Sustainable Protein Impact Map: A Collaborative Action Framework Accelerating Innovation to Realize Manitoba's Impact Potential Important Definitional Notes SP - Sustainable Protein (as in Initiative/ Sector / System including often the closely associated agriculture [1] Principles of Reconciliation as described in "What We Have Learned - Principles of Truth and Reconciliation (pp3-4), 2015. Truth and Reconciliation Commission of Canada. [2] Circular Economy principles: A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. Sustainable Protein Action Framework* — **PRIORITIES** [3] Fit-for-purpose means tabular, spatial, meta and are forms of information and knowledge that are relevant, authoritative, complete, accurate, integratable, inoperable, and affordable. [4] 21st Century competencies involve the ability to meet complex demands, thrive in a world where change is agriculture and food sectors. The work was undertaken by participants of the Sustainable Protein Innovation Forum on January 28, 2021. Each individual could select constant and continuous learning draws on many different complementary of skills such as: learning - critical ULTIMATE BENEFIT thinking, creativity, collaboration, innovation, self-direction, accountability, and communication; literacy - digital Developed as part of Manitoba's Sustainable Protein Advantage Strategy, under the guidance of Manitoba Agriculture and Resource information, media, technology; and life skills - flexibility and adaptability, leadership, initiative, productivity, and Development and the Manitoba Protein Consortium. and the world as an innovative [5] Sustainability strives to attain balance across four dimensions: (a) place minimal pressure and impact on the model for high-value sustainable Feb 18, 2021 ver. (35.75 x 29") protein that nurtures and benefits environment: (b) promote all aspects of an individuals health and well being: (c) be accessible and culturally acceptable; (d) be economically viable and affordable (source FAO, WHO). all people, the local environment, Members of the Design Team and the climate [6] For example, to inform, advance, and communicate policies, practices, research, innovative enterprise. This Sustainable Protein Action Framework was co-created industry, marketing, measurement and valuation, consumers, and the public. through the generous contributions and guidance of a **Local Environment** [7] For example, Indigenous People with traditional knowledge, scientists and researchers, analysts, marketers, diverse Design Team: practitioners, policy-makers, communicators, management-planners, etc. Chris Anderson - Protein Industries Canada [8] UN SDG goals, and in particular #4 - Quality Education; #5 - Gender Equality; #8 - Decent Work and BE03 Public knowledge of and trust in BE04 MB contributes to UN Sustainable Development BE14 The local BE02 MB is are reduced and carbon regarded as a sustainability leader – in Canada and globally and is a sustainable Dominique Baumann - Roquette globally competitive and secures Economic Growth; #10 - Reduced Inequalities; and #16 - Peace, Justice, and Strong Institutions. is strengthened with enhanced Sav Bellissimo - Federated Co-op Ltd [9] This intervention and outcome draw on the Conclusions - Other Considerations section of a 2017 report titled ecosystem services. Carson Callum - Manitoba Beef Producers "Matchup: A Case for Pan-Canadian Competency Frameworks" by the Canada West Foundation. improved water Tim Faveri - Maple Leaf Foods [10] OCAPTM principles are complied with regarding the right of First Nations to own, control, access, and protein supplier possess information about their Peoples. Bruce Hardy - Myera Group _.._.._.. Wayne Hiltz - Manitoba Chicken Producers Jim House - University of Manitoba _____ Marcel Joaquin - IQFoodChain LONG-TERM GOAL **MEASUREMENT** Egbert Frank Knol - Topigs Norsvin MMV01 MB and individual MONITORING. Susie Miller - Canadian Roundtable for Sustainable Crops actors in the SP system measure, report, and LTG01 Through strengthened collaboration and accelerated innovatio AND VERIFICATION Duncan Morrison - Manitoba Forage & Grasslands Association **SOIL, ECOSYSTEMS** value respectively their collective and individual Manitoba realizes its collective and equitable potential to produce Lee Anne Murphy - Protein Highway protein that is diverse, high quality, healthy and increasingly & BIODIVERSITY sustainable protein activities Henry Rowlands - Detox Project and make adjustments Denis Tremorin - Pulse Canada David Weins - Dairy Farmers of Manitoba Robin Young - Food Development Centre SUSTAINABLE and makes adjustments **BENCHMARKS** MMV20i Measure reductions and storage are defined and tracked MMV05 MB establishes baseline data and benchmarks on which to measure improvements and performance against other jurisdictions - e.g., Climate Change ENVIRONMENT SP23 Water and energy reduction in processing is accelerated SE04i to SE09i Individually