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## Producer insights for adoption outcomes across WA BeefLinks

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BeefLinks is a collaborative research and development project between Meat & Livestock Australia (MLA) and The University of Western Australia (UWA) for the WA beef industry.

This Project was supported by WA Department of Primary Industry and Regional Development and the WA beef industry (see back page for list)

BeefLinks Project: P.PSH.2136 | UWA Ethics: ET000309



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## Project overview and objectives

This project investigated strategies that can help maintain profitable, consistent, and sustainable beef yields for the WA supply chain. This was done by identifying market based risks and evaluating various supply chain pathways that can be implemented by WA producers and industry to minimise these risks.

The project also explored the complex issues associated with decision making, supply chain and market risks, and the drivers impacting adoption rates of BeefLinks research innovations.

*"Our evaluation helps beef producers in pinpointing the most profitable supply chain pathway for them and determining the optimal exit point allowing them to effectively manage the risks"*

Dr Fiona Dempster, Project Leader

## Research approach and outputs

This project worked with industry stakeholders and researchers across the BeefLinks program. The team conducted surveys and in-depth interviews with stakeholders and engaged in events, workshops, and meetings.

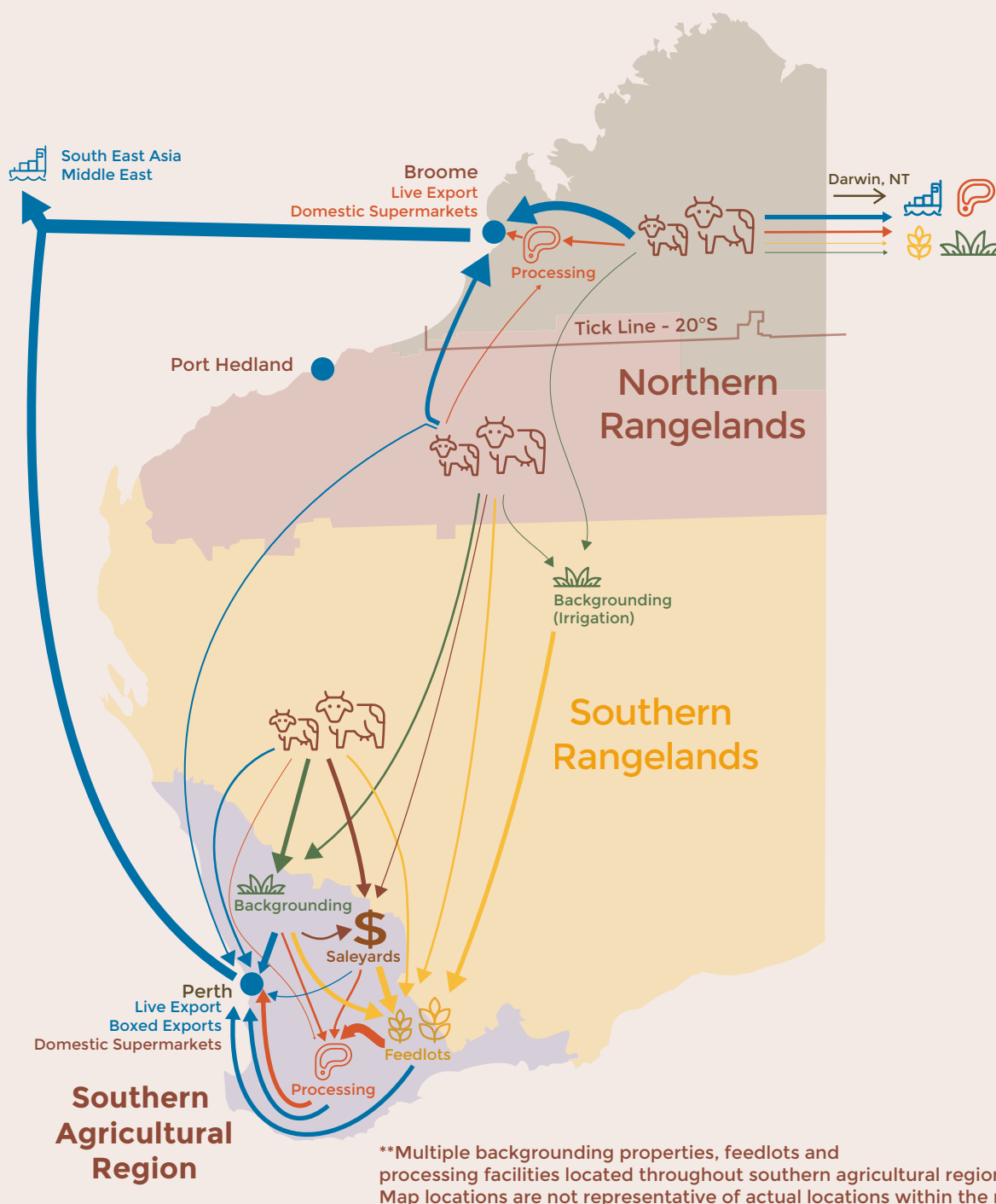
The project used these insights gained in combination with scientific literature reviews and economic modelling techniques to inform a series of recommendations, guidelines, frameworks, and tools targeted at driving practice change.



