

Ad hoc action “Merino network”




*Roman sarcophagus –
Alcazar of The Christian Monarchs
CORDOBA*

SCIENTIFIC COOPERATION INITIATIVE PRELIMINARY RESULTS

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GENETIC SURVEY: AIMS



To investigate the genetic structure and relationships among Merino and Merino-derived breeds around the globe, relevant for the preservation, management and exploitation of the Merino genetic variability.



Special focus on European Merino and Merino-derived breeds.

CONSTRUCTION OF DATASET

MEDITERRANEAN AREA

Breed	Acronym	Origin
Spanish Merino: dataset 1	SMA	Spain
Spanish Merino: dataset 2	SME	Spain
Spanish Merino: dataset 3	SMC	Spain
Merino Branco	MBA	Portugal
Merino Preto	PRE	Portugal
Sopravissana	SOP	Italy
Merinizzata Italiana	MEI	Italy
Gentile di Puglia	GPA	Italy

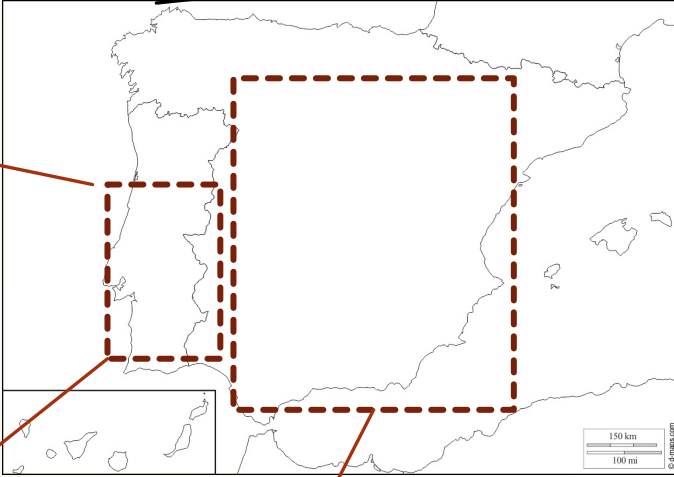
CONSTRUCTION OF DATASET



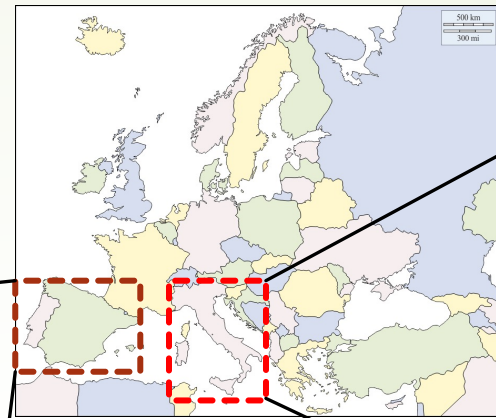
Merino Branco



Merino Preto



Spanish Merino population



Merinizzata Italiana



Sopravissana



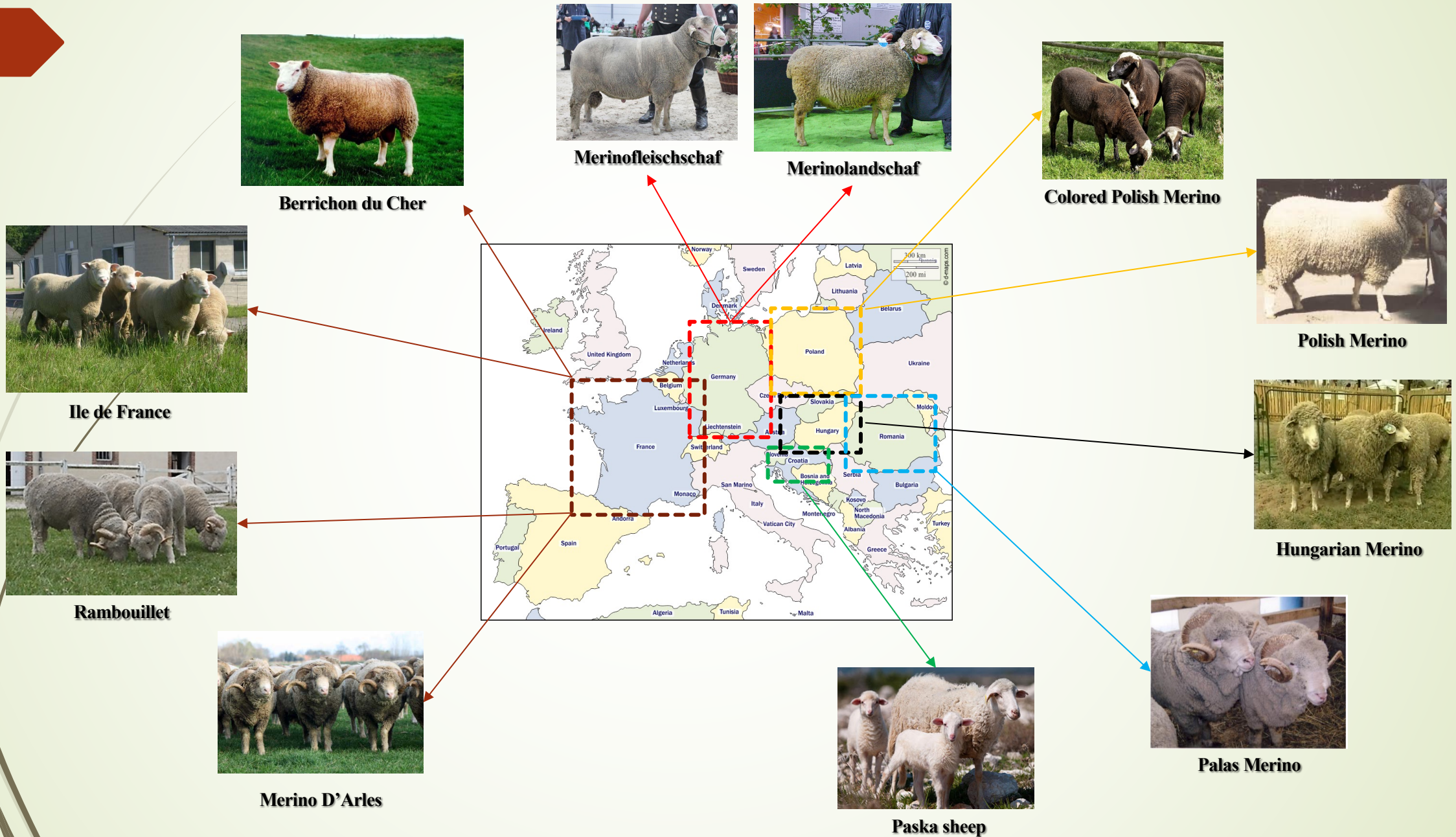
Gentile di Puglia

CONSTRUCTION OF DATASET

MEDITERRANEAN AREA / CONTINENTAL EUROPE

Breed	Acronym	Origin
Merino de Rambouillet (France type)	RAM	France
Berrichon du Cher	BDC	France
Ile de France	IDF	France
Merino d'Arles	MER	France
Merinofleischschaf	FLE	Germany
Merinolandschaf	MLA	Germany
Paska	PAK	Serbia
Hungarian Merino: dataset 1	HUG	Hungary
Hungarian Merino: dataset 2	HUM	Hungary
Polish Merino	POL	Poland
Polish Colored Merino	PCM	Poland
Polish Merino Old Type	PDM	Poland
Romanian Merino (Palas Merino)	ROM	Romania

