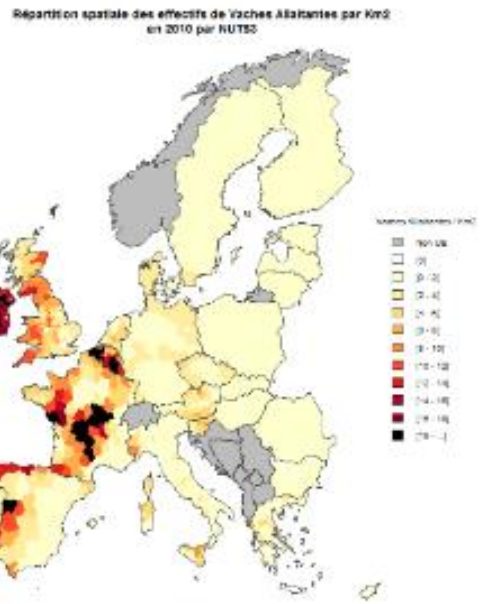
The French R&D framework for beef production research

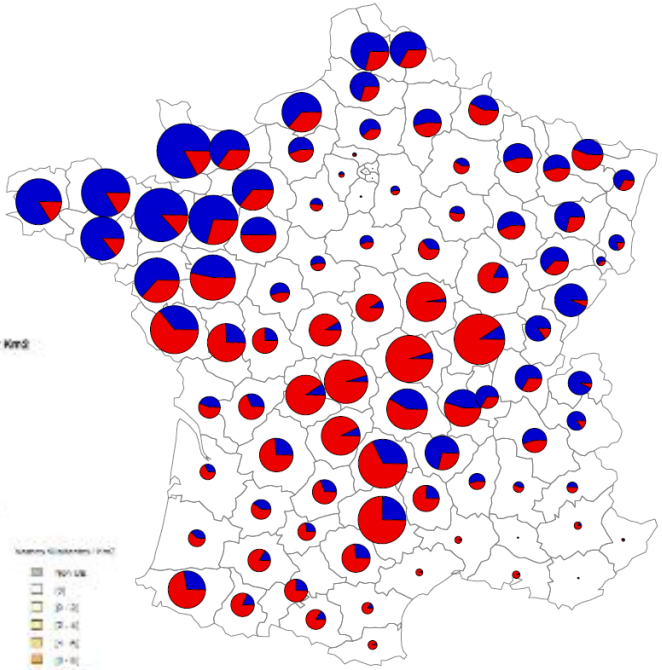
A.Le Gall

22/06/2022

Location of suckler cows in France (and Europe)

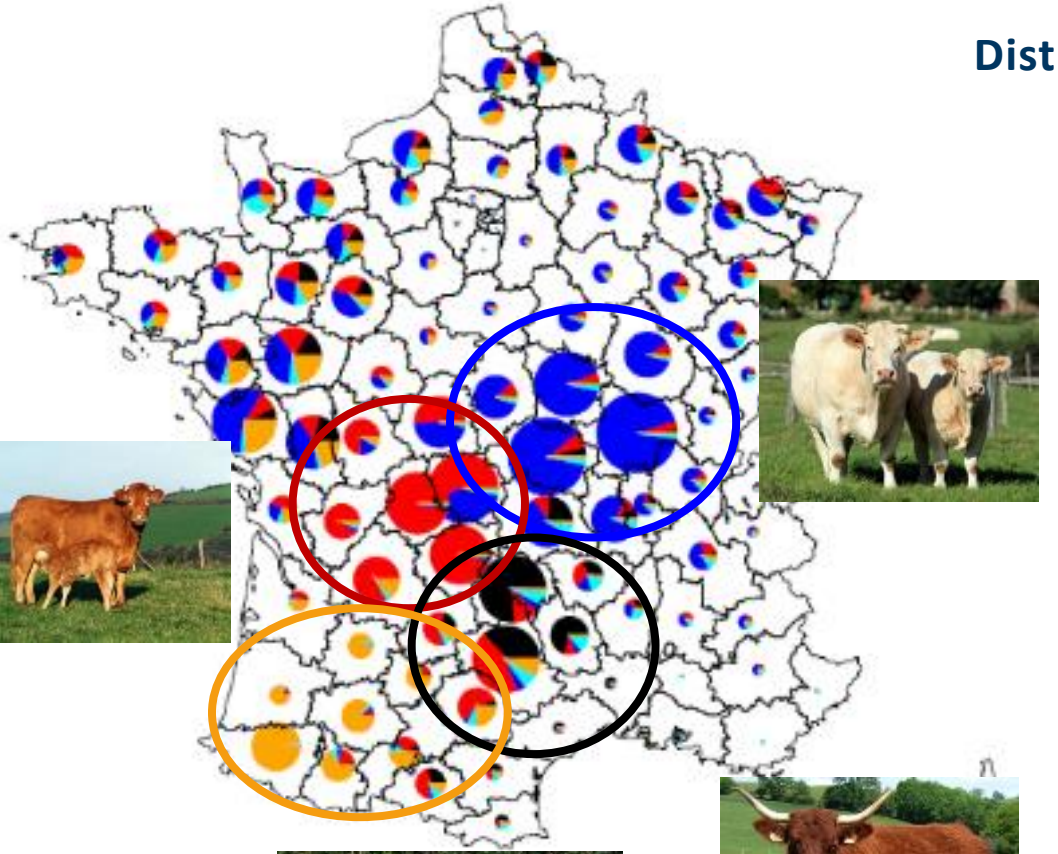
3,8 million suckler cows (51%) => 68% of meat
3,6 million dairy cows (49%) => 32% of meat



