INVEST. BUILD. GROW.

MANITOBA

SUSTAINABLE PROTEIN CHALLENGE DIALOGUE

Progress Report

September 2020

Manitoba

CONTENTS

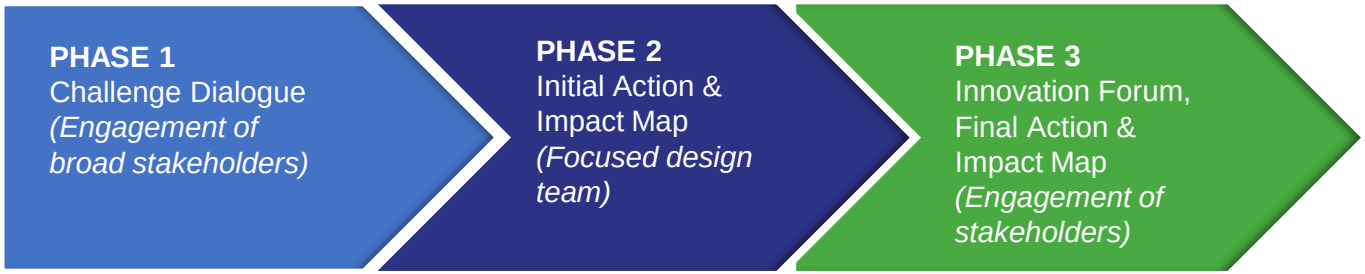
01 | OVERVIEW

Project scope, engagement breakdown, positive sentiment.

PROJECT OVERVIEW

A structured approach to advance the future of sustainable protein.

- Through the Sustainable Protein Challenge Dialogue, Manitoba is looking to work collaboratively with stakeholders to position the province as a global leader in sustainable protein and develop a network of collaborators within which a range of sustainable protein initiatives can be mobilized.
- The Sustainable Protein Challenge Dialogue engaged a broad spectrum of stakeholders for a collaborative dialogue around what the future of sustainable protein looks like for Manitoba, Canada and the world.
- Over 200 stakeholders were invited to participate in the Dialogue from a broad cross-section of groups who all have an interest in the future of Sustainable Protein. Eighty-three responses were received.
- The feedback from the Dialogue will be used to inform “Deep Dive” discussions with smaller stakeholder groups through virtual workshops, and to create an Impact Map outlining where opportunities lie for innovation in Sustainable Protein.
- This Dialogue is part of a three phase approach to strategically advance the Sustainable Protein file for the province of Manitoba.



ENGAGEMENT OVERVIEW

Over 200 stakeholders across Manitoba, Canada and the world were invited to participate in the Dialogue. Over four weeks, we received 84 responses, a 42 per cent response rate.

01 OBJECTIVES

- Engage a diverse group of stakeholders to share views on the future of Sustainable Protein – for Manitoba, Canada and the world.
- Advance new thinking and prioritize approaches to responsibly feed the world in the coming decades.
- Understand together where the opportunities lie, what the challenges are, who is doing what, and where innovative interventions can be made, by any stakeholder, for scalable impact.

02 PARTICIPANTS

- **Total participants invited:** 200+
- **Total participant responses:** 84 (42 per cent response rate)
- **Participants spanned:** proteins (beef to emergent), other knowledge (innovation to soil), organizations (government, non-profit, corporate) and geography (Manitoba, Canada and global).
- For a complete breakdown, see the following slide.

03 ACTIVITIES

- Participants were initially invited via email.
- Follow up phone calls and emails were sent weekly over the engagement period to solicit as much participation as possible.

04 TIMEFRAME

- **Dialogue launched:** June 22, 2020
- **Dialogue closed:** July 17, 2020

ENGAGEMENT OVERVIEW – Participant Breakdown

PROTEIN KNOWLEDGE

- Beef: 16%
- Pork:11%
- Poultry: 3%
- Other livestock: 5%
- Plant Protein:
  - Traditional: 11%
  - New: 17%
- Emergent:
  - Insects: 3%
  - Lab meat: 4%
  - Aquaculture: 7%

TYPE OF ORGANIZATION

- Government: 11%
- Corporate:
  - Production/Processing: 36%
  - Retail/Grocery: 1%
  - Restaurants: 3%
  - Finance/Business: 9%
- Non-profit: 30%
- Academic: 11%

OTHER KNOWLEDGE

- Innovation: 63%
- Climate Change/Energy: 5%
- Soil: 7%
- Regenerative Agriculture: 7%
- Consumers: 18%

GEOGRAPHY

- Manitoba: 49%
- Canada: 38%
- Global: 13%

ENGAGEMENT OVERVIEW – Positive Sentiment

Respondents applauded the province of Manitoba for leading the charge.

- **There was positive general sentiment** regarding the Sustainable Protein Challenge Dialogue. Although some felt the scope was quite broad, respondents still said the paper did an excellent job of capturing the complex sustainable protein landscape overall and kickstarted an important discussion.

> *"I'd like to congratulate the Province of Manitoba and the Manitoba Agriculture Resource Development Department for their leadership on this initiative. Thank you for including me. I welcome any further interactions and dialogues."*

> *"I think it's great that Manitoba is moving forward and taking strides in the plant based market and hope we can continue to grow together."*

> *"Thank you to the Manitoba government for pulling together stakeholders through the sustainable protein value-chain and initiating dialogue. It is out of the greatest differences that there is the opportunity for the best decisions."*

> *"Thanks for organizing the paper and survey. I believe that Manitoba can be a leader and provide a competitive base for global protein supply – climate, land base, growers, clean energy, access to multi-mode transportation and strong Government support bode well."*

> *"We appreciate all the work you are doing on the "sustainable protein challenge" for Manitoba. We thought your challenge paper was quite good."*

02 | GENERAL FEEDBACK

High level observations on definitions, expected outcomes, background statements, assumptions and next steps identified in the Sustainable Protein Challenge Dialogue Challenge Paper.

SUMMARY OF WHAT WE HEARD – General Overview

The Challenge Dialogue received rich, thoughtful feedback.

- **Key Definitions** were well received overall. For those who did have feedback, it focused on:
  - the definition of Sustainable Protein needed to include the three pillars of sustainability (social, environmental and economic), rather than just two (environmental and economic)
  - Regenerative Agriculture as a hot button definition, with many respondents feeling this needed less emphasis because it's perceived as a "buzz word"
- The **Key Challenge** was also well received. To improve, respondents felt it should include more specifics around:
  - who the "diverse group of action-oriented stakeholders" invited to participate were
  - what the intended impact is and how to make it more action oriented
- Respondents felt the **Expected Outcomes** needed two additions: one around improved communication and collaboration, and another that outlined a specific timeline to show an urgent bias to action, with roadmaps, benchmarks and accountability.
- **Background Statements:** C (Market Dynamics and Trends) and D (Agricultural Practices and the Environment) yielded a good amount of discussion:
  - C4 (increased demand for trusted, healthy food) raised questions around what 'trusted' and 'healthy' really mean, along with commentary around need to consider animal welfare as part of this conversation
  - regarding D, participants noted the impacts technology, labour and soil health has on agricultural practices. Many respondents mentioned Manitoba's abundant supply of water should be added as one of the advantages listed

RE: KEY CHALLENGE:
"….placing a sharper point on the stakeholders you want to engage by using language that includes: science based, pragmatic and partnership oriented."

RE: EXPECTED OUTCOMES:
"…more details needed to gain a complete picture of what the provincial government is trying to achieve, who will be involved, how various initiatives will be funded …"

RE: BACKGROUND
"The adoption of innovation and research is equally important. …to meet the challenges and demands for change, we must recognize the cost-benefit realities and offer support at the initial stages to accelerate implementation."

SUMMARY OF WHAT WE HEARD – General Overview CONT'D

Two assumptions show a need for clarification, while four additional assumptions were noted.

