



# Adding value to data emanating from routine animal recording processes

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## Basic animal recording

- ▶ Animal ID
- ▶ Birth date
- ▶ Parent ID's
- ▶ Breeder/Owner



Herdbook registrations

Additional information from the same data allow breeders / breeders' organisations to make better decisions / more genetic progress

## Demographic information

### ▶ Administrative records

- Births
- Deaths
- Cancellations
- Ownership



Size

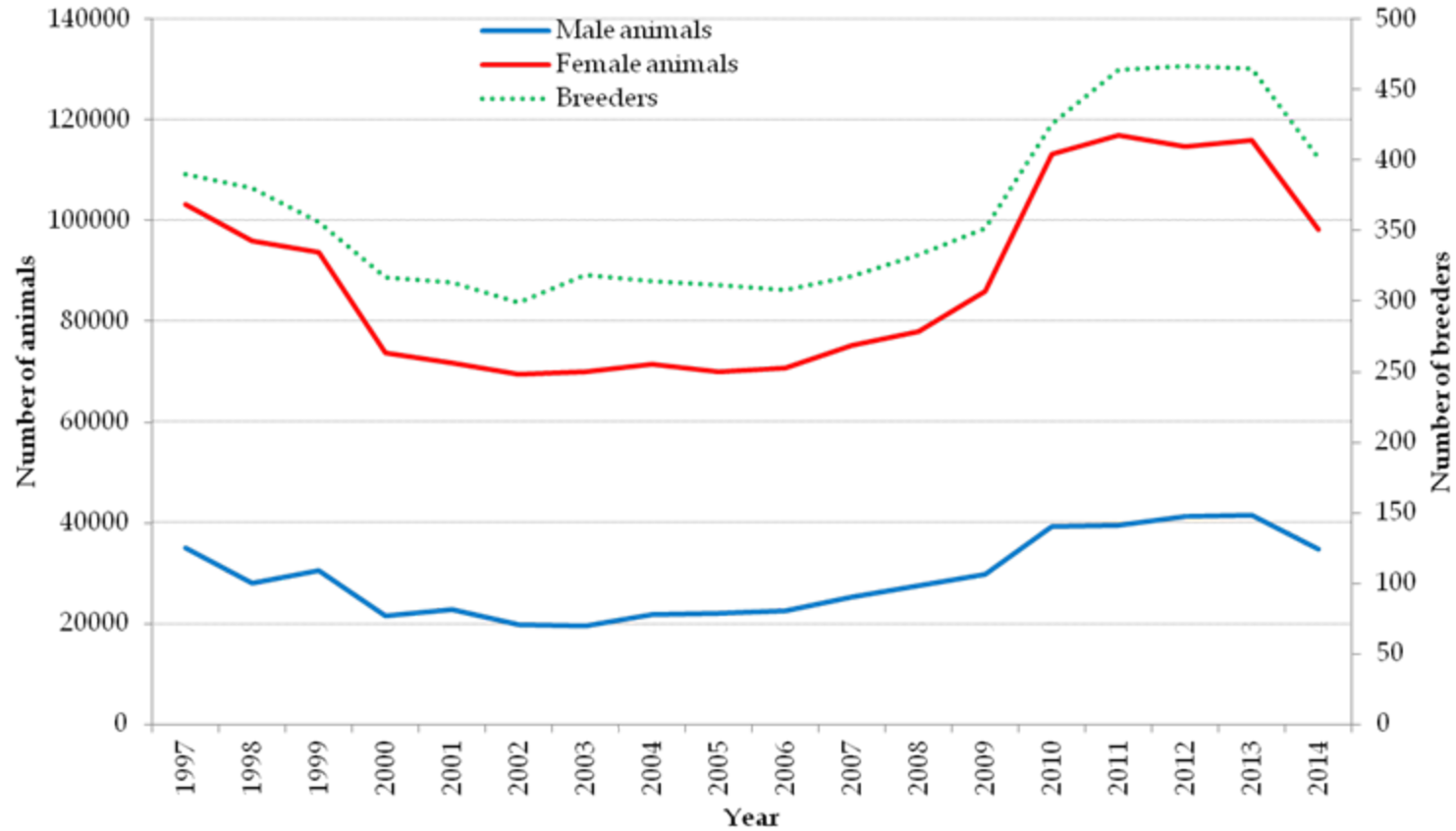
Composition

Spatial distribution

Changes in above

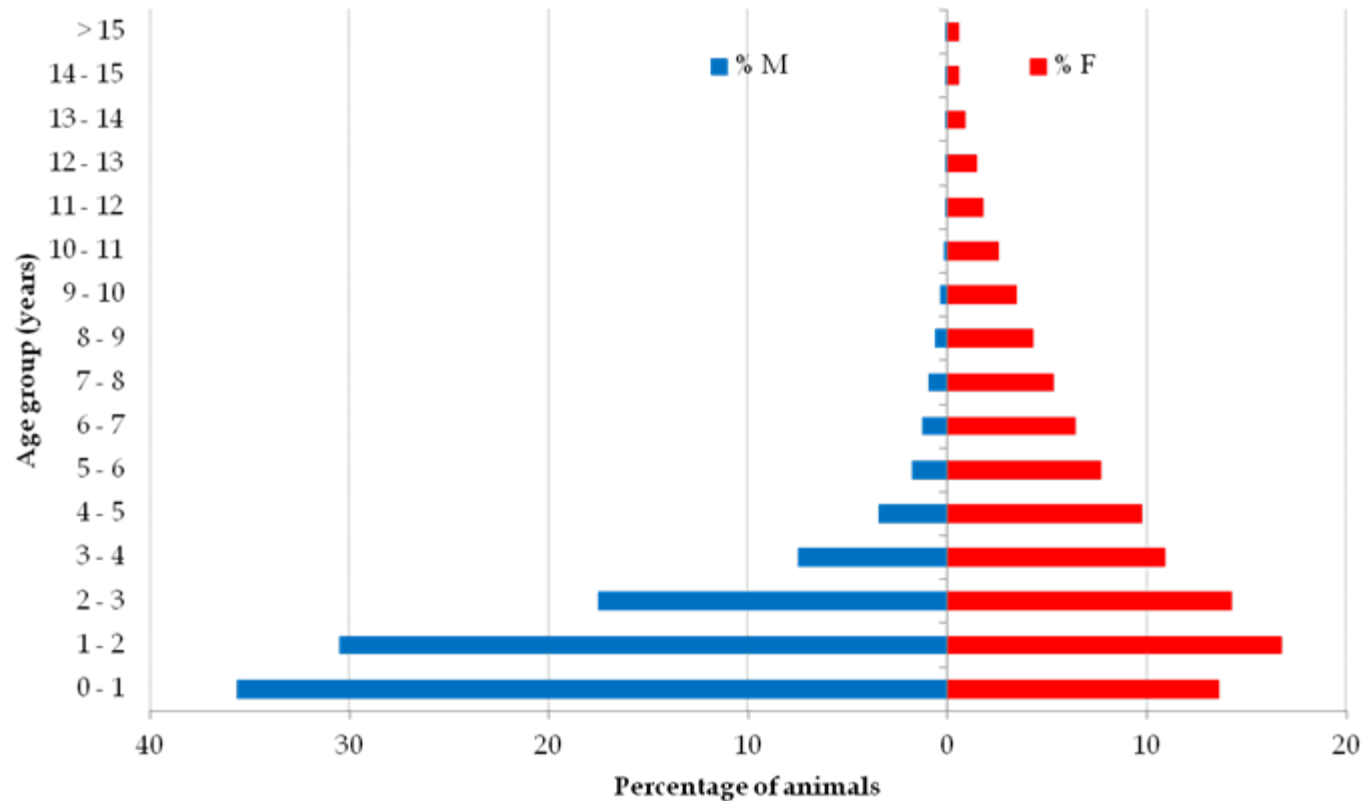
# Demographic analysis - Bonsmara

## ► Population change



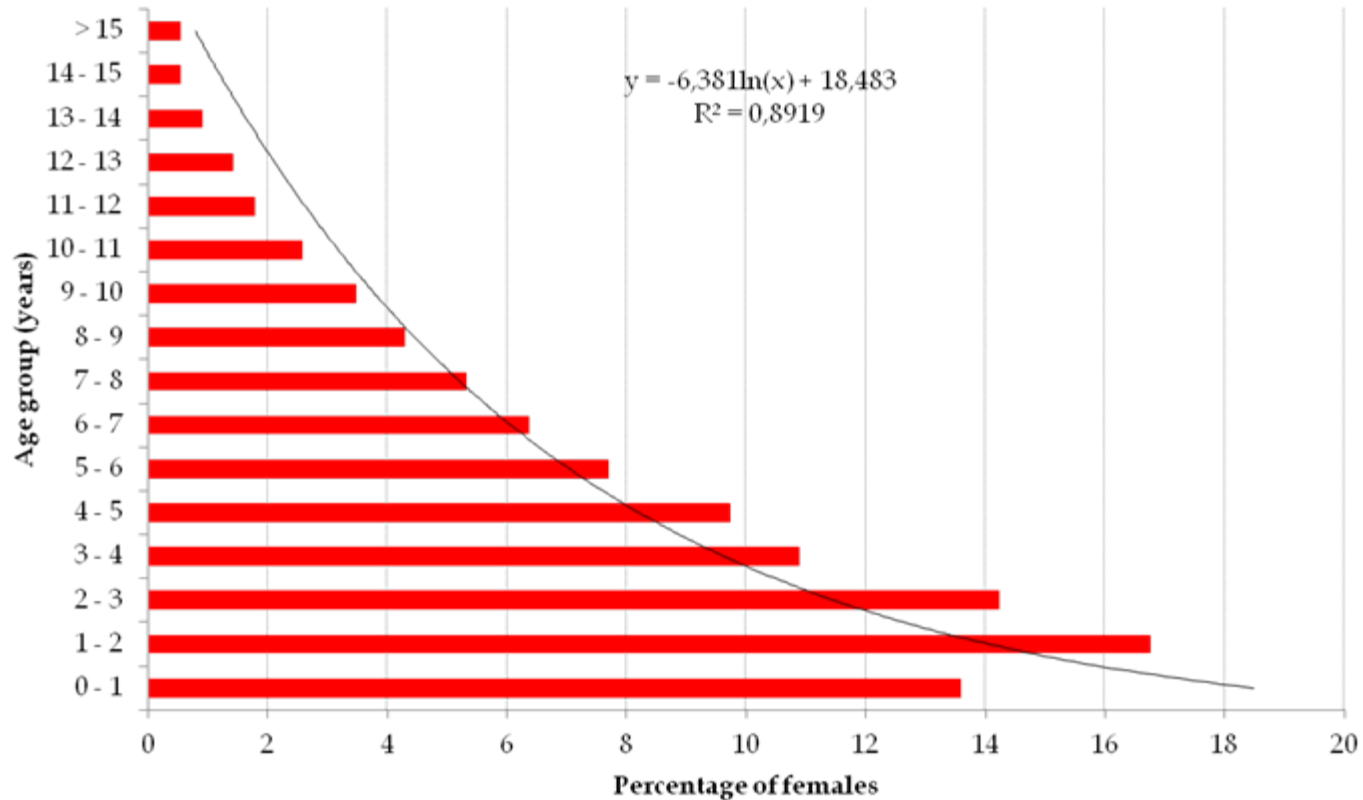
# Demographic analysis - Bonsmara

## ▶ Population composition



# Demographic analysis - Bonsmara

## ► Population composition - females



# Pedigree information

Pedigree data



Genetic variability  
Genetic progress

# Pedigree analysis - Bonsmara

## ▶ Completeness of pedigrees

Parameter	Value
Mean maximum number of generations traced	12.20
Mean number of complete generations traced	3.34
Mean number of equivalent generations traced	6.65