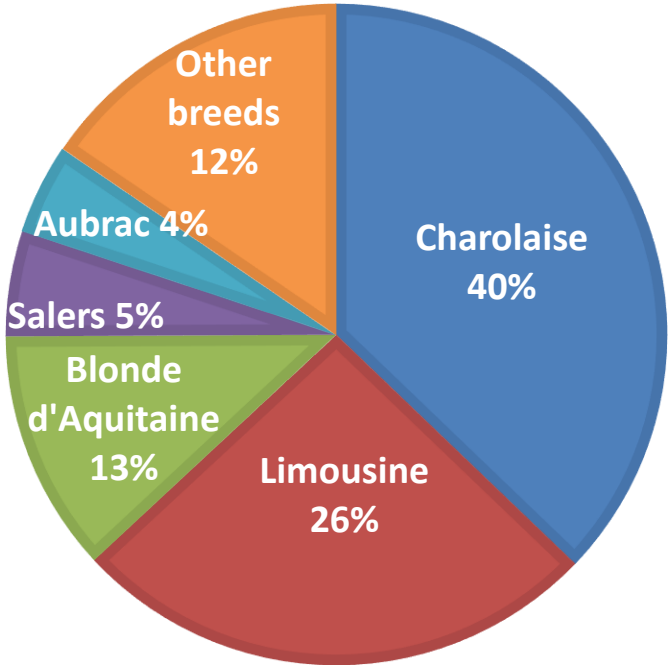


From: SPIE/BDNI – Normabev – Processing: Institut de l'Elevage

Distribution of different breeds



Distribution of the French suckler breeds



25% of dairy cows are crossed with a beef bull

From: SPIE/BDNI – Normabev – Processing: Institut de l'Elevage

Huge diversity of the forage potential with impact on cattle systems

Beef farmers use a large diversity of areas, characterised by:

- **the soil: nature, depth, water reserve…**
- **the climate: quantity and distribution of the rain, temperatures, altitude…**

Variety of forage types and yield potential !

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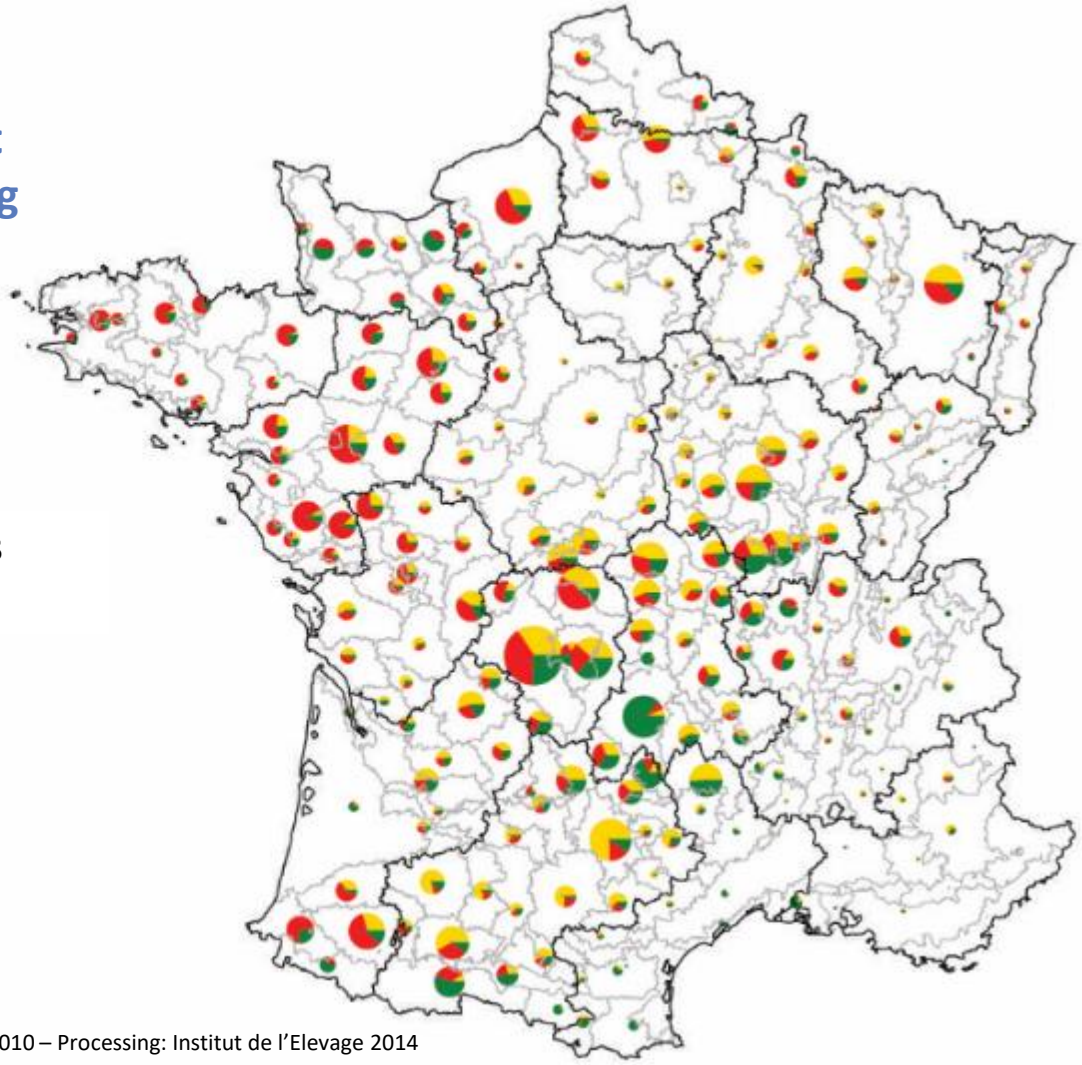
Various feeding systems: from 100 %grassland to forage crop systems

