

CORPORATE PLAN

2022/2023

January 2022



CORPORATE PLAN 2022-2023

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EXECUTIVE SUMMARY

The belief that Canada could be a leader in the production of plant-based food, feed and ingredients is what initially spurred the creation of Protein Industries Canada in 2018. Now, the progress – and the even greater potential – is much more than a belief. It is quickly becoming a reality.

2022-23 marks the last year of Protein Industries Canada's initial mandate. It's a pivotal year for the future of Canada's plant-based sector. Over the past four years, Canada's plant-based ecosystem has seen tremendous growth at all levels – from new companies, products and processes; to increased private investment and new employment. Cumulatively, these are all indicative of a stronger and more competitive ecosystem. While credit cannot go to any one factor or organization, the role of Protein Industries Canada in building out Canada's ecosystem, and positioning Canada on the global stage, is well established.

Over the past four years, Protein Industries Canada has focused on building connections, de-risking large-scale innovation, and building capacity in the ecosystem. By working collaboratively with trailblazing companies, academia and NGOs, we are making progress toward \$25 billion in annual sales from plant-based food and ingredients. Canada's momentum is growing; however, there is more that needs to be done. We must continue to work together to secure the opportunity that is in front of us.

The demand for plant-based foods is poised to continue surging as they become preferred by consumers who are opting for healthier and more sustainable food choices. Further building out our domestic processing capabilities to seize this opportunity will help contribute to a healthy Canada and healthy Canadians, while also contributing to a robust and resilient economy.

- Canada's agrifood sector is a critical factor in supporting our transition to a green economy. A focus on sustainable production and processing, with ingredients like pulses, along with an increase in domestic processing to shorten food miles, can be a key contributor to the reduction of GHG emissions related to food production.
- Canada's plant-based food sector can be an active part of Canada's COVID-19 economic recovery. We expect that by 2035, the global demand for plant-based foods will surpass \$250 billion. With The Road to \$25 Billion as our guide, it is possible for Canada to secure 10 per cent of that market – reaching \$25 billion in annual sales and creating more than 17,000 new jobs
- An increase in domestic processing will help secure supply chains – ensuring Canadians, and those around the world who rely on Canada for their food, always have access to safe and nutritious food.

By almost every metric, 2021-22 was a good year for Protein Industries Canada and Canada's plant-based ecosystem. The initial \$153 million from the federal government has now been fully committed, plus the additional \$20 million received in the 2021-22 federal budget, through 43 total projects. Protein Industries Canada is on track to exceed our goals related to job creation and GDP. Internationally, Canada is gaining traction as the place to do business in the plant-based food sector. Our members are attracting new clients, forming new partnerships, scaling-up, creating jobs and growing. From our perspective, the theory behind the creation of superclusters is proving true: by focusing on transformative industries, collaboration and being industry led, we are accelerating innovation and achieving commercialization quicker.

In 2020-21, Protein Industries Canada:

- Reached a total project value of more than \$451 M with industry contributions of \$278 M;
- Approved eight technology projects with a total project value of \$54 M;
- Approved eight capacity building projects with a total project value of more than \$20 M;
- Developed 580 new products, processes and services;
- Determined it will create 6,200 jobs through co-investment projects; and
- Determined it will contribute \$8.9 billion to Canada's GDP by 2030 through co-investment projects.

In the final year of our initial tranche of funding, our priorities include advancing the implementation of The Road to \$25 Billion, the successful execution of technology and capacity building projects, the continuation of building connections between our members and potential clients and investors, and securing the future of Protein Industries Canada.



\$451M
TOTAL PROJECT
VALUE



\$54M
TOTAL PROJECT VALUE
FOR 8 APPROVED
TECHNOLOGY
PROJECTS



\$20M
TOTAL PROJECT VALUE
FOR 8 APPROVED
CAPACITY BUILDING
PROJECTS



6,200
JOBS
CREATED



580
NEW
PRODUCTS,
PROCESSES AND
SERVICES



\$8.9B
FOR CANADA'S
GDP BY 2030

TAKING FOOD FORWARD

VISION: Canada is a global leader in plant protein.

MISSION: We invest collaboratively to accelerate innovation and the competitiveness of the Canadian plant-protein sector.

Protein Industries Canada is accelerating the advancement of plant-based food and ingredients in Canada, helping build a progressive agrifood sector for Canada. Together with our partners, we are boosting the economy, creating long-term jobs, and contributing to a stronger, more prosperous Canada. Through a powerful combination of collaborative R&D, industry-led co-investment, IP creation, SME scale-up, talent development and more, we are providing solutions to some of society's most pressing issues, including:

- Creating high-protein, plant-based food products that are healthier for our people and our planet;
- Supporting food security through a strengthened and more robust Canadian domestic supply chain – ensuring Canadians and millions of people around the world have continued reliable access to safe and healthy food;
- Reducing GHG emissions related to food production and contributing to Canada's carbon-neutrality goals;
- Adding value to Canadian grown crops – capturing value, creating jobs and contributing to our GDP; and
- Positioning Canada as a global leader in the food revolution.

Protein Industries Canada investments are helping meet the increasing global demand for plant-based food while positioning Canada as a beacon for investment and innovation. As more and more people turn to plant-based foods for their health and our environment's health, they are also becoming more discerning - wanting plant-based foods that taste good. Protein Industries Canada is leading this revolution – bringing partners together that span the value chain, from seed genetics, to farmers, to ingredient and food processors through to consumers in Canada and around the world – all while embracing new technology to improve the sustainability and traceability of our food from field to fork.

Our investment to date is already generating a strong return. Protein Industries Canada and our members are ready to continue that effort, as together we work to maximize our contribution to the health of our economy, our citizens, and the planet.

