Senate Standing Committee on Agriculture and Forestry, March 22, 2018.

The potential impacts of the effects of climate change on the Alberta Greenhouse industry.

My name is Anna De Paoli, consultant to the Alberta Greenhouse Growers Association (AGGA). On behalf of Albert Cramer, President, the Board of Directors and our membership, we thank you for the opportunity to present at this important standing committee.

The AGGA was founded in 1980 to work together to bring knowledge and research information to our members, share ideas and work with government to help grow our industry in the most progressive and sustainable way possible.

Today the AGGA has 179 members, of whom 143 are greenhouse growers. The total greenhouse acreage in Alberta is around 380 acres. We represent all aspects of the greenhouse industry including vegetable, floriculture & forest nurseries. Total Alberta greenhouse sales were $132.9 million[1] in 2016 (which excludes forest nurseries) and our industry employed 3,397 in 2016. This is 2,267 seasonal and 1,130 full time employees.

Measures for the adaptability and resilience of the Alberta greenhouse sector.

Strengths

1. **Family Businesses.** The majority of greenhouse growers in Alberta are multi-generational family businesses. This brings a depth of knowledge, resiliency and experience that is not possible without family succession. It also allows long term decision making on investments and loan guarantees by more financially secure family members. This provision allows access to capital that is not possible for smaller and non
   -family owned enterprises. In Alberta there is also a strong cooperative component to the greenhouse industry, the Red Hat Co-op, founded in 1966 has over 150 acres of vegetable production and 35 members. Pik N Pak Produce, founded in 1987 currently has 15 acres in production. By forming cooperatives, economies of scale in packaging, marketing and distribution are possible. This makes the industry more efficient and able to service a growing market that demands consistency of supply.

2. **Productivity.** Greenhouses are highly productive uses of land, for example 200 cucumbers per m2 was achieved in 2016 in Alberta. A world class yield. Water use is also very low, approximately 90% of water and nutrients are recycled in vegetable greenhouses. Pesticide usage is reducing with the conversion to biological controls by introducing natural predators to the greenhouse environment. There have also been a number of expansions and new additions to Alberta greenhouse membership in recent years. Economies of scale are important differentiators in all sectors of our industry.

[1] http://www5.statcan.gc.ca/cansim/a47

Efficiency. The Netherlands is a leader in greenhouse technology and production efficiency. Many of the Alberta greenhouse growers have direct family and business connections with the Netherlands, meaning that the Alberta industry closely follows and adapts the latest technologies to become more efficient. LED lighting is one example of a change that is starting to be implemented. This low energy medium allows year-round production with much smaller energy consumption than high pressure sodium lighting.

3. **CO2 Recovery.** It is also important to note that greenhouses often recover carbon dioxide from boiler flues and cogenerators. Enhancing CO2 levels from ambient, around 400ppm, up to 1,000 ppm increases plant growth and productivity significantly. This important sink for CO2 makes the greenhouse industry unique from other Agricultural operations.

