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Transhumance and locals breeds

The example of the Pyrénées mountain range
Manech and Basco béarnaise breeds (Milk Sheep)
and Gasconne des Pyrénées breed (Beef cattle)



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- Manech and Basco béarnaise ovine dairy breeds
- Gasconne des Pyrénées suckling bovine breed

are part of the CORAM : **Collectif des Races locales de Massifs**
Local Mountain Breeds Association

As 40 other members in France



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Massif Local Breeds Collective (CORAM) Association of the Local Mountain Breeds

30 breeds :

- 20 meat sheep
- 5 dairy sheep
- 3 meat cattle
- 2 dairy cattle

14 breeding organisations

44000 farms

- 76% in the Massifs

30 Official Quality Marks (PDO, PGI, Labels, etc.)

CORAM piloted the process for France to list transhumance as a World Heritage Site

transhumance

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Most of them experience the Transhumance practice on collective areas for centuries

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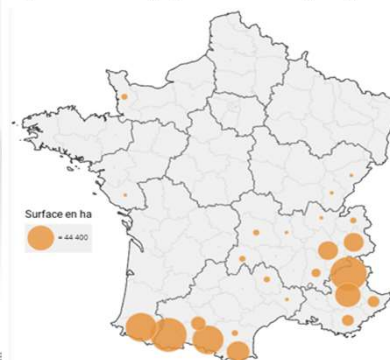
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Transhumance on collective pastoral areas in France

Vizagreste - Collective transhumance

530 000 ha of collective range land

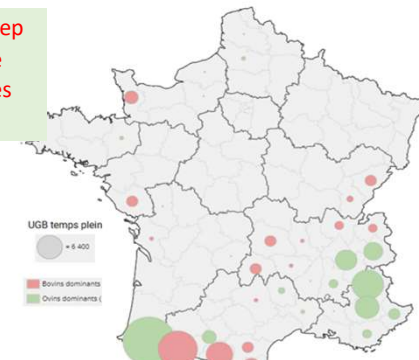
Surfaces collectives – superficie admissible en ha, par département



- 1 054 100 sheep
- 170 700 cattle
- 13 800 equines
- 10 100 goats

7 800 transhumant farmers

Total des UGBTP dans les surfaces collectives, par département

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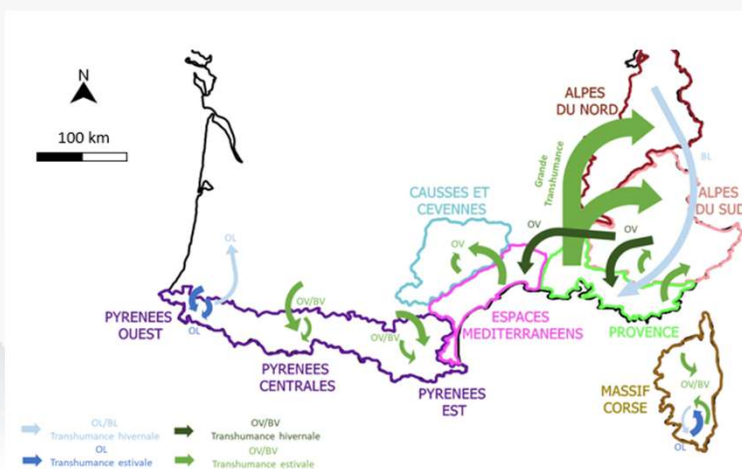
Source : fichier montées et descentes – ASP 2020

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Example of summer transhumance in the south of France