Distribution of the farms

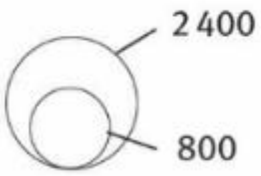
(more than 20 suckler cows, without dairy cows), according to the cropping (or not) of maize silage and crops



100% grassland systems

Grassland and maize silage systems

Grassland and crop systems (without maize silage)



From: Agreste, recensement agricole 2010 – Processing: Institut de l'Elevage 2014

A diversity of suckling systems and products

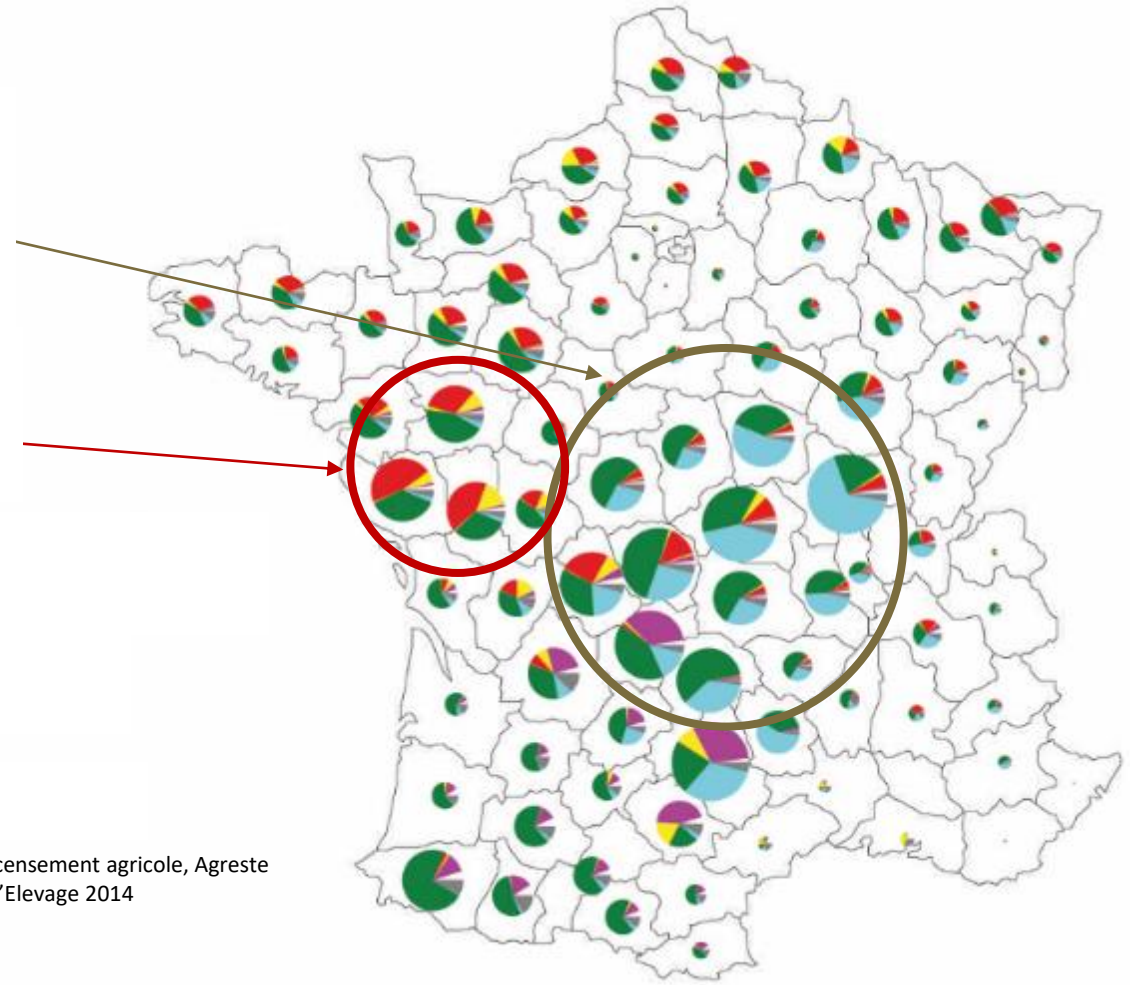
Distribution of the farms (more than 20 suckler cows, without dairy cows), according to the beef farming systems

