiting from them to some extent anyway, but these practices were brought in at a time when carbon credits were talked about, 25 years ago. This file has been around that long in some of the circles I've been working in. We are very cognizant of the different politics around it, but we are really pushing for some recognition that sequestration is a public good as well, and that we're trying to be part of the solution, and not just be penalized with an extra cost that we can't pass on.

Mr. John Barlow: I don't think we're arguing climate change or not, I just think we've seen the reports that a carbon tax is much more punitive on rural Canadians, especially the agriculture sector. We want to try to find a way for that to be taken into consideration when these types of programs are rolled out.

I appreciate that answer.

We heard from the University of Saskatchewan's crop development program on the difficulty in getting new seed and plant varieties approved and certified. Is that an issue as well when we talk about soil conservation and you talk about innovation, to try to streamline that process so you're able to access some of these things?

The Chair: A very quick answer.

Mr. Doyle Wiebe: I'm not a seed grower, but I'm going to a meeting tomorrow of an organization called Seed Synergy, which is doing cross-Canada meetings with farm groups to see what is the best way to move forward to help drive that agenda, that issue, and to get the private sector more involved to see how better varieties can be developed for us.

The Chair: Thank you, Mr. Wiebe.

Mr. Longfield, for six minutes.

Mr. Lloyd Longfield (Guelph, Lib.): Thank you, Mr. Chair, and thanks for both presentations.

It really helps when we can get close to the ground, so to speak, on soil management. Also, not to argue through you to the other side, but it shows the reason that carbon pricing programs need to be locally developed and provincially controlled. We put federal

guidelines in place, and then it's up to provincial governments to work out the mix within their communities.

You've been working on it for quite a long time.

In terms of the progress on sequestration, on managing the carbon cycle, how far along are you on the carbon cycle? Do you feel it's maturely managed? Or is there more research needed to be done to manage the carbon cycle in the soil, increase carbon in the soil, and reduce carbon?

• (1555)

Mr. Doyle Wiebe: All the results to date, particularly of soil measurements of organic matter over the last 20 years, have indicated a whole different curve, if you will, from the original century model, as it was called. We know the practices are good. It's a matter now of proving it to the world. It starts here in Canada, and then we'll try to prove it to the world as well.

Another meeting I'm supposed to go to tomorrow is to discuss the proposal. It has been mostly in Saskatchewan for the last 20 years. We'd like to broaden that to the prairies to have a better handle on the different climatic factors and different management systems, including the livestock sector in their pasture and hay land management.

The foresight was given by an Agriculture Canada researcher based out of Swift Current, Saskatchewan over 20 years ago. He has been involved since the Kyoto days. He theorized it with his colleagues around the country. He has been the lead on this because he's close to the ground, literally, in Saskatchewan. He's going to be publishing his results finally in a journal. It had never gone that far, but it has been publicized otherwise. It's very encouraging that we are doing more good than any scientist otherwise had thought we even could in adding carbon organic matter back to the soil.

Mr. Lloyd Longfield: So we have some longitudinal studies, and are they complete? Did we miss any piece when we lost our census, as an example? Is the scientific data pretty intact?

Mr. Doyle Wiebe: I can't comment on exactly how rigorous the census part of it is. It does ask that one question about our tillage practices, but I wouldn't consider that all that rigorous.

The science behind measuring, seeing how, and interviewing the farmer has been on the same site for those 20 years. They go back to the same spot in those fields to measure it. There is a spot the farmer doesn't even know about, a little piece of metal a foot in the ground they can find, and they go back there repeatedly every five years. The next one coming up will be this coming fall, I think.

Mr. Lloyd Longfield: What organization is looking at that? You have a meeting coming up tomorrow. Is that something we can include in our study as background to make sure we don't miss that?

Mr. Doyle Wiebe: The Saskatchewan Soil Conservation Association has been the coordinating body of that for many years. There are supporting organizations like SaskCanola, Sask pulse, Sask Wheat, and those other commissions that are supporting the whole nature of that work because of the impact we know carbon pricing may have on farmers and so on to ensure this data is well recognized scientifically and worldwide.

Mr. Lloyd Longfield: Data's going to be very important going forward.

I'm thinking also with your neighbour, Mr. Graham, looking at precision agriculture, and the data that's being captured around mapping the soils across western Canada.... Which organization is working on that, and how can we make sure we include that in our report?

Mr. Clyde Graham: I'm not familiar with who would be leading in terms of soil mapping, but provincial agriculture departments would be engaged, and a lot of the agronomic service companies would be doing mapping of soils.

Mr. Lloyd Longfield: Is it supported by Fertilizer Canada? Is it something that Fertilizer Canada uses?

Mr. Clyde Graham: Our emphasis has been on the practices that farmers are using to apply fertilizer to improve those. That has been our focus.

Mr. Lloyd Longfield: Maybe we could have a comment from the fertilizer standpoint of saving on water use. In some circles in civil society, all fertilizers are bad. They are chemicals. Could you speak to the value of fertilizers in mitigating climate change and helping reduce water usage?

Mr. Clyde Graham: The reality is that in 2050 we're going to have 9.6 billion people on the planet, according to the estimates. There is very limited arable land available. We can't make more farmland than what we have.

Countries like Canada are going to have to play a critical role in producing the food that's going to be required for those people to have healthy diets, and we can't do that without fertilizer. We also recognize that, in improving the yields and the production in places like Canada, we're going to have to use fertilizer more wisely, and that's where the 4R program comes in.

Our scientific research has shown that, by using the right source of fertilizer, applying it at the rate that the crop needs, putting it in the soil—in western Canada it's often underneath the soil—and also making sure the timing is right, you can reduce the losses of nitrous oxide, which is one of the emissions from fertilizer, by about 25%.

● (1600)

Mr. Lloyd Longfield: And maintain soil health.

Mr. Clyde Graham: Yes, you can maintain soil health and, in fact, improve the economics for the grower at the same time.

The Chair: Thank you.

Now it's Mr. MacGregor for six minutes.

Mr. Alistair MacGregor (Cowichan—Malahat—Langford, NDP): Mr. Graham, I'll start with you. When you look at the context that this study is operating under and the fact that we ultimately want to make recommendations on how we can increase soil and water conservation and address climate change, it seems that our use of fertilizers is an obvious place to start.

If you look at the history of agriculture over the last few decades, you see we've definitely learned from previous bad examples. The fact remains that, when we manufacture fertilizers, we burn fossil fuels. When we transport them to the farms, we burn fossil fuels. Farmers have to burn fossil fuels to apply them to the fields. We've also had the creation of dead zones in the ocean from runoff.

There is a rising movement in the world looking at the overall system of soil health, the complex interaction among microbes, fungi, and carbon sequestration—how they all work together. Given that you represent an industry association, could you live with the fact that we may eventually have to recommend a decrease in use of fertilizers?