CONSTRUCTION OF DATASET



CONSTRUCTION OF DATASET

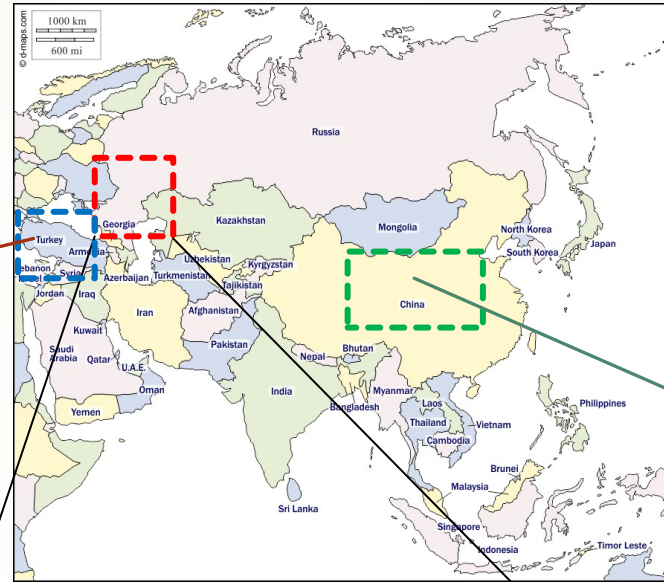
EASTERN EUROPE - ASIA

Breed	Acronym	Origin
Groznensk	GRZ	Russia
Salsk	SAL	Russia
Soviet Merino	SOV	Russia
Stavropol	STA	Russia
Chinese Merino	CME	China
Turkish Merino	TKM	Turkey

CONSTRUCTION OF DATASET



Turkish Merino



Chinese Merino

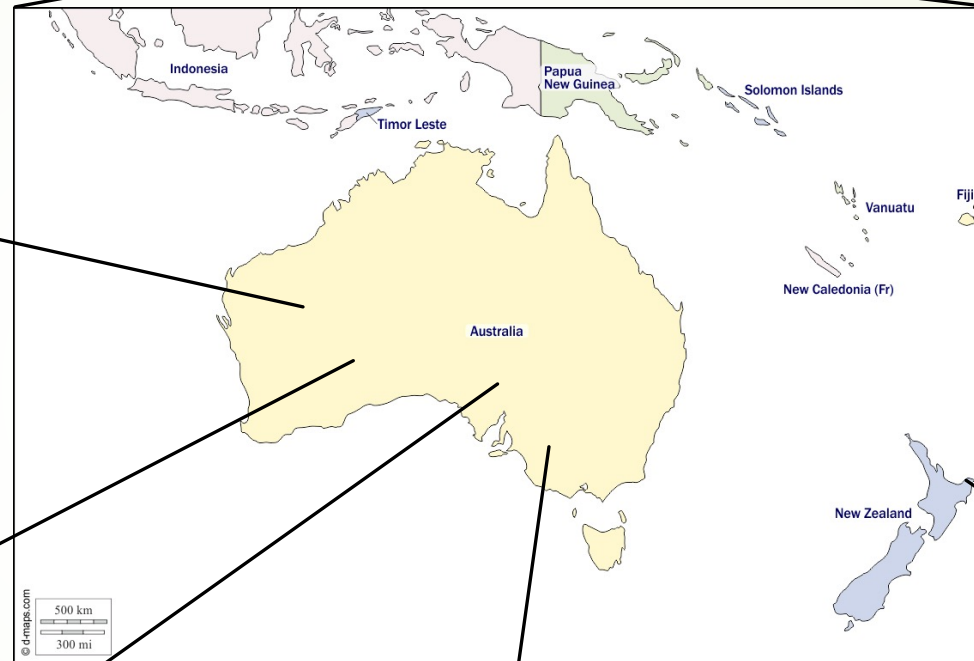
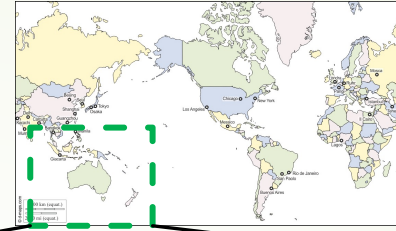