Cow-calf systems

Cow-calf and young bull finishers

Suckler calf systems

Steer producers



From: Dossier Economie de l'Elevage n°440-441 spécial recensement agricole, Agreste recensement agricole BDNI 2010 – Processing: Institut de l'Elevage 2014

The French AKIS for beef farming *(Agricultural Knowledge and Innovation System)*

Public research

Professional research

Technology Readiness Level/TRL: 2-5

TRL: 5-9

Top down

Bottom up

Farm advisory

Institut de l'Elevage/French Livestock Institute: a hub organization in knowledge and innovation transfer

Public basic research

Technical organizations (chambers of agricultures, performance control...)

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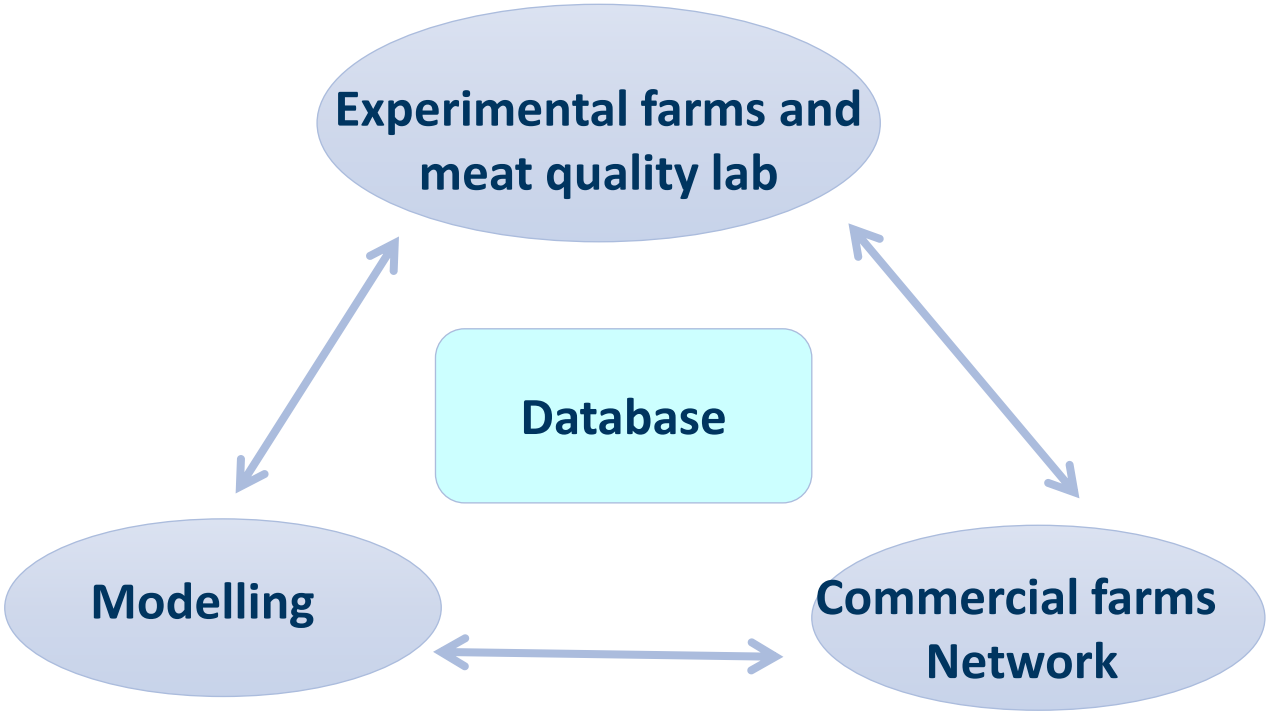
Economic and value chain organizations