I appreciate what you're trying to do already, but there are a lot of voices out there recommending that we get off synthetic fertilizer, or at least significantly reduce our dependence upon it. What would you say to that?

Mr. Clyde Graham: The reality is that 100 years ago we didn't use fertilizer and we were running out of food. We also mined the soils in western Canada in the 1930s. We had terrible soil loss, partly due to drought but also to the fact that the soils were completely depleted. We grew crops year after year, and there was nothing going back in. We took the crops out, but we didn't put anything back in.

The way the world works, you can't do something with nothing. Yes, our products have a carbon footprint, which we're trying to reduce. Yes, there is a cost to growing food. However, we also have an imperative to grow that food for people, for economic development in Canada, and to feed people around the world.

There isn't enough manure and there aren't enough other sources of non-fertilizer nutrients to feed the population that we have now, and there is certainly not enough of those materials to feed the 9.6 billion that we expect to have. We're probably going to have to make some choices about where we spend carbon. I would say that feeding people is probably a better choice than some other choices in society about where we use carbon. I don't think there's any future that we can foresee where simply reducing fertilizer use is going to have a good outcome for humanity.

Mr. Alistair MacGregor: I did see that quote that you had in your study, that the population by the year 2050 is going to increase to so many billions of people and we're going to need to increase food production by 70%. However, current studies show that 30% to 40% of our current food production is lost as a result of wastage in industrialized countries. There are some studies that say that the food scarcity problem in a lot of countries exists because of poverty levels, not really their ability to grow food. There's a real imbalance.

We in the west are lucky to have advanced agriculture techniques. Our farmers, generally and comparatively, are well off. But there have been studies conducted by the United States Department of Agriculture where the yields that have come about from fertilizer use have been so massive that farmers have actually had to sell their crop at a loss. That kind of makes you scratch your head as to whether the system's really working.

Do you have any comments on that?

Mr. Clyde Graham: Sure. If you look at Mr. Wiebe and the prosperity that I think his family farm has—and farms have across Canada—you'll see that a big part of that prosperity comes from fertilizer use.

I think we tend to think a lot about these problems in terms of food supply and scarcity, but in a place like Africa where they're getting yields that are a fraction of what we can grow in western Canada, with the same amount of rainfall in many areas, we're simply not utilizing the farms in those areas the way we should. A big part of the problem is that they're not using fertilizer.

If places like Africa are going to develop economically, the smallholder farmers who have farms of an acre or two acres are going to have to have the means of production to grow a surplus so that they can have a decent income, they can send their kids to school, they can have health care, and they can contribute to their society. Prosperous societies around the world have prosperous agriculture. The two things go hand in hand. Pesticides and seeds are important, but fertilizer is the critical element in allowing that kind of prosperity to develop.

• (1605)

Mr. Alistair MacGregor: Mr. Wiebe, you've already touched on soil. In your opening statement, you talked about the cycles of drought and too much rainfall that you've gone through. Are there any examples of soil conservation that you can see where soil practices are alleviating that problem, where the soil can actually deal with too much rainfall and withstand a drought? What are the best practices that you think the federal government can really concentrate its research on?

The Chair: Very quickly.

Mr. Doyle Wiebe: It's far too difficult a question to ask me that quickly. We know the impacts are generally positive of the soil management packages that we've been employing for 20 years. Last year was a good example where we had reasonable reserve winters but also because our soils were that much healthier, we were able to deal with the fact that we got very little rain last year.

Now we're dealing with no reserves, but that's another question.

The Chair: Thank you.

Mr. Peschisolido, for six minutes.

Mr. Joe Peschisolido (Steveston—Richmond East, Lib.): Mr. Graham and Mr. Wiebe, thank you for your presentations.

I'll begin with Mr. Graham.

You put aside the issue of funding and you talked about the importance of government integrating the 4Rs in the whole approach. Can you elaborate a little on that?

Mr. Clyde Graham: In provinces like Prince Edward Island, Ontario, Manitoba, and Saskatchewan, we've set up working groups with provincial environment and agriculture departments and farm groups to work on how we change the practices to implement the 4Rs in those areas. While the federal government has been very generous in terms of providing funding for research, they haven't really integrated the 4Rs into the way they talk about these issues in the department itself, unlike provinces like Saskatchewan, Manitoba, Alberta, Ontario, Prince Edward Island where they're really more engaged in extension.

We think that the 4Rs has to be part of an international approach. It's being used in the United States and in parts of Europe. We'd like it to benefit farmers around the world. It's not a proprietary program. We essentially do the science and give it away, and we're engaged in extension efforts around the world.

We just think the federal agriculture department could get behind the program more. It's voluntary and we could see more recognition by the federal government for it.

Mr. Joe Peschisolido: Mr. Graham, I don't remember exactly whether you discussed all these elements that you have in your sustainability report. I was intrigued about certain things that you're doing with the private sector and how government can help. For example, you have 4R demonstration farms, you have 4R designation programs. Can you elaborate a little bit more on that?

Mr. Clyde Graham: The demonstration farms are where we provide a very small incentive, about \$1,000, a very small amount of money for the size of some of the farms we're dealing with, for them to take a field or part of a field and implement 4R practices to see how it works at the farm scale. It's very important not just to see the evidence that the 4Rs works, but it's also to have a place where other growers in the area can come by and see what's going on. We have field days where farmers can go out. This is traditional extension that's gone on for decades and decades where farmers learn about these kinds of practices.

Mr. Joe Peschisolido: You have also the 4R designation program.

Mr. Clyde Graham: Right, and that's where we're asking growers to work with a professional, a certified crop adviser—they're generally the kind of people who are making fertilizer and other recommendations to growers—to develop 4R plans that are specific to the farm, and then verify that the farmer is following the plan, learning and going through a process of incremental improvement. That's where we'd like to get to 20 million acres by 2020, which would be 20% of the crop production land in Canada.

• (1610)

Mr. Joe Peschisolido: Mr. Graham, in my area of Steveston—Richmond East, there are a lot of organic farmers and particularly in Steveston. They would argue that you really don't need artificial fertilizer, that the whole system is organic and that if you do things properly, you can not only feed the local community but you will get a surplus and then be able to feed others. Can you deal with that statement?

Mr. Clyde Graham: There is nothing wrong with organic agriculture. We need to use manure, and in some cases we may have to start using sewage by-products in order to help grow the food we need, but the reality is those products are usually in the wrong place. They're not really near the major crop-producing areas. Their livestock tends to be aside from the major crop areas. It's very expensive to move very low-nutrient-content products long distances, and the scale of agriculture that goes on in places like western Canada, Brazil, and Russia just doesn't lend itself to that kind of small-scale solution.

There is nothing wrong with using manure or compost to grow crops. The problem is you can't feed 9.6 billion people doing it, and that is the big problem. If you have a farm where you have a few goats and a few chickens, all the manure stays there, you feed yourself, and you don't send any food away, then you can have a sustainable agricultural system. But if you have to take that grain and ship it around the world, you have to find a way to replace all the nutrients that leave the country to feed people elsewhere.