# Supply Chain Pathways for WA Beef Producers

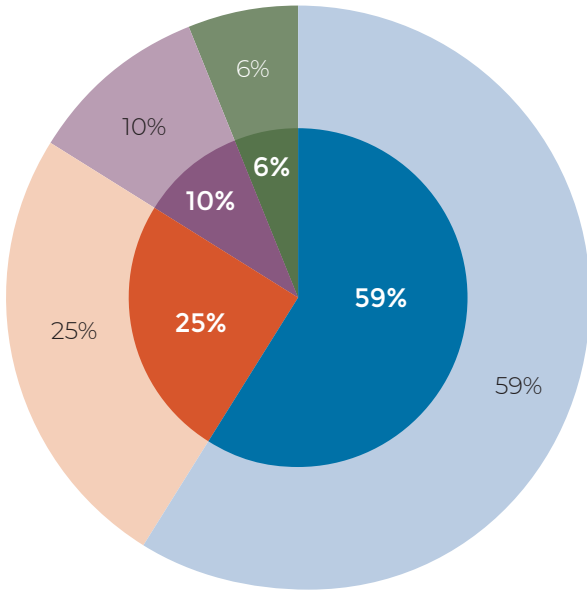
There are several supply chain pathways being utilised in the WA northern production system, with 5 main end points. Region-specific factors, such as distance to markets, influence which supply chain pathways are utilised by producers

*“Most Kimberley producers don’t send their cattle south unless they are part of a large vertically integrated company. The tick line, distance of travel, and road closure during floods limit profitability and feasibility so most of our cattle stay within in the Kimberley or get sent east.” – Producer, Kimberley*