Assumptions:

- There was a significant amount of debate / disagreement around A2 (global demand for protein will continue to increase, including animal protein), and C4 (what the rise of alternative proteins has been driven by).
- **Regarding A2,** many questioned whether animal protein needed to be specifically called out, and whether or not this was in fact true, offering that this should actually be a more general statement that balances across all proteins and ebbs and flows over time due to many reasons.
- **Regarding C4,** there was healthy disagreement here, with many taking issue with the statement that "animal protein has a significant impact on climate change", suggesting the link between the two might be overstated.

Assumptions to add:

Many respondents suggested the addition of assumptions in four areas around:

1. Impacts **of pandemic/supply chain/geo political** factors
2. What we believe about **consumer behaviour**, and the importance of education and knowledge
3. **Economic benefits and ROI**
4. **Inclusion:** A few respondents questioned where fisheries and aquaculture fit in and felt it needed to be overtly added to the Dialogue. Another respondent provided insightful comments around inclusion as it relates to First Nations.

See Supplementary section for an in-depth review of feedback for each component of the Challenge Paper.

RE: ASSUMPTION (A2):
"True. But: the balance between different types of protein will shift substantially. Demand for animal protein in particular will not increase indefinitely."

RE: ASSUMPTIONS (C4):
"I agree that there are concerns regarding the sustainability of producing animal protein, but I disagree with the "given" that it has a significant impact on climate change."

RE: ASSUMPTIONS TO ADD
"The globalization of food, and trade as a whole, is something that net exporters like us take for granted. In a post COVID world …something worth putting a marker on."

03 | CRITICAL QUESTIONS

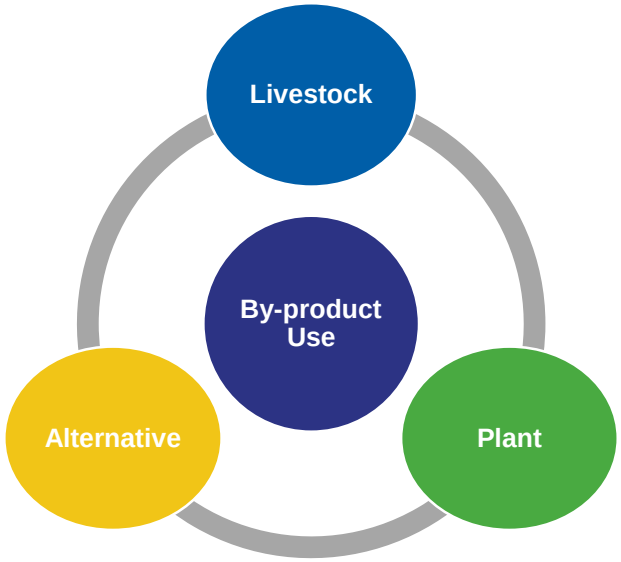
Initial insights into success, barriers and opportunities across the three protein types – animal, plant and alternative.

SUMMARY OF WHAT WE HEARD – Critical Questions

What is Success? Many responses cut across animal, plant and alternative protein.

Vision

- Quality: trusted, healthy, tasty, safe products (quality over quantity)
- Consumer awareness, recognition and respect
- Farmer and community profit and value add in Manitoba
- Improved soil health
- Complementarity between livestock, plant and alternative protein
- Knowledge clarity – how proteins stack up both domestically and globally
- Reduced environmental impact, especially carbon reduction



LEADERSHIP THROUGH INTERCONNECTION

Pathways

- Regenerative agriculture practices – including integration of crops and livestock
- Total utilization, circularity and by-product usage
- Soil health as a pathway to improved production
- Programs to articulate and value environmental goods and services
- Data and science-driven approaches
- Sharing of best practices and education for farmers
- Application of technology, including precision agriculture, big data and traceability

> *Manitoba has strong baseline in sustainability thanks to its renewable energy, land-use practices, technological sophistication, etc. It is hard to imagine a jurisdiction with a greater right to leadership in "sustainable protein".*

> *"Success for Animal, Plant and Alternative proteins means that we are able to identify and encourage sustainable practices across all types ..."*

CRITICAL QUESTIONS - What is Success in Plant Protein?

The overarching theme in plant protein success was quality over quantity.

Specific Plant Protein Vision Perspectives

The following elements are additional to the vision feedback previously listed which cut across all protein groups.

- Use of specific regenerative agriculture element:
  - intercropping (diversity) and crop rotation
  - no till
  - fertilizer management
- Improved biodiversity
- No new land conversion
- Products for market:
  - diversity of crops
  - creating true alternatives to animal protein
  - low cost for consumer
- Efficient markets
- Total value assessment an appreciation, including protein efficiency and water, land, energy use
- Microbiome applications

> *"A well branded and structured local/regional sustainable plant protein model would be ground-breaking and garner large global attention."*

> *"Plant production systems that enhance rural communities and produce safe, nutritious and profitable plant products while reducing environmental impact and maintaining food security."*

> *"The production of sustainable plant protein…is strongly linked with soil health and the soils' ability to continue to produce abundant crop for generations to come."*

CRITICAL QUESTIONS – Plant Protein Opportunities

The overarching opportunity is increased global demand for plant protein.

Priority Opportunities

1. **Production – overall through Regenerative Agriculture, but with specific mention to:**
   - reduction in fertilizer use - Manure / precision ag / other new approaches
   - diversity of crops - nuts specifically mentioned as an area of opportunity
   - decrease tillage – an area of advantage in Manitoba
   - better water management – was mentioned frequently
   - leverage – Manitoba has such a strong base on which to build
2. **Processing:**
   - push for efficiency
   - valorize side streams – full use

Other Opportunities Mentioned

3. **Technology:**
   - processing and extraction of high value elements
   - improving R&D, matching it with deployment in Manitoba to keep processing and value-add in Manitoba
   - genetics to improve yields, fit Manitoba climate, encourage efficient fertilizer use and manage climate change effects
4. **Marketing and branding:**
   - opportunity for a well-branded and structured sustainable plant protein model
5. **Trade:**
   - maintaining and expanding export markets – can provide huge dividends – growth and stability of markets
6. **Education and management:**
   - education needed on regenerative practices, including crop rotation, use of fertilizer, etc.
   - opportunity to support producers and highlight best practices
   - for consumers – correlating health with sustainability
   - pursue a total value approach that includes life cycle assessment

> *"An opportunity…increase the use of manure as a nutrient source as opposed to synthetic fertilizers."*

> *"A plant protein that works in a symbiotic relationship with other protein options is key. One protein sector growing or being promoted at the expense of another … should be avoided."*

CRITICAL QUESTIONS – Plant Protein Barriers

Work is required to understand barriers and prioritize action to tackle them.

1. **Consumer demand**
   - stigma that animal protein is better or a symbol of status
   - plant protein products still too complex (and processed) vs. animal protein – consumer confusion
   - lack of an easy way to demonstrate sustainability to consumers
2. **Existential pressures**
   - climate change effects including emergent pests, disease and severe weather
   - future allergenic concerns

> *Plant protein as a commodity: "Current processing practices are often 'global' and do not lend themselves to sustainable plant protein-based consumer products."*

CRITICAL QUESTIONS – Plant Protein Barriers CONT'D

Work is required to understand barriers and prioritize action to tackle them.

