

Growing opportunities

A strategy for sustainable growth of the
South East Queensland Food Bowl



A report for Regional Development Australia —
Ipswich and West Moreton Inc.

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MainStream

MainStream Economics and Policy is a boutique consultancy providing research, economics, planning and policy analysis, evaluation, strategy and business advice for the natural and built environments.

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TABLE OF CONTENTS

1. Forward	1
2. Introduction	3
The region	3
3. Benefits of the strategy	5
Economic benefits	6
4. Market conditions	8
Demand growth and opportunities	8
5. Key regional capabilities	10
Quality cropping land.....	10
Climate suitability	10
Water resources and services	11
Crop production opportunities	12
Current product transformation	12
Transport and logistics	12
Other upstream and downstream infrastructure and services	13
Research and development capabilities.....	13
Human capital	13
6. A strategy to realise the Food Bowl’s potential	15
Tapping into knowledge, research and data.....	16
Working within natural asset limits	17
Augmenting key upstream and downstream supply chain inputs.....	19
Enhancing human capital	20
Capturing market opportunities	21
7. References	22

Acronyms

Acronym	Meaning
AG	Australian Government
BMP	Best management practice
CCIQ	Chamber of Commerce and Industry Queensland
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Queensland Department of Agriculture, Fisheries and Forestry
DEWS	Department of Energy and Water Supply
DNRM	Department of Natural resources and Mines
DSITIA	Department of Science, Information Technology, Innovation and the Arts
FTEs	Full-time equivalent jobs
GVP	Gross value of production
LVRC	Lockyer Valley Regional Council
LVRWS	Lockyer Valley Recycled Water Scheme
LWUF	Lockyer Water Users Forum
km	Kilometres
kv	Kilovolts
ML	Megalitre
MERI	Monitoring, evaluation, reporting and improvement
QUU	Queensland Urban Utilities
R&D	Research and development
RDAIWM	Regional Development Australia Ipswich and West Moreton
SEQ	South East Queensland
SEQC	South East Queensland Catchments Ltd
TAFE	Technical and further education
UQ	University of Queensland
WUE	Water use efficiency

Notes for readers

The information and strategies in this report have been developed through a comprehensive process of research, analysis and consultation. Additional information relevant to the strategy is documented in a separate report, *Lockyer Valley Sustainable Food Bowl Strategy — Information Report*.

For the purposes of this report, the Lockyer Valley Food Bowl also includes parts of the Fassifern Valley dedicated to irrigated agriculture.

1. Forward

Agriculture is the economic lifeblood of the Lockyer and Fassifern Valleys.

Regional Development Australia Ipswich and West Moreton (RDAIWM) was established to help integrate the regional development efforts of all three levels of government, industry and the community. Much of this effort is being coordinated through a development roadmap that seeks to:

- better understand the region's development challenges
- develop strategies to optimise competitive advantages
- develop strategies to manage risks so that the region's sustainability is not threatened.

Sustainable development of the Food Bowl faces many challenges.

Agriculture is the economic lifeblood of the Lockyer and Fassifern Valleys and a key component of the region's development roadmap. Collectively these two closely linked production regions create the Lockyer Valley Food Bowl.

The Region's proximity to major markets, vital infrastructure, and the solid natural resource base means the region is well placed to make a nationally significant contribution to food security into the future. However, sustainable development of the Lockyer Valley Food Bowl faces many challenges. These challenges include broader market conditions, natural resource constraints, infrastructure limitations, and competition for key inputs — particularly knowledgeable and skilled people.

An ambitious approach including infrastructure developments could see employment increase by 4,400 jobs and an increase in the value of production by up to \$430 million by 2031.

This strategy, *Growing opportunities: A strategy for sustainable growth of the Lockyer Valley Food Bowl*, maps a path for the Lockyer Valley Food Bowl. This path is grounded in economic reality, seeks to exploit opportunities for genuinely sustainable development, is consistent with national and state objectives, but is owned and driven by local knowledge and expertise.

An ambitious strategy that includes specific investment in enhancing water supplies and expanding market reach would result in additional jobs of around 4,400 FTEs, and an increase in the value of production by up to \$430 million by 2031.

This strategy maps a path for the food bowl that is owned and driven by local knowledge and expertise.

Achieving these levels of growth would be highly reliant on the region expanding existing competitive advantages into regional and national markets, diversifying product offerings, further value adding, and progressing access into key export markets.

Even actions aimed at simply expanding at the rate as the SEQ market would result in an additional 1,000 jobs by 2031, while the value of production would increase by up to \$95 million. Given the region's apparent competitive advantage, this strategy is very achievable and potentially a lower commercial risk than greenfield developments elsewhere.

Through the analysis and consultation, the strategy includes key actions to enable sustainable market opportunities to be exploited and key impediments to be overcome. The strategy has been developed around five interrelated themes:

- Tapping into knowledge, research and data
- Working within natural resource limits

- Augmenting key supply chain inputs
- Enhancing human capital
- Capturing market opportunities.

The actions outlined under these themes are a comprehensive way forward to achieve an economically viable and sustainable Lockyer Valley Food Bowl. Ultimately, the strategy could deliver significant economic and social benefits to the region over the next 20 years.

2. Introduction

Sustainable food production is a key objective of governments at all levels.

Development and growth of the Lockyer Valley and the Fassifern Valley has largely been based on an abundance of good quality soil, reasonable water services and good access to the fastest growing markets in Australia. As food supply chains have become more sophisticated and efficient, the Lockyer Valley has also tapped into opportunities for counter-seasonal production to meet the needs of southern markets.

