



Department of  
Primary Industries and  
Regional Development

## Western Australian Sheep Industry

### Research, Development and Innovation Plan 2018-2025

*Industry consultation, March 2018*

The Research, Development and Innovation Plan 2018-2025 will set out the investment priorities and the ways of working for DPIRD's Livestock directorate. It will support DPIRD's overall role of delivering more value to the agriculture and food sectors.

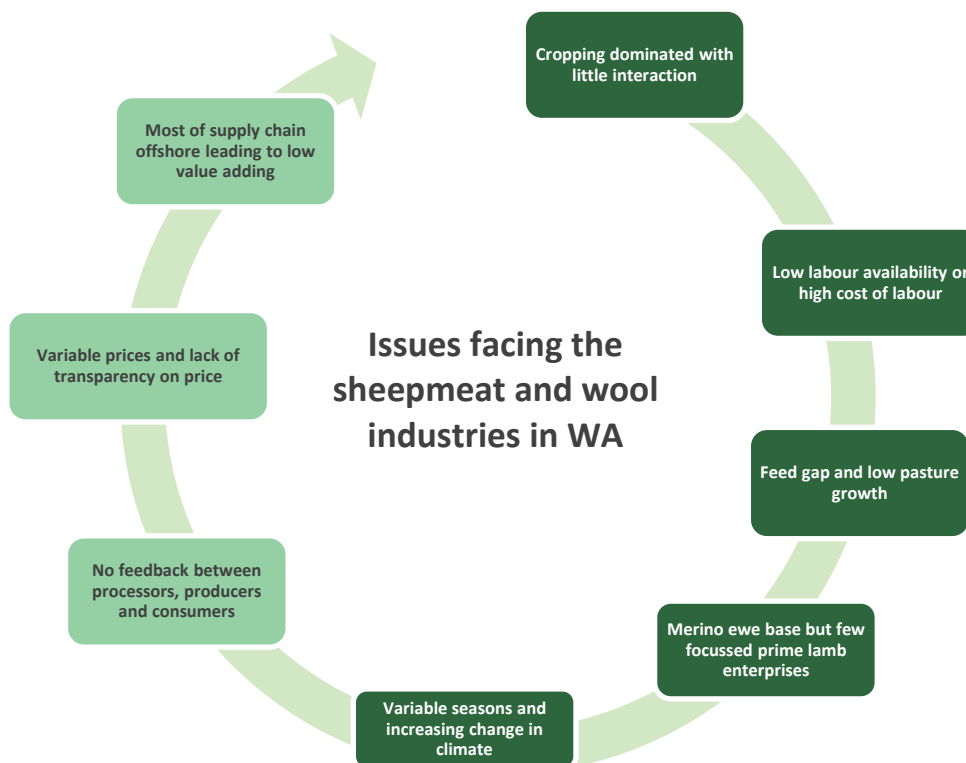
DPIRD Livestock R D & I directorate works in:

- commercially relevant research and development;
- driving innovation and advancing productivity and value creation throughout the value/supply chain;
- collaborating and partnering with industry, universities and across government;
- building local science capacity and networks;
- attracting RD&I investment and new technology providers to our regions; and
- ensuring the rapid and effective translation of research findings to commercial outcomes and economic impact.

***The Department of Primary Industries  
and Regional Development's role is to  
grow and protect Western Australia's  
agriculture and food sector.***

DPIRD supports all aspects of food and fibre production at each stage of the supply and value chains. This is achieved by building market knowledge and conducting innovative research and development. We also develop and enforce regulations that ensure the production of high-quality, safe and healthy food for our customers in Australia and overseas. Importantly, we are strong advocates for the WA agrifood sector and its vital contribution to the economy, jobs and regional growth.

We work with industries and businesses throughout the sector, helping them identify and capitalise on opportunities for growth as well as to manage and overcome obstacles.