CONSTRUCTION OF DATASET

OCEANIA

Breed	Acronym	Origin
Australian Industry Merino	AIM	Australia
Australian Poll Merino	APM	Australia
Australian Merino	AUM	Australia
Macarthur Merino	MCM	Australia
Arapawa	APA	New Zealand

CONSTRUCTION OF DATASET



Macarthur Merino



Australian Merino



Australian Industry Merino



Australian Poll Merino



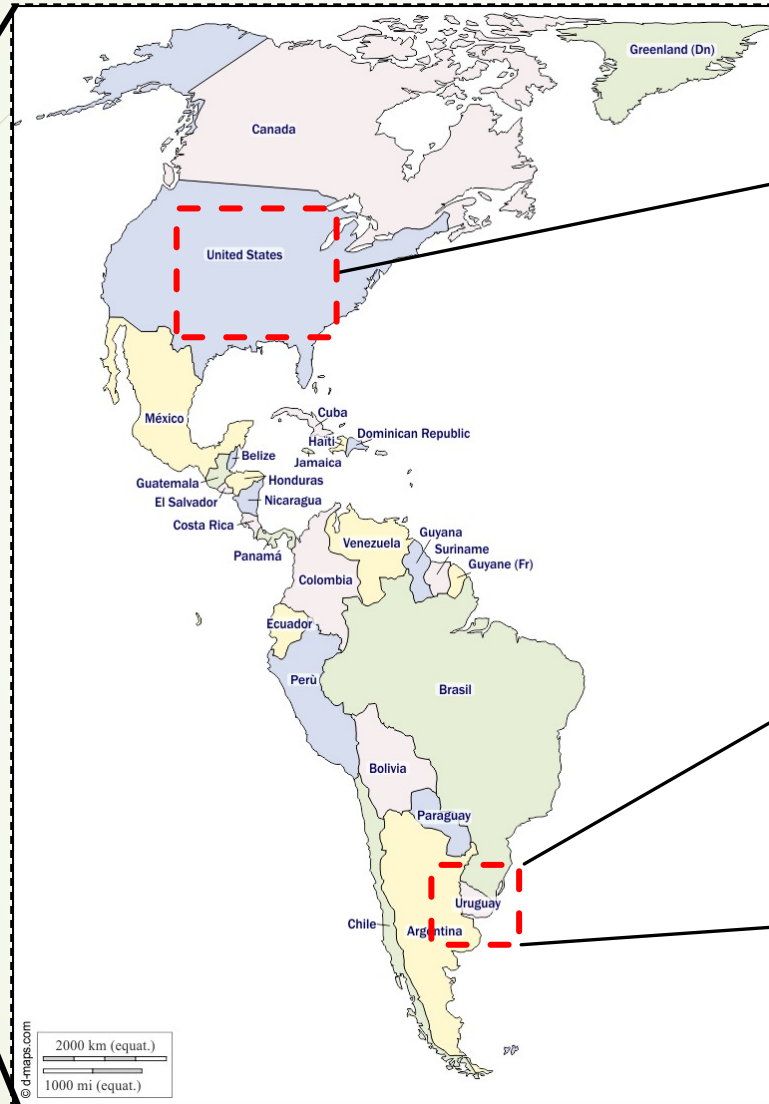
Arapawa

CONSTRUCTION OF DATASET

NORTH AND SOUTH AMERICA

Breed	Acronym	Origin
Merino de Rambouillet (American type)	RMB	USA
Corriedale	COR	Uruguay
Merino Uruguay	MUR	Uruguay

