

# Value-creating decision support systems – a vehicle for deploying innovation

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## **Decision support system**

A computerised program used to support determinations, judgements, and courses of action

Helps making more informed decisions, faster!

UK study of 244 farmers reported that 49% used decision support tools

- 28% were software-based
- 22% were paper-based
- 10% were apps

Vehicle for deployment of innovation





## Potential of breeding



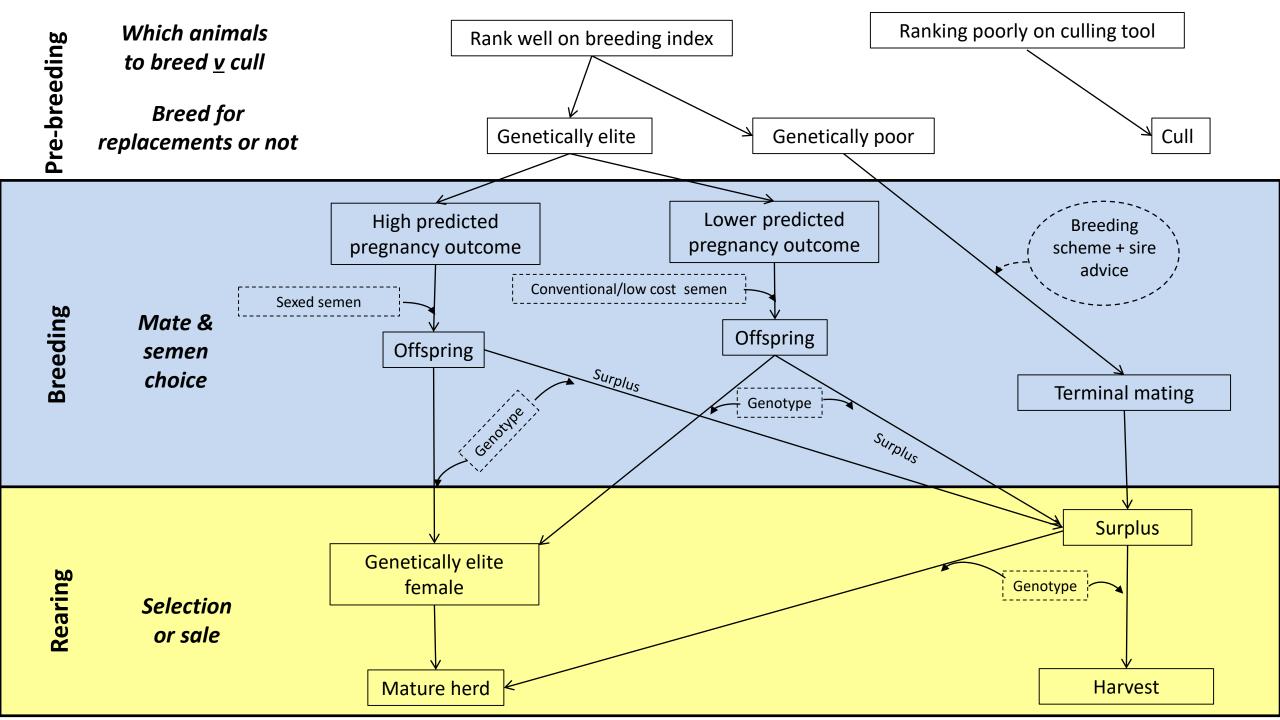


**Selz-Pralle Aftershock 3918** 



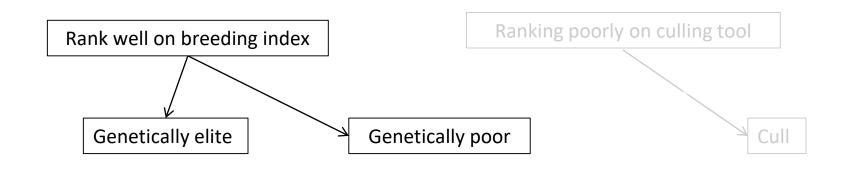
35,475 kg of milk 1403 kg fat (4.0%) 1085 kg protein (3.1%)