Recently, sustainable food production has re-emerged as a key objective of governments at all levels. This has resulted in initiatives such as:

- National Food Plan
- Queensland's Agricultural Strategy
- Lockyer Valley Regional Council Economic Development Strategy.

While the Lockyer and Fassifern Valleys are well placed to contribute to food needs in the future, the region can no longer rely on soil and water to underpin future growth. Sustainable agricultural development is complex and needs to be considered within a market context and be cognisant to the region's competitive advantages along the supply chain and the natural resource base.

This strategy summarises key issues and strategies for the sustainable development of the Food Bowl. The information and strategies in this report have been developed through a comprehensive process of research, analysis and consultation. Additional information relevant to the Strategy is documented separately in the complete version of this report, *Lockyer Valley Sustainable Food Bowl Strategy — Information Report*.

The region can no longer rely on soil and water to underpin future growth.

The region

The Lockyer Valley is around 80 km west of Brisbane and comprises around 25 per cent of the entire Brisbane River catchment. The Lockyer Valley includes some of Queensland's most productive alluvial soils — hence its focus on agricultural crops.

The Lockyer Valley was first settled by European settlers around 1840 and quickly gained a reputation as an area of high agricultural productivity. Agricultural development has been significant within both the regional and national contexts.

The majority of the Food Bowl lies within the Lockyer Valley Regional Council and Somerset Regional Council areas (combined population of around 60,000).

There are several water storages in the region including Atkinsons Dam, Lake Clarendon, Lake Dyer and Bill Gunn Dam. These storages, in conjunction with groundwater resources, are vital to existing agricultural production.

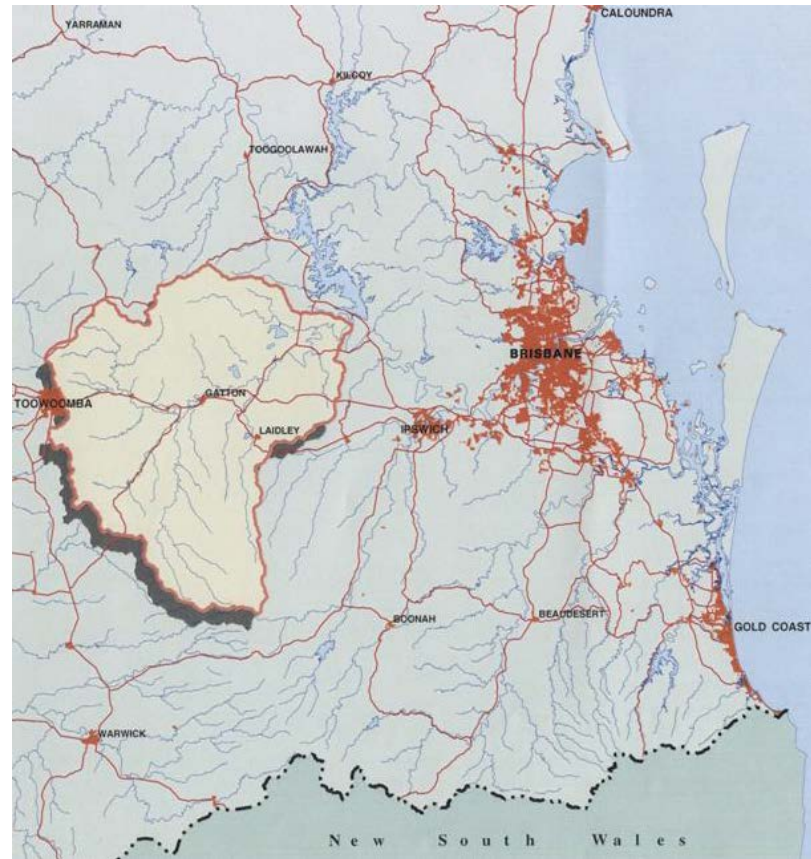
Key environmental issues in the region largely relate to water quality. Instability of stream banks and gully erosion due to degradation of the riparian vegetation are a significant source of

Sustainable agricultural needs to be considered within a market, industry, community and natural asset base context.

pollution runoff into waterways, increasing costs of water supply and creating environmental problems in Moreton Bay.

The Lockyer region is shown in Figure 1.

Figure 1: The Lockyer region



The Lockyer Valley comprises around 25% of the entire Brisbane River catchment and includes some of Queensland's most productive alluvial soils.

Source: Queensland Government

The Fassifern Valley lies to the south-east of the Lockyer Valley, with a significantly smaller production area. That area was settled by pastoralists in the 1800s, while diversification into horticulture began in the 1960s. The area of irrigation is estimated at up to 8,000 ha depending on climate and market conditions and is primarily in riparian zones along Reynolds and Warrill creeks.

