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* [3] Fit-for-purpose means tabular, spatial, meta and are forms of information and knowledge that are relevant, ULTIMATE BENEFIT authoritative, complete, accurate, integratable, inoperable, and affordable. Developed as part of Manitoba's Sustainable Protein Advantage Strategy, under the guidance of [4] 21st Century competencies involve the ability to meet complex demands, thrive in a world where change is Manitoba Agriculture and Resource Development and the Manitoba Protein Consortium. constant and continuous learning draws on many different complementary of skills such as: learning - critical **BE01 Manitoba proudly leads Canada** and the world as an innovative thinking, creativity, collaboration, innovation, self-direction, accountability, and communication; literacy - digital Feb 18, 2021 ver. (35.75 x 29") model for high-value sustainable information, media, technology; and life skills - flexibility and adaptability, leadership, initiative, productivity, and **Members of the Design Team** protein that nurtures and benefits all people, the local environment, This Sustainable Protein Action Framework was co-created [5] Sustainability strives to attain balance across four dimensions: (a) place minimal pressure and impact on the environment; (b) promote all aspects of an individuals health and well being; (c) be accessible and culturally through the generous contributions and guidance of a Local Environment acceptable; (d) be economically viable and affordable (source FAO, WHO). diverse Design Team: [6] For example, to inform, advance, and communicate policies, practices, research, innovative enterprise. Chris Anderson - Protein Industries Canada industry, marketing, measurement and valuation, consumers, and the public. Dominique Baumann - Roquette **Benefits** BE09 MB's agriculture and food workplace is safe and healthier for BE10 Reconciliation with Indigenous Peoples is advanced BE03 Public knowledge of and trust in the agriculture BE06 MB's economy grows with BE07 MB attracts and secures BE08 MB communities are more resilient BE14 The local BE04 MB contributes to UN Sustainable [7] For example, Indigenous People with traditional knowledge, scientists and researchers, analysts, marketers, regarded as a sustainability leader – in Canada and globally and is a sustainable Sav Bellissimo - Federated Co-op Ltd is strengthened with enhanced new talent practitioners, policy-makers, communicators, management-planners, etc. Carson Callum - Manitoba Beef Producers ecosystem services, improved biodiversity [8] UN SDG goals, and in particular #4 - Quality Education; #5 - Gender Equality; #8 - Decent Work and creation, and Tim Faveri - Maple Leaf Foods Economic Growth; #10 - Reduced Inequalities; and #16 - Peace, Justice, and Strong Institutions improved water Bruce Hardy - Myera Group [9] This intervention and outcome draw on the Conclusions - Other Considerations section of a 2017 report titled Wayne Hiltz - Manitoba Chicken Producers "Matchup: A Case for Pan-Canadian Competency Frameworks" by the Canada West Foundation. _.._.._.. Jim House - University of Manitoba [10] OCAPTM principles are complied with regarding the right of First Nations to own, control, access, and possess information about their Peoples. Marcel Joaquin - IQFoodChain Egbert Frank Knol - Topigs Norsvin LONG-TERM GOAL **MEASUREMENT** Susie Miller - Canadian Roundtable for Sustainable Crops MONITORING. Duncan Morrison - Manitoba Forage & Grasslands Association MMV01 MB and individual actors in the SP system AND VERIFICATION LTG01 Through strengthened collaboration and accelerated innovation Lee Anne Murphy - Protein Highway measure, report, and value respectively the SOIL, ECOSYSTEMS Manitoba realizes its collective and equitable potential to produce Henry Rowlands - Detox Project & BIODIVERSITY protein that is diverse, high quality, healthy and increasingly Denis Tremorin - Pulse Canada sustainable protein activities provide ecosystem goods and services; are healthy, resilient, David Weins - Dairy Farmers of Manitoba ______ Robin Young - Food Development Centre MMV02 COLLECTIVE: MB measures, reports, and values its collective **PROTEIN: The** this impact map, and makes adjustmen PERFORMANCE BASELINE / MMV13 GHC & CARBON reductions and storage are defined and tracked SE07 Intact and restored grasslands and wetlands are integral contributing components of healthy agricultural systems SE08 Water and hydrology are integral to an integrated farming landscape and are in balance with natural and agricultural SE10 Landscapes regionally have the ability to buffer climatic events like floods and droughts better MMV05 MB establishes baseline data and benchmarks on which to measure improvements and performance against other jurisdictions MMV21i Assess, modify and adopt core overarching SP metrics on which to measure and communicate action [E] For example, organic matter, soil structure, and mircobiome carbon, nitrogen and other nutrient retention and cycling, water infiltration and holding capacity, microbiome Longer-term outcome SP21 Modern technology [a] enables protein inputs and practices to be increasingly sustainable SP23 Water SP24 Regenerative and energy management practice in processing of trooms SE01 as interested and supported as the process of the second sec SE04i to SE09i Individually or a mix of — adopt, adapt, or develop, and implement, Functional area outcome ______ MMV22i Measure and track performance of key "hallmark" `-------------in an integrated manner Intermediate outcome MMV13i to MMV19i Measure and track performance of key sustainability metrics, ·-----SP19i Adopt production approaches and procurement that minimize inputs (incl. fertilizer) FINANCE (FI) MMV17 ANIMAL WELFARE benefits SOCIAL are defined and tracked sustainably as long as usiness value RESOURCING incentives, returns, and benefits from delivering sustainable IC1 Modern technology include Group of related types of AND FUNDING ******************* leading