



IRISH CATTLE BREEDING FEDERATION SOCIETY LTD
(ICBF)

Evolution of a Selection Index for Irish Dairy Breeding

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Chief Executive

Monday 21st January 2008



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Mission¹ of ICBF

*To achieve the **greatest possible genetic improvement in the national cattle herd** for the **benefit of Irish Farmers**, and the **Dairy and Beef** industries and Members by collecting, collating and distributing available information and data of practical and scientific interest, by promoting the exchange of all such information and data amongst breeders of cattle in Ireland*

1. ICBF Rules as amended in 2003

BANK of IRELAND



MEMBERS AND BOARD OF ICBF

Board of 16

Shares

AI

Munster AI

- 1 - Dairygold
- 2 - Kerry
- 3 - SWS
- 4 Progressive Genetics
- 5 Dovea AI

Milk Recording

- 1 Dairygold
- 2 Kerry
- 3 SWS
- 4 Progressive Genetics
- 6 Arrabawn
- 7 Tipperary
- 8 Connacht Gold

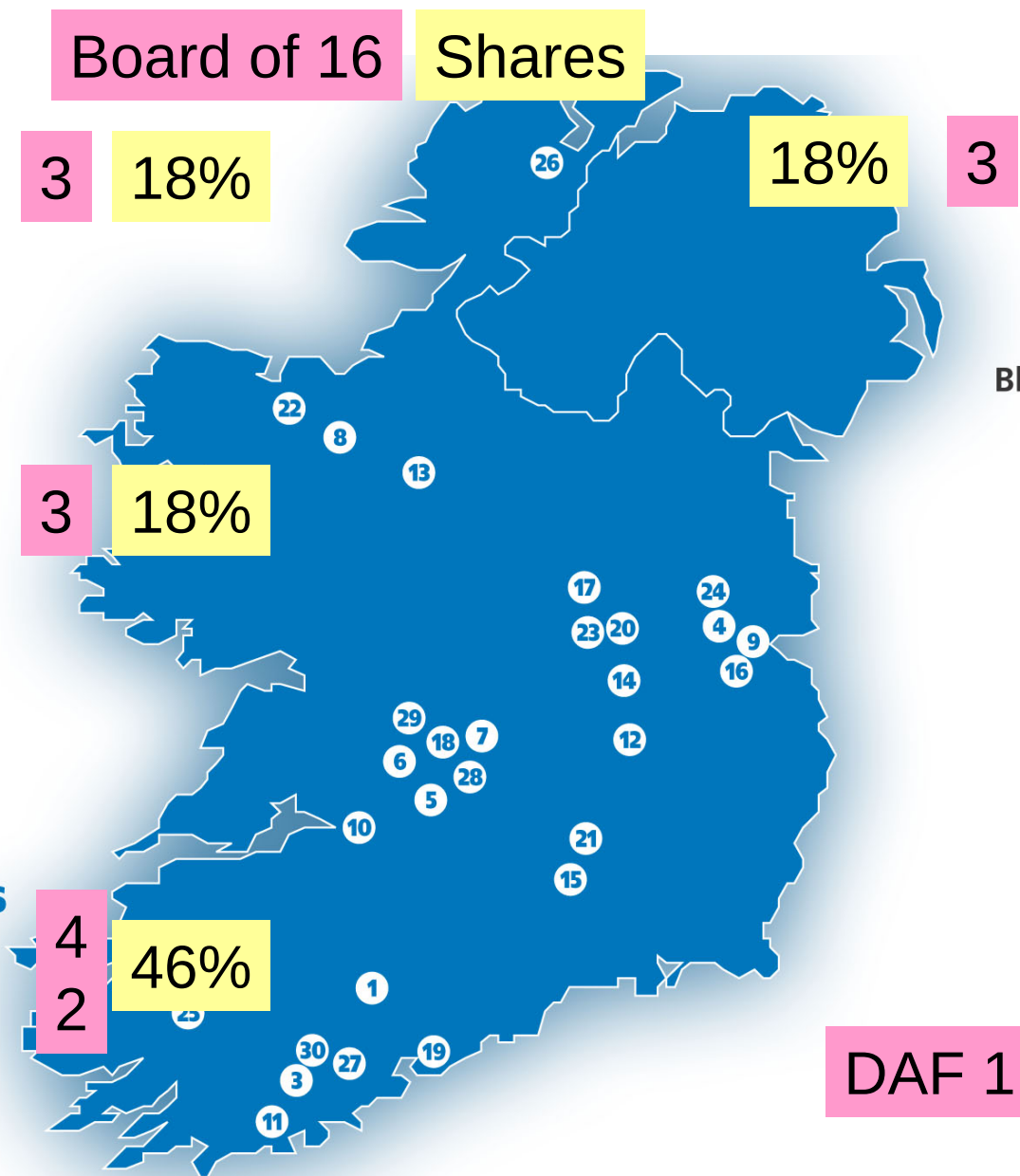
Farm Organisations

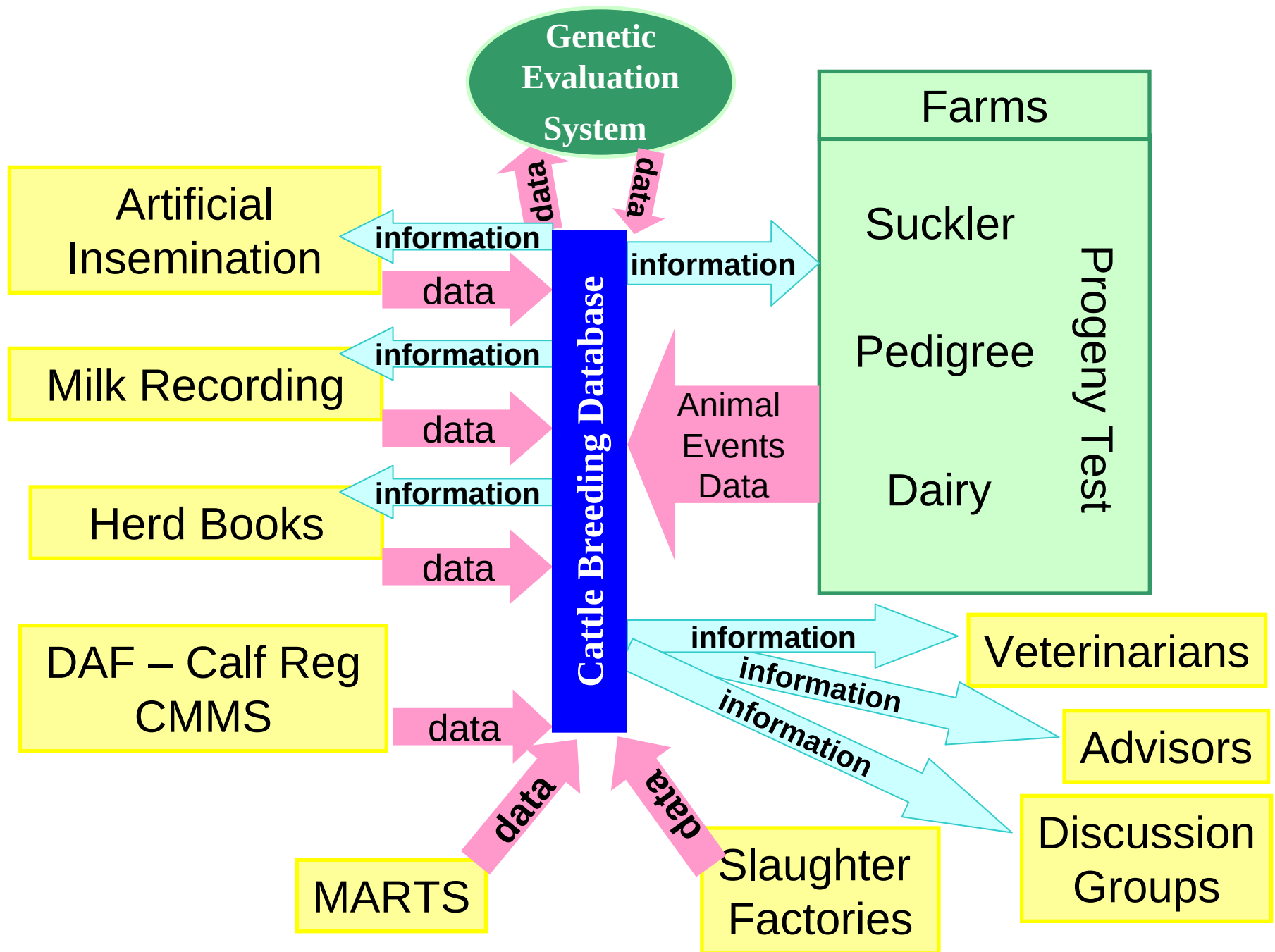
- 9 IFA
- 10 ICMSA

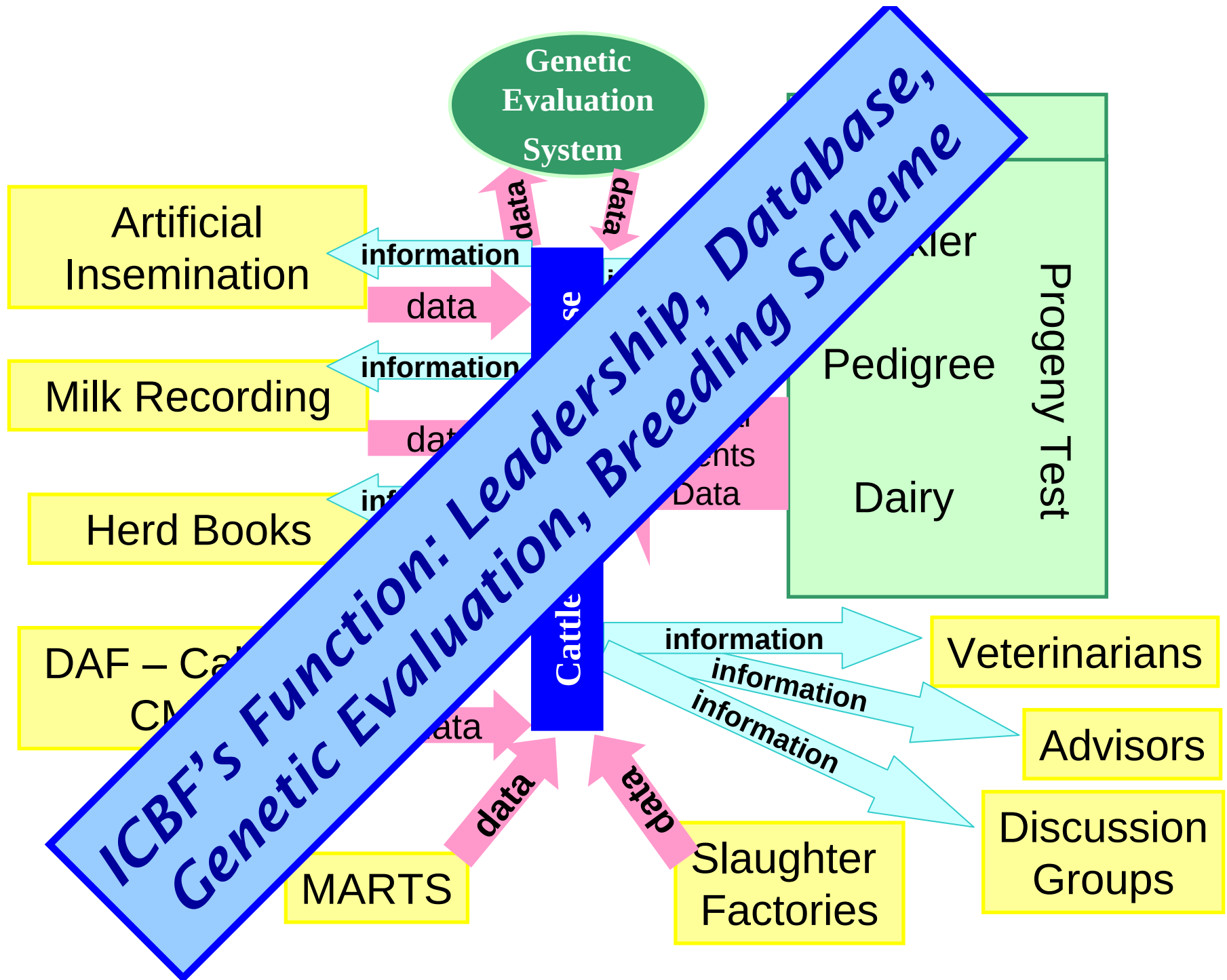
Herdbooks

- Holstein Friesian 11
- Belgian Blue 12
- Angus 13
- Aubrac 14
- Blonde d'Aquataine 15
- Charolais 16
- Hereford 17
- Limousin 18
- Normande 19
- Parthenais 20
- Piedmontese 21
- Shorthorn 22
- Simmental 23
- Jersey 24
- Kerry 25
- MRI 26
- Montbeliarde 27
- Rotbunt 28
- Saler 29

ICBF 30



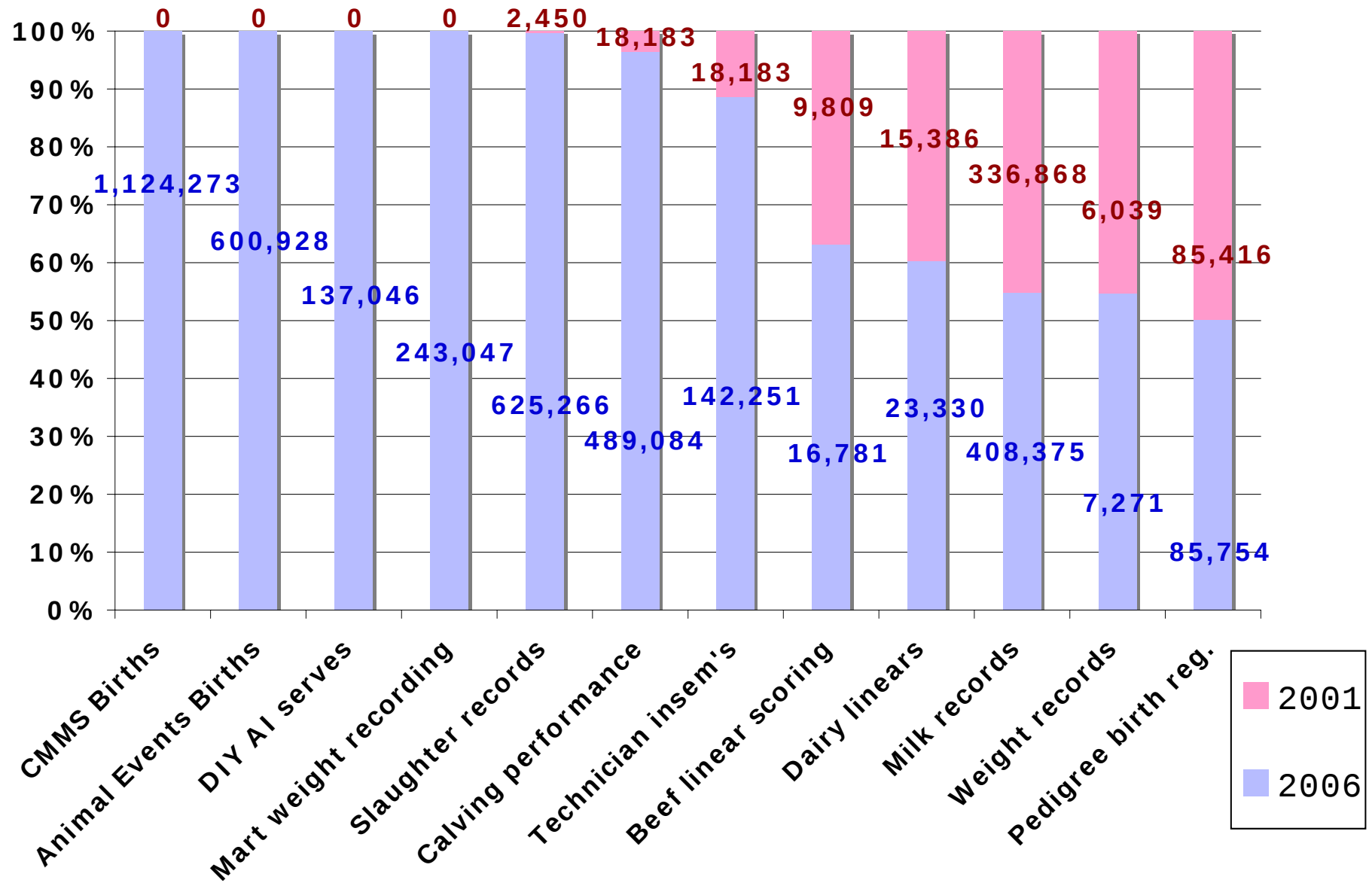




Animal Events

- Introduced in 2002
 - Replaced all previous systems for collecting event data from farms
 - Paper & Electronic
 - Dairy and Beef
 - Linked tightly to I&R, and CMMS (movements)
 - Currently rolling out to 50,000 suckler herds