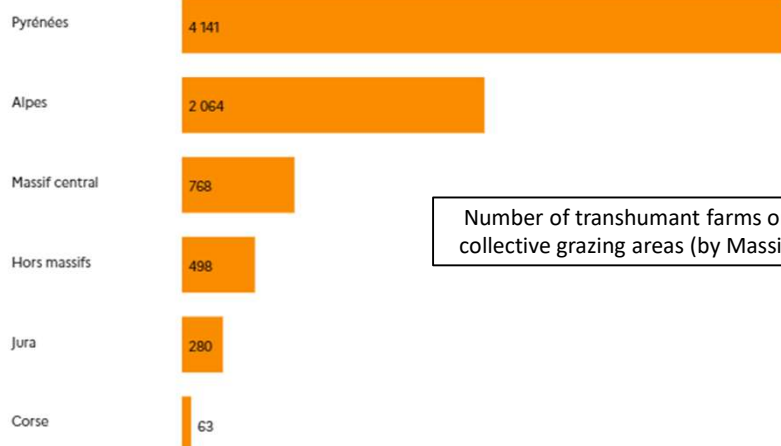
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Carte des transhumances estivales et hivernales dans le sud de la France (Source : Malzac (2021) d'après UNESCO (2020) et cas-types INOSYS (2012; 2018; 2019a; 2019b))

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A very large number of transhumant farms

Vizagreste - Collective transhumance



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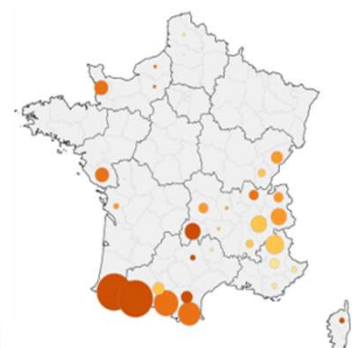
The presence of different species in pastoral areas

Vizagreste - Collective transhumance

UGBTP des ovins



UGBTP des bovins



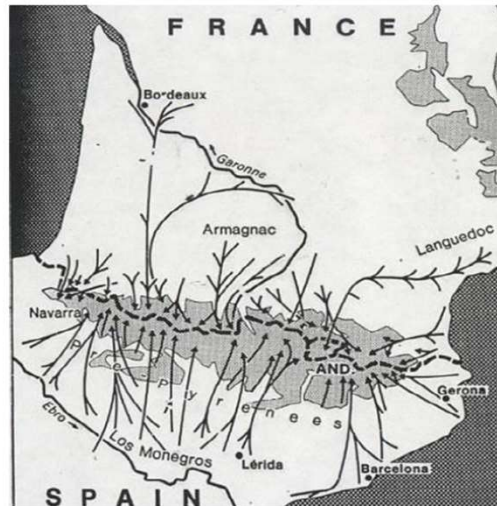
UGBTP des équidés



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Transhumance is practiced on both sides of the Massif
with numerous grazing agreements.