3. Knowledge gap limiting adoption

- reliance on old monocrop models is difficult to break
- lack of education / knowledge / practical paths to replace farm nutrients sustainably
- perceptions that 'sustainable protein' means high-tech and less economic return

4. Structural elements limiting adoption

- farmer does not see benefit when improving soil health, watershed or ecosystem
- insurance is not aligned
- perspective that more production requires more land use
- many value chains are proprietary, not open source, limiting adoption
- access to capital for advanced processing of new products
- precision agriculture use and data not seen to be a priority investment by government or industry
- need talent pipeline across the value chain to support sustainable practices

5. Supply chain pressures

- plant protein products are largely commodities – not easily distinguishable
- corporate cultures do not value sustainability, buyers do not support practices like intercropping
- focus is not on raw material excellence, but on production, extraction and transformation
- unstable export markets

> *"Lack of an easy system to demonstrate sustainably produced products to consumers."*

> *"Farmer reliance on old intensive monocrop plant protein production models are difficult to break."*

> *"Crop insurance penalizes farms for scaling up their intercropping acres."*

CRITICAL QUESTIONS – What is Success in Animal Protein?

Specific Animal Protein Vision Perspectives
The following elements are additional to the vision feedback that cuts across all protein groups:

1. Local production and processing
2. Scientific merits of production are understood
   - Clarify where MB beef stands against global beef supplies – life cycle GHG emissions
   - Clarity on how animal protein coexists with plant protein
   - How animal agriculture affects soil health
   - Clear definition and set of practices to follow
3. Consumer awareness and acceptance – to create a strong brand with global recognition
4. Full traceability and transparency
5. Expansion of production – sustainably
6. Animal health and welfare
7. Worker welfare – reduction in injuries
8. Environment - healthy soil and waterways and a significant reduction of inputs
9. Confined systems (chickens and hogs) to reduce impact on water and environment

> *"…show that animal protein production plays a beneficial role in the sustainability of soil and crop production and that it does not have to compete with plant protein but instead can coexist and support plant protein production."*

> *"It looks like the ground on my pasture after I've moved chickens to a fresh spot of grass. And it tastes like my eggs that have more flavour, nutrition and colour, thanks to the hens' pastured diet and relaxed, fresh air lifestyle."*

> *"Huge opportunity for leadership role in Canadian aquaculture industry."*

CRITICAL QUESTIONS – Animal Protein Opportunities

The opportunity to lead in sustainable animal protein exists, but work is needed.

Priorities

1. **Redefine inputs, feed and digestive enhancements**
   - significant attention to grazing and grass fed
   - novel feed including insects, seaweed and changing the profile of feed crops to better suit animals
2. **Use of by-products and creating a closed-loop system**
   - input: use of waste from other industries
   - output: apply animal waste to improve soil and reduce emissions – optimize manure management
3. **Regenerative agriculture**
   - integration of livestock with crop production to improve soil health
   - greater adoption of best practices – increase producer understanding
   - attention to soil carbon sequestration and nutrient capture
4. **Technology and precision livestock production**
   - traceability and transparency
   - precision feeding
   - advanced processing
   - big data use
5. **Marketing and branding**
   - there is an opportunity for a well-branded and structured sustainable animal protein model
   - communicate the benefits of sustainable protein
   - product integration – animal + plant protein products
   - improve consumer awareness

> *"…greater adoption of best practices, tools and technologies."*

> *"A well branded regional eco-system for sustainable animal protein products (farm to fork) will lead to regional surges of consumer demand..."*

CRITICAL QUESTIONS – Animal Protein Opportunities
CONT'D

Other Opportunities Mentioned

6. **Demonstrate accountability through science and accounting** – build the systems to demonstrate, monitor and communicate about sustainability.
   - understand role of animals to optimize ecosystem function, e.g. how they sequester carbon and increase soil fertility
   - pursue a total value approach that includes life cycle assessment
7. **Research and development**
   - improving R&D and matching it with deployment in Manitoba to keep processing and value add in Manitoba
   - genetics to improve yields, fit Manitoba climate, encourage efficient fertilizer use and manage climate change affects
   - understand and deploy microbiome strategies
8. **Markets**
   - incentives for cutting edge methodologies to push best practices
   - maintain (stabilize) and expand export markets
9. **Practices**
   - farm cattle on land that cannot grow other crops
   - move away from silos
   - use of specific livestock that benefit a regenerative system
10. **Education and management**
    - need education on regenerative practices, including crop rotation, use of fertilizer, etc.
    - support producers and highlight best practices
    - for consumers – correlating health with sustainability

> *"We need to use more of our grass lands to produce beef… Cattle will increase water infiltration, ecosystem diversity and sequester carbon. And they take a diet of which 86-90% cannot be used by humans..."*

> *"…technology and putting a price on carbon. Reward farmers for the amount of carbon they can sequester in their soil!"*

CRITICAL QUESTIONS – Animal Protein Barriers

Top Barriers

1. **Public perception and trust**
   - bad for environment
   - unhealthy
   - lack of understanding on the role livestock can play in a sustainable food chain
2. **Economics**
   - lack of economic signals around environmental goods and services and carbon. Programs needed to reward farmers.
   - revenue and cost visibility for sustainable products is needed throughout the supply chain. Without profitability it is tough to change.
3. **Knowledge and data**
   - no clear data on GHG impact of Manitoba cattle industry
   - lack of knowledge of grasslands
   - many producers believe they are sustainable today
4. **Inertia and culture**

Other Barriers Mentioned

5. **Marketing:** Inability to easily demonstrate and communicate sustainable protein.
6. **Structural barriers**
   - insurance programs to support transition and market uncertainty
   - reluctance to adopt new technologies (to be more productive and work alongside rest of supply chain)
   - implement systems to support and drive continual improvement
   - lack of technical support and education for farmers
   - regulations that limit innovation (e.g. limits to manure and blood use as fertilizer)
   - aquaculture not regarded as part of the system
7. **Access to capital for change is difficult**
8. **Lack of processing capacity**
9. **Trade barriers,** in particular, interprovincial barriers
10. **Environmental challenges**, including drought

> *"Consumer perception of the negative environmental impacts of livestock production and a lack of understanding of its role in a circular economy."*

> *"Resistance by mainstream farmers to accept that 100% of what they do may not be sustainable….have to embrace change for this to scale; so far they tend to defensive reactions ..."*

CRITICAL QUESTIONS – Alternative Protein

Some say go ‘as fast as possible’, some say ‘it’s not happening anytime soon’.

Opportunities

1. **Pursuing a complementary relationship with other proteins, not competition**
   - Interconnectedness and by-product utilization
     - What type of MB by-products can be utilized as feedstock for alternative protein?
     - What alternative protein by-products can animals consume?
   - Establish cross-sector hubs for collaboration between industries and major participants
   - Insect protein – can be very complementary as can be built on by-products and utilized as animal feed
   - Potential for alternative proteins that are not for human consumption, including sustainable feed sources such as seaweed
2. **Convergence in the marketplace**
   - Creation of hybrid products that include alternative and traditional proteins
   - Integration in the marketplace with minimal distinction between products
   - Creation of more choice for consumer
3. **Support adoption and opportunity discovery**
   - **Production -** farmers looking to transition to higher-value crops that are fit-for purpose for alternative protein products
   - **Processing -** encourage processors to explore alternative proteins – learn best practices and uncover synergies
4. **Leverage the infrastructure strengths of Manitoba**
   - Many alternative proteins rely heavily on energy and water
   - **Distribution –** will be critical for all protein
5. **Specific alternative proteins that received the most attention**
   - **Insect** – potential as alternative fish feed, and **fermentation**
6. **Follow the Carlson Curve to track technology advancement (Moore’s law for biotech)**

> *“The agriculture industry needs to embrace the idea of multiple sources of protein - not competing, but complimenting each other...”*

> *“Blended products are a way to increase uptake of non-traditional sources.”*

> *“Get into alternative as fast as possible; use revenues from existing success to buy into the emerging alternative industry.”*

CRITICAL QUESTIONS – Alternative Protein CONT'D

Concerns about direct competition and consumer acceptance predominate.

