

**MEETING STATUS: PUBLIC**

**LEGISLATIVE ASSEMBLY**

**SESSION: 2/62**

**PRINCE EDWARD ISLAND**

**Motion No: 30**

**Year: 2005**

**VERBATIM TRANSCRIPT OF  
HOUSE COMMITTEE PROCEEDINGS**

-----  
**COMMITTEE: STANDING COMMITTEE ON AGRICULTURE, FORESTRY &  
ENVIRONMENT**

**Thursday, September 15, 2005**

**SUBJECT(S) BEFORE THE COMMITTEE:**

**Further consideration of Motion No. 30 regarding GMOs (genetically modified organisms)**

---

**NOTE:**

This Transcription has **NOT** been edited nor subsequently compared with the original tape. It is intended to provide an indication of Committee discussion only and is **NOT** certified by the Legislative Assembly to be a true copy of the discussion.

---

**COMMITTEE**

**MEMBERS PRESENT:**

Wilbur MacDonald, Chair  
Wayne Collins replacing Hon. Mitch Murphy  
Wilfred Arsenault  
Andy Mooney  
Eva Rodgerson  
Richard Brown  
Jim Bagnall replacing Fred McCardle  
Hon. Robert Ghiz replacing Ron MacKinley

**GUESTS:**

Part I - PEI Federation of Agriculture: Eddy Dykerman, Robert MacDonald, Mike Nabuurs  
Part II - Joan Cullen  
Part III - Greenpeace Canada: Dr. Éric Darier  
Part IV - BIOTECanada: Dr. Philip Schwab  
Part V - Institute of Island Studies: Dr. Irené Novaczek  
Part VI - CUSO: Judy Bayliss  
Part VII - MacKillop Centre for Social Justice: Mary Boyd, Barbara Boudreau  
PEI Health Coalition: Dr. Bert Christie, Mary Boyd

**STAFF:**

Marian Johnston, Clerk of Committees  
Bob MacGregor



**Standing Committee on Agriculture, Forestry & Environment**  
**Thursday, September 15, 2005**  
**9:15 a.m.**

**Guests: PEI Federation of Agriculture: Eddy Dykerman, President**  
**Robert MacDonald, Past President**  
**Mike Nabuurs, Executive Director**

**Wilbur MacDonald (PC) (Chair):** We'll call the meeting to order. We have an agenda before us, any questions on the agenda? If not,

**Richard Brown (L):** Moved.

**Wilbur MacDonald (PC) (Chair):** Seconded.

**Unidentified Member:** Yes.

**Wilbur MacDonald (PC) (Chair):** All those in favour, signify by saying aye, AYE. Nay - Agenda is carried.

Today's presenters, we have the Federation of Agriculture, Eddy Dykerman, Robert MacDonald and Mike Nabuurs. All three here? So you can come right up to the centre. Do you need a light? It's kind of dark. You want to be able to see us.

**Eddy Dykerman:** My name is Eddy Dykerman. I'm co-owner of Brookfield Gardens. It's a vegetable farm out towards Hunter River and I'm currently chairman of our—or president of the PEI Federation of Agriculture. On my right is Robert MacDonald, He's the past-president of our organization and a potato and cereal producer from Belle River and he is now the president of the Canadian Hort Council; and on my left is Mike Nabuurs, he's our Executive Director of the Federation of Agriculture.

On behalf of the board of directors and the membership of the Federation of Agriculture, I would first of all, like to thank you, Mr. Chairman and to the committee for taking the time to hear the point of view of our organization on this topic.

The PEI Federation of Agriculture is the province's largest general farm organization, representing some 80 per cent of registered agricultural producers on PEI through direct membership. A further ten commodity specific and other farm organizations enable the PEIFA to extend its representation to even more farms. The role of

this organization is to lead industry toward resolution of generic industry issues relating to the environment, taxation, business risk management, and to support commodity specific initiatives.

Quite simply, the mandate of the PEIFA is to work to effect positive change for our members and their families. The very fact that agriculture continues to be the largest contributor to the economy of PEI leads to the fact that positive change for Island producers and their families also positively affects the entire Island community.

While we do not claim to convey the opinion of every Island farmer or farm business, we have communicated with our members considerably on this issue and we are convinced that the opinions expressed in this presentation represent the majority of opinions of our members and the majority of Island farmers.

Since the first biotech crop was approved by Health Canada in 1994, Canadian farmers have been producing biotech crops and Canadian consumers have been using these crops at consistently increasing amounts. Canada is now the third largest producer of biotech crops in the world behind the US and Argentina. In 2003, Canadian farmers produced almost 11 million acres of biotech crops. Somewhere in the world this spring, a farmer planted the one billionth acres of genetically enhanced crops. It is safe to say that genetic engineering or GE technology for crop production has already been significantly introduced into the environment over the past ten years or more. PEI has certainly not been exempt from this trend. Over 50 per cent of each of the soybean, corn and canola crops on PEI are of GE varieties.

The provincial Department of Agriculture, Fisheries and Aquaculture is currently testing GMO Canola as part of its trials on varieties for production viability for a bio-diesel processing plant on PEI. The viability of this plant - if it is to be considered - will be very dependent on the ability of producers

to access the latest in canola variety improvements which currently is only being pursued through GE technology. Debate continues around the world as to whether these crops are a benefit to society or a curse.

The agriculture industry on Prince Edward Island has undergone terrible hardship during the last number of years. Farm income is at an all time low and farmers are certainly examining ways to differentiate their products in an attempt to obtain a small premium from the marketplace. PEI farmers are keenly interested in the discussion regarding making PEI a GMO-free zone in order to create a market advantage for our products.

After a thorough examination of the issue, the Federation of Agriculture is not convinced that making PEI a GMO-free zone would benefit our members at this time. The benefits of this technology to farmers are notable while the potential for market advantages are still very uncertain. From an environmental perspective, there are three clear areas of positive impact that genetically modified organisms can have on the ecosystem.

First, genetically modified crops will result in a reduction of chemical pesticides. Our members recognize the benefits from using fewer chemicals both in terms of input costs and more importantly in introducing fewer chemical inputs to their land and the environment. One pass over a crop with a \$10 per acre treatment of Round-up is far more cost effective and less environmentally invasive than one or two passes over the same crop with a 20 to \$30 per acre treatment of a pre-emergence product that must be applied during a much smaller window of time.

Anti GMO activists will claim that immunity to these herbicides will eventually increase and require greater chemical application usage but as we all know, in a proper crop rotation, these herbicides will be used only periodically and rarely in the same place in consecutive years.

The second advantage is the ability to increase yields from GMO crops. Along with other advances in technology, chemicals and genetics, GMOs will often result in increased yields due to pest resistance, drought resistance, more efficient metabolism, and other genetic traits. This allows for increased land use efficiency and offers added

benefits for bio-diversity. If we can produce more product on the same or less acreage through the use of this technology, it stands to reason that we are enhancing our ability to preserve critical land by removing it from the production cycle.

Thirdly, the development of herbicide tolerant varieties of food crops allows the adoption of low and zero tillage systems. This results in a considerable reduction in soil erosion, both conserving soil and reducing the amount of chemical fertilizer inputs. In an earlier presentation, Gary Renkema, a hog farmer from Wheatley River, gave a first-class account of how growing GMO soybeans allowed him to implement no-till farming on his fields. No-till farming results in a considerable reduction in soil erosion, both conserving soil and reducing the amount of chemical fertilizer inputs.

On PEI, we have seen efforts by farmers and government to implement activities that reduce soil erosion. Placing a ban on the growing of GMO crops by government will, in fact, certainly eliminate one of the options that farmers will have available to reduce soil erosion.

The power of biotechnology now allows scientists to use plants as alternative methods to produce a wide range of new products. One of the most exciting developments is the ability to use plants to produce human pharmaceuticals useful in treating cancer, cardiovascular disease, infectious diseases and other conditions. Scientists hope this technology will lead to safer, more abundant and more cost effective medicines. Many in the scientific and farming communities are anticipating that farmers can benefit from this technology by producing crops that are production vehicles for drugs. By placing a ban on the growing of GMOs on Prince Edward Island, are we closing the door to future opportunities for farmers? This is an important question given the decision by the National Research Council to build a \$20 million research centre on PEI which will focus on nutraceutical and human health.

Farmers on Prince Edward Island have the option of growing organic, non GMO or GMO crops for specific markets, all of which are legally registered crops for Canadian production. There are several examples of Island farmers who are growing crops to meet the specific needs of their customers. Some of these crops are organic and some are

non GMO. A & R Farms Ltd. has been able to secure a market and are supplying non GMO soybeans to a customer in Japan. At the end of this presentation, Robert, one of three partners in this family farm will outline details on what protocols are in place to meet the needs of the consumer, and how conventional and GMO crops can co-exist on his farm and his neighbour's farms.

Some will say that GMO crops and conventional crops cannot co-exist on the same level; however, recent studies suggest otherwise. Fresh information from a UK farm industry body Supply Chain Initiative on Modified Agricultural Crops has given a major boost to prospects for managing GMO and non GMO crops at the practical farm level. Two reports were issued as EU stakeholders met a roundtable forum in Brussels in 2003 to discuss co-existence and how to manage the production of GMO and non GMO crops on the same farm or between neighbouring farms.

The first report is a survey of all farmers who took part in GMO crop trials over the past three years. It found few practical difficulties in managing GMO and non GMO crops according to co-existence guidelines. The second, an independent audit of growers, confirmed very high levels of compliance with the requirements of the guidelines. These guidelines are based on procedures which farmers are familiar with, and which do not represent a major departure from current practices within the industry.

Members of the Federation of Agriculture are telling us they like having the option to grow the varieties of crops that best suit their farm and meet the needs of their customers. They are confident that organic, GMO and non GMO crops can co-exist, not only on PEI but on the same farm. GMO crops have been grown on PEI for 10 years or more now. During this time, we continue to see strong growth in the organic industry on PEI.

The Standing Committee started hearing from presenters in February of this year and, unfortunately, the hearings have not been as much about expanding market opportunities for PEI products but have become a discussion on whether GMOs are safe for human consumption and the environment.

With all due respect to the members of this committee, the fact of the matter is that the Legislative Assembly of PEI is not equipped to decide whether GMO crops and products are safe or not - this is best left to scientists and organizations like the Canadian Food Inspection Agency and Health Canada who are trained to study and approve or not approve GMO products. Before a GMO product is offered to the public for sale or consumption, it must undergo rigorous testing by scientists and undergo significant regulatory scrutiny.

The United Nations World Health Organization claims in a report released in June of this years entitled "Modern Food Biotechnology, Human Health and Development" that genetically modified foods can contribute to enhancing human health and development. The WHO indicates that ". . . *GMO foods are examined more thoroughly than normal foods for their potential health and environmental impacts. To date, the consumption of GMO foods has not caused any known negative health effects.*"

Why does there appear to be this widespread mistrust of these organizations whose sole responsibility is to research the health and well-being of society? The debate on safety must be left to the professionals. The debate for this forum must focus on market opportunity.

This committee must examine whether there are market opportunities available from making PEI a GMO-free zone. Farmers across PEI and Canada have undergone tremendous hardship over the past number of years. While the BSE crisis has received the most media attention, low commodity prices have had a serious negative impact on all farm incomes. Our members do not want government support, they want to earn their living from the marketplace.

When the Legislative Assembly of Prince Edward Island decided to examine the potential for market opportunities by making PEI a GMO-free zone, our members welcomed this discussion. Unfortunately, many of the presenters choose to use this forum to either extol the virtues of GMOs or to warn legislators about the perils associated with GMO crops.

In our examination of this issue, we have read many articles from writers who claim that there is

a huge market for non GMO products; that consumers are rejecting GMO products and refusing to buy them. Ultimately, consumers will make the decision. Their decision will largely be based on price and quality. We do not disagree that there appears to be niche markets available for non GMO products but we are not so sure the markets are as big as some predict - enough to sustain the entire PEI farming industry, and equally important - to adequately sustain those farmers who would be cut out of existing markets that they currently supply using GMO products.

The estimated global area of approved biotech crops for 2004 was 200 million acres, up from 167 million acres in 2003. Biotech crops were grown by approximately 8.25 million farmers in 17 countries in 2004, up from seven million farmers in 2003. If indeed, there is such a strong market for GMO-free products, then one would think that there would not be such a large increase in the growth of GMO crops around the world.

We would expect the Government of Prince Edward Island to conduct a thorough independent examination of these market opportunities before moving forward with a ban on GMO crops. Given the dramatic effect such a decision would have on our community, it is not enough to assume that these market opportunities exist - there must be undisputable proof.

Where are these market opportunities, and is PEI positioned to meet these opportunities? Can we enforce a ban and verify to consumers that PEI is GMO-free? How will this ban be monitored and enforced? To ensure non GMO market credibility, guaranteeing complete compliance from Tignish through to Souris will be essential. Does our provincial government have the resources to handle this task given the fact that the Government of PEI is downsizing? What will be the returns to farmers under a GMO ban? Will the feed requirements of our livestock producers be available at costs that are comparable to those of our neighbouring provinces? Will we be able to ensure that livestock rations coming into PEI are GMO-free? What changes need to be made on farms to meet this ban? These are just a few of the questions that our members expect to be answered before the government moves to make PEI a GMO-free zone.

We would advise the PEI Legislature to consider

the example New Zealand has taken with GMOs. New Zealand's parliament concluded just over a year ago that the potential rewards from GMOs outweigh the risks. To keep its economy growing, lawmakers reasoned, the nation would need to find ways to produce a greater quantity and more valuable dairy and forest products on less and less acreage. The key would be, not to turn away from GMO technologies, but rather to manage them wisely with a transparent, enforceable, publicly accessible and scientifically based regulatory framework.

In conclusion, the members of the PEI Federation of Agriculture have always been looking at ways to differentiate their products in the marketplace; however, we are unsure that placing a ban on the growth of GMO crops on PEI is the best way to accomplish this. We must also recognize that GMO crops do offer some environmental and societal benefits that must be seriously weighed against a ban. In the future, there may also be some benefits to farmers who may be able to produce crops that could be used to produce vaccines and medicines.

As previously mentioned, the building of the National Research Council's nutraceutical research centre in Charlottetown may accelerate this process. Before the province moves forward with making PEI a GMO-free zone, a thorough and independent market analysis must be completed. Our members need to be assured that they will benefit financially from this ban and that the ban will outweigh some of the benefits currently seen from growing GMO crops. This is a serious move and all issues must be seriously considered before moving forward with making PEI a GMO-free zone.

It is the recommendation of the Federation of Agriculture that an Island-wide ban on GMO products should not be implemented until such time as the concerns and questions raised in this presentation are answered to the satisfaction of the Island farming community. Again, we thank you for your time and we would welcome any questions that you may have. And I think Robert has a bit of a story to tell about his farm and how they co-exist with the GMOs and the non GMOs.

**Robert MacDonald:** Sure, thanks Eddy, I guess just as by way of a brief explanation, as brief as I can anyway, our farm because of the price we

were receiving for our main crop which is potatoes the last numbers of years, we have been always looking for alternate crops, alternative crops to try and cut back on our potato production, number one. And number two, to provide a crop or a source of income which would pay for the rotational years, the off years.

Typically, in our farm the last—well as long as I can remember anyway—we've been on a three-year rotation and that's typically been potatoes, barley and hay, back to potatoes again. Two years ago, we concluded. It didn't take much to convince us that growing barley is a lost cause. It's a cost of doing business. We needed to earn an income off of that year so we switched a lot of our acreage to milling wheat. That was a semi successful operation. We were able to achieve milling wheat prices about 50 per cent of the time in a given year. The next issue was the hay crop. We grow far much—we grow too much hay for our needs. We don't feed all our hay. We basically cut it down, cut it and lay it down and plow it down. There's nothing wrong with that in terms of managing the land base. It's good for the land. But at the end of the day, it's a cost of doing business and we're always looking to cut down on costs. It's just the nature of the beast as far as we're concerned.

So we said, let's have a look at soybeans. There was soybeans grown here on PEI a number of years ago. We actually tried 30 acres and the potato business was a little better back about 20 years ago and we really didn't see a need to do it. So we decided to revisit the situation and it was just by luck and an acquaintance - I met somebody from Ontario during a meeting one time and he inquired about growing soybeans on PEI. We got talking and come to find out this gentleman has been exporting soybeans to Japan for up to eight years now and it's a GMO-free product. He also exports organic soybeans to Japan. So we got talking and we decided last year to try to grow some for him and ship them to Ontario. We did that. We shipped about 170 tonnes to him and they made the grade. We got the price and there is a good chance for some returns on the positive side of the scale.

So in trying to decide where do we go from here, we thought, well we need to produce these—we need to not only grow them on PEI but we need to package them or process them, if you want to call

it that, and the process is very simple. It's much like a bag of potatoes, you clean them, you dry them, you bag them in 50-pound bags. So with that in mind, he said—yeah, well our first test was good. You can grow the varieties here so let's—how much more can we do? And I said—well I'll talk to some farmers in our end of the Island and see if they're interested and this year, we had a project underway. I call it a project. There's nothing to do with government. It's our own initiative. We've got about eight different producers involved and we plan to have roughly 700 tonne of beans go through a facility that we're leasing in the eastern end of the Island this year to clean and dry and bag them.

We're able to meet the standards simply because there are protocols in place in terms of identifying the crop that you plant and by saying, identifying the crop means that if somebody in Japan buys a bag of beans, they can go to this gentleman's website and they'll be able to through various clicks on the screen, to bring up and come right to my farm and say—this is A & R Farms. This is the product that you got in your bag. And how can they do that? Because there's identification of the product all the way through the system, right from the planting to the day it lands in his yard. We must take, we have to take samples of all the stuff coming into the plants. Every container that goes out, we must takes samples and we have to save those samples. So if there is an issue, then we can go back and say—okay, what happened here?

That has allowed us so far, and we've very hopeful in our little venture, we think there's quite an opportunity here for soybean production in PEI. With the decrease in potato acres that's taken place this past year, it's my opinion anyway, I think there's 10,000 acres of production someplace which is significant for this province. This gentleman has grown his export business from 5,000 tonnes to 10 to 15. This year, he plans to do 25,000 tonnes to Japan. They're paying a nice little premium. It's in the range of 40 to \$50 per tonne, depending on variety, over and above the regular fee prices. Their yields are very similar and it just provides another opportunity. But the key to it is we don't have to have a GMO ban on PEI to attract this market.

All we have to do as farmers is do the record keeping, do the traceability things that we have to do to show the consumer or the customer at the

end of the day—you wanted a GMO-free product with so much protein and so much sugar in it, consistently through the load, this is what you get. If there's any questions, then this is the system we use to make sure that you're assured that the product you're getting is what it is.

In terms of co-relation on our farm, we don't grow GMO products on our farm because I don't have a market. Some of the people involved in our project, they do grow both. And it's a simple matter of saying--okay, I need to grow my soybeans so many metres away from GMO products and they'll locate the fields and they do it. It's as simple as that. We exchanged land with a neighbouring farmer who doesn't have enough land to spread the manure. He grows GMO corn. Is that a problem for me? No, because I don't plant my soybeans in the area where he grows his corn. He also grows GMO soybeans because he has to. He needs for the hog market, they need to access as cheap a supply of feed as they can and they find that here by growing the GMO products.

If there's a GMO ban put in place, those people in that business will have to access higher cost products to feed their animals and everything, as you are well aware, goes uphill from there. The costs goes up and the returns go down and you all know where the bottom of the pile is in that one. The farmer loses. So quite simply, that's what we've been doing. We've just started. Again, I'm quite optimistic that we should be able to easily get to 5,000 tonnes or 5,000 acres of production here on PEI which I think is significant. And it doesn't hurt the other producers who need or require feed supplies from GMO produced crops. We can all co-exist on the same Island if we want to. It's just a matter of saying--well I know where Robert is growing his GMO beans. He knows where I'm growing my non GMO beans. Let's work it out and away we go. It's as simple as that.

**Wilbur MacDonald (PC) (Chair):** Okay, thank you.

**Robert MacDonald:** If anybody has any questions.

**Wilbur MacDonald (PC) (Chair):** Anybody got questions? Robert.

**Honourable Robert Ghiz (L):** How many tonnes to an acre?

**Robert MacDonald:** The provincial average is .9 tonnes to the acre. We were able to achieve last year .8, that was after a lot of handling and that's one of the reasons why we need to do it here on PEI. I've said it a lot of times before, maybe some of you people have heard my comments in terms of this. We can grow anything on PEI. Our problem is making a profit and one of the keys to making a profit is processing it to add value to it here on PEI. I lost all our bonus last year by shipping it to Ontario. Last year, it was \$55 a tonne cost to ship to Ontario. My bonus was 40. I'm out \$15. By doing it here on PEI, the growers that are involved in it, will be able to maintain that \$45 bonus and keep it in their pockets here in PEI.