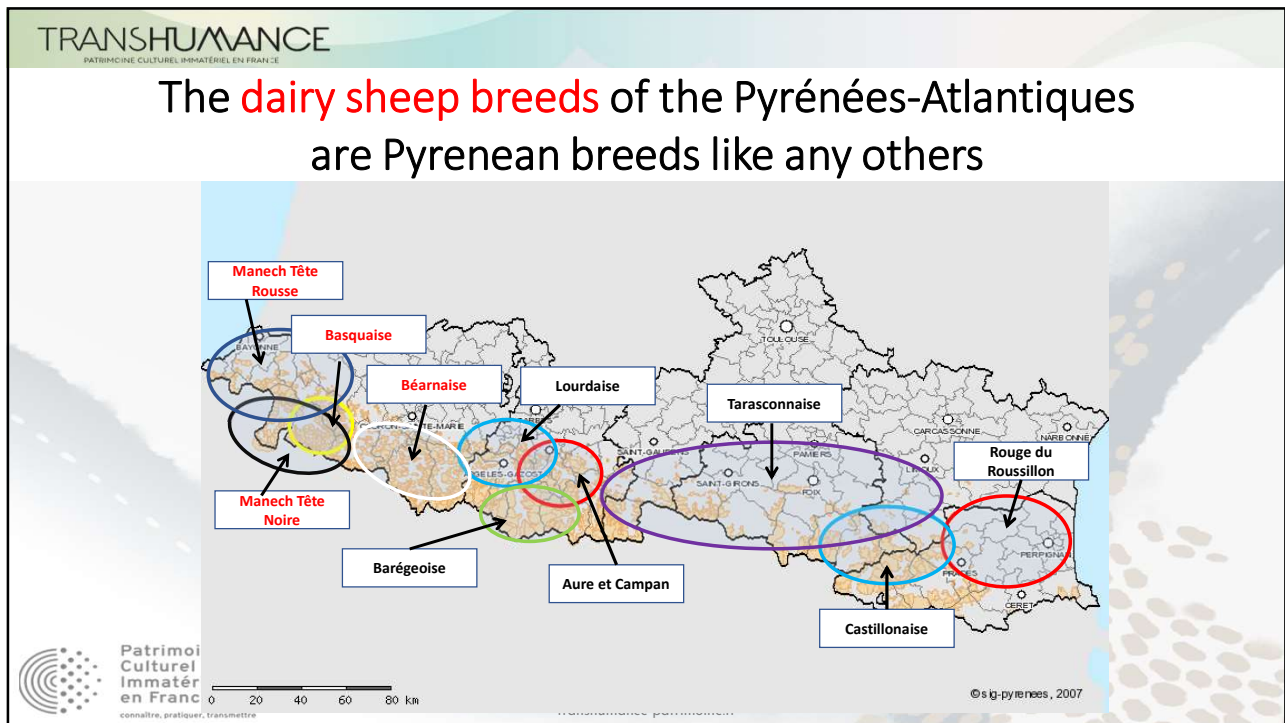
L'attraction du massif des Pyrénées pour les transhumants des deux versants.

Source : Luis Villar, Pratiques pastorales et biodiversité, SERAM2 / Institut Pirenaico de Ecologia, 2018.

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The example of dairy sheep in the Pyrénées-Atlantiques



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But...

Starting from the 60s and the 70s

the French market needs milk

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Questions were put to Basque and Bearn farmers in the 60s and 70s

- **This time was a fantastic opportunity to develop livestock farming and to improve family farms' living and working conditions...**
 - in traditional sheep farming areas = mountain valleys
 - but also in areas where sheep farming was not so well established
- **Questions remained: how to respond to this production need?**
 - Can we develop the dairy production potential of the local flocks?
 - Or... should we introduce animals that are already more productive than the local breeds?



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The choice made: work with the local breeds

- **Wish to develop production as part of local farming systems**
 - Including the importance of grazing
 - Including the practice of transhumance
- **Decision to breed/select and enhance the potential of the 3 local breeds**
 - Merger of Basquaise and Béarnaise which became Basco Béarnaise
 - Manech red head and Manech black head
 - Importance of keeping the 3 breeds in connection with BOTH the specific farming systems AND farmers' attachment to their breeds (part of their culture)
 - From 1972 to 1975: introduction of professional breeding tools / selection



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The 3 local breeds of dairy sheep of the Pyrénées

Manech Red Head



Manech Black head



Basco béarnaise






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Specificity: 75% of herds graze 12 months out of 12

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Specificity: 70% of livestock farmers use collective grazing land (mountain pastures, intermediate areas)



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Introduction of a major pastoral development programme in the mountain pastures