Barriers

1. **Competition between various protein types**
2. **Consumer acceptance**
   - perception of being 'overly processed'
3. **Safety concerns and degree of testing required to ensure safety**
4. **Cost –** technology is still expensive
5. **Energy requirements**
6. **Total value understanding –** what is life cycle impact including energy, water, carbon
7. **Lack of infrastructure and capital intensiveness –** and difficulty attracting outside dollars

> *"This is quite complex. From single cell proteins (which was researched extensively from 50s to 80s), to insect proteins all the way to cell culture. They will have different market expectations - not easy to classify under one group. Will be very important in the future. Still too early to comment."*

> *"It is unclear if consumers will understand and have confidence in lab-produced foods."*

04 | NEXT STEPS

Outline of next steps for the Sustainable Protein Challenge Dialogue, along with engagement outcomes.

ROADMAP – Next Steps

Sep.-Oct. 2020 - Phase 1
Challenge Dialogue

- Progress Report circulated to stakeholder group of Dialogue participants
- Participants invited to Deep Dive Sessions. where more insight and discussion is required. They are:
  1. Visioning the future of Sustainable Protein
  2. Circularity and interconnection through by-products use
  3. Total value framework and assessment

01

Oct.-Dec. 2020 - Phase 2
Action and Impact Mapping

- Over the course of three consecutive workshops, a dedicated design team identifies the necessary conditions to achieve a shared long-term goal
- Conditions are mapped incrementally as a connected and coherent set of interventions, outcomes, long-term goals, and beneficial impacts
- Design team includes 20 to 25 Dialogue participants

02

Jan.-Mar. 2021 - Phase 3
Innovation Forum

- A gathering of ~100 stakeholders (virtual/in person TBD) where finalized Impact Map is presented as a comprehensive framework for action.
- Opportunity for stakeholders to identify where they are currently active and what action pathways should be prioritized to begin working on.

03

CHAMPIONS OF THE WORK - MANITOBA AND THE MANITOBA PROTEIN CONSORTIUM

As champions of this initiative, the Manitoba government and the Manitoba Protein Consortium will be taking ownership of the outcomes and creating specific action plans. The desire is that all participants and others in the protein community will also use this work to guide their decisions to advance the future of Sustainable Protein for Manitoba, Canada and the world.

ENGAGEMENT OUTCOMES

At the conclusion of the three phases of work, participants will have:

- **Insight:** Deeper understanding of the nature, extent, and state of the Sustainable Protein system (components, relationships, interdependencies, etc.) in the context of Manitoba, Canada, and globally.
- **Action Agenda**: A well-designed, comprehensive, coherent and actionable, long-term Sustainable Protein innovation agenda to support and serve the collective interests of the Manitoba's private, public, nonprofit, and academic sectors.

01

SUSTAINABLE PROTEIN LANDSCAPE MAP

A complete and comprehensive picture that shows how all of the pieces in Sustainable Protein are laid out and interconnect to form a whole, ready to be put into action by a broad group of stakeholders.

02

MOBILIZATION OPPORTUNITIES

Identification and mobilization of existing and new opportunities (policies, programs, projects, partnerships, prize competitions), towards the goal of advancing a sustainable protein future.

03

COLLABORATION OPPORTUNITIES

Identification of potential strategic partners and collaborators to help initiate or action specific sustainable protein initiatives.

QUESTIONS?

Contact us below with questions, comments or feedback.

Maurice Bouvier, Assistant Deputy Minister
Manitoba Agriculture and Resource Development

1.204.945.3736

Maurice.Bouvier@gov.mb.ca

1202-155 Carlton Street
Winnipeg, MB Canada R3C 3H8

Dickson Gould, Chair
Manitoba Protein Consortium

1.204.388.7010

dgould@theprogressivegroup.ca

Box 1177, 295 Main Street
Niverville, MB R0A 1E0

manitoba.ca/agriculture/protein

05 | SUPPLEMENTARY

In-depth analysis of responses to each question in the Sustainable Protein Challenge Dialogue Challenge Paper.

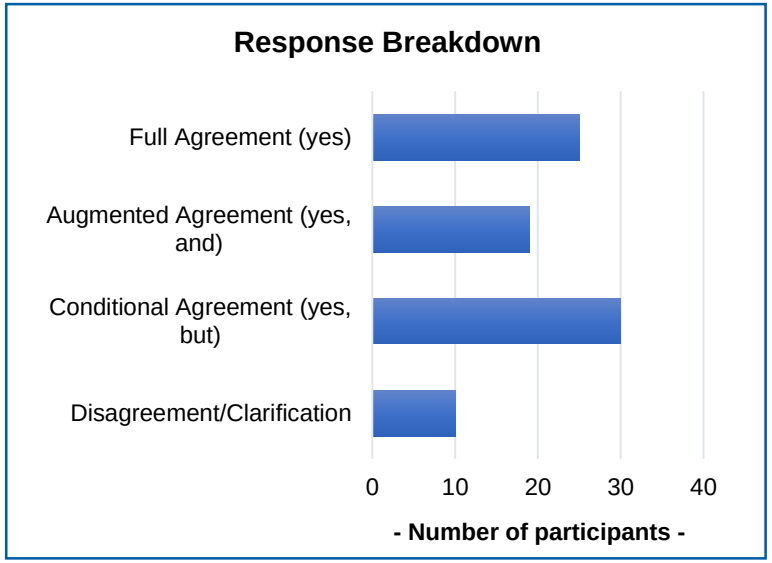
KEY DEFINITIONS – Observations & Insights

SUSTAINBLE PROTEIN | AGRO-ECOSYSTEM & ECOLOGICAL GOODS & SERVICES | SOIL HEALTH AND CONSERVATION | REGENERATIVE AGRICULTURE

Q1 & Q2: What reactions, questions or suggestions do you have regarding these definitions? What key component or definitions do you think are missing?

Highlights:

- Most participants were **in alignment** with all or part of the definitions provided.
- A number of participants offered enhancements and suggested changes (represented through augmented and conditional agreement in response breakdown) in:
  - **Soil Health:** Specifically impact and frequency of tillage, discussion around fertilizer and fertility, and benefits of crop diversity and rotation.
  - **Sustainable Protein:** Use of term "globally best in class" was too vague and hard to measure. One best way doesn't always work across the world. Also highlighted was a need to ensure sustainable represents the three pillars of economic, social and environmental, and that sustainable protein sources should be more specific and inclusive across all pieces of value chain, particularly regarding alternatives.



- **Regenerative Agriculture** was a hot button topic, with participants offering opinions on scope ("too narrow") and necessity ("relevant, but not a driving principle")
- **Missing definitions:** A few participants identified that challenges and priorities affecting the food and beverage manufacturing sector were missing, along with consideration of the processing steps required to make sustainable protein a finished product.

KEY DEFINITIONS – Selected Quotes

RE: SOIL HEALTH:
"Fertilizer and soil fertility are key components of soil health and can be a key contributor to sustainable protein production."

RE: REGENERATIVE AGRICULTURE:
"…needs to include improving the financial outcomes on the farm…necessary for sustained improvements to the environment to occur."

RE: REGENERATIVE AGRICULTURE:
"…has become such a buzz word and often used to describe whatever the participant wants it to mean (everything to everyone…)"

RE: SUSTAINABLE PROTEIN:
"the environmental benefits derived for healthy agro-ecosystems should be acknowledged….. 'sustainability' is widely accepted to include social, economic and environmental pillars. Currently, the definition includes just the economic and environmental components."

RE: SOIL HEALTH:
"Although I completely agree with the five principals listed, are we aware of how this could affect the organic production system that rely so heavily on tillage? Is that an adverse consequence you will have without meaning to?"

RE: SUSTAINABLE PROTEIN:
"I'm concerned about the term "globally best in class practices". That wording suggests that there is one best way that the entire planet should do things. It would be more appropriate to use terms like regionally, nationally, appropriate, relevant…."