**Honourable Robert Ghiz (L):** So one of the arguments that's made is that Prince Edward Island could be put in an unique situation where we would have all these additional markets if we were GMO-free. But from what you're telling us, even if we're not GMO-free, we still have access to other markets around the world.

**Robert MacDonald:** Yes, that's what I'm saying. I'm looking at the Ontario experience. There's a province and this gentleman I'm working with--to me, he's doing a lot of business. He's one of maybe a half dozen to a dozen. They're doing the same thing. It's a matter of identifying your beans and following the protocols. There is a protocol that has been--was developed by the Canadian Soybean Export Association in 2001 and it outlines what growers must do to identify from the day you buy your seed, what the seed source is, when it was planted, where it was planted, what you used, who was next door, how you harvested the crop in terms of cleaning your combine out before, make sure there's no contamination, all those kinds of things. All this stuff has been developed and people are working with it in other provinces. All we're asking for, from our organization, is the same ability for our farmers on PEI.

**Honourable Robert Ghiz (L):** One other question, chair?

**Wilbur MacDonald (PC) (Chair):** Yes, go ahead.

**Honourable Robert Ghiz (L):** Okay. Eddy, you were mentioning the spraying and the spraying's come up on a few different occasions before this committee. We've had farmers before the

committee. We've had non GMO people before the committee and there seems to be quite a contrast in opinions. Now I heard you mention that, well of course there's going to be more spraying if you only go on a one or a two-year rotation. But if you stick to a three-year crop rotation, you believe that there is proof that there will be less spraying with GMO crops?

**Eddy Dykerman:** I'm convinced that there will be less spraying but I guess the point I was trying to make was that there's an argument out there that over time that these GMO crops will become resistant to these herbicides. That's a fact right now. If we use the same product over and over and over again, the bugs will get resistance to all the chemicals. So the way we operate now, we alternate crops in our fields so you don't use the same pesticides every year. You also operate, you also juggle the types of herbicides or pesticides that you use so you're not continually using the same thing.

So in a three-year rotation, like one year it maybe GMO crops so one year you'll be using say, Round-up, whereas in the other years, like in the hay crop, you're definitely not going to use Round-up because it will kill your hay. Right now, we already have to manage resistance so it's not going to change when we produce GMO crops. We still have to manage resistance.

**Honourable Robert Ghiz (L):** So there will be less spraying with GMO crops?

**Eddy Dykerman:** Yes.

**Wilbur MacDonald (PC) (Chair):** Andy.

**Andy Mooney (PC):** I just want to mention and back up what Robert is saying, even the growing of processing potatoes right now, the traceability, the companies demand and the records they need to keep, pretty well every step he does with the beans is done with processing potatoes right now. We have to log every foot of our warehouse, where the potatoes came from. We have to have records on where the seed came from for that and what applications of spray have gone through every step. So the records now on farms are very strong because we have to do, to do business whether it's someone on the open market, fresh potatoes or processing really.

**Eddy Dykerman:** The logistics of growing both crops and the record keeping, we're already doing it.

**Robert MacDonald:** If I could add to that, the impression I've gotten and maybe I'm wrong, I don't think people are malicious but when I hear the comments about—we need to do this for certain reasons in terms of food safety and all these things, I get the impression that people in general, feel that farmers—they don't pay attention to records. They don't like to keep records. Well nobody does, but you know what? Our industry has grown leaps and bounds in the last 10 or 12 years. Our farmers are professional. They know if there's a profit to be made and you must meet certain conditions to retain that market, they'll meet it. The aggressive ones will meet it and they will keep the records that are needed. So people are concerned about not—you know, something slipping into the system, well that can happen at any point in time. But our farmers in this day and age, as I said before, have grown by leaps and bounds in the last 10 or 12 years. They are one of the most professional organizations and the industries that there is in PEI today.

**Andy Mooney (PC):** Just one other quick question before you go on. So for your beans, did you stretch your rotation?

**Robert MacDonald:** Yes, I didn't mention that. On our farm, that's where we wanted to go. We've been a three-year rotation for years. We would like to stretch it to a four-year rotation and this probably will allow us to do that. We would like to do potatoes, soybeans, milling wheat and a hay crop of some sort, hopefully, timothy if we can figure out how to grow the straight timothy and then back to potatoes. For us, that's an ideal rotation. We're almost there I'd say in two or three years time, we'll be there.

**Andy Mooney (PC):** Thank you.

**Wilbur MacDonald (PC) (Chair):** Wayne.

**Wayne Collins (PC):** Gentlemen, thank you very much for your great presentation. I certainly heard you loud and clear in terms as you made your points of less pesticide, greater yields, less soil erosion and new crop opportunities as positives for not banning GMOs.

You spoke earlier about the UK study, “A Firming Coexistence” that there are coexistence and guidelines right now. Is this only in Great Britain where they’ve developed these or do you have a copy of these coexistence guidelines because this is something that has come up time and again here and it seems that there are proponents saying—yes, you can coexist; and others saying—it’s impossible because of the contaminant effects. What about those guidelines?

**Mike Nabuurs:** I have a copy of that particular report with me here and I can share that with the standing committee. It does go into detail there as to what the coexistence guidelines are. As far as I know, this is just for the UK but I’m sure that we could probably use similar guidelines to start developing similar practices that are already taking place here.

**Wayne Collins (PC):** Nowhere else in Canada though are these guidelines accepted or in use? Then it’s strictly in the UK at the moment?

**Mike Nabuurs:** Not on record that I know of. I’m not sure.

**Wayne Collins (PC):** You mentioned contamination and that and with soybeans I can understand it’s a different type of crop and maybe less susceptible to contamination. What about in the area of canola? We’ve heard a lot at these hearings that once you’ve introduced GMO canola, that’s it. You’ll never be able to grow a non GMO canola again because of the proliferation. Any comment on that?

**Mike Nabuurs:** Well I’m not a scientist. I don’t proclaim to be and I have heard similar arguments. What I do know about canola is what I’ve learned from the Department of Agriculture and I’m told that the majority of seed advances in canola seed is happening through GE technology. There seems to be greater improvements in seed and the yields, in the durability of the crop and so on. So as I understand it, the majority of advances in that technology are happening in genetic modification.

So there may not be the opportunities to plant a more productive crop if you don’t pursue the GE technology. There are existing—there are crops that exist now that are obviously non GMO. In terms of the pollination issues between crop, one

versus the other, again I’m not a scientist. I couldn’t comment on that. But I have heard similar arguments that you can’t—once you’ve gone to GMO canola, you might not be able to go back but I would like to see trials and tests done on that. And I think with the proper protocols in place, you probably can grow canola -GMO and non GMO canola.

**Wayne Collins (PC):** Go ahead, Robert, I’m sorry, do you want to add to that?

**Robert MacDonald:** I hear that argument, too. When I hear that, I think that people take the word “never” too literally. Never is a long time. There’s been GMO canola in PEI here for five or six years, seed production. There’s non GMO canola grown here. Like is that an issue? No, because it works. So never is a long time. I don’t think that’s achievable. I think that’s a little bit of a—maybe a harsh word to some people but it’s kind of fear mongering. It scares people. Never is a long time and that’s not positive.

**Wayne Collins (PC):** Do any of you gentlemen see any impediment to the growth of the organic farming industry on Prince Edward Island by continuing to plant GMO crops?

**Robert MacDonald:** Have we seen an impediment so far, that’s our question. Our organic business, I’m not involved in it but I see the stats, organic acres on PEI has grown as much as the market will take ever since it started many years ago. If it is an impediment, I’d like to know what the impediment is.

**Wayne Collins (PC):** So this isn’t really an impediment. . .

**Eddy Dykerman:** Both industries have grown in the last 10 years. The GMO, the use of GMO has expanded but at the same time, organic production has expanded. So we would think that if one was a problem, if the GMO was a problem, we should have saw a reduction in organic production but both are growing. So that leads us to believe that they can coexist.

**Wayne Collins (PC):** Thank you.

**Eddy Dykerman:** It’s really a matter of working with your neighbour. I think this government should probably start spending its time on setting

up protocols of how to coexist, spend their time in learning how to coexist. We're already in the GMO business, have been for quite a few years. If we can never go back, as some people claim, then the horse has left the barn so we should learn to manage the thing and spend their time more, I figure our time was better spent on coexisting, learning how to coexist than to consider a ban because we're already there.

**Wayne Collins (PC):** And you're willing to give a copy of those coexistence guidelines?

**Mike Nabuurs:** Yes.

**Wayne Collins (PC):** Thank you.

**Wilbur MacDonald (PC) (Chair):** Eva.

**Eva Rodgerson (PC):** Yes, I guess some of my questions have been answered but I want to make a comment in regards to having the experience, I guess, for six years to do the paper trail for farmers that were growing the NatureMark potato and I've worked with farmers most of my life at all levels except for about 10 years. And when I looked at the paper trail, I never of any other problem have I ever saw grown by a farmer did I ever see a paper trail that I saw or the close monitoring. When you talked there earlier about no other foods have been that examined that stringent or monitored that close and at that time, they had to hire extra staff for the monitoring. You had to know where the field was and you couldn't throw one potato over here until somebody knew about it. I never saw food anywhere in the farming chain where there was such stringent monitoring.

I guess at the time, I witnessed the things because I did the accounts payable and receivable and when I—I can see yet the figures on those tray bins. At that time, trying to understand—that was my first opportunity to be close to any of this kind of situation, but when I saw the difference in the amount—the big concern that I hear right across this province is fear of the spray and the chemicals and all that.

When I saw them on the store shelves and people were fully explained what they were and how they were grown. Again, it seemed like the local people had bought into the fact that farmers were really working hard, put a lot of effort into trying to make big improvements both on the environmental side

as well as addressing concerns for Islanders. So again, I just wanted to reaffirm what I witnessed first-hand in regards to the paper trail and traceability of all these products. So I thank you for your presentation today and I guess this committee, farmers around the table and we want to address the concerns of all Islanders but certainly appreciate your coming forward today with the information.

**Eddy Dykerman:** I guess I'd like you all to remember that this is people's livelihoods that you're dealing with. It's not just something out there. Farmers are very worried about the outcome of this committee hearing. It is our livelihood that you're dealing with so always remember that in your considerations, I hope.

**Wilbur MacDonald (PC) (Chair):** Thank you very much. I know you're all busy because it's a busy time of year. I do want to take the opportunity to congratulate Robert on being president of the Horticultural Council of Canada. I don't think I did it already. And I know you're following some pretty strong Islanders in that position. I know you'll keep up that good tradition.

**Robert MacDonald:** I don't know whether it's good luck or bad luck being chairman. These MacDonald's, whether it's good luck or bad luck or not because it's been three times you've been chairman of the Canadian Horticultural Council in its history and I'm the third MacDonald so whether it's three strikes and you're out, I don't know.

**Wilbur MacDonald (PC) (Chair):** I thank you again for taking the time to come today. I know you're busy and we appreciate it.

**Eddy Dykerman:** Thank you for hearing us.

## **Part II - Joan Cullen**

**Wilbur MacDonald (PC) (Chair):** Our next presenter is Ms. Joan Cullen. Joan, you can come right up to the centre there. We are running behind already but that's okay, we do that anyway. Don't worry about that. I think we're okay, you can proceed. Could you give us a bit of background, where you're from and so on.

**Joan Cullen:** My name is Joan Cullen and I'm from Charlottetown, Prince Edward Island. I'm a

visual artist.

**Wilbur MacDonald (PC) (Chair):** A what, dear?

**Joan Cullen:** A visual artist.

**Wilbur MacDonald (PC) (Chair):** Okay.

**Joan Cullen:** My background is arts and philosophy. I've studied at Carleton University in Ottawa in philosophy and I have a Master in Esthetics from the Sorbonne in Paris.

**Wilbur MacDonald (PC) (Chair):** As you know, all Islanders like to know the background of everybody, that's why I asked.

**Joan Cullen:** Well, did you want to know my father's name? My father's name was Joseph Cullen and my grandfather's name was Andrew and my great-grandfather's name was . . .

**Wilbur MacDonald (PC) (Chair):** What was your great-grandfather's name?

**Joan Cullen:** Andrew also.

**Wilbur MacDonald (PC) (Chair):** Andrew. Okay, go ahead.

**Joan Cullen:** The Cullen's came here in 1826 and they had their first farm on Malpeque Bay. My mother is not from Prince Edward Island. She is from British Columbia and she was born in Victoria and she is a Bissette but she lost her language due to the fact that Victoria was English.

I want to address this committee on two assumptions underlying the discussion surrounding genetic engineering and the banning of genetically modified crops in Prince Edward Island. The first is the nature of the reasoning with which the recommendations of this committee will be based at the conclusion of these presentations and the second is the assumption that agriculture can and must be treated as a business activity.

I told you my background is philosophy and art but my concern is one of an informed citizen. As such, I am addressing you as legislators, not as farmers or as business people. From this perspective, what concerns us here is the common ground we must share and our relationship to that commonality.

I am placing the question of banning genetically modified crops in the context of an environmental issue, as well as a social and economic one, and more precisely within the context of conserving biodiversity, government legislation concerning land use, and by extension agricultural practices. Legislation is the result of political decisions, which are in fact, ethical ones. That is, they provide normative guidelines generally presumed to be in the interest of the public. By public, I mean here the community as a whole. In this case, Prince Edward Island and by way of example, all communities who are willing to face this question squarely.

In using the term ethical, I want to insist on the responsibility of legislators to consider, first and foremost, the public interest as opposed to that of private interest groups. Ethical decisions imply value judgments about what is necessary to the community at large and in this matter, I am arguing that the cultivation of genetically modified crops, as well as its antecedent industrialized, chemical agriculture is a threat to the conservation of the environmental conditions necessary for the maintenance of biological resources on which humans depend.

This may appear to be a radical position, but I am simply stating the underlying value that opposition to genetically engineered and intensive chemical agriculture imply. An immediate commitment to the conservation of biodiversity is implicit in this position. In placing this discussion in the context of values and moving it away from a scientific debate about the harmful or beneficial effects of genetic engineering, I am reminding the committee that in practical reasoning, that is, in law making about what should or should not be done, science and applied science can serve only a supporting role in so far as they are able to establish the validity of factual statements.

In the case of genetically engineered crops, biogenetics, biology, chemistry or economics are very limited in their ability to provide factual evidence, particularly because of the very short time lapse since these crops have been developed. From a conservation perspective; however, there is a wealth of factual evidence about how our lifestyle and resource management practices have compromised the environmental conditions on which human life depends.

This brings me to my second point which is the assumption today that farming must be treated as a business, and food and water which are basic necessities, as commodities. There are tremendous problems with this paradigm. To mention some of the most flagrant, there is the tendency to exaggerate the neutrality of the conditions and context of food production, that is to ignore what is necessary for the maintenance and restoration of the contextual conditions: the energy available in the form of sunlight and rain, erosion and exhaustion of the soil, water courses and how they are affected by pollution, and overuse of underground water supply through irrigation.

There is also the problem of exaggerating the power of transformation. Soils, lands are site specific and the comprehension of the natural processes in order to farm depends on direction experience of the particular farm. Seeds developed in a controlled environment cannot be relied upon to produce in the same way once seeded in other environments. The indifference of the marketplace to these variables introduces unfair competition for farmers and makes them subject to not only natural variables which they may well find adequate responses to, but to the vagaries of the marketplace, and even more so in today's context of global markets. The idea of global markets itself is illusory, particularly given the transportation and energy context.

Genetic engineering has a particular place in the history of agriculture. It might be thought of as the latest attempt to control not only the farming population but all living matter. A brief history to remind us of this process - Industrial agriculture began in England in the 16<sup>th</sup> century with the enclosures, that is the expropriation of common lands. This logic of accumulation of lands and resources has never ceased and since its early beginnings, we have seen massive deforestation, plantations and intensive livestock farming, ownership concentrated more and more in the hands of industrialists, today called corporations.

This first movement of expropriation was followed by a period, more or less long, of apparent equilibrium where the agricultural production was carried out by small or medium-sized farms working for local and urban markets. This was the situation in Prince Edward Island until approximately the mid 20<sup>th</sup> century. The so called

“green revolution” introduced mechanized farming with the intensive use of chemical fertilizers and energy. This required large capital expenditures contributing directly to the concentration of agricultural lands in the hands of a few corporate farmers, converting the majority of small farmers into agricultural workers or forcing them into the city.

In addition to the social costs of this revolution, there are also the ecological ones. The overexploitation of the soils, the destruction of many local ecosystems, the use of pesticides, chemical fertilizers and adding nutrients have polluted water systems and affected fishing. This concerns both urban and rural life in so far as their fresh water supply has been and continues to be seriously compromised. Moreover, the residues of pesticides as well as the chemical additives associated with the diverse forms of conservation, packaging, as well as transporting of the food produced by the green revolution, have had a major influence on the diet and health of populations, well beyond those groups immediately affected by the reorganization of agriculture. That is the turning of farming into a commodity production business.

From a social justice point of view or even a common sense one, farmers should be the first to benefit from their work and the progress that comes from agricultural research. But this is rarely the case, primarily because research is often motivated by other objectives, bigger production, bigger markets, bigger profits. Underneath this latest progress, ie. genetically modified crops, is not only the more of production, markets, profit, but also control dependence. Farmers will work for corporations, buy their seeds, fertilizers, pesticides, machinery, credit - those who try to remain independent will face merciless competition and law suits.

To return to my earlier suggestion that farming is not an activity to be treated as a business, might I propose that by encouraging cooperative principles in agriculture rather than competitive ones, farmers in PEI could better respond to the ever changing nature but constant crisis in this major economic activity. Food as a commodity means that prices are determined, not by their real costs, but by the force of demand and the manipulations of markets. Small organically oriented farms, independently owned but

cooperatively sharing that which can be - seeds, machinery, knowledge, time off - corresponds to another vision of the community and its needs.

Agriculture research itself must to some degree be tied to immediate necessities, uses and the natural limits recognized by the same people who work the land and know it. We cannot stress enough that the laboratory is a different space from the land and from a particular field. Responsible scientists have long recognized that natural conditions can never be replicated exactly and generally agree with Karl Popper's argument that scientific hypotheses cannot be proved, only disproved.

In light of this, their experiments and theories are constructed so as to allow for only modest conclusions. Organic agriculture situates itself here - a modest attempt to provide quality food that obliges the population to choose from real possibilities, not the virtual ones cultivated by false advertising.

The values defended here are distinct from one another but implicitly related. Food production and agricultural-related activities can be practiced so as to conserve biodiversity and respond to real human needs. But not if these activities must be carried out in a competitive, that is, business first, fashion, with its accompanying indifference to the social and environmental consequences of such practices. The ethical basis of legislative decision making implies value judgments and for this reason, I hope this committee will defend those of conservation of biodiversity and agricultural policies that serve the community of Prince Edward Island.

To quote the report on traditional sustainable agriculture prepared for the Prince Edward Island Department of Agriculture in March 1989, by Wayne MacKinnon and Elinor Vass called "The Best of the Past".

*Agriculture, up to the 1950s, was essentially based on traditional methods, methods which had been followed by generations of farmers. The widespread introduction of chemicals marked a significant break with the past, and exerted a major change on the way farming was carried out. Agriculture after the Second World War was at a crossroads between the continued development of biological and ecological approaches on the one*

*hand, and chemicals on the other.*

I would like to conclude by saying that we are at another crossroad and that even the direction taken some 50 years ago does not commit us to continuing on that path indefinitely. But in order to change directions, the nature of what is involved must be clearly recognized. I contend that organic farming and agro business are not compatible and that the first obligation of legislators in what concerns community life is to defend the environmental, social and economic practices that make it possible in a cooperative context rather than one of a conflictual competing private interests. Thank you.

**Wilbur MacDonald (PC) (Chair):** Andy, you have some questions?

**Andy Mooney (PC):** Yes, I enjoyed your presentation.

**Joan Cullen:** I hope you agree with me.

**Andy Mooney (PC):** Actually, you proposed questions throughout and then answered them in your next - I'll just tell you, I grew up on a smaller farm and our farm now is mostly potatoes. We used to have beef cattle, dairy, we had different crops. I'm even torn on this subject, I have to tell you. If you could step back in time to have what we had when I grew up, I think I'd be happier but I don't know how realistic it is. Even with our world becoming such a small place with modes of travel, right now there's container ships that can cross the Pacific with 7,000 containers on it and in a presentation from some of the processors, that's what we're getting lined up to compete with. . .

