

Supporting material for consultation on the proposed operating model for a better Breeding Worth

The purpose of this document is to provide more context on the proposed operating model for NZAEL to deliver a central and independent Breeding Worth with genomics.

The proposed model changes the way that animal evaluation is run in New Zealand and aims for the new services to be funded by those who utilise them.



System overview

The key pieces of logic behind the proposed business model are;

1. Fees need to be linked to cost centres, and these must be justifiable in their link to the service being provided and cost or value attributed to them. The proposed operating model has three key cost centres;
 - i. Genotype Assets
 - ii. Phenotypic data that support the reference population
 - iii. Software and system services for NZAEL operations
2. NZAEL cost centres will not include any consideration for future market share risk.
3. Fees paid by participants need to be structured with links to the benefits and risks faced by participants.
4. Royalties and payments need to be linked to the asset base or the costs being reimbursed.
5. NZAEL will not use milksolids levy to pay or reduce new or existing participant's fees. DairyNZ will continue to fund NZAEL operations (at a reduced level) through the milksolids levy.
6. NZAEL income and expenditure risks must be manageable.

In the proposed new system:

INCOME IS DERIVED FROM:

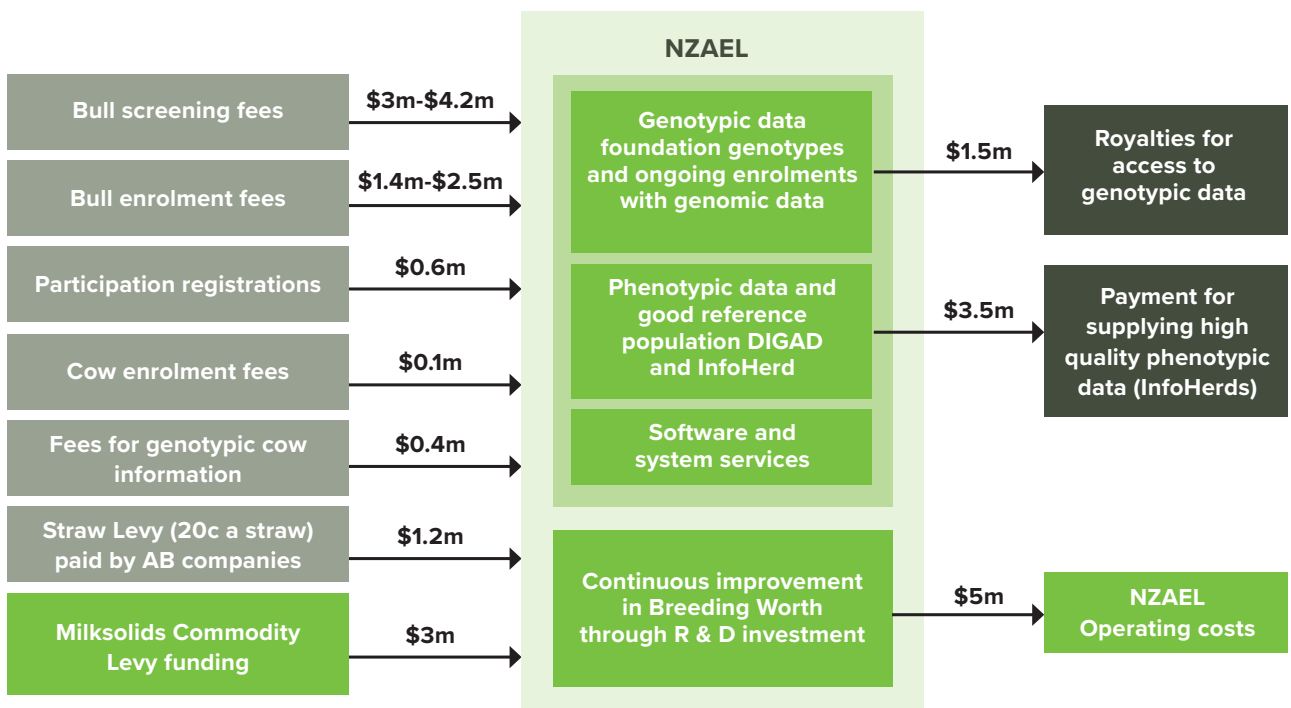
- Bull participation fees
- Cow participation fees
- Participant registration
- Straw levy
- Milksolids Levy allocated to NZAEL

OPERATING COSTS INCLUDE:

- Operation of the evaluation process
- Genotype royalties
- InfoHerd recruitment and maintenance payments



The allocation of income and operating costs is depicted in the diagram below.