Farmers

The French R&D framework: different tools, from farm to fork



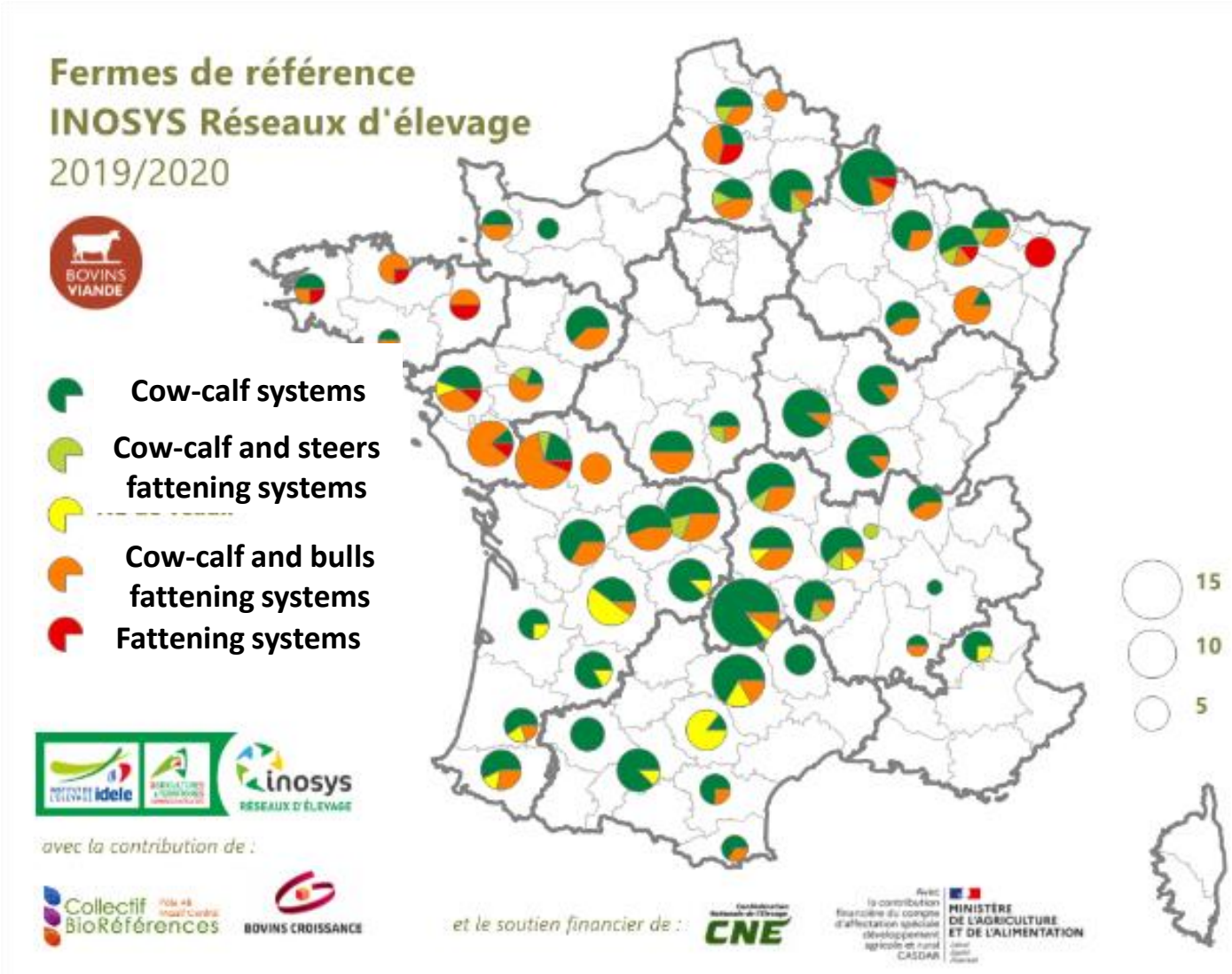
Outcomes :

Recommandations, Key Performances Indicators, Benchmarks and Targets, Blue-print systems, Decision-support tools, Expertise,…

A network of 370 beef farms

55 local advisers (CA)

7 regional coordinators (Idele)



Inosys Beef farms Network

- **Managed by Institut de l'Elevage and Chambers of agriculture**
- **Same farms during 5 years, top 25% farms**
- **Same methodology since 40 years, and implementation of recent developments** (energy, carbon, feed and protein autonomy…)
- **Farm data related to:**
  - Technical aspects (forage, feeding, fertilization,…)
  - Economical performance (income, subsidies, bank loans,…)
  - Environnmental data (N balance, C footprint,…)

Main deliverables

Data observatory

STRUCTURE DE L'EXPLOITATION | ATELIER BOVINS VIANDE | ECONOMIE | ENVIRONNEMENT | COÛTS DE PRODUCTION

Critère	NE charolais < 1.4 UGB/ha		NE Charolais >1.4 UGB/ha		NE Limousin < 1.4 UGB/ha		NE Limousin > 1.4 UGB/ha		NE Blond d'Aquitaine	
	Moyenne	Evol. (%)	Moyenne	Evol. (%)	Moyenne	Evol. (%)	Moyenne	Evol. (%)	Moyenne	Evol. (%)
Nombre d'exploitations	10	10	17	16	8	8	10	9	6	4
Main-d'oeuvre totale [UMO]	1,8	-4%	2,0	-1%	1,5	0%	2,2	-1%	2,5	0%
Nombre de vaches allaitantes	135	2%	119	-1%	96	1%	117	0%	132	0%
Nombre d'UGB	254	0%	224	0%	152	0%	204	-1%	260	0%
SAU [ha]	227	1%	161	1%	137	2%	158	1%	154	0%
SFP [ha]	201	3%	129	5%	129	4%	129	-2%	132	0%
. dont maïs fourrage [%]	4	1 pt	19	2 pt	4	1 pt	11	0 pt	13	0 pt
Chargement apparent [UGB/ha SFP]	1,3	0%	1,8	0%	1,2	0%	1,6	0%	2,0	0%

