THE SERVICES PROVIDED BY RUMINANT LIVESTOCK FARMING















EDITORIAL

"To raise public consideration about livestock farming, we want to share with elected officials and our fellow citizens, reliable, scientifically proven information on all the services that ruminant farming provides to society."

o raise awareness about the benefits of ruminant farming, we want to share reliable, scientifically proven information with elected officials and our fellow citizens about its advantages and the services it provides to society. In addition to providing high-quality food and helping to revitalize rural areas, the French livestock farming model ultimately responds well to societal challenges. It is based on 13 million hectares of grassland that store carbon, regulate water flow and quality, promote biodiversity, enhance albedo, and thereby limit global warming and ensure open, high-quality landscapes. We felt it was important to explicitly highlight the value of all these services, and we asked Institut de l'Élevage (the French Livestock Institute) to produce fact sheets on the subject, some of whose key figures are included in this booklet.

To learn more about all the topics covered, I encourage you to explore the complete fact sheets *via* the QR codes provided throughout the pages.



Patrick BÉNÉZIT
Chairman of the National Livestock Confederation



SUMMARY

This document presents 18 areas in which french ruminant farming provides services, each of which is detailed below and sourced from a fact sheet available on the CNE website, via the 18 OR codes found throughout the pages. At the end of the document, examples of actions and tools implemented by the sector to make further progress are presented.



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ACTIONS AND TOOLS IMPLEMENTED TO OPTIMIZE SERVICES PROVIDED

BIODIVERSITY: A RICHNESS PRESERVED THANKS TO GRASSLANDS

THROUGH ITS GRAZING-BASED PRACTICES, LIVESTOCK

FARMING MAINTAINS

13 million hectares of grasslands not counting hedges, ponds and slopes.

Source: Annual Agricultural Statistics, 2023

IN FRANCE, 20% OF THE TERRITORY IS COVERED WITH MEADOWS.



1 hectare = 160 m

OF PERMANENT GRASSLAND OF HEDGES

compared to 56 meters of hedges per 1 hectare of arable land



FARMERS And Livestock Maintain 700,000 km
OF HEDGES ALONG MEADOWS

Source: Idele estimate, based on Teruti Lucas (Agreste) survey, 2010 - Institut de l'Élevage, 2018



MEADOWS ARE HOME to many wild animal species, which find food resources, habitat, shelter, hunting and movement areas **as well as a diverse flora** that attracts pollinators and insects.

88% of species of butterflies depend on natural grasslands

32

is the average number of different plant species in a permanent meadow. M

BETWEEN 2 and 7 times more

animal and plant biodiversity in grassland soils, compared to arable land + 50% microbial biomass

and **22 times more**earthworms under a grassland than under plowed land



Livestock farming maintain plots with complex shapes, of varying sizes, often with hedgerows, which contribute to the landscape mosaic.



The mixed farming system maintains semi-natural or temporary grasslands and crops that ensure a year-round supply of food resources and shelter for wildlife.

SOME BEST PRACTICES

FOR PRESERVING BIODIVERSITY



MOWING DIFFERENTLY

- Mowing starting from the center of the plot avoids trapping animals.
- Mowing certain areas late gives young animals (birds, mammals) time to develop.

PROTECTING AGRO-ECOLOGICAL INFRASTRUCTURE

Maintaining or installing hedges, slopes, and ponds is beneficial to biodiversity.

MAKING USE OF LIVESTOCK EFFLUENT

Introducing grasslands and organic fertilization (livestock manure) into a rotation can increase beneficial soil bacteria and fungi by up to 50%.

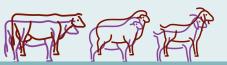
INTRODUCING GRASSLANDS INTO CROP ROTATIONS

The integration of temporary grasslands into crop rotations maintains soil fertility by reducing tillage and increasing carbon input, thereby preserving soil organic matter and microfauna.

D

TO GO FURTHER











France is one of the countries with the richest genetic biodiversity of domestic animals:

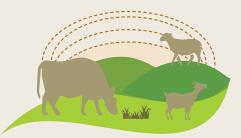
54
CATTLE
BREEDS

59 SHEEP BREEDS 45 GOAT BREEDS

ENVIRONMENT



MITIGATING CLIMATE CHANGE: A SIGNIFICANT CONTRIBUTION FROM RUMINANT FARMING



IN FRANCE,
RUMINANT FARMING CONTRIBUTES FOR

10.5% of national greenhouse gases (GHG) emissions

Source: Citepa, 2023 - Processing by the Institut de l'Élevage

ENTERIC METHANE.

the main GHG emitted by ruminants, is produced naturally during the digestion of plants that make up their rations.



FOR MORE THAN 20 YEARS
THE FRENCH LIVESTOCK
SECTORS HAVE BEEN
IMPLEMENTING MEASURES
TO LIMIT THEIR IMPACT
CLIMATE... AND THEY ARE

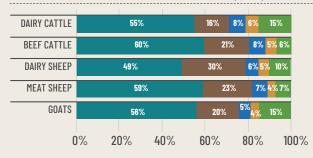
-17%

greenhouse gases from ruminant livestock between 1990 and 2020

AND THE MOMENTUM CONTINUES THANKS TO THE EFFORTS OF THE SECTORS

Source: Citepa, 2023 - Processing by Institut de l'Élevage

MAIN SOURCES OF GREENHOUSE GASES EMISSIONS IN CATTLE, SHEEP, AND GOAT FARMING



- Enteric fermentation
- Manure management
- Nitrogen fertilization
- Direct energy (fuel, electricity, gas)
- Inputs (fertilizers and purchased feed)

Grasslands are true carbon sinks. As much carbon is stored under a grassland as under a forest: **85 t C/ha**



Thanks to carbon storage in the soil, livestock farming offsets 30% of its total greenhouse gases emissions.



SOME BEST PRACTICES FOR LIMITING GHG EMISSIONS



ON FARM, OPTIMIZING ENERGY CONSUMPTION...

... as well as fertilization, limits CO₂ and N₂O consumption.

IMPROVING PROTEIN SELF-SUFFICIENCY

To end dependence on imported foods whose production generates greenhouse gases, the sectors are improving their protein autonomy by planting more protein crops and legumes-rich grasselands.

OPTIMIZING THE USE OF LIVESTOCK MANURE

Optimal utilization of livestock manure increases soil carbon stocks and reduces the need for mineral fertilizers, thereby reducing direct N₂O emissions.