# Pedigree analysis – Bonsmara

## ▶ Inbreeding and relationships

Parameter	Value
Number of live animals	130 588
Mean Average Relatedness (AR) (%)	1.34
Mean inbreeding (F) (%)	1.59
Rate of change in inbreeding ( $\Delta F$ ) (% per year)	0.0375

## Pedigree analysis - Bonsmara

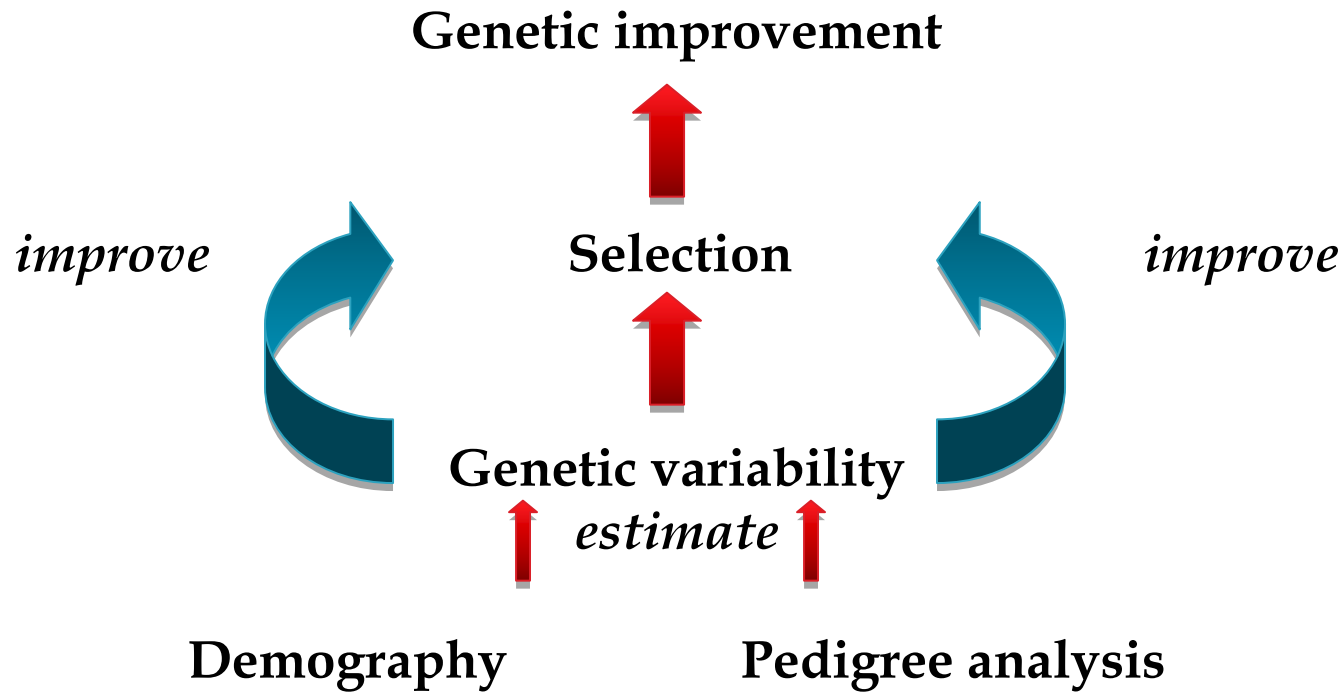
- ▶ Effective population size

$$N_e = 1/(2 \Delta F)$$

$$\Delta F_{\text{Bonsmara}} = 0.002741 \text{ per generation (0.27\%)}$$

$$N_e = 182$$

## Conclusive remarks



Relevant strategies / good decisions in terms of genetic improvement can only be made after an in depth analysis of the pedigrees and demographic parameters of a population