**Joan Cullen:** But can I just interrupt you?

**Andy Mooney (PC):** Certainly.

**Joan Cullen:** That isn't exactly my point. The thing is that in the changing direction, first of all, the initiative is on the part of the individual or the community to change the direction, otherwise they can just say—oh well, everyone else is doing it so we should go along. When you talk about containers crossing the Pacific with—from my point of view or from the point of view that I'm arguing is that - should they? I mean at every point in time, for example, I am an artist and I can say—okay, well I should paint this because that's what the

market demands. I have consistently refused to do that; therefore, you probably don't see my work in any boutiques in Prince Edward Island. Why? Simply because I understand from a long experience of this subject matter - art - that the most important thing is to give voice or expression to what you think is essential. I cannot do that if I'm trying to figure out what somebody else thinks is essential.

**Andy Mooney (PC):** Now comes to my. . .

**Joan Cullen:** So similarly in the food production I think all human beings are capable of knowing instinctively that they need healthy food. The least, the less manipulation of the food in general, like what I'm talking about is the rapport to the land itself. For example, when you're cultivating or when you have things on a smaller scale, you can observe very closely what's going on and I know this from living in a rural environment in France, I do not know it from living in Prince Edward Island because I grew up in the city and I really, honestly, never put my foot on a farm which is totally amazing. But that is the way it was. But I grew up in rural France, I mean I spent ten years in rural France and there was still the end of the small farm. It is astonishing the quality of food that you can get with practically no chemical agriculture and this farmland has been farmed for—let's say, five or six or eight or ten or 1,000 years.

**Andy Mooney (PC):** But you talk about a difference in the marketplace and that's the whole problem I have and it comes right back to even a rural community such as Souris. Everyone in the area says—we want all the services that they have in the larger centres. We want to keep our stores but yet, there's a very strong percentage of our community that talk that way but shop in Charlottetown or shop in Montague at the detriment of our stores and a lot of people say that they want organic or they want GMO-free, but when it comes to the shopping where they go, they don't talk with their wallets. And the problem is as I said, I would dearly love to see the farms be what they once were - a mixed farm, even for our kids growing up, it's a lot better.

But as a farmer, and we came across from Ireland, I guess, in the 1820s as well, that's when our family came. We've farmed ever since and our farms have been passed down from generation to generation which you feel a responsibility to your

parents and grandparents to look after it. If I, as a farmer, said—I'm not going to go with the rest of the world and I'm going to stand still, your intentions may be great but it could be like holding fine sand in a wicker basket at the end of the day. You're gone, I mean—and that's the problem. Like any of the farms that have bucked, making any moves, they've lasted a few years and they're just not there anymore. It's an awful dilemma but.

**Joan Cullen:** I don't pretend that what I'm suggesting here is that the committee or that legislators in general go with a more like—encourage and by encourage, I don't mean simply words. I mean also subventions in order to - is that what you call them? Subventions, yes.

**Unidentified:** Grants.

**Joan Cullen:** Grants or to subsidies, that's it, subsidies to encourage because the federal government and the—I don't know for the provincial government—but we do know for the federal government, they have subsidized tremendous research in genetically engineering. Like they have subsidized it to such a degree that it is shocking that the Canadian public has never been consulted on that issue. Those same, that same money, that same capital could also choose some other direction.

The crisis in the 30s in Western Canada brought about the birth of the co-operative movement that was very strong and it literally saved briefly, not for ever but it literally saved that community and in the crisis that we see continually now, the environmental crisis all over the world that we see continually, the only, the only possibility is cooperation between people and between government and those people, to subject the community constantly to this relentless competition. Now we're all supposed to compete against China. Now we're all supposed to compete against, I don't know, like this principle of competition is so destructive to life. It's so destructive and I'm talking about community life and yet, it's a given.

When the Government of Canada tries to tell me that, as an artist, I have to earn my living by selling my work because unless I can show that I am a selling artist, then I am not even considered a professional. I have been working for 35 years in this profession and my average income, I don't

even think it's \$15,000 a year. It would be lucky if it was three. So what do I do? I teach English as a second language. I depend on my husband. He teaches, but that is a commitment that I have made because art has to be done and similarly, food has to be grown.

So the community can either encourage the farmer to grow good food and help him and that is the legislator's role to some degree, to a very large degree. Or they can say—no, you're on your own. Get out there and compete and you will all—it's a French expression.

**Andy Mooney (PC):** I want to say once again, I appreciate your presentation.

**Wilbur MacDonald (PC) (Chair):** Anymore questions? If not, we want to thank you very much for coming, Joan, and we appreciate the fact that you have taken the time and the effort to come. Thank you very much.

**Joan Cullen:** Thank you.

### **Part III - Greenpeace Canada: Dr. Éric Darier, GE Campaigner**

**Wilbur MacDonald (PC) (Chair):** The next presenter is Greenpeace Canada and we have Dr. Éric Darier. Did I say that right?

**Dr. Éric Darier:** That is correct, yes.

**Wilbur MacDonald (PC) (Chair):** Welcome, Sir.

**Dr. Éric Darier:** Thank you very much. If you give me a few seconds.

**Wilbur MacDonald (PC) (Chair):** I better not ask your background. You're not an Islander so we don't go into that.

**Dr. Éric Darier:** Well you can ask me questions, I can answer.

**Wilbur MacDonald (PC) (Chair):** Perhaps you are an Islander. Where are you from?

**Dr. Éric Darier:** No, I'm not an Islander.

**Wilbur MacDonald (PC) (Chair):** You're from

where, Sir?

**Dr. Éric Darier:** I'm from Montreal.

**Wilbur MacDonald (PC) (Chair):** Good. We appreciate your coming down from Montreal. You may not get out if you don't get out today, we're getting close to a hurricane, coming up the coast. We don't know which way it's going to go, I guess.

**Dr. Éric Darier:** Well I want to thank you very much, first of all. Greenpeace would like to thank this standing committee for inviting us to speak to you today. Greenpeace would like also to congratulate the Premier of PEI and the Legislative Assembly for undertaking a public consultation on GMOs.

Greenpeace, as you know, was created in 1971. It's currently present in about 60 countries. Globally, we have about 2.6 to 2.8 million supporters, including about 80,000 in Canada. Greenpeace is an independent funded organization that works to protect the environment. We challenge government and industry to halt harmful practices by negotiating solutions, conducting scientific research, introducing clean alternatives, carrying out peaceful acts of civil disobedience and educating and engaging the public.

Greenpeace seeks to:

- ~ protect biodiversity in all its forms;
- ~ prevent pollution of the earth's oceans, land, air and fresh water;
- ~ end all nuclear threats;
- ~ promote peace, global disarmament and nonviolence.

Greenpeace's position on GMOs is that we are opposed to the environmental release of GMOs because of the risks it may cause to the environment and in particular, to the protection of biodiversity.

Greenpeace supports policies based on the precautionary principle as adopted by the international community in 1992 under the Rio Declaration on Environment and Development. And I just quote "*In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-*

*effective measures to prevent environmental degradation.*” End of quote.

Greenpeace believes that the Canadian government should respect its commitment to the Rio Declaration and adopt a strict approach to the precautionary principle by not allowing the environmental release of GMOs. Fortunately, many—well unfortunately the federal government has failed to act responsibly on GMOs.

On page 3 of my presentation, you have a list there of some of the reports, not done by Greenpeace, done by actually, most of them government bodies like the Royal Society of 2001. It was 14 scientists. Most of them worked in the biotech community and they made 58 recommendations to the federal government on the issue of GMOs and they were calling for precaution. In fact, both scientists—and I don't want to go into details—if you have questions, we can go into details of this report—but failed to actually obtain scientific proof or evidence that the federal government may have on the safety of GMOs and it's why this committee, this expert group actually recommended precaution. And unfortunately, the federal government has failed largely to implement those 58 recommendations.

I mentioned fairly briefly some of the other reports there - the Ontario Public Health Association which is the advisory board to the Minister of Health in Ontario. They also did report, they also called, for example, for mandatory labeling of GMOs.

In Quebec, the Institut national de santé publique du Québec also did a report and it is also the advisory body to the Government of Quebec. I just want to—as I believe this committee has received a copy of the Agriculture Commission of the Quebec government on their report which they did. They had similar hearings that you're having now but on the issue of food safety and again, there was lots of people who came in front of those hearings and very rarely, in politics, it was unanimous consent from all parties on the recommendations of that report and that included among others, mandatory labeling of GMOs like in Europe.

Now the Canadian government has failed also on other issues. It failed, for example, to ratify the Biosafety Protocol which is an international treaty which has been so far ratified by 125 countries.

Even worse, the federal government has actually signed a moratorium between the US and Mexico that the factor legitimize contamination of all agricultural exports, up to five per cent. That's interesting. It's in the context of the environmental commission, the CEC which is the NAFTA commission of environment, has actually made a strong recommendation regarding the genetic contamination of corn in Mexico that all corn entering Mexico should be milled in order to prevent.

So you have the Environmental Commission of NAFTA, not Greenpeace, NAFTA making a recommendation of zero tolerance for contamination because it's serious stuff. I mean, corn, Mexico is the centre of origin for corn. It's absolutely vital to preserve it. Unfortunately, the US Government, of course, decided not to go ahead with this and the federal government was following suit then.

Then finally, the federal government has actually failed to do what 40 countries have done across the world which is to impose mandatory labeling of GMOs which is to give consumers the right to choose or not to eat GMOs if they want to.

So this is a series of failure by the federal government which you, as a provincial government, should be taking account of. It's why all those failures, and I'm on page 4, why all those failures of the federal government that the PEI government must act and use all its constitutional powers to put in place a de facto a GMO-free zone on the island.

In 2001, Canada's Supreme Court recognized the right of municipalities to, quote, “*secure peace, order good government, health and general welfare in the territory of the municipality, provided such by-laws are not contrary to the laws of Canada, or of Québec, nor inconsistent with any special provision of this Act or the Charter*”. End of quote.

This historical decision by Canada's Supreme Court created a constitutional precedent that recognized the rights of lower levels of governments in Canada to invoke POGG (public order and good government) to protect the health and general welfare in their territory. If the Supreme Court recognize this right to municipalities that are after all, a creation of the

provincial governments, it is obvious that provincial governments can also invoke POGG in order to put in place a GMO-free zone by creatively using existing provincial powers. As the federal government has so manifestly failed to *secure peace, order and good government, health and general welfare* on the issue of GMOs, any lower level of government in Canada and specially a provincial government like in PEI has the constitutional authority and obligation to act.

Therefore, in terms of the de facto, if you want a GMO-free zone in PEI, the PEI government, in our views, should fill the void left by the federal government in terms of taking precautionary measures to protect the environment and biodiversity. I may add health, because in fact, it is clearly a provincial jurisdiction.

Two - it should protect farmers from genetic contamination, limit future farmers liability caused by genetic contamination and avoid conflicts between PEI farming neighbours over genetic contamination and the spread of GE volunteers.

Third - Brand PEI agricultural products as non GE, more natural, better for the environment, in order to capture new markets and respond to emerging and lasting consumer trends.

I'm not going to go into details of figures now, but I just would like to show you some of the market trend because it's some of the debate which (Indistinct) but are global but are also, concerns Canadians and the absolute figures and some of the annex there, you have all the polls consistent for the last eight years that most consumers do not want GE products; and you have some of the figures there and there all even more elsewhere.

I just want to remind you a couple of facts as well in terms of trend. There are three billion people in the world, nearly half of the population of the world that are protected by mandatory labeling laws; 38 countries have mandatory labeling laws. In September, 2005, I mean this month, Article 18 of the Biosafety Protocol will come into force that will make it compulsory for any import-export document of agricultural food to include the presence of GMOs and give extensive details even if the actual practicalities are still to be worked out.

Again, just in the case of GMO-free zone, I just

want to go right to the last point. There are already 100 regional and 3500 sub-regional European areas that have already declared themselves GMO-free and have adopted in January 2005 the *Berlin Manifesto for GMO-free Regions and Biodiversity in Europe*. So PEI would not be the only one to do so and I strongly encourage you to do that.

On page 6, I just want to review with you one of the polls and you have the details in the annex there. Greenpeace commissioned last spring a poll. It was done actually early in your public hearings, in this cycle if you remember rightly. So it will be interesting to redo it now and see what's happened. What is interesting is that if you think that the Island is a majority favour of GMO-free zone, in fact, they are not alone. In fact, across Canada if you look at the figures, the overall figure including the no response is 43 per cent. Alright? And you can see some of the figures across Canada.

In fact, if you distribute the no response proportionately to the positive and negative, that means that 58 per cent of Canadians support the suggestion that their own province should become a GMO-free zone. So what I'm suggesting that if should PEI go alone, you might be the first one but I don't think you'll be the last one and I think there will be lots of pressure from outside to follow suit there.

You have also on page 7, the results of a public poll on PEI. We commissioned this public poll. It's a sample of 300 - it's probably specifically not totally significant in terms of polling but short of having a referendum on the Island, I think it would be difficult to otherwise. But what it indicates, about 53 per cent of Islanders actually do support this idea. In fact, when you distributes the no response, you go up to 62 per cent, and that was early in the debate on this issue.

So what becoming a GMO-free zone, what does it entail? I think since the market withdrawal of GE potato in 1999, PEI is already well on the way to become GMO-free. The last field trials in PEI took place in 2000, from a peak of 40 in 98. Yes, there was 40 field trials in 98 and the last trial took place in 2000.

In this context, by declaring itself a GMO-free province, would only recognize what is already

largely a reality. By declaring itself a GMO-free province, PEI would get public and market recognitions and therefore would be able to brand not only its agriculture production as GMO-free but also strengthen its positive image in the tourism sector.

By declaring PEI a GMO-free zone, the government would also protect its agriculture, fisheries and tourism sectors from the direct and indirect cost associated with genetic contamination including: loss market opportunities for PEI conventional and organic crop farmers, seed producers, dairy producers and salmon fishermen; as well as liability risks for PEI conventional and organic farmers and seed producers.

In particular, PEI should undertake an evaluation of the costs of not declaring itself a GMO-free zone and some, especially in the US have already done that. It is important to remember that the contamination of the food chain and the agriculture system by the GE corn StarLink in the US and in Canada in 2000-2001. It cost an estimated \$1 billion US.

So in conclusion, what should basically, what PEI should do, so on page 8, you've got some of the main points there. I think some of the—declaring yourself a GMO-free zone would in turn making sure that only GM free crops are planted on the Island.

2 - Make sure that seed cultivation on the Island is free from GMOs. This would enable the Island seed producers to supply the expanding IP, Identity Preserve seed markets.

Make sure that animal feed used on the Island for the production of meat and byproducts like cheese, milk, eggs are GMO-free.

Make sure that no genetically engineered fish, salmon in particular, is produced on the Island to protect both fisheries and aquaculture.

Put in place a provincial mandatory labeling for GMOs, harmonized with the European standard that could be eventually harmonized with a pan-Canadian standard when the federal government will be ready. The Agriculture Committee of the Quebec National Assembly recommended unanimously mandatory labeling of GMOs in food harmonized with the European standard.

6 - Declare its intention to move toward an ecologically and sustainable agriculture. This is really—well everybody should be moving towards.

7 - Put in place a communication and marketing

strategy to highlight PEI status as a GMO-free zone that encourage other governments to follow PEI government leadership.

Before ending there, I just want to go through some of the documents I gave you because I think I gave you a lot. I'm sorry, you have a lot of home reading to do now but I've given you one of the—and there are copies at the back for members of the public who are there. This is a little shoppers' guide because there is no mandatory labeling in food in Canada. So this is some information where one might find GMO products and non GMO food.

You have a copy as well, a one-page document called "Labelling by the Numbers" which is a summary of all the public polls done for the last few years which shows that public opinion in consumers is very consistent in Canada in their rejections of GE products.

You have a copy as well of the details of a public poll which was conducted which I just mentioned which gives you some of the more details and pointed information. I also gave you a bill which was introduced in the US in the State of Vermont which is a bill actually, to protect farmer's liability on GE contamination. This bill is going through a parliamentary process. It's a Senate Bill, Bill18 which basically would protect farmers from genetic contamination caused by GE and I think it would be interesting as well for PEI, part of this GMO package to really consider protecting its farmers from the consequences of GE contamination. I don't see why farmers should have to pay the price when it's a company like Monsanto who has introduced a technology that probably hasn't been tested sufficiently in that case.

There is a little booklet, there's a couple of booklets. One is on fish, on GE fish which is a summary a bit of the, of what's coming up in terms of GE fish. And as you know, you are on PEI, there's a company who is very keen to market this and get authorization in the US and possibly in Canada so I think you should—be on the front line on this one and that's why we make a specific reference to fish.

We have also a little booklet on Canola. It was interesting to hear the first one of the presenters from the agricultural community talking about soybeans. They just omit—I think one of you asked

them a question about canola and the answer was, I'm not an expert, I think, something like that. So you have some of the technical information there.

What's interesting - this document is really about documenting how Canadian exports of canola, GE canola, in Japan is actually now contaminating some of the local plants which are plants related to Canada in Japan. I just want to point out that it is very interesting that Australia who is also very pro GE, Australia has decided to put a moratorium on canola, not because they don't believe in GE but because they realize there's a market opportunity to supply the world with GE free canola. And Canada is the only country now which exports GE canola on a large scale.

Again, Japanese are very, very concerned because canola, it's a local plant and they eat the actual flower. So can you imagine the symbolic significance for Japanese in terms of getting GE canola from Canada contaminating their crop which is for deep control reasons being very significant. So that's a little document there as well.

I'm going to leave as well, with the clerk of this committee, a couple of other documents. I don't have enough copies but there is a CDROM of some of the documents on soybeans which we've done but the real context of the market and what's happening on that. So it's two CDROMs I've got there. I've got also a document on this argument that GE will feed the world which is again, a very and a dubious argument there but it's to show that there are alternatives, existing alternatives to do so and we don't in the world, specifically in the seven countries certainly don't need GE, so I'll leave it with you.

I also took a copy of the NAFTA Environmental Commission report on Mexico corn which make recommendations that all corn should—imported in Mexico—should be milled in order to prevent contamination. Again, let me remind you, it's not Greenpeace there, it's the NAFTA Environmental Commission. So I'll leave it for you. It's a valuable. . .

I leave you two copies as well, we did—our colleagues in Europe did an extensive study of trend in markets in the EU regarding GE and it was quite clear that most companies in Europe now actually have entirely shifted to non GE

because consumers simply don't want it. And it's quite ironic when the soybeans, its Canadian farmers who are exporting and producing non GE soya to respond to the demand of the European consumers who can express a preference because they have mandatory labeling and I'm sure that Canadian farmers could also do the same for Canadian consumers who do not want to eat GMOs if we had mandatory labeling.

So I will end there and I will be delighted to take any questions and answer if I may.

**Wilbur MacDonald (PC) (Chair):** Wilfred.

**Wilfred Arsenault (PC):** Dr. Darier, merci beaucoup [Welcome in French]

**Dr. Éric Darier:** Merci.

**Wilfred Arsenault (PC):** I'd like to go to page 8 of your presentation, in particular, point number three and I'll read from the quote here - *Make sure that animal feed used on the Island for the production of meat and byproducts like milk, cheese and eggs are GMO-free.* My question is - do you think that if some of your recommendations were implemented, that the cost of production would be higher? And the other part to my question is let's say the Island is declared GMO-free, from a market perspective, do you think that we would be able to obtain a premium price for the products leaving Prince Edward Island?

**Dr. Éric Darier:** Yes, I think by being the first provincial government to declare yourself a GMO-free zone, you would get the benefits of at least branding yourself very firmly. You know in business, one of the things is to always be the first. So when McCain the business actually withdrew the GE potato in 1999, in large part it was because they recognize—first of all, it's a reputable who knows there were international rejections of GE elsewhere. They knew in the long term, they would have to probably do that. So when they withdrew the GE potato in 1999, they wanted to be the first one precisely that people and the consumer remember later on or immediately that they were the first one to do so.

So I don't have any figures per se and it's why I think it would be interesting to do. Of course, I know you got to make cost analysis just to recap that. Not only what would be the cost, additional cost of putting in place a GMO-free zone but what

are going to be the costs down the line if you continue to—or there's an expansion of GE crops on the Island. Then down the line, there is contamination. For example, canola is a specific case. So what we are inviting you is go the full way. I think you can do it. As I said, you are probably already there's not too much GE products already here on the Island and I think it would be a tactical and market advantage for you to brand it, including animal feed. I think it's the trend, as well in Europe, I think more and more companies in Europe are now shifting to non GE animal feed. So might as well going that route too.