CONVERTING CULTIVATED LAND INTO GRASSLANDS

Converting cropland into grasslands increases soil organic carbon by 26%, while converting grasland to cropland results in a 16% decrease.



PRACTICES TO STORE EVEN MORE CARBON Grazing more permanent grasslands:

+265 kg C/ha/year



Planting an intermediate crop:

+246 kg C/ha/year



Planting a hedge:

+125 kg c /100 linear meters/year



Inserting a temporary meadow for 2 or 3 years instead forage corn in a rotation:

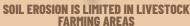
+466 kg C/ha/year



Sources: Study 4 for 1000 - INRAE, 2019 Arrouays et al., 2002



SOIL QUALITY: FARM FERTILIZERS AND GRASSLANDS THAT FEED AND PROTECT



Meadows' grass that covers the soil, and organic matter which Increases its stability, limit the risk of erosion

Source: Pellerin et al., 2020



LIVESTOCK MANURE FROM RUMINANTS. REDUCES THE NEED FOR MINERAL **FERTILIZERS**

6.2 million hectares of arable crops and grasslands are fertilized exclusively with organic fertilizers, i.e.

1/4 of french agricultural land

Sources: Ademe, 2018 - Agreste, 2020

Less erosion

Soil loss under grassland: 0,3 t/ha/year

compared to 3.6 t/ha/year under annual crops





GRASSLANDS PROMOTE THE DEVELOPMENT OF SOIL BIOLOGICAL



11,6 µg microbial DNA



FORESTS

10,4 µg microbial DNA



CROPS

8 μg microbial DNA per a of soil



VINEYARDS AND ORCHARDS

5,7 µg microbial DNA



MIXED FARMING SYSTEMS
USE FEW PLANT PROTECTION
PRODUCTS, THANKS TO THEIR
GRASSLANDS AND THEIR
DIVERSIFIED CROP ROTATIONS

Limit the use of herbicides

A rotation introducing 6 years of temporary grassland compared to a rotation that does not introduce any

A rotation = 25 to 50% ing 6 years FEWER WEEDS

Source: Schuester et al., 2019



95% of grasslands receive no herbicide

Source: Dephy Ecophyto Farms, 2009-2011

IN RUMINANT FARMING,

40% reduction

in plant protection products on crops in rotation



SOME BEST PRACTICES FOR PROTECTING SOIL



INTEGRATING TEMPORARY GRASSLANDS INTO CROP ROTATIONS...

... increases organic matter in the soil, limits the use of mineral fertilizers and plant protection products.

PROTECTING OR DEVELOPING MEADOWS, HEDGES, SLOPES...

... to limit erosion and preserve soil quality.

FERTILIZING CROPS WITH FARM FERTILIZERS...

... increases organic matter in the soil, improves its structure and allows savings on mineral fertilizers.

MANAGING ANIMAL LOADING ON GRASSLANDS...

... helps maintain the positive effects of organic fertilization.

ESTABLISHING LEGUME-RICH GRASSLANDS...

... saves 100 kg of mineral nitrogen per hectare and thus reduces the carbon footprint of milk by 15 to 20%.

Source: Cap'2ER® - analysis by Institut de l'Élevage



AIR QUALITY: RUMINANT FARMING SECTORS GET ORGANIZED TO PRESERVE IT



agriculture accounts for **94%** of ammonia emissions, or 514 kt of NH₃

Source: Citepa, 2023

Cattle farming accounts for 22% of these emissions

AT THE CENTER OF ALL ATTENTION, AMMONIA HAS SEEN A DECLINE IN EMISSIONS.

Air quality is a public health issue. Ammonia (NH_s), a nitrogen derivative, is an atmospheric pollutant that comes mainly from agriculture and livestock farming. Measures have been implemented over the past 30 years to reduce these emissions in livestock farming. They focus on the storage and on the effluent management.

Effluent management

(in buildings and at storage) is the leading source of ammonia emissions in cattle farming.

Source: Citepa, average of inventories for 2018-2022 Processing Institut de l'Élevage

MAIN SOURCES OF AMMONIA EMISSIONS IN CATTLE FARMING IN FRANCE





Between 1990 and 2022,

CATTLE FARMING REDUCED ITS NH, EMISSIONS

by **27**%

NH₃ EMISSIONS FROM FRENCH CATTLE FARMING,

IN 1990 AND 2022 Source: Citega, 2024



2022



TO GO FURTHER

NITROGEN CYCLE IN RUMINANT FARMING SYSTEMS AND SOURCES OF AMMONIA **EMISSIONS**









Grazing results in lower emissions than housing.

Grasslands use directly nitrogen from manure, the storage phase is avoided.





Legumes have the ability to fix nitrogen from the air and thus reduce ammonia emissions. They are primarily used in ruminant farming:

> **80%** in permanent grassland and 10% in alfalfa crops Source: Cellier et al., 2012



+4% grazing __ -5% ammonia

SOME BEST PRACTICES FOR LIMITING AMMONIA EMISSIONS



OPTIMIZING NITROGEN FERTILIZATION AND USING LEGUMES

The latter can be introduced in combination with another crop or in a meadow.

120 to 300 kg of atmospheric nitrogen per hectare per year fixed by legumes-rich grasslands.

ADJUSTING THE NITROGEN CONCENTRATION OF ANIMAL RATIONS

This reduces the nitrogen content in manure.

For cows producing 8,000 kg milk/year, 4% of NH, emissions avoided when the nitrogen concentration of the ration is reduced by 10%.

IN BUILDINGS. REGULARLY REMOVING MANURE

Up to 20% of ammonia emissions avoided with scraping every 3 hours.

REDUCING VOLATILIZATION DURING STORAGE

-60% volatilization by covering the manure pit with a special tarpaulin

-50% with controlled vegetative crusting.

PRIORITIZING EOUIPMENT THAT ALLOWS DIRECT AND RAPID BURIAL **OF EFFLUENTS**

-40% emissions with spreading using dribble hars.



ENERGY: RUMINANT FARMING, A KEY PLAYER IN THE ENERGY TRANSITION





IN 2022, IN FRANCE, RUMINANT LIVESTOCK FARMS HAD BEEN RESPONSIBLE FOR:

1.5% of direct energy consumption (fuel, electricity, gas)

far behind

transport (31%), residential (31%), industry (19%) and the service sector (16%)

Source: SDES, final energy consumption by sector, 2023

... WHO COMMITS TO SAVINGS

IN FRANCE, BETWEEN 1990 AND 2010, energy consumption in the cattle sector has fallen by 22%

mainly due to indirect energy savings (purchases of feed and fertilizer).