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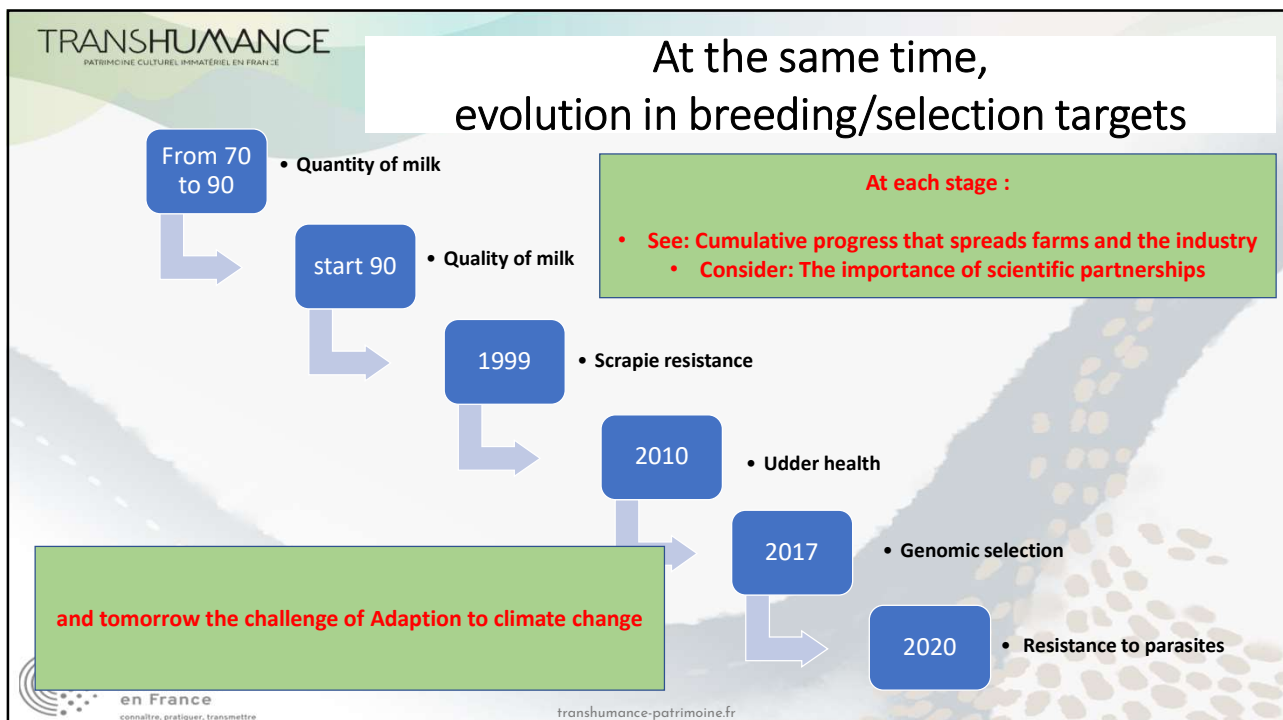
Recognition of the specific nature of mountain cheese