Our vision for a profitable sheep industry:

Grazing systems	Profitable production	Technology	Markets & industry
Productive and resilient pastures within a cropping/ pasture system that supports profitable wool and lamb production.	Quality wool and sheep meat produced by modern Merinos that fit our variable climate.	Livestock technology and data supporting quality, accurate, safe and labour friendly systems.	Support of markets and investment for value-added meat products that fit consumers' needs.

DPIRD's way of working is to:

Research	Development	Analysis	Adoption
Focus on applied research.	Focus on building value to existing research.	Focus on industry analysis for strategic direction and industry.	Provide new knowledge for adoption packages and events.
Build relationships with R & D Corps and across other partners such as universities.	Designing decision support tools for key management and marketing decisions.	Economic/financial analysis of new products and potential business models.	Extension is delivered by private sector unless market failure.
Utilise Katanning Research Facility as base for work.	Integration of new technology along the chain.	Modelling of best practice on-farm and off-farm.	All R & D work to have built in adoption processes in project.
Support scholarships and internships with a research and development focus.			

And provide essential support to:

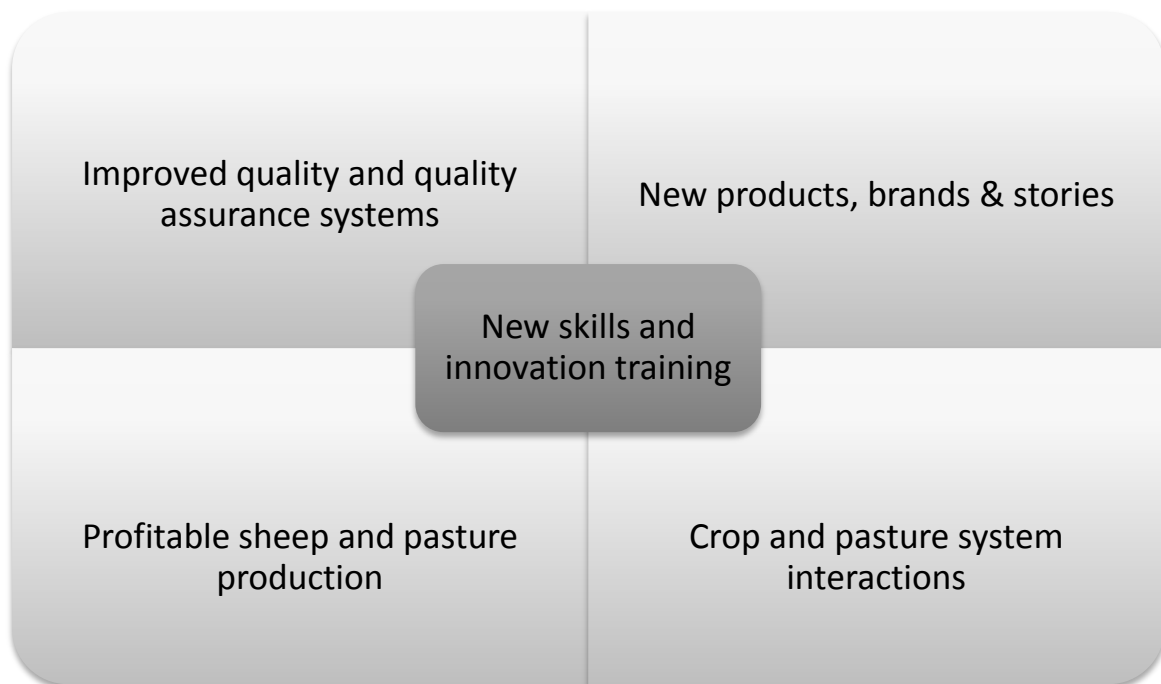
- Incident responses
- Animal welfare issues
- Dry seasons or extreme weather events
- Industry wide issues that impact the state

## Themes for investment

Six themes have been identified as core to the sheep industry. These themes also support the Sheep Alliance of WA's Strategic Direction.