2021-22 KEY METRICS

FUNDS COMMITTED

 **\$174M**

INDUSTRY
MATCHING FUNDS

 **\$302M**



6,200

JOBS CREATED/
PROJECTED



30

SME LED PROJECTS

TOTAL PROJECT
VALUE

\$476 M

\$8.9 B*

10-YEAR
EXPECTED GDP



49

PROJECTS



7,000

PEOPLE TRAINED/
MENTORED



580

NEW PRODUCTS, PROCESSES
AND SERVICES DEVELOPED



276

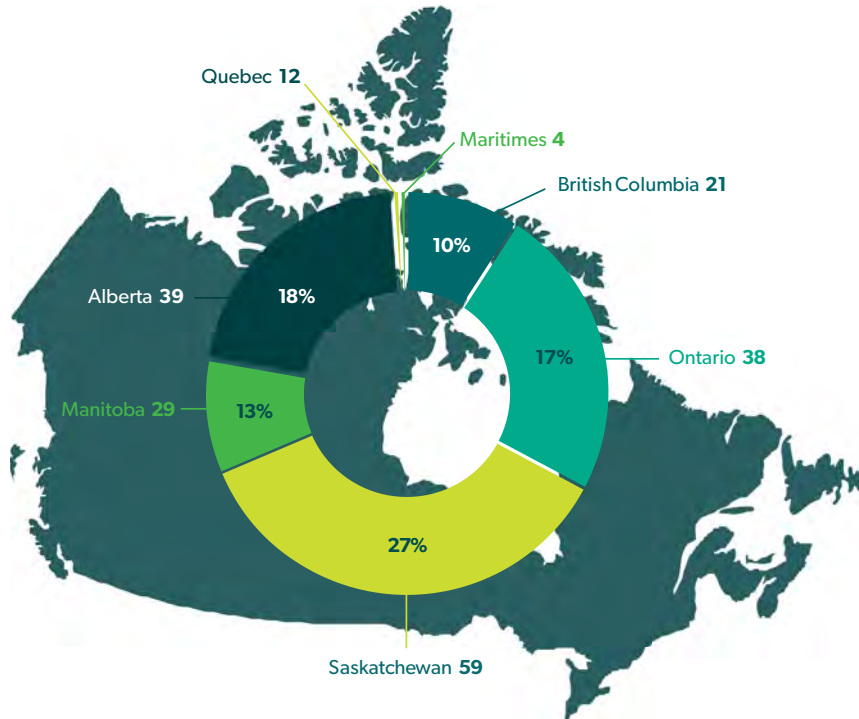
PROJECT PARTNERS



*from 15 analyzed projects

PROTEIN INDUSTRIES CANADA'S MEMBERS

OUR MEMBERS REPRESENT THE AGRIFOOD SUPPLY CHAIN

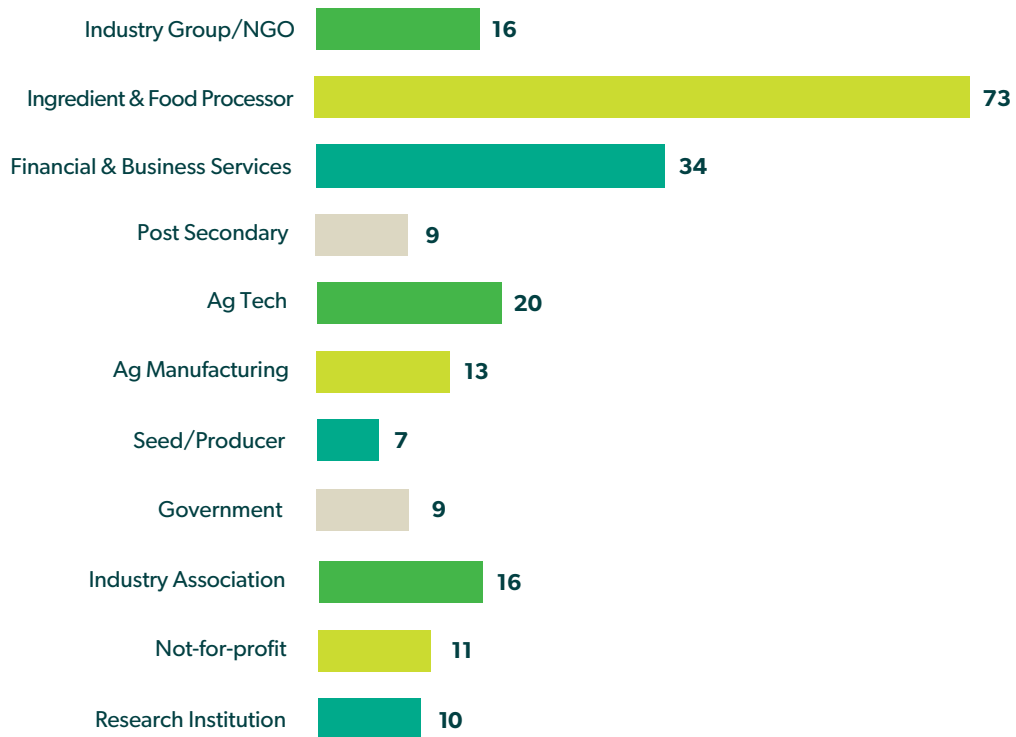



218
MEMBERS


16
INTERNATIONAL MEMBERS


131
SME MEMBERS

MEMBERS BY CLASSIFICATION



2021-22 ACCOMPLISHMENTS AND RESULTS ON OBJECTIVES



SURPASSING OUR 2021-22 GOALS

By almost every metric, 2021-22 was a good year for Protein Industries Canada – with significant progress made toward both long- and medium-term goals.

The initial \$153 million from the federal government has now been fully committed, plus the additional \$20 million received in the 2021-22 federal budget, through 43 total projects approved. Protein Industries Canada is on track to exceed our goals related to job creation and GDP. Internationally, Canada is gaining traction as the place to do business in the plant-based food sector. Our members are attracting new clients, forming new partnerships, scaling-up, creating jobs and growing. From our perspective, the theory behind the creation of superclusters is proving true: by focusing on transformative industries, collaboration and being industry led, we are accelerating innovation and achieving commercialization quicker.

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The core work of Protein Industries Canada continues to revolve around five main themes:

- Agrifood Leadership
- Sector Growth
- Sector Collaboration
- Sector Competitiveness; and
- Operational Excellence.

AGRIFOOD LEADERSHIP

The complexity of Canada's agrifood sector became increasingly apparent in 2021 as the world – and the global supply chain – continued to struggle with the impacts of COVID-19. This, combined with the fragility of trade agreements, the rising cost of food and the instances of empty grocery store shelves, is evidence of why Canada needs to work collaboratively to increase domestic ingredient and food production capacity.

The need for a unified agrifood sector that works collaboratively from lab to field to fork is necessary for the continued evolution and success of the sector. Challenges related to production – such as drought – and consumer preferences, expectations of retailers and food manufacturers around sustainability have put continued stress on the agrifood sector. Increasingly Canada's plant-based food sector, led by Protein Industries Canada, has become a prominent voice in these conversations. As an industry, we need a strong, united voice that can focus resources on the most important initiatives. We will only achieve success by collaborating with like-minded organizations, those that believe we need a new approach to grow Canada's agrifood sector.

Protein Industries Canada uses our position as a respected leader in Canada's agrifood sector to share the message about the importance of investing into Canada's processing sector, most notably leading the creation of *The Road to \$25 Billion* – a 15-year plan for Canada's plant-based food, feed and ingredient sector.

Objectives:

- Building on the success of the initial work of Protein Industries Canada plan; develop and begin to implement a next-level, comprehensive sector-wide strategy aimed at capturing a significant portion of the anticipated \$109-181 billion CDN global plant protein market.

Results:

In September of 2021, Protein Industries Canada, in partnership with our members, launched *The Road to \$25 Billion*. The document outlines the necessary activities and actions to supply 10 per cent of the ingredients for the global plant-based food market. Capturing 10 per cent of the global market would mean \$25 billion in sales each year, and the creation of more than 17,000 well-paying jobs for Canadians.

Created in collaboration with more than 100 stakeholders, the Roadmap is a comprehensive sector-wide strategy that considers 46 key actions to help guide the continued growth of Canada's ecosystem. By working collaboratively, we will ensure Canada is positioned to meet global demand for healthy and sustainable plant-based food options. The Roadmap recommends continued innovation, supporting scale-up of production and ensuring Canadian organizations can prosper. The Roadmap will help meet some of society's most pressing issues – including climate change, food security and health, while also creating jobs and driving economic growth for Canada.

THE ROAD TO \$25 BILLION



Protein Industries Canada, in collaboration with several partners, launched a Sector Roadmap for Canada's plant-based food, feed and ingredients sector. The Roadmap outlines key actions that will help the sector reach its goals in a strategic manner, including supplying the ingredients for 10 per cent of the global plant-based food products by 2035.

Initiated by Protein Industries Canada and developed with input and feedback from industry representatives from across Canada, the Sector Roadmap was developed based on the needs and capabilities of companies, organizations, academics and researchers across the country. It prioritizes a collaborative approach to advancing the sector, particularly in the areas of innovation, scale-up and prosperity.

"Our sector is on the edge of an incredible opportunity, but it will take a coordinated effort to achieve it," Protein Industries Canada CEO Bill Greuel said. "We believe that by 2035, Canada can expect upwards of \$25 billion a year in annual sales from plant-based food, feed and ingredients. To put that in perspective, right now we generate about \$3 billion in sales - not including canola crush and wheat milling. The Sector Roadmap outlines the ideal outcomes and recommended actions necessary to help get us there, while highlighting how our sector can build on its strengths to achieve our goals and those of Canada as a whole."

The actions outlined in the Sector Roadmap will help guide the continued growth of Canada's ecosystem, ensuring it is positioned to meet global demand for healthy and sustainable plant-based food options. By focusing on continued innovation, supporting the scale-up of production and ensuring Canadian organizations can prosper, the Roadmap will help meet some of society's most pressing issues – including climate change, food security and health, while also creating jobs and driving economic growth for Canada.

"The opportunity for plant-based foods is set to explode, with the global market expected to be worth at least \$250 billion CDN by 2035," Greuel said. "Over the past three years, Protein Industries Canada, in collaboration with our partners, has made significant progress - with more than \$400 million already invested, but we are only just getting started. Countries all over the world are racing to scale-up production to become the global leader and claim their stake. Canada has to take advantage of our many strengths to claim our place atop the podium, but we must act quickly and strategically."

SECTOR GROWTH

The growth of Canada's plant-based food and ingredient sector requires increased private sector investments across the entire value chain, from plant breeding and production agriculture through to value-added processing and market development. Investments made by Protein Industries Canada leverage private sector contributions to increase research and development into Canada's plant-protein sector.

Over the past year, there has been a focus on increasing the awareness of the need for significant private investment into the ingredient and food space. Businesses in this space have very different requirements for capital than more traditional investment streams – such as a larger amount due to the capital-intensive nature of the sector, longer times to a return, and the overall early stage of the sector. Combined, this has made it difficult for many of Canada's innovative SMEs to attract the capital necessary to scale and grow.

Objectives:

- Create and implement a Capital Growth Strategy

Results:

In 2021-22 the advancement of a Capital Growth Strategy for Canada's plant-based ecosystem was a significant priority. To advance the strategy, significant member and stakeholder outreach was undertaken. This included contacting private investors as well as organizations like BDC and EDC to better understand their investment criteria, their knowledge of the sector, and engaging them in Canada's plant-protein ecosystem. Similar outreach was conducted with Protein Industries Canada members — to help understand their challenges in accessing capital – and learning from those who have had success. The results and findings of the outreach will be summarized into a document, with recommendations to increase capital investment into Canada's plant-based food and ingredient sector, and to make Canadian SMEs looking to attract capital more competitive:

1) **Attracting capital to Canada's plant-based food, feed and ingredient sector**

This project is focused on the creation of a pool of deployable and available capital to support Canadian ingredient and food processors. Protein Industries Canada's role will focus on engagement and creating awareness. An advisory board consisting of subject matter experts, industry representatives and Indigenous leadership will be established to help lead the project. The project's objectives are:

- Access to capital for Canadian plant-based food, feed and ingredient SMEs;
- Support economic reconciliation with Indigenous communities;
- Creation of at least 300 direct jobs and additional indirect jobs;
- Work toward sustainable and environmentally friendly changes within the plant-based food, feed and ingredient sector;

- Growth of Canada's economy;
- Investment into and job creation throughout Indigenous groups; and
- Improvement of Canada's food security.

2) **Accelerate: Leadership Program**

This \$859,000 capacity building project between Ivey Business School at Western University and Protein Industries Canada will offer training in leadership skills and business acumen to Protein Industries Canada members, with the intent of strengthening capacity within the sector. A key component of this program is increasing the business acumen and sophistication of Canadian companies to make them more competitive in accessing private investment.

