Growing for Queensland

The way forward for the agribusiness and food sector in Queensland

Submission

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1. INDUSTRY BACKGROUND

1.1 Horticulture in Queensland

Queensland is Australia's premier state for fruit and vegetable production, growing more than one-third of the nation's produce. The state enjoys the advantage of being able to supply export and domestic markets all year and is the dominant supplier during the winter months.

The commercial fruit and vegetable growing industry is highly competitive, made up of small, medium and large enterprises operating with a range of business models and markets. The industry is driven by market forces, rather than being regulated by quotas or licenses. Growers expect that they will be able to operate in a reasonable business environment, with opportunity for fair competition.

A number of reviews of the horticulture industry have provided insight into the factors impacting on horticulture business management and development.

These factors include:

- Retailers having enormous power down the chain as they strive to secure the consumer dollar, which is driving the structure and nature of produce
- A greater focus on the use of sophisticated technologies across the chain to provide improved outcomes
- A greater focus on the domestic market, which is often oversupplied, has many producers, has ineffective communication, is strongly competitive, and lacks price transparency.

Overall, the changing nature of the horticulture industry continues to have an impact on business management and development, as well as on industry productivity and growth.

This is further being influenced by factors such as the investment requirements, biosecurity issues, availability of labour, management of human resources, the value chain, international competitiveness, natural resource management, and climate variability. These issues are placing enormous change pressures on protected cropping sector.

1.2 What is protected cropping?

Protected cropping is defined as the production of horticultural crops within, under, or sheltered by artificial structures to provide or enable modified growing conditions, and protection from pests and adverse weather. Crops are grown in artificial media rather than directly in the soil, and nutrients are supplied through irrigation systems.

Protected cropping is about control and technology is largely focussed on increasing that control.

The level of technology in protected cropping varies and is broadly divided into three categories.

At the high-tech end of the industry, this amounts to almost total control over the plants growing environment, from the root zone through to the atmosphere. The level of control, particularly of the atmosphere, decreases for medium- and low-tech protected cropping structures.

- Low technology consists of polytunnels, which are open at each end, without any automation or control and are up to two metres tall.
- Medium technology consists of enclosed polyhouses for which the sides can be opened and closed, allowing some degree of control of the inside temperature and humidity. Polyhouses are usually

constructed of a galvanised steel frame with either a single or double layer of polyethylene and are up to 4.5 metres in height.

- High technology protected cropping consists of constructed glasshouses which are up to 8.5m high with significant automation of vents, fans, heaters and shade to optimise growing conditions. They have hydroponic systems that are computer controlled and automated. Sowing, crop management and picking are also partially or fully automated.

1.3 Protected cropping in Australia

The development of protected cropping in Australia has lagged much of the world due to our wide range of growing environments and ability to grow "out-of-season" vegetables under field conditions.

Initially, low technology plastic film-based structures were used. The conversion from soil to hydroponics in protective cropping was the first major "upgrade" in many areas.

This was driven by the prevalence of soilborne diseases and poor soil condition under the intensively cropped protective structures. Climate control technology initially involved ventilation and cooling, with naturally ventilated structures and fogging, proving to be very effective in modifying the high temperatures experienced in many regions.

Significant crops include:

- vegetables including tomatoes, cucumbers, capsicum, lettuce, strawberries, herbs and micro-herbs, Asian greens and mini vegetables;
- berries;
- cut flowers, including lilies, roses, gerberas, carnations, lisianthus and chrysanthemums; and
- medicinal cannabis is a major new crop.

More recently, industry expansion has been based on development of high technology protected cropping structures to meet specific market requirements for high volume contracts and quality measures for key fresh product lines such as tomatoes, cucumbers and berries.

1.4 Industry value

The protected cropping industry is the fastest growing food producing sector in Australia with annual growth rates averaging more than 60% over the past five years.

In 2017, it was valued at around $1.5 billion ($1,589 million) per annum at the farm gate, up from $486 million in 2014. This is equivalent to around 15% of the total value of vegetable and cut flower production in Australia (RIRDC report HSA-9A).

However, anecdotally, it is understood that around 30% of all Australian farmers are growing produce in some form of soil-less or protected cropping system.

1.5 Employment in the industry

Despite the high levels of automation in more sophisticated glasshouse environments, large-scale protected cropping requires a significant labour force, especially during crop establishment and harvest.

Research carried out overseas estimates that the annual work requirement is 11,293 hours per hectare of high-tech structure (which does not include packing operations or any other activities outside of the greenhouse). Assuming an average worker works 1,610 hours per year, then some 7 workers would be required per hectare of operation.