The themes are either incremental or transformational in nature. Industry requires work in both areas and DPIRD will endeavour to meet our Minister's objective of delivering more value utilising our strengths and investing in new skills and knowledge.

1. Improved quality/assurance systems across the whole chain
2. New products, brands & story for the whole chain
3. New skills and innovation training within the sector
4. Profitable sheep production
  - a. Efficient & low labour production
  - b. Precision management
5. Profitable pasture production
  - a. Efficient & low labour management
  - b. Precision management
6. Crop and pasture system interactions



## **1. Improved quality/traceability assurance systems across the whole chain**

This theme is about building opportunities for new markets and protecting existing markets for our products. It is also about recognising the customer's need for trusting the food they eat. WA lamb and sheepmeat has a reputation for being safe as well as 'clean and green' and Australia's quarantine and biosecurity systems underpin this. Now more than ever before customers and consumers want details on production systems. WA producers receive little feedback on how their lamb performs or meets quality targets and processors have poorly developed systems for providing feedback to both the producer and the customer.

Some of the issues identified are;

1. Processors don't have a product quality assurance scheme that protects and enhances WA lamb and are probably unsure of how to go about getting one.
2. There is no price penalty or bonus for producing quality lamb.
3. There is little incentive for producers to change lambing time to produce out-of-season lamb and little incentive/reliability for feedlotter/backgrounder to produce out-of-season lamb.
4. Technology for traceability is growing but adoption is low and uncoordinated.

Work in this theme will need to be around building relationships along the chain, improving information, costings and investment opportunities to producers and processors. It will need to integrate the biosecurity and traceability functions of NLIS and eNVDs.

## **2. New products, brands & story for whole chain**

This theme tackles the emerging need for our products to be recognised by export markets and customers to maintain or build value. Our customer base is expanding in Asia, the Middle East and Europe with meat consumption tipped to continue rising. This is also driving an increasing demand for feed grains. Products that fit the change in eating styles, the high level of single meals and ready meals are in demand. Europe in particular, but also ME and Asian countries will require a greater demonstration of production sustainability, welfare and provenance. Having brands that are packaged in Australia with a story and quality that meet these demands is important and allows more value to be retained in Australia.

We have few brands that champion attributes such as animal welfare, carbon neutral, family and grass fed products to meet consumers' needs. There is also a growing demand for blended (prime meat and legume/pulse) products and boutique level new products and packaging.

Some of the issues identified are;

1. Limited on-shore processing and packaging of meat products prior to export.
2. Undeveloped forage systems that support grass-fed or low carbon meat products in a low rainfall environment.
3. Opportunities for niche branded products or state level brands for our quality products are yet to be developed.

Work in this theme could be partnered with Food Innovation Centres and meat scientists and would need to focus on high value products and partnering in campaigns. Some of the opportunities are around flavour and quality enhancements through production allowing speciality products and Boutique value chains developed, adding to regional value.

### **3. New skills and innovation training within the sector**

This theme is about building capacity and skills in technology that is or may become useful for animal production. Technology is part of an ever changing world and we need to harness the learnings from other industries and countries. There are specific skill sets that are becoming more important in agriculture such as data scientists, computer and soft technology systems designers, communications and connectivity skills. These skills exist and are growing rapidly in other countries and other industries. How do we increase existing personnel's skills and knowledge as well as bringing in new entrants and new thinking into the sheep industry?

Some of the issues identified are;

1. Producers may not know which skills or products or technologies are the most useful for their business.
2. Universities have greater diversity in technology and student skills than those that lie in agriculture focussed faculties.
3. Little interaction between agriculture and other industries – no innovation hub drawing on WA's vast experience in mining or other systems that use similar technologies.

### **4. Profitable sheep production**

This theme tackles the on-farm production of sheep and pastures/feeds that they rely on. Some of the challenges are around making the current farming system more efficient through lower inputs or labour management or making practices or technology more precise and thereby improve the production levels or quality from the same inputs. There are technology opportunities in both animal and pasture production that are introducing a true change in what we do in production.