The eight-month course will focus on five key areas:

1. Culture, Strategy and Communications
2. Talent and Performance
3. Teams and Finance
4. Teams and Information Systems
5. Driving Change

Target companies are late-stage start-ups and SMEs looking to scale up. The hybrid structure of the courses — which will feature in-person classes, online classes and an in-person roundtable session — will allow for both timely delivery of the material and networking opportunities. The program will feature guest lectures from Canada's plant-protein sector, including Indigenous leaders, investors and more to help build connections, and for participants to meet with new investors, helping SMEs to scale and grow their market footprint.

The program, will be available to Protein Industries Canada's members for the subsidized cost of \$2,000. Non-members who are interested may be able to participate at a non-subsidized rate.

STRATEGIC INVESTMENT LEADS TO STRATEGIC GROWTH

Strategic sources of investment capital are required to take Canada's plant-based food, feed and ingredients sector to the next level.

"You need to have the right money, both patient and smart.

While there are numerous Canadian opportunities in the sector, raising project capital in this space is actually a real challenge because these projects generally do not fit into a Canadian investor's overall risk-adjusted investment thesis. Therefore, our problem remains that if somebody doesn't step up and find the 'right' capital to fund these opportunities, our goal of long-term GDP and employment growth will never accrue within our borders."

— T Base 4 Investments CFO Blair Knippel

As the capital community's understanding of an opportunity grows, so does their desire to invest.

Capital communities are what grew world-renowned ecosystems in the United States, Europe and Asia.

Two important questions remain, however: which companies will be able to attract the right capital, and where will their physical operations be located?

To ensure Canadian companies and innovators remain a long-term component of Canada's plant-based food, feed and ingredients sector, Knippel believes we need to raise awareness of the opportunities available here while also proving Canada has the necessary type of capital and risk tolerance to create new opportunities for businesses, employees and investors.



580

new services, products and processes



162

new intellectual property assets



\$200 Million

in follow-on investment

SECTOR COMPETITIVENESS

Canada's plant-based sector is a vibrant start-up space. Canadian start-ups are creating new product categories that do not yet exist — applying innovative technology to the development of food and ingredient products to meet an ever-discerning consumer expectation for healthy and sustainable food. New companies are being created, investment is being attracted, and new partnerships are being developed. Together, these efforts are positioning Canada as a leader and innovator in a growing and dynamic industry. To be successful, we need to build a business environment that supports innovation and the commercialization of new technology. Protein Industries Canada's capacity building stream focuses on investments into priority areas necessary to ensure a competitive environment and build capacity in the ecosystem.

Objectives:

- Invest with industry to develop and commercialize new products;
- Continue to focus on priority areas of regulatory modernization, international engagement, and skills, talent and access to labour;
- Support the development and tracking of sustainability indicators for Canadian plant-based ingredients;
- Position sector as an attractive investment opportunity;
- Increase the stature of Canada in global value chains pertaining to food processing and manufacturing;

Results:

In Spring of 2021-22, Protein Industries Canada issued a special call for capacity building projects, with a focus on four key areas: regulatory, skills, labour and access to talent, infrastructure, and international engagement. The call resulted in 13 new expressions of interest. From the 13 EOIs, seven projects were invited to move to full application. The seven projects fall into a mix of priority areas, with a strong focus on skills, labour and access to talent. Through the specific call, several new capacity building projects were approved in the priority areas:

1) Increasing Canada's Training Capacity in Chemical and Food Science Technologies – this \$565,000 project will result in the development of two new three-year diploma programs in a college based in Manitoba to address the challenges in labour shortage and to meet the opportunities presented through the investments in plant-protein processing and other food and beverage manufacturing across Canada. The programs Chemical Technology Diploma and Food Science Diploma will be offered to students across the Prairies and Canada, and international students, with a special focus on Indigenous students, given the college's current focus on Indigenous student recruitment and retention. These programs will be the first in Manitoba and the Food Science Diploma will be the first in the Prairies.

2) Regulatory Centre of Excellence – this \$1.5 million program works with key industry partners to generate the data to inform and support changes to Canadian regulatory frameworks as well as developing the first Regulatory Centre of Excellence to assist companies in the sector. This project will help drive change with Health Canada and other regulatory bodies, and the Centre of Excellence will help Protein Industries Canada members and other industry players to work through their regulatory issues, create a repository of regulatory knowledge and bridge the conversation with regulators to support the commercialization and competitiveness of innovative products and processes.

3) Reskilling Workers for Digital Agriculture – this \$1 million project is focused on designing and delivering a reskilling pilot program in digital skills in the agrifood sector in Saskatchewan. The project includes consultations with key stakeholders and industry partners, as well as leveraging existing reports to determine the most pressing needs of industry and develop a short program to meet the demands of employers. The project will help unemployed Canadians, including under-represented populations, to access specific training on digital skills in the agrifood sector and have access to job placement opportunities, and a special focus on bias-mitigation. The project will also build a case for a potential expansion across the prairies.

4) Micro-Credentialing of Indigenous Youth to Work in Food and Ingredient Processing/Manufacturing Businesses – this \$946,000 project will bring together Indigenous leaders, technical training institutes, governments and industry to create one or more “agrifood processing micro-credentials” for Indigenous, and potentially non-Indigenous, youth in Western Canada. Ultimately, it will allow those youth to become engaged, successful and meaningful employees and contributors to agrifood processing businesses and form a potential long-term source of sustainable benefits to Indigenous communities (e.g., education, employment, community engagement, agricultural business development, health, etc.). Interconnected to these new employment opportunities for youth, the proponents assert that as sources of Indigenous investment capital seek the ability to meaningfully deploy assets into these businesses as co-investors, Indigenous leaders will further be able to ensure that numerous long-term benefits (e.g., investment returns, youth employment, education, equitable access to opportunities, etc.) continue to accrue for multiple generations.

“Indigenous people want to expand their national and global businesses in ways which bring economic prosperity, jobs and well-being to their communities, and this will help all Canadians.

By advancing an innovation culture with Indigenous businesses and communities, and growing the collaborations among researchers, research agencies and Indigenous business, we can develop new products, new service lines, new innovative approaches and solutions that are good for all Canadians and the Canadian economy.”

- Indigenous Works President and CEO Kelly Lendsay

FIRST TECHNOLOGY PROJECT COMPLETE WITH COMMERCIALIZATION OF SUSTAINABLE FERTILIZER

The completion of Lucent BioSciences' and AGT Food and Ingredients' full-seed-utilization project represents the potential of Canada's plant-based food, feed and ingredients sector.

After launching the project with a \$3 million co-investment in March 2020, Lucent and AGT worked together to create a novel fertilizer out of the co-products of Canadian-grown pulses: Lucent's new Soileos fertilizer. The utilization of these co-products helps create value from substances that were traditionally considered waste, while also leading to the development of a product that producers can use on their crops to increase nutrients and, in the long run, yield.

Throughout the life of the project, the partners have been able to scale up from producing 1 kg of Soileos per day to 2 tonnes per day, and now have plans of building a plant that can produce up to 100 tonnes per day by fiscal 2022-23. This scaling up helped the partners refine the environmental impact of their process, as well; they went from using 20 tonnes of water to no water, proving the environmental benefits of the sector from crop to value-added product.

Consumers around the world are choosing plant-based foods to support their health and to help reduce their own impact on the environment — a trend that will only accelerate in the years and decades to come. At the same time, nations across the globe are dealing with issues around population growth, mass urbanization, food security, nutrition and climate change. These countries need assurance of a reliable supply of healthy and sustainably produced food — and Canada can be that supplier.

In 2021-22, Protein Industries Canada co-invested into a \$650,000 project to establish the sustainability benchmarks for Canada's agrifood sector. A private-public coalition of more than 70 diverse partners are working together to create the indicators, and together will help shine a spotlight on the sustainability of Canada's agriculture and agrifood industry, improving both consumer trust and our national brand. The creation and adoption of sustainability indicators will increase Canada's competitiveness and market opportunities.

In the past year, Protein Industries Canada invested in two key reports to advance Canada's position as an attractive investment opportunity — the Ernst and Young Report and the Ady Advantage Report. Both reports outlined Canada's competitive advantages and areas of improvement in attracting investment. The insight and direction garnered from the reports are an important first step in furthering investment into the growing sector.

In addition to the reports, Protein Industries Canada continued to increase the profile of Canada on the global stage, making connections to support the growth of Canada's ecosystem. A specific example is the multiple international events Protein Industries Canada participated in — including multiple events to Japanese audiences, South Korea, the United Kingdom and more. Protein Industries Canada also participated in international events including Future Food Tech and Bridge2Food.

SECTOR COLLABORATION

Collaborative innovation in high-growth sectors, such as plant-based foods, will help support Canada's innovation agenda and grow the Canadian economy. The collaboration between start-ups, SMEs, large anchor firms and academic intuitions de-risks their ambitious R&D projects, allowing them to innovate quicker and more efficiently – helping them more quickly move from concept to commercialization, and at a larger scale. The creation of Protein Industries Canada has catapulted Canada onto the global stage.

Collaboration is a central tenant of how Protein Industries Canada approaches all things. Over the past three years, increasing collaboration has become the norm within Canada's plant-based food sector – which is evidenced by the increase in collaboration metrics.

Objectives:

- Continue to develop and evolve member value offerings to stay relevant and meaningful to the ecosystem
- Work to increase connections between members, capital firms, potential clients and more.