Source: Idele, 2018

AND FOR TOMORROW...

precision control
of equipment,
biomethane or electric
tractors, robots, etc.
are opening up
new avenues for
progress

RUMINANT FARMING PRODUCES RENEWABLE ENERGY

IN FRANCE,

1,624 Ktoe*
of renewable energy
are produced by cattle farms
(*Ktoe = 1,000 tons of oil equivalent)

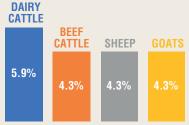
Source: Institut de l'Élevage, 2020

or **5.9%** of national renewable energy production

Source: Agricultural Census, 2020 - Processed by Institut de l'Élevage



SHARE OF FARMS PRODUCING ENERGY ACCORDING TO LIVESTOCK PRODUCTIONS



Source: Agricultural census, 2020 - processed by Institut de l'Élevage

SOME BEST PRACTICES FOR REDUCING ENERGY CONSUMPTION



FUEL SAVINGS

Economical driving, adapting equipment to tractors, consolidation of plots, less plowing, and the use of robots in buildings help reduce fuel consumption.

ELECTRICITY SAVINGS

- Opting for LEDs or energy-efficient air circulators.
- For calves farms, consider installing a heat pump to heat water or optimize hot water efficiency.
- For dairy farms, consider tank pre-coolers, heat recovery units, variable speed vacuum pumps or an energy-saving tank.



WATER RESOURCES: RUMINANT FARMING, A KEY PLAYER

billion m³ of freshwater received each year in France in the form of effective rainfall

WATER, A PRECIOUS RESOURCE, ESSENTIAL FOR AGRICULTURE,

16.4 billion m³ of fresh water withdrawn in France (excluding "energy" use),

of which 22% by agriculture

Sources: National Bank of Quantitative Water Withdrawals, based on 2022 data Idele, 2023 Water Study on Livestock

> THE WATER CONSUMED BY RUMINANTS **ENDS UP PARTLY IN** MILK AND MEAT

IN FRANCE, **AVERAGE WATER CONSUMPTION IN CATTLE FARMING**

to produce to produce one liter of milk: one kilo of meat: 6 to 10 liters 32 to 102 liters

DEPENDING ON THE LOCAL CLIMATE AND ANIMAL FEED

Livestock, all sectors combined, withdraw 324 million for watering animals and washing

milking facilities





IN LIVESTOCK FARMING AREAS,

WATER OUALITY IS IMPROVING.

For more than 20 years, improvements in the agricultural use of livestock manure have optimized the nitrogen cycle and limited nitrate leaching into water.

Source: Foray and Manneville, 2019

TOTAL NITROGEN

spread per hectare of UAA on average between 2010 and 2020

Source: Agricultural Census, 2010 and 2020 - Processing by Institut de l'Élevage

-25% MINERAL NITROGEN CONSUMED

between 2000 and 2023 Source: UNIFA, processed by Institut de l'Élevage

Source: Idele, 2019 - Technical Livestock Files No. 2

Only 1% of forage areas are irrigated and 6% of silage corn

Source: Agribalyse 3.1 processing by Institut de l'Élevage 2024, and Idele 2022.

FLOOD CONTROL, PRESERVING ITS QUALITY: GRASSLANDS ARE A VALUABLE ALLY FOR WATER RESOURCES

Maintaining grass in forage systems promotes soil stability, nitrogen fixation, and its gradual release to plants.

The predominance of grasslands and wooded areas in livestock farming areas retains certain pollutants, preventing them from reaching waterways.



WET MEADOWS

ARE BUFFER ZONES
THAT PREVENT FLOODING.
THEY COVER APPROXIMATELY

1 MILLION HECTARES, OR TWO-THIRDS OF MAJOR WETLANDS

Source: zones-humides.org



IN NON-VULNERABLE AREAS, WATER QUALITY IS VERY GOOD. PERMANENT GRASSLANDS ACCOUNT FOR

MORE THAN 50% OF AGRICULTURAL LAND

Source: Idele, 2019 -Technical Files on Livestock



SOME BEST PRACTICES FOR PROTECTING WATER RESOURCES



SAVING WATER

- Monitor and repair leaks.
- Use economical cleaning practices.
- · Recycle white water.
- Use rainwater for washing or watering animals.

OPTIMIZING ONES CROPS

- Prioritize grass and pasture.
- Choose species and varieties suited to the climate.
- Choose crops that require little or no irrigation.

OPTIMIZING ONES PRACTICES

- \bullet Fertilize primarily with farm fertilizers.
- Cover the ground.
- Maintain hedges and wetlands.



HERD HEALTH: PROTECTING ANIMALS WHILE PROMOTING PUBLIC HEALTH

RUMINANT FARMING SECTORS ARE COMMITTED TO COMBATING **ANTIBIOTIC RESISTANCE**, WHICH AFFECTS **HUMAN HEALTH, ANIMAL HEALTH** AND ECOSYSTEMS.



TO PREVENT THE OCCURRENCE OF DISEASES. PARTICULARLY EPIZOOTIC DISEASES. LIVESTOCK FARMS BENEFIT FROM STRICT VETERINARY MONITORING.

BETWEEN 2011 AND 2022

of animals to antibiotics in France thanks to the national **EcoAntibio 1 and 2 plans**

of antibiotics in cattle farming

BETWEEN 2011 AND 2022

The number of intramammary treatments per dairy cow decreased by

BETWEEN 2013 AND 2020

of antibiotics in veal calf farming

SYSTEMATIC SCREENING **OF INFECTIOUS DISEASES** (BRUCELLOSIS, TUBERCULOSIS, ETC.):

4 times/vear in dairy farms (milk analysis)

> Once a year on suckler farms (blood analysis)

Once a year, the attending veterinarian conducts a health assessment with a summary of diseases that have occurred in the herd and implements an appropriate treatment protocol if necessary.

SINCE 2005, FRANCE HAS BEEN OFFICIALLY DECLARED FREE OF BOVINE BRUCELLOSIS. IT SHOULD SOON BE THE SAME FOR OVINE AND CAPRINE BRUCELLOSIS.