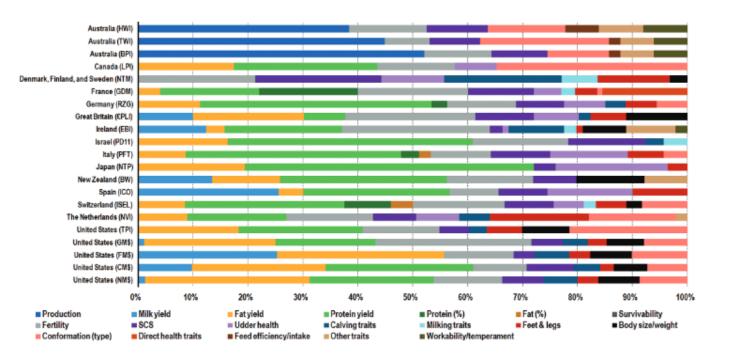




Which animals to breed <u>v</u> cull

Breed for replacements or not





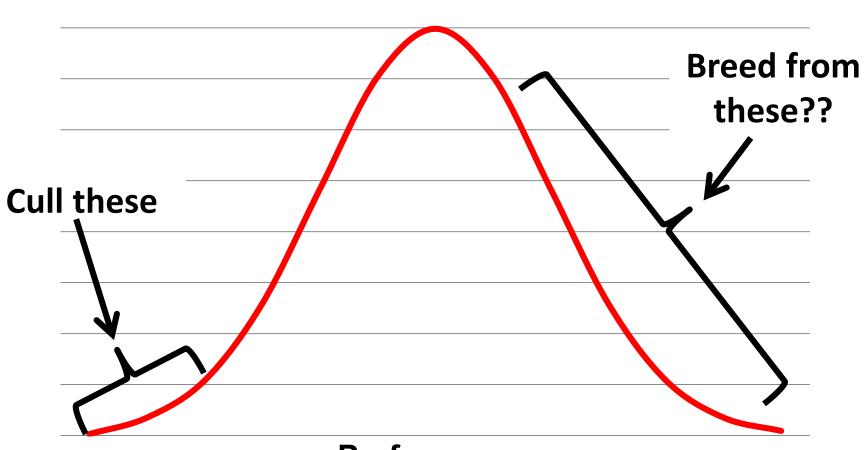
- 1. Must be important
- 2. Must exhibit genetic variability
- 3. Must be measurable or correlated with a measureable trait
- Phenotypes and edits
- Statistical model
- Genomic evaluations
- Relative weights



Which animals to breed <u>v</u> cull

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Which animals to breed <u>v</u> cull

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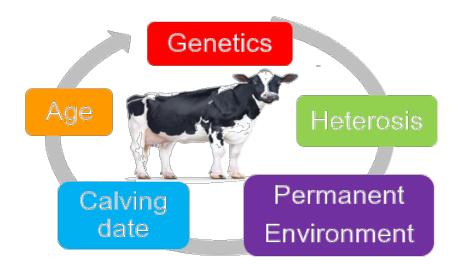




J. Dairy Sci. 98:4225–4239 http://dx.doi.org/10.3168/jds.2014-9073 © American Dairy Science Association®, 2015.

Development of an index to rank dairy females on expected lifetime profit

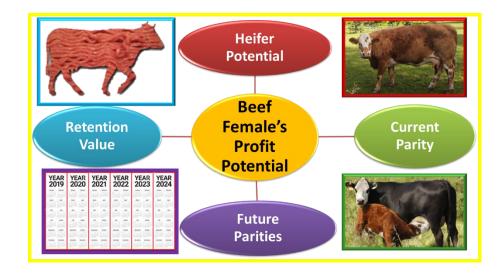
M. M. Kelleher,\*† P. R. Amer,‡ L. Shalloo,\* R. D. Evans,§ T. J. Byrne,‡ F. Buckley,\* and D. P. Berry\*1