Key costs

As NZAEL is an industry good organisation, the proposed operating model is cost-recovery not profit orientated. The approach taken to the proposed operating model is to start with an estimate of the costs to support NZAEL provision of genomic Breeding Worth. The three cost centres and the approach taken are summarised as:

1. Genotype royalties - Genotypes are valued at replacement cost, with an annual royalty charged for access to genotypes supported by NZ phenotypic data. This annual fee expires when the animal passes an age threshold. A Foundation premium is proposed to recognise the additional value of genotypes supplied early, supporting the system to be accurate from launch.

2. Phenotypic data - We have estimated the costs of obtaining high quality data from 100,000 cows every year to support the reference population. This number is based on the Australian GInfo Herds example.
3. NZAEL operating costs - NZAEL costs to build, maintain and develop animal evaluation systems is currently \$5M per year. A contribution of \$2M per year from participants has been included, allowing re-direction of the levy to other industry good activity such as research.

The fees proposed in the scenarios are based on two levels of bull fees, with varying assumptions of participation numbers leading to a balance of fees and costs.

Key assumptions

This proposed operating model has been developed with some assumptions to test the scale of the operation and where income streams and costs will come from.

- While all relevant genotypes should be deposited with NZAEL, only genotypes with supporting New Zealand performance data will attract a royalty. These are referred to as Qualifying genotypes. Genotypes from animals too old to be useful in genomic predictions will not qualify.
- Qualifying genotypes that are included into the NZAEL Breeding Worth will be valued at replacement cost (~\$40) and have an additional 25% 'foundation' premium for being provided at the start date (date TBD) and a valuation multiplier (5x) for bulls.
- Best estimate of Qualifying Foundation genotypes is 175,000 cows and 25,000 bulls, which leads to a total Foundation genotype valuation of \$15M.
- Leading to royalty payments of approximately \$1.5 million per annum (based on a 10% Royalty return).
- DairyNZ will also be funding and submitting Foundation genotypes on (and receiving royalty payments accordingly).
- A straw levy of approximately \$0.20 per straw to help fund NZAEL operations given the call on fees from royalties and InfoHerds (alternately this could be levied on cow enrolment at \$1/cow).
- Participant registration fees to ensure only committed participants (AB companies, Genotyping companies, Breed Societies) engage with NZAEL.
- A net \$2M contribution to NZAEL running costs from fees. This is 40% of the current \$5M pa funded by the levy.

Options within the system for bull screening and enrolment fees

- Two scenarios are described with contrasting bull screening and enrolment fees. The key elements of this are:
 - Two alternate screening evaluation fee options for bulls (\$300 - Low screen cost or \$700 - High screen cost per bull) leading to different participation rates in screening (10,000 or 6,000 per year respectively).
 - Differentiated enrolment fees for enrolled bulls, based on extent of use (Natural mating, Low use AI, High use AI). Up to \$4,000 pa charged for high-use AI bulls in the Low Screen case.

InfoHerds

A well run InfoHerds programme will provide a highly accurate reference population that will help ensure the predictions made using genomic information are relevant to the New Zealand dairy herd.

InfoHerds is a mechanism where farm business can enter a contract to collect and supply high quality phenotypic data for a payment. It is likely that many of these farms will operate within a Herd Records Provider scheme.

The standard of phenotypic data required includes all cow physical traits (weight, Body Condition Score, etc), frequent herd testing, management decisions and fertility treatments.

The cost of payment is a substantial part of the costs of the new system, greater than genotype royalties, and will potentially involve 100,000 animals per annum.

Straw levy and cow fees

Options to broaden the revenue base include a straw levy and a cow enrolment fee. Both of these reflect that farmers obtain value from a Better Breeding Worth in the genetic merit of their cows. A straw levy or cow enrolment fee would contribute to funding the overall scheme.

Where cows are being genotyped and receive a genomic Breeding Worth, their owners are also benefiting from the genotype and InfoHerds assets, and should pay a fee for this.

Financial viability

The scenarios modelled reflect a static situation, with assumptions about participation affecting both revenue and costs. To manage the risks to NZAEL of an unknown future revenue scheme and asset base requires additional operating rules.

These have not been considered in detail, but possible options include:

- Limiting royalty payments to less than fees received for genomic evaluations
- Capping the number of total royalties paid for qualifying genotypes
- Ring-fencing a proportion of fees to support InfoHerds contracts
- Phasing introduction of InfoHerds to reduce risk of over-commitment of costs
- Maintaining flexibility of levy funding, and allowing future revenue sources to be adjusted.



DairyNZ

Animal
Evaluation