THEY IMPLEMENT SPECIFIC PRACTICES TO PREVENT DISEASE AND REDUCE THE USE OF VETERINARY PRODUCTS

More than 70% of dairy and beef cattle farmers and **more than 60%** of dairy and sheep farmers

THEY TRIM THEIR ANIMALS' HOOVES 75% of dairy cattle farmers 40% do so preventively and 35% curatively

93% of goat farmers

THEY IMPLEMENT VACCINATION

Approximately **60%** of dairy and beef cattle farmers (particularly against respiratory diseases and diarrhea)

and **50%** of sheep farmers

THE MAIN BIOSECURITY MEASURES IMPLEMENTED BY FARMERS TO LIMIT THE INTRODUCTION OF PATHOGENS INTO THEIR HERD



KEEPING THE ANIMALS' LIVING Environment Healthy

- By treating or disinfecting buildings every year.
- By taking precautions when visitors come in (footbath, overshoes).

ISOLATING SICK ANIMALS FROM THE REST OF THE HERD OUARANTING ANIMALS FROM OTHER FARMS

by reserving a dedicated space to isolate the animals.

MONITING ANIMALS VERY REGULARLY TO QUICKLY IDENTIFY ABNORMAL BEHAVIOR

In general, farmers monitor their animals several times a day.

Source: Idele, 2021

ANIMAL WELFARE: A NATURAL PRIORITY FOR RUMINANT FARMERS

ETHICAL REASONS,
BETTER ZOOTECHNICAL
PERFORMANCE,
GOOD WORKING CONDITIONS:
3 GOOD REASONS TO ENSURE
ANIMAL WELFARE

97% of dairy farmers adhere to the charter of good farming practices.

70% of goat dairy farmers are involved in the mutual code of good practice in goat farming.

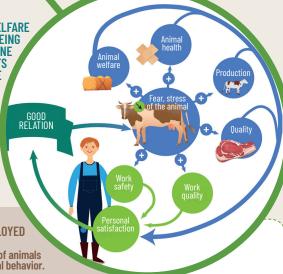
Each ruminant sector —beef, sheep, and goats—have a tool for assessing animal welfare.

In 2023 and 2024.

31,000 cattle farmers carried out a Boviwell diagnostic.

ANIMAL WELFARE
AND FARMER WELL-BEING
ARE CLOSELY LINKED. ONE
NECESSARILY IMPACTS
THE OTHER. THIS IS THE
CONCEPT OF ONE WELFARE

This is largely based on a good relationship between the farmer and his animals.



DIGITAL TOOLS ARE BEING DEPLOYED IN LIVESTOCK FARMING.

They facilitate continuous monitoring of animals and prevent risks by detecting abnormal behavior.



Heat detectors

49% of dairy cattle farmers equipped

Building environment sensors

25% of dairy sheep farmers equipped

Calving detectors

19% of beef cattle farmers equipped

Automatic ventilation

36% of dairy sheep farmers equipped

Camera

40% of cattle farmers equipped

Feed distribution robots

17% of goat farmers equipped

Electronic scales

29% of sheep meat farmers equipped

Milk analyzer

26% of dairy cattle farmers equipped



ANIMAL WELFARE IS BASED ON 5 KEY DIMENSIONS, KNOWN AS "5 FREEDOMS." In herds, compliance with each of these dimensions can be verified using a few simple farming indicators. Below is an example of the assessment grid used to evaluate animal welfare in cattle farms, "BoviWell."





LYING AREA, CLEANLINESS OF ANIMALS, TOTAL AREA OF HOUSING, **POSSIBLE TETHERING**



INJURIES, BUDDING



HUMAN-ANIMAL RELATIONSHIP. AREA AVAILABLE FOR SOCIAL BEHAVIOR

TAKING ANIMAL WELFARE INTO ACCOUNT WHEN DESIGNING AND FITTING OUT LIVESTOCK BUILDINGS: A FEW EXAMPLES



MINIMUM SLEEPING AREA FOR SLEEPING AND MOVEMENT TO BE RESPECTED

NUMBER OF PLACES AT THE TROUGH AND MINIMUM NUMBER OF DRINKING TROUGHS TO BE PROVIDED

TEMPERATURE CONTROL AND AIR SPEED INSIDE THE BUILDING

- Design of a building with effective mechanical ventilation or addition of ventilation.
- Installation of warning sensors (temperature, etc.).

ENRICHMENT OF THE LIVING AREA

- · Installation of brushes in cattle and goat
- · Installation of raised platforms and addition of manipulable devices (balls) to stimulate play behavior in goat farms.

INSTALLATION OF AN OUTDOOR **COURTYARD CLOSE TO BUILDING, FOR GOAT FARMING**



FOOD PRODUCTION FOR HUMAN CONSUMPTION:

FRENCH RUMINANT FARMING, A MAJOR PLAYER IN GLOBAL TRADE, IN TERMS OF BOTH QUANTITY AND QUALITY

IN 2024,

FRANCE IS:

FRENCH MILK AND MEAT PRODUCTION AT THE TOP OF THE EUROPEAN PODIUM

the european producer of goat's milk

(just ahead of Spain), with 690 million liters, of which 72% is collected the 1st

with 1.15 million tce* or 20% of the beef in the EU



the 2nd
largest producer
in Europe
of cow's milk
(behind Germany)
with 23.7 million

tons

the 2nd producer of sheep meat (behind Spain) with 70,000 tce* the **2nd**largest producer
of veal in Europe

(behind the Netherlands) with 144,000 tce*





*tce: ton carcass equivalent

DAIRY AND MEAT PRODUCTS: AT THE HEART OF THE FRENCH DIET



Source: FranceAgriMer, 2025

France is the second largest consumer of lamb meat in Europe (behind the United Kingdom) with

2,2 kg/capita/year

Source: 2021 data - Franceagrimer, 2025

In 2023,

28,000 tons of sheep cheese were purchased by French households.

84% of French households have purchased goat cheese.

The average per buyer is 2.5 kg/year.

Source: Franceagrimer, 2025

French people are the leading european consumers of butter (8.2 kg/capita/year) and cheese (27.4 kg/capita/year),

but they consume only 41.8 kg of liquid milk (less than the European average of 49.7 kg) and 25 kg of yogurt and milk-based desserts.

Source: 2021 data - Franceagrimer, 2025

DAIRY AND MEAT PRODUCTS: RECOMMENDED INTAKE* AND NUTRITIONAL BENEFITS



RECOMMENDED INTAKE: <500 G OF COOKED MEAT/ WEEK

82% of french adults follow this recommendation.