3. Benefits of the strategy

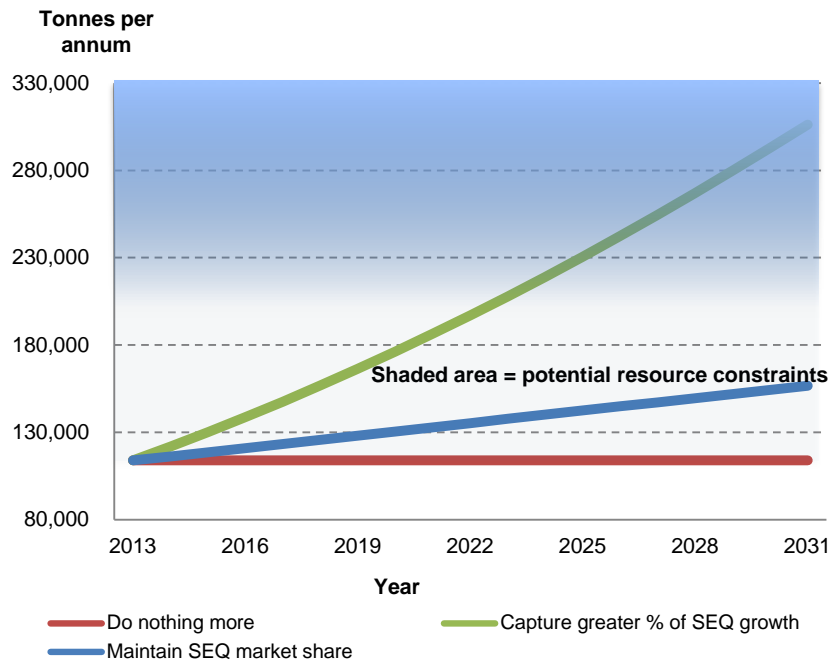
The potential economic impacts of the strategy are significant.

The strategy is designed to maximise opportunities and overcome impediments to sustainable development of the Food Bowl. The degree to which the strategy will transform the Food Bowl cannot be known with any certainty. However, a number of potential growth scenarios have been modelled to help understand the potential benefits of implementing the strategy. These scenarios focus on growth in vegetable production. While vegetable production only accounts for around half of the current value of production from the Lockyer and Fassifern Valleys, it is an area of significant potential competitive advantage. Competitive advantages in fruit production are not as great. It should also be noted that increases in vegetable production will result in reductions in areas available for other crops (e.g. fodder).

Figure 2 shows modelled growth in production in the Food Bowl under three potential scenarios.

- **Scenario 1: Do nothing more (red line).** The region continues to produce without a proactive sustainable development strategy. Under this scenario, the region does not capture any more market share or share of growth, and does not address natural resource issues such as water reliability.
- **Scenario 2: Maintain SEQ market share (blue line).** The region actively implements strategies to underpin growth and achieves growth at a rate consistent with growth in the overall SEQ market.
- **Scenario 3: Capture a greater percentage of SEQ growth (green line).** Strategies lead to growth in production equivalent to the total growth in demand in SEQ.

Figure 2: Potential production growth (mid-point estimates of scenarios)



Source: MainStream

While production growth has been negligible in recent years, the potential to tap into growth of existing markets is key to commercially sustainable growth.

Under Scenario 1: Do nothing more, no material growth would be expected. This is consistent with history over the past decade where production levels have fluctuated (depending on climate conditions), but no underlying growth trend has been apparent.

Under Scenario 2: Maintaining SEQ market share, retaining the current share of the total SEQ demand could increase production to around 140,000–180,000 tonnes per annum by 2031. Given the competitive advantage the region currently enjoys in servicing the SEQ market and existing counter-seasonal advantages into other domestic markets, this scenario would be feasible providing industry has sufficient information to make informed decisions and if resource constraints can be overcome.

Under a very optimistic Scenario 3: Capture a greater percentage of SEQ growth, production could increase to around 250,000–330,000 tonnes per annum under optimal market and production circumstances. However, achieving this scale of growth would involve significant investments in expanding areas under production and expanding infrastructure (including significant use of recycled water) to underpin growth.

Economic benefits

The economic benefits of growth attributable to successfully implementing this strategy are regionally very significant, for both employment and regional output.

Table 1: Potential economic benefits

Economic indicator and scenario	By 2021 (range)	By 2031 (range)
Increase in jobs (FTEs)		
Scenario 1: Do nothing more	0	0
Scenario 2: Maintain SEQ market share	360–540	650–980
Scenario 3: Capture greater % of SEQ growth	1,400–2,100	2,900–4,400
Increase in gross value of production (\$ million per annum)		
Scenario 1: Do nothing more	0	0
Scenario 2: Maintain SEQ market share	30–50	65–95
Scenario 3: Capture greater % of SEQ growth	120–180	280–430

Source: MainStream estimates

Maintaining market share in SEQ could deliver an additional 1,000 jobs over 20 years.

While there is a degree of variability in the modelling outcomes depending on the assumptions underpinning the analysis, Scenario 2: Maintaining the current SEQ market share should be achievable under the strategy. This scenario would deliver significant benefits to the region including:

- Employment: An increase of 360–540 FTE positions by around 2021 and up to around 1,000 additional jobs by 2031.
- Value of production: While the current value of vegetable production is around \$210 million per annum, this would be expected to rise by \$30–50 million per annum by 2021 and up to \$95 million by 2031 in real terms.

Importantly, this level of growth could potentially be achieved primarily by exploiting the region’s existing competitive advantages without taking excessive market and resource management risks.

A more aggressive approach under Scenario 3 that delivered growth in production equivalent to the total growth in demand in SEQ would deliver very significant benefits for the region including:

- Employment: An increase of 1,400–2,100 FTE positions by around 2021 and up to around 4,400 additional jobs by 2031.
- Value of production: While the current value of vegetable production is around \$210 million per annum, this would be expected to rise by \$120–180 million per annum by around 2021 and up to \$430 million per annum by 2031 in real terms.

A more aggressive approach that delivered growth in production equivalent to the total growth in demand in SEQ could deliver 2,900–4,400 jobs in the next 20 years.