Data - 2006 relative to 2001

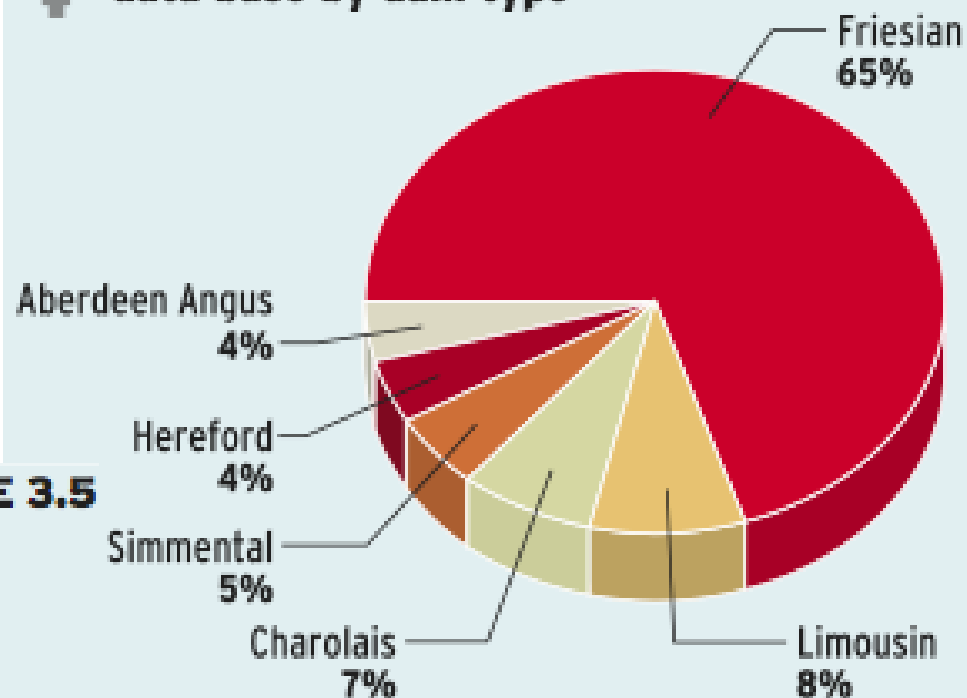


- Many breeds
- Beef in dairy herds
- Data supports across breed evaluations



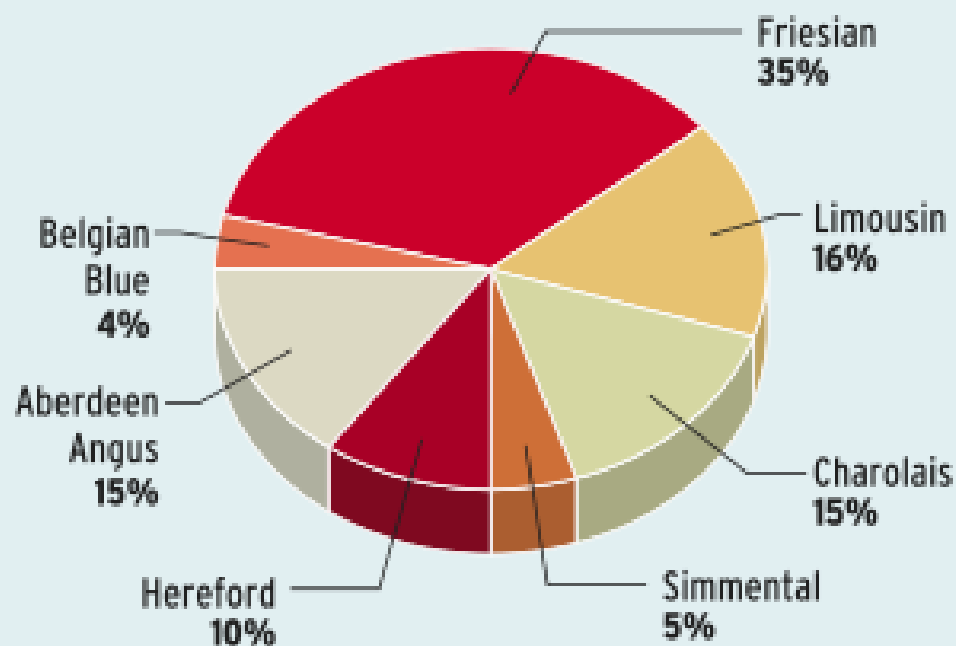
Births on the ICBF data base by dam type

FIGURE 3.4



Births on the ICBF data base by sire type

FIGURE 3.5



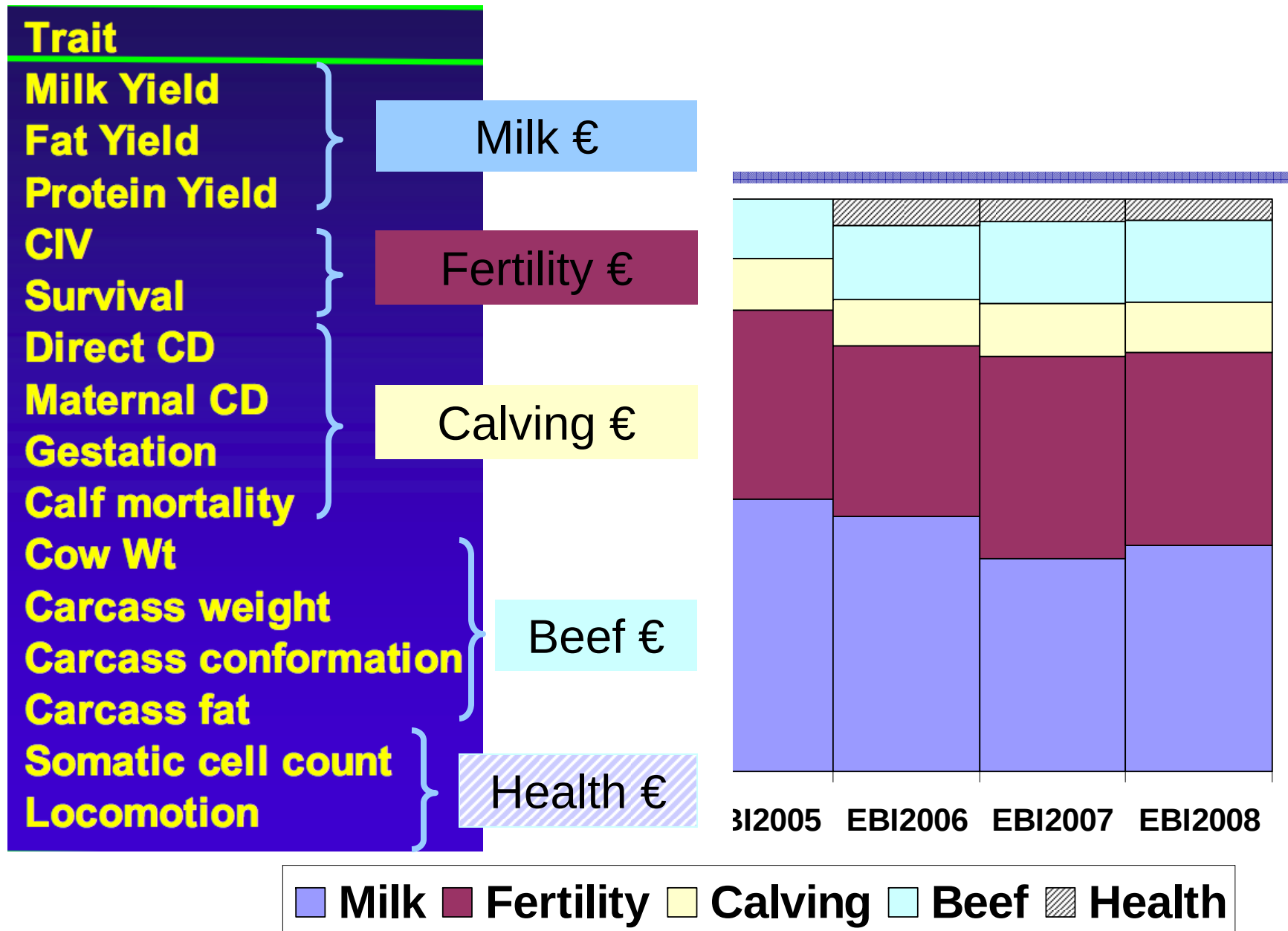
Research & Implementation

- International Team
 - Contractors (Roel Veerkamp, Peter Amer)
 - TEAGASC (Pat Dillon, Donagh Berry, Laurence Shalloo)
 - ICBF (Andrew Cromie, Victor Olori, Francis Kearney, Ross Evans, Thierry Pabiou)
- Annual Cycle
 - Industry Consultation (40 to 60 people - AI, Herd Book, Farmers, Scientists)
 - Agree priorities
 - Review research results
 - Recommend changes
 - ICBF Board makes final decisions

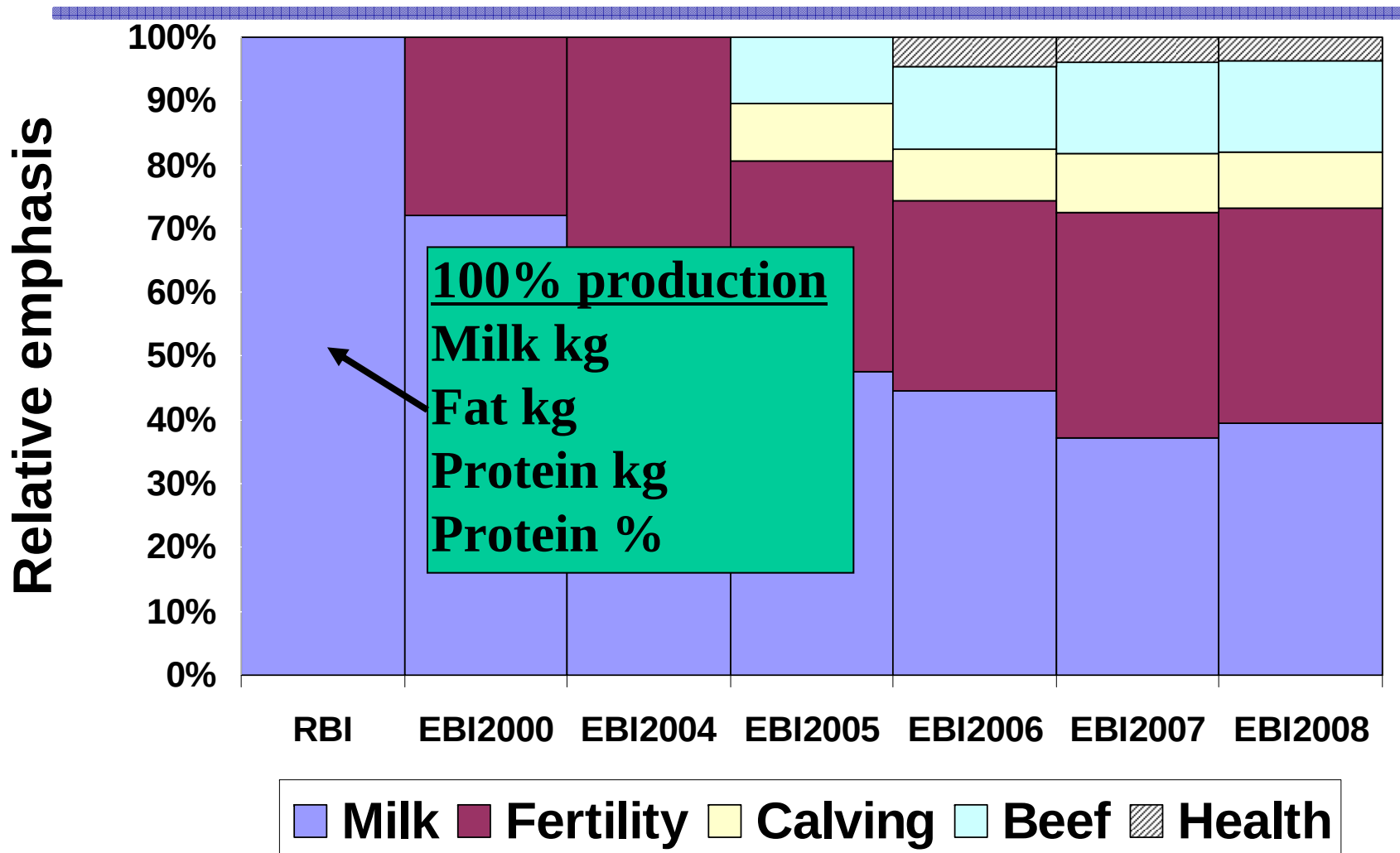
Breeding Objectives

- Place in a breeding program
 - Most important
 - Most dynamic
 - Most controversial
- Choice of traits
 - Important (economically, environmentally, socially)
 - Genetic differences between animals
 - Measurable (related to measurable traits)

