

The Moka cattle, an element of the Reunion island heritage to preserve

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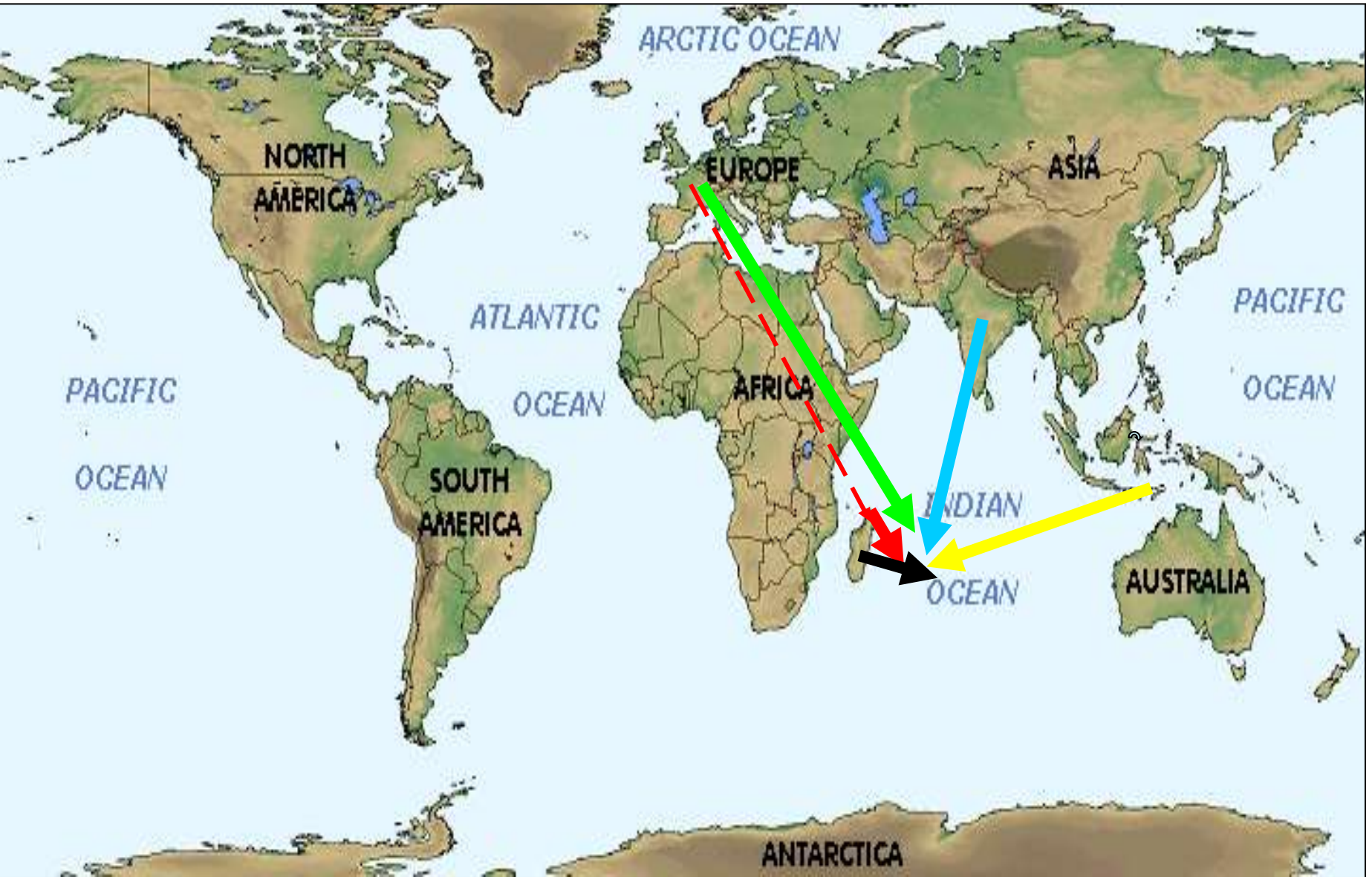
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ALIMENTATION
AGRICULTURE
ENVIRONNEMENT



As other overseas territories, a cattle breed issued of the diversity of the colonist population



What about The Moka Cattle?

- A cattle population that was used for sugar cane transport → 35000 heads
- Today : 600 -1500 heads?
- Breed or not breed?
- ~ 30 breeders who have females
- ⇨ A residual population
- Neither conservation nor recognition

Situation appraisal

- 1) Consultation of bibliographical sources and questioning experts to provide information on : History, Situation, Uses and animal performances.
- 2) Identification of 11 herds to:
 - characterize their structure and the main breeding operations
 - locate animals described as Moka type to support a phenotypical description
- 3) Genetic characterization of the breed

Some breeding Practices

- Extensive livestock on Rangeland (Savanna with a marked dry season)
- Without food supplement
- Without batching management
- Without reproduction management (several bulls in the herd)
- Basic pens
- But an identification of animals (zooprophylaxis)



Moka's value: some breeding abilities

A breed very well adapted to his environment

- Heat resistance
- Tolerance to seasonal variation of food (“accordion”)
- Good conversion of tropical forages
- No compulsory food supplement
- Resistance to diseases, few expenses in veterinary products
- Calving facilities

What future? : a high risk of extinction

- A niche marketing : direct sale (muslim festivities) with domestic (prohibited) slaughtering
 - A **land access** more and more difficult
 - **Few or no aids**
 - **No farm transmission** : the absence of transferee lead to herd slaughtering
- But a **genetic and cultural Heritage!**

Moka breed traits

The color of the coat is not one!



Moka breed traits

Hump?



Or not Hump?