RE: SUSTAINABLE PROTEIN:
"…should be defined as "protein sources – animal, plant and alternative for food, feed and other applications – that are sourced, developed, and scaled to meet the needs of the present…."

KEY CHALLENGE – Observations and Insights

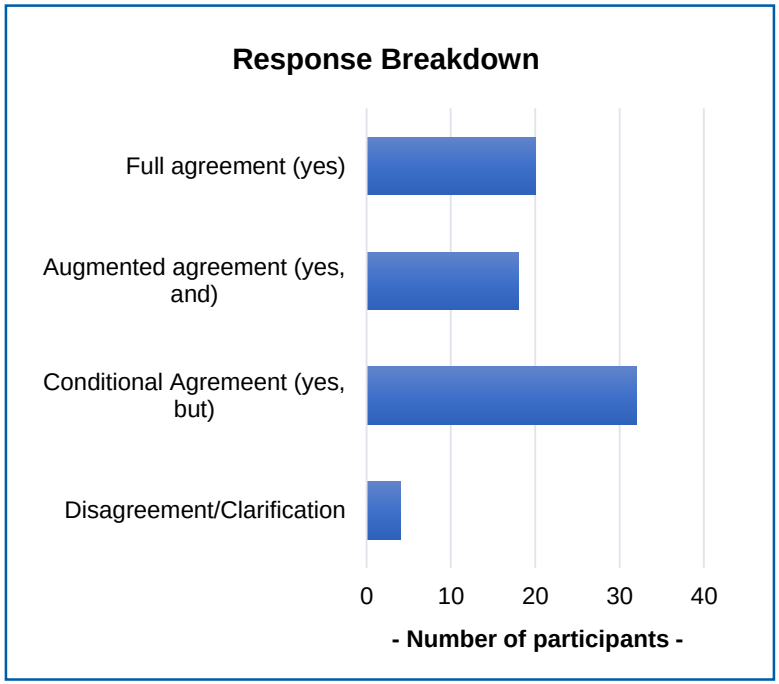
Q13: What reactions, questions or suggestions do you have regarding the key challenge statement?

Our key challenge is:

To engage a diverse group of action-oriented stakeholders to advance our collective understanding of a global Sustainable Protein agenda that identifies ways both Manitoba and the global agriculture sector can play a leadership role in advancing policies, innovation, practices, products and services.000

Highlights:

- Respondents were **generally aligned** with and supported the challenge statement.
- The majority offered enhancements around two main areas:
  - **Vagueness of Stakeholders:** Respondents required additional clarification around who the stakeholders were. Were they across various industries as well as throughout the supply chain?
  - **Intended Impact/Action:** Another group of respondents felt the statement failed to identify an intended impact or outcome and as a result, found the statement too passive and not action-based.



KEY CHALLENGE – Selected Quotes

RE: MANITOBA & CANADA OPPORTUNITY
"The key challenge should also focus on the fact that interest in sustainable protein sources is increasing, given the current state of environmental pressures on the planet. Manitoba, and Canada have a real opportunity to capture market opportunities..."

RE: INTENDED IMPACT:
"…statement would be more impactful if followed by an action statement. We don't only want to discern how to be the best, we want to make meaningful steps in being the best!"

RE: INTENDED IMPACT:
"It seems to me 'a leadership role in advancing policies, innovation, practices, products and services' should be directed towards some end: e.g. 'to address this challenge' or 'to make our agricultural enterprises the most sustainable in the world' etc. Otherwise it says we just want more products, markets etc. The phrase on the next page would do the trick; '…see Manitoba become a global leader in Sustainable Protein products.'"

RE: STAKEHOLDERS:
"…placing a sharper point on the stakeholders you want to engage by using language that includes: 'science based, pragmatic and partnership oriented.' This means you are looking for fact-based solutions developed by partners for the identified problem."

RE: STAKEHOLDERS:
"The challenge statement is well-worded. With respect to the "diverse group of stakeholders" – the food system includes research, production, processing, storage, transportation, distributions, and consumption. Are there representatives from all of these perspectives in your engagement framework? Also, I hope that the engagement framework will include a cross-section of society outside of those with strictly commercial interests."

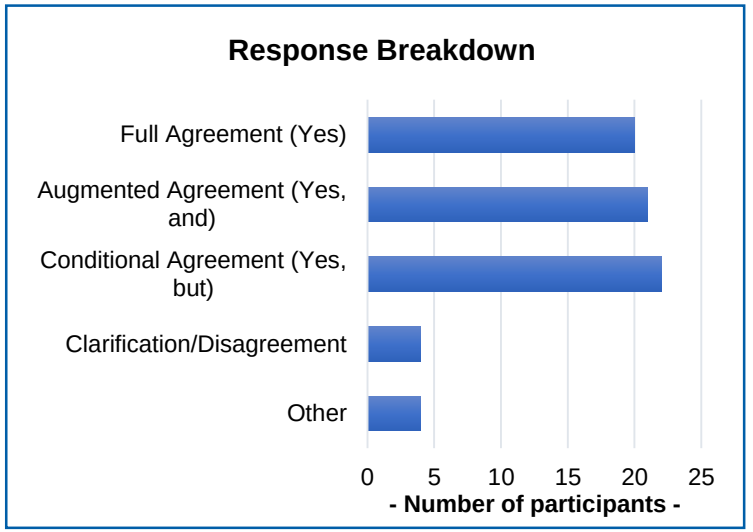
EXPECTED OUTCOMES – Observations and Insights

1. SHARED UNDERSTANDING
2. STRATEGIC PARTNERSHIPS
3. VISION & STRATEGIES TO ACHIEVE THE VISION
4. TACTICS & POTENTIAL ACTIONS

Q4 & Q5: What questions or comments do you have about the expected outcomes for this Dialogue? What additional expected outcomes would you like to suggest?

Highlights:
Respondents were **happy overall** with the expected outcomes identified at a broad level. When additions were suggested, they tended to fall into one of five categories (in no particular order):

1. **Clarity and Bias to Action:** Looking for more quantifiable and measurable outcomes, along with more specific timelines, benchmarks and accountability.
2. **Consumer Acceptance and Commercialization:** Identification of new technologies, along with a focus on commercialization and advancing consumer acceptance, was needed alongside other expected outcomes.
3. **Economic Outcomes:** Many respondents were looking for a direct statement that highlighted economic outcomes or benefits for producers and the supply chains for both Canada and the global citizens they serve or supply.



4. **Communication and Collaboration:** A "constant need for communication to all key audiences", and some suggested an additional outcome to place a finer point on the importance of "collaboration with existing efforts to encourage alignment and reduce duplication and confusion." Examples included: CRSC Code of Practice, CRSB Verified Beef, SAI Platform etc.
5. **Building Resiliency and Adaptiveness:** For supply chains and other players, given changing world dynamics, and the consequences and impacts of climate change.

EXPECTED OUTCOMES – Selected Quotes

RE: CLARITY & BIAS TO ACTION:
"…helpful to have more concrete aims within each category….how many partnerships do you hope to establish and what does a partnership mean to you? What does alignment mean? What would the work product of this actually look like? A written roadmap? A website with key milestones and priority areas?"

RE: CLARITY & BIAS TO ACTION:
"…we agree with the expected outcomes, but more details needed to gain a more complete picture of what the provincial government is trying to achieve; who will be involved, how various initiatives will be funded etc."

RE: ECONOMIC OUTCOMES:
"Addition of economic outcome i.e. development of a strategic innovation framework, where metrics are defined. ADD economic outcomes for all stakeholders are quantified, activities are prioritized etc."