So I don't have any specific—and then the other thing is, is GE really less cheaper? You know, again there are no independent studies that confirm so and as you know, and lots of you are in agriculture, any new products the price might be lower initially because the company wants, vie for farmers to buy it and then you might have seeds probably cheaper but then down the road you have to pay the other side that comes with it, a bit higher anyway. So once they have a market, they get you there a few years down the line. So I think that's my, some of the pointers that .

**Wilfred Arsenault (PC):** Thank you.

**Wilbur MacDonald (PC) (Chair):** Wayne.

**Wayne Collins (PC):** Yes, Dr. Darier, welcome and thank you for your presentation. I want to follow up a little bit about what Wilfred was saying in terms of market opportunities here because just earlier this morning, we heard representatives from the PEI Federation of Agriculture say that in terms of formulating our recommendations, our emphasis should be on market opportunities. As a matter of fact, they said that if we were ever to recommend a ban on GMOs that a market study is needed regarding whether or not non GMO really presents the kind of opportunity that you, in fairness, I think you speculate is there and that's all we have at the moment is speculation on whether or not the market opportunities are there.

We're a small province and right now, we're even having challenges to enforce our buffer zone laws and our crop rotation laws and to say that we would be in a position to make sure that only GMO-free crops are planted and that all animal feed used on the Island that would go into indirectly to making of milk, cheese and eggs are

GMO-free, I think while it sounds good, I wonder about the practicality of doing that.

But also this morning, we heard something interesting as well from a farmer in his firsthand testimony here that last year he sold 150 tonnes of non GMO soybeans to Japan. This year, he and others in his area have banded together and they're going to sell, I think it was over 700 tonnes of non GMO soybean to Japan. So already without declaring Prince Edward Island GMO-free, we see the opportunities on that level right there. So why is it necessary to ban GMOs to accomplish some of those market opportunities?

**Dr. Éric Darier:** Yes, on your last point, I mean soybeans as you know, it's not a cross-pollination, it doesn't cross pollinate so there is no infield contamination per se. So it's the exception among all the crops. But when you're talking about canola, it's not the case and corn, it's not the case either. There can be cross pollination and contamination there. That's the first thing. My question is just as I said in my comments is it's great that actually the Canadian farmers and PEI farmers actually have made that choice of actually producing non GE soya. It will be good if the market which exists there for non GE soya was made by Canadian farmers. It's interesting that it's an international market, Europe or Japan. It was actually encouraging Canadian farmers to actually produce something which even Canadian consumers want but couldn't get because we simply don't know. We don't have this right of knowing if it contains GE.

So again, we have to be careful because the coexistence argument which is there which always mentions soybeans but they never mention the others. And I say, watch out on the canola out there. Because one thing which they didn't mention this morning, the gentlemen from the PEI Federation is that they haven't told you that there is eventually no organic canola being produced anymore in the west. In fact, all the organic canola producers have more or less stopped producing organic canola because they know they could lose the specifications because of contamination. Even more than that, the Saskatchewan Organic Directorate has actually gone to court to sue the federal government and Monsanto for genetic contamination and they lost all that sector.

So again, I would urge you in PEI to be very careful. Maybe so far it has worked. Maybe it's

because GE has not entered in a big way. Maybe because McCain in 1999, with all the provinces having large businesses controlling a lot of farmers has actually made those choices but don't—be careful of doing much within there. And I would say, not only be careful but take this as an opportunity. Take this as an opportunity and say—fine, we are relatively small. We can actually be, you know, even if a North American non GE (Indistinct) is there, let's not—go the full way and do it because it's visible and because I think it's in the long term, very much what consumers want internationally and in Canada and I think it would prevent a lot of problems down the line in terms of genetic contamination.

**Wayne Collins (PC):** When you say it's what consumers want, yet we heard earlier this morning again the quantum leaps in terms of the number of acres worldwide that are being sown with GM seed. So how do you explain that? If it's what consumers want, why is there such growth?

**Dr. Éric Darier:** I think what are the figures of the acreage, it's important to remember that 95 per cent of all GE acreage in (Indistinct) free countries: US, Argentina and Canada, for all historical reasons which we can explain but the long term trend is against that in terms of market demand. So I think you have to look at as well who is pushing this? There's one company. Let's not beat the bush about it. It's one company, a US company, Monsanto. Ninety per cent of all GE crops around the world is one company. And what did this company do or it has done historically is to sell what? Herbicide and pesticide. What GE does, contrary to some of the comments that were made this morning, does not increase yield. There's no GE crop specifically designed to increase yield. What they do, two-thirds of it, maybe 70 per cent is herbicide resistant and as you know, it's herbicide resistant to one of the side that the company is trying to sell as well. So it's a way to capture that herbicide market. So one has to be very careful also to look at the broader context and not—try to protect your own farmers from being too dependent on those companies who's selling the ingredients as well, and I think that would be a way of doing it.

**Wayne Collins (PC):** Could you just update us a little bit on the current status of the Bill in Vermont - S.18?

**Dr. Éric Darier:** Yes, I think it's going to go back to the House of Rep at some point. That was the initial bill that was introduced. I'm not—it's going to be in the fall. It's going to come up in the fall.

**Wayne Collins (PC):** But it's still to undergo debate under the state representatives?

**Dr. Éric Darier:** Yes, I just want to point out there are other examples of actually adopted bills or laws in that case because Germany just adopted a bill which protects farmers as far as—it's reverse burden of proof. For example, it's actually if you are a conventional farmer and if you actually find there is GE contamination in your field, you basically have a legal recourse which doesn't mean that you have to prove there's contamination where it's coming from which is the case here which we have to do. But in fact, it's those farmers who produce GE who have to put themselves in the registrar and have to show and convincingly—they have adopted measures to prevent that contamination.

**Wayne Collins (PC):** They've reversed the onus.

**Dr. Éric Darier:** That's right. Switzerland has done similar bills. So I think it's important because remember, most farmers are still conventional farmers, organic can't afford contamination of their crops because they lose their certification. And it's not an accident, there is no, as I said, I mean organic production of canola in the west is finished. It's over. It's a business over. So don't go that route.

**Wayne Collins (PC):** If I may have one other short question, Mr. Chair, this morning we heard about the United Kingdom has come up with coexistence guidelines. Are you familiar with that at all?

**Dr. Éric Darier:** I'm not familiar in details but what I know is that there is no commercial growing in Europe and it's very unlikely will happen. The European Commission is very keen to push it and Tony Blair's government is pleased to push it. There is such huge resistance against a GE crop being planted. I don't think it's going to go ahead and actually, there was another report, I could give you a reference.

**Wayne Collins (PC):** How would they have come up with these guidelines? Are these just strictly on paper or have they done any trials in the UK to form the guidelines?

**Dr. Éric Darier:** Well actually yes, there's another study which showed that in fact, GE would have major impacts on wildlife in the UK. I mean I can find you this report if you are interested as well. So one has to be—to put that in that context. I know the European Commission would like to push as well on existing, on coexistence but there's lots of practical problems and lots of farmers just simply don't want down that route.

I'll just give you an example which is a Canadian one which is why do you think Monsanto was forced to withdraw its application to GE wheat? It's because farmers in the west had already Round-up Ready, it was a resistance crop like canola, you know like soya, and they had already that experience and it's (Indistinct) No, no, no, we're not going to go in GE wheat when it will contaminate our own conventional wheat and then we depend 70 per cent of Canadian wheat is exported abroad. We don't want to kill off that market abroad so I think Canadian farmers, especially in the west, those—someone will probably try GE canola in the past. Even now, they're looking at that and said—we don't want to go down that route. And that was a major victory for Canadian farmers to force Monsanto which is not a company which is usually easy to turn to actually say—no, we are not going to go ahead for the time being. It's never . . . too much of a . . .

**Wayne Collins (PC):** That was for the survival of the Canadian wheat export markets then?

**Dr. Éric Darier:** For a large part and I think farmers in the west, I trust their judgment, they look at what GE has brought to them in the past, some of inconvenience and some of the risks prevailing the market and long-term future and I think the international market was very clear to tell them, don't go that route because we'll go elsewhere and I fear that for Canada, it's going to be the same in Japan. I think Australia who are not anti GE and I know for the fact they have a moratorium on GE canola, it's precisely to make sure that they have a presence in Japan.

**Wayne Collins (PC):** We were told they were not getting any kind of competitive price advantage

here in those markets. We were told that they were actually underselling in places like Pakistan. They were actually getting less for their non GMO canola than as the GMO canola.

**Dr. Éric Darier:** Well I think it varies from products in the years and it depends on how it's marketed. I know for non GE crops usually, at least initially a few years ago there was actually a premium and I think there is a case for soybeans. But canola, I think of a report, I don't have any proof of that, that the existing stock of canola is like 40 per cent of the actual annual production which is very high apparently. So there must be problems of overproduction of canola and singly, there must be a resistance of market abroad against that. So again, I will. . .

**Wilbur MacDonald (PC) (Chair):** Eva.

**Eva Rodgerson (PC):** Yes, I want to thank you again for your presentation today. There's a lot of information here and one that I'm looking at here is how to avoid genetically engineered food. In trying to sift through all our information and look at whether it's a health concern or environmental concern, I find it really strange that McCains was used as an example, of a company that took leadership in not being part of this GMO and yet they're on the red list.

**Dr. Éric Darier:** Yes.

**Eva Rodgerson (PC):** Where, they threw out the potato—so it makes me wonder what was their motive? Was it health or safety concerns or was it a business move?

**Dr. Éric Darier:** I can't answer for McCains. I think you can ask them directly. One reason why for us they're still on the red list, it's because as you know, we have also a little orange or yellow list there which is basically to encourage companies who have made some kind of move towards removing one or more ingredients from being GE.

So we do acknowledge that they removed GE potatoes from their production. But they never confirmed that they actually not using other ingredients. How they fry their potatoes? In canola oil, so we decided to be very, very conservative in that shoppers guide. I'm sure there are some probably defectives, some of the

products in the red list who might be actually defect or below, let's say, the European level of one per cent or .9 per cent there. Until the companies send us letters under seals confirming that actually they're GE free or a level below the European level, we're going to keep them on the red list.

I just want to point out, the little shoppers guide exists for the last four years. We write to companies. We give them an opportunity to list the products where and when to confirm. Some of the companies on the green list, not all organics, some conventional or non organic products actually, write to us and tell us, by the way, we've removed GMO ingredients. We can give you the proof. We do testing. I think at least of one small beer company in Quebec. We give you proof that all our corn is non GE when it comes in but all the others at four or five years, an opportunity to respond and none of them told us we were wrong on that level.

So I would love to put McCain as well as his potatoes on the green list but until they give us some kind of evidence and written confirmation that they are not, we are not going to do that. So I think it's why, why PEI, I can tell you, we are an agreeable organization. The news travels fast in an organization. I can tell you should PEI declare itself a GMO-free zone, you probably would get a lot of positive publicity for having done so which can't do harm in terms of promotion of PEI outside both of tourism, both in North America and both elsewhere and I think we might have a little shoppers guide on a specific section on GMO and PEI, non GE free zone in PEI. That would be a positive move to do.

**Eva Rodgerson (PC):** I guess it is a challenge when we say zero per cent GMO-free. That's an example of the fries that ships out of this province today. It's an example of our challenge (Indistinct) . . .

**Dr. Éric Darier:** Yeah, but we are practical as well. I mean obviously, we would rather determine, we realize that it exists in North America and obviously, that you would not be able to go from one day to the next to a GMO-free zone. I mean, for example, for the seeds—we did a discussion with some of the agricultural panels in Quebec on how long would it take them to actually—and Quebec is much larger so the issue

of stock of seeds availability there and some of the seed growers as well. It would take about three years to do a full transition because we need to plan seed productions a bit down the line. So they could do a full transition within three years. That's for a fairly large—I'm sure there would be enough seed, non GE seeds for farmers here on PEI so you probably could do it much quicker.

So we're not asking you to do it tomorrow morning after the report. Obviously, there will have to be a transition - there will have to be support for farmers too. I don't think, it's not fair, farmers have got other things to do. So I think there has to be a guide and commitment to assist farmers to do that transition, to do it well because there's nothing worse than to do something half-baked which it doesn't work. But to be quite firm politically, if you say, no, we're going to go there. We're going to do it. We're going to do it well. That's our firm intentions to move there. We can come back. You can invite us. We can talk about which threshold and all this.

**Wayne Collins (PC):** A very quick question - is this the first public disclosure of the Canada and PEI poll today?

**Dr. Éric Darier:** No, we did it last spring when it came out, there was already a release. There were articles in the local media.

**Wayne Collins (PC):** Alright, thank you.

**Wilbur MacDonald (PC) (Chair):** Thank you very much, Sir, for coming to PEI today.

**Dr. Éric Darier:** Thank you for inviting me.

**Wilbur MacDonald (PC) (Chair):** We appreciate the fact that you come and we have a lot of reading, I know. We'll have to do that.

**Dr. Éric Darier:** I'm sorry about that.

**Wilbur MacDonald (PC) (Chair):** So again, I thank you.

**Dr. Éric Darier:** Thank you to you.

**Wilbur MacDonald (PC) (Chair):** We're going to take a short break. Dr. Irené is not here yet.

[Five-minute break]

**Part IV - BIOTECCanada: Dr. Philip Schwab, Vice President, Policy and Sector Affairs**

**Wilbur MacDonald (PC) (Chair):** Where are you from, Sir?

**Dr. Philip Schwab:** I'm coming to you today from Ottawa.

**Wilbur MacDonald (PC) (Chair):** From Ottawa, very good.

**Dr. Philip Schwab:** You control the microphone from back there.

**Wilbur MacDonald (PC) (Chair):** Yes, they are controlled back here.

**Dr. Philip Schwab:** Very good. I really appreciate the invitation to be a part of this proceedings. BIOTECCanada is an industry based association. It's a membership association and we represent the broad range of biotechnology companies in Canada. We also represent academic institutions and what we call, our knowledge and service providers, legal firms, accounting firms, business development firms that are also interested in the biotechnology sector.

What I would like to do today is talk to you a little bit about the broad industry of biotechnology in Canada and talk a little bit about some of the efforts that are going on in PEI because we view biotechnology as related to, not only agriculture but environment, human health and industrial purposes. GMOs are one portion of that overall universe but I'd like to talk a little bit today about that wider range of industries.

Why am I here today? It's because I've seen these biotechnologies from a number of different angles throughout my life and my career. I have a PhD in plant breeding from the University of Minnesota. While I was there I worked on breeding alfalfa crops as a biomass fuel source. So an alternative use for a crop that in some ways is declining in use. We wanted to look at altering that crop through traditional breeding methods for a new market. I worked for about 10 years in Washington, DC on agricultural biotechnology policy both at the United States Congress and at the Department of Agriculture. I was raised on a family dairy farm that has incorporated biotech

crops in I think, a very sustainable way, using crop rotation, animal agriculture and diversified systems.

So like I said, I'm really pleased to be part of your process here. I feel a little bit like, I'm here at the table and everything has already been said, but I just haven't said it yet so I appreciate that you've had a very extensive briefing on this issue. You've heard from a lot of people and I think you all must be some of the most informed legislators on the continent about this issue based on what you've seen this far.

You know, biotechnology is not new to Canada. I think just last week or two weeks ago, the Canada Post unveiled an honorary stamp commemorating the 50<sup>th</sup> anniversary of the polio vaccine work in Canada. So Canada has been involved, has been a leader in biotechnology for a very long time. Biotechnology today in Canada represents about 500 companies that are on the cutting edge of the life sciences revolution here. The majority of these companies are small companies. They are fewer than 50 employees. They generally represent an innovator or an entrepreneur who has discovered a new technology, a promising technology, and is struggling to bring that to market in Canada and to the global marketplace.

These companies are found right across the country. There's Immuno Vaccine Technologies in Halifax and it goes right across the country all the way to Vancouver. The folks who run these countries are innovators. As I said, they're developing new technology and as of last year, they were employing over 12,000 Canadians in high tech, high skill jobs. The biotechnology sector in Canada earns over \$3.8 billion in revenue each year and they spend over \$1.5 billion in research and development activities. Now this is pretty small in comparison to the overall Canadian economy. The top ten biotechnology companies in Canada have a market value of less than one of the major banks but the biotech companies in Canada do have \$12 billion worth of market value and that value is growing each year.

The economic opportunities of biotechnology overall are driving countries around the world to race for dominance in this technology and the Canadian government is certainly participating in that effort. The Government of Canada as you have heard from several presentations has

repeatedly stated its goal to make Canada a leader in the knowledge economy and biotechnology is one of those areas that it would like to lead. It has backed up those wishes with investments in biotechnology research and development through programs like Genome Canada, the Canadian Institutes for Health Research, the Canadian Research Chairs program and regional development funds like ACOA.

As a result of those efforts, Canadians are now participating in global efforts to develop vaccines against AIDS, to determine the genetic causes of diabetes and other diseases, sequence the bovine genome, and improve the cold-tolerance of wheat. These are real partnerships where Canadians are at the table making excellent scientific contributions. Federal and provincial governments are investing more money each year in genomics and proteomic research in an attempt to unravel the genetic causes of diseases, and to develop the next generation of medicines that are targeted not only to specific diseases but to specific patients. So that not only will you know whether you have a disease that can be treated with specific medicine but will have an idea of whether that medicine will work on you. So it's more precise medicines.

Our scientists are also leading the way in the development of plants that produce human pharmaceutical proteins, biofuels and bio-plastics. You heard a little bit about that this morning from the PEI Federation.

I'd like to point out that these opportunities are not just limited to Montreal, Toronto and Vancouver. Smaller communities across the country, like Saskatoon, have developed innovation centers around their universities and around national research laboratories. Winnipeg, for instance, also is quickly becoming a center of health and medical biotechnology due to the presence of the national disease laboratory there and the home of the Public Health Agency of Canada. Even smaller communities like Thunder Bay, Ontario are highlighting the economic opportunities of biotechnology during National Biotechnology Week later this month. Thunder Bay is just really an amazing example where they are planning 3.5 days of events featuring their university, some local companies and schools to highlight what can be done in biotechnology across the range of industries.

As you all know, Prince Edward Island is also seeing the benefits of the life-sciences revolution. The establishment of the Institutes of Nutrisciences and Health is a giant step toward creating a nexus of high-tech talent and investment in biotechnology related to food and nutrition. Investments in biotechnology through the Atlantic Innovation Fund have stimulated new research and have contributed to the development of companies like Atlantis Bioactives which extracts pharmaceutical compounds from local resources. PEI has also attracted corporations like BioVectra which is a member of the PEI BioAlliance which uses advanced biotechnologies to create many types of industrial and nutritional compounds.

Just as biotechnology in Canada encompasses more than just genetically modified crops, biotechnology in PEI is also larger than the debate over transgenic foods. The heated controversies over those items unfortunately, tend to grab most of the headlines regarding biotechnology. When folks are talking about GE foods, they're not also talking about insulin or medicines, other medicines that are produced through transgenic technology.

You've also heard many times about the rapid adoption of biotechnology around the world and you've heard about how PEI farmers have found great success adopting genetically modified soybeans, canola and corn for the benefits that they provide. You've also heard the statistics about overall in Canada that biotech varieties represent 50 per cent of the corn and 77 per cent of the canola grown in Canada. These are rates that are very similar to the United States.

Overall in the United States, about 55 per cent of the corn crop is genetically modified. About 80 to 85 per cent of the soybean crop is genetically modified. In some areas of the United States, where the pest pressure is not so great, genetically modified corn may only be about 25 per cent of the market. So their farmers do have a choice and I believe that farmers, as you've heard, are voting with their pocketbooks. If they don't find a value in this technology, they're not buying it. If they do find a value, they're happy to purchase those seeds and use them.

I believe you heard from the Canola Council about the values that they have described to genetically

modified canola and I won't repeat their (Indistinct) there but their benefits of reduced fuel usage due to fewer herbicide applications and a greater profit per acre are very convincing arguments. A product that is just entering the market right now is rootworm resistant corn in the United States and this is an important innovation because rootworms are currently controlled through application of insecticide and it's estimated that adoption of the BT rootworm resistant corn will reduce organophosphate insecticide application in the United States by about five million pounds of active ingredient per year. So that's a pretty significant reduction in pesticide use that is projected from the adoption of those varieties.

It goes without saying that BIOTECanada's members strongly support the comprehensive, science-based system governing the use of agricultural biotechnology that regulates genetically modified crops in Canada. Health Canada and the Canadian Food Inspection Agency, as you also heard, perform extensive tests and evaluations to ensure that genetically modified plants and animals do not pose a threat to human or animal health. New biotech crops only appear in Canada on the market after receiving the government's stamp of approval. And to date, over 50 different varieties of biotech crops have been approved for safe production in Canada.