RED MEAT

NUTRITIONAL BENEFITS:

- Heme iron (very well absorbed by the body)
- Highly digestible proteins and rich in essential amino acids
- · Zinc and selenium
- Vitamins B3, B6 and B12

DAIRY PRODUCTS

RECOMMENDED INTAKE: AT LEAST 3 DAIRY PRODUCTS PER DAY FOR CHILDREN (2 FOR ADULTS)

Only 1/3 of children and adolescents follow this recommendation.

NUTRITIONAL BENEFITS:

- Calcium, essential for bone and tooth formation
- Highly digestible proteins and rich in essential amino acids
- Fat-soluble vitamins A and D (in butter and cream)
- Live microorganisms (fermented products) beneficial to the gut microbiota

*by the National Nutrition and Health Program



ANIMAL FEED: RUMINANTS CONVERT PRODUCTS THAT ARE NOT CONSUMABLE BY HUMANS INTO VALUABLE PRODUCTS



RUMINANTS MAINLY EAT GRASS, A RESOURCE PROVIDES MULTIPLE ECOLOGICAL AND LANDSCAPE BENEFITS.

SHARE OF GRASS IN THE DIET OF RUMINANTS

81%

78%

74%

60%

GRASS AND MEADOWS ARE ASSETS IN REDUCING OUR DEPENDENCE ON IMPORTED PLANT PROTEINS

France imports million tons of soybean meal 1 hectare

of grassland produces as much protein as









Meat sheep

Dairy sheep

49% Dairy cattle

IN ADDITION TO GRASS, **RUMINANTS CONSUME:**

- fodder such as corn silage
- · energy- or protein-rich concentrates (cereals, oilseed meal, etc.)
- · minerals and vitamins

Most of their feed is produced on the farm

Source: Cap Protéines

BETTER USE OF

our 15 M hectares of protein-rich grasslands: AN ASSET FOR IMPROVING **OUR SOVEREIGNTY**









BY-PRODUCTS
FROM THE FOOD INDUSTRY,
UNSUITABLE FOR
HUMAN CONSUMPTION,
ARE VALUABLE FOR ANIMALS

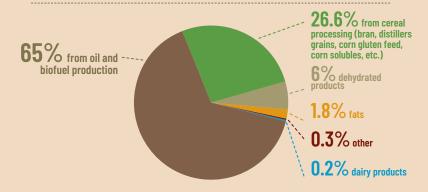
3/4
of by-products
from the agri-food industry
are used in animal feed.

Nearly 50%
of the raw materials
used by manufacturers
of feed for farm animals
are by-products.

This represents approximately 500 kg S/LU ruminant, or 10% of the feed of ruminants.

Source: Chapoutot et al., 2018

BY-PRODUCTS USED IN THE MANUFACTURE OF FEED FOR FARM ANIMALS - INCLUDING IMPORTS



utot et al., 2018 Source: Agreste, 2015

SOME BEST PRACTICES FOR FEEDING RUMINANTS IN THE SERVICE OF SOCIETY



Promote the use of locally produced oilseed meal and seeds in livestock farming. increase the proportion of grass and pasture in rations.

Promote protein-rich fodder: legumes, protein crops, multi-species grasslands, Produce on farm concentrates: peas, lupins, field beans, mixed grains, cereals.

Promote by-products from the French agri-food industry: rapeseed meal, soybean meal, peanut meal, wheat distillers grains, beet pulp, etc.



BY-PRODUCTS OF RUMINANT FARMING: AN UNEXPECTED WEALTH

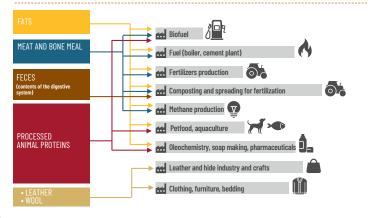


IN ADDITION TO MILK AND MEAT,

RUMINANTS GENERATE VALUABLE NON-FOOD RESOURCES FOR MANY SECTORS OF ACTIVITY.

FOR MANY SECTORS OF ACTIVITY.
Their use reduces the use of other raw materials that are polluting and costly in terms of fossil fuels.

APPROXIMATELY 50% of the weight of ruminants is recovered in by-products: this is the fifth quarter, which is inedible for humans and utilized in many ways



In France,



9 million Skins from ruminants are produced Each year, including

3.5 million cow HIDES

Sources: FAO statistics and National Leather Council, 2012

12,800 companies in the leather industry, generating

over €25 billion in revenue and employing 133,000 people

Source: National Leather Council 2023



The 5.4 million SHEEP SHEARED EACH YEAR PROVIDE

10,100 tons of Fleece

Source: Collectif Tricolor, 2023 / Calculations by Races de France & FNO

A fleece weighs an average of 3 kg

After cleaning, yielding 1 kg of wool,

ENOUGH TO KNIT BETWEEN 1 AND 1.6 sweater

TO GO FURTHER

LIVESTOCK MANURE, HIGH-QUALITY NATURAL FERTILIZERS, USED FOR OWN CONSUMPTION

92% of ruminant farms utilize all of their manure and slurry on their agricultural

Source: Charter of Good Farming Practices, 2015

THE STORED ANIMAL WASTE REPRESENTS

1.2 million tons of organic nitrogen, the recovery of which avoids the production of 320,000 tons of mineral nitrogen

95% of organic nitrogen produced in France is generated by farms with ruminant livestock.

AVERAGE ORGANIC NITROGEN PRODUCTION BY RUMINANTS - VIA THEIR EFFLUENTS









7.8 Mt of CO₂ eq. avoided thanks to livestock manure spread on fields compared to synthetic fertilizers

This represents the annual carbon footprint of more than

700,000 french citizens

SOME BEST PRACTICES FOR MAKING GOOD USE OF LIVESTOCK EFFLUENTS



STORING THEM PROPERLY TO KEEP THEIR QUALITY WHILE WAITING TO SPREAD

To avoid dilution of the nutrients, it is recommended to opt for a covered manure pit.

KNOWING THEIR FERTILIZING VALUE

The composition of effluents varies greatly depending on the farming system.

Laboratory analysis is the most accurate method for properly characterizing it.

SPREADING THE RIGHT AMOUNT TO MEET THE NEEDS OF PLANTS WHILE RESPECTING THE ENVIRONMENT

The average density of manure can vary by a factor of two!