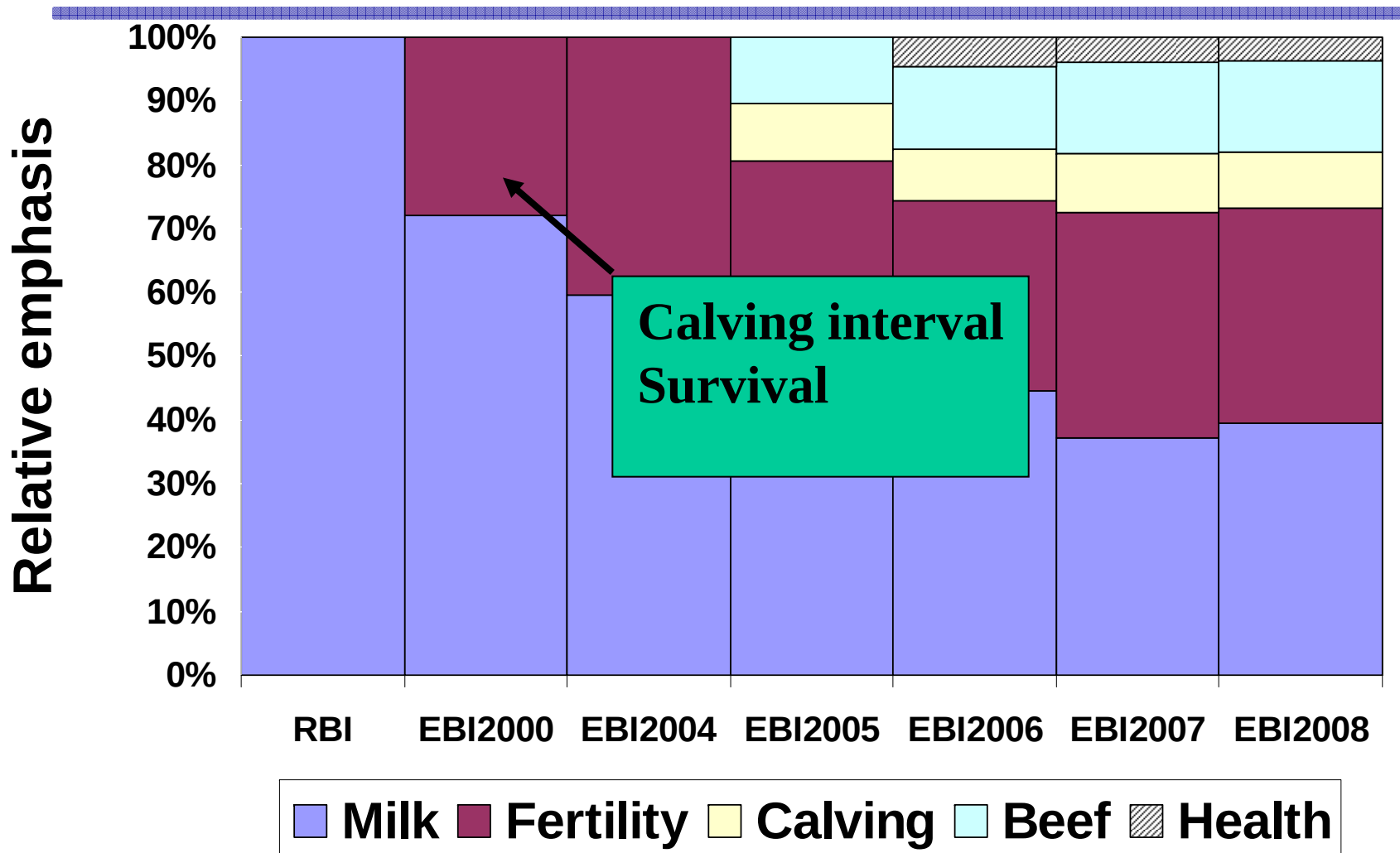
Evolution of EBI



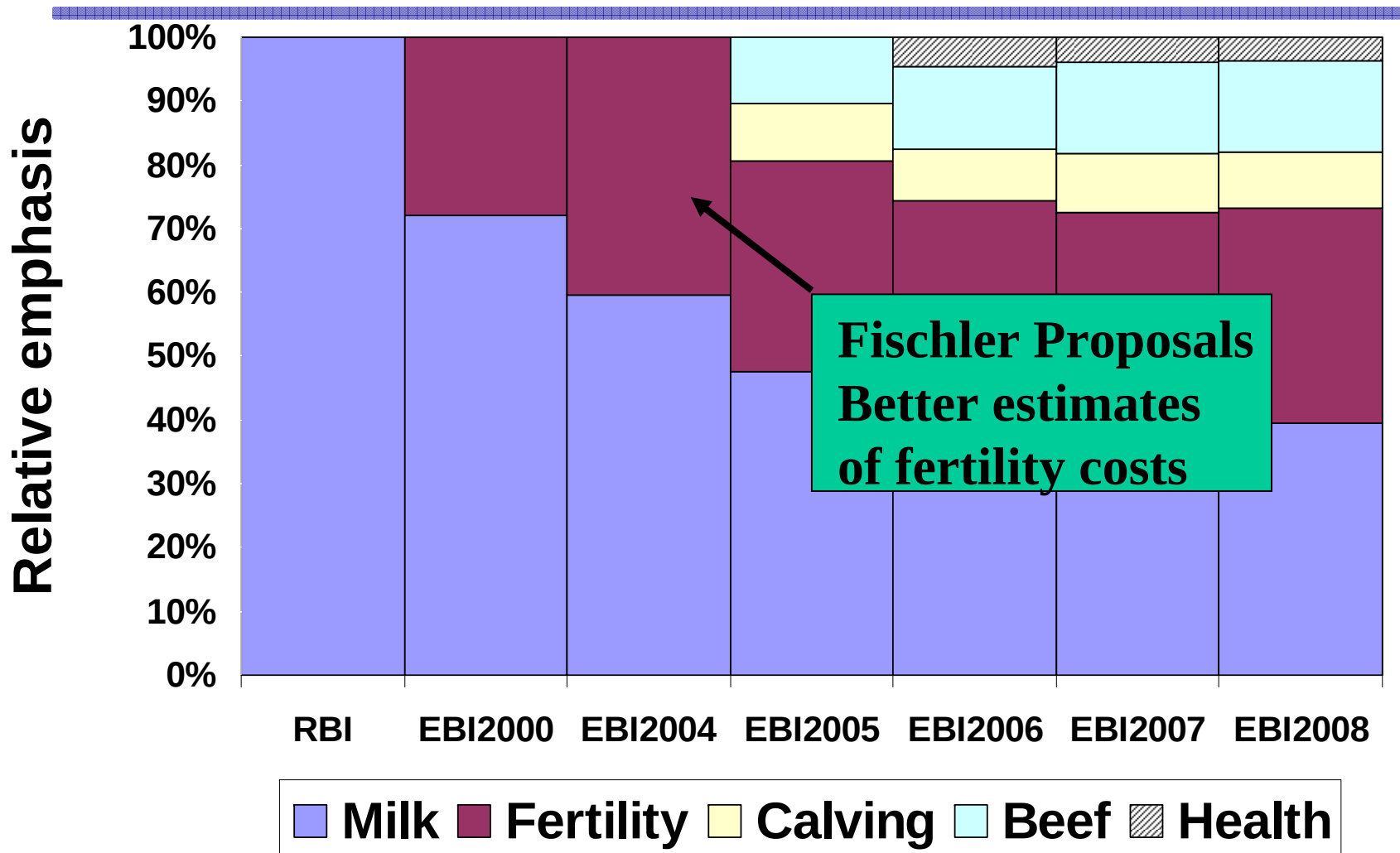
Evolution of EBI



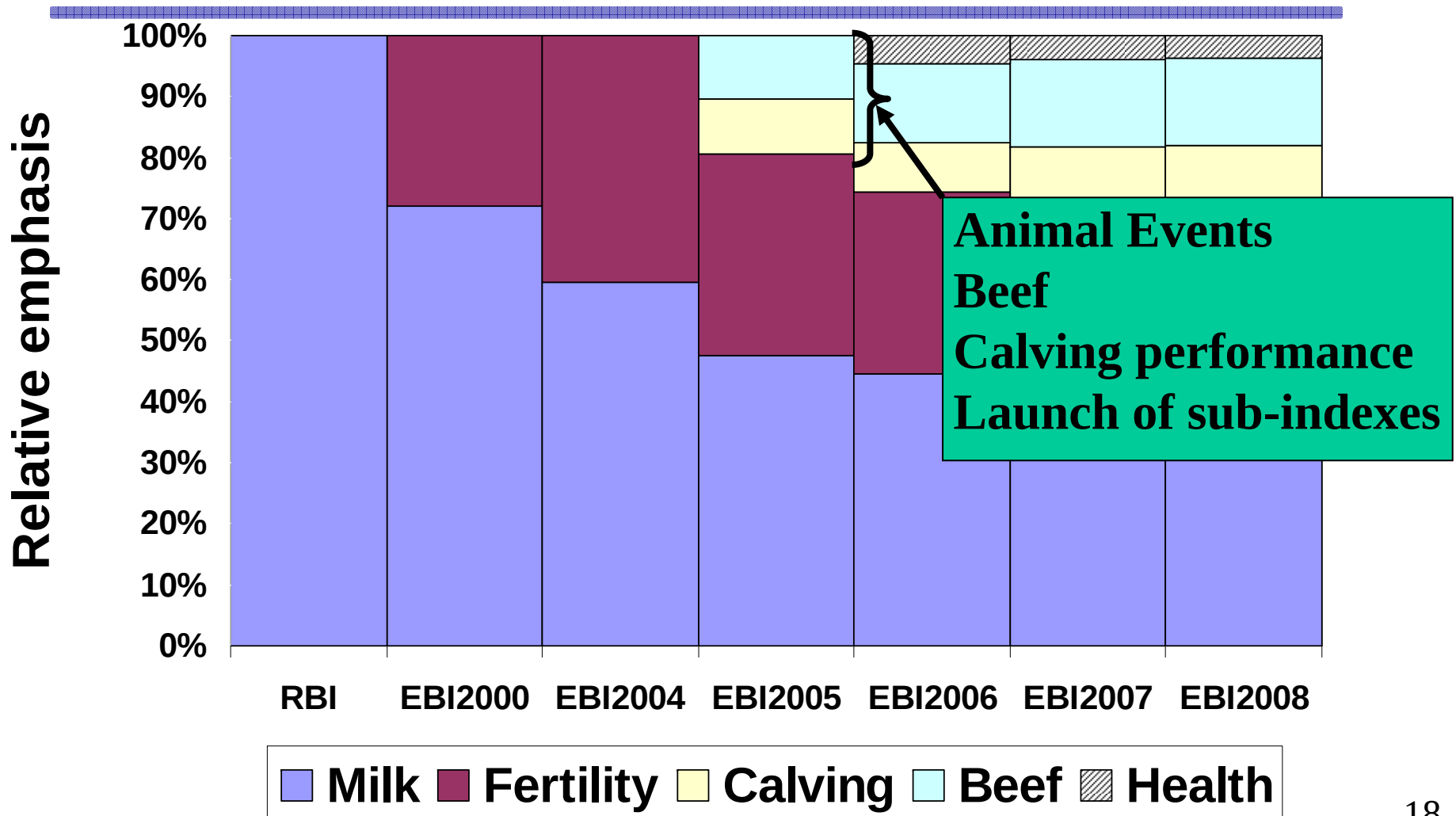
Evolution of EBI



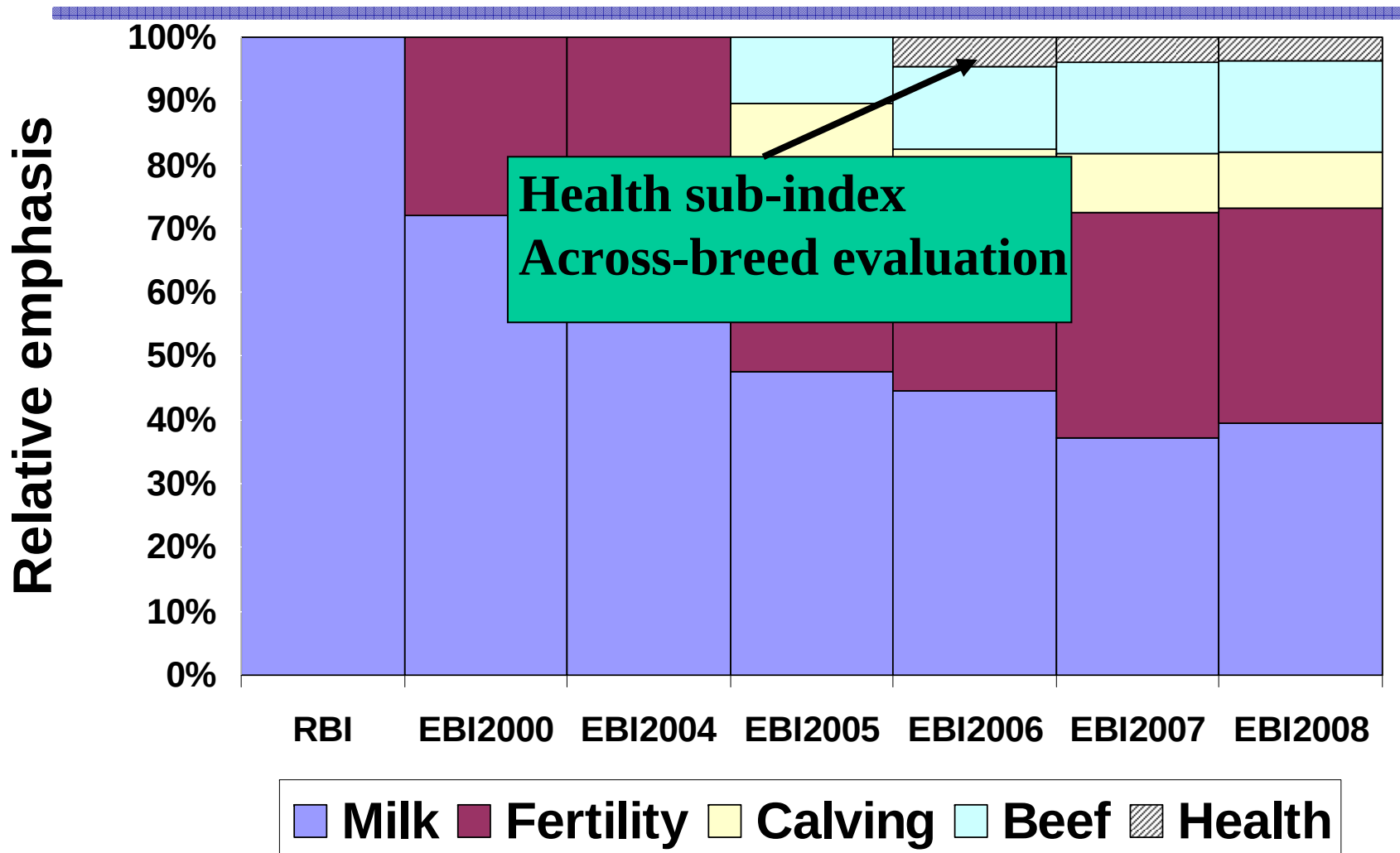
Evolution of EBI



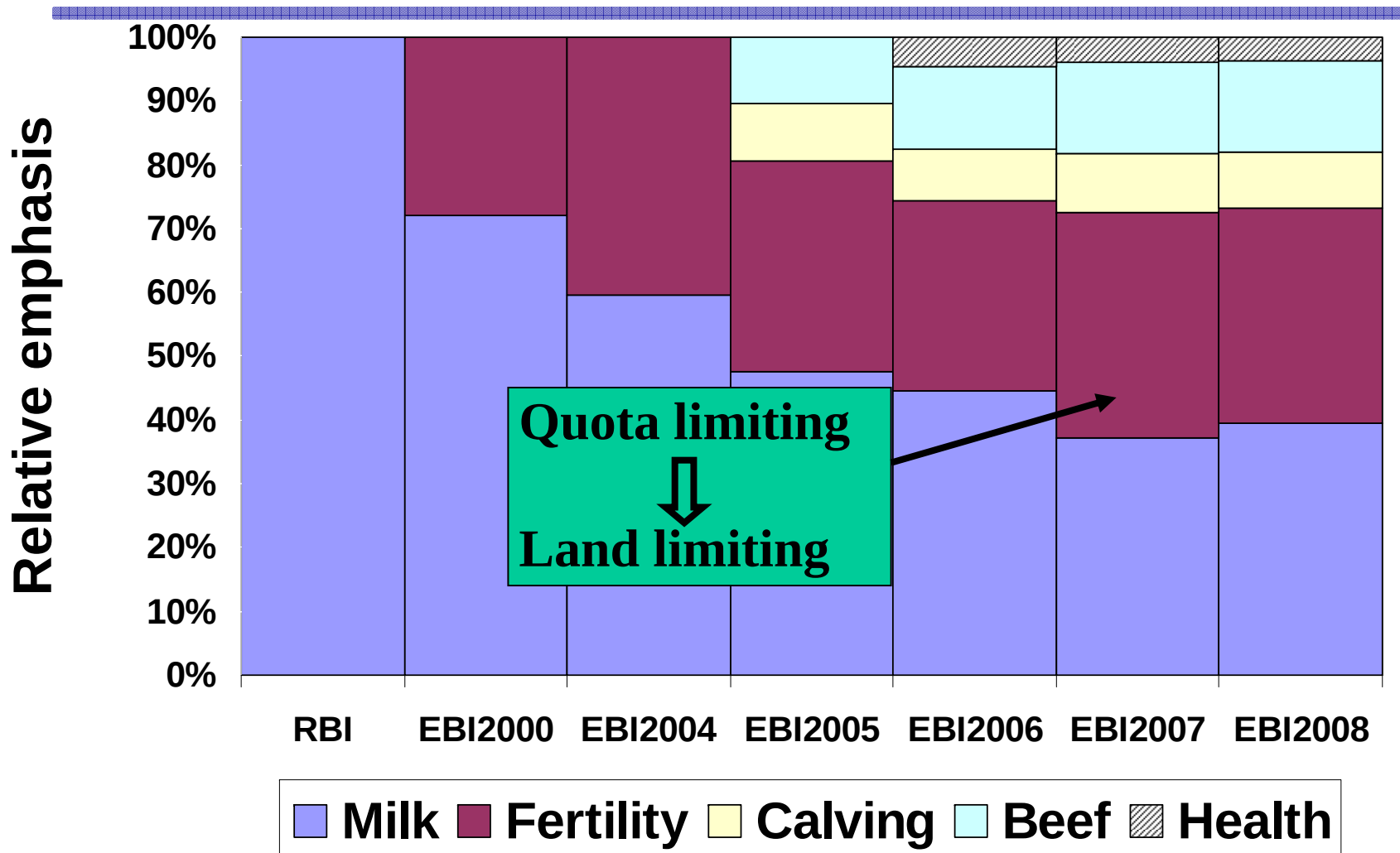