Achieving this level of increase in production would be highly reliant on the region expanding existing competitive advantages into regional, national and international markets, diversifying product offerings, further value adding, and progressing in key export markets. Achieving Scenario 3 would also require significant investments on the supply side of the market to overcome supply impediments, particularly a major expansion of the areas under production, significant augmentations to water infrastructure, and major enhancements of other infrastructure and services up and down the supply chain.

However, this outcome would require a major suite of input initiatives and investment.

Under both scenarios, significant advancements in the sophistication and efficiency of the food sector would be required in the region right along the supply and value chains.

4. Market conditions

The Lockyer Valley produces approximately 115,000 tonnes of vegetables in a reasonable production year, equivalent to around 40% of SEQ's total annual demand.

While primary industries account for around 2.6 per cent of Queensland's gross state product, the regional importance of primary industries to the Lockyer and Fassifern Valleys is significantly higher.

Based on available data of apparent consumption of fruit and vegetables, it is estimated that the size of the SEQ vegetable market is around 260,000 tonnes per annum, while the total domestic market is almost 1.9 million tonnes.

Table 2: Estimated annual domestic consumption of fresh fruit and vegetables (tonnes per annum)

Geographical region	Fruit and fruit products	Vegetables
South East Queensland	215,000	260,000
Rest of Queensland	115,000	140,000
Rest of Australia	1,220,000	1,465,000
Total domestic consumption	1,550,000	1,865,000

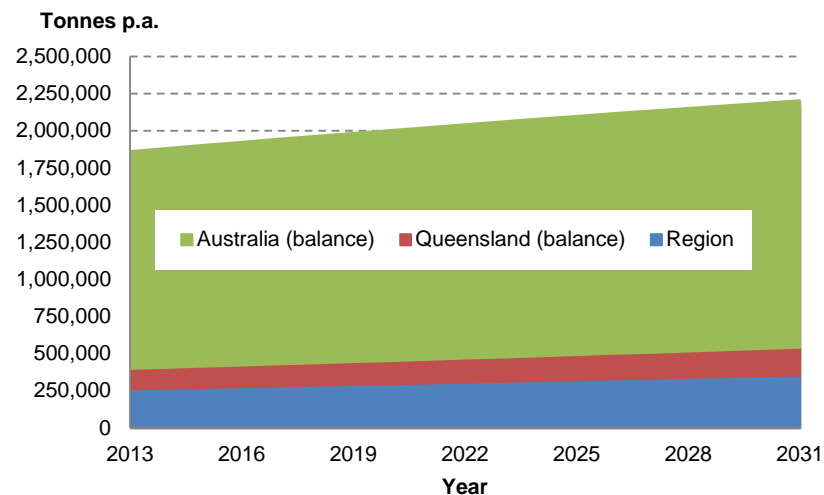
Source: MainStream estimates

Horticultural production in the Lockyer and Fassifern Valleys is primarily vegetables. Available data indicates the volume of horticultural production in the Lockyer Valley in reasonable years is typically around 115,000 tonnes, equivalent to around 40 per cent of SEQ's total annual demand for vegetables. However, production levels of vegetable crops can be significantly reduced during periods of drought.

Demand growth and opportunities

Figure 3 outlines estimates of demand for fresh vegetables for the SEQ region, Queensland and Australia to 2031.

Figure 3: Forecast demand for fresh vegetables (tonnes per annum)



Source: MainStream estimates

Just maintaining market share in SEQ would result in a 30–35% increase in demand for regional product by 2031.

The region has a distinct geographical advantage in meeting future demand growth in SEQ—an existing market of around 3.2 million people. Even if the region only maintains its market share in SEQ, the region’s product would need to increase by 30–35% over the next 20 years just to maintain pace with growth in demand.

If the Lockyer and Fassifern Valleys were to meet *all* of the demand growth in SEQ, production from the region would need to increase by 80 per cent by 2031.

While the demand growth in the domestic market will create growth opportunities, the international market will be significantly more difficult to gain any significant market share due to a greater degree of international competition.

Growth of the Australian horticultural sector is constrained in the international market by a number of factors including a strong dollar, high production costs (particularly labour inputs), and competition from international imports.

However, export opportunities may emerge in the longer term on the back of significant demand and income growth in emerging Asian nations.

The amount of vegetable product transformation in the region is low. Furthermore, the processed fruit and vegetable sector in Australia is in decline due to competition from cheap imports, rising input costs, and a growing tendency of the major supermarket chains to establish private-label brands (where product is often imported).

Most opportunities for further product transformation in the Lockyer and Fassifern Valleys are in establishing highly transformed, high-value products (e.g. ready-made meals).

Export and major product transformation opportunities are constrained in the short-term by a number of factors including a strong dollar, high production costs (particularly labour inputs), and competition from international imports.

However, greater opportunities will emerge as markets expand and incomes rise in Asia.

5. Key regional capabilities

This section briefly summarises the region’s key capabilities relevant to sustainable development of the Food Bowl. Significant information relating to the region’s capabilities is outlined in Sections 5–8 of the *Sustainable Food Bowl Strategy — Information Report*.

Quality cropping land

The area under cropping in the region is estimated at around 7,500-9,000 ha depending on seasonal and market conditions. Almost all the black alluvial soils in the region are suitable for irrigation and vegetable crop production. Land availability for horticulture crops is not a major impediment to future development as there is significant scope for transferring more area from pastures to horticulture to accommodate expanded horticultural production.

One of the key issues facing the expansion of agriculture in the region is the water quality consequences attributable to soil erosion. Mitigating future risks to downstream water quality will necessarily be a major consideration of any expansion of the Food Bowl.