Mr. Joe Peschisolido: Mr. Wiebe, you talked about weather being the greatest risk. In life and in farming, we obviously cannot eliminate risk, but we can manage it.

I want to follow up a bit on Mr. MacGregor's point about management practices and perhaps give you an opportunity to deal with the question that he asked with a bit more time.

Mr. Doyle Wiebe: I've thought about it a little. To help me manage my weather risk, I subscribe to a weather service from Kansas. You may ask why I would want to subscribe to a weather service that's based in Kansas. It has value. It made me money over several years by following a much more detailed recommendation forecast.

You can't change the weather, but you can interpret things differently. Why I have to go to Kansas for that is a question I'll leave with you.

The Chair: Thank you Mr. Wiebe and Mr. Peschisolido.

[Translation]

Ms. Nassif, you have six minutes.

Mrs. Eva Nassif (Vimy, Lib.): Thank you, Mr. Chair.

Mr. Graham, earlier, in your presentation, you talked about the use of 4R nutrients.

Can you tell us more about the use of 4R nutrients and whether this practice is universal? Can you please explain how 4R fertilizers are used?

Mr. Clyde Graham: Thank you for your question.

In French, we call them “4B”.

Mrs. Eva Nassif: Okay, thank you.

[English]

Mr. Clyde Graham: The basic concept is that there are four things you have to get right if you're going to use fertilizer well. First, you have to pick the right source of fertilizer, and that may be manure if it's available, or you have to make a decision whether you're going to use ammonia, or ammonium nitrate, or ammonium sulphate for your nitrogen source, and the kind of sulphur you need, etc.

You have to decide what nutrients are in the soil, and how much of the nutrients the crop will use. You have to determine the absolute amount of fertilizer that you need to apply to provide a good diet for the plants and crops that you're growing. Then you have to put the fertilizer in the right place. Often, that means putting it under the soil, so it's not exposed to the elements, and is in proximity to the seed where the roots can use the fertilizer efficiently, and there's less chance of it being lost to the environment.

Finally, it's the timing. For example, it used to be a practice, and it still is in some places, to apply manure in the winter, or fertilizer in the winter. You run a great risk if you're applying nutrients on frozen soil that in the spring it will simply run off. In other areas, timing may relate to when you have heavy rains, and you don't want to be applying your fertilizer right before heavy rains, as again that's a loss. Some farmers split-apply their fertilizer. They put on a certain amount in the spring, but then they go in the middle of the year when the plant is growing vigorously and needs a boost, and give it additional fertilizer.

It's looking at all those things together, those four areas—the source, rate, time, and place—that give you a better chance at getting your fertilizer to be more efficient in the crops you're growing.

A big part of the program is also to not just look at the economics of your farm, but also to look at the environmental issues where you are. In Prince Edward Island, the issue is that nitrates have been getting into the groundwater from a number of different sources, so a lot of the focus there, and using the 4Rs, is to reduce losses of nitrates to the aquifer system.

In western Canada, a lot of the focus has been on greenhouse gas, nitrous oxide being lost to the air because of the different growing conditions. In the Great Lakes region, people are very worried about phosphorus getting into Lake Erie, so a lot of the effort is on using the 4Rs to reduce phosphorus losses.

Finally, then, society itself has issues like being able to grow sufficient food for the population, but also more local things like reducing conflict between farmers and city people. If we, as a group in agriculture, are able to demonstrate we're being responsible in our fertilizer use, perhaps we'll have a better relationship with people who live in towns and cities.

It's those three areas of sustainability—economic, environmental, and social—that are embedded in the whole planning process. It's really about making wiser decisions when you're using fertilizer, manure, or other sources of nutrients.

● (1615)

[Translation]

Mrs. Eva Nassif: Thank you very much for that explanation. Now I understand what is involved.

My next question is for both of you.

As we know, everything about the use of pesticides and certain fertilizers is stigmatized owing to the perceived association with food quality, water contamination from runoff and overuse, soil degradation, and so forth.

I would like each of you to comment on this. We know these problems will not disappear.

That said, what approach should we take to maintain the quality of products for Canadians and for export and to ensure that environmental standards are upheld?

[English]

Mr. Doyle Wiebe: I'll use the example that was brought up earlier, neonicotinoids being examined by PMRA. It was examined a few years ago by the Ontario government, particularly because of certain things to do with bees. Now it's to do with aquatic insects being threatened, because they found a couple of spots. When I say a couple of spots, we're talking about millions of square miles in Canada.

We weren't testing for it very much. In the last year, as an industry we ramped up, made sure, because we didn't want that very useful pesticide threatened. We were quite sure and we all believe, as farmers, we are using the products that are available to us in a safe manner and in a way to produce safe food.

The Chair: We're out of time. Thank you. Perhaps you'll have a chance with another question.

Mr. Dreeshen, for six minutes.

Mr. Earl Dreeshen (Red Deer—Mountain View, CPC): Thank you very much, Mr. Chair.

It's great to have an opportunity to talk to farmers about the weather. As someone who has about 50 years of farming the same land, I know exactly the kinds of issues and concerns you're dealing

with. I don't necessarily want to go through my life experiences, as I'll have opportunities later to tell my colleagues about that.

Certainly, if you cherish the environment, you support a farmer, because it's their life. Everything they do is so important to make sure that their land is ready for the next year. The pesticides that are being used are there for a reason. The work that has been done over the last 15 to 20 years to reduce the number and the amount of pesticides and to be able to select.... Even for sprayers nowadays you can go through and you're not spraying the whole field. You're just going after the weeds. Those are the kinds of things we have.

Mr. Graham, on the fertilizer side of it as well, we have the different types of placements and the different levels for various crops. All of this comes because of the technology that's associated with it. If you're going to pay \$250,000 for a seed drill that's going to do that, then that's part of it, and it's also part of the reason.

Farmers are doing that, and there's a great risk they are taking in order to make sure they can look after their land and have the ability to take their product—the best in the world—and sell it around the world as well. These are the kinds of critical things that I believe we have to look at.

One of the things that I have here is on the business risk management programs and the discussion about where that may go in the future. Could I get some specific information on AgriStability and the late participation approach they have suggested?

A late participation mechanism has been added that provincial and territorial governments can trigger to allow producers to enter the program late in situations where there is a significant income decline and a gap in participation.

The mechanism will only be triggered in response to significant events and benefits will be reduced by 20% for producers who enrol late, to encourage regular annual enrollment by producers.

There are a lot of people who aren't involved in any of those kinds of programs. They manage their risk in so many different ways. They have cattle or whatever and have different ways of managing risk. My concern, of course, is that you're going to pay for that difference somewhere along the line. I've also read in documents that there are going to be extra associated costs, so that is going to come from somewhere. I'm just curious as to whether you've had opportunities to talk to the government about some of the effects that there could well be because of these new approaches they are planning to take on the business risk management programs.