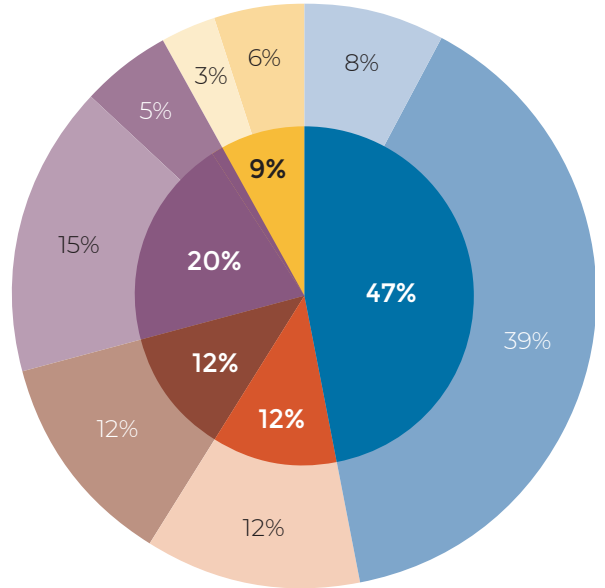


## Supply Chain Pathways Used by Region

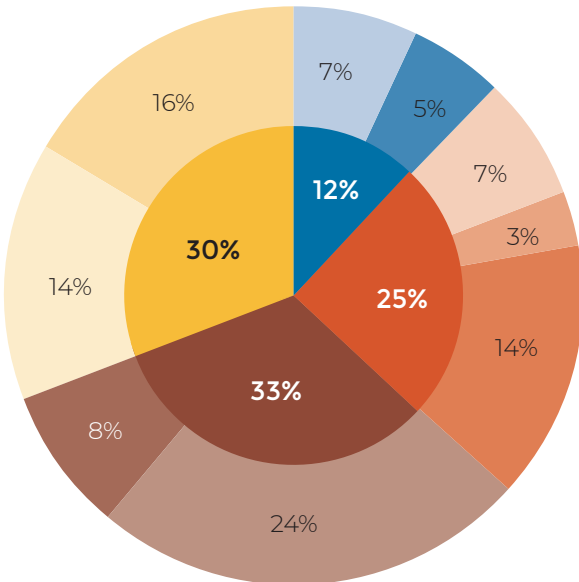
**Kimberley**



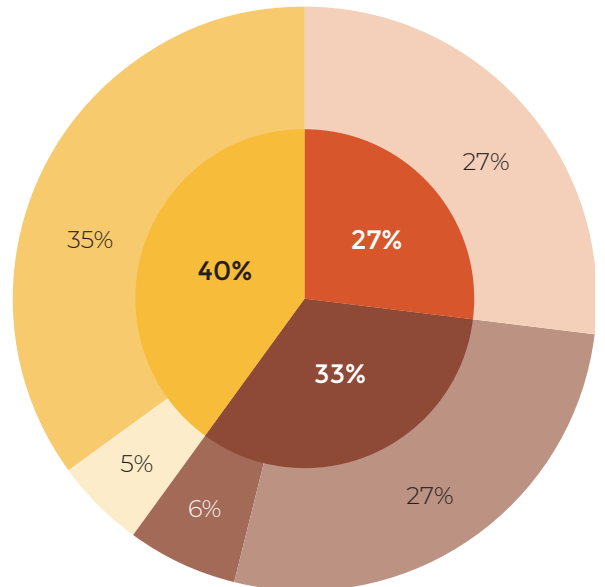
**Pilbara**



**Southern Rangelands**



**Southern Agricultural Region**



*"We are in a Blue Tongue Risk area which prevents us selling cattle to the Live Export market, so we sell most of them to a backgrunder in the East." –*

Producer, Kimberley

## Supply Chain Pathway Options by Sale Endpoint

### Live Export

- Pastoral Breeding-Feedlot-Live Export
- Pastoral Breeding-Backgrounding-Live Export
- Pastoral Breeding - Live Export

### Saleyard

- Pastoral Breeding-Backgrounding-Saleyard
- Pastoral Breeding-Saleyard

### Feedlot

- Backgrounding-Feedlot
- Pastoral Breeding-Backgrounding-Feedlot
- Pastoral Breeding- Feedlot

### Abattoir

- Pastoral Breeding-Backgrounding-Feedlot-Abattoir
- Pastoral Breeding-Backgrounding-Abattoir
- Pastoral Breeding-Abattoir

### Station/Farm (direct sale)

- Pastoral Breeding -Backgrounding-Station/Farm(Direct Sale)
- Pastoral Breeding - Station/Farm (Direct Sale)

### Backgrounding

- Pastoral Breeding-Backgrounding



*"We try to breed cattle suited to both the domestic and live export market so we have more flexibility" –*

Producer, Pilbara

## Key Influences on Pathway Selection

Most producers use multiple supply chain pathways to mitigate risk and maximise profit. The number of different pathways used varied depending on the producer’s business model and region-specific opportunities and limitations. The biggest influence on pathway selection was price premium offered (Figure 1)