The availability of suitable quality land for horticulture is not a constraining factor to future development of the Food Bowl.



Image: Quality soils, Lockyer Valley

Climate suitability

Climate (rainfall and temperature) in conjunction with the availability of good soil, which is abundant in the Lockyer and Fassifern Valleys, are key determinants of the feasibility of horticultural production. The region’s climate is suitable for many crops, with annual rainfall averaging 775 mm. The regional climate also provides counter-seasonal opportunities in competing southern regions (e.g. Werribee in Victoria and Virginia in South Australia).

Available regional climate change information from CSIRO’s OzClim simulation model to 2030 indicates that average temperatures and rainfall in the region may be marginally more adversely impacted by climate change than competing regions (generally faster average temperature growth and relatively greater reduction in rainfall).

The climate is suitable for multiple crops and enables counter-seasonal production opportunities.

Significant water resources are available. However, low reliability has been a significant constraint to investment, expansion and diversification of the Food Bowl.

Water resources and services

Water allocations available for irrigation in the Lockyer Valley are a mix of surface water allocations and regulated and unregulated groundwater sources. Groundwater is sourced from a network of over 5,000 bores. In the Warrill Valley within the Fassifern, water is accessed for irrigation via diversions.

While regulated allocations total around 38,700 ML, the volume of unregulated groundwater use is dominant. Table 3 summarises water allocations in the Lockyer Valley.

During the Millennium Drought, announced allocations for regulated water availability were often very low. Reliability of water resources has been a significant constraining factor to the expansion and diversification of the Food Bowl.

Table 3: Water resources for irrigation (ML)

Sub-region and water allocation type	ML allocation
Upper Lockyer	
Groundwater — unregulated	Not measured
Central Lockyer	
Surface water — medium priority interim water allocations	3,507
Surface water — Risk-A and Risk-B priority interim water allocations	3,115
Groundwater — medium priority interim water allocations	9,340
Lower Lockyer	
Medium priority interim water allocations	11,268
Groundwater — unregulated	Not measured
Warrill Valley	
Medium priority interim water allocations	20,785
Total water allocation for irrigation	>38,675

Source: Queensland Government (2008) Interim Resource Operations Licences (various) July.

The region is serviced by a network of water storages and distribution infrastructure.

There are a number of water storages in the Lockyer Valley with a full supply level of approximately 148,000 ML and an irrigation distribution network, including engineered channels, natural channels, and aquifers. This infrastructure is primarily administered through the Central and Lower Lockyer irrigation schemes that service around 530 irrigators and the Warrill Valley Water Supply Scheme servicing over 380 customers.

Expanding recycled water availability would overcome one of the Lockyer Valley's major competitive disadvantages (i.e. current water supply reliability).

Queensland Urban Utilities (QUU) also operates a modest-scale recycled water scheme (400 ML/annum). A major expansion of the scheme, to 2,000 ML/annum, is being considered. While the expanded volumes provided by an expanded recycled water scheme would not substantially change development patterns in the Lockyer Valley, the improved reliability of water would enable a fundamental change in commercial crop viability in the area that can access the expanded scheme.

A more ambitious option explored in recent years is to supply approximately 15,000–25,000 ML/annum per annum of recycled water to augment the groundwater resources of the Lockyer Valley. Effectively, this resource is equivalent to the sustainable volume of groundwater available in the Lockyer Valley and would significantly

change production opportunities in the Lockyer Valley. While this option is technically feasible, service delivery charges would be significant, constraining demand for recycled water in the shorter term.

Expanding the availability of recycled water would enhance the relative competitive advantage of the Lockyer Valley compared to two of the Lockyer Valley’s key competitors — Werribee and Virginia — both of which have access to significant volumes of affordable recycled water.

Crop production opportunities

There are a wide variety of horticulture crops that can be grown in the Lockyer and Fassifern Valleys. Dominant crops (by volume) include lettuce, potatoes, beans, broccoli, onions, carrots and pumpkins. Many crops also have relatively long planting and harvesting windows, ensuring continuity of supply for key markets. Water reliability and the preferences of major purchasing chains have often resulted in crop patterns that do not maximise returns for producers.

The region can support multiple crops with long production and harvesting windows.



Image: Spray irrigation, Lockyer Valley

Current product transformation

Most regional product is sent to market with minimal processing or transformation. Local product transformation capacity is largely washing, some sorting, and basic packaging. This is largely done in on-farm packing sheds, cool rooms and using other infrastructure located on some of the larger farms in the region.

Currently, product transformation in the region is negligible.

Transport and logistics

Given the time-sensitive nature of fresh horticultural produce, a quality and reliable road network and road transport services are vital to the regions success and growth. The region is serviced by a network of approximately 2,700 km of local roads and has direct access to the Warrego and Cunningham Highway’s that provides rapid and reliable access to key markets in SEQ and interstate.

The region is well serviced by road infrastructure and road transport services, providing rapid and reliable access to key markets.

A number of road transport companies already operate out of the area, and it is relatively well serviced by national transport companies, including transporters working directly for Woolworths and Coles.

Access to other transport modes — air, rail, sea — is sufficient to underpin future development of the Food Bowl.

Other upstream and downstream infrastructure and services

The Lockyer Valley is relatively well serviced by other upstream and downstream infrastructure and services required to underpin further development of the Food Bowl. These services include:

- **Serviced industrial land.** The establishment of the proposed industrial precinct at Gatton and industrial land in Lowood would essentially fill any foreseeable needs for serviced industrial land.
- **Energy.** Powerlink already have a 132 kV and 275 kV transmission lines running through the region, with plans for another 500 kV line.
- **Information and communications technology.** Parts of Gatton are already serviced by fibre optic cables, while the NBN has already been rolled out in Grantham and Laidley.
- **Professional support services.** Key professional support services (e.g. accounting, business and legal advice, technical agronomic and water resource management inputs, and marketing and production consolidation services) are readily available in Brisbane and Toowoomba.

