

Southern Dairy Hub Future Farm Systems Trial Strategy 2025



Introduction

Southland's unique geographical features, including its cool temperate climate, high rainfall, and fertile and heavy soils, make it an ideal location for dairy farming. The region's long growing season supports high pasture growth rates, while its proximity to coastal and riverine environments necessitates careful environmental management. Also unique to Southland are soils prone to pugging, flooding, and prolonged periods of soil saturation.

These factors make it important that Southland has unique and targeted testing, research and trials of future-focused dairy systems.

The Southern Dairy Hub (SDH) is a leading research and demonstration farm committed to identifying and showcasing outcomes from dairy farming systems that are fit for the future.

Through real-time, tangible data collection via farmlet trials, SDH intends to provide Southland and South Otago dairy farmers with insights into sustainable, profitable, and environmentally responsible farming practices.

Why We're Here

SDH's purpose is to address key challenges in Southern dairy farming, including environmental sustainability, economic viability, and animal welfare, and other challenges as they present.

With evolving industry regulations, shifting consumer expectations, and the need for resilient farm systems, SDH is ideally positioned to explore and validate future-proofed dairy farming models.

By collaborating with industry partners such as DairyNZ, AgResearch and MPI, we aim to leverage research, innovation, and technology to support farmers in making informed decisions and ultimately create a positive impact for our region.

VISION

To be the most trusted research and demonstration hub for southern – and all New Zealand – dairy farmers.

MISSION

To provide economic, social and environmentally sustainable solutions for southern dairy farmers and our community.

We have a world-class intergenerational asset that is uniquely geared to running complex farmlet trials in a robust and credible way.



A Temporary Pivot to Short Term Trials

Our strategic purpose points to long-term research, but this relies on future funding. In the interim we are focused on core business which is providing great data to inform great on-farm decisions by southern farmers.

Farm system trials, or demonstration farmlets, have been identified as a valuable opportunity to showcase and refine farming practices in real-world conditions. By comparing farm systems side-by-side, we can assess critical factors such as:

- ✦ The impact of lower stocking rates on profitability and efficiency.
- ✦ Strategies for reducing the environmental footprint (GHG emissions, nitrogen efficiency, and water quality impact).
- ✦ The role of emerging technologies in improving animal sentience / welfare and farm sustainability.
- ✦ Economic performance across different system models, providing clarity for farmers considering transitioning to lower or higher-input systems.



- To identify, measure and report on outcomes from a future dairy farming system that can be adopted by southern dairy farmers.
- To stimulate ideas and discussion on future farming systems.

How We are Doing This

We are implementing a multi herd comparison that will measure the performance of two contrasting farm systems, comparing a standard herd with a future herd, using different parameters, feed, and wintering practices. The trial is geared to build understanding of the levers to pull to achieve the lowest environmental footprint, and most potential for profitability using cows selected for generic merit.

- ✦ **Farmlet 1: Future Herd** – focused on greater individual cow performance at a lower stocking rate with less supplementary feed, a lower environmental footprint (methane, carbon, nitrate leaching), and emphasis on animal welfare (from an already high bar) and cow comfort.
- ✦ **Farmlet 2: Standard Herd** – has a higher stocking rate, a stronger focus on profit, and closely reflects a ‘typical’ farming system in the southern South Island.

Our Objectives

Research, test, and report on how environmental footprint (water quality and GHG emissions) can be reduced with minimal impact on profitability by:

- ✦ Farming a preselected future herd at a lower stocking rate focusing on increased efficiency to minimise profit impact, and improved animal comfort.
- ✦ Identifying the critical success factors to improving cow production in a lower input system.
- ✦ Showing leadership to our farming community by demonstrating a future proofed southern dairy farming system.
- ✦ Identifying opportunities to partner with providers of emerging technologies that will help reduce environmental footprint, improve animal welfare and deliver cost benefits.