http://idele.fr/services/outils/observatoire-inosys-reseaux-delevage.html?tx_ideleinosys_inosys%5Baction%5D=filiere&tx_ideleinosys_inosys%5Bcontroller%5D=Inosys&cHash=ee324bb3411fc5d039bb3b4a525eac24

Blue print systems

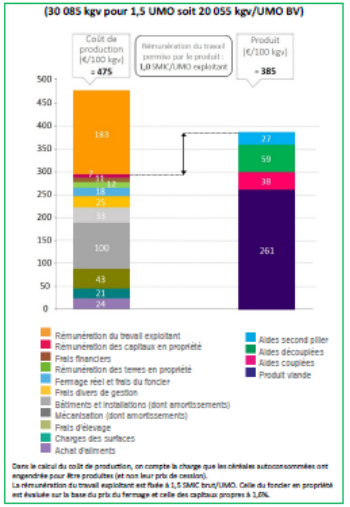
LE SYSTÈME NAISSEUR LIMOUSIN
BROUTARDS MÂLES ET FEMELLES

CT 2.a

LES REPÈRES ÉCONOMIQUES 2018

RENTABILITÉ DE L'ATELIER BOVIN VIANDE

(30 085 kgv pour 1,5 UMO soit 20 055 kgv/UMO BV)



Dans le calcul du coût de production, on compte la charge que les céréales autoconsommées ont engendrée pour être produites (et non leur prix de cession).
La rémunération du travail exploitant est fixée à 1,5 SMIC brut/UMO. Celle du foncier en propriété est évaluée sur la base du prix du fermage et celle des capitaux propres à 1,0%.

IMPACT SUR LE REVENU

es performances techniques telles que :
- **la maîtrise de la reproduction**
  +/- 3 % de productivité numérique (+/- 2 veaux) ± 1 755 €
- **le niveau génétique du troupeau**
  +/- 4 % de production de viande vive (soit +/- 10 kg/UGB) ± 3 140 €
  +/- 1/3 de classe de conformation ± 2 610 €

De la maîtrise des charges telles que :
+/- 10 % du coût des concentrés ± 1 040 €
+/- 10 % de charges de mécanisation ± 2 620 €

De la conjoncture :
+/- 0,05 € /kg vif en prix de vente ± 1 505 €
+/- 2 % sur le prix des intrants ± 595 €

Évolutions de 2017 à 2018
(hors cession des céréales)

Produit brut	+ 0,5 %
Dont ventes bovines	+ 1,5 %
Charges totales	+ 4,4 %
EBE	- 2,6 %

QUELQUES INDICATEURS ÉCONOMIQUES DE L'EXPLOITATION	€/ VÊLAGE	€/ ha SAU
Produit brut	**1 495**	**1 260**
(dont aides totales)	(475)	(400)
Charges opérationnelles	370	310
Marge brute	**1 125**	**950**
Charges de structure (hors amo. et FF)	455	380
Excédent Brut d'Exploitation	**670**	**570**
Résultat courant	335	285

➔ Le revenu se dégrade (- 3,8%) malgré le prix favorable des broutards, très demandés en 2018.
Les réformes sont mal valorisées et les charges élevées.

Document édité par l'Institut de l'Elevage - 149 rue de Bercy – 75595 Paris Cedex 12 – www.idele.fr
Juillet 2019 – Référence Idele : 00 19 301 022 – ISSN : en cours

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Professional research: 7 experimental farms

Le Rheu (Brittany)

Veal calves

250 places

Thorigné-Anjou (Pays de la Loire)

Cow-calf and fattening system

70 suckler cows – bulls, steers and heifers

Limousine

Les Bouviers (Brittany)

Dairy fattening system

250 bulls, steers and heifers

Crossbreed Dairy x Beef

Saint-Hilaire-en-Woëvre, (Est)

Cow-calf and fattening system

55 suckler cows and 200 places for fattening

Charolaise

Les Etablières (Pays de la Loire)

Cow-calf and fattening system in forage crop areas

Two calving periods

120 suckler cows - 300 young bulls

Charolaise

Jalogny (Burgundy)

Cow-calf and fattening system in grassland area

Two calving periods

120 suckler cows – 150 young bulls

Charolaise

Jeu-les-Bois (Val de Loire)

Cow-calf and fattening system

30 suckler cows in conventionnal system (Charolaise)

25 suckler cows in organic system (Limousine)