CONSTRUCTION OF DATASET



American Rambouillet



Corriedale



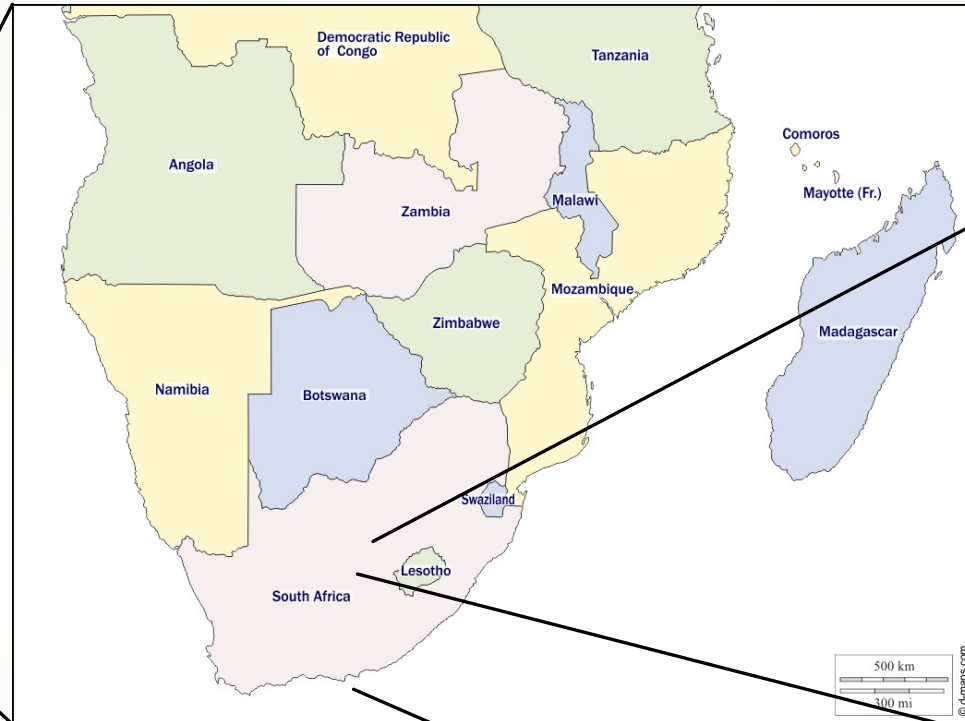
Merino Uruguay

CONSTRUCTION OF DATASET

SOUTHERN AFRICA

Breed	Acronym	Origin
South African Merino: dataset 1	SAM	South Africa
South African Merino: dataset 2	SAM	South Africa
South African Mutton Merino	SMM	South Africa
Dohne Merino	DHM	South Africa

CONSTRUCTION OF DATASET



Dohne Merino



SA Merino



SA Mutton Merino

CONSTRUCTION OF DATASET

More samples are coming:

- **Spanish Merino (Spain)**
- **Transilvanian Merino (Romania)**
- **Trimetticcio di Segezia (Italy)**
- **Sopravissana (Italy)**
- Etc..

TECHNICAL ASPECTS

Part of the dataset was downloaded from public repository.