pest, disease, methane FINANCING AND INNOVATION ~---and technology applied to deliver a performance improvement. It is not just an idea, but an idea that has been made to work. impactful SP activities and grows globally MMV08i to MMV11i PARTNERSHIP RESOURCES FI17 The financial community supports and invests more in SP businesses and initiative FI21 Voluntary carbon verification valuation and aggregation programs and platforms are utilized in MB ent FI20 Valuation and/or trading of carbon reductions can be accounted RKET INTELLIGENCE IN13 Early IN14 SP approaches adopted farm-lard benefits level management are demonstrated practices and showcased are supported at Scale are uncovered, and rewarded labs IN15 More innovative potential potential potential potential are suitions are supported at Siving advanced and rested IN21 Government incentives (i.e. tax incentives) encourage development and adoption of novel SP approaches IN12 Stronger and more trusting indigenous partnerships focused on SP are created **AND MARKETING** BM14 AGRICULTL INTEL: Understand of regional, global sustainabl agriculture practices and technologies is improved 07 DIFFERENTIA MB positions itself as a leader, outdoing other jurisdictions BM13 SUSTAINABILITY INTEL: Understanding of global sustainability priorities and activities is improved IN12i Build stronger indigenous relationships focused on SP business opportunities IN11i Develop networks and cross-sectoral partnerships in MB [G] IN14i Design and support model SP pilot projects WF12 Indigenor community cohorts have the knowhow to create, grow, and sustain Indigenor SP businesses in their community WF09 Learning programs are responsive to current and future needs of the SP sector and labour force WF16 The SP sector natches peop with the right jobs, and jobs with the right people better, more quickly, and less expensively BM19 MB DIFFER ENTIATES itself based on its inherent strengths, actions underway and potential 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 environmenta brands BM25 The SP supply chain can better assess and capitalize on SP marke opportunities BM20 The SP sector LEVERAGES LEADING SUSTAIN-ABILITY APPROACHES (e.g., circularity) IK03 SP data, information and knowledge are fit-for-purpose [3] to better support the SP initiative to relevant, reliable, and usable information, knowledge, and intellectual property to advance (6) the SP agenda & KNOWLEDGE KNOWLEDGE NEEDS PROPERTY WF12i Design and implement learning programs for small Indigenous community cohorts centred around SP business opportunities WF11i Design and implement equitable learning and work opportunity approaches for Indigenous Peoples, genders, newcomers, and people with disabilities BM21i Define and apply to branding communications and marketing, MB's SP principles (which work for all sizes BM27i Partner with relevant domestic and internationa players that are at the leading edge of understanding BM17i Craft narratives based on SP activities and validated by the total BM24i Suppor for industry-led market development and targeted IK17 SP-related land resource management information and research knowledge needs are better known IK19 SP-related measurement and valuation information and research knowledge needs are better known IK22 SP-related data, information research, knowledge, and IP is shared and **LLABORATION** & INFRASTRUCTURE IK22i Establish context-appropriate between Indigenous protocols for the sharing and use of SP-related data, information, research, knowledge, and IP by pnon-Indigenous protocols. IK14i Translate SP knowledge for consumptior by business, industry, government, and other across the value chain WT04 Contributors to the SP initiative focus groups, etc. to assess current situation PI10 WASTE Nécessary waste and recycling facilities and services are available to support current and future the SP supply chain needs PIO3 NEEDS: SP-related infrastructure development needs are better known, and opportunities are ready to be acted on ("shovel-ready") PI05 ENERGY FRASTRUCTURE Necessary energy and related services are available to support current and future the SP supply chain needs PI06 CLEAN :: ENERGY: The current and future renewable and alternative energy needs can be accommodated appropriately PI07 TRANSPORT: The current and future transportation and distribution needs can be accommodated appropriately share and exen a common se of values and ~----and communicate current and future energy needs, including operating costs, of the SP supply chain periodically PIUsi Assess and communicate current and future Internet and related service needs, including operating costs, of the SP supply WT11i Create and leverage formal and informal networks PI22 Cross-jurisdictional exchanges and equivalencie are more efficient and less costly PI20 MB's regulatory and policy environment is easier to navigate for SP-related the SP sector locally to globally to identify and act on complementarities and synergies or complex problems requiring collaboration collaboration at all levels across the SP sector approaches, processes and tools PI24 Winwin HR solutions are implemented that both protect union jobs while also enabling innovation PI25 HR policy barriers on recruitment criteria are more flexible PI17 By-product use and safety approval processes are progressive PI21 Innovative regulations and policies target reduction of waste PI23 Procurement policies better support SP, recycling, and sustainability goals generally PI18 SP employers can have access to a larger pool of newcomers Pl17i Engage in forward-looking policy dialogues and advocate for by-product use and safety (e.g., for livestock feeding) PI24i Initiate a collaborative dialogue between SP managers 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 PI19i Work with regulators early on in the idea and concept development process PI21i Engage in dialogue and advocate for better policies supportive of waste reduction, Protein Strategy.

[I] For example on-farm manure



system mapping software