Plants that have been genetically modified for pest resistance and herbicide tolerance are currently the most common biotech crops in Canada. But just as genetically modified organisms are only one facet of the overall biotechnology picture, so too are modified food crops only one application of plant biotechnology overall. Canadian innovators are hard at work developing the next generation of "Made-In-Canada" biotechnology solutions in the area of plant-made pharmaceuticals, enhanced nutritional crops and plants that are resistant to environmental stress.

Imagine, if you will, that there's a new protein-based pharmaceutical that is discovered. It's highly effective for the treatment of arthritis and following its approval by Health Canada, there are thousands of people in Canada who want access to this treatment. But because it's a protein-based molecule, it's very difficult to manufacture. It's not a simple chemical manufacture like most pharmaceuticals. So the types of manufacturing

facilities required to ramp up production take a long time to build. However, plants are highly efficient generators of protein and they can be engineered to produce human pharmaceuticals quickly and at lower costs than conventional production methods. You can increase production of these types of compounds in a single growing season versus the several years it might take to design and actually construct a manufacturing facility.

This might sound like science fiction and you've heard a little bit about plant made pharmaceuticals through the course of your hearings. But it's not science fiction. There are Canadian companies that are currently today developing this type of technology.

SemBioSys is a company that's located in Calgary. It's a small startup but it is leading in developing plant made pharmaceuticals. They are currently testing safflower varieties which is a type of oilseed that have been genetically engineered to produce human insulin and cardiovascular disease therapeutics. I think that's what some of the gentlemen this morning were referring to.

Medicago Inc. is a Quebec City company that currently has a staff of 53 people at its facilities and it's developing a plant based platform for producing bio-pharmaceutical proteins such as interferon in alfalfa. Medicago produces its genetically engineered plants in controlled greenhouses.

I should say this, SemBioSys is also mostly limited to the laboratory but they are conducting field trials in the United States because the United States does have a framework for regulating these types of crop varieties in the field, very careful isolation and containment regulations. And as you heard from the CFIA, Canada is still in the process of consulting and designing those types of regulations.

Another interesting point is that researchers in the United States and elsewhere around the world are trying to develop tobacco varieties that also produce human and animal pharmaceuticals. The obvious benefit to this application is the ability for current and former tobacco growing regions to reincorporate a crop into its economy even as demand for traditional tobacco products decreases. Also, it's very unlikely that a tobacco

“pharmacrop” would enter the food chain.

Another second-wave application of genetic engineering is the use of genomic techniques to identify genes that can lead to crop varieties more resistant to environmental stress, higher in nutrition or suitable for industrial purposes. The University of Toronto Joint Centre for Bioethics in a 2004 report of the Genomics Working Group of the United Nations Millennium Project listed nutritionally enriched genetically modified crops as an important technology in the fight against global poverty and disease. Notice that they did not say a cure for global poverty and disease. It's a tool in helping to fight poverty and disease.

Now following up on that recommendation, the Bill and Melinda Gates Foundation just invested over \$17 million US in the development of nutritionally enhanced sorghum for Africa. And of course, Canadians are also involved in this area of work as well.

There's a company called Performance Plants Inc. of Kingston, Ontario, another small startup. They're currently using genomic research techniques to identify genes that maybe related to water use efficiency, heat stress, drought tolerance and develop new varieties that can perform better in stressful environments. Now some of these varieties maybe transgenic. Some of them maybe resulting from better selection within current crop species but all of these varieties will make use of biotechnology and DNA markers in some particular way.

The University of Alberta also recently received a Genome Canada grant of over \$13 million to study the genomics of oil production in canola. They're looking at the way that canola seeds make its oil and decide to see if they can modify the types of oil the seed produces, make it healthier for nutritional purposes or perhaps make it more suitable for industrial purposes like biodiesel.

Finally, scientists at the Defence Research Establishment in Suffield, Alberta and the US Department of Defence have engineered a plant that can be used to detect land mines by changing colour in the presence of TNT. So plants are marvelously flexible platform for all types of purposes and really, it's really a sort of a limitation of the imagination that keeps us from developing more applications for the use of plants.

But there are also applications to biotechnology in the aquacultural sector. Genome Canada also just awarded a total of \$12.7 million to scientists working at the Huntsman Marine Science Centre in New Brunswick to study genomic methods of improving cod breeding and broodstock development. Their idea is to select not necessarily genetically engineered but to select using biotechnology, cod stocks that are suitable for farming. Their project estimates that cod farming in Newfoundland alone could generate more than \$100 million in new money while meeting consumer demand for a high quality food resource.

These are not hypothetical examples. These are not the airy promises of biotechnology. These are real life companies and they are projects in which governments and individuals have decided to risk their capital because they see the economic, health and environmental values associated with the development of these technologies. These are companies that are bringing high tech, high skill and high value endeavours to Canada and attracting topnotch scientific and management talent to our country as well as significant financial investment.

As you can see, Canada is currently punching above its weight in biotechnology but our international competitors are close behind. China and India both continue to develop expertise in human and agricultural biotechnology at an ever increasing rate. China alone increases its cultivation of biotech crops by over 30 per cent each year. Singapore and South Korea are developing tremendous capacities in medical biotechnology. And we saw just this spring that the University of Toronto may loose a biotech project to Singapore because they have more capacity to deal with it there.

Just this week, the government of Vietnam after several years, announced regulations governing the production of genetically modified crops. Its scientists have been developing these crops in laboratories for years. But now, Vietnam has a framework for planting these crops on the field and testing them to ensure that they're safe for production. I was there a couple of years ago and I saw its universities are full of students, thousands of students enrolled in biotechnology courses because those students view biotechnology as the next high tech, high skill career area.

But to keep its competitive edge, Canada must continue to attract intellectual and financial capital. High-technology enterprises only choose to locate in areas where innovation and technology are welcome. Currently, PEI is such a place. You see the government investing in the new institute here and companies are coming here. But a move to ban or limit the use of a technology as biotech crops that has been proven safe around the world, may send a strong signal to folks that innovation is not as welcome here as it is in other parts of Canada and it may make it more difficult to attract future biotechnology corporations.

As I've tried to relate, the applications of biotechnology that we are witnessing today are only the leading edge of the innovations that are just around the corner and they are broader than just genetically modified crops. The information that humankind is currently uncovering through the human genome and proteome projects will soon allow unprecedented ability to detect and treat diseases. Efforts to understand the functioning of crop and forest species will allow us to use our natural resources in more efficient ways and allow us to improve plant and animal varieties without the need for genetic engineering. Scientists and entrepreneurs are currently part of this growing portion of the knowledge-based economy in Canada.

These technologies are being debated in committees like yours around the world. This has been some of the most debated technology that has ever been introduced and they are important debates to have. In general, the result of these debates has been an overwhelming desire to grasp the promise of biotechnology as another tool to combat disease, hunger and resource depletion. What we see, we don't see new countries erecting bans, we see countries adopting these biotechnologies just like we saw last week, Vietnam finally releasing their regulations.

Canada and PEI can continue to be innovators in biotechnology and architects of the biobased economy. What our members, what BIOTECANADA's members ask you to do is not to turn the clock back on this safe and beneficial technology but rather to allow innovation to continue to move forward for your citizens. Thank you.

**Wilbur MacDonald (PC) (Chair):** Thank you,

Sir. Any questions? Wayne.

**Wayne Collins (PC):** When you talk about and you just mentioned it there, the most debated technology and there certainly has been a great deal of testimony offered here since we began our hearings, but it keeps coming back to one side of the argument saying that the science of genetically modified organisms is uncertain. It's an uncertain science. You hold a PhD in plant breeding?

**Dr. Philip Schwab:** That's correct.

**Wayne Collins (PC):** Is the science uncertain? Are there question marks out there? Are there great unknowns?

**Dr. Philip Schwab:** I think the science is pretty well settled on genetic engineering. We know how the technology works. We know how to refine it and we also have 10 years of experience of knowing that this technology can be used safely and without any harm to human health.

**Wayne Collins (PC):** Yet there are still reputable scientists around the world who offer up papers from what we hear, that have negative comments about the science.

**Dr. Philip Schwab:** I think you can design a study to achieve the results that you might have set out to achieve, but I think that in balance, the evidence that is out there shows that farmers are adopting this technology, that it is safe for human and animal consumption and that people are realizing the benefits from it.

**Wayne Collins (PC):** In your presentation, you reference the NRC facility which is nearing completion on campus at UPEI dealing in nutraceuticals and health overall. Could you expand a little bit on the premise of—if we were to ban GMOs on Prince Edward Island, what impact would it have on the work of that nutraceutical facility?

**Dr. Philip Schwab:** I've tried to find out more about their research it's in and they're just getting started. But because they're just getting started and because they don't have the results of their research agenda yet, it's hard to speculate about what any kind of ban might be. But certainly, you can think about the idea that they might discover a particular compound or a gene in a crop or fruit

species and because there would be a ban on GMO varieties in PEI, they might have to license that technology to another province or even to the United States to fully develop and commercialize that scientific advance.

**Wayne Collins (PC):** So they wouldn't have their field laboratory handy then?

**Dr. Philip Schwab:** That is correct.

**Wayne Collins (PC):** Thank you.

**Wilbur MacDonald (PC) (Chair):** Richard.

**Richard Brown (L):** Thank you for your presentation. What is genetically modified? It's pretty simple for people to figure out - okay, you put a chemical on a plant and a bug eats it or whatever eats it and it kills it and that's how we get rid of these problems. So what happens in the cell that kills the bug on a genetically modified thing or do they just don't go around it? Does it actually kill the bug?

**Dr. Philip Schwab:** It actually will kill the bug.

**Richard Brown (L):** So it's in the cell then.

**Dr. Philip Schwab:** It's in the cell of the plant.

**Richard Brown (L):** So we're eating that that kills the bug then?

**Dr. Philip Schwab:** That is correct, that is correct, and what the difference is, is that the digestive enzymes of the insect respond very specifically to the protein that is produced in the plant but what happens is the protein binds the digestive enzymes of the insect and sort of give it a bad case of indigestion.

**Richard Brown (L):** So why wouldn't it happen to us then?

**Dr. Philip Schwab:** Well these proteins are extraordinarily specific, even to insect species. That's why a BT crop doesn't kill every insect that lands on it or chews on it. It kills a very specific insect for which it was designed and the human and animal digestive enzymes are not sensitive to that protein.

**Richard Brown (L):** So what kind of testing

would happen then on human beings? Like let's say, we get it wrong, you know, it kills the bug but also there's something in there that kills us. How do we know that it's not going to kill us? What kind of testing does Health Canada do to make sure that--although Health Canada says--it kills this bug. It does a great job on it. But what about humans, is there any testing done on humans before it's put into the field?

**Dr. Philip Schwab:** Absolutely, everyone of these varieties, before it leaves the laboratory, is tested to ensure that it is digested in exactly the same way as a non genetically modified crop and that's the basis of the testing. So it's tested. . .

**Richard Brown (L):** So do they test on humans?

**Dr. Philip Schwab:** It's tested in a sort of a laboratory digestive system that mimics human digestive system and it's also tested in animals.

**Richard Brown (L):** Thank you.

**Wilbur MacDonald (PC) (Chair):** Any other questions? When was the gene first developed? It's not that many years ago, is it, when they started to separate the genes? I remember reading back some years ago about how they had been able to isolate a gene from even humans, I guess, they can.

**Dr. Philip Schwab:** Really, we couldn't do any of this until about 50 years ago when this structure of DNA was discovered. It was in the early 70s when technology became such that we could actually identify specific genes, take them out of organisms and study them. So it's a technology that's been around for a little bit over 30 years.

**Wilbur MacDonald (PC) (Chair):** You mentioned about medicine and the biotech, being able to develop medicines. How close are we to that? Is there, let's say, for diabetes, cancer, whatever, is that a possibility?

**Dr. Philip Schwab:** Absolutely, we are very close right now to being able to commercially produce medicines in plants but it really is astonishing at the level of detail that Canadian scientists especially, are learning about the genetic causes of diseases. Another Genome Canada study that was just launched is studying diseases

in Newfoundland because there is a small population there that can be useful for identifying the genetic causes of diseases and once you identify genetic cause of disease, then you can set about looking for a protein-based treatment for that disease because you're correcting the genetic error that is causing the disease.

**Wilbur MacDonald (PC) (Chair):** I remember going through—what do they call those forests in Mauritius where there were five different trees that manufactured medicine for certain diseases—so we have been able to take that from trees for a long, long time.

**Dr. Philip Schwab:** Right.

**Wilbur MacDonald (PC) (Chair):** So this would be the first time taking it from crops?

**Dr. Philip Schwab:** Right with the idea being that, if it was a protein-based chemical that was producing in the tree, for instance, then you could engineer that into a crop and produce that same protein here. It is sort of like the Atlantic Bioactives, a company that is taking the tax off from the hemlock here too.

**Eva Rodgeron (PC):** I think when they found the gene that causes cystic fibrosis, the excitement across the country, across the border when they determined what gene it is but now it affects (Indistinct). . .

**Wilbur MacDonald (PC) (Chair):** I want to thank you, Sir, for a very interesting presentation and it seems like there is so much to this now. It's getting broader all the time.

**Richard Brown (L):** (Indistinct)

**Dr. Philip Schwab:** You know as much about this as some folks because you--you could spend--very enjoyable for me to read the proceedings.

**Wilbur MacDonald (PC) (Chair):** I welcome you to stay for the rest of the day if you wish. You can hear both sides most likely.

**Dr. Philip Schwab:** Thank you.

**Part V - Institute of Island Studies: Dr. Irené Novaczek, Director; Laura Fanning**

**Wilbur MacDonald (PC) (Chair):** We will now move to Dr. Irené Novaczek, if they got the technical difficulties wound up. It's funny in this modern age, we still have technical difficulties, and Richard, you couldn't sew?

**Richard Brown (L):** (Indistinct)

**Wilbur MacDonald (PC) (Chair):** There we go, we're all set.

**Dr. Irené Novaczek:** Thank you very much for allowing us to speak to you today. This is Laura Fanning. She's a Master of Arts in Island Studies student—no, she's a recently graduated Master student and she was working for the Institute of Island Studies briefly earlier in the year and I had her do the research that went into this small paper.

You will notice that we—being the Institute of Island Studies, we focus particularly on Island case studies that might help inform this issue for you rather than try—you've heard a lot of scientific discussion on one side or the other of this debate which is very legitimate. We didn't feel that we needed to try to cover all of that ground again in one small paper.

We've done something that's fairly specific because being the Institute of Island Studies, we have a particular mandate. One is to be a bridge between academia and the wider world here on Prince Edward Island, to perform research on issues that are important to PEI to help explain PEI to Islanders whether it's culture, the history, political systems, the environment or whatever. To bring in the best of what we can find from other Islands around the world because we firmly believe that Islands are particular—we have particular strengths and weaknesses as an Island and we can learn from other Islands around the globe.

We also have a mandate to intervene and to facilitate public discussion around public policy issues and this is a very serious public policy issue and therefore, I made it my business to be sure that we did some research that we could bring to the table to help you in your deliberations. Islands are very interesting jurisdictions because Islanders can look around and they see the sea all around them and they can see where their limits are. Islands are distinct. They are separate. They

are often remote. They have challenges with respect to communication and transportation and they have challenges with respect to the economies of scale that they can reasonably hope to attain. We are not a large Island. We are not well equipped to compete with mass markets, with mass consumer goods because we simply don't have the mass land base or the mass forest base or the mass, the very large marine resource area that other places may have access to.

Islands are often very—we're small and we're often very vulnerable. On this Island, we know that our soils are vulnerable. Our water table is vulnerable because it is small in size and because mistakes catch up to us very quickly. We can't simply order in fresh water from somewhere else or order in more topsoil from somewhere else. We have what we have. We have to take care of it because it's all we have and it is limited. Islands often have unique assemblages of plants and animals and they frequently go extinct either from natural causes or man-made causes because they're very limited in their extent. But Islands also has some very positive benefits. Because we're small, we are manageable. We know our neighbours. There are possibilities for democracy, for conversations, for dialogue and for progress that are not available to jurisdictions that have a lot more people or a lot bigger geographic area to cope with.

Our isolation also gives us some very particular advantages when it comes to genetically modified organisms or the declaration of a genetically modified organism free zone, GMO-free zone. It rather plays into our limitations in terms of being able to compete with mass markets. For a small Island, if we're smart about it, what we really need to find are high value, low volume markets, products that can go into those type of markets that will not deplete our resources or require more people than we have or require more land or more wood or more marine areas than we actually have. We need to find those high value, low volume niche market products that will allow us to have a healthy, not too stressful and comfortable lifestyle here on PEI, that living within our means and taking advantage and building on our advantages, our inherited advantages as an Island.

Now when we look at genetically modified organisms on Islands, there are risks that are very much like the risks that you will find in a mainland

jurisdiction. But we are somewhat different in that we have some real potentialities that are at risk, particularly in terms of organic farm sector, nutraceutical and pharmaceutical crops sector which where you have a naturally occurring plant or animal or plant, say, medicinal plant that can be grown as a crop to feed a niche market for medicinal applications. But if we are to take advantage of those niches, we can't have GM pharmacrops growing next door. GM pharmacrops, in my mind, are at this point completely unethical. It is unethical, I think, to liberate any genetically modified organism out into the environment with our current understanding of the signs.

But pharmacrops are particularly problematic ethically because of the possibility of transference of those medicine-producing genes into plants where you don't want them and the very real possibility of them slipping into our food system and dosing people who have no medical condition that calls for that medicine and they're getting it in their food without their knowledge or consent, that is a real problem with that whole area of pharamcrops.

We are embarked on very exciting developments at UPEI and with the National Research Council in this whole area of biotechnology. None of that is at risk if we simply put a ban on the introduction of food crops or pharmacrops into the natural environment. That's a very different thing. You can use GMO mix and genetic engineering to do research in controlled laboratories circumstances, to develop products and medicinal applications with—and it has absolutely nothing to do with what you do in your agriculture. And to bring up the specter of blackmail, I have to call it blackmail. I call it emotional blackmail when someone says—oh well, you're going to have an image problem. People aren't going to want to invest. If you take care of your environment and your people and you're conservative—being conservative somehow is being backward. Being prudent is somehow being backward and unwilling to be inventive or courageous or forward looking. I don't think so.

I think it's very courageous and forward looking for us to be having this discussion and I think if we were to set ourselves apart as a GMO-free Island which is something that most provinces in Canada are unfortunately unable to do. They don't have the advantage that we do. If we take that

advantage and run with it, I can't imagine anyone saying—oh, they're a bunch of troglodytes over on PEI. I think it would be very much the opposite. I don't think any scientist would rationally refuse to come to PEI to work at the National Research Council laboratory with all those fabulous new equipment and so on because we decided that for our agriculture sector, planting genetically modified crops was too big a risk or was unwarranted or didn't have kinds of benefits attached to it by staying GMO-free or being GMO-free might have.

There are certainly risks and for organic farmers and their consumers and there are increasing numbers of consumers who are looking for organic and GM free foods, the coexistence of genetically modified crops in nearby farm fields is an absolute threat. Raymond Loo's corn, as you heard earlier, has already been decertified because his neighbour decided to grow GM corn. And our entire organic farm sector could be seriously affected to the point of annihilation if we don't protect them—if we don't provide some protection for them.

Cross-pollination between something like canola and a related weed is a very real specter. But there are also the possibility of genes actually moving around, not necessarily attached to pollen. There are other ways for especially inserted genes that you have in a genetically modified organism are not necessarily very stable. We don't know a whole lot about it but we do have enough evidence to—scientists do, to be mostly reluctant to say something like—these are proven safe and these are absolutely safe. I mean that is not where the science is right now. That's where some industry proponents—that's propaganda in my mind. That's not science because the science is definitely not at that level of security and assurance at this point.

The whole question of the long term safety of genetically modified crops as food is still—that is not an argument that has been won on either side. It is still very much in contention. So these are risks. The erosion of a market brand, we have a FoodTrust brand that we're trying to build up in PEI and we've put a lot of money and effort into branding ourselves as a trustworthy place for markets to get their food crops. But consumers don't trust genetically modified foods. So we are working against ourselves in continuing to allow genetically modified crops to be side by side with increasingly organic and other conventional types

of crops that we're trying to promote as trustworthy foods. It really works against that whole attempt at branding which we're just getting going on. And then they are, of course, issues of lost market access particularly in the European market but increasingly in North American markets because of the consumer resistance to genetically modified foods.

On the other hand, there are some benefits of GM free status in terms of supporting the organic sector, attracting organic farmers as settlers to PEI and I know you have heard from at least one and maybe more of them. Establishing green niches and it's not just for healthy food crops. We don't have to establish that they are more or less healthy. The consumer perception is already out there. We can position ourselves as an Island that has trustworthy, healthy food to offer the rest of the world, clean seed.