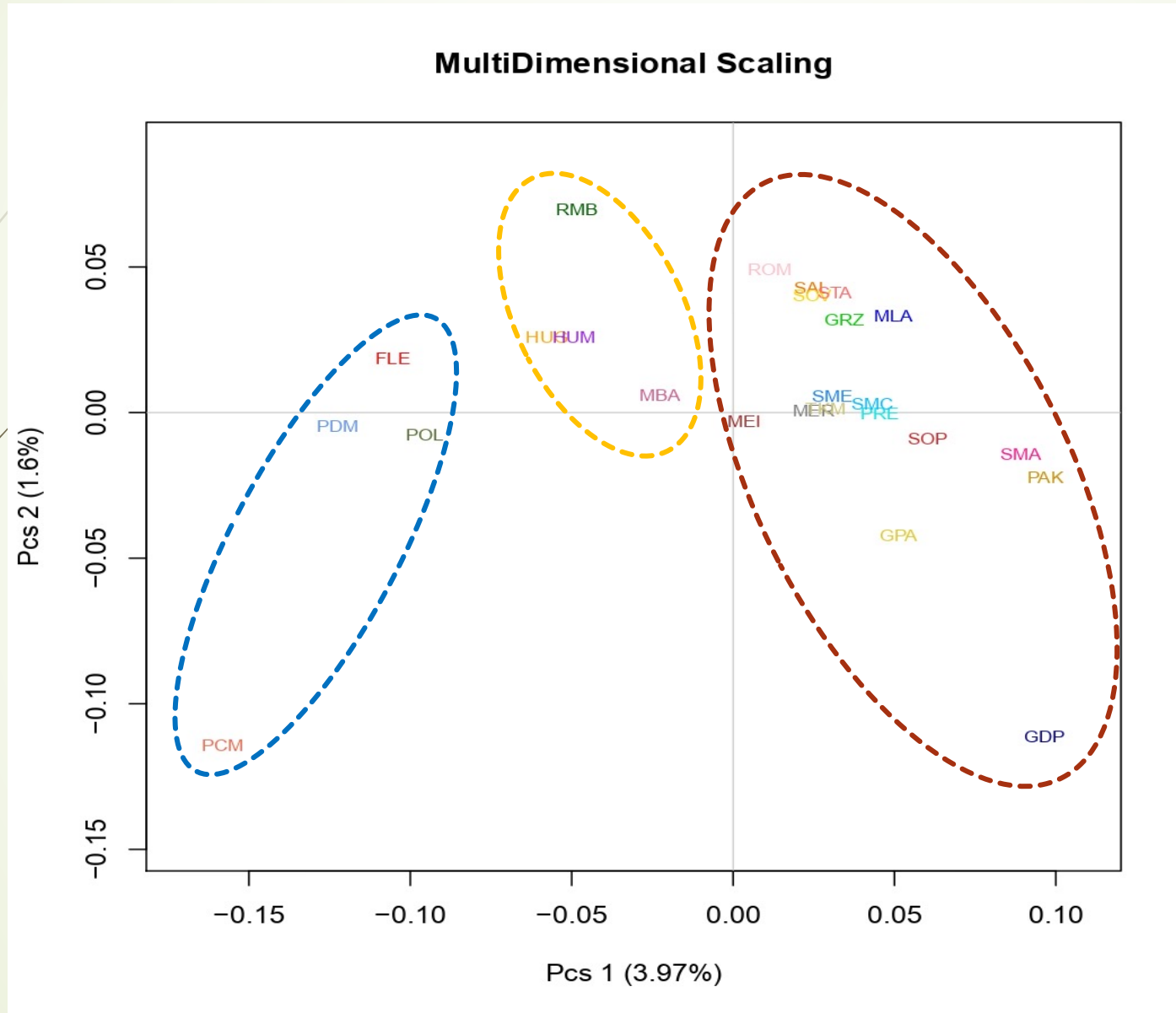
Most of the breeds have been genotyped with the OvineSNP50 BeadChip (Illumina, San Diego, CA).

Every research team contributed with samples or genotypes.
The project was self-financed by the research team.