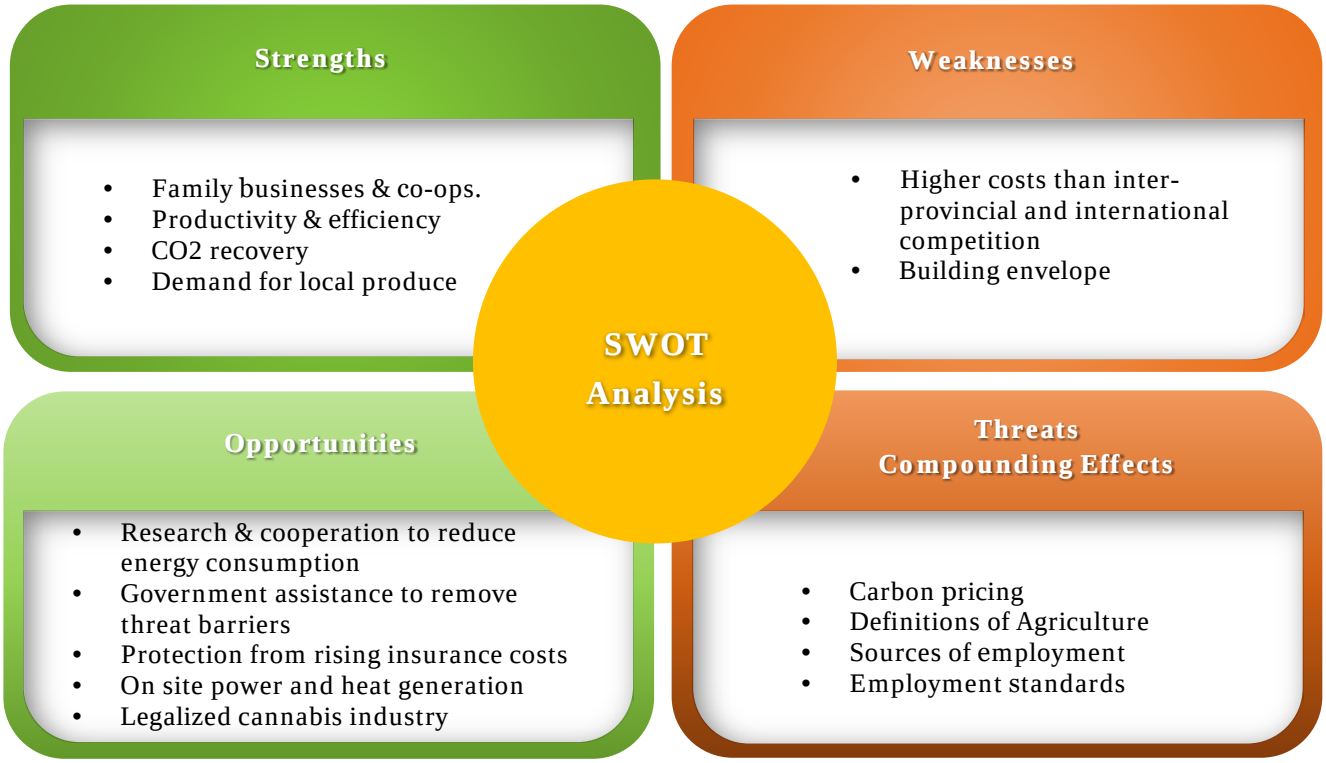

Figure 1. SWOT Analysis for the Alberta Greenhouse Sector

Weaknesses

- **Building Envelope.** Energy efficiency is an important method to reduce energy consumption, however greenhouse structures are unique in that the balance of light penetration is counter to standard building insulation technologies. Whilst measures such as energy curtains, high efficiency boilers and fans are increasing in Alberta. Greenhouses will continue to use significant amounts of natural gas for heating.

Opportunities and risks associated with climate change. The repercussions of the establishment of carbon pricing mechanisms on the competitiveness of stakeholders in the Alberta greenhouse industry.

Risks Associated with Climate Change

- **Severe Weather Events.** The key risk posed by climate change for the Alberta Greenhouse industry is the increased occurrence of severe weather-related events such as flooding, hail, tornadoes and wind storms. In a climate-controlled environment, sudden changes are devastating to the crops. Severe weather also causes structural damage and lost production as a result.

- **Insurance Cost Increases.** Additionally, the frequency of weather related claims drives insurance premiums higher and is a threat to the viability of the industry. In Alberta, insurance premiums have been rising significantly in recent years, in some cases over 20% per annum. Such cost increases cannot be passed down to consumers in a highly competitive commodity market and are absorbed by producers, reducing margins.

Threats to Industry Viability

1. **Carbon Pricing.** Alberta greenhouses are significant users of natural gas for heating and electricity for lighting. Demand for vegetables is year-round and increasingly, to be competitive, the larger operators are moving to year-round operations. Energy costs account for approximately 25% of operating expenses. Hence the Alberta Climate Leadership Plan[2] and the Government of Canada's Carbon Pricing Backstop[3] present a significant challenge to the competitiveness of the industry.

As a result of consultation with the AGGA, the Government of Alberta granted the greenhouse industry an 80% rebate of the carbon levy for eligible heating via the Alberta Greenhouse Rebate Program[4]. This is a 2-year pilot program, ending on December 31, 2018. **It is vital for the competitiveness of the greenhouse industry that this program be extended.** Data from statistics Canada for the vegetable industry shows that 69% of the total production area is grown in Ontario, followed by 20% in British Columbia. Alberta is small in comparison, at 3% of the national total. The Province of British Columbia has an equivalent Greenhouse Carbon Tax Relief Grant[5]. As such, **it is important to have a level playing field within Canada for greenhouse growers.**

[2] https://www.alberta.ca/climate-leadership-plan.aspx
[3] https://www.canada.ca/en/services/environment/weather/climatechange/technical-paper-federal-carbon-pricing-backstop.html
[4] http://www1.agric.gov.ab.ca/general/progserv.nsf/all/pgmsrv460
[5] https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/environmental-programs/greenhouse-carbon-tax-relief-grant

Figure 2. Greenhouse Vegetable Area Harvested in Square Feet – 2016. Source Statistics Canada.