Much of the labour force requirement is semi- or unskilled and many of the work operations can be repetitive.

For example, in a tomato greenhouse plants need to be regularly de-leafed, flowers need to be pollinated by hand and fruit needs to be picked. Whilst the most modern facilities use automation to facilitate many of these tasks, the bulk of the work still must be performed by people. At the other end of the spectrum, demand for highly skilled growers who manage these large facilities is high and supply of people with suitable skills is low.

The fact that produce is grown all year round in protected cropping systems means that there is less seasonality in the workforce requirements and the physical conditions are less taxing than for field-grown crops. This means many new facilities can source labour locally and, even where seasonal worker labour is employed, often develop long-term relationships with workers and communities.

It is estimated that more than 10,000 people are currently employed directly in protected cropping throughout Australia, with labour requirements for the industry expanding at more than 5% per annum.

1.6 Investment in the industry

Protected cropping structures are capital intensive, with a high level of supporting infrastructure required.

For the high technology production facilities, there is a strong reliance on expertise from northern Europe, and north America. This also applies to much of the research and development that occurs in the engineering and technology areas.

Because the leading edge of the protected cropping industry is technology-driven, there will always be new developments that will have a positive impact upon production efficiency.

The key advantage of protected cropping is the ability to control the growing environment. This brings with it the ability to optimise climate conditions and plant properties to deliver improved productivity and profitability. For example, in the Netherlands over the last 25 years productivity (kg per m2 of glasshouse) has increased by 90% for sweet peppers and 35% for cucumbers.

Capital costs can be anywhere between $250 and $750 plus per square metre, depending on the sophistication of the facility and the level of equipment being included. Viable production units are a minimum of 1,500 square metres.

The average return on investment is between 5% and 10%. The potential return on investment for high technology glasshouse vegetable enterprises can be as high as 20-25% per annum.

1.7 Industry issues

State of the art control systems in high-tech developments means new facilities have a relatively small environmental impact.

In these systems, nutrient loads and run-off are managed on-farm or in closed, recycling systems. They are also very efficient users of water. Fruit and vegetable growing generally uses about 38L of water per dollar of value produced, whereas hydroponically produced vegetable crops use only 0.6L of water to produce the same value.

Whilst growing crops under cover is more energy-intensive than other farming methods, the ability to mitigate weather impacts, ensure traceability and better food and to deliver consistent quality outcomes far outweigh these costs.

The key challenge facing the industry relates to community concern about the perceived visual impacts of large structures.

Protected cropping businesses have high labour requirements, reliance on specialist service and ancillary industries and fragile and perishable crops. These facilities are, generally, best suited to peri-urban locations. This can result in increased potential for land use conflict with neighbours who see the large structures as not compatible with their lifestyle expectations. These areas are also less familiar with agricultural production, and this causes issues with local government authorities that have little experience in these types of development.

To be successful, as for all agriculture, the protected cropping sector must have certainty of land tenure. Effective land use planning is therefore crucial to protecting the sector's capacity to underpin economic activity and deliver desired outcomes for local communities – and the state more broadly.

Key drivers of success will include: a supportive regulatory framework with innovative approaches to land use planning; and understanding the extent of current and projected future agricultural land resources.

1.8 About PCA

Protected Cropping Australia (PCA) is the peak industry body representing commercial hydroponic and greenhouse growers Australia wide. PCA members also include equipment and installation suppliers, specialist consultants and advisors, researchers and educators.

PCA is committed to improving the business environment in which growers operate, through the value chain and the regulatory environment, and by providing pathways to practical outcomes for members, including continuous improvement in horticultural production systems, marketing and business.

In return, PCA expects that growers will be able to operate in a reasonable business environment, with opportunity for fair competition and equitable sharing of risk. We also expect that other stakeholders involved with the industry will consider the industry's costs of production when making decisions affecting growers.

2. RESPONSE TO DISCUSSION PAPER

2.1 Protected cropping industry priorities

This submission is focussed on the issues directly affecting the protected cropping industry.

Other industry groups have made submissions to this process that outline in detail the situation as it affects the agriculture sector more generally. In particular, we have read and support Growcom's submission that addresses issues affecting the horticulture industry.

All the outcomes listed in the discussion paper are important for the protected cropping industry; however, some are more strategically important than others.

The ultimate measure of success of this strategy should be the profitability and sustainability for the sector as a whole, as well as improved results for the individual businesses involved in the sector.

Profitable businesses create more jobs and which in turn generates economic growth in local communities. This drives and underpins sustainable community development. Profitable businesses are better able to invest in business growth and innovation; and also more resilient in the face of business downturns, market variability and natural disasters.