Results:

- Protein Industries Canada members have a high level of satisfaction with Protein Industries Canada with a satisfaction score of 8.1/10. NGOs and Private Sector organizations ranked Protein Industries Canada the highest with an average of 8.2.
- The greatest member benefits presented by Protein Industries Canada, according to our for-profit members are:
 - Opportunities for collaboration (4/5)
 - Opportunities to grow my network (3.3/5)
 - Market knowledge that is helpful to growing my business (3.4/5)
 - Industry insight that is helpful to growing my business (3.7/5)
 - Connections to catalyze innovation within our business (2.7/5)
- Collaboration is an integral part of all that Protein Industries Canada does. Over the past three years, Protein Industries Canada has made collaboration amongst members a priority, and the growth in the collaboration metric is evidence of the success. Throughout 48 projects, Protein Industries Canada have brought together 276 project partners, averaging over seven partners per project.
- Over the past year, Protein Industries Canada has focused on building connections between firms in the ecosystem – between ingredient and food processors, investment firms, researchers and more. To date, Protein Industries Canada has made more than 600 introductions across the ecosystem.

“The importance of the PIC Supercluster and associated projects cannot be understated. Many of the industry stakeholders that were interviewed for this study indicated that the consortium connections made through the Supercluster, as well as the access to funding, were critical for their work to move forward. For those that believe they could have gone ahead with their project without PIC, they did indicate that it would have been on a much smaller scale, with increased risk and a much slower timeline. Indeed, the PIC Supercluster is an integral source of funding and industry networking needed for Canada to be seen as a major player in the emerging market for non-meat plant-based proteins.”

(From an independent evaluation conducted by Nichols Management on Protein Industries Canada’s first 15 technology investments).

STRATEGIC INVESTMENT LEADS TO STRATEGIC GROWTH

Collaborative efforts between project partners have a ripple effect across the ecosystem, often leading to new partnerships and a propulsion of Canadian innovation into the global spotlight. One of Protein Industries Canada’s first projects involved Merit Functional Foods, Pitura Seeds and TWC Nutrition, and was focused on utilizing Canada’s abundant, diverse crops to develop new pea, canola and blended pea-canola protein ingredients. The project was a success, with Merit commercializing the ingredients within a two-year timeframe. Since then, the company has partnered with international companies like Bunge and Nestle to utilize the ingredients in a variety of consumer-facing products, as well as joined two more Protein Industries Canada projects: one with TWC Nutrition, Daiya Foods and Grand River Foods to use the ingredients in new plant-based meat alternatives, dairy alternatives and beverages; and one with Wamame Foods, Wismettac Asian Foods and Winecrush Technology to develop plant-based pork and beef alternatives that rival the highly regarded Wagyu beef.

OPERATIONAL EXCELLENCE

As a member-based organization that administers public funds and helps to execute large-scale technology and capacity building projects, we require due diligence, strong financial management and transparency.

Objectives:

- Continue the delivery of technology and capacity building investment streams;
- Have a high-performing team; ensure staff are engaged and appreciated.

Results:

Though COVID-19 continued to impact the operations of Protein Industries Canada, the organization continued to deliver as a high-performing team. Over the year, key positions, including a Director of Member Relations and Director of Business Development, as well as additional resources to support the technology and capacity building programs, were added. These positions were key in helping the organization evolve to better meet member needs, including increasing member engagement and connections. Protein Industries Canada is truly national in scope, with staff from British Columbia to the Maritimes.

Staff members participate in monthly all-hands meetings and develop work plans that include personal and professional development goals. Staff have also participated in team training and in planning sessions that occurred throughout the year. Protein Industries Canada also committed to the federal government's 50-30 Challenge — a program to accelerate diversity and to encourage Canadian organizations to adopt practices to improve equity. Protein Industries Canada has a gender-parity Board of Directors as well as gender-parity within their senior leadership team. In addition, 15 per cent of Protein Industries Canada staff are new Canadians.

The key deliverable for Protein Industries Canada continues to be the delivery of both the technology and capacity building investment streams. Both streams are now fully committed, and the focus is now on project management – ensuring that projects are on track to reach expenditure goals and carefully monitoring any deviations, so money can be re-invested into new initiatives.



33

TECHNOLOGY
PROJECTS



16

CAPACITY
BUILDING PROJECTS



\$476 M

TOTAL PROJECT
VALUE

2022-23 GOALS AND OBJECTIVES

CORE VALUES

Sector Growth

Sector Collaboration

Agrifood Leadership

Operational Excellence

Sector Competitiveness

Organizational Sustainability

THE FUTURE OF FOOD

2022-23 GOALS AND OBJECTIVES

Consumers around the world are choosing plant-based foods to support their health and to help reduce their own impact on the environment—a trend that will only accelerate in the years and decades to come. At same time, nations across the globe are dealing with issues around population growth, mass urbanization, food security, nutrition and climate change.

Canada, as well as those countries who rely on Canada for their food, needs assurance of a reliable supply of healthy and sustainably produced food. Canada can be that supplier.

Today, Canada is seen as the preferred country in which to invest, collaborate with, and from which to source plant-based food and ingredients. By raising our profile even further, we believe that Canada can contribute ingredients to 10 per cent of all plant-based food products globally by 2035—equating to \$25 billion in sales annually and creating economic prosperity and good, well-paying jobs for all Canadians.

With fiscal 2022-23 representing the last fiscal under the current contribution agreement for Protein Industries Canada, our priorities for the short-term are focused on meeting the requirements of the current contribution agreement, while continuing to look toward the future and securing Canada’s position as a global leader in the production of plant-based food, feed and ingredients.

Looking beyond the term of the current contribution agreement, Protein Industries Canada will continue to work toward securing the future for Canada’s plant-based ecosystem. We are facing a short window to seize this opportunity for Canada. An investment into plant-based foods and value-added processing provides tremendous opportunity for Canada. The Superclusters present a unique way of doing business – supporting collaboration between companies to achieve transformative innovations – commercializing made-in-Canada solutions. Based on the strength of the sector, and the demand currently in our pipeline, Protein Industries Canada will be pursuing a renewed funding commitment starting in 2023-24. This renewal would allow Protein Industries Canada to continue to attract sufficient levels of industry investment to build on our success and to continue to develop world-class solutions to grow Canada’s economy and innovation ecosystem.

Over the next year, Protein Industries Canada will continue to work and make progress into areas related to digitization, inclusivity and diversity, measuring impacts on carbon reduction, and supporting job growth across Canada. These foundational elements are key to the continued growth and competitiveness of Canada’s plant-based ecosystem.

Protein Industries Canada will continue to focus our efforts on core outcomes related to:

1. **Agrifood Leadership** strives to address the underlying need for a strongly united voice that will increase the profile of the agrifood sector in Canada.
2. **Sector Growth** centres on growing Canada’s plant-based food, feed and ingredients sector.

3. **Sector Collaboration** seeks to improve partnerships among private sector firms, between private sector firms and academic institutions, between private sector firms and government institutions spanning research, policy and regulation, and between private sector firms and international partners and research institutions.
4. **Sector Competitiveness** is about building a business environment that supports innovation and the commercialization of new technology, as well as improving Canada's international reputation.
5. **Operational Excellence** is a requirement for Protein Industries Canada, as a member-based organization that administers public funds, we require due diligence, strong financial management and transparency.
6. **Organizational Sustainability** related activities help us build a structure and mandate coupled with industry relevance so we can achieve the organization's and sector's long-term objectives.

1. AGRIFOOD LEADERSHIP

Objective: Protein Industries Canada is viewed as a leading organization working to increase the profile of Canada's plant-based food, feed, ingredients and agrifood sector.

- Increase the profile of the agrifood sector as a leading industry in Canada through collaboration with national agencies;
- Improve the understanding and appreciation of the plant-based sector as a driver of our economy and a solution to climate change by Canadians; and
- Engage national and international thought leaders to gain additional perspective on the growth of Canada's agrifood and plant-based foods sector.

Objective: Prioritize and begin to drive implementation of the recommended actions in *The Road to \$25 Billion*.

- Engage and work across the sector to determine leads for specific actions and outcomes; and
- Implement and measure progress for the recommended actions in *The Road to \$25 Billion*.

Objective: Thought leaders and decision makers from coast-to-coast- to coast have an increased understanding of the potential of Canada's plant-based food, feed and ingredient sector.

- Develop and execute an awareness and communications strategy targeted at thought leaders and decision makers; and
- Increase engagement with federal departments and agencies whose programs and policies affect the agrifood sector (Environment and Climate Change Canada, Finance, Health Canada).

2. SECTOR GROWTH

Objective: Increased investment into the plant-based food, feed and ingredient sector.

- Work with ISED to secure funding and deliver the Pan-Canadian Artificial Intelligence Strategy Supercluster Commercialization Stream;
- Work across the governments to align investments into Canada's agri-food sector; and
- Attract private investment – including foreign and capital funds – into Canada's plant-based sector.

Objective: Attract and scale domestic and international firms into Canada's plant-based ecosystem.

- Increase the number of firms engaged in Canada's plant-based foods sector and Protein Industries Canada's membership base;
- Supporting creation of new firms; and
- Help domestic firms scale-up and grow in Canada.

Objective: Support the commercialization of new plant-based products.

- Support the creation of globally relevant brands for high-value ingredients and consumer-packaged goods; and
- Ensure timely completion of all technology projects and commercialization of associated products and IP.

3. SECTOR COLLABORATION

Objective: Drive alignment of funds and actions, with other funding agencies, industry associations, provincial governments, and NGOs to maximize the flow of investment into Canada's plant-based food, feed and ingredient sector.