I believe, Mr. Wiebe, that you probably have been somewhat engaged in that.

● (1620)

Mr. Doyle Wiebe: Yes, I have. I'm engaged to the point that I know what is being planned or being worked on. I'm not at the front lines of it. There's a whole new committee that's just been formed and just became active, and it's reviewing all of the BRM programming. It's rolling out April 1, but they're reviewing it now as well, to look at what might be changing down the road.

One new aspect is that they've allowed each province to decide if they're going to also provide that somewhat costly new option. Our province has chosen not to. I think most farmers would see it a bit like buying insurance after the house burns down. Also, how do you make that available? It will actually drop enrollments, likely, because now I have an option to go into it when I feel like it, instead of paying the money up front every year.

Mr. Earl Dreeshen: The way I look at it is that it's like buying insurance as the house is burning down. Yes, you take a 20% cut, but.... I know it isn't exactly that way, but take a look at the process there. Your neighbour, who's been engaged and involved with this all the time.... AgriStability has its own nuances anyway. It's a case of being able to just jump in.

The costs I've seen in some of the other articles that are associated with it.... They're going to add some costs here and so on. It has to be paid for somewhere.

I appreciate getting the information on that. The farmers have always had to do a census, and they continue to do that. We continue to get phone calls constantly about what we've grown or the fertilizer that we use. That continues as it always has. I just want to make sure that everyone recognizes that part of it.

Mr. Graham, the discussions that you have with regard to the four Rs in the recommendations.... Again, farmers have been doing these kinds of things because it's important. It's like getting the information you need from Kansas on the weather. You're going to do what is needed in order to make sure that there is some margin of profit for you to be able to function. These are the sorts of things we're looking at.

The concept of the government making decisions on financial incentives means you have to build a bureaucracy in order to deal with that type of thing, whereas most farmers would say to just get out of their way and let them do what they need to do because they understand their circumstances.

What kinds of issues do you see as far as potential incentives?

•(1625)

The Chair: We're out of time.

I want to thank the panel. Unfortunately, this is all the time we have in this first hour of our panel discussion. I really want to thank Mr. Graham from Fertilizer Canada, and Mr. Wiebe and Mr. McCann from Grain Growers of Canada for being here with us today. It's been very informative, and it will certainly help us with our report.

We shall break to change the panel and then be right back.

•(1625)

_____ (Pause) _____

•(1630)

[*Translation*]

The Chair: Once again, welcome to everyone.

We will begin the second hour of our meeting.

We now welcome by video conference Mr. Louis Gauthier, general manager of Les Fraises de l'Île d'Orléans inc.

Thank you for being with us today, Mr. Gauthier.

We also welcome Mr. Marc Laflèche, chairman of the board of directors and agricultural producer, from the Union des cultivateurs franco-ontariens, as well as Ms. Emilia Craiovan.

Thank you for being here today.

Would you like to begin, Mr. Gauthier?

Mr. Louis Gauthier (General Manager, Les Fraises de l'Île d'Orléans inc.): Yes, I will begin.

The Chair: Thank you. You have seven minutes for your presentation.

Mr. Louis Gauthier: With regard to climate change, we are seeing some positive signs in our region. The changes can be quite positive at certain times of the year and negative at other times. That is not the case in other regions of the province, in Montreal in particular. Eastern Quebec is known for its cool and rather damp climate in the summer. We notice that, when we plant our crops at the end of April or early May, climate change does not really have a significant effect on us at this time.

We are seeing more dramatic changes in September and October, however, with temperatures that are much higher than in the past. This delays the deadly frosts, which is good for us. In the past few years, this has meant a longer production period in the fall. In the past five years, for instance, we have been able to produce strawberries outdoors right up to October 20 or 25, whereas in the past it was hard to get to October 10 and we often had to intervene to protect the plants from the fall frosts. Using large tunnels, we can now easily produce raspberries up to the beginning of November.

Although the production season is getting longer every year, we are increasingly noticing something else. Extended periods of insufficient precipitation will likely force horticultural growers in our region to keep larger reserves of water for irrigation to respond to severe drought. In 2017, for instance, on Île d'Orléans we went more than 60 days without precipitation, and close to 50 days in 2016. The Montreal region has experienced the complete opposite, with very heavy rains throughout the summer. Further, there were numerous disasters in late summer in the Saint-Rémi region, where more than 200 mm of rain fell in less than an hour, destroying all existing crops.

In our region, the yields for crops such as potatoes were significantly lower last year since we do not have sufficient irrigation infrastructure to deal with such situations. In the very near future, we think the federal government should invest in irrigation infrastructure for horticultural production in Eastern Canada to prevent disasters caused by extended drought.

For southern Quebec, it is becoming clear that investment is needed in drainage and run-off infrastructure to drain the land quickly in the event of unusual episodes like the ones we saw in late summer 2017. That would save existing crops.

For my part, I have more than 33 years of experience growing small fruits on Île d'Orléans. In the beginning, strawberries were produced over a three-week period each year, from June 24 to July 15. With the advent of new production methods and everbearing varieties, we can now produce strawberries from the start of May until October 25, for five months of production. For raspberries, production used to run from July 20 to August 20. Now it starts every year on July 7 with the first raspberries and extends right to October 31.

And what about blackberries? Since the climate is too cold in our region, in Eastern Canada, that is, no one would have expected us to be able to produce so much.

• (1635)

Adapted production techniques, production infrastructure, and the overwintering methods for these plants make a difference, but a warmer climate increases their production.

As to the effects of climate change on soil preservation, that does not seem to be a big concern for our region for the time being. However, the extreme events that are happening more and more frequently, such as in the south of Montreal, result in a much more marked erosion cycle and degrade the soil more quickly.

We must remain vigilant about climate change. Although the effects are more positive than negative in certain regions such as ours, the opposite is true in others. Is this entirely the result of climate change? I cannot answer that question. There are extreme trends, however, such as droughts and rain storms, that are a cause for concern.

Thank you for your attention.

The Chair: Thank you, Mr. Gauthier.

Mr. Laflèche now has the floor for seven minutes.

Mr. Marc Laflèche (Chairman of the Board of Directors and Agricultural Producer, Union des cultivateurs franco-ontariens): Thank you.

I had a little map distributed to you that shows the United Counties of Prescott and Russell as well as Glengarry and the region a bit further west. Do you see the yellow line? That is the South Nation River. You will notice that the South Nation flows from south to north and empties into the Ottawa River.

I would like to tell you a bit about the history of drainage in my region.

When the land was first cleared, it was hard for people to work the land or plant grain. It was good clay soil, but it was so flat that it was hard to drain it. There was the Nation River, the streams that flow toward it, as well as the gullies, as we say in my region. Farmers then started digging ditches to drain their fields. They made channels. That kind of flat land was perfect for growing hay and the land stayed moist in the summer. The problem was that people could not go into the fields too early to plant corn or soy and, as soon as it got rainy in the fall, they could not harvest the corn in the fields.