Earlier this year, Senator Richard Colbeck (then Assistant Minister for Agriculture) convened a roundtable forum to look the development of a 2030 strategy for the protected cropping industry. The meeting was attended by key stakeholders from across the value chain.

The consensus was that the issues that will have the greatest influence on the future of the industry going forward can be grouped as follows:

- Economics
- Leadership
- Skills Development
- Planning
- Market Access

From a government perspective, these issues were identified as key:

- Planning approvals and building construction regulations
- Energy
- Market access
- Labour supply
- Education and training
- Taxation
- Government role in research

From a grower/value chain perspective, these issues were identified as key:

- Skills aligned to industry needs for growers, specialist technical staff, and harvest labour

- Access to capital and mapping capital investment required at all stages of the value chain
- Social license - especially around visual impact and environmental impact
- Planning and building regulation, both for development of new facilities and expansion/update of existing ones. The lack of consistency across local government areas exacerbates these challenges.
- Lack of awareness and understanding of the industry by others including government, councils, banks etc – all focus seems to be on more traditional types of agriculture
- Pollination environment differs and creates hurdles
- No clear alignment between research and industry needs because of the commodity focus of research funding
- Increasing energy costs
- Higher production costs mean that growers need higher returns
- Improved market access

From a researcher perspective, these issues were identified as key:

- Ensuring R&D is focused on key research priorities
- Capacity building - training and funding
- Offsite impacts, including green waste and non-green waste eg plastics, coir, substrate
- Community acceptance and the need for social research to better understand factors affecting the industry
- Resource use efficiency - including water, energy, chemicals
- Facilities - site selection, design and construction
- Benefits of protected cropping in terms of environmental impact, climate change resilience and risk minimisation
- Economics
    - Market impact
    - Supply efficiency
    - Benefit cost analyses and ROI analyses
    - Equipment redundancy
    - Robotics/labour saving
    - Enabling technology and connectivity
    - QA benefits/ traceability
    - Consumer benefits – shelf life, nutrition, health benefits etc
- Technology transfer – decision support
- Participatory R&D
- Investment to support early adopters
- Importance of data sharing via open access to intellectual property
- Biosecurity – industry certainty and market access benefits

To be relevant, the government needs to clearly recognise protected cropping and intensive horticulture more generally, as key drivers of economic growth.

To ensure future success, the strategy must take a whole-of-government approach. It must be developed in partnership with industry, and it must address the issues which have been identified as either enablers or impediments.

2.2 What does success look like?

PCA believes that new initiatives or changes to policy should enhance the industry's contribution to the economy and lead to greater productivity and industry sustainability. We also believe that initiatives or regulatory changes need to be transparent and well-managed and lead to outcomes such as increased investment, growth and new jobs.

The ongoing relationship between industry and government will be a key component in the success and long-term viability of the agriculture industry in Queensland.

We expect:

- a consultative government that engages with PCA on issues that affect our members;
- accountability and transparency in regulatory and administrative processes and a commitment to undertaking credible regulatory impact statements when considering policy change; and
- increased accessibility to forums and consultative processes to ensure meaningful and genuine engagement between government and industry.

In the short term, the highest priority for the protected cropping industry is the development of a comprehensive picture of the industry from shed and shelf to consumer.

This will provide benchmarks for assessment of future industry performance, as well as a tool to improve wider understanding of the sector.

By that, we mean the sort of industry profile information that is readily available for traditional agriculture industries.

It should include:

- what is being grown where and on what scale
- production systems and investment profiles
- sectoral needs and gap analysis across major input factors (labour, infrastructure, skills and training, market access, production research, diversification opportunities, energy and water needs etc)
- historical trends and future forecasts
- potential for industry to contribute to increased food security, reduced environmental impacts etc
- potential for industry to contribute to resilient rural communities, continued economic growth and increasing employment opportunities
- metrics and targets

In the medium term, the desired outcomes include:

- A respectful and pro-active partnership approach to industry development
- Transparent alignment of government investment and policy decisions with the strategy, and clearly articulated measures to assess progress, which are reviewed and updated at least annually
- All proposed government decisions which impact on the sector should be subject to a transparent and specific impact risk assessment process
- Appropriate and adequate funding needs to be made available to assist in adjustment to changed policy settings.

Measures of success in the medium to long term would include:

- Increased value of production
- Increased attractiveness of Queensland as an investment destination for protected cropping businesses
- Increased number of protected cropping business operations and participants
- Valued partnerships between the protected cropping industry and government.

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