



SUSTAINABLE PROTEIN INNOVATION



MANITOBA PROTEIN RESEARCH STRATEGY

Defining the Research Ecosystem in Manitoba

Developed by Dr. James House, Professor at the University of Manitoba

Imagine Manitoba as the acknowledged global leader in sustainable protein. Though sustainability is our greatest challenge, it is also our greatest opportunity. The dream is an achievable one.

Industry, academia, government and non-profits are working together to strengthen Manitoba's position as a global leader in sustainable protein. Collectively, these stakeholders developed the [Manitoba Protein Advantage Strategy](#) – a comprehensive action plan to accelerate strategic sustainable protein initiatives. This strategy highlights the need for robust work on knowledge and information generation – one of the key pillars in the Manitoba Protein Advantage Strategy.

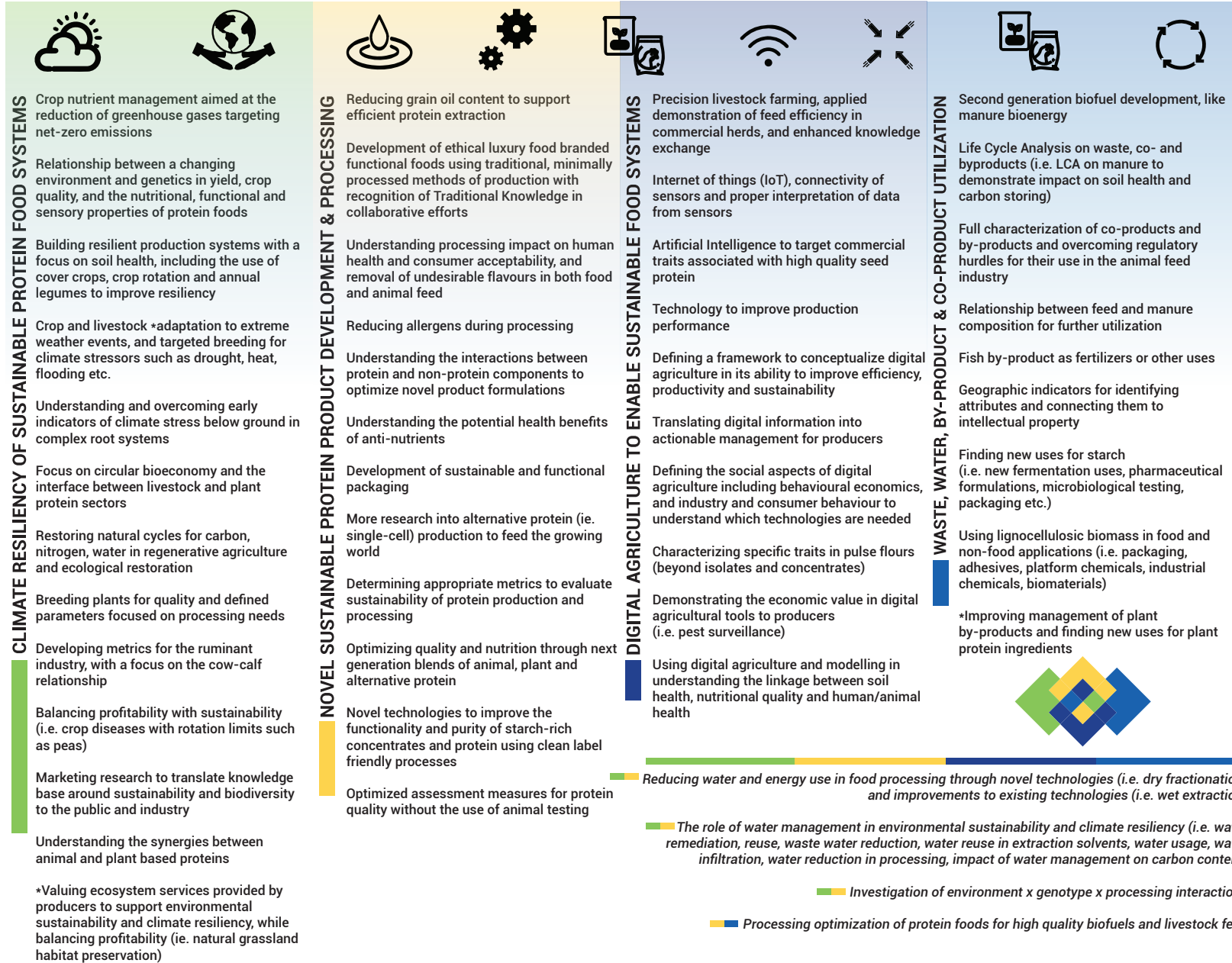
Manitoba has a robust research ecosystem, and with strategic direction and targeted resources, the province can advance its position as a leader in sustainable protein innovation. [Dr. James House](#), professor at the University of Manitoba's Department of Food and Human Nutritional Sciences, with the support of Research Associate [Dr. Erin Goldberg](#) (University of Manitoba) developed the Manitoba Protein Research Strategy (MPRS) to help advance Manitoba's Protein Advantage. The MPRS will serve as a work plan for a Strategic Research Chair in Sustainable Protein.