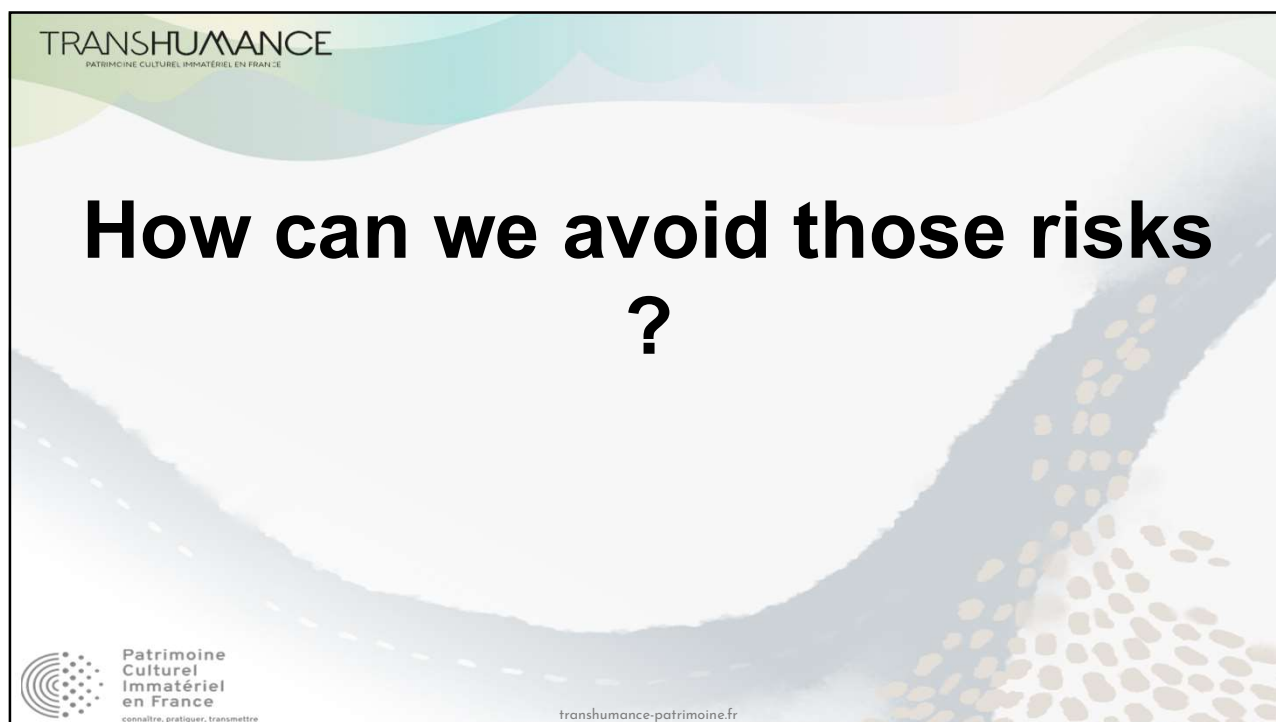
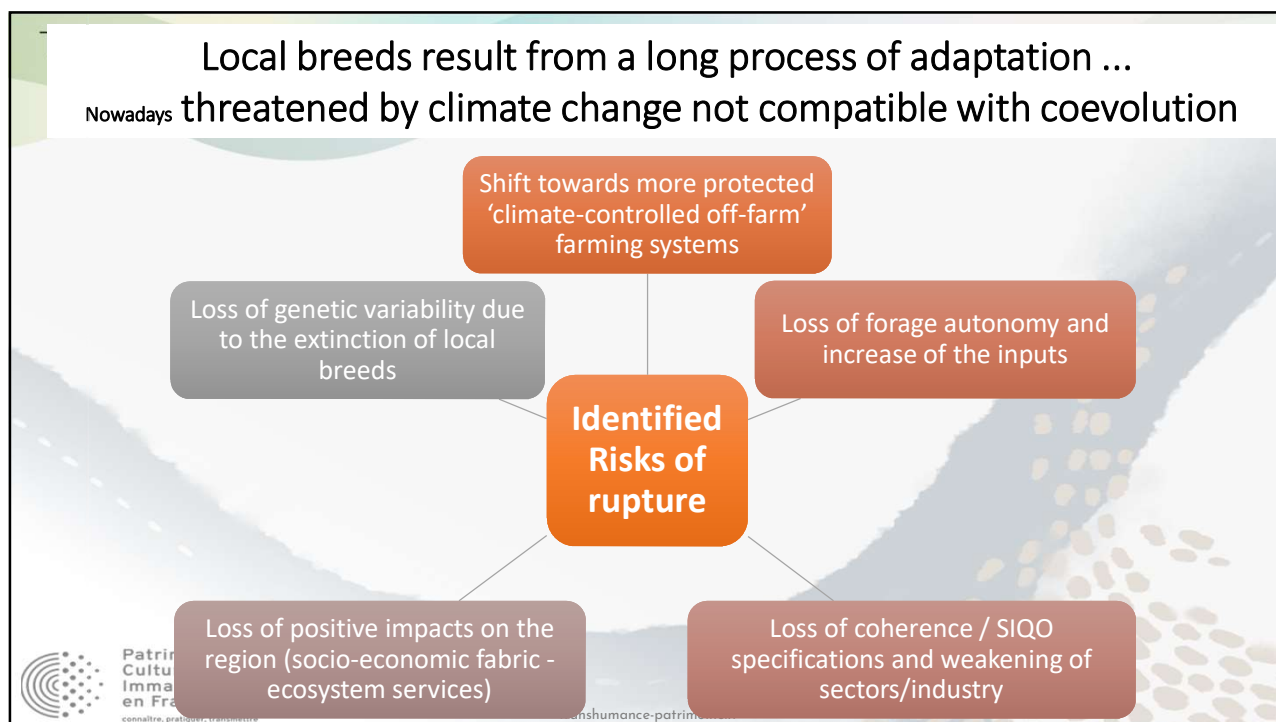
- Specific differentiation within the Ossau Iraty PDO (since 1980)
- **Nowadays** Slow Food **sentinel product**