To avoid overdosing when spreading, it is advisable to carry out a few weighings of full spreaders to be able to extrapolate the quantity applied per hectare, and to use the reference values to determine the dose to be applied.



EMPLOYMENT: THE LIVESTOCK SECTOR GENERATES JOBS AND SEEKS LABOR

RUMINANT FARMING, A SECTOR THAT GENERATES
ALMOST AS MANY DIRECT JOBS AS INDIRECT ONES!

144,000 ruminant livestock farms

generate **500,000** FTE*

256.000 FTE

IN LIVESTOCK FARMING

244,000 FTE
IN UPSTREAM AND
DOWNSTREAM
SECTORS (RELATED

DISTRIBUTION OF PROFESSIONS RELATED TO THE LIVESTOCK SECTOR

- Animal health
- Genetics and performance
- Equipment, buildings, and various services
- Collection, processing, and trade
- Distribution

- Research, advisory services and education
- Animal feed
- Logistics
- Industry suppliers
- By-products management
- · Administration, political representation

13,900 FTE Goa

8.800 FTE

3,900 FTE Others*

Beaf cattle

103.300 FTE

* COMPLEX LIVESTOCK FARMS, Including those with equines

THE LIVESTOCK INDUSTRY IS RECRUITING...

50% of ruminant farmers active in 2018 will have left the profession by 2027. This means that many positions of responsibility will need to be filled

(Source: Idele, 2023)

..AND EMPLOYEES ARE ACTIVELY SOUGHT AFTER.

The proportion of salaried workers has increased:

from **11.2%** in 2010

to **13.8%** in 2020 (compared to 47% in crop production)

Employees are particularly young:

50% of salaried workers are aged 30 or under

Source: Depeyrot et al., 2023

DESPITE **NUMEROUS ADVANTAGES**, CAREERS IN RUMINANT FARMING SUFFER FROM **A LACK OF ATTRACTIVENESS**THAT URGENTLY NEEDS TO BE ADDRESSED IN ORDER **TO LIMIT THE IMPACT ON PRODUCTION VOLUMES**.

REPLACEMENT RATE OF DEPARTURES BY AGRICULTURAL SECTOR

Source: Idele, 2023, based on MSA data



IN 2021
Replacement rate
for farmers in livestock
sectors:

40% for dairy cattle

50% for beef cattle

109% for sheep and goats

Source: Idele, 2023, based on MSA

LEVERS FOR IMPROVING WORKERS RENEWAL IN RUMINANT FARMING



IMPROVING THE INCOME OF LIVESTOCK FARMERS AND THE COMPETITIVENESS OF SECTORS

A decent income, the creation and fair sharing of added value are necessary for the future of livestock farming.

PROMOTING AND STIMULATING THE PROFESSION, AS IT CAN BE A SPRINGBOARD TO SETTING UP

7% of employees and 15% of apprentices in ruminant livestock farming set up their own farms.

Source: Depeyrot et al., 2023

ATTRACTING PEOPLE OUTSIDE THE FAMILY CIRCLE SEEKING TO RETURN TO THE LAND

Since 2010, 28% of new livestock farmers come from outside the family framework (more than 50% in goat farming systems).

Source: Depouret at al. 2023

ENCOURAGING YOUNG PEOPLE AND WOMEN TO PURSUE A CAREER IN LIVESTOCK FARMING

Barely 6% of farmers' daughters become farmers (compared to 24% of sons). Sectors that are successfully replacing those leaving are those that attract young women: sheep and goat farming.

Source: Idele, 2023



RURAL AREAS: RUMINANT FARMING CONTRIBUTES SIGNIFICANTLY TO THEIR ATTRACTIVENESS

Farmers, **key players**in the local economy, especially in sparsely populated areas



11,000 cattle farms practice agri-tourism

Source: CNE. 2021

6% of dairy cattle farms 25% of dairy sheep farms 51% of goat farms

17% of beef cattle farms

29% of **meat sheep** farms

SELL THEIR PRODUCTS, MILK OR MEAT, THROUGH SHORT SUPPLY CHAINS

Source: Agreste, 2020 agricultural census - processed by Institut de l'Élevage

3.2% of employment is dependent on livestock farming

IN FRANCE

Nearly **2/3** of herbivore farms are located in "disadvantaged" areas

The agricultural area dedicated to herbivorous animals represents

27% of the territory's area



28% of which are in mountainous regions

Source: Agreste, 2020 Agricultural Census

Source: Lang et al., 2015

FARMERS ARE COMMITTED TO SERVING THEIR COMMUNITIES



11.6% of french mayors are farmers in 2020

Source: Foucault, 2023

42% of farmers are members of an association

Source: Rigutort et al., 2014

460,000 hectares of pastoral land are present in the 8 french metropolitan national parks. Livestock farming preserves their landscapes and contributes to the fight against fires and avalanches.



SOME LEVERS TO HELP FARMERS AT THE HEART OF THE REGIONS*



SUPPORTING THE 21% OF FARMERS AND SHEPHERDS WHO MAKE USE OF GRAZING LAND AND SUMMER PASTURES

- Development of huts
- · Securing access to land via pastoral groups

Source: Agreste, Agricultural census 2020 - Processing by Institut de l'Élevage

PROMOTING, DEVELOPING, AND SUPPORTING...

- Agritourism
- · Farm stay

... offered today by 11.000 farmers

SUPPORTING FARMERS TO RAISE AWARENESS ABOUT THEIR PRODUCTS

12 to 29% of farmers practice direct marketing, depending on the sector.

HELPING LIVESTOCK FARMERS WHO WISH TO DIVERSIFY THEIR ACTIVITIES...

...construction companies, services to other citizens, while preserving agriculture as their main activity.

*Aid is available in regions, nature parks, and at the European level to support farmers who commit to sustainable practices



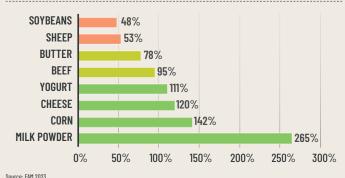
FRENCH FOOD SOVEREIGNTY: AN ACTIVE BUT FRAGILE CONTRIBUTION FROM RUMINANT FARMING



FranceAgriMer defines food sovereignty as a state's capacity for self-determination over the food systems operating within its territory.
THIS IS NOT SELF-SUFFICIENCY, BUT CONTROL OVER FLOWS.