#### **a. Efficient & low labour management:**

Some of the issues identified are;

1. Wool harvesting has a high labour commitment and many areas don't have access to skilled staff.
2. Many management systems and equipment aren't interlinked allowing electronic data to be shared across platforms.
3. Feedlot and backgrounding production knowledge is not widespread and requires better and more efficient systems suited to WA.

#### **b. Precision management:**

Some of the issues identified are;

1. eID for sheep allowing individual management and linking with Livestock Production Assurance (LPA) and eNLIS.
2. Identification of production characteristics and genetic merit in animals using sensors is still in development.
3. Feedback systems from processors and DEXA allowing better genetic selection need to be in place.
4. Our understanding of efficiencies in feed conversion and how wool and meat are interacting need to be improved for modern Merinos.
5. Critical success factors for a sheep enterprise aren't widely understood.

## **5. Profitable pasture production**

This theme is around better matching the feed base to the product and land use and developing better pasture and forage systems that increase livestock production. WA agricultural land poses numerous challenges for livestock producers and in many areas pasture systems are used that were developed 50 years ago and are managed in much the same way. Pasture systems are currently not meeting the needs of livestock or are seen as low priority on cereal dominant farms.

### **a. Efficient & low labour management**

Some of the issues identified are;

1. Cheap fast and reliable method of assessing FOO isn't yet available.
2. Cheap fencing and watering infrastructure for better/targeted grazing.

Work in this area could include; Robotic and remote monitoring of pastures for FOO, On-farm testing of feed quality and Quick calibration of feeding equipment.

### **b. Precision management**

Some of the issues identified are;

1. Low pasture quality & quantity data from remote or autonomous sources not allowing good planning, grazing or fertiliser management.
2. The best legumes for different environments aren't really known.
3. Weed control and enhancing desirable species – mapping to build management knowledge isn't a focus with most producers.
4. Modern fodder options are underutilised or undeveloped.

## **6. Crop and pasture system interactions**

This theme tackles the complementarities and the conflicts between the livestock and cropping enterprises and the lack of good knowledge in how best to make them work together to support a profitable mixed farming business across both the Medium Rainfall Zone and the Cereal-Sheep Zone. The significant rise in sheep and wool prices and the understanding of constraints to high input cropping enterprises are changing the profitability and limiting the exploration of synergies across the agricultural zone.

Some of the opportunities identified are;

1. Updated farming systems packages and information available to producers.
2. Specialty feed grains and forages as part of the cropping system.
3. Integrated annual feed supply working with cropping equipment.
4. Land capability mapping with financial analysis allocating for crop & permanent pasture.
5. Pastures from Space integration with cropping yield prediction packages (Yield Prophet for pastures).

## Process for feedback from industry

Attend one of the R&D for Me forums to give ideas and vote on priority areas of work

Fill out the form attached to this document with your thoughts and ideas and post to the address below

Visit the website where you can respond to the proposed priorities and leave ideas or email Mandy Curnow [mandy.curnow@dpiird.wa.gov.au](mailto:mandy.curnow@dpiird.wa.gov.au)

### Timeline

Industry and government consultation: March 2018

Plan finalisation & ratification by DPIRD: April 2018

## Feedback

Are there national or global trends or work that may impact on the sheep industry that haven't been captured in this document?

Rank the investment pillars in order of value to the livestock sector in WA

1 – highest priority      6 – lowest priority

quality & assurance systems	new products, brands and provenance	skills & innovation training	profitable sheep production	profitable pasture production	crop & pasture systems

Identify the importance of each pillar/theme for the focus for work by DPIRD

quality & assurance systems	new products, brands and provenance	skills & innovation training	profitable sheep production	profitable pasture production	crop & pasture systems

Please identify any further ideas on where DPIRD should invest its time and money.