SFF Futures Outcome Logic Model for Puro

Long term Outcomes (at end of programme and years after)

Puro has developed a unique market position, selling organic, premium product to global pharmaceutical and wellness product manufacturers. Puro is focused on value not volume. Puro is agile in its breeding and production capabilities, able to meet the changing requirements of its customers as evidence on the health benefits of specific cannabinoids, and market demand, and regulations evolve. Puro's business model is proven. Outdoor yields per hectare have doubled and indoor yields per sq. m have increased 60% due to the application of agronomy learnings and agritech.

Outcomes for project duration

- By 2034, Puro has captured a global market position valued at up to NZ$100M per annum.
- By 2034, creation of up to 200 FTE, and a new Contract Grower Model for organic production.
- By 2024, Cadetship programme and Organic manufacturing Roadmap in place.
- New Zealanders have increased access to quality, trusted, affordable medicinal cannabis bioactives and their health benefits.
- Improved land use and environmental outcomes from organic growing methods.
- Increased automation of harvesting, drying, processing and packaging.
- Clear pathway to export markets and increased visibility for NZ products.

Outputs

- Development of an open-source agronomic farming system growing premium medical cannabis products outdoors, organically, in NZ.
- Agri-tech (data, AI, sensors, automation and mechanisation) is applied.
- Streamlined processing options (less handling/reduction in damage to product), best drying methods, and fit for purpose packaging and storage conditions have been identified and validated.
- Harvest of high-value crops and sale of premium product to local and export markets.
- Breeding database established and hybrid seed developed, to achieve new genetics, supporting cultivar performance, disease tolerance and organic cultivation.
- Proof of concept to achieve pharmaceutical consistency of organic cannabis flower produced via indoor cultivation, with year-round understandings of key inputs and parameters, and the influence of protected cropping environments on plant yield and quality.

Activities (Across entire programme)

- Harvesting, drying, processing and packaging trials.
- Quantitative cultivar and seed breeding to develop a 'genetic bank' linking the genetic profiles of medicinal cannabis varietals to the health and wellness solutions required for specific human health conditions.
- Working with providers to develop employment, skills, career and education pathways and programmes.
- Waste products and organic manufacturing roadmaps, to inform future investment in prioritised opportunities.
- Trial of on-farm practices and methods to determine an agronomy "handbook" (proof of concept) for growing and producing high quality pharmaceutical grade cannabis outdoors in New Zealand conditions, to organic methods.
- Apply learnings from Puro's start-up research facility and piloting them in a pre-commercial scale protected cropping environment to achieve a Proof of Concept for pharmaceutical consistency in flower production.
- Feasibility studies and market and consumer insights to inform future investment in prioritised innovation opportunities, and improve visibility and export opportunities for NZ.

Enablers & Inputs

- Data driven science and R&D
- Engagement with regional stakeholders and nationwide industry participants.
- A deep understanding of genetics, organic farming, cultivation and drying systems.
- Co-investment and collaboration with Government.

Problems & Opportunities

- The significant health benefits derived from a range of cannabinoids is now proven in NZ, but we rely on imported products, for which we pay a substantial price premium.
- The price of medical cannabis products in NZ currently drives a black market in products of dubious quality and efficacy, and drives the crime often associated with black market production and distribution.
- NZ's regulatory regime gives us a unique competitive advantage to develop a premium, organic, high value ingredient market position.
- Worldwide demand for organic medical cannabis is expected to outstrip supply – accredited growers are achieving 90% premiums. E.g. There is a shortage of flower in Australia.
- The global medicinal cannabis market is forecast to be worth up to US$211 billion by 2035.
- Puro must take on the 'first mover' risk required to innovate and achieve Proof of Concept for an organic industry.

Additional benefits for the sector and New Zealand

- Development of a new, high-value industry for Marlborough and Kaikōura, diversification of the regional economy, and diversification of national exports.
- Development of a robust supply chain and reduced costs for NZ medical cannabis manufacturers.
- Growth in downstream processing and manufacturing as the industry grows, innovates and leverages new product development opportunities.
- Opportunities developed for farmers to diversify into a crop that can be integrated into existing farming systems.
- Increased R&D, science, biotech and agronomy capability to support ongoing investment in the emerging sector.
- NZ's ~~tertiary~~ education providers develop pathways and expertise to meet the training needs of the emerging sector.
- Potential industry value to NZ economy of $552m by 2029.
- Circular economy benefits, including utilisation of waste streams for new product development.

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