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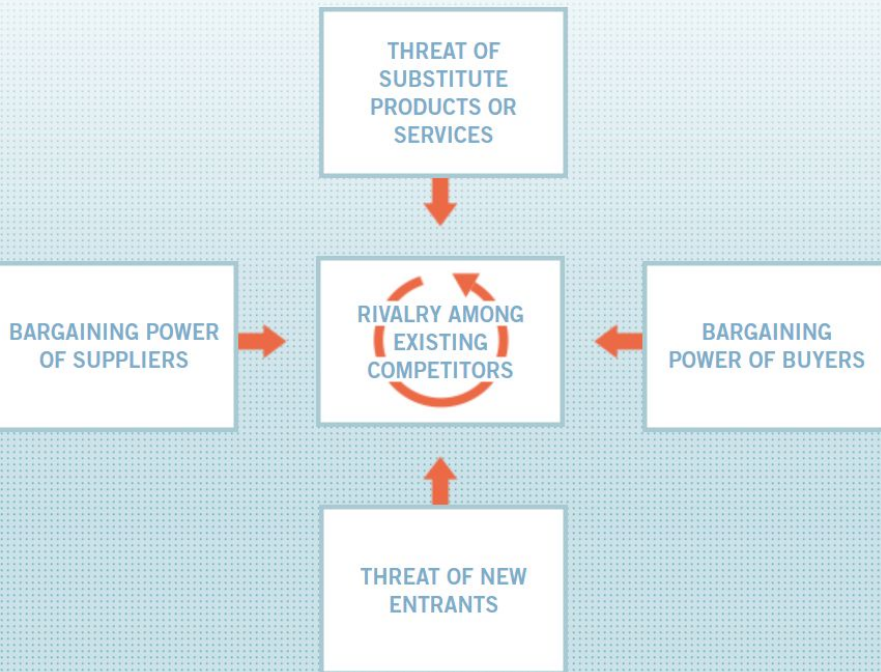
2019-2021 Industrial

Cannabis (seed and Fibre)

- Industry Analysis

Industry Analysis – Low, Medium and High Intensity

The Five Forces



THE FIVE FORCES IS A FRAMEWORK FOR UNDERSTANDING THE COMPETITIVE FORCES AT WORK IN AN INDUSTRY, AND WHICH DRIVE THE WAY ECONOMIC VALUE IS DIVIDED AMONG INDUSTRY ACTORS.

First described by Michael Porter in his classic 1979 *Harvard Business Review* article, Porter's insights started a revolution in the strategy field and continue to shape business practice and academic thinking today. A Five Forces analysis can help companies assess industry attractiveness, how trends will affect industry competition, which industries a company should compete in—and how companies can position themselves for success.



Barrier to Entry – High

- comparative regulatory environment - **high**
- production practice & materials intensity- **high**
- labour equipment and cost of money- **high**
- access to distribution channels **low** –resulting in **high** entry barrier
- high levels of proprietary knowledge – **high**
- access to favourable locations, raw materials, know-how- **low** (results in **high** barrier)
- high learning curve - **high**
- presence of government subsidies – **low to High State Dependent**



Supplier Power – High

- CR4 of the top 4 ASX listed firms control over \$ 900 million of the \$1.7 billion industrial cannabis sectorial listing. – **low (but significant)**
- the concentration of supplier power in PBR seed owners. **-high**
- rely on inputs from non-Australian sources. - **high**
- limited value adding facilities- **high**
- limited supply chain cohesion- **high**
- supply chain and value adding concentrated in the larger actors in the sector- **high**
- R&D proprietary based in limited control - **high**



Buyer Power Intensity– High

- buyer power concentrated in plant breeding rights and seed supplier. - **high**
- final consumption dominated by seed provider buy-back contract models. - **high**
- difficult to establish backwards or forward integration due to plant breeding rights and buy back business models. - **high**
- pricing sensitivity is present imported seeds @\$1.80/kg (2019)
- buy back of seeds @\$2.85/kg domestic production (2019)
- larger companies control most seed supply in the order of tens of tonnes per annum. - **high**
- Small to medium suppliers of seed are in the order of ten's -hundreds of kilograms of seed per annum. - **low** (result in **high** intensity)



Substitutes for local Production – Low

- closest generic crops canola, cotton and kenaf- **low**
- above crops are empirically known and retain well established markets and supply chains. - **low**
- canola and cotton supply 90% of all oil seed production. - **low-medium**
- no real substitutes for industrial hemp provision in the food, fibre, health, and carbon sequestration. - **low**
- ability to potentially provide all required amino acids for human nutrition difficult to replicate with other plant sources. - **low**