or a mix of -Longer-term outcome natural area, crop, agricultural, and by-product systems [D] inclusive of Indigenou product systems [2] modern traditional experience and learnings manner TINIANICE /EI\ Functional area outcome MMV22i Measure MMV19i Measure and track performance of key sustainability metrics, to be determined Intermediate outcome SP16i Promote and develop non-food uses for bi-products This list of sustainability attributes will need to be assessed for applicability to MB RESOURCING AND FUNDING Group of related types of (leveraging existing methodologies as applicable) VALUATION MPACT FINANCE **----flos INVESTMENT to support growth in SP production and value-added processing, increases PARTNERSHIP RESOURCES 13 SP outcome and impact - focused financing models (non-traditional finance) can be deployer and scaled FI16 The corporate community is more confider with its investments in SP activities FI17 The financial community supports and invests more in SP businesses and initiatives **Priority** IN14 SP approaches and benefits are demonstrated and showcased at scale at living labs are uncovered, advanced and tested IN20 More companies and other organizations are attracted to and engage with MB's SP research and innovation system IN16 MB is able to leverage best-in-class thinking (e.g., dircularity) to accelerate SP innovation IN17 Limited SP resources are focused in the important activities first (e.g., greatest leverage, critical path, etc.) IN10 More value-add P partnershi with players outside MB are created 21 Government incentives (i.e. tax incentives) encourage development and adoption of novel SP approaches FI18i Develop and implement tailored investment structures for Indigenous businesses IN12 Stronger and more trusting Indigenous partnerships focused on SP are created FI15i Deploy funding and financial support program for SP projects that are guided by defined sustainabi priorities FI20i Implement MB carbon pricing through policy and regulatory tools and Outcomes COMMUNICATIONS aM14 AGRICULTUR' INTEL: Understandir of regional, global sustainable agriculture practices and technologies is improved IN17i Establish priority criteria, odated periodically and apply them to set an innovation agenda IN16i Identify, adopt and apply leading sustainability approaches and frameworks WF11 The SP initiative embraces diversity, inclusivity, equitability with its workforce and learning systems WF16 The SP sector natches peop with the right jobs, and jobs with the right people better, more quickly, and less expensively WF12 Indigenous community cohorts have the knowhow to create, grow, and sustain Indigenous SP businesses in their community BM28 MB has more strategic exchanges with international forums on sustainability, climate change, and biodiversity BM18 The SP sector LEVERAGES CANADA'S positive agri-food and environment brands BM17 Compellin, innovation and sustainability STORIES inspire and engage more people in the SP sector journey BM19 MB DIFFER-ENTIATES itself based on its inherent strengths, actions underway and potential BM25 The SP supply chain can better assess and capitalize on SP market opportunities BM22 Consumers are more aware and literate of protein production, processes and products (whole value chain) BM26 MB capa to develop new SP marke (incl. for niche protein products) is increased appropriate access to relevant, reliable, and usable information, knowledge, and intellectual IK03 SP data, information and knowledge are fit-for-purpose [3] to better support the SP initiative & KNOWLEDGE **KNOWLEDGE NEEDS** WF11i Design and implemen equitable learning and work opportunity approaches for Indigenous Peoples, genders, newcomers, and people WF10i Design, develop, and implement new innovative learning models led and owned by Indigenous Peoples founded on OCAP principle [10] WF16i Develop and deploy rapidly, and iteratively improve a minimum viable core competency product for the SP sector rother sector WF15i Craft and market compelling narratives that SP sector employees and learners see themselves in WF12i Design and implement learning programs for small Indigenous community cohorts centred around SP business opportunities BM20i Assess, adopt, deploy (and integrate where appropriate leading MMV and reporting methodologies BM22i Create and share communication and educational materials on MB's SP journey and story BM27i Partner with relevant domestic and internation players that are at the leading edge of understandir BM24i Suppor for industry-led market development and targeted missions IK11 Available research experfise in the natural, health, and social sciences and engineerin fields is better known IK17 SP-related land resource management information and research knowledge needs are better known IK14 Business industry, and other key stakeholde can utilize knowledge more easily to create relevant business value INFRASTRUCTURE & INFRASTRUCTURE ALUES & PRINCIPLES