We used to have a wonderful seed potato industry here. We lost it. We largely lost it and that's attached to our, I think, precipitous rush into industrialized chemical farming and the large monocultural swaths of potatoes that we got into and that put that seed industry at risk and finally drove it into the ground. But we don't have to stay there. We can invent. We can be very creative. We can be very forward thinking. We can do things on this Island that other people can't do because we're an Island and because we have that potential to be bio-secure Island.

We can offer green real estate, green tourism and we can attract immigrants to this Island with a GMO-free stamp. People who would otherwise might be attracted to any number of other places, thinking highly educated, qualified, ecologically conscious people, really valuable immigrants and settlers to PEI would be attracted to this Island if we were known internationally as a GMO-free space. They would come here from Europe rather than to other provinces in Canada. I'm sure they would because of the consumer consciousness in the European Union at the moment.

Other benefits are avoiding costs of litigation, avoiding super weed infestation and it just builds on—we have to think of what - where are our strengths as an Island and not throw them away chasing a mass market option or slavishly following a mainland lead, you know, trying to do what everybody else is doing. We are small.

We've already proven with our experience in the potato industry that we don't compete well in mass markets. We don't get the price that we need to cover our extra transportation costs and that is only going to get worse as time goes by with the rising price of fuel. We need to be really a lot smarter in what products we are offering to the world from this Island and we've got to capitalize on our advantages.

Now there are some risks and costs to going GM free. We can't, the very first one off the top is that we would no longer be growing genetically modified crops and we wouldn't be benefitting from whatever economic or environmental advantages that grower can identify. But those, whatever advantages, whether economic or environmental have been identified are attached to even larger risks in my mind and particularly for a small Island where we do have options and where our options build on our obvious strengths, it doesn't make sense to me to take that kind of—those kinds of risks to try to get those marginal benefits.

Now the cost of regulation of a GMO-free zone could be high. It's difficult to maintain bio-security. It would be a significant investment for this province. It would require building on the fact that the majority of Maritimers and probably the majority of Islanders actually want to see this being a GMO-free province because we would need the active cooperation of our citizens to ensure that GM crops were not grown or accidentally introduced or if they did reach the Island, that they were treated like any other invasive pest and eliminated as quickly and as efficiently as possible. That will cost money and it will require the cooperation of our citizens.

I have great faith in Prince Edward Islanders myself and I think if they have a vision, if this government can provide them with a vision of the future that they can believe and take pride in, that we won't have trouble with that part of the equation.

It's important to recognize that a ban on the liberation of genetically modified crops into the environment is not a ban on other kinds of genetically, bioengineering and particularly research and medical applications. It has nothing to do with that. It is completely, it's a quite separate and specific thing. This is an environmental, social and economic measure but

it does not mean that you're banning, that you're closing any doors to whatever economic, social, medical or health spinoffs could come from other applications of bioengineering.

Laura pulled out - there are many Islands where this issue of genetically modified crops and whether or not they're suitable for growing, to be grown on Islands is being debated. Laura picked out two that she thought were interesting and valuable case studies for you to consider. The first one is Ireland. Now Ireland is an Island sitting off the coast of Europe. In looking at a market where 30 of the major food brands, food processing players have declared themselves GM free and therefore, are no longer markets for anybody growing or adjacent to a genetically modified food crop.

They are looking at six EU countries that already have crop moratoria on genetically modified crops. They are looking at a situation where there is mandatory labeling for any significant amount—if you've got any GE food in your product, you have to label it for the benefit of European consumers. The Irish are very, very concerned about maintaining what for them are the very lucrative markets for meat and agricultural products. They're concerned about meat because the way the jurisdictions are going is that they're looking, not just does this bread have genetically modified grain in it, but they're looking at, has this cow ever eaten genetically modified grain?

So the markets are shutting down for livestock, whether it's poultry, pork, beef or whatever or even milk, from animals that have been fed genetically modified foods. This has farmers, organizations, producers, restaurateurs, consumers very concerned and there is very active lobbying on the ground in Ireland to keep that Island free from genetically modified crops. And there have been hundreds—you say it's thousands—of local referendums where citizens have decided on their own that their particular locality, their municipality, their village, their rural area is going to be a GM free zone and that has happened spontaneously from the grassroots. There is now demand for some national legislation so national protection to keep GM crops out of Ireland.

Case study number two is Hawaii where in the mid 1990s, they decided—they had a papaya crop, an important crop for their export market, papayas

growing on papaya trees. They were hit by a virus. They were dealing with—trying to deal with viruses that were killing these trees. They decided to invest in a GM papaya tree that was, had resistance built into it for this particular virus. The papayas came ripe and they started going to market in 1999 and what they found was they couldn't sell them. Their markets, even in Canada, wouldn't buy them. Their Japanese markets closed down completely. They lost millions of dollars every year in sales. What they're finding now is that those non GM papayas that they still have, the fruit from those trees is commanding a premium price in their market and they have started pulling out their genetically modified papaya crops and they're hoping that none of those genes have escaped into the wider population so that they can get back to a GMO-free papaya industry and they are considering a ban on further genetically modified crops.

I think that this a very contentious area and you've heard lots of arguments on both sides and you know that the science is still out on this. The evidence of risks for genetically modified organisms liberated into the environment, it tends to grow daily. There are lots of industry lobbyists putting out other research to try to contain and argue against that evidence and I see that ding-dong going on for a good long time yet. That is not really our concern. We have to think what is best for us on this Island. We know that there are some environmental risks. I think that much has been proven that there are some environmental risks. We know that there have been actual economic losses in places like Hawaii where they have attempted to diversify into GM crops and then been rejected by the marketplace. We know that our western farmers who have heavily invested in genetically modified canola and corn are having a devil of a time and are losing a lot of money with rejection in their European markets.

There is, in my mind, a serious possibility that not all, but some, genetically modified crops currently in our food system will turn out to have negative health impacts for human beings and for livestock. I don't see any really clear advantages that are not under dispute. On the other hand, we know where our advantages lie as an Island and that is in developing unique, high value, low volume products that distinguish ourselves from mainland producers that don't simply follow mainland trends and try to compete in mass markets. That doesn't

work for us, we know that and we need to learn from that.

I would argue that because we are an Island, we have a clear advantage. We have a barrier against contamination by GM crops whether it's through jumping genes or pollen or seeds blowing in the wind. It's perhaps, it would be nice if it were a wider barrier but it is a barrier and it's one that we can work with and we are in a position to reap benefits from high value agricultural markets such as the organic market and the GM free market. From international branding as a GM free zone, I think will do our international reputation good and the benefits will accrue, not just for agriculture but perhaps even more from tourism, from the quality of immigrants that we then attract to this Island, for the environmental security that we leave for our children and grandchildren and for the peace of mind of Islanders who today are concerned about GM crops and GM foods and what this means for their own health and for their family's future.

That said, I think this is a very timely deliberation and if we are going to move in a positive direction on genetically modified crops, it needs to be done quickly. It needs to be a decisive decision made so that our land and our agricultural sector are not hopelessly compromised by continued planting of genetically modified crops or the introduction of new varieties of genetically modified crops, because after a certain point we will no longer have the opportunity to reverse that. We will be contaminated. We will not have that option of being GM free. We will not be able to eradicate these transgenics from our environment and then we really will have lost our opportunity.

So thanks very much for listening to us, me mostly. Laura's been very quiet and we'd be happy if you have any questions.

**Wilbur MacDonald (PC) (Chair):** Any questions? Wayne.

**Wayne Collins (PC):** I do have a few questions, if you would. Thank you very much Dr. Novaczek for your presentation. I appreciate it. I would like to talk about—you talk about environmental security by their being a ban on GMOs and I'm thinking what the reality is today with say, the loss of a genetically modified potato which was taken off the market, as you're well aware. But I mean what is known through our conventional farming methods

is we risk pesticide poisoning.

**Dr. Irené Novaczek:** We do for sure, absolutely.

**Wayne Collins (PC):** We have higher than we care for, levels of nitrates in our water. We have tremendous erosion. From those pesticides, we've had fish kills. Overall, we have farmers paying higher production costs to try to get their crops together. You talk about the social and economic aspects of this. You wonder how—would we be better off if we had a potato that was—we had one—that was resistant to the Colorado potato beetle. They were working on ones close to having variety—

**Dr. Irené Novaczek:** Not if nobody will eat it.

**Wayne Collins (PC):** They were eating it. It was on the market and it was being sold. Variety of viruses that it could take care of. Can you imagine if you had a potato that could take care of late blight and all the impact that would have in keeping people on the land so that they could make a dollar?

**Dr. Irené Novaczek:** Yes, but as you know, Wayne, there are other alternative ways of reaching those targets that don't require taking these kinds of risks.

**Wayne Collins (PC):** Explain what you mean.

**Dr. Irené Novaczek:** I mean I would be deliriously happy if we could get to a point where we reduced or eliminated the application of pesticides on this Island but I cannot imagine that that could be done through the use of transgenic crops. There would always be crops that people would still want to be applying pesticides to and the science on the whole reduction of pesticides from these particular—when you have a pesticide resistant—when you have BT in corn, for instance, you know that deals with your caterpillars but it doesn't deal with the weeds. You're still spraying herbicides and you're still spraying fungicides. If you're going to try to engineer crops that have three or more different vectors in them for herbicide resistance and virus resistance and this and that, these seeds are going to be prohibitively expensive. They're going to—and they come with other risks. The risks of transfer out of artificially inserted genetic material in food crops really—that is a very serious and ongoing concern.

To my mind, where we have, where there are organic and other methods and evolving technologies in the organic sector to deal with a whole host of things. We know how to grow low virus potatoes. It wasn't more than a generation or two ago where our virus levels were at 0.5 per cent and now we're up to five or more. That has—we don't need genetically modified potatoes to take our virus levels. We know, we have that knowledge. What we don't have is the growing environment where we can keep our potatoes virus-free because we are invested in too much monoculture, too big fields and too heavy an investment in one crop where we really ecologically need to be diversified.

**Wayne Collins (PC):** How do you explain—we've heard this mentioned here earlier this morning that there has been a growth in organic agriculture on PEI at the same time as we've seen growth in the number of acres of genetically modified crops? I mean it isn't impeding organic agriculture?

**Dr. Irené Novaczek:** Well you could talk to Raymond Loo about that. It has started to encroach and impede but so does pesticide applications. I mean, pesticide blowing in the wind has also caused decertification of organic producers on this Island. They are both a serious cause for concern and need to be dealt with. If we are serious about supporting and enhancing our organic sector and that is a very forward looking and there are sure market advantages in there whereas the market advantages on GM are not sure and not evident. The market advantages on organic are growing demonstrably and you can prove that statistically with your economic data. To my mind, it's better to be on the horse that's actually demonstrably winning rather than risking that by chasing something else which is not a demonstrated winner.

**Wayne Collins (PC):** From your remarks again, I want to point out that I think Prince Edward Island does live on its exports. You know, we are in the export business whether it's agriculture.

**Dr. Irené Novaczek:** Yeah, and with the rising cost of fuel, we're going to have to be really smart about what those exports are.

**Wayne Collins (PC):** Technology, fish, I mean.  
. .

**Dr. Irené Novaczek:** Sure, and we live on our imports too. I mean, we unfortunately don't eat enough of our locally grown food and our ecological footprint for food imports is huge. It's shameful.

**Wayne Collins (PC):** I thank you very much, food for thought. I appreciate it.

**Wilbur MacDonald (PC) (Chair):** Thank you very much much, Irené and what's your name?

**Laura Fanning:** Laura.

**Dr. Irené Novaczek:** Laura Fanning.

**Wilbur MacDonald (PC) (Chair):** We appreciate very much your coming. You have certainly given us another aspect of this topic that we're discussing and I guess we look forward to presenting our report.

**Dr. Irené Novaczek:** I look forward to that too.

**Wilbur MacDonald (PC) (Chair):** Thank you.

**Dr. Irené Novaczek:** Very much interested.

**Wilbur MacDonald (PC):** We're going to break for lunch and we'll be back at 1:45.

1:50 p.m.

**Part VI - CUSO: Judy Bayliss, Dr. Irené Novaczek**

**Wilbur MacDonald(PC) Chair:** Okay, we're back in session. We'll hear from CUSO, Judy Bayliss. Am I saying that right.

**Judy Bayliss:** You're saying that right.

**Wilbur MacDonald(PC) Chair:** So the form here usually is you make your presentation and then some of the members may have questions.

**Judy Bayliss:** Yes, I understand that.

**Wilbur MacDonald(PC) Chair:** Now, we have a noisy background here.

**Judy Bayliss:** Yes, the coach is persisting in keeping his engine running out there.

**Wilbur MacDonald(PC) Chair:** I wonder if we could get her to come up. We can't hear you. The windows are closed.

**Marian Johnston (Committee Clerk):** The window are closed. It's just construction is going on outside.

**Judy Bayliss:** Do you want me to move further?

**Wilbur MacDonald(PC) Chair:** Could we do that? Wouldn't make much of a difference there. We've got to hear her.

**Judy Bayliss:** I'll just shout.

**Wilbur MacDonald(PC) Chair:** It's too bad. I don't know what they're doing out there. They're getting ready for Sunday, their official opening of the monument.

**Judy Bayliss:** Oh, I see.

**Wilbur MacDonald(PC) Chair:** I think they're chopping up the limbs. That may not take too long.

**Judy Bayliss:** If I should will it distort the sound for you. Or speak louder.

**Wilbur MacDonald(PC) Chair:** That's not too bad.

**Judy Bayliss:** Okay, I'll just try and speak more clearly. So, good afternoon. CUSO is a Canadian based international development organization, one of the leading volunteer sending organizations in the country, so I thank you for this opportunity to present our views on a GE- free zone. My name is Judith Bayliss. I worked as a CUSO volunteer in Kingston, Jamaica with Women's Media Watch from 1996 to 1999. I've acted as CUSO PEI regional representative on the area council and I'm currently regional director for the Atlantic region. We work with partner groups and individuals to promote equality and freedom, safeguard cultures and communities and protect the environment.

At CUSO we call our international volunteers Cooperants and since 1961 CUSO has recruited and sent more than 14,000 cooperants on international volunteer postings. At any given time more than 200 Canadians are volunteering as CUSO cooperants in communities and cities in

Africa, Asia, the Pacific, Latin America and the Caribbean. We've had an office in Charlottetown since 1994 and have sent over 100 Islanders overseas in its 44 year history. Our programming strategy seeks to empower vulnerable groups such as women, youth and indigenous peoples. CUSO is trying to meet the challenges of development head-on by designing our programs in direct response to current issues and by directing our support to the popular movements which are already working on these problems.

One of these problems is the promotion of genetically engineered crops in southern countries. The biotech industry claims that GE crops will reduce hunger in the third world countries but GE crops have never resulted in lower prices for consumers. As you have heard from many of the presenters the only beneficiaries of GE crops are the corporations themselves. Poverty and hunger in southern countries have their roots in colonialization which transforms self-sustaining countries into huge plantations of export cash crops controlled by rich countries. Industrial agriculture has worsened the problem as poor farmers went into debt trying to pay for expensive machinery and chemical pesticides and fertilizers. The introduction of GE crops threatens to perpetrate this devastating cycle.

Currently more than 80 per cent of seeds used by farmers in developing countries are grown from seed saved from their previous year's crop. Millions of farmers depend on saved seeds to survive. The legal right to use GE seed requires an annual payment by farmers to the corporation, an expense not affordable by small farmers in southern countries. More important to note is the inevitable loss of indigenous varieties of food plants that have served local populations well for thousands of years and that have acted as reservoirs of genetic material for traditional plant breeding of important commodity crops.

For example, corn is native to Mexico and the hundreds of varieties growing there are absolutely critical to main genetic diversity in this crop. Without this genetic diversity traditional plant breeders cannot create new and better varieties with qualities like increased resistance to disease or insects. The government of Mexico fought without success to keep GE corn out of the country in order to protect the lineage of the plant in its original home. GE crops, including the

dangerous Starlink species, have now contaminated fields of corn throughout Mexico. Starlink is banned in the US because it carries new allergens.

Resistance to GE crops is also strong in other southern countries. In India, Millions of farmers have burned GE fields in the "Cremate Monsanto" campaign. Farm union leaders from India have also toured Europe to help destroy crops there. When Brazil decided to allow GE crops into the country the landless movement called for mass protests against the government. In Bangladesh and the Philippines, thousands have demonstrated at biotech industry meetings.

The introduction of genetically modified foods in Argentina has had disastrous consequences. Once capable of producing enough food to feed eight times its population, agriculture is now dominated by US agribusiness giants and now many foods must be imported. Prices have increased and instances of hunger and extreme poverty are common. Farmers have lost access to seeds and tens of thousands have gone into debt trying to keep up. Over 500 rural towns have disappeared as farmers, unable to compete, were pushed off the land and into the cities. Agriculture is dominated almost entirely the production of Monsanto's Roundup Ready soy beans, designed to withstand massive doses of the herbicide glyphosate. Argentina's use of glyphosate has increased almost fourfold causing wide scale ecological harm. Studies from a maternity hospital in Buenos Aires found pesticide residue in the breast milk of over 90 per cent of the new mothers.

The parallels to PEI agriculture are obvious. PEI farmers are struggling and only manage to compete as long as massive subsidies are available. PEI farms are small compared to North American standards and cannot compete with large scale agribusiness. Long range transportation of our farm products will become increasingly expensive and ultimately unfeasible as fuel costs rise.

Our Island ecology and human population cannot withstand the increased pesticide use required by GE crops. Instead of trying to compete with agribusiness PEI needs to develop its own identity in harmony with our small economy and Island environment. We might look to Cuba for

inspiration. After more than a decade of economic crisis brought on by a US trade embargo and the collapse of the Soviet Union this small Island country has against all odds transformed its intensive industrial agricultural system. Unable to import food or chemical fertilizers and pesticides necessary for industrial food production, Cuban agriculture is now largely organic and small scale.

Today food is grown in small neighbourhood plots, community and patio gardens and fields that were unused. Organic farming practices using composting, beneficial insects and micro-organisms have done what GE crops have failed to do elsewhere. In 2003 Cuban agriculture used less than 50 per cent of the diesel fuel, less than 10 per cent of chemical fertilizers and less than 7 per cent of synthetic insecticides used in 1989. Sustainable farming practices based on traditional knowledge and seeds and modern advances in organic production have in some cases raised yields by 100 per cent or more. Cuban agricultural scientists are in demand all over the world to share the lessons they have learned in creating a new kind of agriculture that is productive, environmentally friendly and hopeful for all humanity.

Cambodia is another country that can teach us a lesson. This tiny country wants to diversify its economy through agriculture but cannot compete with its bigger neighbours. So in conjunction with the European Union, Cambodia has just launched a new campaign to promote organic farming. In a BBC news report in March, Cambodia's secretary of state for commerce said-I find the global trend in organic agriculture is very, very conducive to our niche marketing.

So by rejecting the false promises of the GE food industry PEI will join a growing number of jurisdictions committed to ecologically sound agriculture, local economies, the democratic control of our food supply, the flourishing of small farms and real solutions to the problems of poverty and world hunger. Thank you. I'd be willing to respond to questions. Joining me is Dr. Irene Novaczek, scientist here and also a CUSO volunteer in Indonesia the same period of time I was away, the late 90s.

**Wilbur MacDonald(PC) Chair:** Okay, any questions? Andy.

**Andy Mooney (PC):** Thank you for your presentation and I actually did a tour of Cuban farms back a few years ago with a group of international people and it's tremendous what they're doing with organic in Cuba. Actually they're to be commended. But when you ask a farmer in Cuba if the choice was there tomorrow for conventional as we see it and straight organic, what would they do and the answer I received from a few farms is they would love to see a blend just because . . .

**Judy Bayliss:** They would like to see . . .

**Andy Mooney (PC):** They would like to see a blend of both. Put it this way, I mean they knew what it was when they had chemical fertilizers and equipment and the whole issue and they know how they're getting along now. It's hard to put us both in the same boat when they're quality of life is definitely-they're not rich farmers I guess I would have to say. A lot of them just get by and so if they could turn the clock back and have a blend of both, what they've learned through going organic and combine that with some of the chemical fertilizers and things I think they would do a blend.

