Future dairying concepts

Following are two of the concepts that have been developed out of the Leap 21 project of how our future dairy systems could look. One has a natural theme and has a focus on provenance, while the other looks to employ more technology in order to farm with greater precision.

Local and global, naturally

1 Forage mix to perfectly match animal diet requirements:

Offering diets to the animals that are well-balanced, match seasonal demand and reduce nutrient excretion.

2 Right plant, right place, right practice:

Plant species are chosen according to the functions that plant needs to fulfil in the system and the ecological conditions on each part of the farm.

3 Nature, people and climate:

Carbon capture and providing habitat for biodiversity, soil erosion control and provision of shelter for animals. This creates opportunities for job creation and community led projects for biodiversity enhancement.

4 Right forecast, right irrigation, right moisture:

Water is used very prudently, making sure that every drop counts. Water and nutrients are recycled in the system.

5 Every animal born has a purpose:

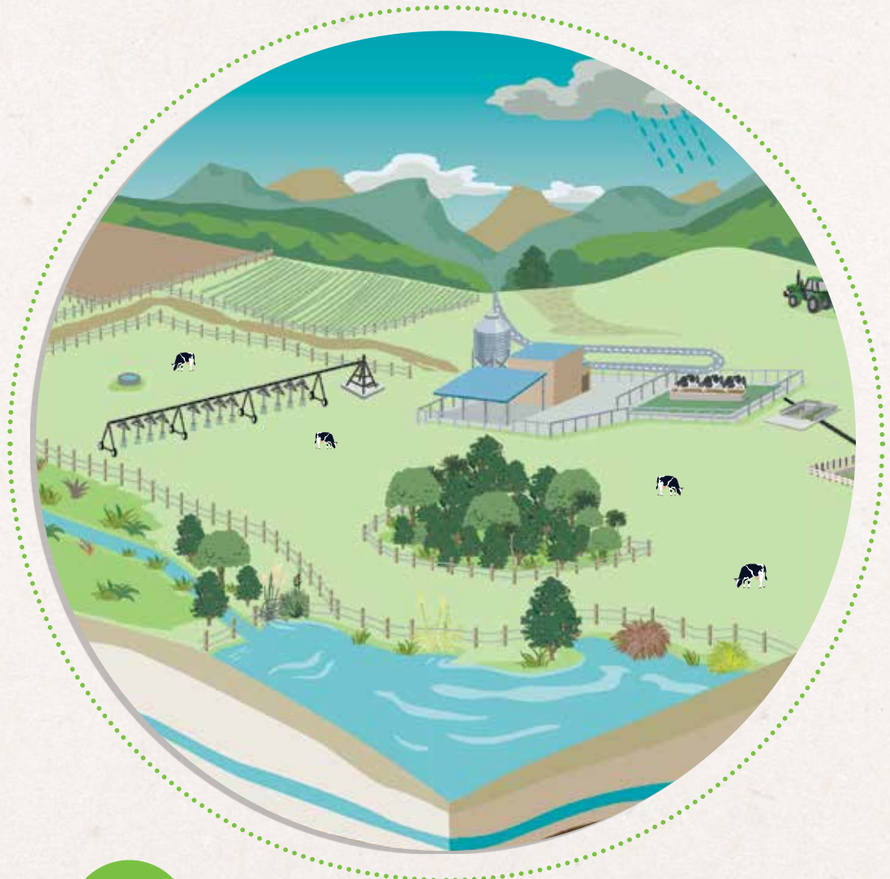
This concept places a high respect for animals, by making sure every animal that is born fulfils a legitimate purpose, and it is treated with high welfare standards. Sexed semen can be used for replacements and remainder using the best genetics for beef production with local processing.

6 Transparency and trust:

The system is highly transparent to consumers and to the New Zealand citizens, so that they can be sure that all practices on-farm and throughout the value chain are consistent with the any claims made.

7 Produce to the world and engage the community:

Local business opportunities are developed purposefully. This is to ensure that local economies are prosperous as well as farmers. Developing local brands to help stabilize markets by increasing customer loyalty and enhancing consumer trust through provenance.



High tech, high control

1 Better balanced pastures:

High energy pastures on the intensive area, higher yielding with a better balance of energy and protein, through the use of diverse pastures, hybridisation or gene-editing.

2 Manage rumen bugs to reduce methane:

Vaccines or additives will reduce methane emissions, and through more effective use of the plant energy, contribute to better production and cow condition.

3 Treat urine to recycle nitrogen:

The urine will be sprayed in a timely fashion with an inhibitor to reduce nitrification, preserving nitrogen for later plant use (the sprayer could be automated).

4 Sexed semen to add value:

The cows begin mating with sexed semen to create replacements as needed, with the remaining cows used with beef semen to produce valued animals for other markets.

5 Active management for business resilience:

Use of tailored financial products such as milk price futures and weather futures to smooth the cycles of market and climate risk. More flexible boundaries may allow for new land use opportunities.

6 Every space has a purpose:

Areas of the farm are assigned to particular functions, with flexible boundaries. Lower-value areas can be planted with trees, planting of riparian areas can be expanded, and critical source areas are actively managed.

7 Optimised once a day:

The farm is designed to operate as a once a day milking farm, allowing more time for owners, making a more employee-friendly work schedule, and improving cow condition and longevity.

NOTE: These concepts are not finished products or stated intent. They are designed to help us look at the big issues, contrast scenarios, and reflect the goals of different stakeholders. This will help us align research, development and action toward these issues.