(Competitiveness) Rivalry Intensity – Low

- Whole crop use- **low**
- Regulation & Legislation for whole crop usage relatively high (result **low**)
- Access to suitable seed & agronomic information- **low**
- Closed loop business model that compels the sale of seeds back to supplier -**low**
- Inexperience with cropping and value chains - **low**
- Lack of scale production for cropping, harvest, seed, fibre, and health products-**low**
- Lack of supply chain connectivity and sophistication - **low**
- Education - **low**
- Attraction of investment funds - **low**
- Information transparency - **low**
- Strategic support government and non-government – state based variation but considered **low** due to relatively small industry production size
- Relative crop yield vs growing conditions - **low**



Barrier's

response

Substitutes

- Create a **centralised transparent web** presence for industry relevant information including regulations.
 - Undertake Research Development and Innovation (RD&I) to support cropping and **supply chain support**. Especially with tropical varieties and the value improvement of seeds and fibre at a 'up stream industry level'.
 - **Value adding** to access new markets-'down stream industry level'.
 - Develop north Queensland **cluster** of supply chain firms from growing to value adding and export at a 'industry level'.
- All of chain **education** at a 'industry level'
 - Develop north Queensland **cluster** of supply chain firms from growing to value adding and export at a 'industry level'.
 - Supply chain logistics **coordination undertaken from a** 'Mid stream industry Level'



Supplier

response

Buyer

- Work with the companies of adequate size, credible regionally significant players, and Aust-Queensland Associations. Use Pull Strategy to assist with developing the supply chains and value chains. **Clustering** of local strategic industry partners, localised growing, harvesting and storage trials.
 - Develop north Queensland **cluster** of supply chain firms from growing to value adding and export at a 'industry level'.
- Loose cooperative or **cluster** approaches to market access at a 'industry level'
 - Use Research Development and Innovation (RD&I) and industry development approaches to actuate down stream industry to want to use crops grown in Qld.
 - Develop north Queensland **cluster** of supply chain firms from growing to value adding and export at a 'industry level'



Regionality Rivalry & Competitiveness

response

- North Queensland can produce **2+ crops per annum** making it a productive yield environment- tropical agronomics withstanding. (**establish comparative advantage**)
- Develop a north Queensland **cluster of supply chain firms** from growing to value adding and export. (**Regional Development Cluster**)
- Utilise a pull strategy to assist with developing the entire supply chains and value chains' (**Industry and Stakeholder Engagement and Strategic Marketing**)
- Focus on developing first world level '**tropical industrial hemp**' capabilities, capacity, know –how to position northern Australia as a globally competitive industrial hemp region. (**21st Century Ag and Food Tech Industry industry Approach**)
- Work with all **3 tiers of government** to access the 10,000-30,000 ha Green-fields possibilities in NQ and current Grey-fields. Include **Venture Capital Support** and **CR4** at Industry level. (**Total Factor Productivity Improvements**)