COLLAB SKILLS IK14i Translati SP knowledge for consumptio by business, industry, government, and other across the value chain PIO9 ICT: Necessary information documenicatio technology infrastructure and Feiated services are available to support needs of the SP-supply chain WT04 Contributor to the SP initiative share and exempli a common set of values and PI04 R&D: Leading edge research and innovation infrastructure, facilities, and equipment supports MB's SP initiative PI07 TRANSPORT The current and future transportation and distribution needs can be accommodated appropriately PI10 WASTE Necessary waste and recycling facilities and services are available to support current and future the SP supply chain meeds PIO3 NEEDS: SP-related infrastructure development needs are better known, and opportunitie are ready to be acted on ("shovel-ready") PI06 CLEAN ENERGY: The current and future renewable and alternative energy needs can be accommodat appropriately focus groups, etc. to assess current situation VT10 Contributor to the SP initiative experience tangible early benefits of collaboration Pl03i Develop an infrastructure gap analysis, strategy and business case across the SP supply PIO4i Invest in R&D and commercialization infrastructure (e.g., equipment lab, testing and scale-up facilities) PIO5I ASSESS and communicate current and future energy needs, including operating costs, of the SP supply chain periodically and communicate current and future transportation and distribution needs, costs, and plans of the SP supply chain periodically and communicate current and future renewable and alternative energy needs, costs, and plans of the SP supply chain periodically and communicate current and future Internet and related service needs, WT16i Affirm, communicate, and follow a shared set of principles for the SP initiative (Ten Principles of Reconciliation [1]; Circular Economy [2], Sustainability WT13i Declare w109/SP-related funding programs utilize evaluation criteria requiring strategic collaboration in relation to SP strategies and plans WT14i Provide WT10i Focus collaborative work initially on priority pre-competitive, public good, or complex problems requiring collaboration your organization's intention to support the SP initiative, integrate it in your plans, and deliver repeatedly recruit, and develop champions and leaders advocating collaboration at all levels across the SP sector SP contributors with ongoing opportunities to understand, respect and be true to the values equality, diversity, and inclusion including operating costs, of the SP supply chain periodically and report on a periodic survey of current SP actors of their challenges, opportunities across the sector formal and informal networks throughout the SP sector locally to globally strategies and actions of SP initiative contributors to identify and act on complementarities and synergies programs on proven collaborative innovation approaches, processes and tools approaches and systems that are fair and treat all people respectfully Pl23 Procurement policies better support SP, recycling, and sustainability goals generally 118 SP employers can have access to a larger ool of newcomers to choose from PI24 Win-win HR solution are implemente that both protect union jobs while also enabling innovation PI22 Cross-jurisdictional exchanges and equivalenc are more efficient and less PI14 Crown land plans account for the long-term benefits of ecosystem goods and services in agricultural landscapes PI20 MB's regulatory and policy environment is easier to navigate for SP-related businesses 115 Governmer policies encourage R&D in and early adoption of novel SP approaches PI17 By-product use and safety approval processes are progressive PI21 Innovative regulations and policies arget reduction of waste This Sustainable Protein Action Framework* has ``` been developed as part of Manitoba's Sustainable Protein Strategy. Consulting led by Pl17i Engage in forward-looking policy dialogues and advocate for by-product use and safety (e.g., for livestock feeding) Nork Pl20i Review and streamline on SP-related idea regulations nept and policies and policies supportive of waste reduction, reuse and recycling, sustainable packaging) Pl21i Engage in dialogue and advocate for better policies supportive of waste reduction, reuse, and recycling systems [I] Pl22i Initiate a dialogue toward better harmonization of cross-jurisdictional regulations and standards PI23i Engage in policy dialogues to explore how procurement might support or help drive the SP agenda Pl24i Initiate a collaborative dialogue between SP and unions to explore any potential barriers to innovation PI18i Engage in a dialogue and advocate for more flexible immigration policies supportive of SP human resources needs Sustainable Growth Co Outcome Mapping led by R. Keith Jones & System® (CDS) Colllaborative Outcome

Theory of Change methodology and Kumu online system mapping software