Source: FranceAgrimer, 2023

SELF-SUFFICIENCY RATE: PRODUCTION/CONSUMPTION RATIO



In 2022, **46%** of the sheep meat consumed in France is produced in France.

A POSITIVE FRENCH TRADE BALANCE, THANKS IN PARTICULAR TO DAIRY PRODUCTS AND LIVE CATTLE



A TRADE SURPLUS OF:

€3 billion for dairy products

€1.5 billion for live cattle

In 2023, France is the world's leading producer of goat cheese, with

120,000 tons. Source: Key figures from the GEB - Caprins, 20

STRENGTHENING SOVEREIGNTY BY PRESERVING LIVESTOCK FARMING AND IMPROVING ITS AUTONOMY

Better protection of livestock farming is necessary to ensure our food sovereignty

French ruminant farming has lost:

BETWEEN 2010 AND 2020,

20% of its workforce and 24% of its farms

BETWEEN 2016 AND 2023,

1 million cows

Source: Idele, 2023

IN FRANCE, MINERAL FERTILIZERS IMPORTS REPRESENT

€3.8 billion

Farm fertilizers reduce the cost of importing mineral fertilizers

FARM FERTILIZERS LIMIT THIS COST:

40% of the nitrogen supplied to crops comes from livestock farming

Source: Rieutort et al., 2014

SOME LEVERS TO HELP FARMERS IMPROVING FRANCE'S FOOD SOVEREIGNTY



IMPROVING LIVESTOCK
FARMERS' INCOME
AND THE COMPETITIVENESS
OF THE SECTORS

A decent income, the creation and the fair distribution of added value are necessary for the future of livestock farming.

MAINTAINING THE PRODUCTION AND PROCESSING INDUSTRY

in the heart of the regions and encouraging consumers to buy French and sustainable products.

PROMOTING THE PROFESSION OF LIVESTOCK FARMER AND EMPLOYEE IN LIVESTOCK FARMING

Showcasing its strengths and facilitating access to the profession in order to inspire vocations.

SUPPORTING THE STRENGTHENING OF OUR AUTONOMY IN PROTEIN AND FERTILIZERS

by optimizing the use of grasslands and protein-rich materials.



GASTRONOMIC AND CULTURAL HERITAGE:RUMINANT FARMING, A PILLAR OF OUR HERITAGE



Sources: CNAOL, INAO, 2023 - INAO, 2022 - CNE, 203

THE HIGH OUALITY OF FRENCH DAIRY AND MEAT PRODUCTS IS RECOGNIZED

51 PDO AND 12 PGI dairy products			
33 cattle 15 goats 3 sheep	57 cheeses	This represents 3 butters	3 fresh creams

35 Red Labels, including:

17 large cattle 7 calves 11 lamb

19% of lambs and 18% of suckler cow herds carry official quality and origin labels

11% of cow's milk, 11% of goat's milk, and 33% of sheep's milk collected are used in PDO products

APPROXIMATELY 7%
OF RUMINANTS ARE RAISED
ORGANICALLY





IN 2010, THE FRENCH GOURMET MEAL WAS RECOGNIZED AS PART OF UNESCO'S INTANGIBLE CULTURAL HERITAGE.

Boeuf Bourguignon, blanquette de veau, Camembert de Normandie, Roquefort, crème brûlée... These recipes, true ambassadors of French cuisine, testify to the expertise of the country's farmers and artisans.

















The production, processing, and marketing professions RELY ON TRADITIONAL KNOW-HOW that MAINTAINS THE QUALITY and AUTHENTICITY OF PRODUCTS, which are essential to FRENCH GASTRONOMIC IDENTITY

The meat industry employs a large number of people:

5,400 in livestock trading,
2,900 in producer organizations,
28,710 in slaughtering, cutting, and processing,
3,350 in meat wholesale,

85,100 in distribution.

Source: Interbev, 2023

They are involved in the PDO and PGI dairy sectors:

15,369 milk producers, **1,210** farmers,

484 processing workshops, **327** maturing workshops

Source: INAO, CNAOL, 2023

7,200 ruminant farms have an on-farm processing facility

Source: Agreste agricultural census 2020, processed by Institut de l'Élevage

LANDSCAPES AND LIVESTOCK FARMING PRACTICES HAVE A HIGH HERITAGE VALUE



The Grands Causses and Cévennes, designated in 2011 by UNESCO for their Mediterranean agropastoral cultural landscapes. France has 59 regional nature parks and 11 national parks. With more than 60% of their surface area covered by permanent grassland, their maintenance depends on livestock farming.

Source: Cne, Idele, 2021

In our urbanized society, cultural landscapes are a key element of a region's appeal, both for residents and tourists.

Source: Dumont et al., 2016

LANDSCAPES: RUMINANT FARMING SHAPES THE LANDSCAPES OF OUR COUNTRYSIDE



in France: a mosaic of landscapes shaped by ruminant farming



Areas with crops and livestock: open landscapes, a wide variety of crops where livestock farming brings diversity



Areas of forage crops where livestock farming has shaped bocage or semi-bocage landscapes, with alternating grasses and forage crops



Intensive foothills: areas dominated by livestock farming with few alternatives



Grassland areas in the northwest with dense hedgerows and a network of meadows, hedges, slopes, and crops



Grassland areas in the center and east, with very open plots in the northeast and large-scale bocage landscapes to the north and west of the Massif central



Mediterranean pastoral areas and limestone plateaus and hillsides lie on a mosaic of vast grazing lands, combined with limited areas of plowed land



Wet mountains where grassland farming and forestry are highly developed with open summer pastures at high altitudes



High mountains, areas of high-altitude pasture where pastoralism plays a major role in preserving heritage



DIVERSITY OF LANDSCAPE ELEMENTS PROVIDED BY RUMINANT GRAZING

A livestock farming landscape has many facets:

- An alternation of pastures and crops of various species.
- Agroecological elements that divide up the space: hedges, trees, copses, ponds, slopes, etc.
- Structures, buildings, huts, fences, low walls, etc.
- The ruminant herds themselves, with a variety of species and breeds.