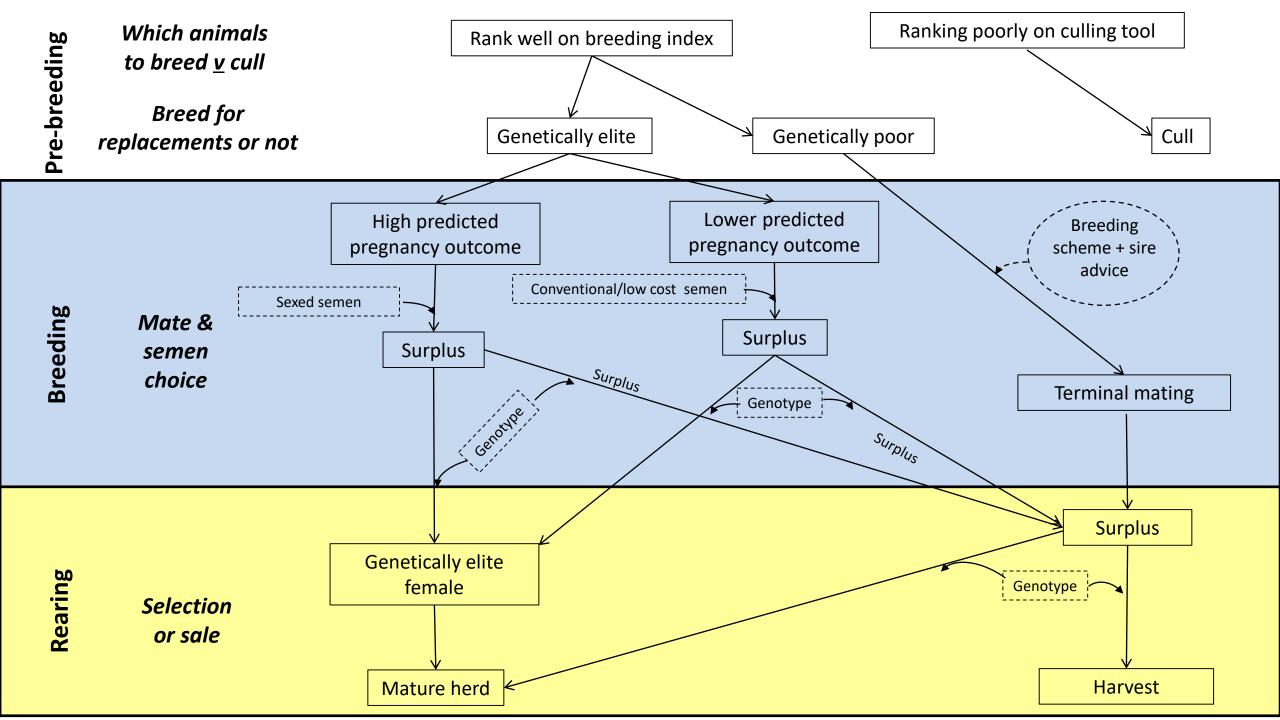
An index framework founded on the future profit potential of female beef cattle to aid the identification of candidates for culling