- Continue engagement with national commodity organizations and VPs Research at Canada's U15 to ensure understanding and alignment with Protein Industries Canada's direction; and
- Collaboration with all levels of government to increase investment and collaborate on priorities to secure Canada's position as a global leader in plant-based ingredients and food.

Objective: Drive private sector collaboration between ingredient processors, food manufacturers, retailers and investors.

- Create opportunities for Protein Industries Canada’s members to create new partnerships to support growth and scale-up.

4. SECTOR COMPETITIVENESS

Objective: Position Canada’s plant-based food, feed and ingredient sector as a contributor to Canada’s net-zero economy.

- Refine assessment and tracking tools to measure ingredient as well as food and feed product sustainability;
- Communicate GHG/carbon reduction benefits of plant-based food, increase awareness and understanding of plant-based foods as a solution; and
- Work across Canada’s agrifood sector to create an aligned position on sustainable protein production.

Objective: Grow the talent pool to support the growth of Canada’s plant-based food, feed and ingredient sector.

- Implement and offer, in collaboration with leading organizations, training and skills programs to attract under-represented groups into the sector;
- Engagement of under-represented groups and creation of specific programming to support Indigenous-led businesses;
- Support scale-up of SMEs through training and skill development; and
- Support other national organizations to address the chronic labour shortage in food production; advocate behalf on Protein Industries Canada members.

Objective: A membership that has increased awareness of cybersecurity.

- Increase awareness regarding cybersecurity within our membership by sharing relevant information; and
- Include cybersecurity mitigation efforts as an eligible project expense.

Objective: A business environment that supports sustainable innovation and commercialization.

- Continue to drive regulatory modernization for protein labelling, novel food approvals, advanced breeding tools, fortification and labelling requirements for plant-based milks and meats through collaboration with key industry associations and federal government departments (ISED and AAFC); and
- Create awareness of Canada’s competitiveness in comparison to key jurisdictions.

Objective: A strong international reputation for Protein Industries Canada and the Canadian plant-based food sector.

- Create and foster relationships with key international markets with the support of ISED, AAFC, GAC, Federal Regional Economic Development Agencies and provincial trade departments and agencies to position Canada as the supplier of choice for plant-based foods and ingredients;
- Work with Invest in Canada and other organizations to improve Canada's reputation and brand as a market for Foreign Direct Investment for ingredient manufacturing and plant-based foods; and
- Define Canada's plant-based food brand including the determination of product attributes valued by end use customers.

5. OPERATIONAL EXCELLENCE

Objective: Maximize ISI funding.

- Manage spend on projects, ensuring full spend to maximize co-investment.

6. ORGANIZATIONAL SUSTAINABILITY

Objective: A diverse, inclusive, engaged and effective workforce.

- Assess whether current Protein Industries Canada policies, practices and procedure are inclusive and sensitive to various cultural, gender and LGBTQ2S+ differences; and
- Ensure all staff complete the Four Seasons of Reconciliation training.

TECHNOLOGY PROGRAM STREAM

SUMMARY OF PROJECTS AND OUTCOMES



CREATE



GROW



MAKE



SELL

INVESTING IN NEW PRODUCTS AND PROCESSES

Fiscal 2021-22 marked a significant achievement for the technology program – reaching full commitment, with \$157.4 million of Protein Industries Canada funds invested into 33 technology projects. Protein Industries Canada’s investment leveraged a further \$290 million from industry, for a total project value of \$447 million.

Like the previous year, technology projects were accepted on a continual in-take process – with eight new projects being approved during the fiscal.

The priority for 2022-23 continues to be project management, with progress and cash flows carefully monitored to ensure that the full investment initially committed to the project will be spent as planned. If it is found that there are projects that are significantly under budget, the remaining investment will be brought back into the technology program pool of available funds and re-distributed through Protein Industries Canada’s normal project process.

Any investments made in 2022-23 will be short-cycle projects that can be completed by March 31, 2023 and those that can be built off of in the future to further the growth of Canada’s plant-based food and ingredient sector. Other activities for 2022-23 include a complete review of our current investment portfolio to identify gaps in both the technology and capacity building streams

The project intake and selection process, as well as the members of the independent Eligible Project Selection Committee, has not changed. Information on the process and committee members can be found at <https://www.proteinindustriescanada.ca/technology>.

NEW PROJECT TO DEVELOP PLANT-BASED SEAFOOD LINE

Prioritizing taste and texture, new plant-based fish filet would be first of its kind in Canada

Protein Industries Canada is co-investing with New School Foods and Liven Proteins to develop plant-based seafood products. The project will focus on developing a whole muscle, plant-based fish filet that emulates the same texture, taste and cooking experience of fish, creating a product that appeals to the mass-market consumer.

This co-investment will allow New School Foods to expand its research and development efforts by partnering with additional universities and private laboratories, allowing them to more quickly and successfully achieve their product development goals. It will also accelerate Liven’s development of protein ingredients through its precision fermentation platform, and will enable Liven to bring these ingredients to the marketplace. Liven will contribute their novel specialty protein ingredients to the project, to enhance the sensory and cooking experience of the plant-based seafood products.

TECHNOLOGY PROGRAM SUMMARY OF PROJECT FUNDING

Protein Industries Canada takes a value chain-based approach to innovation. This means that our investments into technology projects mirrors that of the agrifood value chain – from the lab to the consumer’s fork. Protein Industries Canada represents this through four pillars: *Create, Grow, Make and Sell*. These pillars have been used to guide all previous technology co-investments and will continue to frame co-investment decisions from re-allocated funds in 2022-23. Examples of potential innovations that complement these pillars are provided below.

PROGRAM AREA	AREAS OF POTENTIAL INNOVATION FOCUS
<p>Create</p> <p>Creation of high-quality protein germplasm from Canadian crops</p>	<ul style="list-style-type: none"> Improvements in genetics for seed protein and nutrient content, nutritional quality and processing attributes through genomic and proteomic technologies and modern gene editing and plant breeding techniques Near-term improvements in canola and pulse protein quantity and quality.
<p>Grow</p> <p>Smart Production to improve yield, quality, value and integration within the supply chain</p>	<ul style="list-style-type: none"> Productivity improvements via farm production data collection, analysis, and producer decision making and knowledge management systems, through advancements in the use of production-related information technology for sustainable agriculture practices and land regeneration technologies Development and application of plant phenotyping and imaging technologies for improved root systems, enhanced photosynthetic efficiency and greater carbon sequestration Advanced data networks, artificial intelligence (“AI”), machine-learning systems, robotics and autonomous farm vehicle technologies for enhanced productivity, sustainability and profitability through improved agronomic practices and AI-enabled decision support tools for growers Impact assessments and mitigation strategies to cope with climate change
<p>Make</p> <p>Novel Process Technology and Product Development for further processing of crops</p>	<ul style="list-style-type: none"> Process and applications research for enhancing existing methods and platforms and acceleration of new processing technologies for extraction and fractionation of protein and co-products Protein functionality and bio-activity for the development of novel ingredient and food product formulation strategies Novel separation technologies such as ionic liquids, sub- and supercritical fluids, Ohmic heating, pulsed electric field and other processes with significant IP opportunities

PROGRAM AREA	AREAS OF POTENTIAL INNOVATION FOCUS
	<ul style="list-style-type: none"> • Processing solutions for pea, lentil and faba bean starch-based sustainable and renewable industrial polymers for paper, paperboard, packaging, building and other composite materials
<p>Sell</p> <p>Marketing and Commercialization for branding, sales and export</p>	<ul style="list-style-type: none"> • Company-led initiatives and partnerships with Government Organizations and Non-Government Organizations (“NGOs”) for the testing of product prototypes, branding and sale of plant protein and co-products, trade missions, and other sales and marketing activities • Human resource development, enabling technologies related to marketing and commercialization efforts • Support for business to business global supply chain development initiatives, expansion and attraction and fostering of industrial competitiveness • Conference presentations to raise brand awareness of Canadian strengths in plant proteins and related co-products technologies and production • Market research and market intelligence studies

To ensure a balanced value-chain approach, Protein Industries Canada strives to have investments distributed amongst the pillars via a 20/20/40/20 percentage split. As of Dec. 31, 2021, the percent of investment into each category was 10/10/56/22.



CREATE
10%



GROW
10%



MAKE
56%



SELL
22%

ANTICIPATED RESULTS OF TECHNOLOGY PROJECTS

There are currently (as of Dec. 31, 2021) 32 active technology projects, and three completed technology projects. It is expected that there will be minimal new projects added in 2022-23, as funds are fully committed, and only funds that become available from under-spent projects can be committed to new projects.

As this is the final fiscal for eligible expenses for the initial tranche of funding, all projects must be complete by March 31, 2023. A summary of all active and announced projects can be found at <https://www.proteinindustriescanada.ca/news>.