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the importance of genetic leverage for local breeds

A collective and sustainable lever that accelerates adaptation mechanisms

- Cumulative genetic progress 10 to 20% accessible genetic progress over 15 years
- Work on the adaptation of animals within the breed and at the farming system level

= Choice of two strategic traits

- Resilience and efficiency features

Goals:

- 1) Include our breeds, our industry (PDO) and our territory (grazing-pastoral system) into the logic of the agro-ecological transition

- 1) Give our breeds a competitive advantage over other breeds



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Tools (programmes)

SMARTER from 2018 – 2023

PHENOPASTO since 2024



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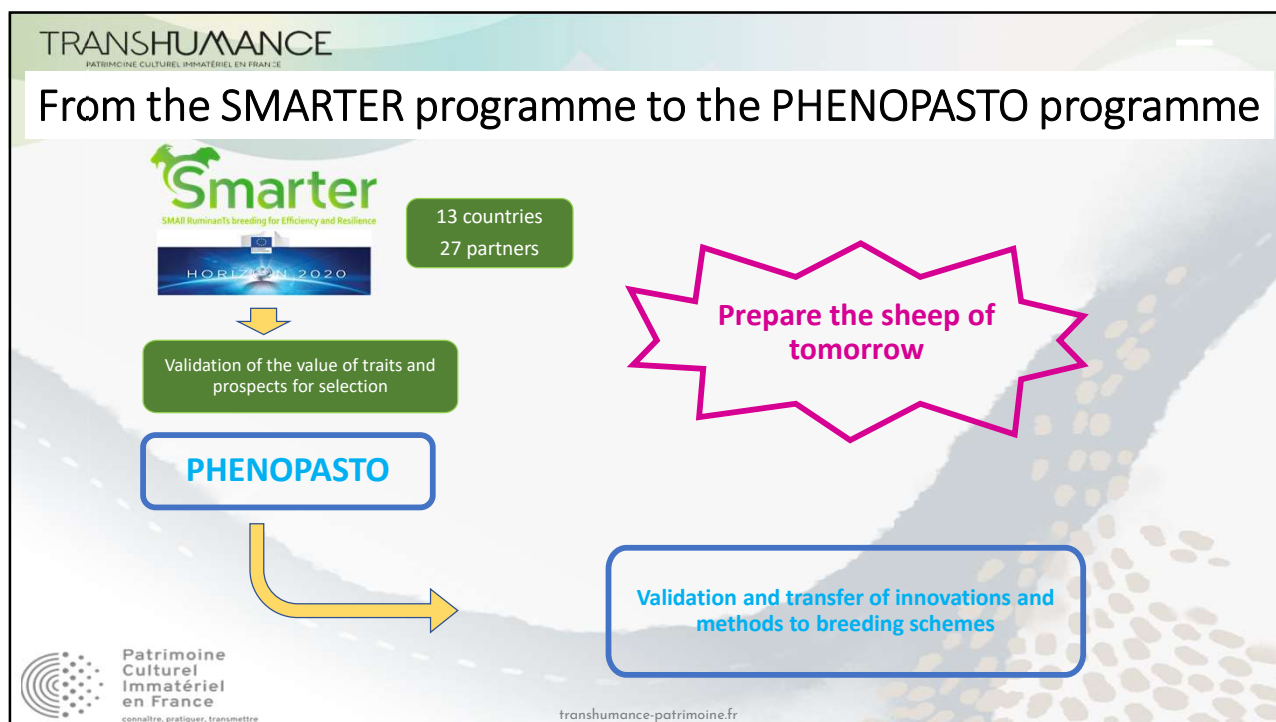
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SMARTER : fondamental research programme
Small Ruminants breeding for **Efficiency** and **Resilience**
 The facts : hardiness, feed efficiency, production involving less greenhouse gas emission...