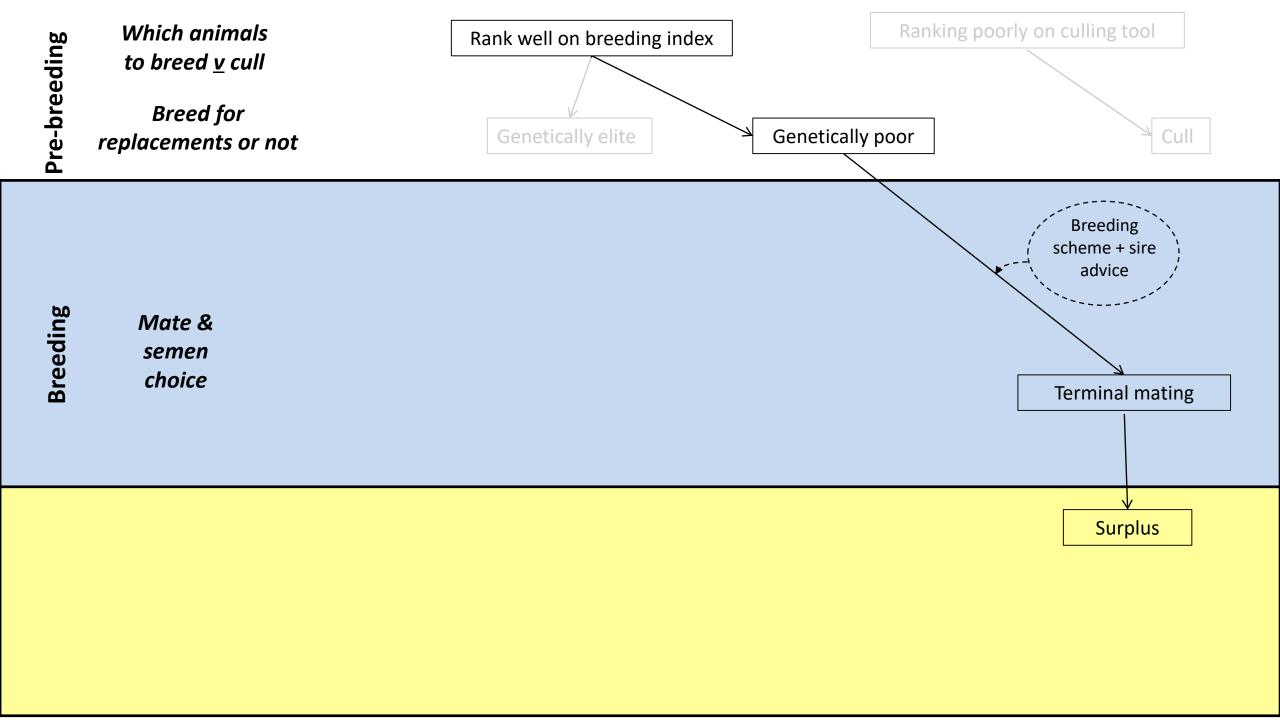
F L Dunne, D P Berry 록, M M Kelleher, R D Evans, S W Walsh, P R Amer