Measurements

	n	Mean	Standard deviation
Weight of the males	7	430 kg	85 kg
Weight of the females	26	340 kg	45 kg
Thoracic perimeter	33	162 cm	15,24 cm
Height at withers	33	116 cm	8,27 cm
Rump width	33	120 cm	17,57 cm

Genetic variability analysis of Moka breed and Amsterdam Island cattle with microsatellite marker

- Amsterdam Island is a little island of the French Southern and Antarctic Lands
- Hosting a wild population of cattle
- Issued from 5 animals abandoned in 1871 by a Reunion Island farmer

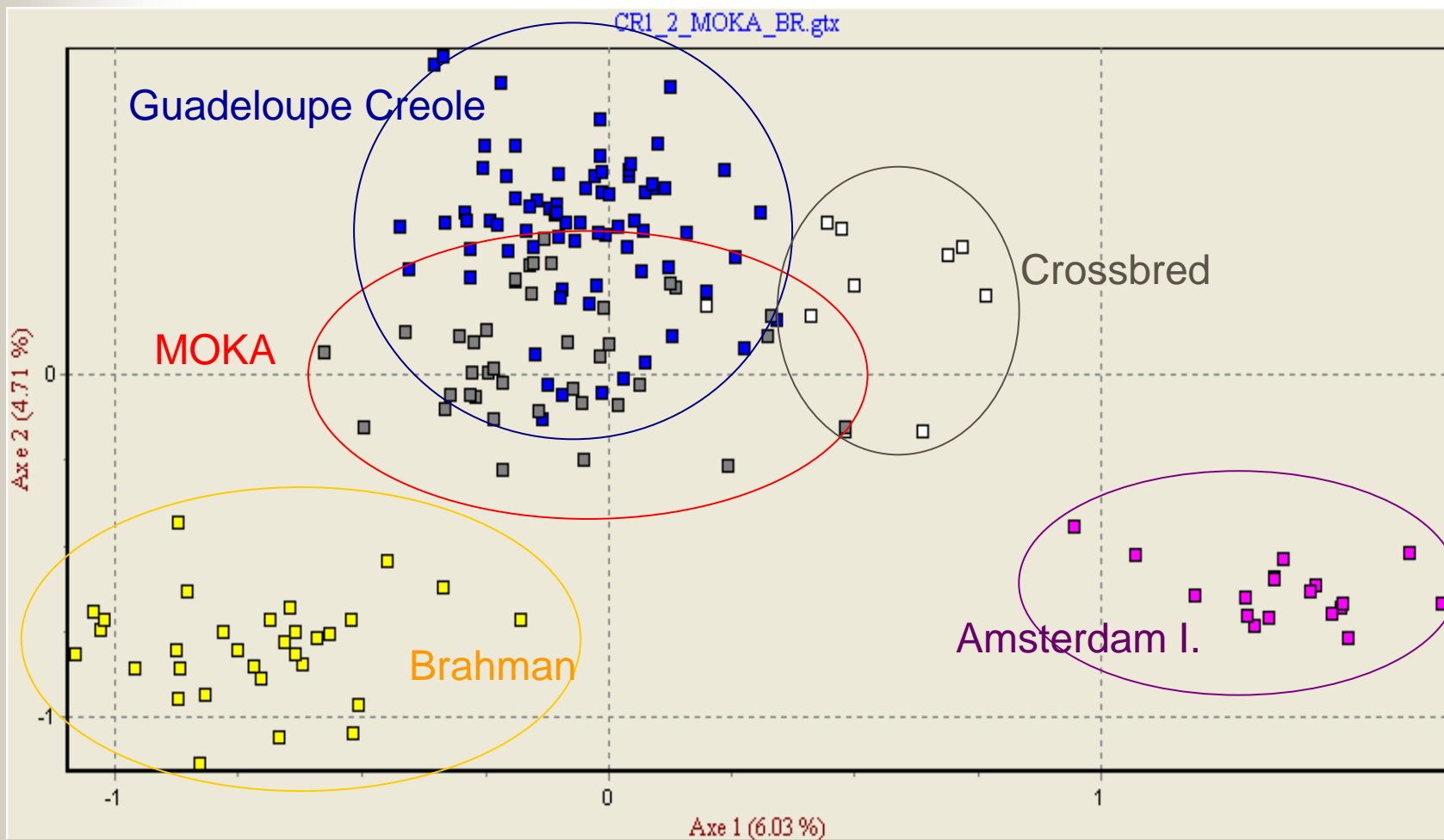


Allele mining and inbreeding rate

Breed	n	Mean number of alleles	Min-max	Estimated Inbreeding rate
MOKA	38	6.7	5-10	8.5
Amsterdam I.	18	2.6	1-4	11.1
Guadeloupe Creole	39	8.3	6-13	-2.9
Charolais *		8.1	5-12	6.7

* (San Cristobal-Gaudy et al., 2000).

Graphical interpretation of relations between breeds (factorial map projection)



Frequency of specific alleles

Specific allele marker	Moka	Crossbred	Creole
ETH10-209 African zebu	38.2	10.0	37.2
ETH10-211 African zebu	4.0	0.0	6.8
ETH225-158 African zebu	23.7	20.0	24.7
INRA023-198 African taurine	4.0	0.0	21.9
ETH10-217 European taurine	1.3	35.0	13.5

⇒ The Moka breed has some origins from African zebu - close to Creole

⇒ And a lower crossbreeding with taurine than Creole breed

⇒ Moka breed appears to be very distinct from crossbred

Conclusions



- The Moka : a specific breed which is an element of a cultural heritage...
- that became marginal for loss of uses and because of the development of a more intensive cattle breeding
- This work supply elements for a definition of the standard and recognition of the breed
- But the conservation can't be achieved without a political will and the implementation of a new breeding model