In the 1970s, systematic drainage was introduced in our region. Municipal drains were built to drain the lands and let the water run

off as it should. The drainage was marvellous. Farmers had drains every 50 to 60 feet.

Nowadays, some farmers have started installing drains every 25 feet so they can get into the fields earlier in the spring. If it is rainy in the fall, they can get into the fields sooner.

The problem we have had in the past few years, however, is the drought in July.

I will let my colleague talk about the new control system to keep water in the fields.

• (1640)

[English]

Ms. Emilia Craiovan (Representative, Union des cultivateurs franco-ontariens): Good afternoon, members of the committee.

I will briefly present on controlled tile drainage and research conducted by Agriculture Canada with producers such as Mr. Laflèche and the South Nation watershed. I completed my master's degree on this in 2009 at the University of Ottawa.

Despite climate change projections, producers must manage water on their farms efficiently and effectively. We want to provide farmers with the means to manage water in their fields in the context of maximizing crop production.

In Ontario, about 1.6 million hectares of agricultural land are tile trained. But tile drainage often drains water from fields during periods when producers want to conserve that water for crop use.

There are times to control water losses and times when we want to let it go. To do so, control structures can be installed at the tile outlets to manage water flow, making water available for plant use. Excess water from the field can still be drained by overflow in the structure.

I passed around a few papers. If we take a look at the first slide on the second page, we see the control structures. What we have noticed is that by installing these structures on the outlet tile, we reduced the tile flow by 60% and increased water storage in the field by 15%. By doing so, crops benefit from water and nutrients conservation. Yields increased from 10% to 30% in the short term, and in the long term from 3% to 8%. This practice also provides benefits to the environment, as nutrient runoff is reduced by about 60% and bacteria by 75%.

Studies on satellite imagery indicate as well that crop growth benefits from controlled tile drainage increase when seasonal precipitation is low.

Given all the economic and environmental benefits, why is controlled tile drainage not practised as it could be?

Well, we asked the question to the producers who have been participating in this practice. They are happy with the agronomic benefits derived from water retention and reducing nutrient loss, and they are also proud to reduce the impact on the environment. But deterrents to the practice include increased farm labour, increased cost to farming operations, and the lack of support.

At the beginning of our project in 2005, only one producer was interested in participating in this research. Today hundreds of hectares in the South Nation River basin are now under control tile drainage, managed largely as a result of our research. Thank you to the producers who agreed to participate.

Thank you.

The Chair: Thank you very much for your presentation.

Now we'll go to the question part of our panel.

[*Translation*]

Mr. Berthold, you have six minutes.

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

Many thanks to the three of you for appearing before the committee today. It is not every day that we get to hear from growers from our part of the country. I am sure Mr. Drouin will have some good questions for Mr. Laflèche.

Mr. Gauthier, greetings to you from my colleague who was a member of this committee...

• (1645)

Mr. Louis Gauthier: Do you mean Ms. Sylvie Boucher?

Mr. Luc Berthold: Precisely.

She was the one who invited you. She really wanted us to hear what you had to say. She was so happy to meet you and still says that the strawberries from Île d'Orléans are the best in the world.

Mr. Louis Gauthier: That is quite true.

Mr. Luc Berthold: Is it because of climate conditions that the seasons are longer?

Mr. Louis Gauthier: Île d'Orléans has a microclimate. Since we are surrounded by water, the weather is always temperate, which is good for a plant like strawberries, which prefer a cool climate.

Mr. Luc Berthold: You said that, for the many years that you have been growing strawberries on Île d'Orléans, the season has increased from a few weeks to nearly five months. Have you had to change your methods as regards the soil?

You said there are not a lot of problems with the soil, but I would imagine that the more demands you place on the soil, the more you have to look after it. What steps have you had to take to extend the season?

Mr. Louis Gauthier: We use production infrastructures such as large tunnels that allow us to outsmart nature in a way in the spring and get an early start on the season.

A large tunnel gives us an extra 45 days of production per year. That means we can start much earlier. Preparing the plants is another important factor: we prepare the strawberry plants the previous year

and grow them without soil. In our region, we grow strawberries, raspberries and blackberries without soil 80% of the time. For strawberries, we recover all the run-off and irrigation water. That means that all excess nutrient solutions are recovered and constantly fed back into the system. This saves water for crops. Our control of irrigated water and fertilizers is even better. We control nearly all the elements.

Mr. Luc Berthold: When it comes to global warming, we often hear about the positive side from producers such as yourself. I have heard others say that a longer season is a positive thing. However, insects become a factor.

Is that the case on Île d'Orléans? Since the season is longer, do you need to use more pesticides?

Mr. Louis Gauthier: Certain insects are adapting to the climate in eastern Canada. I will give you the very specific example of the spotted wing drosophila, the famous fruit fly. In our region, we see outbreaks of two to three weeks. Massive trapping allows us to control this insect very well without applying pesticides. However, certain Quebec regions are much more affected, and certain crops more so, because they are even more attractive to them. Blueberries, for instance, are very attractive to this insect. There is less pressure on strawberry crops, but there is a bit more on raspberries. As for blackberries, we manage to have very good control.

Mr. Luc Berthold: I would like to talk about the need for governments to invest in infrastructure to manage surpluses or shortfalls.

Could you tell us more about those needs? Could the industry adapt? Why should the government contribute to modernizing infrastructure?

Mr. Louis Gauthier: Some very extensive work is needed in the black earth area south of Montreal. I do not think that the industry can pay for all that right now. However, over the past two years, we have noticed that when there is abundant rain, the water on the surface of the crops does not dissipate quickly. This could save certain crops like onions and all of the root vegetables, which literally rotted in the ground.

It's harder with some crops, like lettuce, because these rain events are too long, and destroy them. However, for other crops the fact that surface waters dissipate quickly could have saved a large part of the production.

Mr. Luc Berthold: My next comments are for Mr. Laflèche.

The work you did with Ms. Craiovan aimed to control precisely that. At a certain point you had to invest to remove the water, and now you are working to try to conserve it.

Do you think the need for massive investments in your region and all of Canada is due to these climate changes?

•(1650)

Mr. Marc Laflèche: I did not have to invest in my project. South Nation Conservation was looking for participants in my area and asked us to take part in a pilot project. We had some doubts about the project in the beginning.

Mr. Luc Berthold: What was the scope of the project? How much did they invest in your project?

Ms. Emilia Craiovan: I don't know the exact amount. However, I can tell you that the amount required to drain a 10-acre field is approximately \$1,000.

The Chair: Thank you, Mr. Berthold.

Mr. Drouin, you have six minutes.

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

I thank the witnesses for being here. I wish to thank Mr. Laflèche, particularly for having showcased our beautiful region.

I think your work is important. I know that in our riding, you have partnerships with South Nation Conservation and that several projects have been carried out in our region.