While there is room for improvement in infrastructure and services, they do not currently constitute a material constraint on further development of the Food Bowl.

Significant research and development capacity exists in the Lockyer Valley.

Around 27% of the local workforce already work in Food Bowl related jobs.

While there is underutilised labour capacity in the Region, additional capacity is tight in key skills necessary to underpin further development of the Food Bowl (i.e. trades and machinery operators).

Research and development capabilities

The Lockyer Valley is possible one of the best-serviced agricultural production zones in Australia. A number of research activities are being undertaken at Gatton Research Station, including plant research, sustainable farming systems, water and other natural resource management, and biosecurity research.

Human capital

Around 27 per cent of the labour force are already employed in Food Bowl related jobs. Over 1,500 people are directly employed in crop farming, while total employment in upstream (e.g. science) and downstream (e.g. transport) industries equates to around another 1,050 people.

Analysis of relevant demographic and labour data indicates there is significant underutilised capacity in the local labour force. However, there is limited additional capacity of technical and trades workers and machinery operators. This may inhibit further development of the Food Bowl.

The labour force is highly skilled, with around 45 per cent of the workforce holding some form of post-school qualification — half with TAFE training.

While average weekly earnings are around \$750, key skills necessary for future development of the Food Bowl (trades, machinery operators etc.) tend to work longer hours and have significantly higher weekly earnings. However, it can be difficult to attract technicians, trade workers and machinery operators to the region as these skills are in high demand elsewhere, particularly for energy developments west of Toowoomba.

Existing wage rates for technicians, trade workers and machinery operators may create an impediment to attracting appropriate labour capacity to underpin further development of the Food Bowl.

6. A strategy to realise the Food Bowl’s potential

Consultation revealed a preference for maintaining a high degree of local control and ownership over sustainable development of the region.

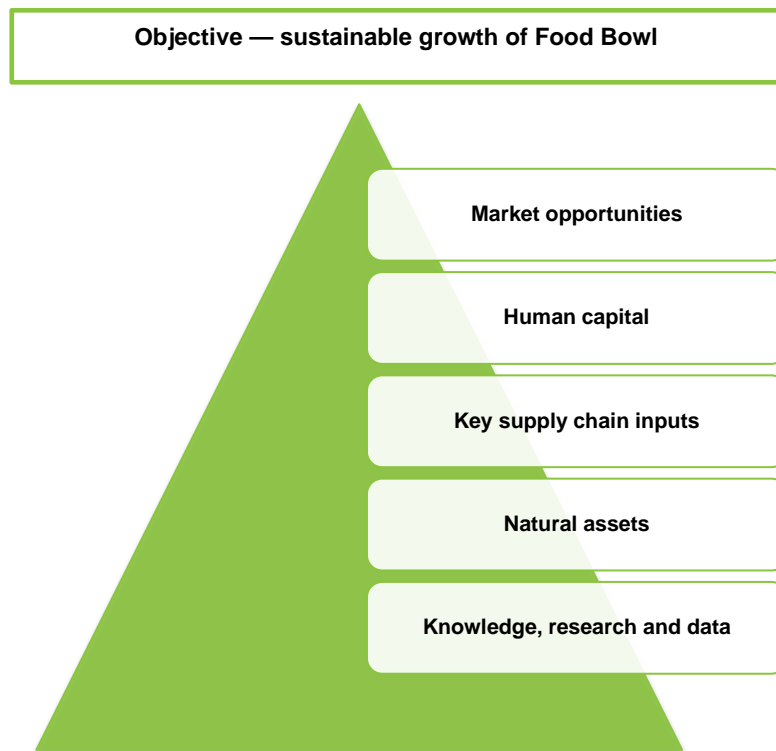
Through the analysis and consultation, the strategy has identified opportunities to be exploited and key impediments to be overcome. Importantly, sustainable development must ensure that there is a viable market to underpin growth, and a strong theme emerging from the consultation was a preference for maintaining a high degree of local control and ownership over sustainable development of the region. There are concerns about entities with only limited vested interest in the long-term economic, social and environmental viability of the region dictating the development agenda.

The strategy has been developed around five themes:

- Tapping into knowledge, research and data
- Working within natural asset limits
- Augmenting key supply chain inputs
- Enhancing human capital
- Capturing market opportunities.

Figure 4 shows the five themes and how they provide a path for the sustainable development of the Food Bowl progressively moving from a base of enhanced knowledge, research and data through to subsequent exploitation of market opportunities.

Figure 4: Pathway to sustainable growth of Food Bowl



Undertaking actions under the five identified themes should provide a pathway to the sustainable development of the Food Bowl.

Source: MainStream

The actions outlined under these themes provide a systematic approach to achieve sustainable development of the Food Bowl.

Tapping into knowledge, research and data

Further investment and development of the Food Bowl will require private sector capital and innovation. The economic, social and environmental risks of that investment are higher where there is a lack of readily available and appropriate information to underpin investments.

Key issues

While there is a significant history of production and natural resource research specific to the region, access to this information and its presentation is not necessarily suitable to many users. There is a need to ensure information is freely available and targeted to the needs of investors.

