

LIVESTOCK RECORDING AND IMPROVEMENT IN SOUTH AFRICA: CHALLENGES AND MAJOR DRIVERS

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Brief history of Livestock Recording & GE in South Africa

- Stud Book established - 1905
- Milk Recording - 1917
- Small Stock (Wooled sheep) Recording - 1956
- Beef Cattle Recording - 1959
- Integration Registration & Production - 1985+
- BLUP
 - Sheep (Experimental) - 1986
 - Dairy Cattle - 1987
 - Beef Cattle - 1993
- Interbull MACE - 2000
- Total privatisation of Stud/Seedstock industry - 2012
- Genomic GE
 - Beef Cattle - 2017
 - Dairy Cattle - 2020
 - Sheep - 2021



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Focus on inclusive participation & comprehensive service

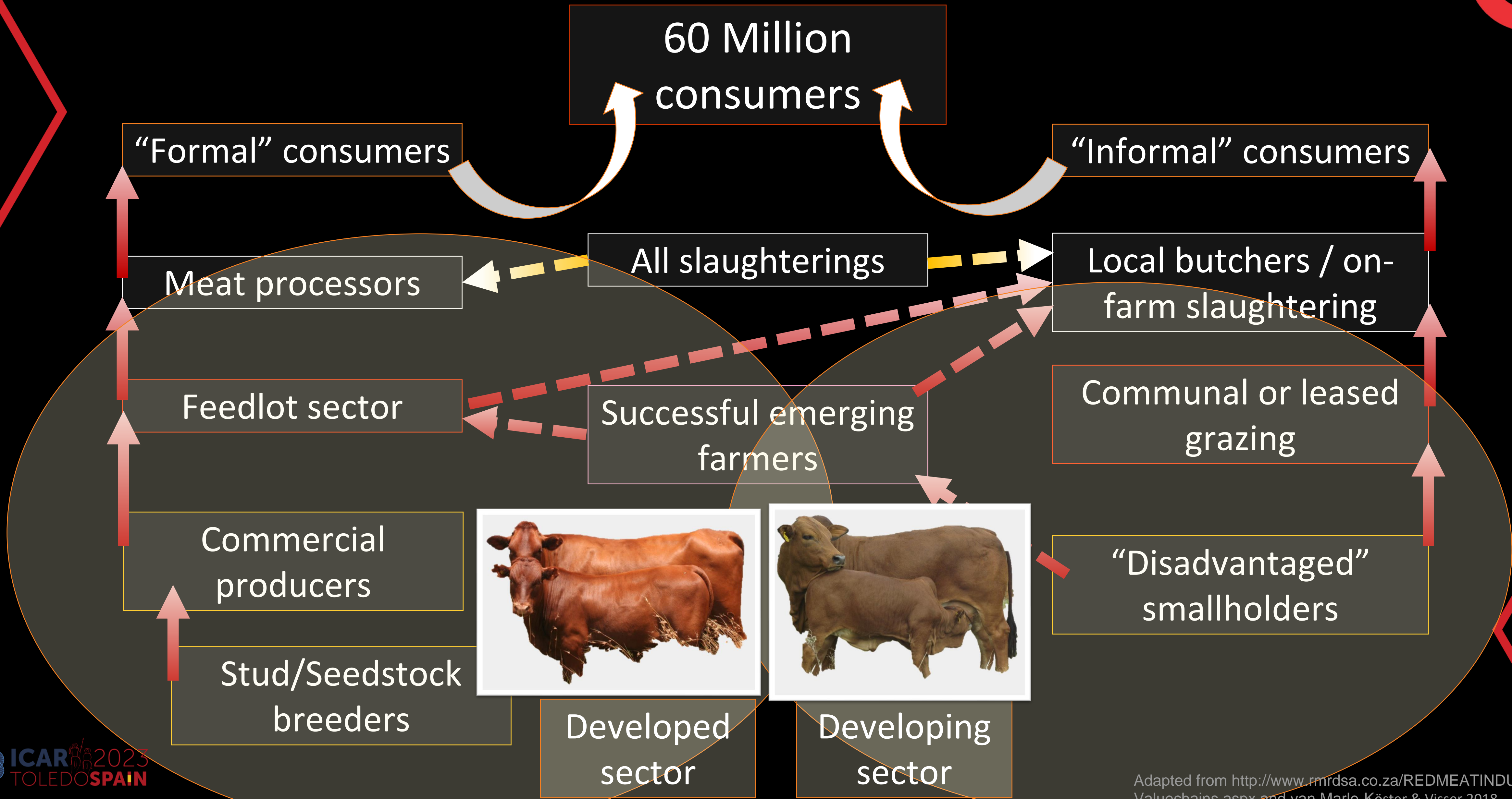


- Accurate & Affordable Registration & Recording for economic important traits & properties
- Optimal use of recorded data & information
 - Management decisions
 - Genetic selection & matings
- Expansion of participation
- Uptake & integration of new technologies



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South Africa: still reflecting the recent past



Beef Cattle "Triangle"

0.5 Million Beef Cattle

2800 Seed
Stock Breeders

Developed Sector

40 000
Large commercial
Beef Cattle Farmers

Major Gene Flow

6.7 Million Beef Cattle

85 000
Beef Cattle Farmers with
potential to commercialize

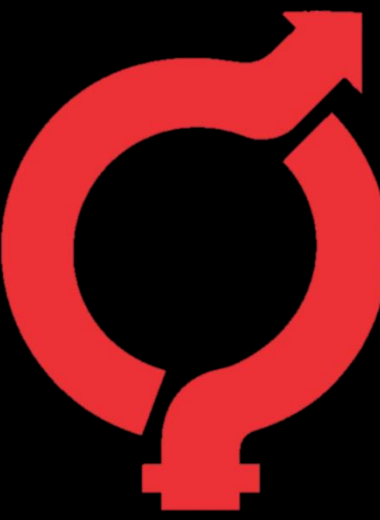
Developing Sector

5.7 Million Beef Cattle

240 000
Beef Cattle keepers known as emerging
(small) farmers

3 million
Beef Cattle keepers - "subsistence farmers"

Livestock recording: Governance and Current Situation



- Legislation for Registration & Recording: Stud animals
- Registering Authorities
 - Stud Book = Registering Authority (>80 breed x species)