The MPRS identifies priority research gaps and their connections to the four factors of sustainability: health, environment, sociocultural, and economic. Beyond specific research expertise, MPRS envisions the future Chair to be a nexus for research collaboration and knowledge translation activities. By doing so, the Strategic Research Chair in Sustainable Protein will foster important connections between academia and industry while leading strategic research priorities that will attract investment in the protein sector for long-term economic growth.

The MPRS highlights 46 strategic research projects under four main themes:

1. Climate resiliency of sustainable protein food systems
2. Novel sustainable protein product development and processing
3. Digital agriculture to enable sustainable food systems
4. Waste, water, by-product and co-product utilization

Priority Areas in Sustainable Protein Research



Note: *In addition to the research gaps identified through the gap analysis, top priorities from our initial surveys were included if they were not already represented.



Rising Global Demand

With a growing world population and increasing income levels in emerging markets, the global demand for sustainable protein is continually rising. Protein produced and processed in Manitoba is among the world's highest quality. Identifying key research opportunities and potential challenges in the protein sphere is critical in advancing Manitoba's position as a global leader of sustainable protein.

Rising consumer awareness regarding adequate protein intake and the associated health benefits, concurrent with rising wealth in developing nations, has also contributed to this rise in demand for high

quality sustainable protein. The overall sustainability of the full production and utilization cycle is a key challenge facing the protein supply sector. Sustainability, as defined by the FAO/WHO, strives to achieve a balance between four factors:

1. Place minimal pressure and impact on the environment
2. Promote all aspects of an individual's health and wellbeing
3. Be accessible and culturally acceptable
4. Be economically viable and affordable

Key Recommendations

The key MPRS recommendations focus on the need for funding, collaboration with industry, training of highly qualified personnel and better understanding of provincial infrastructure.

1. Manitoba should focus efforts on the research priorities identified under the four themes of climate resiliency of protein food systems; novel protein product development and processing; digital agricultural and food systems; and management and utilization of waste, water, by-products and co-products.
2. Manitoba should develop targeted programming to advance the identified research priorities. Program design should consider both the capacity of enterprises and the public versus private outcomes.
3. Manitoba should continue to evolve the MPRS under the leadership of a Strategic Research Chair in Sustainable Protein.
4. Manitoba should leverage existing committees and structures to support the Strategic Research Chair in Sustainable Protein to strengthen collaboration within Manitoba's robust protein research ecosystem and guide programming to advance the MPRS.
5. Manitoba should strengthen synergies between government, the research community and industry through networking opportunities and digital tools via the development of a Sustainable Protein Research Network.
6. To build momentum on the MPRS, Manitoba's protein research community should collaborate with global experts and institutions to advance common strategic priorities in protein research and innovation.



Conclusions

The MPRS identified key priorities such as increased collaboration between academia, industry, and government, and a focus on sustainability throughout the food system. Government is seen as a facilitator to advance research priorities through appropriate funding programs, a connector between industry and researchers and a provider of strategic policy direction.

Appropriate funding programs remain an important component to advance the strategy. Programs such as public/private cost-sharing and the partnerships needed to advance shared priorities must be further evaluated. In particular, the current 50:50 cost-matching structure may not be suitable for all project priorities and partnership structures.

Upon reflection of the research gaps identified through the MPRS, it is recommended that the province considers supporting a Strategic Research Chair in Sustainable Protein to advance the Manitoba Protein Advantage Strategy. The Chair will focus on

the areas of sustainability, particularly in relation to the four themes identified by the MPRS including: climate resiliency of sustainable protein food systems, novel sustainable protein product development and processing, digital agriculture to enable sustainable food systems, and waste, water, by-product and co-product utilization. The Chair should possess a strong record of past research funding, training HQP to advance sustainable protein research in Manitoba, and be a focal point for knowledge translation and training activities.

The Manitoba Sustainable Protein Research Symposium is an important element in knowledge transfer, placing local research at centre stage of the changes sweeping the global sustainable protein food system, and creates opportunities for collaboration with industry and other researchers across the entire protein research ecosystem in Manitoba, Canada, and the world.

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