Journal of Animal Science, skaa334, https://doi.org/10.1093/jas/skaa334

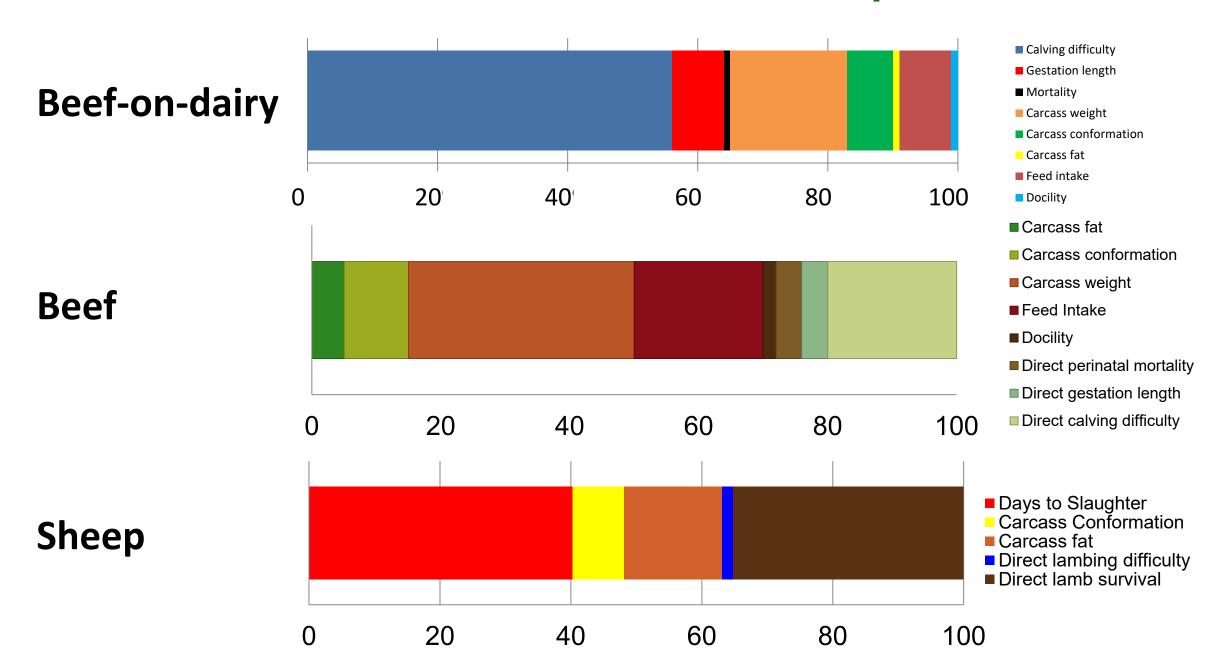


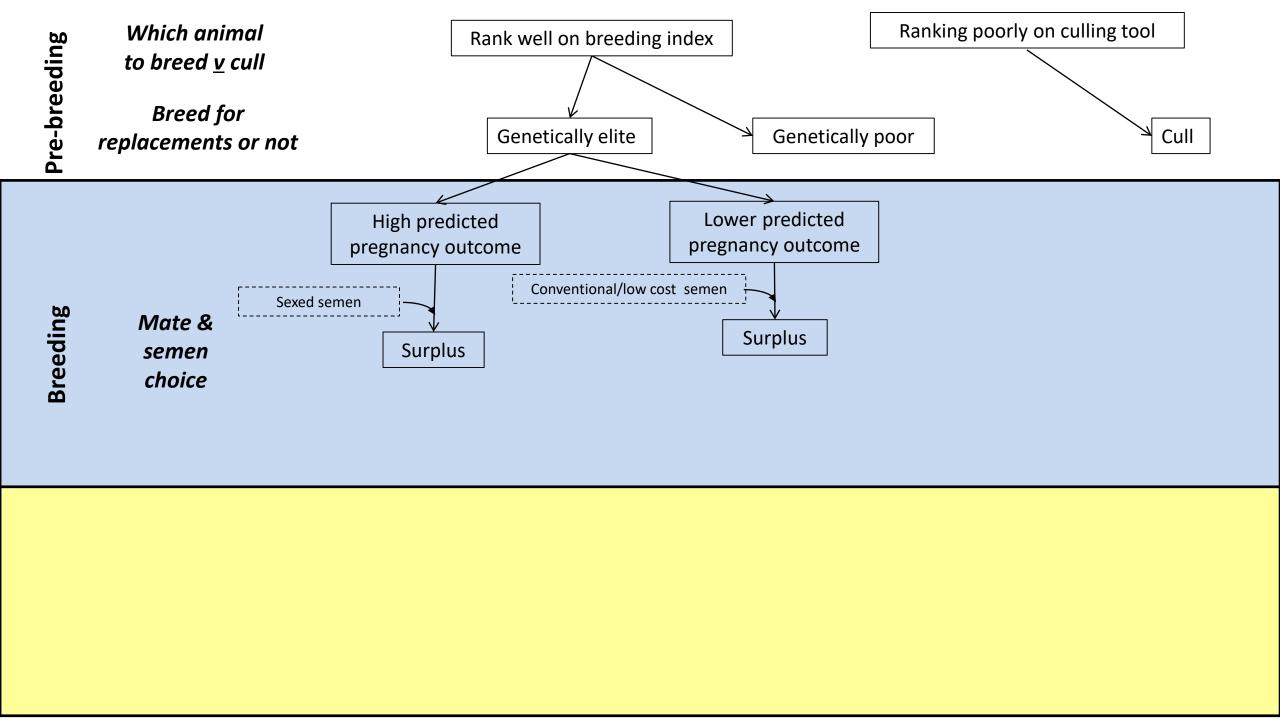