RE: CLARITY & BIAS TO ACTION:
"Build the drumbeat: local-provincial-regional-national-global … the language is around "global leadership" is visionary and appropriate. But in the context of the challenge presented, the path to global leadership actually starts at each farm gate. Producers are peer-influenced, peer-motivated. If the absolute top level of the protein challenge pyramid is to be the epi-center of global leadership (and there is global leadership already from Manitoba in some segments) it is the farm gates of Manitoba producers that are the baseline foundation of that pyramid. The strategy needs to encompass and acknowledge success and progress at each level of the pyramid to reach the next level."

EXPECTED OUTCOMES – Selected Quotes

RE: RESILICENCY & ADAPTIVENESS:
"Given the speed things move and uncertainty of our times, any strategic framework should include an adaptive management approach that looks at progress at short-porch intervals as well as end of Phase for most nimble responses, adjustments and momentum."

RE: RESILICENCY & ADAPTIVENESS:
"Consider adding an outcome related to resiliency of the sustainable protein chain, in light of recent global events (COVID, Swine Flu). How can Manitoba ensure a resilient protein supply chain?"

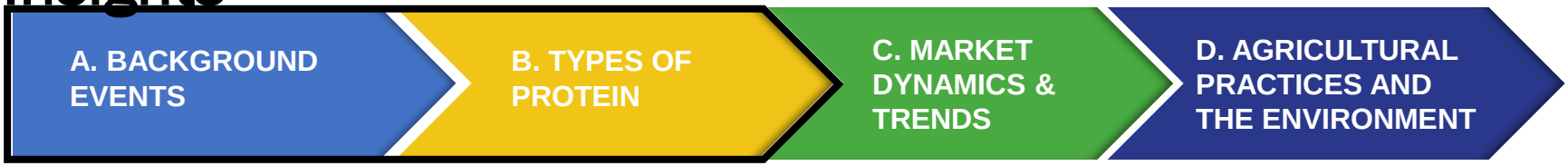
RE: COMMUNICATION & COLLABORATION:
"Other provinces are thinking along the same lines, and no one province can supply the global demand for protein products. Collaboration and inter-provincial co-planning is critical."

RE: CONSUMER ACCEPTANCE & COMMERCIALIZATION:
"New and innovative technologies should come out of it, we should be looking for the sustainable new technologies that may help, may not be existing at this time or in infancy."

RE: CONSUMER ACCEPTANCE & COMMERCIALIZATION:
"…an expected outcome driven towards advancing consumer acceptance and commercialization strategies to ensure the viability for producers moving forward."

RE: COMMUNICATION & COLLABORATION:
"Intensive sharing among global partners/regions to mitigate duplicated efforts/actions and hasten actions and outcomes."

BACKGROUND STATEMENTS – Observations and Insights



Highlights:

A | **Background Events:** Many responses mentioned Manitoba's abundant water supply should be added as one of the advantages listed. *(e.g. "The combination of clean, low cost hydro plus water is an excellent combination for both production and any processing (especially wet processes).")* Another respondent mentioned population per arable acre as an advantage. *(e.g. "We have significant agricultural land to properly utilize animal by-products in a sustainable and regenerative manner.")*

B | **Types of Protein:** Section B feedback was specific to content/organization corrections, including being consistent in listing products rather than company names (e.g. Beyond Meat™), and in overall organization of protein categories. *(e.g. "I'd propose using "plant-based meat and dairy products" in place of "novel plant-based food products" to indicate that we're talking about direct drop-in replacements for animal protein.")*

BACKGROUND STATEMENTS – Observations and Insights

Q6: What reactions, questions or suggestions do you have regarding background statements?

Highlights (cont'd):

C | **Market Dynamics and Trends:** Section C yielded the most feedback, in particular #4, increased demand for trusted, healthy food. There were many in-depth comments questioning definitions of trust, organic and health. Within #4, respondents also identified that the changing understanding, awareness and demand around animal welfare and husbandry was missed and needed greater emphasis.

D | **Agricultural Practices and the Environment:** This section had feedback across all six points, with specific call outs around #1 (changing agricultural practices), suggesting to augment with points around use and adoption of technologies/robotics, innovation and research, and use of fertilizers and herbicides. A few respondents also felt that points #5 and #6 (improved land and water management, increased awareness of the importance of soil health), could be looped in with #3 (increased focus on agro-ecosystem health).

The following slides illustrate the depth and range of comments around Background Statements C4 and D.

Missing: A respondent did note that to *"bring the conversation full circle, the pieces missing is the final step in bringing finished products to market which is the processing industry. A fifth category should be added to include the processing of these ingredients with some context."*

BACKGROUND STATEMENTS – Selected Quotes for C4

C4: Increased demand for trusted, healthy food.

RE: TRUST
"We can't take data at face value, but often need to probe deeper….shopper will buy organic, not because they necessarily prefer an organic diet, but because they believe organically produced food is safer or better quality….neither true."

RE: TRUST
"Might want to reference work from CCFI around declining trust in food safety and public trust as another driver."

RE: TRUST
"Trusted, healthy food can be achieved in a non-organic way. I don't believe organic equals healthier or safer (unregulated pesticides, manure application leading to contamination etc.)"

RE: HEALTH
"'Beyond Meat™ burger' and 'organic' are examples presumed to be healthier because of name. These protein alternatives may increase use of land, water and energy, with no evidence that the agricultural system sequesters more carbon than traditional agronomic practices. Following these trends may be good for profit generation, but are they good for the environment and food security?"

RE: HEALTH:
I think public health merits deliberate attention as a motivating factor here, especially in light of COVID. …we need to acknowledge the ways our current protein systems (e.g. animal proteins) contribute to antibiotic resistance, zoonotic disease risk, food safety risks, and health risks from particulate matter and waste run-off that enter air or water that puts nearby communities at higher risk of various health consequences."

BACKGROUND STATEMENTS – Selected Quotes for C4

Regarding animal welfare and other insightful comments.

RE: ANIMAL WELFARE
"In part c, the issue of humane treatment of animals is not mentioned, yet it is becoming a key driver for consumer preferences."

RE: ANIMAL WELFARE
"Omission of market trends related to animal welfare – this is a major market driver and is influencing regulatory frameworks globally re: production practices."

RE: OTHER
"…market dynamics and trends focus on consumer demographics and behaviours. However, not every citizen is a consumer in that sense of the word. Individuals and families struggling to put food on the table around the globe should be considered when tailoring food systems towards sustainability."

RE: OTHER
"You nailed the key trends, BUT there is no sense of 'risk' drawn out explicitly here. These market dynamics and trends suggest the possibility of serious disruption to established agri-food producers."

RE: OTHER
"Reference shifts in market approaches to protein, with demands for sustainability-certified or verified products increasing."

RE: OTHER
"The data on Gen Z and Millennial food purchasing trends shows incredibly different spending patterns than those who typically hold power in government and food industry. Decisions are being made by people who are in the dark about how and where money is going to flow in the food system in the years and decade ahead."

BACKGROUND STATEMENTS – Selected Quotes for D

Regarding changing agricultural practices, labour attraction and availability, increased focus on agro-ecosystem health (including land and water management and soil health), and climate change as a dominant global issues.

RE: CHANGING AGRICULTURAL PRACTICES (D1)
"The adoption of innovation and research is equally important here. As we strive to meet the challenges and demands for change, we must recognize the cost-benefit realities and offer support at the initial stages to accelerate implementation."

RE: CHANGING AGRICULTURAL PRACTICES (D1)
"We are using more pesticides and fertilizer in our farming systems than ever before and this trend shows no signs of slowing down. Market signals are needed to help producers adopt more complex farming systems that utilize the principles of agro ecology and are more resilient and regenerative."

RE: CHANGING AGRICULTURAL PRACTICES (D1)
"There is increasing evidence that removing unproductive areas of segments of fields and "re-wilding" these spaces provides significant economic return to the grower…."

