

ADAPTING DAIRY FARM SYSTEMS

PROJECT ACTIVITIES OVERVIEW



Project Background

The Australian dairy industry is currently in a state of unprecedented and rapid transformation with numerous dairy businesses making changes in their production system to address evolving feedbase and climatic pressures. Water policy reforms have impacted dairy communities through increased competition for water resources across the Murray Darling Basin. Climate change is contributing to increased volatility in seasonal conditions, shifting rainfall patterns and year on year increases in average temperatures. These changes are set to continue, impacting animal and plant performance into the future.

Many dairy businesses in Australia, and more specifically northern Victoria, inland New South Wales, South Australia and Queensland are making substantial changes to their farming systems to cope with these challenges. Without targeted and strategic support to facilitate farming system adjustment, there is a significant risk sections of the dairy industry will not transition quickly enough, and farmers could make poor investment decisions.

Adapting Dairy Farm Systems is a three-year project. The project will build resources and processes to assist dairy farmers and their advisers make low risk decisions around the construction and implementation of cattle feeding infrastructure with, or without, cattle housing. These decisions are often capital intensive and create flow on effects on how systems need to be modified.

This project has formed collaborative partnerships with Agriculture Victoria, Murray Dairy, NSW DPI and subject matter experts both within and outside of Australia. A National Feedbase System Strategy Advisory Committee (a community within dairy Moving Forward) has also

been established to serve as a consultative group for work around feeding and housed systems Research, Development and Extension (RD&E) priorities and provide constructive technical and strategic advice in this area.

Project Objective

The objective of this project is to provide Australian dairy farmers with information and resources that will support them to make well informed decisions when designing and using cattle feeding and housing systems, to ensure profitability is maximised and risks are minimised. Specifically, the project will:

- Provide farmers (and their advisers) access to robust and evidence-based information to support their decision making as they contemplate change in the areas of feedbase alternatives, cattle feeding infrastructure and housing infrastructure.
- Provide farmers access to a decision support process that will identify and mitigate risks before any capital is invested and farm systems changes are enacted. This decision support process may also be used to optimise infrastructure management post investment.
- Provide farmers with access to Australian based service providers with recognised expertise and skills in the areas of intensive farming systems or cattle housing design.
- Provide industry recognition and support for the farmers currently using or intending to move their businesses towards forms of intensive feeding system and/or housing system.

Key deliverables of this project include:

1 Desktop Review

In progress – subject to peer review, due for completion December 2021

The desktop (literature) review was commissioned by Dairy Australia and was conducted by highly experienced and well-respected dairy consultants, Ray King and Steve Little. The desktop review had two components:

- A technical review into alternative feedbase and forage options for more diverse feeding systems on dairy farms, and
- A technical review into infrastructure required for more diverse feeding and housing systems on dairy farms.

The review identified some knowledge gaps that may be worthy of further investment in RD&E.

National Guidelines for Feedpads and Housing Systems

In progress, due for completion June 2022

The national guidelines will be based on best practice, underpinned by published research and engineering standards and reflective of current statutory and regulatory planning. A team of subject matter experts from around Australia and United States are authoring content and all chapters are undergoing a further, technical peer review process. These guidelines will replace the existing *Victorian Dairy Feedpad and Freestall Guidelines* (2010) and be applicable Australia wide.

2 Social and Economic Research: Dairy Transition Project

In progress, due for completion December 2021

This project is an economic performance observational study conducted on selected farms using intensive feeding systems with, or without, cow housing in northern Victoria and NSW. An economic analysis will be performed on up to 12 case study farms (6 in VIC, 6 in NSW). This study will be supported by an accompanying social science parallel study to understand the motivations and aspirations of dairy farmers. This research will enable all dairy farming communities to be more profitable and resilient by having the confidence to make informed investment decision when transitioning to a feeding system using mixed rations and, potentially, cattle housing.

3 Focus Farm: Focus Farm Re-focus

In progress, due for completion June 2021

The Focus Farm Re-focus activities were looking to bring peer groups of farmers from a wide geographic area together for face-to-face events. Each event was designed so experts in a certain field and farmers could discuss relevant matters in depth. Guest speakers and host farmers were challenged to leave participants with enough information to know how and why they might implement some of what was discussed, or alternatively why it may not be worth implementing on their farm. Two groups of 10 participants were formed in the Murray Dairy region:

- Group 1 – Transition to more intensive system
- Group 2 – Grazing in a reduced water environment.

The Focus Farm Re-focus project had to adapt to manage Covid-19 restrictions. Participants were invited to outline a small project on their farm that the project could help bring expertise in to help with and then if restrictions eased follow up with on farm open days to explore the outcomes as a group. With the easing of C-19 restrictions, and the return to face-to-face delivery, the deliverables over the next four months include:

- Finalisation visits and communication plans
- Five on farm workshops discussing the C-19 farmer small projects
- Development of technical resources, and
- Collation of case studies and project roadshows to communicate project outcomes.

4 Agronomy Trial: Summer Starches

In progress, due for completion December 2021

This study will evaluate grain sorghum for silage as a potential alternative to maize in the Murray Dairy region. Grain sorghum has a higher tolerance to water stress than maize and thus may be an alternative source of summer starch under limited water conditions. The three sorghum varieties being assessed are White Grain Sorghum, Red Grain Sorghum and a Forage Sorghum. These varieties will be compared with both long and medium season maize varieties.

Three irrigation treatments have been applied. A high irrigation treatment to meet the water requirements of maize, a medium irrigation treatment to meet the water requirements of sorghum and a deficit irrigation treatment to determine how both crops respond to water stress conditions.

5 Decision Support Process

September 2021 – December 2022

When any farm is contemplating a decision to create feeding infrastructure beyond the paddock and dairy, they add infrastructure components into their production system. Prior to any capital being committed, the first decision always needs to be around the feedbase portfolio for both homegrown and purchased feed. From this point, decisions on deploying the feedbase and using new feeding infrastructure components needs to be recognised along with any additional people capacity required and associated changes to operating costs. The decision process may include housing infrastructure.

Each of five deliverables described above will inform an operational "Decision Support Process" to guide farm businesses who are contemplating altering their Feedbase (purchased or home grown), feeding system or incorporating housing.

6 Capability Scan

June 2022 – August 2023

An assessment of active Australian based service providers capability in this technical area will be conducted. Currently international subject matter experts have expanded outside of the North American geographical area to service some Australian business transitioning to housed systems. It may transpire that any succession plan from the established expertise pool in Australia relies on new players being State or industry sponsored.

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