 - Comply with ICAR CoQ
 - Fully industry funded
- Breeders' Societies
 - Breed standards, inspections, promotion
- Few non-Stud animals centrally recorded
- Very low participation in Milk Recording (in comparison)
- Mostly owner sampling, measurement & recording



Major challenges

- Data quality assurance (trustworthy application)
- Acceptance & Uptake of Scientifically developed technology
- Mutual understanding & Insight
 - Correct use of genetic & management information
- Funding & Allocation -> R&D
- Investment in training & Education
 - Scientific & Technical staff (HR development)
 - Farmers / Breeders / Trainers

Major drivers



- Sustainable **PROFIT**
 - Local & Internationally competitive
 - Natural resource usage & environmental impact
- Knowledge & ability
 - Use and utilising genetic gains of seedstock animals
- Timely adjustments & Application
 - Driver: new scientific & industry knowledge
 - Changing markets & economic realities
 - Funding realities & human demographics



Focus: current developments

- Model development & implementation
 - Expanding GE production accuracy – SS gBLUP
- Interactive data & information exchange
 - Farm, laboratory, database
- Management information
 - Benchmarking & Timely decisions
- Selection index uptake & timely adaptations
- Web-based tools
 - Optimal breeding objectives – different environments & systems
 - Selection - herd & breed levels
 - Mating plans.

Historic past & current challenges

- Fast tracking of opportunities & resource
- Research priorities with public funding
- National infrastructure & public services
 - Animal health
 - Export protocols
- Public X Private partnerships



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Thank you Dankie

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