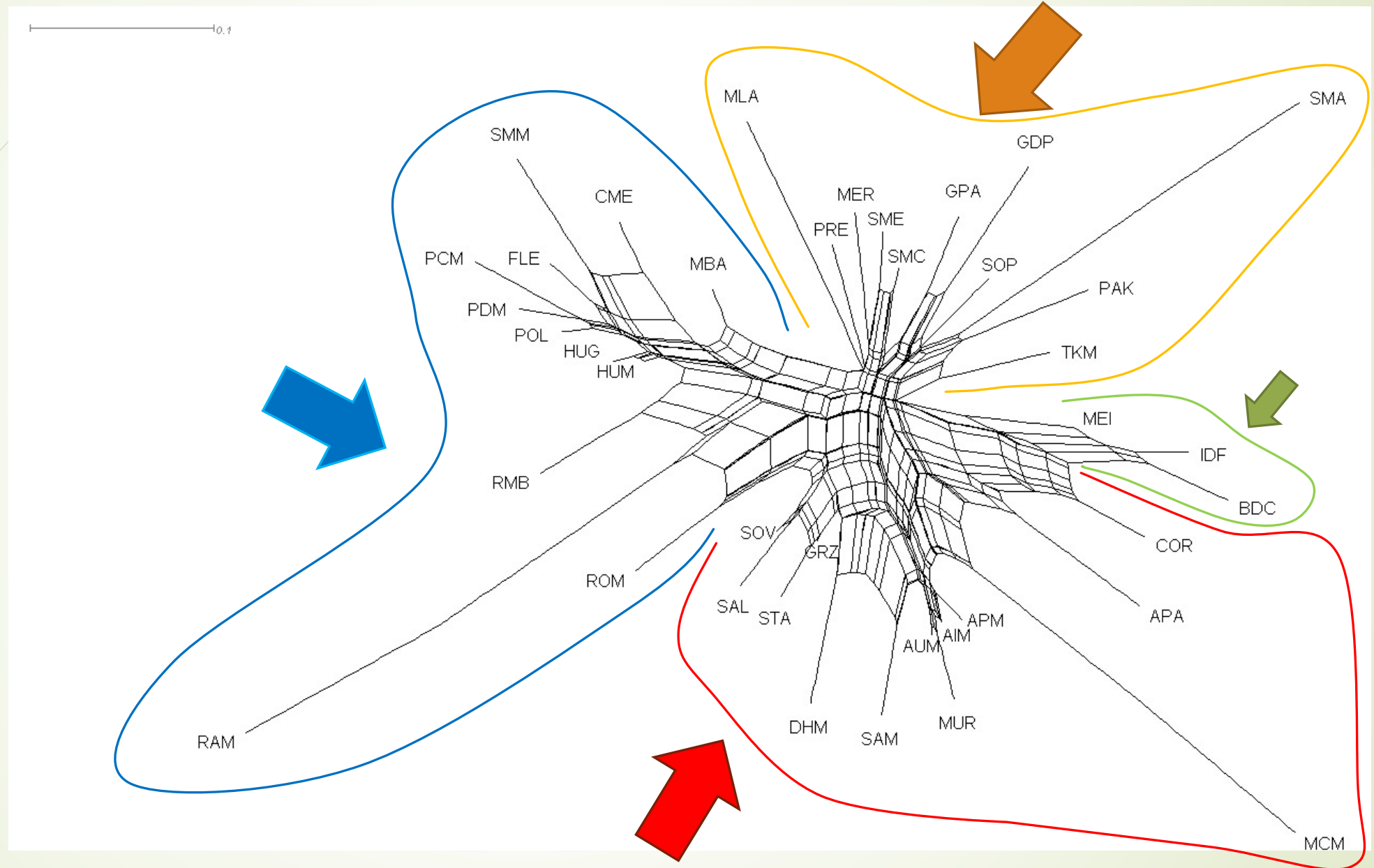
PRELIMINARY RESULTS: MDS PLOT



And in Europe??



PRELIMINARY RESULTS: GENETIC DISTANCE



FUTURE PROSPECTIVES

- To achieve a better knowledge on the molecular characterization and population structure of Merino branch considering the historical events that influenced their genetic makeup.
- To provide new insights into the remote origin of the most famous fine-wool sheep breed in the world.
- To identify putative genomic regions under selection that may explain the phenotypic differences and potential candidate genes associated with local adaptation among the Merino branch.

The molecular information will be use as a guideline for management and breeding strategies in order to obtain better utilization and conservation of Merino and Merino-derived sheep breeds.