PHENOPASTO : R&D programme
 The means : Definition of the selection criteria + Genotyping these characters and specificities

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New selection criteria under review

- **Increase resistance to diseases** (internal parasitism, foot rot, etc.) and work for a better understanding of the **immunity mechanisms**
- The **ability to mobilize body condition in situations of feed challenge** without penalizing production and reproduction functions
- The **ability to withstand the challenges of temperature variations and the lack of water** availability without penalizing production and reproduction
- The **ability to use at the upmost pastures and grazing resources**, in relation to the feed efficiency of these grazing animals, and in relation to greenhouse gas emissions



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Let's be practical...

Targeting new traits would lead to the inclusion of resilience and efficiency in the overall indexes

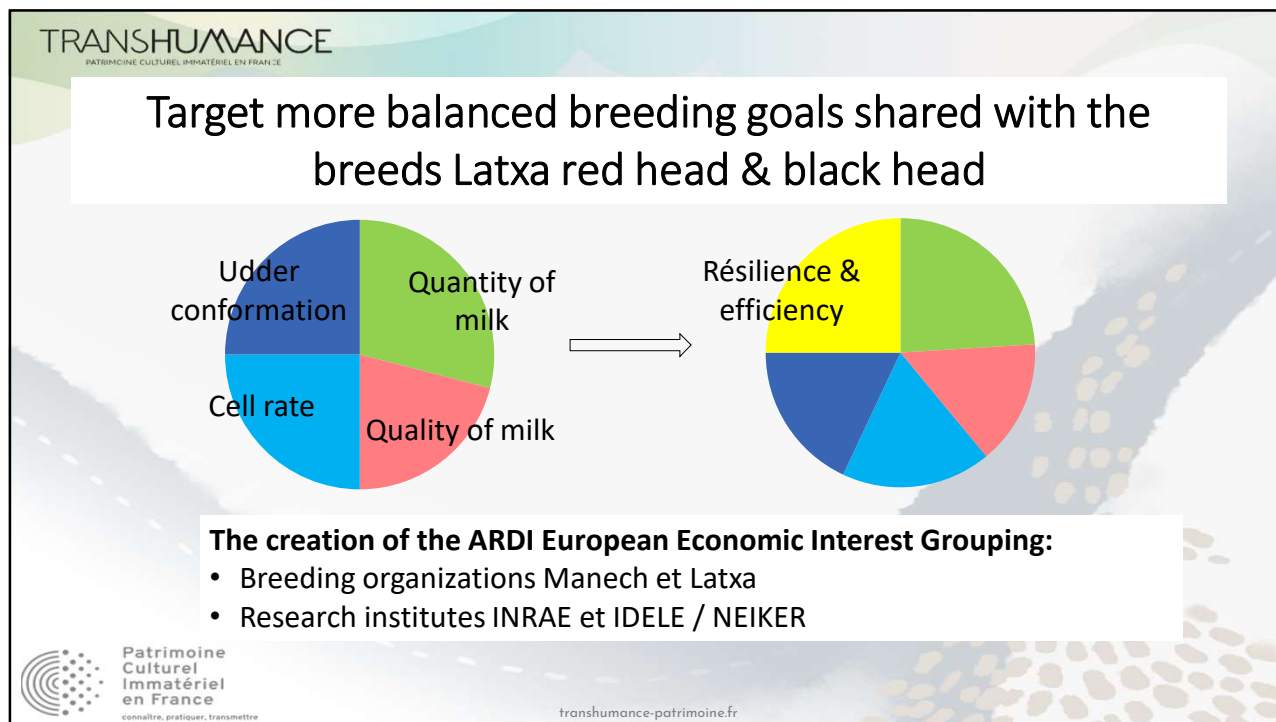
Overall indexes in which the « classical » production traits will use less room



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 **Resistant** and fitting to transhumance!