Evolution of EBI



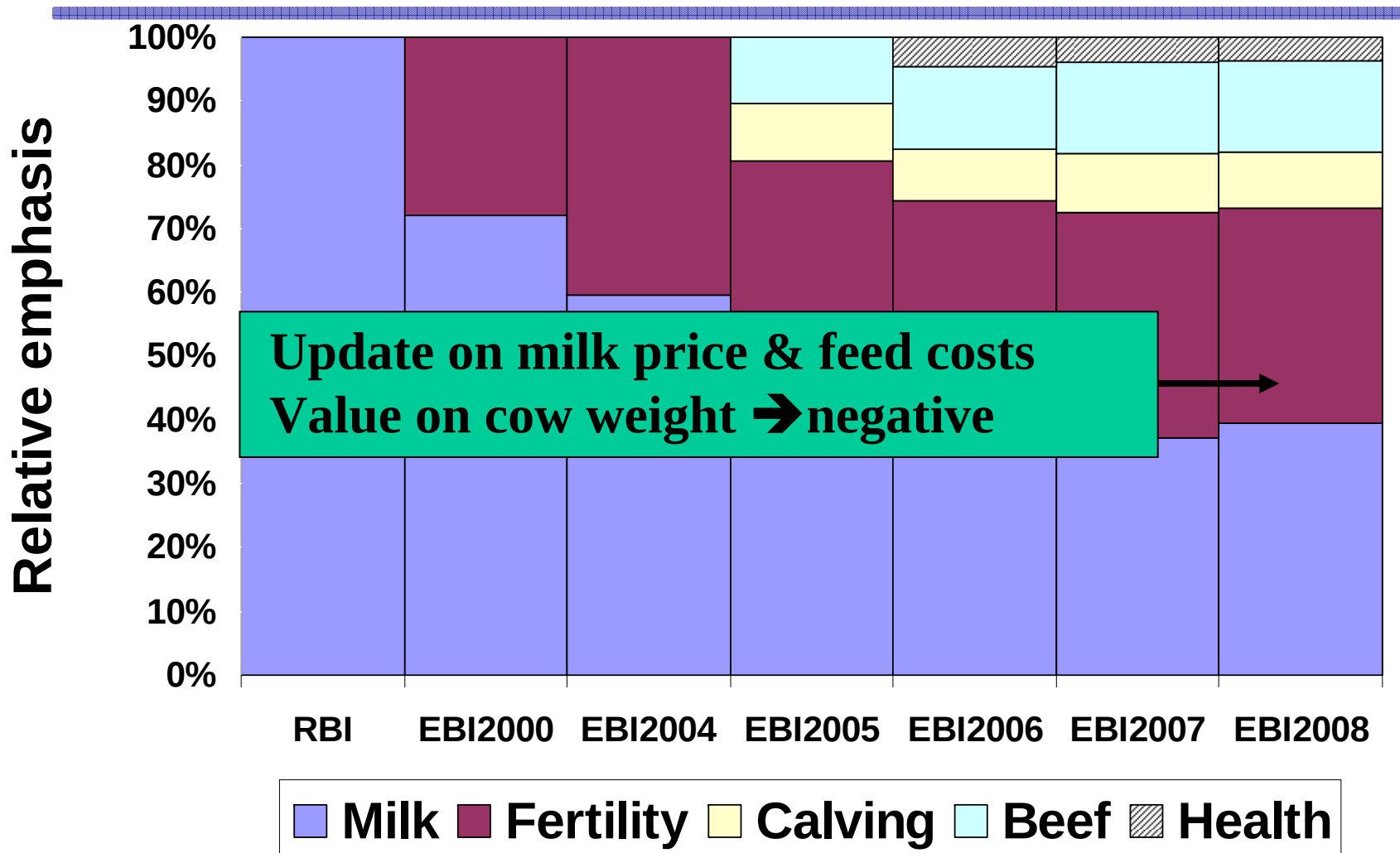
Evolution of EBI



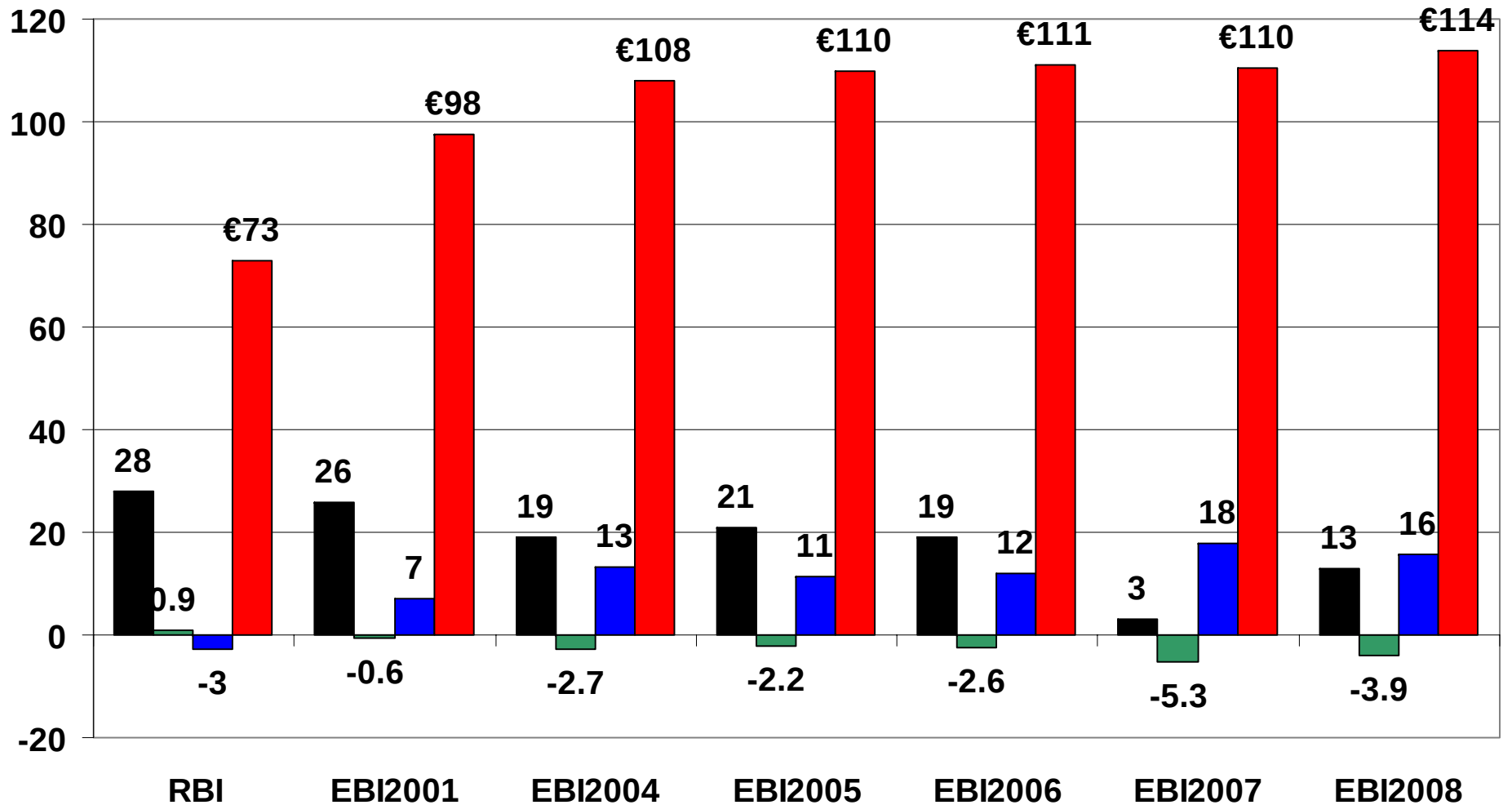
Evolution of EBI



Evolution of EBI



Response to selection



Fat + Protein yield
 Calving Interval
 Survival (*10)
 EBI

EBI