RE: LABOUR (D2)
"Has any consideration been given to tension points in rural landscape as headroom communities begin merging with agricultural landscape? Or the loss of wetlands and prime agricultural land by urban sprawl? (sic)

RE: LABOUR (D2)
"This is also driving an increase in automation / robotics in agriculture….self driving tractors…..robotic food packaging and processing etc."

RE: SOIL HEALTH (D6)
"Only mention of Carbon is in storage. What about efficiency of Carbon use and non-carbon-base alternatives?

ASSUMPTIONS – Overall Observations and Insights

A. ON SUSTAINABLE PROTEIN OVERALL | **B. ON ENVIRONMETAL IMPACTS & AGRO-ECOSYSTEMS** | **C. ON PROTEIN TYPES**

Q6, Q7: Are any of the assumptions unclear to you? Do you strongly disagree with any of the overall assumptions?

High Levels of Agreement Overall:

The vast majority of respondents felt assumptions were representative, thoughtful and clear. There was general alignment. One quote sums it up quite well: *"I strongly agree with every one of these statement and I commend the authors for doing such a thorough job of covering all the bases. There are a lot of moving parts to the big fat mess that agriculture has been making of our natural habitats, and it's not easy to face. The background paper has been the most refreshing read I've come across in a long time. Thank you!"*

Areas of Disagreement:

There was a significant amount of debate / disagreement around A2 (global protein will continue to increase, including animal protein), and C4 (see boxed text).

- **Regarding A2,** many questioned whether animal protein needed to be specifically called out, and whether or not this was in fact true, offering that this should actually be a more general statement that balances across all proteins and ebbs and flows over time due to many reasons.
- **Regarding C4,** there was healthy disagreement here, many took issue with the statement that "animal protein has a significant impact on climate change", suggesting the link between the two might be overstated.

ASSUMPTION C4: The rise of protein alternatives, from plant-based meat substitute and insect protein to cultured meat, has been driven by technology advancements; the changing nature of Western diets towards more of a flexitarian diet; and concerns regarding the sustainability of producing animal protein, given its significant impact on climate change.

ASSUMPTIONS – Selected Quotes for A2 and C4

RE: INCREASING PROTEIN DEMAND (A2)
"…implied assumption that an increase in protein consumption is correct and inevitable. Although there may be a desire in the developing countries to emulate the consumption patterns of North American's…doesn't mean that aspiration is the right way to go."

RE: ANIMAL PROTEIN & CLIMATE CHANGE (C4)
"..strong concerns with respect to C4. The significance of the impact of animal protein on climate change is often overstated….the language used needs to be nuanced to indicate perceived concerns, but not fully state any proven correlation."

RE: INCREASING PROTEIN DEMAND (A2)
"True. But: the balance between different types of protein will shift substantially. Demand for animal protein in particular will not increase indefinitely. Animal proteins will be increasingly displaced by plant-based and alternative proteins in many manufactured food products."

RE: ANIMAL PROTEIN & CLIMATE CHANGE (C4)
"I agree that there are concerns regarding the sustainability of producing animal protein, but I disagree with the "given" that it has a significant impact on climate change. The benefit of cattle on the grasslands and forage crops have not been well considered when consideration is given to ratio between inputs for dairy and meat production and the quality and density of the protein produced it suddenly becomes much more sustainable."

RE: INCREASING PROTEIN DEMAND (A2)
"I see a peak in a decade or so, then a decline."

RE: ANIMAL PROTEIN & CLIMATE CHANGE (C4)
"The "given its significant impact on climate change" can come out. That's the reason that some people don't eat meat. But others choose not to eat meat on account of ethical concerns, health perceptions, religious or cultural reasons, economic realities etc."

ASSUMPTIONS – To be added

A. ON SUSTAINABLE PROTEIN OVERALL | B. ON ENVIRONMETAL IMPACTS & AGRO-ECOSYSTEMS | C. ON PROTEIN TYPES

Q8: Are there any overall assumptions you think should be added?

Assumptions to Add:

1. **Impacts of pandemic/supply chain/geopolitical factors:** Many respondents suggested the addition of assumptions around market changes and resulting impacts to supply chains.
2. **Knowledge of end consumers:** Some respondents felt it was important to add assumptions around what we believe about consumer behaviour, and the importance of education and knowledge.
3. **Economics and ROI:** A few respondents mentioned the need to include assumptions around the tremendous economic and environmental benefits that are available.
4. **Inclusion:** A few respondents questioned where fisheries and aquaculture fit in and felt it needed to be added to the Dialogue. Another respondent provided insightful comments around inclusion as it relates to First Nations.

> *"We assume if we have "First Nations" people consulted, or on a board, we have "talked to them". The means that this process was "inclusive". How do we make sure that "Indigenous" is not just a focus, target or initiative, but a truly inclusive process that included both Metis and First Nations? We need to understand from day one, that you can not have a "transparent/competitive process" and "hope" a few Indigenous groups "make it through." What would it look like, if from day one, it was designed with inclusion in mind?"*

ASSUMPTIONS – Selected Quotes

RE: PANDEMIC/SUPPLY CHAIN
"Given the COVID-19 pandemic and its global impact, there is likely to be increased attention and scrutiny to animal-human contact and its potential role in virus creation and spread. This issue will need to be addressed somehow in a global sustainable protein strategy."

RE: PANDEMIC/SUPPLY CHAIN
"Geo-politics post COVID will have all the assumptions on markets change. The focus needs to shift to shorter supply chains, and the ability to have more integrated approaches to feed, employ and 'heal' our society…COVID has helped us to see the risks of long supply chains."

RE: PANDEMIC/SUPPLY CHAIN
"The globalization of food, and trade as a whole, is something that net exporters like us take for granted. In a post COVID world …something worth putting a marker on."

RE: END CONSUMER:
"…important that the public has a better understanding of the synergies between plant and animal protein production. Misconceptions need to be addressed as they are counterproductive to an informed discussion around agricultural productions.."

RE: END CONSUMER:
"…we make a lot of assumptions about consumer behaviour and tend to make generalizations when preferences change….it's important to recognize and talk about their wants and needs, since they drive the bus at the end of the day."

RE: ROI / ECONOMICS
"There is nothing about economics here which is key to protein production decisions."

RE: ROI / ECONOMICS
"Something to do with ROI, cost of production, EBITDA and economics. It is not sustainable if it does not make a profit."

CRITICAL QUESTIONS – Agro-ecosystems and Soil Health

Feedback to enhance agro-ecosystems and soil health fell into four buckets.

1. **Production Improvements**
   - decreasing or eliminating practices such as tillage and monoculture and replacing with intercropping, crop rotation and crop diversity
   - returning nutrients back to the soil, increasing soli organic carbon and carbon sequestering

More specific feedback fell into three sub categories:

a) **Animal Grazing:** Incorporate more animal grazing as it provides important ecosystems functions and helps increase the nutrient content of soil.

b) **Fertilizer Use:** Increase the use of organic fertilizers and manure, while decreasing the reliance on synthetic and chemical fertilizers.

c) **Land Management:**
   - preservation of grasslands and wetlands
   - better management to resolve issues with flooding, drainage, ground water pollution etc.
   - work to increase and preserve biodiversity and restore non-productive land

> *"Conservation methods such as no-till, inter cropping and cover cropping are becoming more common and known, but the regenerative methods with the most potential involve integration of grazing animals, perennial crops and trees into agricultural systems...increasingly critical as climate change intensifies …these methods will make the land more resilient to weather events."*

> *"A discussion also needs to be had regarding biodiversity capacity of the agricultural landscapes in Manitoba. We need recognition from all players in the supply chain (producers, government, markets, and consumers) of the important role that the certain aspects of the agricultural landscape have for biodiversity (wetlands, woodlands, grasslands/grazing lands)."*

CRITICAL QUESTIONS – Agro-ecosystems and Soil Health

CONT'D

2. Technology + Research

Further advancements need to be made within technology and research in order to improve soil health and help implement best practices.