Furthermore, there are information and data gaps, particularly relating to market conditions, commercial aspects of production, and key sustainable farming and resource management issues.

There is also very limited industry-led data and information — partly attributable to the large number of relatively small producers.

A structured program of enhanced information and data gathering will significantly assist short and long-term investment decision making and provide a solid base to ensure future development is economically, socially and environmentally sustainable. Key to this approach is the need for better engagement between industry and research and government agencies.

Key actions

Actions identified during research and tested during consultation are outlined in Table 4.

Table 4: Key actions for tapping into knowledge, research and data

Action	Lead & support entities	Timing
Establish and maintain an information portal. Establish a specific portal to enhance easy access to relevant commercial, agronomic, logistics, and natural resource information and data. Note: content would be provided/managed by relevant information custodians (e.g. DAFF).	<i>RDAlWM</i>	Short-term
Report on market data and trends to underpin investment decisions. Establish and maintain credible and timely data on trends (demand, production, pricing) for key commodities and key markets (SEQ, balance of Queensland, national).	<i>DAFF, RDAlWM, industry</i>	Short-term

A structured program of enhanced information and data will significantly enhance short and long-term investment decisions.

Action	Lead & support entities	Timing
Enhance natural asset and resource information. Ensure information on key natural assets (e.g. land availability, water resources) and condition (e.g. long-term climate trends, regional water quality) is readily available to producers and potential investors.	<i>DNRM, DSITIA, SEQC</i>	Medium-term
Promote best management practices (BMPs). Ensure BMP material is available and delivered for key issues underpinning sustainable development (e.g. water use efficiency, mitigating chemical runoff etc.)	<i>Industry, DAFF, researchers, SEQC</i>	Medium-term
Reinvigorate extension. Reinvigorate extension activities to accelerate adoption of best management practices. Extension will need to include some targeted extension activities for producers from non-English speaking backgrounds.	<i>Industry, DAFF, UQ, SEQC</i>	Medium-term
Refocus ongoing research and development. Refocus R&D into a user-prioritised program specifically aimed at meeting the needs of sustainable development of the Food Bowl.	<i>Industry, UQ, CSIRO, DSITIA</i>	Medium-term
Monitoring, evaluation, reporting and improvement (MERI). Establish and implement a targeted MERI program to track progress in implementing the strategy.	<i>RDAIWM</i>	Short-term

Key: Short-term = within 12 months; medium-term = 12–36 months; long-term = > 36 months; ongoing = continuous. Note: Lead entities are italicised.

Working within natural asset limits

Analysis undertaken in developing this Strategy (detailed in the Information Report) indicates that any production and development cannot be sustainable in the long-term without ensuring the condition of natural assets underpinning production (e.g. soil, groundwater, waterways) is maintained.

There are already a number of natural resource management issues that need to be addressed. These include:

- sustainable water use, particularly unregulated groundwater use
- water use efficiency
- soil and chemical runoff into waterways
- biosecurity risks (e.g. fire ants) to production and market access.

These issues need to be addressed within the short-term, while being managed more intensively into the future.

Actions to ensure current practice and future development is within the limits of the natural asset base are vital.



Image: Efficient water use in irrigation, Lockyer Valley

Key actions

Key actions identified during research and tested during consultation are outlined in the table below.

Table 5: Key actions for working within natural asset limits

Action	Lead & support entities	Timing
Land use capability and mapping. Develop up-to-date maps outlining land availability, soils, erosion risks, salinity risks etc. to ensure future expansion and intensification of food production occurs in appropriate locations.	<i>DNRM, DSITIA, LVRC</i>	Medium-term
Manage erosion and water quality. Enhance BMP to mitigate erosion and water quality risks. Model the change in loads attributable to potential growth scenarios and change of management practices to inform future development pathways. Target extension in key risk areas.	<i>SEQC, DNRM, DSITIA, LVRC, industry</i>	Medium-term
Exploit environmental market opportunities. Undertake a feasibility study, and potentially a pilot program, of water quality offsets in the Lockyer Valley.	<i>DEWS, utilities, DSITIA, LVRC</i>	Medium-term
Accurately specify surface water attributes. Update modelling to determine estimated annual volumes of surface water at different reliabilities to underpin better-informed investment decisions.	<i>DNRM, DSITIA,</i>	Medium-term
Enhance groundwater management. Explore cost-effective solutions for managing groundwater in the Southern Lockyer region to ensure sustainable use.	<i>LWUF, DNRM</i>	Medium-term
Enhance water use efficiency. Maximise uptake of water use efficiency (WUE) via enhanced extension programs. Research and develop commercial funding opportunities to overcome capital and financial constraints to WUE uptake.	<i>DNRM, DAFF, industry</i>	Medium-term
Optimise biosecurity investments and management. Assess and implement an optimal strategy to mitigate biosecurity risks to the Lockyer Valley's production and market access.	<i>DAFF, Industry</i>	Medium-term

Key: Short-term = within 12 months; medium-term = 12–36 months; long-term = > 36 months; ongoing = continuous. Note: Lead entities are italicised.

Augmenting key upstream and downstream supply chain inputs

Actions addressing critical supply chain constraints are necessary.

Regions are increasingly competing based on the whole supply chain into key growing markets. This requires strategies that ensure weaknesses in the supply chain are overcome. A number of issues that need addressing in the region have been identified.

Key issues

Significant and sustainable development of the Food Bowl is highly unlikely unless a number of significant impediments are overcome. The most critical impediments are the volume and reliability of water — limiting both actual expansion of the Food Bowl and diversification into higher value crops that require more reliable water supplies.