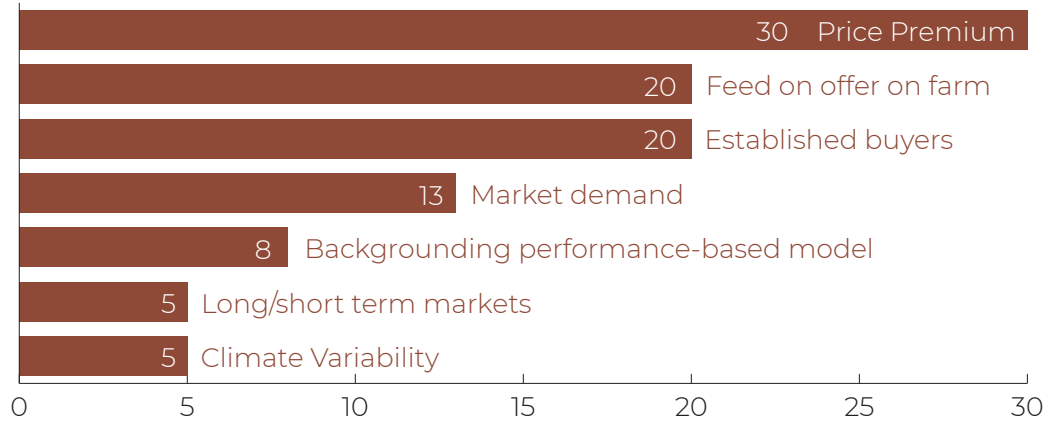


Figure 1: Factors contributing to decision on pathway selection

## Market Risk for WA Beef Producers

The five main risks perceived by producers are maintaining social licence to operate cattle production, lower global and domestic prices, severe drought and erratic rainfall, and high risk of mental health problems. Producers adopt various management strategies to mitigate these risks (Figure 2).