Province	2016 Square Feet of Production	Percentage of Total Area
Alberta	5,894,596	3%
British Columbia	33,013,639	**20%**
Manitoba	21,557	0%
Ontario	116,901,354	**69%**
Other	3,063,568	2%
Quebec	9,844,089	6%
Saskatchewan	43,114	0%

Alberta producers face competition from the United States and Mexico, here producers have both lower labour costs and no carbon taxation. It is challenging for Canadian producers to compete in an environment of rising carbon pricing when imported produce is not subjected to this.

2. **Definition of Agriculture.** The Alberta greenhouse industry is threatened by changes to the definitions of Agriculture. Several provincial and municipal jurisdictions are changing definitions for Employment Standards codes and land use bylaws to exclude greenhouse operators from the definitions of Agricultural operations. This causes changes to building codes, hours of operation and labour costs to name a few. This is highly detrimental to our industry and gives a great hesitation to those considering investing in their businesses. **Consistency in recognition of greenhouses as Agricultural operations is vital.**

3. **Sources of Employment.** The greenhouse industry employs a large number of low skilled workers. The following National Occupational Classifications codes describe the roles:

8431 General farm workers: vegetable farm/farm machinery worker. 8432 Greenhouse workers: horticulture, hand sprayer, plant propagator, hydroponics. 8611 Harvesting labourers

The availability of this skillset locally in Alberta is low and when available turnover is high. The Red Hat Co-op had a 93% turnover rate for new local employees in 2016. As such, the industry relies on the Temporary Foreign Worker Program (TFWP) and the Seasonal Agricultural Worker Program (SAWP), for the continued operation and growth of the industry. The costs of the TFWP have increased significantly over time, which is challenging and the SAWP program has been denied to cooperatives that have packaging facilities that are not co-located at their member's greenhouses. This is threatening the viability of cooperatives in Alberta and is something that the industry urgently needs to rectify. In the past, the SAWP program was available to them, the denial is a recent federal change.

> In May 2017, the Senate Committee published a report entitled Market Access: giving Canadian farmers and Processors the World. The report's Recommendation no. 11 (page 31) reads:
> **"the Temporary Foreign Worker Program be flexible enough to accommodate the needs of the sector, since agriculture production is cyclical, and to expand the National Commodities List for eligibility for the Program, bearing in mind these sector's needs for foreign workers."**

Figure 3. Senate Market Access quotation[6]

4. **Employment Standards**. In Alberta, greenhouses mushrooms and sod farms are not considered "farm and ranch"[7] under the Employment Standards code. This recent change (January 1, 2018), means that not only are greenhouses not on a level playing field within Canada, but also not within Agriculture.

5. **Compounding effects.** Carbon pricing, minimum wage increases, rising costs of the TFWP, holiday pay and overtime benefits changes have significant compounding effect on the viability of the industry. This fact cannot be underestimated and has several operations considering exiting the industry. These are serious threats to our industry.

The role that the federal & provincial governments can play.

Opportunities

1. **Aligning Definitions.** Recognition of the greenhouse industry as primary Agricultural production in federal, provincial and municipal jurisdictions. Recognition that greenhouse owned cooperatives are also Agricultural producers and should qualify for the SAWP. Defining cannabis as an Agricultural operation is also important as a key area of growth in our industry.

2. **Energy Efficiency.** Programs to support the implementation of available energy efficiency measures in the greenhouse industry. Research on CO2 sequestration in greenhouses with the aim of developing carbon credits for such projects. Until such time as this is completed, rebate programs to reduce the threat of the carbon taxation are critical.

3. **On Site Generation.** Financial support for on-site power and heat generation (cogeneration from natural gas, geothermal, solar and wind). This includes support for the application process with provincial regulators such as the Alberta Utilities Commission and Alberta Environment.

4. **Insurance.** Protection from rising insurance rates through federal financing agencies for example Farm Credit Canada and provincial financial institutions such as ATB and AFSC.

[6] https://sencanada.ca/content/sen/committee/421/AGFO/reports/FINAL-Market_e.pdf
[7] Farm and ranch employment standards exceptions https://www.alberta.ca/es-exceptions-farm-and-ranch.aspx

In conclusion, the greenhouse industry in Alberta is resilient and growing. Climate change does pose some threats but also opportunities. We would like our concluding message to be one of a good news story; that of vibrant family businesses, of growing cooperatives and of expanding local food, floriculture and forest seedling production. The opportunity for the federal and provincial governments is in consistency of policy and recognition of the unique nature of this small but growing industry.

#Albertagrown

Thank you again for the opportunity to address you, I welcome any questions you have.