**Judy Bayliss:** I doubt they would want the prostrate cancer levels that we have in our farm communities here though.

**Andy Mooney (PC):** Perhaps not.

**Wilbur MacDonald(PC) Chair:** Wayne.

**Wayne Collins (PC):** Thank you very much for your presentation. Again, I'm kind of confused in a way about where we-I appreciate the perspective you brought here today-an international view of your perspective on what's happening in other countries around the world and the way they're seeing things. But here on Prince Edward Island we've heard representatives of the farm community and I won't say in unison because the National Farmers Union has quite a different take on things than does the PEI Federation of Agriculture and the PEI Potato Board. They are advocating that farmers be allowed to continue to have a choice in the type of agriculture they want to pursue, be it organic, conventional or GE crops and that.

We hear about again also the increased number of farmers, even around the world, who are

engaging in GE crops and that. Why do you think it is that on the one hand the numbers keep increasing-we hear around the world from about 7 to 8 million farmers.

**Jim Bagnall (PC):** Acres.

**Wayne Collins (PC):** Acres, was it? In just one year in GE crops. What's behind it? It seems somewhat contradictory to me.

**Judy Bayliss:** I'm just trying to weigh my words. My past life has got me into trouble sometimes when I've said things that-my instinctive response. I think CUSO's viewpoint in this to try and, like you mentioned Wayne, to try and give a wide view, to remember the wider view of the implications on a wide scale because the people who are worst affected by this are the people who can't afford to compete and there are more of them than of the people who can. And the lure of some extra money when you're in no position really to argue is very strong, like your situation in Cuba. It's very tempting to think in a shorter term rather than the worldwide implication which is what we're frightened of. You know, you diminish the gene pool and you make a few people in rich corporations responsible for the decisions of who gets what and what's available. That's very dangerous. And the numbers, yes, I mean how can I argue with that. That's a fact. It doesn't lessen the problem and it doesn't lessen the danger they're presenting to next generations.

The example we gave of Mexico I think is close, it's recordable, it's true and it's there for us to see and the fact that there's species developed there that have been banned in the States, who are sometimes a bit more lenient in what they let in, is a lesson. This is a real threat and it's not an emotional thing. This is based on fact, like Irene can present you. It's hard sometimes to put our immediate personal financial goals aside and think on a world scale and what we're doing and where the wealth lies in that world.

**Wayne Collins (PC):** Here on Prince Edward Island though, I mean and we've got, I know, two farmers sitting at this table and maybe they can enlighten me a little bit more on this as well, but how many farmers on PEI use their seed from the crop this year to plant the next crop the next year? It seems to me in many cases-and I stand to be proven wrong on this-but farmers have to get their

seed from somebody, you know, whether it's virus-free seed we got from out West one year, all the way from Manitoba I believe we were purchasing potato seed. Or whether it's for barley or whatever it may be, whatever crop they're putting in. They have to get their seed from somebody.

**Judy Bayliss:** Yes, but the point is that the seed business, whether it's potatoes or whatever, is a hugely lucrative business. But the point is that you have to have a large gene pool of seed that you can choose from. Our point is that this whole process diminishes the whole gene bank of available seeds. I don't know whether any of you remember a few years ago, probably not, you're all busy working people. I was at home studying at the time and Peter Gzowski was on and he was talking about the availability of apple seeds and how gradually all of, so many of the traditional apple seeds availability has gone and gone and gone because we have been led to believe that we must have perfect, evenly shaped identical apples of equal colour in the supermarket. We've been, the whole marketing business is a big rusty wheels cranking around and we are the recipients of the effect of that and the social marketing aspect of how this all works and how we react as humans to that is very subtle but it takes a long time. And we've all been sucked in. We want the perfect. We want bulk. We want reliable. We want to be able to have one any time we want, at any time of the year and this is the kind of world that we're setting up for generations to come now.

And when I talk in this presentation about for all humanity, PEI, we're sophisticated. We have access to technology and information. We're talking about the people in smaller communities in the South who do not have that chance and who, on a short term, it means that they can eat and I think we're talking about two separate scenarios here. You know, we're living in a rich community north of the equator where we're not as dependent and as vulnerable but we, CUSO work with communities who don't have a whole a lot of choices and don't have the resources to choose what they buy and where they get their seeds from. This is the system they have run for thousands of years where they save their best seeds for the next year. They don't have that choice now because they can't compete. What are they going to do? Are they going to starve?

**Wilbur MacDonald(PC) Chair:** I guess you've hit

on one of the things that this committee has to look at. We've got to be very careful. I farmed in the 50s, 40s, and I know what poverty is like and I know what poor land is like in this province. Back in them days you had probably ten acres along the road that was good land. The rest was poverty. You went over it with a binder and you could see the red soil, you know, with the horses. It was poverty and this Island didn't come ahead until we got lime. Lime turned the province around. Lime before fertilizer came. They came not too far apart. We used to haul it in bulk and you had to shovel it out of the railway car. Andy would remember that, you know.

And we lived in poverty and you're talking about poverty in Cuba with the small farms. We can't go back to that on PEI. We've got to be so careful we don't do that to the farmers of this province, you know. And I don't know how we can take all we've heard and put it together and say to the farmers, you know. Because their cost of living is the same as anybody else who works. They've got to educate their children, they have to have a car and they have to have a truck. They've got to have tractors and they've got to have all the equipment to work with and they've got to be able to educate their children and bring them up, you know, and that's not cheap today. It's so different.

Back in the old days we didn't educate the children on the farm. They were lucky to get Grade 8. My older brother, when he passed Grade 8 he quite school. That was the thing to do back in the 40s was to quit school when you get Grade 8. Then it moved to Grade 10, then it moved to high school. Now, it's Masters, right, you have to have your Masters if you're going to be a teacher or anything. So we've had a dramatic change in the last 50 years and we have to be very, very careful. We don't want to put them back where Cuba is, you know. You said the farmers are poor and they may be small but there is a niche for certain people to grow organic but that's a very small niche. That's 1 per cent of the farming on PEI right now. So if we can go to 2 per cent that's a doubling of it. But that will take time.

Part of our problem is we have to look at the future too and we have to protect the farmers as well as protect the people. The bread and basket of this province is the farming community. So goes farming, so goes PEI. Everybody will tell you that and the major part of that is potatoes, which

fortunately we don't have to rule on the potatoes right now because they are not genetically engineered.

And to answer Wayne's question on the seed, most farmers grow their own seed. They change it every once in a while but not generally. They keep their own potatoes for seed or they buy new seed, certain part of it. They have their own grains and soybeans but you do change every once in a while because, you know, you have to do that, change.

So I thank you for coming because you've given us an insight of what it's like in other countries and I know it's not good and it's not great to live in poverty in Cuba or any other country where you have, your land base is very small and you don't have much to work on and I congratulate you people for working at that and trying to change that. But that's really not our mandate.

**Dr. Irené Novaczek:** I think what Cuba tells us though is that a small island-now they didn't take this stand, it was forced upon them and they went cold-turkey. They had no choice to get off of pesticides and they have, as far as I know, never made any moves to adopt genetically modified crops. Although they have very sophisticated, I mean they have wonderful medical schools and agricultural schools and they turn out very sophisticated, very well educated college graduates in Cuba.

But the point is, in our position, we're tremendously privileged compared to where Cuba was. When they had to make a cold-turkey adjustment to their farming, agriculture system and they have done amazingly well and they're highly respected and their people may be poor but they are also healthy and wealthy in many, many other ways. They have, in many respects, qualities of life that are enviable for us. You know, things that, ways in which we could improve our quality of life modelling some of what they are doing, even if we might not choose to go without some of the modern amenities that money can buy which they cannot afford. Still they have other things going for them.

And I think from our position, for us to take a stand with respect to genetically modified crops, for good ethical reasons as well as for selfish reasons of economic gain and environmental sustainability,

we can do that with much less risk, many more tools, lots of social network supports and really distinguish ourselves and do something wonderful. We have that opportunity.

**Wilbur MacDonald(PC) Chair:** Are you saying that opportunity is going to be shared by every Islander or is that going to be shared by the agriculture community?

**Dr. Irené Novaczek:** Yes, ultimately yes. You can't change agriculture over night. We know that. All changes do take time but if, for example, rejecting the use of GMO, genetically modified organisms liberated into our environment, as an insurance policy, as a conservative way to protect. I mean farmers see the new and flashy and they get the propaganda and they get the industry guys coming and telling them just like they got sold on ripping out their hedgerows and buying bigger tractors. Just like they got sold on becoming increasingly dependent on pesticides and fertilizers and rejecting some of the more labour intensive, slower ways that really could have saved our soil base on this Island.

Sometimes, I mean sometimes-this is the role of government-is to look at the larger picture and sometimes the government has to protect its people from their own desires and from their own pensions to run after the flavour of the month, to join the bandwagon and to adopt whatever is going on, for their own good.

**Wilbur MacDonald(PC) Chair:** Any more questions? Well, we thank you both again. We appreciate it.

**Judy Bayliss:** Thank you very much for the opportunity.

**Wilbur MacDonald(PC) Chair:** And all the best to you in CUSO. Our next presenter is - Mary, are both groups going to come at the same time.

**Mary Boyd:** Yes.

**Wilbur MacDonald(PC) Chair:** Okay, that's fine.

**Part VII - MacKillop Centre for Social Justice:**  
**Mary Boyd**  
- PEI Health Coalition: **Dr. Bert Christie,**  
**Mary Boyd**

**Wilbur MacDonald(PC) Chair:** So we have the MacKillop Centre for Social Justice, Mary Boyd and Barbara Boudreau and we have the PEI Health Coalition, Dr. Bert Christie and Mary Boyd. Is Barbara Boudreau here?

**Mary Boyd:** No, she won't be coming so it will be myself and Dr.Christie. And before I begin I was asked if I would table this material with you folks and it's material done by an Islander who now works as a researcher for the Canadian Health Coalition. His name is Bradford Duplisea and he's a researcher with the Canadian Health Coalition and he's sent along some examples of what he's done. There's a discussion here on marketplace in 2002 where he calls for labelling of GMOs and points out that poll after poll shows that over 90 per cent of consumers want to know what food they are eating.

He also sent a copy of this magazine where he has input also, on page 8. He's answering the CFIA pamphlet on food safety and he points out that Dr. Ann Clark of the University of Guelph revealed serious limitations in Health Canada's test for toxicity and allergenicity. For example, in 70 percent of all toxicity trials Dr. Clark found that no laboratory tests were even conducted. Researchers simply assumed that toxic material would be removed when the crops such as canola and cotton were refined into oil. He also points out that Dr. Charles Benbrook, former secretary of agriculture in the United States and at the United States National Research Council, in a study of 8,200 field trials concluded that transgenic soy beans need 40 per cent more herbicide than their normal counterparts while data from the US Department of Agriculture suggested genetically modified corn requires 12 per cent more chemicals than its conventional cousin.

Brad is away for a month and therefore he can't be present. He's a very brilliant researcher and I'm sorry that he can't be with us. Maybe later if things develop he might be. And finally he points that in the whole world there have only been five independent studies on GMO foods and one of them happens to be on the potato and he considers that to be quite significant.

I would also give you-maybe some of you heard him on *Maritime Noon* about a year ago-he was asked to go on and debate on *Maritime Noon* with company representatives on the whole GMO

question and everybody who called in was on Brad's side. They were unanimous that we have to be careful about GMOs and he did a wonderful job of explaining. I'll get a copy of this and give it to you also because it's a very excellent program.

**Wilbur MacDonald(PC) Chair:** The Clerk, Marian will take our material.

**Mary Boyd:** Alright. I just don't want to lose that disk.

**Wilbur MacDonald(PC) Chair:** Do you want a copy of the tape or do you want to do a copy?

**Mary Boyd:** Of the tape, yes, I can do a copy and give it. Maybe that would be, well, I'll get it from you afterwards, Marian. That's okay.

**Mary Boyd:** Thank you very much for giving us time to come here this afternoon and present. And I certainly want to congratulate the government for this initiative. I think it is a wonderful, wonderful thing that you've done and I've been at every session and have heard every presenter so far. I'm probably the only one who can make that boast at this time and it's been, I have some idea of what you folks are experiencing because it has been such a rich and rewarding experience and such an educational experience and I guess my one regret is that this can't be done in a lot more subjects than this because this would actually be an example of true government at work.

The CUSO presenters were talking about the role of government and the one that I have always seen spelled out is that the role of government is to safeguard the common good and to intervene among the various groups as they vie for their rightful position in society. So it's a big, big job to know what decisions to make. The MacKillop Centre is a small social justice centre. It's a non-profit organization, it's all volunteer. And we do research on advocacy and public education and coalition building at local, national and also we are in solidarity with international groups such as Development in Peace. We do research on poverty and other questions of justice.

I'm going to be talking a bit first before the Health Coalition presents more succinctly on health about some of the things I heard, you know, that I listened to that I think I might be able to and MacKillop might be able to shed a little bit of light

on. I'd like to start off by saying we heard so many great presenters, some of them very distinguished in their field. I think of Dr. Ann Clark from the University of Guelph and the Renata Brillinger, Michelle Swenarchuk who is so well known in environmental circles. We have many great local presentations and I think that the ethical presentation of Joan Cullen this morning was extremely important to have in the midst of this and the Institute of Island Studies focus on the Island and Greenpeace also did a wonderful job and it was tremendous that they would be present.

But there's some things that I see missing. I certainly see an absence of ethical questions and moral theological questions about our society. Like, what kind of society do we want? Who wins in this debate and who loses and so on. I find that there's too much emphasis on the quote "free market" which is after all the new religion of economic globalization. We are worshipping the "false God of the free market" and, you know, the thing as long as it sells it's okay. That's one of the slogans. So I think we need to think back at the ethics of all of this.

I remember at the beginning of the hearings, I believe it was Dr. Bert Christie who advised-ask who is paying for your research. When someone comes before you ask who is paying for your research. Another way of asking that is-do you have a vested interest in that? And if you do then it's difficult to speak on behalf of the common good or the greater good of society.

One of the most troublesome facts that cannot be explained away about this whole question is that we have had GMOs imposed on us without our knowing. They were sneaked in the back door and the question is why. If they are so great why not label them and let the public decide. It is extremely undemocratic to impose this food system on an unsuspecting public. And I'd say that now that the public is catching on you can bet that they will shop far more discriminately.

The question was asked yesterday-why didn't people oppose the first GE potatoes in this province? And the answer is simple-they didn't know. I mean it was a new thing, people didn't know much about them. They hadn't heard about GMOs. They didn't know what was at stake and so they quietly let it slip by, you know, until people started pointing out.

And then I was surprised on Tuesday Dr. Robert Coffin stated that we would all be naked and more of us would be dead and we would be hungry if it wasn't for GMOs and I thought that was a very rather exaggerated statement. I mean you'd have to ask first of all what did we do up until 1995. And then he stated that insulin is now genetically modified and he left the impression that it is far superior to the old type of insulin. This is not the case. There is a national organization of diabetics in Canada founded by Colleen Fuller, a diabetic herself, because she and so many people are allergic and have experienced severe side effects to GMO insulin. And I know a man here in Charlottetown who, he had unbelievable side effects and it might be a good thing to have him come and appear before you. He couldn't get out of bed in the morning and he had a list of really awful things. His health was really going down until finally the insulin was changed.

So, you know, I think you hear sometimes over exaggerated cases for GMOs and I was thinking too that in presenting this there was a question that came up about what's behind the increased acreage of Monsanto and one of the things that you can find- I was looking at it and came across it yesterday-was that Monsanto's by far the biggest lobbyist for GM. From 1999 to 2004 it spent \$18.5 million on promotion. The focus was mostly on Washington where it has nine in-house lobbyists on its payroll. That's along with another 13 private firms and that's a whack of money. If we all had that much money to spread our product and push it and there is-I was shocked today to hear the performer, the man who presented for the biotech industry talk about how much Bill Gates has given and this is for Africa. Because the Africans are trying very hard. They're very, very afraid of the effects of GMOs on their lives and on their countries and the trouble is the United States, when it can't get a market for it's GMO food, and in many cases it does have trouble, it dumps it on the Third World countries and they're refusing it and then the United States government tries to say that they should be sanctioned under the United Nations for refusing that food. But they have their reasons to refuse it.

So there are many, many things like that that come up but certainly those who oppose GMO foods should not be considered as luddites or people who want to remain in the past. I think Mr. Chairperson you said we must look to the future

and it might be just the kind of good title for turning down GMOs in this country and making this province a GMO free zone, that we are looking to the future.

And Prince Charles had a battery of questions. I don't know if any of you have seen the questions that Prince Charles asked about GMO foods. He's very, very concerned. I'll just read the questions, I won't read his explanation but I'll table that too.

Do we need GMO food in this country? He's talking about Britain. Is GMO food safe for us to eat? Why are the rules for approving GM foods so much less stringent than those for new medicines produced under the same technology? How much do we really know about the environmental consequences of GM crops? Is it sensible to plant test crops without strict regulations in place? How will consumers be able to exercise genuine choice? If something goes wrong with a GM crop, who will be held responsible? Are GM crops really the only way to feed the worlds growing population? What effect will GM crops have on the people of the world's poorest countries? What sort of world do we want to live in?

So those are his questions and he offers some background opinion on that as well.

Now one of the questions that came up, we talked a lot about and people talked a lot about yields during the presentations. There's information . . .you all know that the 2004 Nobel Peace Prize winner is a woman called Wangari Maathai from Kenya. And she says that biotechnology and patenting life forms is the new frontier of conquest and Africa ought to be very wary because a history of colonization and exploitation is repeating itself. And that's true. With the control of seeds by the multinational corporations that is a new colonization of the people of Africa. And then as far as the yield goes, in Kenya they had a trial with sweet potatoes but it yielded far less than the non-transgenic sweet potatoes and were found to be more susceptible to viral attacks, the very thing the GMO sweet potato was created to resist. And the new scientist reported the GM sweet potatoes failure under the heading "Monsanto Showcase Project in Africa Fails". And this was reported on February 7<sup>th</sup>, 2004.

And then a successful conventional breeding program in Uganda had produced a new high

yielding variety which was virus resistant and raised yields by roughly 100 per cent yet the GM sweet potato was a total flop. The study mentioned Tuesday by the Canola Council of Canada too about increased yields, that was done in 2000 if you remember. It wasn't a recent study. And if we go into the whole question of yields and food and feeding the world's hungry, Brazil is the third largest exporter of food in the world yet one fifth of its population or 32 million people go to bed hungry every night. So the problem is poverty and mal-distribution of food. It's not a problem at all of quantity of food.

When we were talking, and the subject came up about whether it's possible to label food and the Canadian government says, well it should be a voluntary thing but it's interesting to note that the state of Alaska is the first United States state to pass legislation requiring that GMO foods be labelled and I find that quite an interesting development. That news just came out, probably a month or two ago and I would suggest it would be a very interesting thing for this committee to get in touch with the state of Alaska and find out, you know, what they did and what the rationale was and all of that. But the legislation requires that GMO foods be labelled and they don't seem to be afraid to do that.

Another question I guess that's extremely important here is the question of the EU. I heard, I guess it was the Canola Grains Council that said five of the six events but at the same time we heard Greenpeace say this morning that really the big promoters of GMO foods are the United States, Canada and Argentina. I think it's USA first, Argentina second and Canada third, if I remember well. So that's where some of that is growing. But it's interesting because there are a number of states in the EU so if the EU as a government, an umbrella government, takes a stand it doesn't mean that some of the member states are going to follow that because they themselves are putting in regulations and they are GMO free and Poland is 80 per cent GMO free.

I think that, one that's interesting, a country that's interesting for us, Mr. Chairperson, is Australia and you're familiar with it, you've travelled there. It has extended its moratorium. It just extended it two or three days ago on GM in New South Wales. Maybe there's destiny here for all of us who are deeply concerned about GMOs because the

minister in charge was called Ian MacDonald. So we're hoping the MacDonald clan will show some solidarity here. He might even be a cousin of yours. Anyway, it was a great omen that he would do this. And he's extended it for quite some time and most of the states of Australia now are under a moratorium. And the thing that they're finding out that's really, really concerning them is just the canola tests that are being done on GMOs - there is testing being done in spite of the ban-and these test plots are contaminating the conventional canola crops of Australia. And it's causing a lot of concern for them. They're going to get to the bottom of it and I'd say they're going to go next to the legal cases. So they're going from moratoriums and banning to legal cases in Australia. That seems to be the process and the direction that that's going in.

I know I heard Eva talking about, you know, there's 70 per cent of the foods have traces of GMO in them but you know it's really corn, canola and soy that have those traces and a lot of people are finding a way to have healthy diets without GMO foods. And you know what will happen if we make PEI a GMO free zone? Those big corporations will just withdraw those products and you'd be surprised how fast they'll have non-GMO products on the shelves and they'll probably write all that off at our expense. So, you know, it's not going to be a problem. What we need to worry about is the delivery of safe food to the population.