PILLAR PROJECTED OUTCOMES

PILLAR	PROJECTED OUTCOMES
<i>Create</i>	<ul style="list-style-type: none"> • High yielding, high protein hybrid canola resulting in meal with higher protein, lower fibre, more energy that will add value to both traditional and novel approaches to canola crushing and other downstream processing • Pea varieties with higher protein content, higher yields and improved agronomic and disease resistance characteristics that increase value for protein extraction processing • Advanced breeding tools, new methods for quality testing and novel data sharing protocols to enable faster breeding outcomes and accelerated quality improvement across multiple crops
<i>Grow</i>	<ul style="list-style-type: none"> • Real-time nutrient monitoring • Improved sub-field and whole farm management support through advanced digital tools for producers through the integration of multiple data sources, IoT devices, remote sensing and human input. • Increased value for emerging crops including hemp, peas, faba bean and other through improved production practices to support higher quality harvests. • Targeted crop protection application technology reducing input costs and benefiting market access through advanced data and analytics capabilities and a unique delivery platform • Traceability from field to fork through integrated data streams enabling handoff of data across value chain • Improved crop nutrition through novel nutrient delivery platforms • New high-value crop options for western Canadian producers
<i>Make</i>	<ul style="list-style-type: none"> • New processing technologies for dry processing of multiple crops • New food processing technologies for production of fortified beverages, meat analogues, pastas and snack foods • New preparation and extrusion methods to address texture targets for plant-based meat, dairy and seafood alternatives • Value-added processing of by-product and bio-mass streams for novel nutrition, industrial and consumer products • Novel wet processing technologies creating high-value protein, starch and fat-based products from multiple crops

PILLAR	PROJECTED OUTCOMES
	<ul style="list-style-type: none"> • New processing techniques to address flavour and texture challenges • Development of new processes to achieve specific functionality of plant-based ingredients such as solubility, particle size and gelling properties • Blended products with improved amino acid profiles
<i>Sell</i>	<ul style="list-style-type: none"> • Unique value position of novel protein products for aquaculture from multiple crop types including canola, hemp, pea, faba bean and wild rice • Enhanced feed value for unique processing of meal and by products • Multiple new high-protein food products • Multiple new ingredients across feedstocks with a wide range of functional attributes • Unique combinations of ingredients designed to meet consumer demands and enable superior labelling opportunities • Products with unique functionality to serve important bakery markets with high-protein flours and egg replacements • Human nutrition trials to support the positive impacts of plant-based products on general health, in addressing specific chronic conditions, speeding recoveries and use by high-performance athletes • Export opportunities for ingredients and finished food products

REACHING MILESTONES QUICKER BY WORKING TOGETHER

Collaboration leads to acceleration—of innovation, of scale-up and of the commercialization of new plant-based foods and ingredients. In January 2020, Merit Functional Foods, Pitura Seeds and TWC Nutrition embarked on a partnership to develop new pea, canola and pea-canola blended protein ingredients. The project has been a success, with the partners reaching their final milestone during the summer of 2021.

The protein ingredients developed through the project have since reached commercialization, and are being tested in several new plant-based food and beverage products that will soon reach grocery shelves across Canada and international markets. This includes through two new Protein Industries Canada co-investment projects: one with [TWC Nutrition, Daiya Foods and Grand River Foods](#), and the other with [Wamame Foods, Wismettac Asian Foods and Winecrush Technology](#).

This ability to build off of one project to create others proves the versatility of these Canadian ingredients.

CAPACITY BUILDING PROGRAM STREAM

SUMMARY OF PROJECTS AND OUTCOMES



LABOUR, SKILLS AND
ACCESS TO TALENT



REGULATORY
MODERNIZATION



DATA AND ICT
MANAGEMENT



ACCESS TO
CAPITAL



INFRASTRUCTURE



INTELLECTUAL
PROPERTY
LITERACY



GLOBAL BRAND AND
INTERNATIONAL ENGAGEMENT

BUILDING CAPACITY TO BUILD THE ECOSYSTEM

At Protein Industries Canada, our sights are set on building capacity within Canada's plant-protein sector, in a way that delivers benefit to our members and the entire value chain. The capacity building program is focused on advancing Canada's agrifood sector and creating a competitive and sustainable global business environment, while incenting new approaches to doing business and removing barriers to growth.

Fiscal 2021-22 marked the second full year of Protein Industries Canada's capacity building program – building off the foundation established in 2020-21. During the year, a further 12 capacity building projects were approved, for a total of 16 projects, with a value of \$28.9 million, of which \$16.9 million is Protein Industries Canada's co-investment. With this commitment, the capacity building program is considered fully committed.

The focus of the capacity building program in 2021-22 was to support the creation of projects in the key priority areas of: Labour, Skills and Access to Talent, Access to Capital, Infrastructure, and Global Brand. To do this, a specific call was issued. From the call, 13 expressions of interests were received, with seven new projects being approved. In addition to the specific call, Protein Industries Canada took a much more proactive approach to project creation and initiated several projects with consortiums. The result was projects that are purposefully designed to meet the needs of our members and build capacity in the ecosystem.

Like the technology program, the priority for 2022-23 will be project management, with progress and cash flows carefully monitored to ensure that the full investment initially committed to each project is spent as planned. If it is found that there are projects that are significantly under budget, the remaining investment will be brought back into the program pool of available funds and re-distributed through Protein Industries Canada's normal project process.

Projects considered for investment in 2022-23 will be short-cycle projects that can be completed within the fiscal year. Projects must be aligned with priority areas and contribute to the growth of the ecosystem. The project intake process for the capacity building program remains as is, with projects being accepted on an ongoing basis. However, there will be limited proactive outreach to bring in projects with limited co-investment dollars available. Any new projects will most likely be brought in on a specific request basis to fill gaps in priority areas. All projects that are deemed eligible and aligned with the objectives are reviewed by the Project Approval Committee (PAC). The Project Approval Committee is made up of two members of Protein Industries Canada's Senior Leadership Team and two independent industry experts. More information on the application process and PAC can be found at <https://www.proteinindustriescanada.ca/capacity-building>.

CAPACITY BUILDING SUMMARY OF PROJECT FUNDING

The capacity building program focuses on seven priority areas: Labour, Skills and Access to Talent; Regulatory Modernization; Data and ICT Management; Intellectual Property Literacy; Infrastructure; Access to Capital; and Global Brand and International Engagement. Focusing on these areas, as well as Indigenous Engagement, will help build capacity in the sector and strengthen our ecosystem.



Labour, Skills and Access to Talent:

The chronic labour shortage in the agrifood sector has become one of the most pressing barriers to growth. As the protein sector evolves, we can expect to see shortages on two fronts: a lack of labour and workers without the necessary skills to work in a rapidly changing and growing sector. If not addressed, this will influence Canada's ability to realize our agrifood potential.



Regulatory Modernization:

As we invest in technologies that results in new products and processes, we require a regulatory system that keeps pace with innovation. Without a responsive regulatory system, our ability to get products to market, attract investment and grow the sector is impacted. This isn't just about removing immediate regulatory barriers, it's about creating and implementing processes that allow regulations that evolve as the sector does, while maintaining the highest standards of safety.



Data and ICT Management:

Managing data, and further leveraging it to improve processes and make decisions, is key to advancing the agrifood sector. The opportunities around data regarding precision agriculture, improved production techniques and regulations, as well as providing consumers with the information they are requesting regarding traceability, food safety and other elements, are all part of the evolving agrifood ecosystem.



Intellectual Property (IP) Literacy:

A cornerstone of innovation, and the Innovation Superclusters Initiative, is the commercialization of IP. Canada is a country of inventors. We have strong scientific capacity that leads to the creation of new knowledge and technologies; however, we lag other industrialized nations in our ability to realize the value of IP. Numerous studies indicate that SMEs (small- and medium-sized enterprises) that hold IP are more likely to export and to become high-growth firms than those that don't.



Infrastructure:

The agriculture and food processing sectors have complex and substantial infrastructure needs. To secure Canada as an agriculture production and processing powerhouse, focused investment into infrastructure along the value chain – from the lab to end market – is necessary. This includes physical infrastructure, such as transportation, as well as infrastructure related to research capacity.



Access to Capital:

According to the Canadian Venture Capital and Private Equity Association, less than three per cent of venture capital investment flows into the Prairie region, and only a fraction of that is targeted to the agriculture and food processing sector. Western Canada has seen both start-up and established companies looking to scale, move out of the Prairie region and establish operations closer to venture capital sources. This separation between the research community that generates new technology and those with the skills to develop and commercialize it has slowed the pace of innovation and commercialization. The creation of a sustainable agrifood sector requires access to both talent and capital.

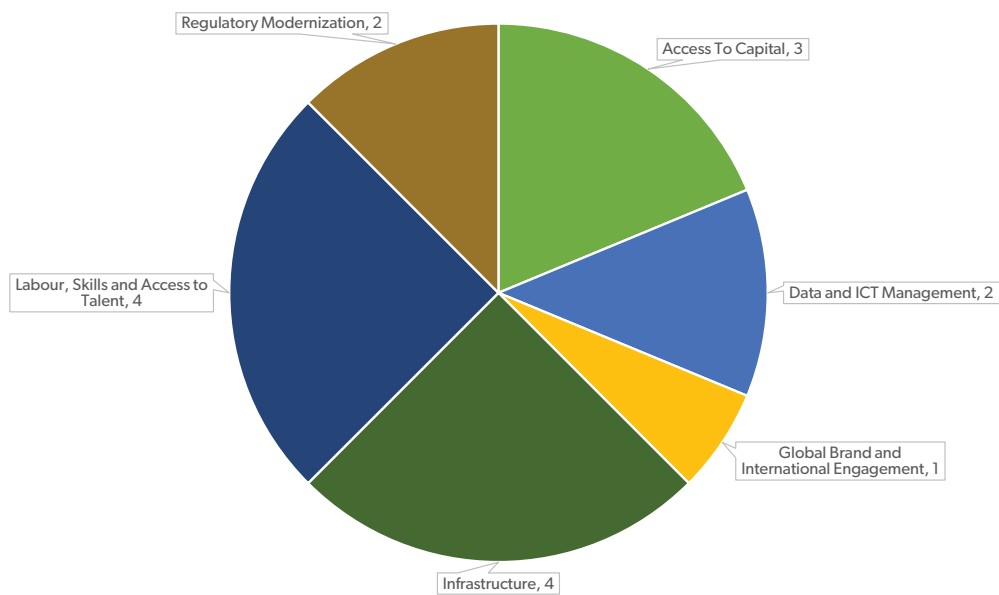


Global Brand and International Engagement:

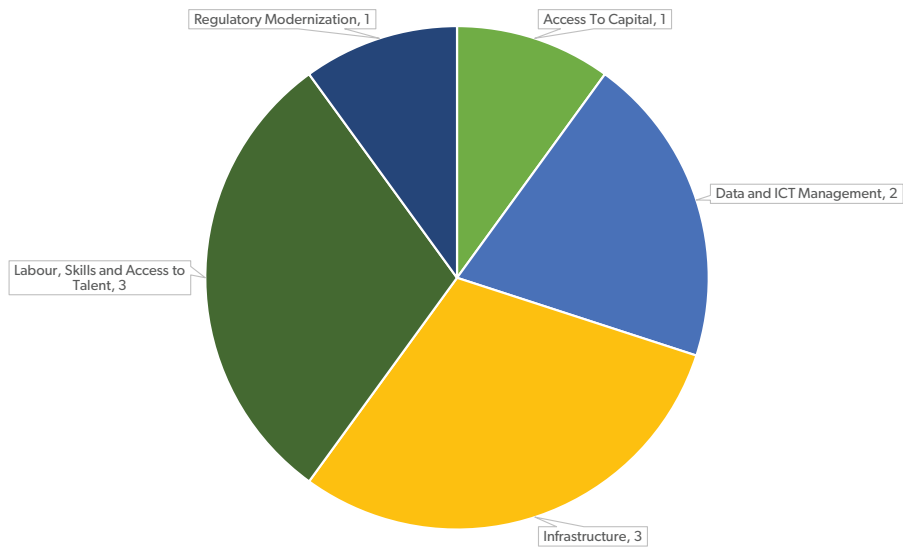
Canada currently enjoys a competitive advantage as an environmentally sustainable source of agricultural commodities, with world-class, innovative producers. However, the industry faces three main challenges in this area: reliability of supply, authenticating our global reputation and a lack of global recognition as a supplier of protein-rich food ingredients. Investment into these areas is necessary to improve Canada's global brand as a food and ingredient supplier.

The 16 active projects are split between the priority areas.

Approved Capacity Building Projects by Priority



Active Capacity Building Project by Priority



ANTICIPATED RESULTS OF CAPACITY BUILDING PROJECTS

The capacity building program is designed to help contribute to Canada’s plant-protein ecosystem. The goal is to contribute to the overall success of Canada’s agrifood sector by creating a competitive business environment with the means to grow and flourish. This means ensuring that the companies have the knowledge, tools and access to the infrastructure, markets, skills and labour, and financing they need to continue to invest in innovation to create new processes and products. When all the elements of the ecosystem coming together, Canada will fully realize the full opportunity of the global plant-protein market. Together these projects are helping build out a competitive and sustainable ecosystem that will support the growth of Canada’s plant-based food, feed and ingredient ecosystem.

PRIORITY AREA	EXPECTED OUTCOMES
Skills, Talent & Access to Labour	<ul style="list-style-type: none"> • Reskilling programs to engage Indigenous and other under-represented groups into Canada’s agrifood sector • Creation of new training programs in post-secondary institutions, focused on food science to help build the workforce of the growing sector • Engagement of youth to increase awareness of careers • A strategy to engage Indigenous people and groups into Canada’s agrifood sector. • Create internship opportunities between start-ups and students

PRIORITY AREA	EXPECTED OUTCOMES
Access to Capital	<ul style="list-style-type: none"> • Create education programs to help increase business acumen of SMEs looking to scale up. • Engage investors into Canada’s plant-based ecosystem; create connections between investors and Canadian companies • Increase competitiveness of Canada’s business environment • Work with investors to create a fund specific to ingredient and food processors
Infrastructure	<ul style="list-style-type: none"> • Add fermentation capacity to support ingredient and food processing capacity in Western Canada
Data & ICT Management	<ul style="list-style-type: none"> • Creating linkages between ingredient processors and food manufacturers to strengthen Canada’s supply chain • Improved competitiveness of Canadian produced food through improved traceability • Use hands-on technology to demonstrate the ability to share data along the value chain and improve data literacy
Global Brand & International Engagement	<ul style="list-style-type: none"> • Host an international event to showcase Canada’s strength as a producer of plant-based food and ingredients to the international audience • Define sustainability benchmarks to increase competitiveness of Canadian products in international markets • Create connections between foreign companies and Canadian businesses
Regulatory Modernization	<ul style="list-style-type: none"> • Create a Regulatory Centre of Excellence • Work with the federal government to modernize regulatory environment to support the growth of Canada’s plant-based ecosystem

INTELLECTUAL PROPERTY STRATEGY



INTELLECTUAL PROPERTY STRATEGY

Protein Industries Canada continues to work to better understand stakeholder needs and opportunities related to intellectual property (IP) management in the agrifood sector. A key theme emerging from this consultation is the ongoing need for organizations, particularly SMEs, to have access to tools, training and expertise to support their understanding of strategic management of IP. The initiatives below describe actions that Protein Industries Canada continues to undertake to support Canadian organizations in the creation, protection, commercialization, and ultimately, value creation from intellectual property.

IP RATIONALES

Organizations participating in Protein Industries Canada supported projects are required to develop an IP Strategy for their project, referred to as the IP Rationale. The rationale process requires that project partners contemplate Background IP, Foreground IP and commercialization opportunities. The rationale is revisited at Steering Committee meetings and updated as required. Introducing the rationale process to project participants provides them with a basic framework for IP strategy development that can be applied to subsequent internal or collaborative technology development projects.

IP HUB

Protein Industries Canada has developed an IP Hub to serve as a marketplace for Intellectual Property created by Canada's agrifood sector. The IP Hub is accessible to Protein Industries Canada Members via an online portal. Conceived as a mechanism by which Protein Industries Canada Members may identify collaboration and licensing opportunities, the IP Hub is also available to academic and research institutes as a platform to build awareness around latent and emerging IP available for license.

LITERACY AND TRAINING

Stakeholder consultations indicate that Protein Industries Canada Members cannot easily access targeted and effective opportunities to better understand how to protect and leverage their IP. Protein Industries Canada will continue to diversify the type of training offered to members to ensure that training addresses specific risks facing organizations active across the value chain, including in plant breeding, digital technology/AI, value-added processing and product formulation. Members have also indicated that they face challenges in selecting service providers when pursuing IP protection. To address this challenge, Protein Industries Canada has resources available to connect members with prospective service providers.

IP ADVISORY COMMITTEE

Ensuring that the agrifood sector is well informed of IP opportunities and challenges is necessary to effectively translate innovation into economic output. In order to remain responsive to emerging IP trends in each of Protein Industries Canada's four technology pillar areas (*Create, Grow, Make and Sell*), and to strengthen IP management as the Supercluster matures, Protein Industries Canada has recruited an Intellectual Property Advisory Committee. The IP Advisory Committee is positioned to provide advice to the Protein Industries Canada Senior Leadership Team and Director of Intellectual Property regarding maximizing the benefit of Supercluster developed IP for Canadians, supporting member development of IP strategies and new initiatives that will benefit member organizations. Volunteer committee members have experience in Canada's agrifood sector and expertise in Canadian IP law, technology commercialization and growth of Canadian small/medium-sized enterprises.

IP SUCCESS STORY

Precision.ai, the Global Institute for Food Security (GIFS), Sure Growth Solutions Inc. and Exceed Grain Marketing came together to give Canadian farmers a new option to address a global concern: the demand for sustainably grown plant proteins that don't sacrifice quality or yield. By combining Precision.ai's artificial intelligence technology with GIFS's phenotyping software, they're developing pest-targeting intellectual property that balances modern farming practices with international marketing needs.

DATA AND ICT MANAGEMENT



DATA AND ICT MANAGEMENT

In 2021-22, Protein Industries Canada, together with our partners, invested in several capacity building and technology projects that support the overall goals of the data strategy. These investments include:

- 1) The Food Convergence Innovation (FCI) Canada – Food and Beverage Supply Chain Project.** The \$2.7 million project led by FCI-Canada focuses on creating a national, sector-wide platform with enterprise-to-enterprise connectivity capabilities, to help strengthen Canada’s domestic food supply chain. The national platform will help companies from across Canada make connections across the value chain by allowing them to post and search for specific products, services and partners within given geographic parameters. The FCI-Canada platform will also evolve to be responsive to supply chain disruptions such as those associated with COVID-19.
- 2) Improve Canadian Agriculture Sector’s Data Use -** This \$900,000 project will improve data use within Canada’s agriculture and agrifood sector. The project is led by the Enterprise Machine Intelligence and Learning Initiative (EMILI) in collaboration with the Alberta Data Institute (ADI), a program under Alberta Innovates, as well as a number of other participating organizations. The project focuses on four areas: using hands-on technology demonstration to explore the ability to share data along the value chain; researching data ownership, data privacy, and interoperability and standards for agrifood data; developing data literacy training programs for producers, technologists and others working along the food value chain; and creating an advisory working group to provide oversight and direction for next steps.
- 3) Technology-driven traceability and marketing partnership to improve competitiveness of Canada’s plant-based food sector –** This \$17 million, second phase of a partnership will improve traceability and marketing opportunities by creating a platform for Canada’s plant-based food, feed and ingredient sector. In this phase, the partners will leverage the power of connected field sensors, artificial intelligence and big data analytics to create a high-tech solution to enhance predictive modeling, digital traceability, and connectivity within the agri-food supply chain.