Mr. Laflèche and Ms. Craiovan, you said earlier that you had had trouble finding participants. Could you tell me why?

In fact, Mr. Laflèche said that he had some reservations about the project.

Mr. Marc Laflèche: We already had enough work to do on the farm, and they arrived with their machinery, cut our pipes and installed a big box. We had doubts about the effectiveness of this project. Our impression was that it meant a lot of work. We had just installed some drains and we wondered if they were going to cut them and if we were going to have to repair them if things did not work out. We had some doubts.

So they started in one of my fields, and later we asked them to do all of the land.

Mr. Francis Drouin: Someone said that productivity in the short term increased by 10% to 30%, and by 38% in the long term. Did I understand that correctly?

Ms. Emilia Craiovan: Yes, exactly.

The structures are not the only thing that matter, it also depends on precipitation. If it does not rain, there won't be any water to retain. It works well some years, and not so well other years. That is why we said that the yield improvement ranged from 3% to 8%.

Mr. Francis Drouin: Could you tell the committee exactly how this device works?

Ms. Emilia Craiovan: There are several sizes. The box can drain a larger field, or a larger area.

To understand better, I invite you to look at the second slide.

We install a structure at the end of the drain pipe and we put in traps. We can drop it in as far as the roots, that is to say to 30 or 60 cm into the ground. This allows the water to stay in the pipes rather than flow freely and disperse into the ground.

Mr. Marc Laflèche: So this controls subsurface water, or the water table.

Mr. Francis Drouin: Fine.

I'd like to talk about the obstacles that prevent many farmers from adopting this technology. Mr. Laflèche spoke of these obstacles and wondered whether the simple fact of putting in a box could work. There is an education process, of course.

The federal government focuses a great deal on the environment in the Agricultural Policy Framework. Should such a practice be adopted or made accessible through these programs?

Ms. Emilia Craiovan: If you are asking for my advice, I would say yes, especially since climate change leads to a variation in water levels. We have had good results. Unless I am mistaken, producers like Mr. Laflèche are very happy with the results.

Mr. Marc Laflèche: That's right. You can't argue with the results.

There are six or seven traps in one of my fields, a 70-acre field. To obtain the best possible results, they close and open the traps. In the fall when we use the combine, a GPS can calculate the harvest all over the field. Thanks to the GPS, they can see the results in the fields; the results where the traps were open, and where they were closed.

I can't say how many tons I took out of my field, but they can see the results in one location where the trap was closed, and can tell whether the control was beneficial or not.

•(1655)

Mr. Francis Drouin: Ms. Craiovan, I wonder if you are aware of a South Nation Conservation project that deals with precisely this sort of thing. That organization wants to connect with satellites to predict the weather or the climate, and thus know whether fields need to be watered.

Are you aware of that?

Ms. Emilia Craiovan: Not really. Someone who works on that project spoke to me about it a bit two days ago, but I can't give you any details.

Mr. Marc Laflèche: The system's only disadvantage is that the traps have to be removed manually, but they may invent machines or boxes one day that will control that automatically.

Mr. Francis Drouin: Mr. Laflèche, through your organization, do you think it's possible to promote and spread the use of those new techniques?

Mr. Marc Laflèche: For the 12 years the project has been in place in our region, a number of articles have appeared in journals and magazines throughout Ontario.

How many projects are there in Canada?

Ms. Emilia Craiovan: I'm not sure.

Mr. Marc Laflèche: I know regions in Quebec and western Canada have tried the technique.

The Chair: Thank you, Mr. Laflèche.

Thank you, Mr. Drouin.

[English]

Now we'll have Mr. MacGregor for six minutes.

Mr. Alistair MacGregor: Monsieur Gauthier, you mentioned in your opening comments that one area where you think the federal government could get involved is that investment in irrigation infrastructure.

I know from my own small example on my small farming property, I've had tremendous success with significant investment in drip irrigation that is controlled by computers. I no longer have to go out and hand water. I notice that my water use is significantly less.

I was wondering if you could expand a little more. I might have missed it in your opening comments. Specifically, what types of investments would you like to see, and are there specific types of irrigation infrastructure you think would be beneficial in the overall goal of water conservation?

[Translation]

Mr. Louis Gauthier: In our region, in particular, capturing water is especially difficult because we are on an island. Our infrastructure consists of water reservoirs supplied mainly by runoff. We collect the water.

A lot of the irrigation infrastructure in our region is moving towards automation, for instance, controlled by tensiometer. It's similar to the drainage principle Ms. Craiovan explained, further to the research in Ontario. If it's too difficult for a plant to draw water because of soil tension, it becomes dry, so it's important to provide the plant with a certain range of soil tension through irrigation. The soil has to be irrigated just enough for the plant to function properly, but not too much. Excessive irrigation of a raspberry plant, for example, will kill it. Therefore, the plant needs a very specific level of irrigation for optimal production in a year. Automated irrigation is possible by controlling soil tension. At the right time, the computer receives a signal to open the irrigation valves in a certain crop area.

[English]

Mr. Alistair MacGregor: Thank you.

Monsieur Lafèche and Madame Craiovan, I was listening with interest to your discussion on drainage issues and the controlled drainage system.

I come from what's known as the "Wet Coast", Vancouver Island, and we get an extraordinary amount of rainfall every winter. Increasingly, we're seeing two different types of weather systems: very heavy rain in winter and spring and an increasingly dry summer, so that by the time we get to August, the ground looks like baked concrete.

I have a small farming property on a slope. We get an incredible amount of runoff and right now the water table is up to the maximum, so it looks like a standing pond. We've implemented a system whereby we've followed the contours of the land and built in some swales to direct the flow of the water around the property. We've also found that by raising the earth a little with a slight culvert, even in the dry summer months, that tends to retain moisture in the soil.

Are any kinds of experiments like that going on in your region?

● (1700)

Ms. Emilia Craiovan: The only way to drain very sloped land is to have control structures at different levels that will drain the first part and then slowly take it down to the next part.

We haven't done this because here in the South Nation area, the land is very flat. I believe research like that was done in the United States where they had to go with different steps in the drainage system.

Mr. Alistair MacGregor: You mentioned that this is sort of an experiment in a few areas. Is enthusiasm for it growing?

Ms. Emilia Craiovan: Very much so. Like I mentioned, in 2005 only one person was interested in doing this process. Slowly, with our results and making producers see that there's no bad effect from control structures, they're becoming happier to accept the structures.

Mr. Alistair MacGregor: You also mentioned the use of satellite imagery to aid you with this. I know that Agriculture Canada uses satellite imagery across Canada to monitor how our farmland is changing.

Are you quite satisfied with this service, or is there something more that the federal government could do to utilize this technology and make it available to farmers?

Ms. Emilia Craiovan: I haven't been looking that closely at the project. I believe the results are there to show that satellite works. They were studying our field sites, and they had good results coming out of it. I would say it's another tool to—

[Translation]

The Chair: Thank you, Ms. Craiovan.