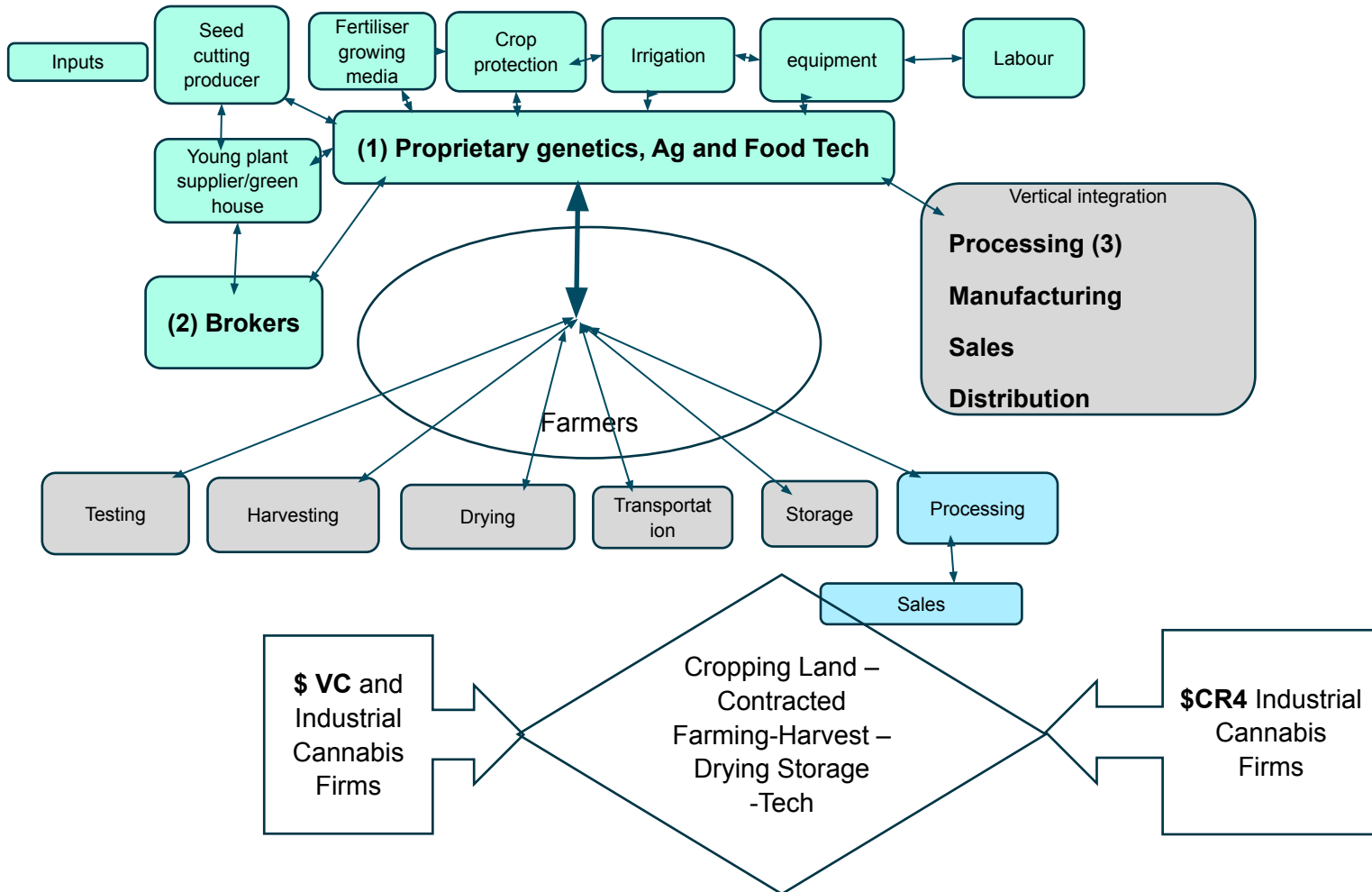


Benchmarking: Table 7 Below Indicate Gross Margins-Hemp Seed Production @ Various Yield, Price, and Cost Assumptions

ABARE Human Consumption of Hemp Seed

Cost\$/ha	\$1700/Yield/t/ha	\$1700/Yield/t/ha	\$1700/ Yield/t/ha
Prices, \$/tonne	0.5 Mt	0.7 Mt	1.0 Mt
\$1600	-\$900	-\$580	-\$100
\$2500	-\$450	-\$50	\$800
\$2800	-\$300	\$260	\$1100
\$3500	-\$50	\$750	\$1800

Industrial Cannabis Supply – Value Chain Model





WANDARRA

Stakeholder Presentation

Accelerating Growth In the Hemp Industry

Company Development / Industry Development

- **Think, plan and develop along supply chains.**
- **Industry development, Government and private capital.**
- **As Hemp products become accepted, where will the volume and capacity come from?**
- **Invest in best practice technology, advanced manufacturing & skills.**
- **Requires a national strategy?**
- **Possible approach a series of regional hubs?**

Hemp is a New agri-food sector. Requires - Innovation, Research & Development



Wandarra's collaboration with key partners will capture considerable Intellectual Property (Patents, brands, novel products, process and manufacturing methodologies and Plant Breeders Rights).

Wandarra is collaborating with:

- CSIRO Food Innovation Centre
- CSIRO, Advanced Material Science (Fibre and Hurd)
- Queensland Department of Agriculture and Fisheries, Crop Science Division
- Technology Transfer with 3 Canadian Hemp processing companies
- AusIndustry New programs when announced .
- Regional Councils, Universities, TAFE and gateway schools.
- Innovative farmers and regional engineering companies

Wandarra is approved by the ATO for the 43% R&D Tax incentive rebate.

Diversified Support Partners



Department of
Agriculture and Fisheries



Townsville Manufacturing
Hub | Regional Economic Development
Department of Regional Development,
Manufacturing and Water





Thank you
Include picture of you

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Queensland
Government