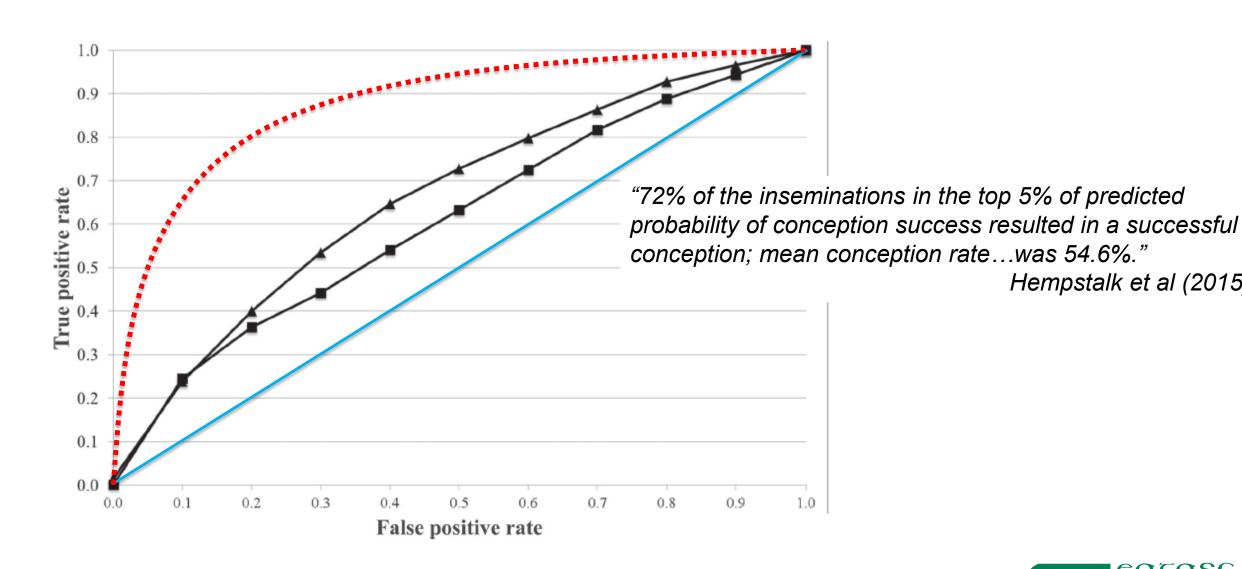


#### **Terminal indexes – relative emphasis**





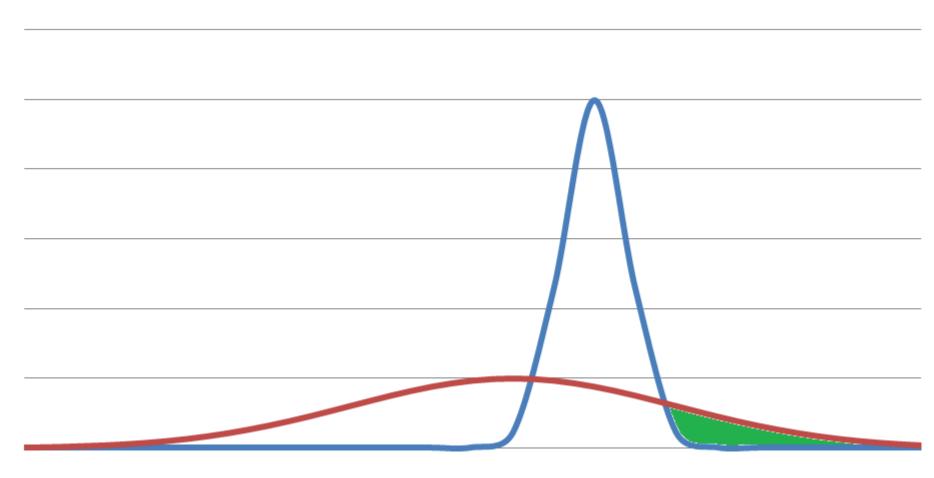
#### Can we predict pregnancy??