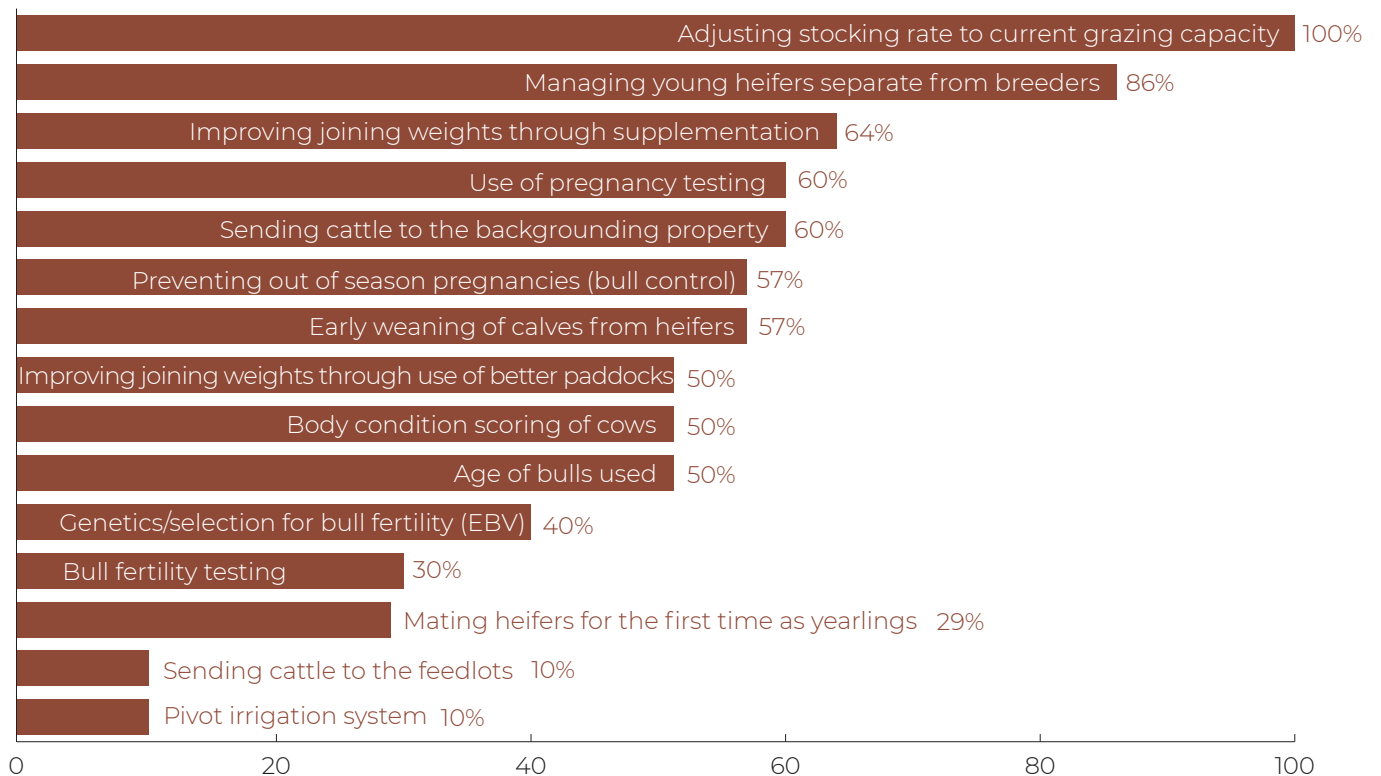


Figure 2: Adoption rate of management strategies to mitigate these risks

## Budget Analysis

Producers often make complex decisions on which supply chain pathway and which management strategies to select for their business. They must determine which combination of options will provide the best return, while also considering other factors such as animal welfare and risk mitigation.

This project developed an excel-based budget tool called BEEF (Beef Economic Evaluation Framework) to assist with evaluating profit from each supply chain pathway and different management strategies.

## Example Scenarios

Below are four typical scenarios experienced by WA beef enterprises. The project applied the **BEEF** tool to assess the return on investment with each supply chain option, including with/without using active destressing practices, which is a management strategy to minimise risk to their social licence (SLO).

### Case Study 1: Cow-calf → Various markets

**Size:** Small-scale

**Location:** Mid-West

**Focus:** Return from active destressing practices when selling direct to markets.

#### Profitability Ratio:

Without active destressing:

- Live Export: 1.14 (ROI: 7.1%)
- Saleyard: 0.92 (ROI: -4.2%)
- Abattoir: 1.58 (ROI: 23.6%)

With active destressing:

- Live Export: 1.16 (ROI: 8%)
- Saleyard: 0.94 (ROI: -3.3%)
- Abattoir: 1.61 (ROI: 24.4%)

#### Results & Recommendations:

- Abattoir sales provide the highest return
- Active destressing does not reduce returns

### Case Study 2: Cow-calf → Backgrounding → Various markets

**Size:** Small-scale

**Location:** Mid-West

**Focus:** Return from performance-based backgrounding on profitability when selling to markets.

#### Profitability Ratio:

Performance-based Backgrounding:

- Live Export: 1.28 (ROI: 13.1%)
- Saleyard: 1.03 (ROI: 3.1%)
- Abattoir: 1.76 (ROI: 29.5%)

Performance-based Backgrounding:

- Live Export: 1.28 (ROI: 13.1%)
- Saleyard: 1.03 (ROI: 1.7%)
- Abattoir: 1.76 (ROI: 29.5%)

#### Results & Recommendations:

- Backgrounding provides return to producers
- Active destressing does not reduce returns





## Case Study 3: Cow-calf → Feedlot → Various markets

**Size:** Small-scale

**Location:** Mid-West

**Case Study Focus:** Comparison of different market options following 100 days in feedlot, with/without active destressing.

### Profitability Ratio:

Without active destressing:

- Live Export: 1.11 (ROI: 5.4%)
- Saleyard: 0.89 (ROI: -6.1%)
- Abattoir: 1.53 (ROI: 22.2%)

With active destressing:

- Live Export: 1.16 (ROI: 6.7%)
- Saleyard: 0.91 (ROI: -4.8%)
- Abattoir: 1.57 (ROI: 23.4%)

### Results & Recommendations:

- Active destressing does not reduce returns
- Abattoir sales should be prioritised

## Case Study 4: Cow-calf → Various markets

**Size:** Large-scale

**Location:** Kimberley

**Case Study Focus:** Return from active destressing practices when selling a fixed proportion of cattle to abattoir and live export markets..

### Profitability Ratio:

Without active destressing:

- 1.17 (ROI: 7.9%)

With active destressing:

- 1.17 (ROI: 8.1%)

### Results & Recommendations:

- Active destressing does not reduce returns.



## Best Practice guidelines for increased adoption and program effectiveness

This project developed a transdisciplinary framework using experiences and lessons from the BeefLinks Program.