Fattening unit with 280 places (automatic feeding)

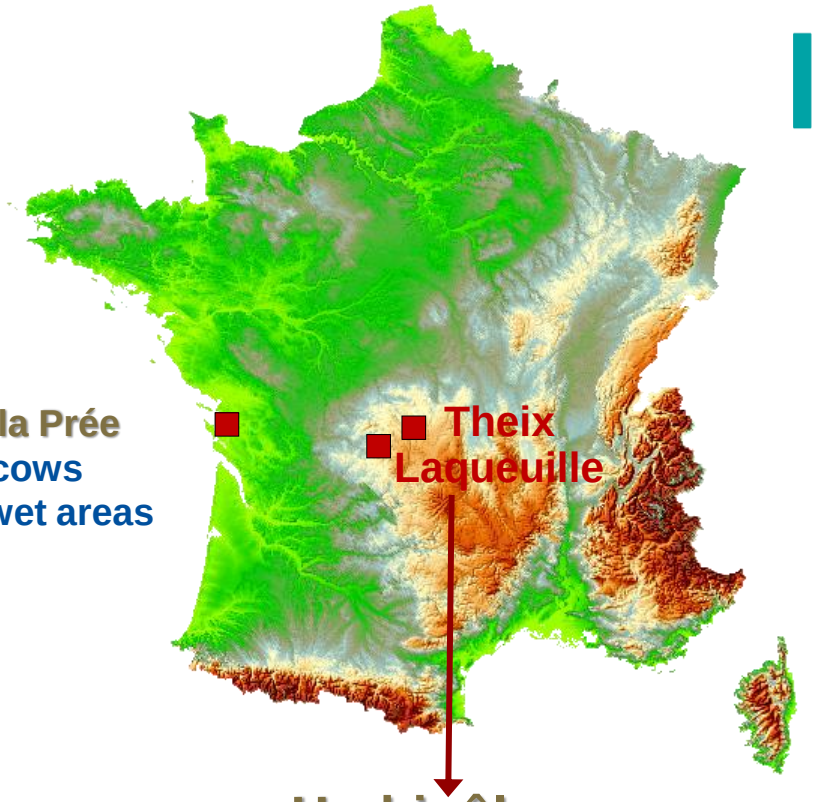
420 cows

F@RM XP

ARVALIS Institut du végétal

Public research: 3 experimental farms

270 cows



St Laurent de la Prée
70 suckler cows
Maraîchines in wet areas

Theix
Laqueuille

Herbipôle

- **140 suckler cows Charolaises and 60 suckler cows Salers**
- **120 places for fattening**

New equipments for new challenges

Weigher troughs

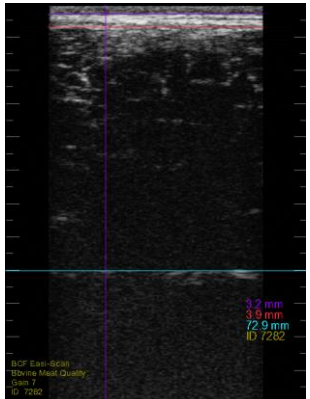
Feed efficiency

Green feed

Laser Gun

Methane emissions

Echograph



Fat thickness, marbling,…

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Technical Mixed Unit “suckling systems”: a partnership between INRAE and Idele

Aim : Definition and proposal of farm management technics to combine environmental and productive performances

New forage resources

Round / cell grazing
Bioactive plants
Agroforestry

Livestock efficiency and complementarity between species

For an optimum valorisation of forage resources?

Uses of new technologies at the farm level

Which tools:

- **To have a better understanding of resources (livestock – forages) ?**
- **Help farm management ?**

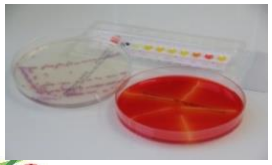
UMT SeSAM

Meat quality Lab, in Villers Bocage (Normandy)

- **Nutritional analysis**
  - Dosage of classical components like lipids, proteins, moisture, collagen...
  - Dosage ofspecific components (haem iron, total iron, zinc, selenium shear strength, fatty acid profiles...).

- **Sensory analysis**
  - Characterization of sensory properties by an expert panel
  - Appreciation of products by a consumer panel
  - Willingness-to-pay
  - Focus group

- **Microbiological analysis**
  - Enumeration of technological and alteration flora
  - Research of pathogens by PCR, challenge tests…



- **Interventions in companies, farms**
  - Sampling and follow-up of studies

European projects to be stronger together

Beef carbon
Life+
Low carbon systems

SustainBeef
Era-Net
Sustainability of beef systems and competition feed/food

H2020
Resilience and efficiency of dairy and beef herds

Carbon farming
Life+
Low carbon systems and carbon credits

Smart Cow
H2020-Infratructures
Networking, Transnational Access

BovINE
H2020-TN
Environmental sustainability, Socieconomic resilience, production efficiency&Meat quality, Animal health&welfare