Key Outcomes

Environmental Sustainability – Demonstrate best farm practices that enhance water quality, reduce greenhouse gas emissions, and optimise nitrogen efficiency.

Economic Viability – Identify pathways for maintaining or improving farm profitability within sustainable systems.

Animal Welfare – Develop and showcase improved herd management techniques that enhance animal health and productivity.

Farmer Adoption – Provide accessible, evidence-based insights that empower farmers to implement sustainable changes with confidence.

Collaboration and Knowledge Sharing – Strengthen partnerships between researchers, industry bodies, and farmers to ensure continuous learning and improvement.

How We Measure Success

Success will be measured through ongoing data collection, farmer engagement, and industry impact. We will track progress using monthly performance reviews and farmer led KPIs. These are being finalised through consultation with our farmers, but are likely to include factors, such as:

Environmental Measures

- ✦ Nitrogen use efficiency (kg MS per kg N applied)
- ✦ Purchased N surplus (lower quartile Fonterra target)
- ✦ Greenhouse gas emissions per kg MS (kgCO₂e/kg MS)
- ✦ Water quality indicators

Financial Measures

- ✦ Labour cost per hectare
- ✦ Feed spend per hectare
- ✦ Feed as a % of farm operating expenditure (FOE)
- ✦ Operating profit per hectare, cow, and kg MS

Workforce & Operational Efficiency

- ✦ Hours worked per week, per kg MS, and per dollar of operating profit
- ✦ Staff satisfaction and wellbeing measures
- ✦ Cows per full-time equivalent (FTE)

Animal Welfare Measures

- ✦ Lameness score – cases as % of peak cows
- ✦ Mastitis – cases as % of peak cows
- ✦ Body condition score – % of herd below target at key times
- ✦ Winter cow comfort – lying time
- ✦ Calf fate – proportion of calves entering the value chain

Metrics will be shared with farmers, rural professionals and industry bodies weekly through Hub Watch, the SDH website, media articles, Farm Open Days, Field Days, and webinars to provide insights into system performance.

What This Will Mean for Farmers

- ✦ **Practical, Hands-On Learning** – Farmers will witness firsthand how different approaches impact profitability, productivity and sustainability.
- ✦ **Sustainability and Resilience** – The trials will provide clear strategies for balancing environmental responsibility with farm profitability.
- ✦ **Confidence in Change** – By seeing successful implementation in real-world conditions, farmers can make informed, confident decisions.
- ✦ **Community Building** – A strong network of farmers, researchers, and industry stakeholders collaborating for better dairy farming practices.



Next Steps

- ✦ **Underway:** herd set up on farm and data collection
- ✦ **Data Collection and Transparent Reporting** – Continue to refine key performance indicators (KPIs) and set up foundation systems to share findings through accessible and transparent reporting formats.
- ✦ **Farmer Engagement and Field Days** – Establish a 2025/26 calendar of regular, free and farmer focused on-farm demonstrations, workshops, social media, newsletter, HubWatch and interactive sessions to ensure practical learning and adoption.
- ✦ **Collaboration and Industry Involvement** – Work closely with researchers, agribusinesses, and policymakers to align demonstration outcomes with industry needs.
- ✦ **Adapting to Future Needs** – Ensure demonstration trials evolve to incorporate new challenges, opportunities, and technologies as they arise.
- ✦ **Demonstrate the value of SDH** – Enhance the visibility of the value-add the Hub provides, that is specific, targeted and unique.
- ✦ **Readiness for future research opportunities** – Maintain our methodical approach to data capture and recording, as well as maintain our facilities so we are able to move seamlessly from the current demonstration to research.

Through the SDH Future Farm Systems Trials, we aim to provide actionable, research-backed strategies that enable farmers to thrive in a changing landscape. Our commitment to innovation, sustainability, and practical knowledge-sharing positions SDH as a cornerstone of dairy research and demonstration in New Zealand.