Traits of hardiness naturally developed to live in local strong constraints



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 **A resistant breed !**

Her natural abilities to be managed free range with her calf



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Cold resistance

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 A resistant breed fitting to transhumance!

Outstanding abilities regarding sun and heat





A lighter grey coat in summer, black surroundings of the anus, nose, mouth and eyes.

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 A quality mark for the **STEERS**



Le Label Rouge « LE VRAI BOEUF ! » permet de labelliser uniquement les vrais bœufs (**mâles castrés** et engraisés avec une moyenne de **carcasse de 550kg**) et d'en faire une catégorie d'excellence pour le consommateur en toute transparence. L'animal doit passer au minimum **6 MOIS PAR AN** dans des **pâturages**




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2 R&D programmes linked to transhumance and climate change

- ▶ **Pastorclim**
- ▶ **Estivomètre**

- ▶ In order to experiment and better understand new phenotypes :
 - ▶ Analyse the aptitude to walk (use of videos) at the breeding station on 1 year old bulls
 - ▶ Résistance to parasites
 - ▶ Heat tolerance
 - ▶ Measures of movement, forage and concentrate individual consumption (young bulls/station)
- ▶ In the scope of cross border programmes

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PASTORCLIM

Preserve, give value and transmit the ecologic heritage and the Pyrenean local breeds linked to summer grazing

thanks to a scheme taking in account the climate change

 AGRICULTURES & TERRITOIRES
CHANGEMENT D'AGRICULTURE
en France

 GASCONNE
DES PYRÉNÉES

 UPRA OVIES
PASTORCLIM

 Govern d'Andorra

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A win-win balanced cross border partnership

PASTORCLIM, a working consortium including :

- Breeders associations
- Research labs
- Schools and universities
- Technical organizations
- Local governments.

Common goal :

- A work plan to preserve and improve the Pyrenean breeds
- taking in account their performances in summer grazing situations
- preserve the ecosystems which feed them
- link these topic to the cultural heritage, including transhumance.

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How do they move ?

Study using neck collards and GPS

Example (Estive de Quioules)

10 km / day

Altitude min. : 2045 m
Altitude max. : 2479 m

Adaptation de la Sélection aux contraintes liées au Pastoralisme et à la Transhumance

SUIVI JOURNALIER DE DEPLACEMENT - ANIMAL : EPAUTO-061601 - DATE : 2016-08-09

Distance (m)	Vitesse moy. (m/h)	Dénivelé cumulé (m)	Dénivelé positif (m)	Dénivelé négatif (m)
10523.94	441.59	-136.22	495.04	-631.26

Altitude minimale (m) : 2045.97 Altitude maximale (m) : 2479.8

Légende :

- Limites de l'estive à l'étude
- Parcours de l'animal pour un jour donné

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PASTORCLIM

Next steps on site / studies through the GPS

Localisation linked to feeding, watering and resting habits

Body temperature measurements in real time

Rumination

Behaviour/attitude when a cow comes back (eventually) in heat

Store the most data as possible to better understand the breed in her context



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« L'estivomètre »

video analysis: willing of movement



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ESTIVOMÈTRE

A small mountain built for the one year old bulls evaluated at the station

Videos are made during five days on each mob of bulls

Analyse :

- Will to walk, frequency
- Amplitude of the steeps
- Feet and legs quality

Store the most data as possible to better understand the potential future bulls in their future context

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