Mr. Poissant, you may go ahead for six minutes.

Mr. Jean-Claude Poissant (La Prairie, Lib.): Thank you, Mr. Chair.

I'd like to thank the witnesses.

It's always nice to eat tasty strawberries, especially since they are available for longer and longer periods.

My first question is for Mr. Gauthier. You piqued my curiosity earlier when you talked about the work you do in the fall to prevent problems associated with early frosts. What sorts of things do you do?

Mr. Louis Gauthier: What we call radiation frost is a loss of heat during the night. It's also known as ground freezing. When that happens, sprinkler irrigation can be used to water crops. Since the water is warmer than the air, when it freezes, it releases heat. Therefore, if we water the crops as long as the frost lasts, we can keep the temperature of the plant at zero degrees, plus a few degrees, and save the fruits and the plant during another frost-free period.

Mr. Jean-Claude Poissant: You said you had about two additional weeks before the early frost in the fall. How much more do you think it's possible to harvest as a result?

● (1705)

Mr. Louis Gauthier: Let's take the month of September. For the past five years, the weather conditions in September have been very favourable and frost-free, whereas, previously, by September 20 or so, we might have had to deal with one or two radiation frosts in order keep production going into October. The more frosts there are, the more the plant slows down and moves towards dormancy. If we have periods, then, that are not cold below four degrees Celsius, the plant is able to continue intensive production for as long as it is not forced into dormancy. We harvest perennial plants. The strawberry, the raspberry, and the blackberry are perennial plants.

Mr. Jean-Claude Poissant: Our government has set a target of \$175 billion in exports by 2025. Clearly, the future holds opportunity.

Mr. Louis Gauthier: Yes, the future holds opportunity.

In fact, we estimate an increase of about 20% in our strawberry production, which is quite significant. The use of row covers in the field and high tunnels has allowed us to extend the strawberry growing season, and grow raspberries into October. We can currently produce blackberries in September and October, and the U.S. and Canadian markets are wide open.

Mr. Jean-Claude Poissant: My next question is for Mr. Laflèche and Ms. Craiovan.

I installed the water table control devices you talked about on my farm. As far as I know, the solution has been around for at least 15 years.

Producers see the practice as more work for them. Is that the only reason they aren't adopting it?

Mr. Marc Laflèche: Initially, it had to do with a lack of knowledge. Farmers were already satisfied with their drainage systems. It's important to note that we hadn't experienced any drought-plagued summers like the ones we've seen in the past decade. Over the past five years, we've had three very dry summers. From what I've been told, the practice helps retain moisture in the soil for at least two weeks longer than an area that's been drained.

Mr. Jean-Claude Poissant: Very well.

Could money be another factor?

Mr. Marc Laflèche: I do think it is another reason.

Mr. Jean-Claude Poissant: Could you give us an idea of the investment required? How much does it cost per acre or hectare?

Ms. Emilia Craiovan: According to our data, it costs about \$1,000 a year for every 10 acres.

Mr. Jean-Claude Poissant: It costs an average of \$1,000 per 10 acres, then.

Clearly, the method is not effective everywhere. It depends on the slope of the land.

Mr. Marc Laflèche: No. The land has to be flat.

Ms. Emilia Craiovan: When the land is slightly more sloped, the structures have to be installed in tiers.

Mr. Marc Laflèche: Our region was ideal for the method.

Mr. Jean-Claude Poissant: Great.

Thank you.

The Chair: It is now over to Mr. Breton, for six minutes.

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

I'd really like to thank the producers who are here today.

I am always so impressed when I listen to you, especially when I see how resilient you are in the face of the various climate change issues you have to deal with. You find solutions to the problems that arise in your environment. I am talking about not just problems related to climate change, but also all the problems you encounter every day. Again, I tip my hat to you.

Mr. Gauthier, my riding is also home to strawberry farms, in the Granby region. I have always thought we had the best strawberries in Saint-Paul-d'Abbotsford, especially since one of our farms bears the name Roi de la fraise, or the strawberry king in English. I'll visit you on your island for a taste test. You're really a very nice person.

You mentioned the changes that do have their share of advantages, opening up opportunities for you. You also talked about the extended growing season. I am particularly interested in your production methods that have changed and the innovative solutions you have adopted, allowing you to increase your production and extend your growing season, despite climate change.

Could you elaborate on that for us?

● (1710)

Mr. Louis Gauthier: As far as new production methods go, our focus has mainly been on high tunnels that are tailored to the eastern Canadian climate, which we developed in co-operation with a Quebec company. Companies in Ontario and western Canada also make these kinds of tunnels. The eastern Canadian climate is quite severe, however, given the spring and fall winds. As a result, we needed high tunnels that were better able to resist the wind. We also needed to be able to close the structure completely. Most high tunnels remain open in the front and back, making them more like shelters that provide protection from inclement weather and slightly more heat. In our region, though, we need more heat in the spring and fall. We needed a structure that would, at times, allow for more of a greenhouse effect in order to help the plants grow faster.

Mr. Pierre Breton: Are the tunnels you talked about shelters, similar to small greenhouses?

Mr. Louis Gauthier: They are big greenhouses, but the roof has to come off every winter, because the structure isn't made to bear the weight of snow. It's merely a temporary shelter, not just to protect the plants from precipitation, but also to retain the infrared radiation in the soil so that it spreads to all the crops to speed up production time.

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

Mr. Laflèche and Ms. Craiovan, I was very interested in what you said about the innovative solution you adopted in your region. Given what Mr. Poissant said, I'm realizing that it is in place elsewhere as well. What more do you think we could do to spread its use?

We talked about the financial and labour challenges. What could the government do? How could it be a better partner or ally to producers like you?

The need is there, and in light of the climate change issues we are experiencing, that need is only going to grow.

Mr. Marc Laflèche: I think the results need to be published.

The South Nation Conservation Authority has all the results, which have been published in journals and magazines.

People take an interest in this new way of conserving water in fields as soon as they see its benefits. Money talks, after all. They need to be told that their end-of-year harvest will be better and that, in the summer, hay fields will retain their root moisture. That is the way to do it. The government could introduce programs to make it easier for farmers, for instance, by offering subsidies.

This method of conserving water in fields is just one of many innovations. Over the years, farmers have adopted new farming practices. I own a plow, but I don't use it anymore. Plows were useful when all we had were ditches. For my father, it was important to plow properly so that the water would drain as it should. I no longer plow in the fall. Instead, I use an offset disc in the spring to keep as much organic matter in the soil as possible. That's another soil conservation method.

We look for new ways to keep organic matter in the field and moisture in the soil. Our research work was one of many projects.

The Chair: Thank you, Mr. Laflèche and Mr. Breton.

That concludes the second hour of our meeting.

I'd like to thank our witnesses for their input this afternoon.

Mr. Gauthier, I hope there is enough snow on the Île d'Orléans to cover your strawberries so that they weather the winter well.