New

ClieNFarms
H2020-Green Deal call
Climate neutral farms

INTAQT
H2020 INnovative Tools for Assessment and Authentication of beef meat products' QualiTies

Several decision-support tools for farmers and industry

Costs of production

COUPROD

8 000 audits

Carbon and environmental audit

CAP'2ER®

7 000 audits

Animal welfare audit

BoViWell

Stunning at slaughter audit

CET' automatique

Feed and protein autonomy platform

AUTOSYSEL

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Main topics of research and development

Protein autonomy, feed efficiency, competition feed/food

Finishing fattening of heifers and cows with more grass, in conventional and organic systems

Precocity, development and impact on meat quality and fat

Adaptation and mitigation to climate change, cutting emissions to achieve carbon/climate neutrality

Efficient and resilient beef systems

Intrensic and extrinsic qualities of meat, management of marbling and tenderness

Dairy to beef production

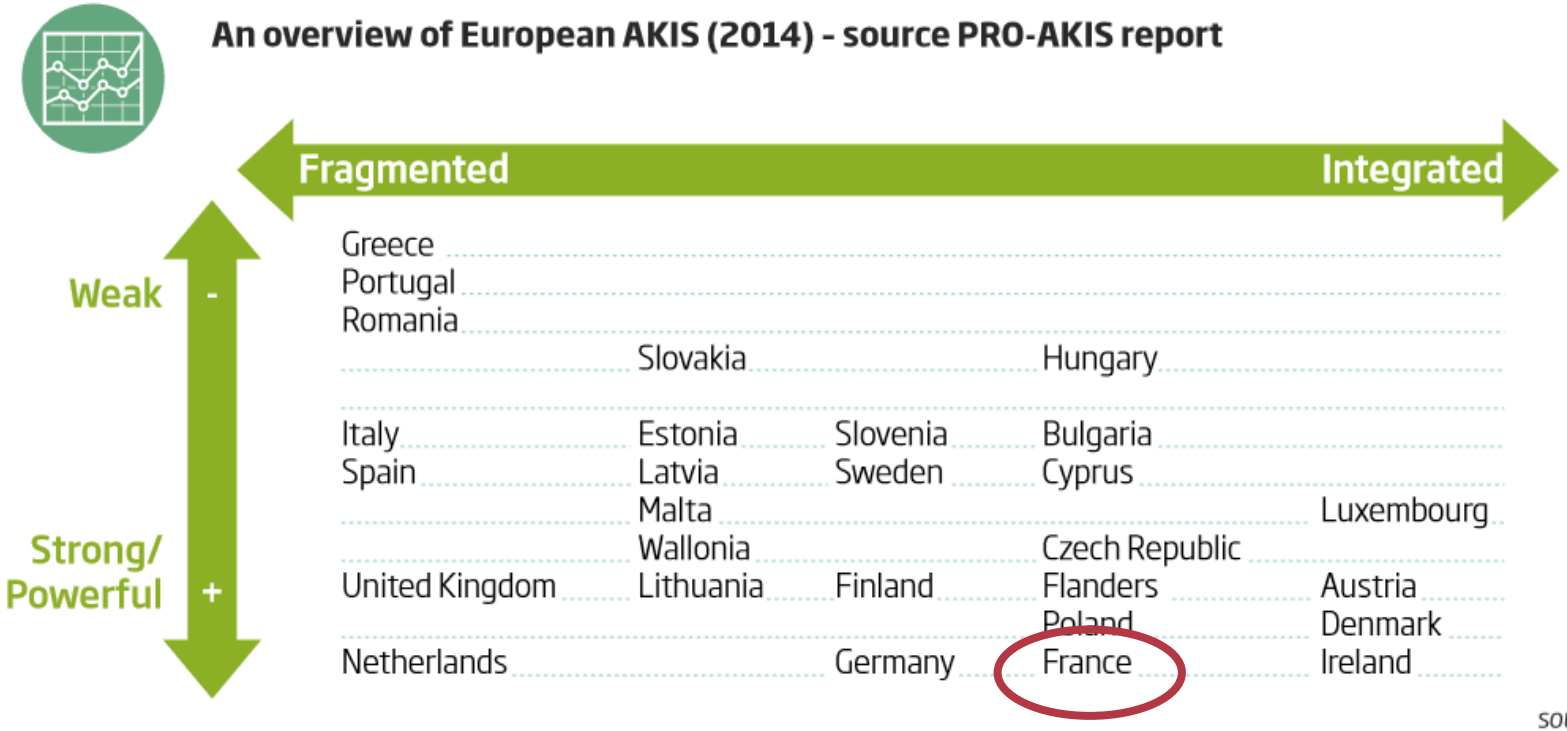
Health (preparation of weanlings, lameness,…) **and animal welfare** (farm, slaughter house)

Attractiveness, transmission and replacement

Muliperformance of beef systems, including ecosystemic services (biodiversity, land occupation,…)

Use of sensors and digital technologies for grass, herd, welfare and health management

French AKIS system is relatively integrated



source PRO-AKIS report

Thank you for your attention!