While there are no specific changes to Protein Industries Canada’s data strategy in 2022-23, collaborative activities related to data and ICT management will continue to occur across the ecosystem. This includes regular meetings with organizations actively involved in this space, such as Farm Credit Canada (FCC), the Canadian Agri-Food Automation and Intelligence Network (CAAIN), the Enterprise Machine Intelligence and Learning Initiative (EMILI), and the Alberta Data Institute (ADI). The goal of this collaboration is to address the issues and challenges related to data for the agriculture, value added and food processing sectors and to work collaboratively to advance data-based solutions.

In addition, steps will be taken to advance AI applications in the plant-based food space, supporting the Government of Canada’s Pan-Canadian AI Strategy (PCAIS), with a specific focus on building upon Protein Industries Canada’s initial investments. Leveraging Protein Industries Canada’s existing program architect and collaborative network, we will work with partners to create projects to support the adoption of made-in-Canada AI applications by Canadian agrifood businesses.

RISK ASSESSMENT AND MITIGATION STRATEGIES



Compliance
Financial
Strategic
Client
Political
Operational and Security

RISK ASSESSMENT AND MITIGATION STRATEGIES

Protein Industries Canada's strategic plan is the foundation for its risk management program. Risks are assessed quarterly by management and identified as low (green), moderate (yellow) and high (red). For any risk that falls into the moderate or high category, mitigation strategies are developed, and brought forward to the Audit and Finance Committee on behalf of the board.

RISK CATEGORIES

Management has identified six categories of risk. They are:

- Operational and Security;
- Compliance;
- Financial;
- Strategic;
- Client; and
- Political.

Operational and Security Risks are those associated with the day-to-day operations of the organization, as well as risks related to security of sensitive information of Protein Industries Canada and its stakeholders.

Risks in this category include protecting confidential business and employee information, and attracting and retaining high quality talent.

Mitigation strategies:

- A high level of IT security and protocol, access to the appropriate tools and software, as well as adoption of best practices by staff to protect data;
- The development of a performance management system; and
- Becoming a workplace of choice with a sound benefit package, flexibility around working hours/location and fulfilling work, which is appreciated and recognized.

Compliance Risks are those associated with operating pursuant to the Contribution Agreement, our Articles of Incorporation, Bylaws, the Canada Not-For Profit Corporations Act and all other regulatory or legal requirements.

Risks include ensuring consortium project members provide adequate project reporting to Protein Industries Canada and ensuring, in return, that Protein Industries Canada provides adequate reporting to ISED.

Mitigation Strategies:

- Completing proper due diligence and financial assessments on all project partners;
- Supporting project partners in meeting reporting requirements;
- Holding regular project Steering Committee Meetings; and
- Using tools to ease the capture and transfer of data between all the parties.

Financial Risks are those associated with the fiducial responsibility of the organization. Some of these risks include not expanding the full allocation of funding within the program mandate because the delivery of project outcomes is slower than planned, resulting in a delay in co-investment reimbursements, obtaining the required 25 per cent of operating funds from industry and other sources, and not securing \$153 million in industry matching funds by March 31, 2023.

Mitigation Strategies:

- Work closely with projects to monitor progress and accelerate projects where appropriate;
- Actively monitor and adjust forecasts of project spending so that any potential issue is identified as far in advance as possible;
- Re-direct underspent funds to new short-term projects, or additional eligible activities in successful projects, such as cyber security audits;
- Ensuring Protein Industries Canada has the support of industry and demonstrates continued relevance;
- Ensuring a detailed financial workbook with milestones are developed for each project, and that project progress is regularly measured against anticipated milestones; and
- Develop a thorough and timely reporting process for all projects, and for Protein Industries Canada's Board of Directors.

Strategic Risks are those associated with ensuring our investments are aligned with our strategic plan and supporting the projects with the best chance of driving the industry forward. The primary risk for this fiscal year is that the Supercluster does not attract additional funding from the Government of Canada to renew its plans after March 2023.

Mitigation Strategies:

- Prepare a proposal for additional investment through the Pan-Canadian AI Commercialization Stream, as well as explore opportunities with provincial governments, private sources of capital and other funding agencies.
- Selecting projects that align with Protein Industries Canada's strategic, Capacity Building and science plans;
- Engage dialogue with global leaders and invest in studies and research to understand the latest

developments, market trends and consumer demand;

- Have support from industry, academia and government.

Client Risks are those associated with the execution and ultimate commercialization of new products and processes for consortia members engaged in co-funded project execution. Clients face risks related to scientific uncertainty, regulatory uncertainty, securing IP, data protection, market access and commercialization/business outcomes.

- An iterative process of full proposal development where key risks are identified in the development of the project and methods or strategies for resolving or minimizing risks are identified;
- Bringing together of consortia members and collaborators with complementary and relevant expertise, milestone creation and go-no go decisions suitable to project plans;
- Regulatory risks identified early, with relevant expertise brought in as appropriate to help mitigate or move to resolution;
- Members are aware of potential cybersecurity risks to their business and have taken the appropriate steps to mitigate them;
- Intellectual property and data protection/sharing risks are addressed through collaboration within consortia, identification of best practices, IP literacy training and co-funding of activities; and
- Commercial risks are mitigated through thorough business case development, co-funding in projects, up- and down-stream consortia membership and support through ecosystem activities such as market knowledge, international market access, and skills and talent development.

Political Risks are those associated with Protein Industries Canada's relationships with all levels of government and relevance with industry – both domestically and internationally — and support for growing Canada's plant-protein sector. An example is ensuring that the Government of Canada continues to view agriculture and plant protein as an economic growth sector with continued investment.

Mitigation Strategies:

- Regular and proactive communication with federal and provincial elected officials and administration;
- Strong stakeholder engagement and relationship strategies to ensure support by industry leaders;
- Regular communication with members and stakeholders on our plans and progress.

KEY PERFORMANCE MEASURES



KEY PERFORMANCE MEASURES

Ongoing performance management is critical to measuring the success of Protein Industries Canada and the investments made across both the technology platform and ecosystem development.

In response, Protein Industries Canada tracks a series of operational and strategic metrics used to measure progress, impact and relevance.

- Increase in GDP contribution from participating small, medium and large firms to Canada's economy;
- Number of projects funded;
- Value of PIC investments in technology priority projects;
- Value of industry contributions in technology priority projects;
- Value of PIC investments in capacity building projects;
- Value of industry contributions in capacity building projects;
- Number of services, products or processes developed or improved by participants;
- Number of services, products or processes developed or improved that are commercialized by participants;
- Number of new positions/jobs created by industry project participants;
- The Collaboration Index by project (number of Ecosystem partners involved on a per-project basis);
- Protein Industries Canada membership by class and geography;
- Project milestone tracking against statement of work/project plan;
- Budget to actual expenditures; and
- Cash flow projections.

FINANCIAL REPORTING



FINANCIAL REPORTING

PROJECT FUNDING AND ANTICIPATED INDUSTRY MATCHING FUNDS

PROJECT FUNDING		FISCAL YEAR MARCH 31, 2023
Technology Projects	Industry Investment	\$73,355,297
	PIC Co-Investment	\$50,698,770
Total Investment in Technology Projects		\$124,054,067
Capacity Projects	Industry & Member Investment	\$1,911,470
	PIC Co-Investment	\$9,042,265
Total Investment in Capacity Projects		\$10,953,735
Overall	Industry & Member Investment	\$75,266,767
	PIC Co-investment	\$59,741,035
Total Investment in Projects		\$135,007,802

ANTICIPATED REVENUE FROM OTHER SOURCES	
Project Administration Fees	\$4,055,902
Membership	\$154,762
Other	\$84,000
Total	\$4,294,663

STATEMENT OF PLANNED EXPENDITURES	
Technology Program	\$50,698,770
Capacity Program	\$9,193,515
Salary & Benefits	\$3,692,652
Office & Administration	\$1,166,031
Events & Community Engagement	\$465,375
Total	\$65,216,342

STATEMENT OF CASH FLOW

CASH PROVIDED BY		FISCAL YEAR MARCH 31, 2023
Operations	Excess of Revenues Over Expense	\$(1,407,905)
	*Amortization of Property, Plant and Equipment	\$10,000
	*Amortization of Intangibles	\$7,400
	*Accrued Interest	-
	*items not involving cash	
Changes in Non-Cash Operating Working Capital	ISI Funding Receivable	-
	Accounts Receivable	\$(800,000)
	Prepaid Expenses	\$(130,000)
	Project Advances Receivable	-
	Accounts Payable and Accrued Liabilities	\$150,000
	Deferred Contributions	\$(10,597,000)
Total		\$(12,767,505)
INVESTING		
Purchase of Property, Plant and Equipment		\$(1,500)
Purchase of Investments		-
Purchase of Intangibles		-
Total		\$(1,500)
CASH		
Beginning of Period		\$14,953,088
End of Period		\$2,184,083
ANTICIPATED ISI FUNDING (CASH BASIS)		
Operating & Administration		\$3,957,390
Technology & Capacity Projects		\$43,434,602
Total		\$47,391,992



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