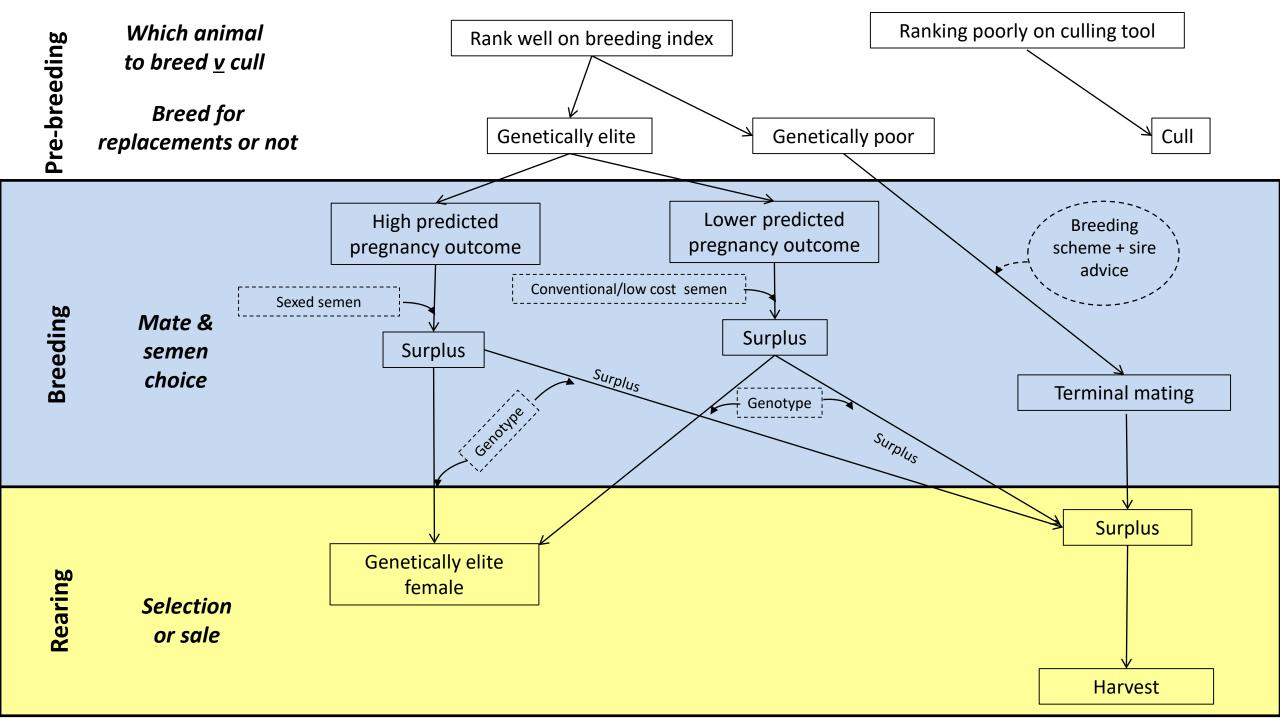
Hempstalk et al (2015)

### Risk management - sire advice



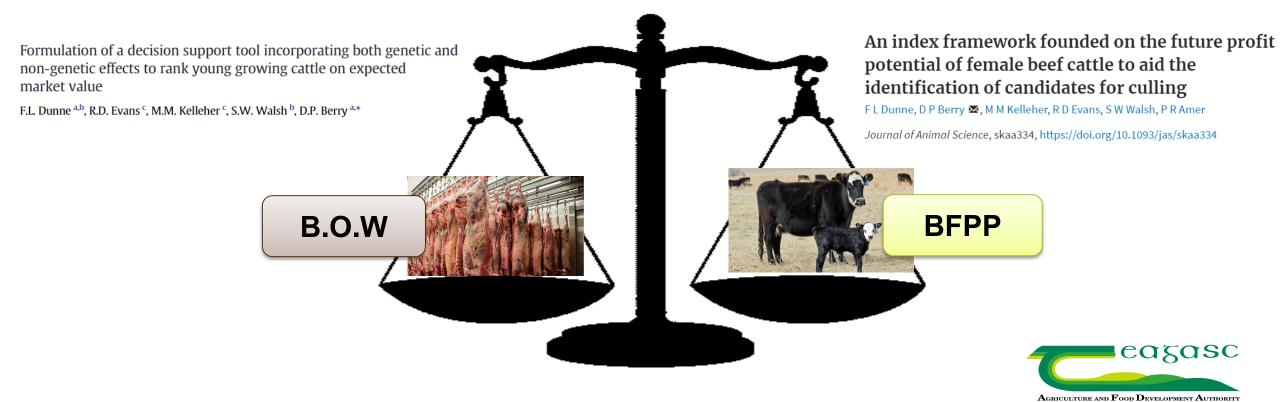
More difficult birth →





# Female suckler/F1 dairy calves





#### **Collated**

- Calving/lambing dates
- Pregnancy rates
- Nulliparous animals and growth rates
- Young progeny & destiny

- Resource allocation budgets
- Daily feed requirements
  - Feed availability





## **Decision support tools**

- Easy to use & understand
- Real-time & "accurate"
- Joined up
- Modular framework
- Multi-functional
- Species/population agnostic
- Exploits currently available data sources
  - Free-notypes
  - Augmented with additional data
- Single point of the truth
  - SRUC/Eagenes + Teagasc/ICBF