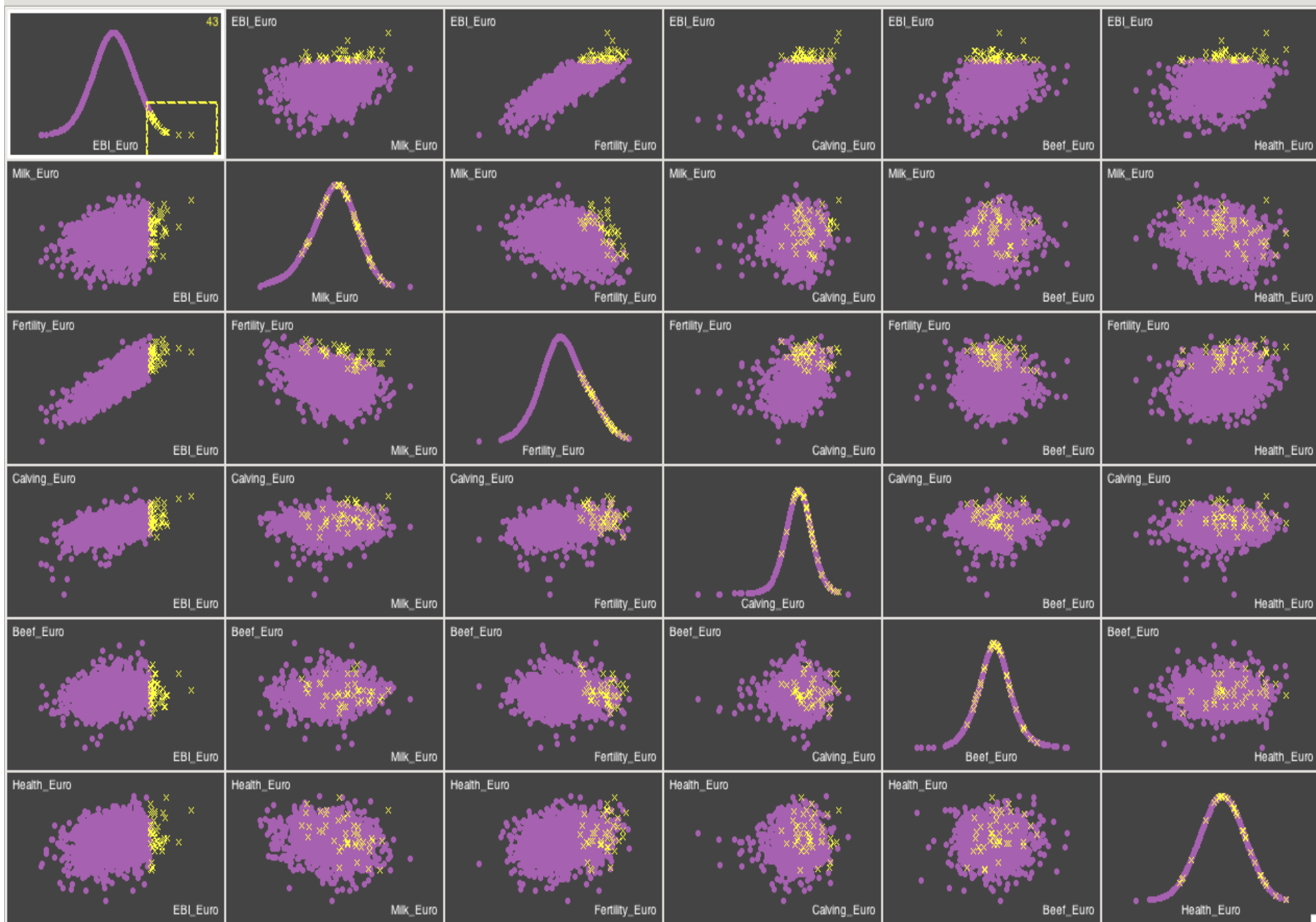
Milk €

Fertility €

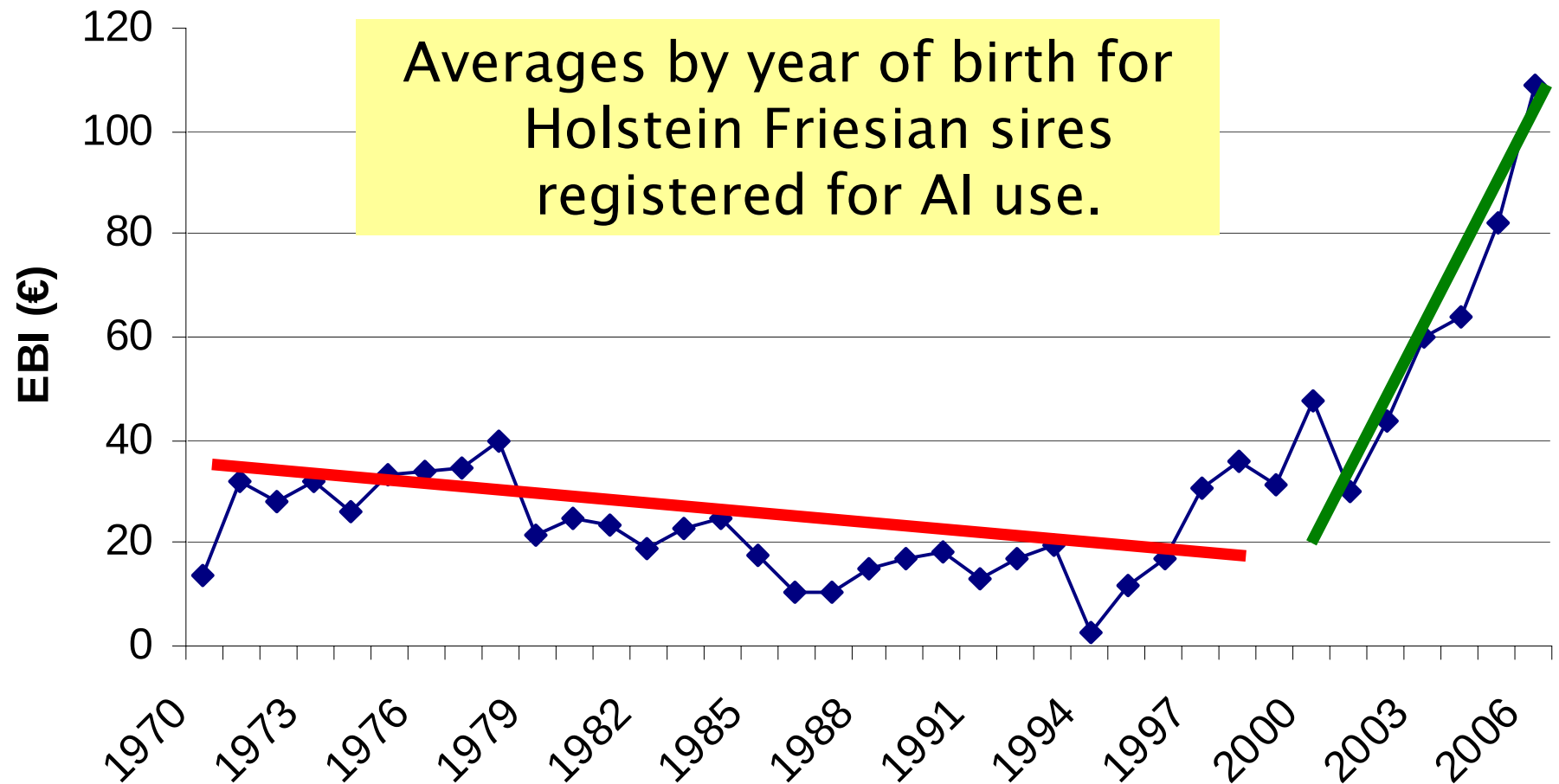
Calving €

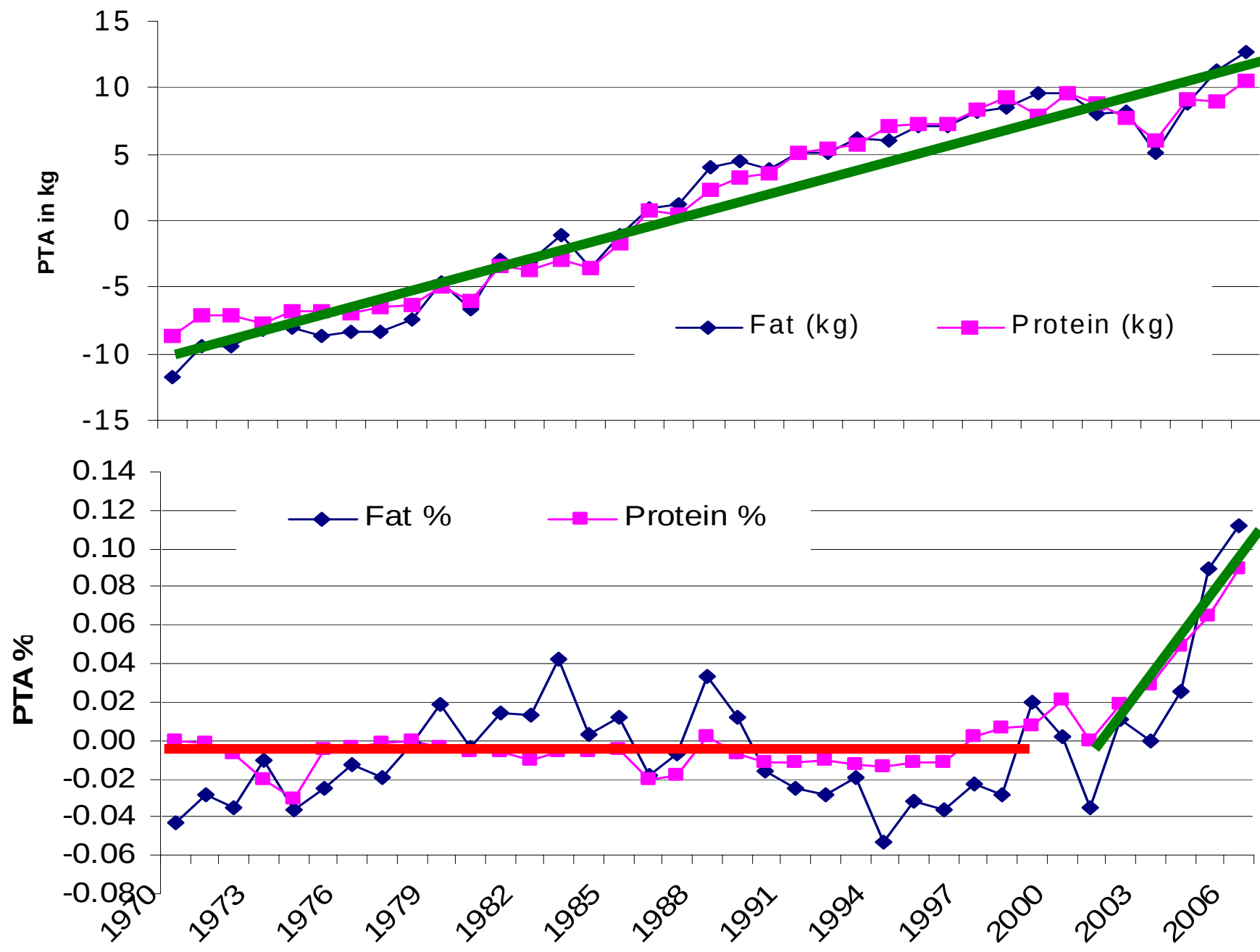
Beef €

Health €

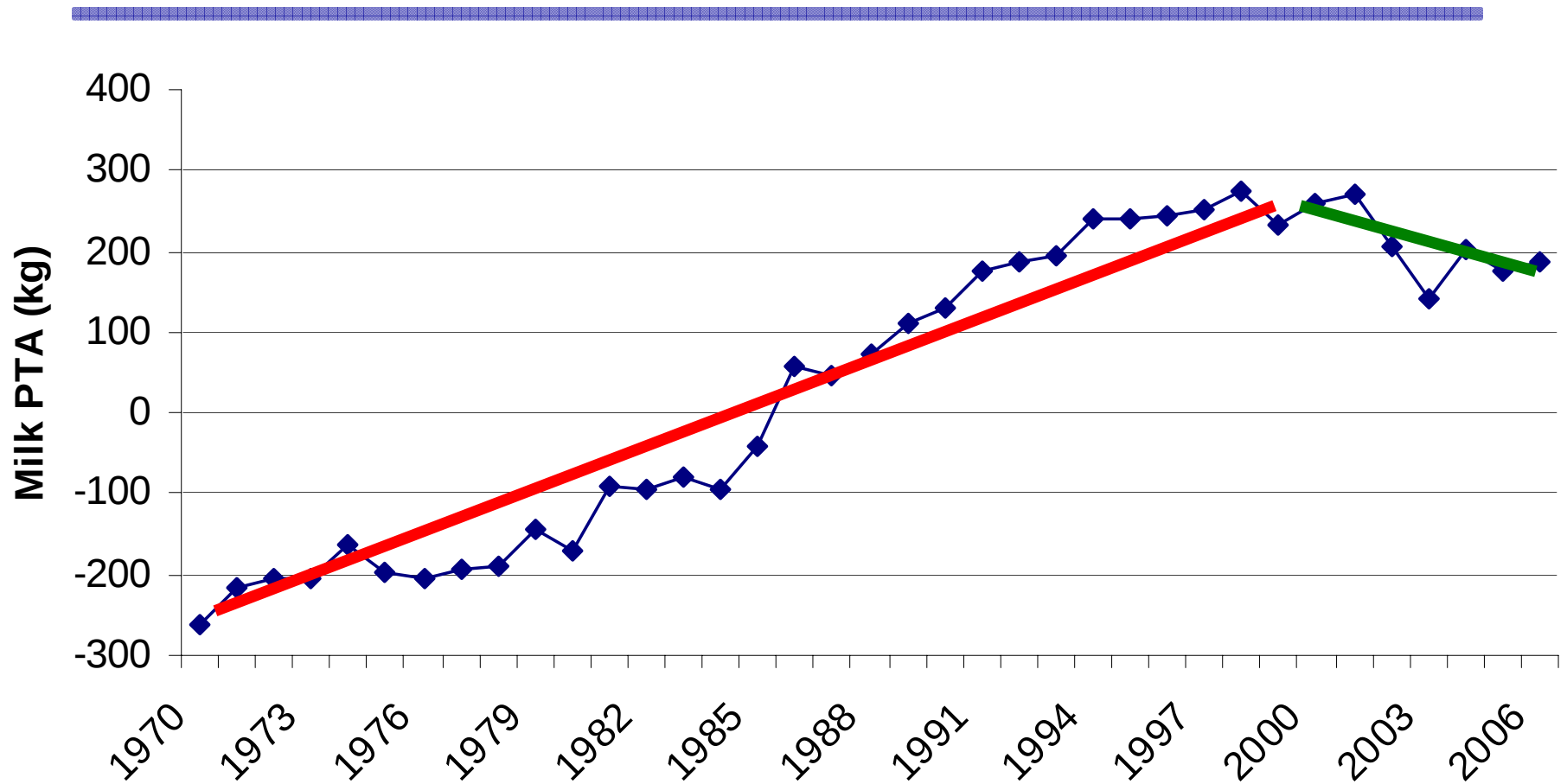


Genetic Trends

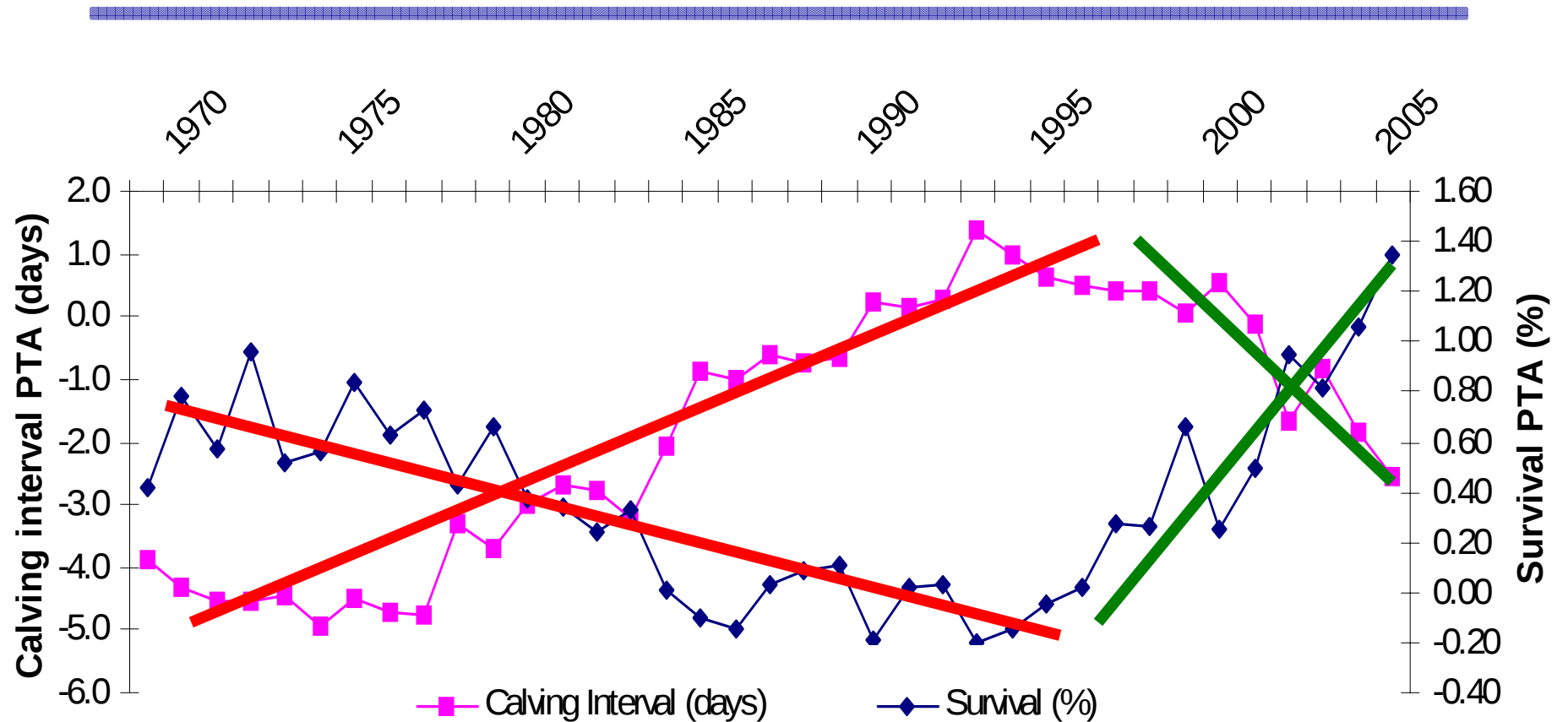




Genetic Trends



Genetic Trends



The Future

- Better trait definition
 - Insemination data - Fertility
 - Mart data – Calf value
 - Health – Lameness / mastitis
- Review of economics
- Better statistics
 - Across-breed evaluation
 - More lactations
 - Test-day models
- Use of biotechnology
 - Genomic selection

Summary

- Irish Cattle Breeding is evolving rapidly
- ICBF is leading the development
- Mission, Structure, Funding
- Database and data collection systems
- Research & Implementation on annual cycle
- EBI is profit based and evolving