• (1715)

Mr. Louis Gauthier: We have plenty.

The Chair: Mr. Laflèche and Ms. Craiovan, thank you for being here today. Your remarks will certainly inform our report.

We will now suspend the meeting briefly before coming back to discuss a few things.

• (1715)

_____ (Pause) _____

• (1715)

The Chair: We will now resume the meeting.

Thank you for your patience.

We are moving on to committee business.

[English]

I had a few items. There may be more.

First, I have a few reminders. Each party is invited to submit a list of the sites to visit, including their contact information, to the clerk of the committee no later than Thursday, February 8. If we are approved, then we'll have to submit that for final approval.

We're going to have instructions from the analyst for the drafting process of the report on the adaptation of climate change and water and soil conservation issues. We would need to have the recommendations sent by each party to the analysts before Wednesday, February 28. We will be given an outline on the 12th, and with that we can come up with our recommendations and submit them.

Are there any other matters to be brought forward?

Mr. Berthold.

• (1720)

[Translation]

Mr. Luc Berthold: Earlier I spoke to the clerk about our study on food inspection agencies. I submitted a pretty thorough list of all such agencies, thanks to Library of Parliament staff, who put together the list. I don't want to take all the credit. The analysts did a lot of research to build the list of agencies, which is very useful to have. I have no objection to making the list available to all committee members, if they would like.

Since we cannot hear from people at all those agencies, I think we should focus on the three major international agreements Canada has signed. We could invite officials from two agencies, that of the European Union and that of France, since both countries have comparable systems to Canada. The federal government here is focusing on the main points. France is working on its end. As far as cheeses go, understandably, France is the country that will be exporting cheese to Canada. I think it would be beneficial to hear from representatives of both of those agencies.

In terms of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, I thought the most relevant countries would be Japan and India. Given that both markets are very important to Canada, I think we should invite representatives from both of those national agencies. Of course, there is the U.S. Those are the five national agencies I think we should reach out to. We could invite the officials to appear before the committee, if they agree. We could ask them questions about their practices. The presentation by our own agency officials will provide some guidance for subsequent questions on the various procedures and practices.

If we hear from five representatives, I think one meeting would do it. We thought about holding two.

That is what I am proposing to the committee.

The Chair: Mr. Poissant, you may go ahead.

Mr. Jean-Claude Poissant: Last week, you proposed that we do a study on mental health.

Would you have us do what you are suggesting today before or after that study?

Mr. Luc Berthold: There is no specific time frame. When the subcommittee met, we talked about meeting with the Canadian Food Inspection Agency first. It might be difficult to bring all five representatives together at the same time. I am open to conducting the studies when it is most timely. I don't expect us to complete one before the other.

Mr. Jean-Claude Poissant: I'd like to move an amendment to what was proposed last week.

[*English*]

The Chair: Earl, this is about your motion. It hasn't been...as yet, but I don't know if it's your intention to bring it up today or not.

Mr. Earl Dreeshen: I'd be prepared to listen to a recommendation that the member might have. I assume that we would deal with this in a more fulsome manner later, but I'd certainly be interested in hearing what he would have to say.

[*Translation*]

The Chair: Do you want to discuss the notice of motion before going any further? What would you like?

[*English*]

We can have a discussion about the motion even though it hasn't been passed, but on the notice of motion that has been tabled, is that how you'd like to proceed?

Mr. Earl Dreeshen: My only point, and again, the main reason for me wishing to present it when I presented it, was because it was Bell Let's Talk Day. I know there's a lot of other important business that has to be dealt with, so it isn't my thought that we'd just jump right into it. You folks have been here much longer than me, so I'm not—

• (1725)

Mr. Alistair MacGregor: Not me.

Mr. Earl Dreeshen: Well, okay.

You guys have been here much longer than most of us, so I'm in no way suggesting that what I had suggested on that particular day should take precedence over everything else.

The Chair: Just to remind everybody, we are not in camera; we're in public. This is open.

Mr. Barlow.

Mr. John Barlow: I'm more than happy to discuss Mr. Poissant's amendments. If he has amendments to Mr. Dreeshen's motion, we can discuss it today, but I don't think we would vote on it today. I want us to be able to go back and talk about the amendments he's making to it as well. However, I think it's worthwhile talking about it today.

The Chair: At this stage, there's no motion, so there can be no amendment to the motion. Do you want to have that discussion now? As of now, there's no motion.

Mr. John Barlow: Right.

The Chair: There's a notice of motion, but we cannot amend something that has not been voted on. I'm certainly open to a discussion.

Mr. Longfield.

Mr. Lloyd Longfield: Does it make sense to put something in writing? We can take a look at it, so when there is a motion, we will know whether it's friendly or not?

Mr. John Barlow: That would be fine. I think we all support the essence of the motion, so if you want to put something in writing, we can all talk about it, and come back to it at the next meeting.

[*Translation*]

The Chair: Does that work for you?

Mr. Jean-Claude Poissant: Yes.

The Chair: The suggestion is to propose elements you'd like included in the motion. My understanding is that the members on the other side are prepared to look at them.

Mr. Jean-Claude Poissant: Can we go over the list? Has it been handed out?

The Chair: No. All we have is a notice of motion on the table; no motion has been adopted. It's open to discussion.

Mr. Jean-Claude Poissant: Should I read it right now?

The Chair: If you like. We have two or three minutes left to discuss it.

Mr. Luc Berthold: We have three minutes left.

[*English*]

I'm suggesting to give us the amendment, and we can discuss it at the next meeting.

[*Translation*]

Mr. Jean-Claude Poissant: Very well. I will read the amendment, which would add the following text: "review the available resources and identify the mental health issues in Canada's agricultural community, and that the Committee report its findings to the House. At least six meetings will be allocated to the study."

The Chair: All right.

[*English*]

Mr. Luc Berthold: Are you okay with that?

[*Translation*]

Mr. Jean-Claude Poissant: That is my amendment.

The Chair: We will leave you with that and come back to it when the motion is put forward.

[*English*]

Mr. Earl Dreeshen: Yes, that's good.

The Chair: That is all I have. Is there anything else?

Mr. Berthold.

[*Translation*]

Mr. Luc Berthold: I just wanted to make sure that everyone was in agreement on the proposed witnesses.

The Chair: Does anyone have anything else?

Mr. Luc Berthold: Does anyone have any other suggestions? This is really a study by the committee. If you agree with the proposed witness list, the clerk can start the process of contacting people, which may be challenging.

The Chair: If you would like to propose representatives from other countries, please let us know.

[English]

Are we all okay with the choice of countries we would like to hear from on the inspection side?

Mr. Longfield.

Mr. Lloyd Longfield: I should have been paying closer attention at the beginning. Do you have the EU in there?

Mr. Luc Berthold: Yes, EU, Japan, India, and U.S.

The Chair: All good?

[Translation]

Thank you everyone.

[English]

The meeting is adjourned.

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