- increase precision agriculture
- develop practices that are backed by science, research and technology
- develop technology to help measure soil health and create user-friendly benchmarking and metrics producers can use to compare and track their progress
- increased research within the area of soil health to further develop best practise that can be applied at farm level

> *"Many farmers and producers are looking for knowledge and practical assistance to adopt more regenerative practices. There's a great deal of willingness to adopt better practices but also fear around the economic impacts of making changes to what they've traditionally done. They need to believe there will be economic benefit. We need to provide evidence."*

3. Education + Demonstration

High priority given to increased education, demonstration and evidence on the benefits of improving soil health. Producers are looking for knowledge and assistance; there is fear of economic loss.

- fill in knowledge gaps related to carbon sequestration, soil health, soil microbial ecosystem and plant nutrition
- educate farmers on successful regenerative approaches and best practices
- educate that the economic returns can be positive when more sustainable practices are adopted
- demonstrate these benefits by holding workshops, field tours, etc.

> *"Producers need to see a return on investment to ensure they can maintain sustainable operations. Adopting new production practices requires a testing phase, and if there are no incentives or returns to try it out, there will be less interest in doing so…"*

CRITICAL QUESTIONS – Agro-ecosystems and Soil Health

CONT'D

4. Regulation + Programming

Desire for increased support by governmental programming including crop insurance, rebates on infrastructure costs, tax credits and funds to help pay for cover crop seed and fences to promote grazing.

- funding programs like ALUS and support behind industry efforts like CRSC's Responsible Grains Code of Practice
- investment into the agriculture sector to help farmers adopt more sustainable practices when there is no immediate return to do so

The need for Incentives

The most common response was that producers need to be incentivized in order to improve soil health:

- rewarding sustainable behaviour when farmers prioritize soil health, adopt regenerative practices, support biodiversity and sequester carbon
- connecting soil health to marketplace outcomes so farmers are shown the potential economic benefit of implementing sustainable practices and that it is maintainable
- incentives for preserving wetlands, grasslands, etc.

> *"The Manitoba Government would need to make the rubber hit the road… Maybe it would be a 5yr investment, where the province pays for something like cover crop seed, and then the farmer would see its benefits over those 5yrs, and then they would continue to do it on their own dime.*
>
> *For cow/calf producers, maybe there's a tax credit or reduction in lease fees because of the important ecosystem functions that grazing cattle perform. Maybe there's funds for anyone who wants to build subdividing fences, so that they can rotationally graze."*

> *"Farmers in general do what is good for their farm - they understand that the farm for this generation is the farm for the next and the next. However, there is also the pressure to have a strong bottom line. There needs to be financial incentives to encourage the adoption of practices that will improve soil health and agro-ecosystem management."*

CRITICAL QUESTIONS – Areas in Need of a Breakthrough

Areas for a breakthroughs mentioned more than once:

- consideration of rural communities, religious preferences and traditional Indigenous food systems
- methodologies for addressing and including Indigenous and First Nations perspectives and groups in the development of bold policy plans
- inclusion of biodiversity in strategy
- integrating plant, animal, and alternative protein sectors to foster collaboration across the production chain, as opposed to competition
- longevity and the economic viability of sustainability
- link between food, nutrition and health
- food lost to waste, food security
- wastewater treatment
- ecological goods & services (EGS) market
- sustainability across the production chain to the end consumer
- value-added protein industry in Manitoba
- microbial technologies (fermentation)
- trade and political disruption

Other areas mentioned:

- crop insurance
- consumer education and expectations on low food costs
- agroforestry
- mental health / HR in the farming model
- gene editing to serve sustainable protein
- profit shares received by producers
- measurements of sustainability metrics on farm
- reskilling/upskilling talent of producers/processors; access to labour
- aquaculture and algal proteins
- consumer acceptance of insect protein
- alternative feed additives
- using whole plant; use of by-products
- continuous improvement
- adaptive management

> *"I wonder if the "really alt" proteins are on the cusp of interesting developments. Algae and bugs, both of which can be produced on waste heat and with waste feedstock, may be suitable as feed for aquaculture and poultry and this will further disrupt the sector."*

NEXT STEPS – Observations and Insights

JULY–AUGUST 2020
Compile initial draft report

SEPTEMBER - OCTOBER
Circulate progress report, host deep dive sessions

NOVEMBER - DECEMBER
Impact mapping of Sustainable Protein landscape

Q1 2020
Host Innovation Forum to share Impact Map

Q22 & Q23: Do you have any questions about the next steps? Do you have any other comments you would like to share?

Highlights:

Overall the Challenge Paper received **excellent, positive and thoughtful feedback**, participants were thankful for the opportunity to contribute. Many applauded Manitoba's leadership. **Close to 10 per cent** of respondents explicitly stated interest in taking part in further discussions in whatever capacity would be useful.

Beyond that, there were three main buckets of feedback:

1. **Clarification:** Similar to expected outcomes, some respondents required more clarification around specific next steps. For example, wondering what happens after the Final Dialogue Report, if action plans or impact maps would be developed, and if so, how it would be communicated and driven forward.
2. **Interdisciplinary Collaboration and Engagement:** Similar to expected outcomes, many respondents reiterated the need for ongoing political support, engagement and integration for ultimate success overall.
3. **Move Quickly to Action:** While many respondents felt the Challenge paper and resulting Dialogue were an excellent start, they were quick to identify a sense of urgency to move this forward as other jurisdictions are also looking to capitalize on protein sector growth and innovation.

NEXT STEPS – Selected Quotes

RE: INTERDISCIPLINARY COLLABORATION:
"…important not to "reinvent the wheel." The Canadian beef industry and its partners have been working collaboratively on sustainability initiatives…such as the National Beef Strategy and the work of the Canadian RoundTable for Sustainable Beef…important this work is recognized, and that governments' efforts complement the valuable work already being undertaken..."

RE: MOVE QUICKLY TO ACTION:
"Sounds good…go fast as others are starting to catch up to Manitoba."

RE: MOVE QUICKLY TO ACTION:
"Overall the document is very good BUT there is much that it is silent on. Issues that need to be part of the conversation include: risk of not taking significant action now..."

RE: INTERDISCIPLINARY COLLABORATION:
"…opportunity for Manitoba to be a leader in sustainable protein is significant and now as competing jurisdictions also prepare to lead. Success will require interdisciplinary collaboration. The sustainable protein strategy has the potential to galvanize these multidisciplinary actions and give all stakeholders a clear road map to success. Success will also require the sustainable protein strategy to be a long-term priority of government."

RE: MOVE QUICKLY TO ACTION:
"Due to COVID-19, and heading into the fall….if/when, there are outbreaks in First Nations communities, rural communities, and remote communities,….the importance of value added, suitable food products that can be produced in Manitoba to help address critical issues here is needed now….use COVID -19 as your case study….use this call to action to get some wins going now."

MANITOBA SPECIFIC COMMENTS – Selected Quotes

"I agree that Manitoba is strategically well-positioned to become a world leader in Sustainable Protein. The key strength is the knowledge base of the core group of regenerative farmers here. There are a few big players outside of Manitoba, but of the 25 people I'd list as leading the conversation about regeneration nationally, half of them are in this province. I also think that our provincial government has a uniquely innovative culture and the sensibility to address the tough economic questions around sacrificing existing sales in key sectors like chemical and fertilizer that no other jurisdiction in Canada will tackle."

"One challenge facing Manitoba is that supply chains don't end at provincial borders, Some Ag commodities either originate in another province to be processed in Manitoba (e.g. swine), while others leave Manitoba for processing elsewhere (e.g. cattle). Same with crops. That's one clear benefit of working with existing, national sustainability initiatives."