Finally I just want to say one other thing. Yesterday I had a discussion with a potato farmer on Prince Edward Island because he had told me last winter that he had planted a crop GM canola and then he said he didn't think he would do it this year. He wouldn't repeat the experiment and he didn't. He said that his financial gain was only slightly better per acre than potatoes and we all know that potatoes had a very low price last year. He said there was a lot more work to it, which I found interesting. And he said he had to hire somebody to look after that canola. And he said it has to be dried after it's cut. If the moisture is just a little bit higher than it should be the buyer won't take it. So you have to get the moisture out. And he said if he was going to continue he would have to invest in a special grain tank and a good dryer and all kinds of extra expense when he wasn't getting much financial gain from it anyway. He said that for every 100 pounds of canola there are 40 pounds of oil and that has to be dried out and

extracted and all of that. And he also said that they bring bees down from Ontario in the nighttime on tractor trailers, put them out in the field and let them loose in the morning and they do the pollinating and that and then they go back in. However, they must have a chip in their head or something because they go back in the boxes and they take them in the nighttime.

This is some of the stuff that I certainly didn't know about it and so he, contrary to farmers who spoke and said that it lessened the work, he said that it increased the work and also said that there's a certain weed that's not killed by the spray and that he had to go out in the field and pull that weed by hand and that that took a lot of work. And he told me of another potato farmer who got out of potatoes and then he tried GMO canola and he got out of that and then he was into berries and unfortunately it's a sad situation in our province that, in fact, the farmers are not making it and this man went out of business.

So I think I'll stop here and I'll come back and do a little bit of presenting with Dr. Christie on the Health Coalition material. But just to say, again to go back to the common good and to say that the onus is on our Prince Edward Island government to safeguard the common good, that consumers have not been told about this food, it just arrived without consumers knowing it, that the effects-and we'll be talking about that in our presentation-the health effects are real. The concerns about health are real because the testing has not been done and there is evidence showing that there could be some problems down the road and serious problems.

So it seems wise if you're safeguarding the common good to follow the lead of other countries who have banned GMOs and make PEI a GMO free zone because far from being backward or going back into the past by doing that, you're taking a technology that has a lot of unknowns and you're saying-for the good of our people, for the good of this province we're saying no to it and that's what we would recommend from the MacKillop Centre.

**Wilbur MacDonald(PC) Chair:** Dr. Christie.

**Dr. Bert Christie:** Thank you, Mr. Chair. I would just like to make a few points in connection with the health effects of GM crops. Most of this I think

you've heard before but I just want to re-emphasize it. For over ten years now there have been a number of scientists have been concerned about possible health effects from foods made from genetically engineered crops. And these concerns, by and large, have been ignored. First of all we were told, and I can remember back in the mid-nineties, we were told that all foods will have GE ingredients in them anyway so you might as well accept it. *Fait accompli* - that's what we were told. Then there was continued opposition and we were told, well it's important that you eat GE foods because GE crops will be important for world hunger. So it's either accept GE crops or starve. And then later on it was, well GE crops are beneficial for the environment so we must have them. And now of course there's some questions about that.

I think the thing to remember in all this is that as far as the consumer is concerned there's no advantage to any GE crop that's currently on the market, no advantage whatsoever. And as I mentioned there's still some concerns about the safety of them. And in January of 2001 an expert committee of the Royal Society of Canada, which was set up at the request of the federal government, made a number of recommendations about genetically engineered foods. They recommended, among other things, that governments-both federal and provincial-invest money in research on the safety of these. They recommended that the regulatory process be made more transparent and that the results be reviewed by a panel of experts and be subjected to verification.

It's rather interesting that there was nothing, absolutely nothing done about this until the Auditor General, Sheila Fraser, about 18 months ago criticized these agencies and called for "a tighter security on GE crops". That's a quote from her report. So once she demanded that something should be done then they started increasing the transparency of this. We also hear that GE foods have been subjected to a greater security than non-GE foods. This is impossible to verify because if you try to get the data you can't find it. You can't get it, they won't release it. And as a plant breeder I can find out more information on a forage variety, for example, than I can on, say a soybean, a genetically modified soybean variety. Because you just cannot get the information.

Research on the safety of genetically engineered foods, on the safety or otherwise, just is not available and nobody is doing any research to improve this situation. The expert committee of the Royal Society called for more research on food safety. It's also interesting that the Canadian Biotechnology Advisory Committee, which is a committee set up by the government to advise it, six months after the Royal Society report they called for monitoring the long term health impacts of genetically engineered food and nothing has been done. So I think despite the widespread concern about this governments are not doing anything and industry is not willing to put money into it. They'd rather put money into lobbying and I don't think there'll be anything done until the economics of the situation dictates that something must be done. And one of the ways that we can force something to be done is for a committee like this to recommend a banning of GE crops until we can be assured of safety. And I think that's one point that you people should consider. It's a pressure tactic and I think you would be doing great service if you were to do this. Thank you, Mr. Chairman.

**Wilbur MacDonald(PC) Chair:** Thank you. Any questions? Or do you have more?

**Mary Boyd:** I was going to continue a little bit more.

**Wilbur MacDonald(PC) Chair:** Sure, go ahead.

**Mary Boyd:** I'll start, I know when Health Canada came here they left the impression that they really are using very good science and that we can have all the trust in the world in that science and that it's admired around the world and then they use the, they say they're under this United Nations umbrella of the Codex Alimentarius and I remember hearing the former federal agricultural minister, Eugene Whalen talking about the frustration. He ended up somehow as a director of that. At a certain point he said it is so industry driven that there is absolutely no way that you can have any other thought except the advancement and the well-being of industry. He was totally frustrated and that kind of industry influence has also, very sad to say, gone into the FAO to a certain extent and into the World Health Organization to a certain extent.

Industry right now, I mean we are in a corporate

world and we are underestimating, I think, the power and the influence of the transnational corporations and their vested interest and they are the ones who stand to benefit from this, not the Prince Edward Island farmers, not the consumers but the corporations. And the Canadian Health Coalition has asked these questions to Health Canada and they have not answered them. They asked, why did Health Canada ignore the Royal Society's expert panel report *Elements of Precaution* and the recommendation to immediately adopt the precautionary principle as the basis for regulating food biotechnology.

Secondly if Health Canada's approval of GM food is science based, where is the science has not been answered. It is not enough to say we're doing some kind of a . . . after the industry does raw data we do go through some kind of a motion which you can see on our website. That's not science and that's not careful and the Health Coalition has asked them where is the science and they have not answered. They also asked, when did the Canadian people or Parliament debate the benefits and risks of biotechnology in general and genetically modified food in particular? Good question huh? Next, since 97 per cent of Canadians want GM food labelled-and that was a poll that came out a few years ago, that it was 97 per cent-why does Health Canada prevent mandatory labelling?

So those are some questions they're waiting for answers for . And there's another, in a brief I'm going to give you on Bill C-28 which is on the Act to Amend the Food and Drug Act, which the Health Coalition says has got to be discussed and not just put through automatically because of the negative effects and the dangers of that- and they asked, there's a lot of questions to Health Canada-12- which I won't go through. I'll leave that with you. But I'm just going to read the one paragraph of the Canadian Health Coalition's concern about this. They said-as the Joint Committee for the scrutiny of regulations has pointed out Health Canada's current approval of chemicals, pesticides and veterinary drugs through an interim marketing authority is illegal. It must remain illegal because it is unsafe and violates the Food and Drug Act. The Canadian Health Coalition considers this practice and the proposal to legalize it with Bill C-28 a major threat to food safety and the health of Canadians.

So they will come here and they will tell us that they're doing a great job and it's foolproof and everything. It's not and it deserves many, many questions and should be taken with a grain of salt. Our food is not being protected and the Codex Alimentarius is not something that you should boast about, that we should boast about as something that assures safety because it's controlled by industry.

Just to say a couple of things. We are hoping still that you will have some people as witnesses on video conferencing. For instance Brewster Kneem who wrote this book "*Farmageddon*" which is all on GMOs, it's an excellent book, and he would be willing to appear on video conferencing. But I was really surprised when we asked Dr. Arpad Pusztai, whose name has been mentioned a few times around the table, if he would be willing and he sent a lovely letter as a response, email saying-yes, I have heard about the meetings and discussions to make Prince Edward Island a GMO free zone. He was writing from Hungary. So you're famous. You're being watched a lot farther abroad than you think. This is far more significant a hearing than maybe anybody around this table really realizes, you know. Keep it in mind. It's a major piece of work which has the eye of the world. And that means that your responsibility is greater than you probably realize although I know you realize how heavy it is.

But he was the first to publish research pointing out the possible serious effects on our health and he was severely criticized for publishing even though the Rowett Institute gave him permission to publish it but once he got on TV there were phone calls from the British Parliament and so on and he was really leaned on, his work was seized. He lost his job and you'd have to say he was the first "whistle blower" on GMOs. He's so highly regarded by his peers. He's written 16 books and over 300 scientific articles so he made the first one on GMOs and it was on potatoes. And he found that the rats in the laboratory experience, only 10 days into the experiment showed serious damage to the kidney, lining of the stomach, the spleen, the brain and immune system. So a lot of stuff there.

I think it's interesting-I wanted to mention him but also, you know, when Health Canada presented the other day they said that they were, that the first GMO food that they approved in Canada was the "flavour-saver tomato", remember they said that.

**Eva Rodgeron (PC):** (Indistinct)

**Mary Boyd:** I thought they said that the flavour-saver tomato was the first.

**Jim Bagnall (PC):** They were talking about another one. (Indistinct)

**Mary Boyd:** It was the first. Okay. Dr. Pusztai has looked into maize, soybeans, potatoes, rice, cotton and into the flavour-saver tomato. So I'm just going to read what he said about that. He said-GM potatoes, the first and only safety evaluation of a GM crop, the flavour-saver TM tomato was commissioned by Calgene as required by the FDA and then Pusztai explains how the test was done. The test has not been peer reviewed or published on the internet. The results claim there were no significant alterations to total protein, vitamins and mineral contents and to toxic glycolides or however you pronounce that. Therefore the GM in parent tomatoes were deemed to be substantially equivalent. He said these studies were poorly designed and therefore the conclusion that flavour-saver TM tomatoes were safe does not rest on good science questioning the validity of the FDA's decision that no toxic glycolides testing of other GM foods will in future be required. Health Canada is not independent of all that and it did accept, it accepts the whole term substantial equivalence which means once you say that GM foods are substantially equivalent to conventional foods that you don't have to do as much testing on them. You know, Pusztai was very strong on that.

He goes on, he talks about also GE soy beans that he tested and he said they contain less concentrations of beneficial phytoestrogen compounds believed to protect against heart disease and cancer and he believes GE foods are likely to be inferior both in quality and nutritional content and Michael Marr, a former minister of the environment for Britain has said that there's no long term studies that have been done to show, without a doubt, that GM crops are safe. And it's certainly, the safety of the food we eat that concerns us in the Health Coalition and that we're eating it and that people have been eating it.

There's a letter here, there's a piece here from a pediatrician in Boston, Dr. Martha Abier who, she's extremely worried about the effect that GMOs will have, especially on babies, the elderly

and the sick. And you know some baby food has been genetically modified and fed to babies and I'll leave this letter because she asks some pretty important questions about health safety there.

The other thing that you may be familiar with is that Monsanto did do a study on safety of foods but it suppressed the findings and then they got out in May of this year and the *Independent* was one of the, in the UK, was one of the papers that published it and so they suppressed the fact that GMO foods could have problems with rats. The concern was for the corn and that there were changes in the blood of the rodents which could indicate that the rat's immune system had been damaged or that there was a disorder such as a tumour and also there was some concerns with their gut, their intestine. And that was suppressed and it just got released somehow which we have to know those things. Like the public has to know that these things are happening, that these companies have information about the health of food and that they really should be making that public.

There's other examples might come up within the discussion but certainly from a point of view of health we can't see any advantage to consumers of GMOs and Dr. David Suzuki says the only advantage is to the corporations for GMOs and so we think that the Prince Edward Island government has a very important role to play here in setting straight for the good and the health of Islanders and Canadians and people in the world the way we need to force the policy making organizations to enforce safe food. And if we look at Health Canada, if you ban GMO crops here and make this a GMO free Island you will be doing your part to force Health Canada to do more testing because it has to do more testing on the safety of food. You can bring more pressure on Health Canada, which is very much needed. And then other jurisdictions will follow the lead and they will put more pressure on and the questions that have to be answered will be answered.

So this has come, whatever promises technology holds for the future, it's being applied untested, you know. And even Pusztai would say it's a crude technology by now, very crude. And if we're going to go in this direction of finding a new food that's superior to what we have then we need a new science to do it and he says very strongly what we don't need is less science. What we very

much need is more science. So you could play a role by saying no and banning GMO crops and you would be forcing Health Canada to serve Canadians in a better way than it's serving us now.

**Wilbur MacDonald(PC) Chair:** Okay. We've had a bit of a discussion. It's too bad the media doesn't cover. We're missing CBC, it's not here. Today we have no media at all with all the information that's going here. Wayne, you have a question.

**Wayne Collins (PC):** Yes, I guess I do. I have a question actually seeking some advice here, if you will and I'll predicate it by first of all saying a couple of things. Get that farmer in here in October who had the experience with canola.

**Mary Boyd:** If he'll come.

**Wayne Collins (PC):** Tell him to get in touch with the Clerk. I wouldn't mind hearing his first person story. Secondly, a quick clarification, it was you say New South Wales in Australia renewed their GMO moratorium. Was that on canola only or all GM foods?

**Mary Boyd:** Well, canola especially and it's the western, the state of Western Australia. Almost all the states on canola. Bert, do you know?

**Dr. Bert Christie:** I'm not sure. Canola definitely.

**Wayne Collins (PC):** Dr. Christie, Ms. Boyd, I thank you for your presentation but you know this has been three days solid of hearings now and even going back to our previous hearings earlier in the year and I'm at a loss to-I wonder if you can get scientists on both sides of this issue to agree on a definition of good science. I'm really beginning to wonder. Because we have had distinguished scientists like yourself, Dr. Christie and other distinguished persons come to this table and tell us diametrically different things. And they're all educated, well-meaning people. I don't mean to disparage any of them. So it really leaves us, I know I probably speak for many of my colleagues here, in somewhat of a quandary on the issue of particularly health as related to GMOs.

Which brings me to my question seeking advice. And you may have already answered it a little bit here because I think Mary said a recommendation

to declare PEI a GMO free zone would put pressure on Health Canada but I pose the question. Here we are a standing committee of the smallest province in Canada examining this issue which is crucial to our number one wealth generator in this province-agriculture and its future. We do not have the financial wherewithal or other resources to independently evaluate the science of GMO. And I ask the question, is it even within the mandate of this committee to make, to come down on one side or the other here when what we're talking about is a federal mandated with the authority of Health Canada to make rulings on issues such as new foods introduced to the marketplace? So I ask you again, do you have the expectation that this committee should or could recommend anything in the area of health visa the GMOs?

**Dr. Bert Christie:** My reaction to that is, yes, you could say we will ban GMOs or GM crops until they can be proven safe.

**Wayne Collins (PC):** But doesn't that, isn't that a repudiation by this committee of the taxpayer's dollars spent through Health Canada to actually safeguard the Canadian public?

**Dr. Bert Christie:** Yes, but you're supporting what the Royal Society of Canada has already said. You know if you read their report they're already calling for more testing, more independent testing, more verification, more transparency. So you're supporting what they have said. And I don't see why you can't ban them because we have municipalities now banning pesticides which have been approved by Canada and that's already taking place.

**Wayne Collins (PC):** If we were to go in that direction about health and we're talking about the planting of crops on our Island, something over which we have some control. But as Eva has pointed out time and time again in her questions to various people testifying at this committee, there are thousands of products on the shelves out there at Sobeys and the Superstore that have some kind of GM factor in their process. You know, to say banning GMs or to have come down against it on a health basis, what do we do? I don't believe that the manufacturers are going to go out of their way to start labelling GM foods for 130,000 souls at this end of the country. I'm sorry, it's not going to happen.

**Dr. Bert Christie:** But you can ban GM crops.

**Wayne Collins (PC):** Correct. But to put it up as a health issue is to say that what we think Islanders are consuming by their purchases in the grocery store is suspect.

**Dr. Bert Christie:** My reaction would be, you don't know whether it's good or bad. That has been the attitude of a lot of scientists. We don't know whether these things are good or bad and we'd like to find out.

**Wayne Collins (PC):** Alright, I thank you.

**Mary Boyd:** Yes, and there's indications too, as I mentioned some of those examples and there's other too, that they're finding that we do have something to be worried about. I was talking to the gentleman from Greenpeace this morning and I was saying, you know I mentioned your question, Eva, about all these. He said-do you think that if people stopped eating those products tomorrow because they have GMOs in them that the companies wouldn't be supplying the food right away? For one thing if PEI starts a trend and if it makes compulsory labelling, you know, if it initiates it like Alaska is doing . . .

**Wayne Collins (PC):** I don't think we have the power to do that as a provincial government, do we?

**Mary Boyd:** Yes, I think the guy from Greenpeace said we do have that. That it was a Supreme Court decision that we can do it. And Alaska has been able to do it in the United States and it's happening in other states of the United States and it's happening in states, within states in Europe too.

**Wayne Collins (PC):** I know the principle he spoke about. I did read the background around it but that was related to the town of Hudson in Quebec, is it not, and their right as a municipality to ban the spraying of pesticides within their municipal jurisdiction? That's what that derives from. That doesn't come anywhere close to saying label GE foods in your supermarkets. I don't think that would stand up quite as well as they hoped it would.

**Mary Boyd:** Well, certainly there was research saying that we have the legal authority to ban the planting of GMO crops here.

**Wayne Collins (PC):** I don't disagree with you there.

**Mary Boyd:** Seems to me it wouldn't take much more to get labelling if we can go that far. How did Alaska get it? It's interesting. We have to find out those things. But right now the people who don't want to eat GMOs are eating very well because if you don't want to eat canola oil or corn oil you have other choices of oil. You can make your own salad dressings and you can avoid it. You can bake with ingredients that don't have so much of that in it and that would be a very good thing for consumers to read the labels and to be more critical and if they started to do that they'd soon start complaining if they were discovering that everything they want has some GMO ingredients in it.

**Eva Rodgerson (PC):** Just wanted to make a comment after looking through this book. This is the one that's really amazed me today, the one that the gentlemen from Greenpeace left this morning. And I just did a short list of 35 companies that I've known since I was, known or brought product from since I was a child. And I'm just going to run through some-Heinz, Kraft, Nestles, Betty Crocker, Duncan Hynes, Hershey, Pillsbury, Quaker Oats, Robin Hood. People would buy nothing else but Robin Hood flour. Cadbury's, Proctor and Gamble. Again, Heinz, Kellogg, Weetabix, Hunts. The list goes on and on of products that have some form of GMO, whatever. And when I looked through this right from the baby foods and I remember my grandchildren, Similac, Enfalac, you know.

And when you say it's easy for people to go and make their food and whatever and I know we used to make our own mayonnaise and that. But when I see people lining up at the drive through, they don't make their own coffee. They don't make their own muffins. They don't make their- I'm just overwhelmed by, like my colleague just reiterated, when I look at the magnitude of the types of food that's already on our store shelves that's the one that I have not been able to get my head around just how we can counteract something of this magnitude that's already in our food chain.

But anyway, thank you for our presentation. That was just a comment that I'm overwhelmed by this.

**Wilbur MacDonald(PC) Chair:** I would like to

make a comment. I really like the idea of labelling. I think it gives the consumer the opportunity to do what they want to do. They don't want to take GMOs, they don't have to. And I'm sure, even though the list is there and there's lots of other foods that we would . . . it would be a big job but it could be done and some pressure has to be given, you know. Anyway that's just my own idea, I'm just throwing that out so the committee can know that I'm behind the labelling idea.

**Mary Boyd:** That's very good news.

**Wilbur MacDonald(PC) Chair:** Thank you very much for coming. We really appreciate it and I just regret that the media has failed to come. That's how we get both sides out so people understand it. We've talked about it but I guess it's up to them. We can't force them to come.

**Mary Boyd:** Anyway it was a very encouraging comment that you just made at the end of this session, Mr. Chairperson. Looks as if the MacDonalds may be revolutionary around the world with food safety.

**Wilbur MacDonald(PC) Chair:** Don't be putting pressure on me there. (Laughter) Thank you very much. We thank all the people who have come today and we appreciate it very much. We thank Greenpeace. I see you've stayed for the day and that's very good. And we hope that you have a good flight back and beat that weather that's coming. We're going to go In Camera for a few moments.