Key actions

Key actions identified during research and tested during consultation are outlined in the table below.

Table 6: Key actions for augmenting key upstream and downstream supply chain inputs

Action	Lead & support entities	Timing
Progress expansion of Lockyer Valley Recycled Water Scheme (LVRWS). Move to formal business case, pricing model and expressions of interest from potential customers. Work with QCA to incorporate wastewater treatment costs avoided into irrigation service charges.	<i>LVRC, QUU, RDAIWM, DEWS</i>	Medium-term
Maintain watching brief on other recycled water opportunities. Maintain a watching brief on demand growth, prices for food product, and irrigators' capacity to pay, and establish triggers for establishing recycled irrigation water supplies.	<i>QUU, DAFF, DEWS, LVRC, industry</i>	Ongoing
Enhance horticulture productivity and risk management. Detailed agronomic and economic analysis to determine optimal regional crop mix to maximise economic benefit under different input restrictions (e.g. water variability). Underpin with extension services.	<i>Industry, DAFF, researchers</i>	Medium-term
Supply serviced industrial land. Finalise establishment of the industrial land precinct. Ensure the land precinct has all services and a designated clean industry zone that meets needs of investors.	<i>LVRC</i>	As per schedule
Examine viability of small-scale processing. Assess opportunities for modest-scale processing capacity (e.g. owned under a co-operative arrangement). Undertake a feasibility study and formal business case. Seek investment (if commercially viable). Note: This is consistent with existing actions under the LVRC economic development strategy.	<i>LVRC, RDAIWM, Industry</i>	Medium-term

Key: Short-term = within 12 months; medium-term = 12–36 months; long-term = > 36 months; ongoing = continuous. Note: Lead entities are italicised.

Enhancing human capital

Sustainable development of the Food Bowl will only be possible if the region has access to the right types of skills, knowledge and general labour inputs. The skills required are likely to become more sophisticated.

Key issues

Research and consultation undertaken in developing this strategy indicates attracting and retaining critical skills and inputs is sometimes problematic for the Lockyer and Fassifern Valleys. This is particularly the case for tradespeople and machinery operators as they are in high demand in the resource and energy sectors.

Actions need to be undertaken to ensure there is a future supply of appropriately skilled people available to participate in further development of the Food Bowl.

Key actions

Key actions identified during research and tested during consultation are outlined in the table below.

Table 7: Key actions for enhancing human capital

Action	Lead & support entities	Timing
Establish regional skills strategy. Undertake a needs analysis and develop a long-term skills and training strategy for the region.	<i>RDAIWM, industry, training providers, CCIQ, LVRC</i>	Short-term
Training in key skills. Proactively work with training providers to ensure industry needs (numbers, skills) are well understood.	<i>Industry, RDAIWM, training providers, CCIQ, LVRC</i>	Ongoing
Targeted regional employment promotion. Where possible, promote the region as an attractive location for skilled tradespeople. The region needs to emphasise good access to all cultural services, low costs of housing, and reasonable wages to counteract demand from resource project areas (high wages, high costs, and low levels of amenity). Note: This is consistent with existing actions under the LVRC economic development strategy.	<i>LVRC, Industry</i>	Ongoing

Key: Short-term = within 12 months; medium-term = 12–36 months; long-term = > 36 months; ongoing = continuous. Note: Lead entities are italicised.

Actions addressing critical skills shortages are vital to the future development of the Lockyer Valley.

Actions to capture market share provide significant economic dividends.

Capturing market opportunities

To underpin sustainable development opportunities, there needs to be a growing market for product from the Lockyer and Fassifern Valleys and the region needs to have a competitive advantage at supplying that market.

Key issues

A number of key issues emerged from the research and consultation:

- There is a realisation that the Lockyer and Fassifern Valleys have potential to gain further market share in SEQ (one of the fastest growing markets in Australia). Consultation reinforced a preference to concentrate on the local market, rather than international markets.
- There is a desire to see the Lockyer and Fassifern Valleys be recognised as a sustainable food production region, with opportunities for allied economic development (e.g. food tourism).
- There are concerns that the purchasing patterns and strategies of the major supermarket chains were having a significant influence on production patterns and investment in the region that are not necessarily desirable at a local scale. Decisions are forced upon farmers due to a high reliance on direct or indirect contract farming.

A suite of actions is required to reposition the region in a way that will ensure future development is consistent with the region's long-term interests.

Key actions

Key actions identified during research and tested during consultation are outlined in the table below.

Table 8: Key actions to capture market opportunities

Action	Lead & support entities	Timing
Understand demand. Undertake a market analysis to enable Lockyer and Fassifern Valleys producers to better understand demand (products, volumes, and timing) in key markets (particularly SEQ) to better match supply with regional demand. This would also facilitate better exploitation of counter-seasonal opportunities and emerging international markets.	<i>DAFF, AG DAFF, Industry</i>	Short-term
Lockyer branding. Undertake a branding exercise to provide a point of difference within the market. This could be done in conjunction with the LVRC Food Strategy.	<i>Industry, RDAIWM, LVRC</i>	Short-term
Farming contract arrangements. Based on a more comprehensive understanding of all retail market opportunities and alternative supply chains, seek to rebalance production (volumes and product type) to a more economically viable footing for the region.	<i>Industry</i>	Ongoing

Key: Short-term = within 12 months; medium-term = 12–36 months; long-term = > 36 months; ongoing = continuous. Note: Lead entities are italicised.

7. References

In addition to consultation, a wide range of references have been used to inform this Strategy. These are listed below.

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