A **transdisciplinary** approach combines interdisciplinary collaboration with engagement of non-academic participants, such as industry experts and stakeholders, to solve problems and create new knowledge and learning.



### Facilitated learning

Assisted the beef industry to gain knowledge, awareness and experience with project results and outputs



### Co-designed a budget analysis tool

Co-designed an economic framework aimed at practical ways to improve decision making and drive practice change



### Conducted 50+ interviews with stakeholders

Interviewed stakeholders to gain insights on-ground management practices and market options, and the associated risks, costs and benefits.



### Developed relationships with stakeholders

Created connections by conducting site visits, meeting producer groups and industry representatives, and participating in industry events.



### Established diverse research teams

Worked with a diverse team of researchers and incorporated a variety of perspectives into the scientific data collection and analysis.



### Created a feedback loop with stakeholders

Communicated outcomes through a variety of methods and formats, including stakeholder reference groups, factsheets and feedback sessions.

Figure 3: BeefLinks implemented a transdisciplinary framework

## Contributions to the beef industry

The following are some key learnings for our stakeholders based on the results from this project.

### Producers

- Use **BEEF** to evaluate and compare returns for different supply chains and management practices
- The abattoir pathway generates the highest ROI, followed by live export and saleyard markets.
- Management practice changes can reduce risk to social licence to operate without reducing returns or market access.
- Backgrounding cattle is a viable management option
- Building trust, collaborating, and frequent communication with backgrounders and feedlots is crucial for smooth cattle transition from the pastoral station.

### Government

- Most of the WA public think animal welfare is more important than environmental outcomes.
- ADOPT is the most used and the suitable tool for predicting adoption of new technology and management in pastoral cattle enterprises.
- To increase adoption rates, time and resources should be invested in relationship building, co-designing outputs, creating factsheets, and providing extension activities and support beyond project end dates.
- Maintaining social license to operate cattle production is one of the top risks perceived by producers.

### Networks & support businesses

- Provide capacity building and investment into animal weighing equipment, demonstrate how to use the weighing system and collect the data, and reinforce the value of the data in decision-making.
- Incorporate **BEEF** analyses into training and events to facilitate adoption and improve decision making among producers.
- Increase knowledge and skills of active destressing practices through training workshops (e.g., weaning to yards, familiar feeds, visual cues, etc).

*"Many producers have a 'wait and see' attitude, which protects them from adopting technology that doesn't continue to be supported"*

– Industry representative.



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## Way forward

This project has identified several key areas where future R&D efforts can be focussed to improve the value being delivered to the beef industry:

- A detailed economic analysis of the returns generated at each step in the beef supply chain.
- A Return-On-Investment from the adoption of new technologies using BEEF.
- Evaluate the impact of cattle handling and preparation on shrinkage through the supply chain.

## Funders & collaborators

This research was jointly funded by Meat Livestock Australia (MLA), The University of Western Australia (UWA) and the MLA Donor Organisation. The project was a collaboration between multiple BeefLinks projects run by the various research disciplines (P.PSH.0949, P.PSH.1233, P.PSH.1245 & P.PSH.1262) as well as with many industry groups, WA beef producers, and WA's Department of Primary Industry and Regional Development (DPIRD).

## Major Stakeholders

The following industry groups and organisations assisted us with project implementation by connecting us with producers and co-designing our outputs; DPIRD, Gascoyne Catchment Group, West Midland Group, Rangelands NRM, Grazing Innovation, Kimberley Pilbara Cattlemen's Association (KPCA), Mingenew Irwin Group, Rio Tinto Iron Ore, Select Carbon, and Pardoo.

## Acknowledgements

The authors wish to acknowledge the assistance of all who were involved in this project, particularly the participants of the surveys, interviews, reference groups and case studies, as well as all the research teams and Steering Committee members.

## Publications

A Final Report was delivered to MLA containing technical reports, tools and recommendations. Other publications will be available on our project website under BeefLinks. Following are some useful resources for our industry stakeholders:

- Industry Summary Report (this publication)
- Supply Chain Map
- Consumer Survey Fact Sheet

## Training Opportunity

We support a Partner & Involve strategy. Contact us to engage our services and deliver training packages on this work.

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## Contact Us

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