• RUMINANT FARMING HELPS MAINTAIN OPEN ENVIRONMENTS:

21% of French herbivore farms enhance and maintain pastures and summer grazing lands, areas that cannot be mechanized

Source: 2019 graphic parcel register

• LIVESTOCK FARMING MAINTAINS HEDGEROW LANDSCAPES

and their 700,000 km of hedges (equivalent to 17 times the circumference of the Earth)

Source: Rieutort et al., 2014

LEVERS FOR PROTECTING FRENCH LANDSCAPES*



PRESERVING OR REPLANTING HEDGES OR ISOLATED TREES AND MAINTAINING AGROECOLOGICAL ELEMENTS MAINTAINING SMALL BUILT HERITAGE, LOW WALLS OR TERRACES INTEGRATING NEW BUILDINGS INTO THE LANDSCAPE PROMOTING DIVERSITY OF CROPS AND PLOTS

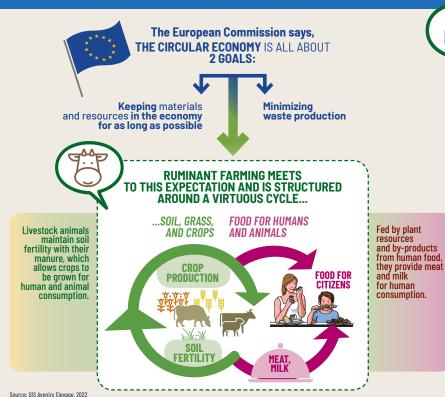
PRESERVING THE BREEDING OF RUMINANTS

*Aid is available in regions, nature parks, and at the European level to support farmers who commit to sustainable practices.

GENERAL VISION



CIRCULAR ECONOMY: RUMINANT FARMING AT THE HEART OF VIRTUOUS CYCLES



RUMINANT FARMING **VALORIZES IN ANIMAL FEED CROP BY-PRODUCTS** INTENDED FOR HUMAN CONSUMPTION THUS PREVENTING THEM FROM BECOMING WASTE

> Livestock nutrition accounts for

> > of the by-products from the French agri-food industry.

+43% increase in value

In 10 years,



Farmers committed to recycling...

...non-organic waste

300,000 farmer-recyclers:

41% of the twine and nets used in round bales for ruminant farming are collected and recycled.

Source : Adiv



... livestock effluent through methanization to produce energy and

o produce energy and provide digestate to fertilize soil:

6,900 French livestock farms produce renewable energy.

Source: Idele, 2020

SOME BEST PRACTICES FOR BETTER "CLOSING THE LOOP"



MAXIMIZING THE USE OF ANIMAL EFFLUENT...

... as fertilizer or to produce energy.

JOINING ADIVALOR (THE FRENCH RECYCLING ASSOCIATION)
AND FIND SOLUTIONS...

... to recycle tarpaulins, twine, and cans through organized channels.

USING FOOD PRODUCED ON THE FARM...

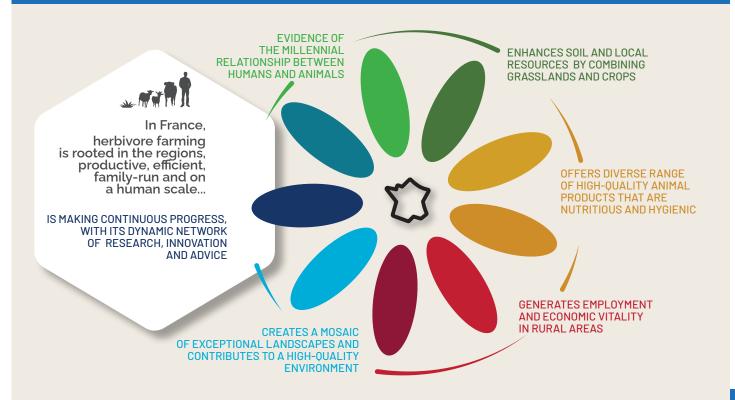
... or by-products from the food industry.

TAKING AN INTEREST IN THE VALORIZATION...

... of wool or leather from t



THE FRENCH HERBIVORE FARMING MODEL: A KEY PLAYER IN SUSTAINABLE DEVELOPMENT



2/3 of farmers are committed to good practices, including animal welfare (charters, Label Rouge, organic, BoviWell)

At least 85% of the protein and energy in ruminant feed is not consumable by humans.

REFLECTS THE MILLENNIAL RELATIONSHIP BETWEEN HUMANS AND ANIMALS

70% of professional livestock farmers receive technical advice

More than 10,000

advisors support livestock farmers in the field

12 NGOs involved in consultations with livestock farmers and industry stakeholders

IS CONSTANTLY
PROGRESSING, WITH
ITS DYNAMIC
NETWORK
NETWORK OF
RESEARCH,
INNOVATION, AND
CONSULTING

SHAPES A MOSAIC
OF EXCEPTIONAL LANDSCAPES
AND CONTRIBUTES TO
A HIGH-QUALITY ENVIRONMENT

85 tons of carbon stored per year under 1 hectare of permanent grassland

8,000 French farms produce renewable energy (photovoltaic and methanization)

More than 48,000 CAP '2ER® environmental assessments carried out between 2015 and 2024

14 million ruminants (adults) spread across 150,000 farms, most of which combine livestock farming with crop cultivation

1 hectare for 1 cow or for 6 sheep or goats

13 million hectares of grassland, representing 20% of the territory 1,3 million hectares of feed corn

1,5 million hectares of cereals for own consumption

ENHANCES SOIL AND LOCAL RESOURCES By Combining Grassland and Crops

> OFFERING A DIVERSE RANGE OF ANIMAL PRODUCTS WITH HIGH NUTRITIONAL AND SANITARY QUALITY ON THE MARKET

100% of animal products traced from farm to fork

51 PDO dairy products

35 Red Labels

Approximately 7% of ruminants are raised organically

GENERATES EMPLOYMENT AND ECONOMIC VITALITY IN RURAL AREAS

83% of the workforce is family-based

26% of farmers are women

256,000 direct jobs in livestock farming **244,000** indirect jobs

Per livestock farm, typically **2** workers for:

60 dairy cows or 100 suckler cows or 500 ewes or 300 goats

ACTIONS AND TOOLS IMPLEMENTED BY LIVESTOCK SECTORS TO OPTIMIZE SERVICES PROVIDED

ENVIRONMENT





Assess your farm's environmental performance, benchmark yourself against industry standards, and take action to improve.

HEALTH AND WELFARE



Assessing animal welfare in dairy and beef cattle farms.

FEED AND PRODUCTION



Developing protein self-sufficiency in ruminant farming.







Reduce methane emissions from cattle farming by 30% in 10 years.





Health, welfare, identification, nutrition, milk quality, safety, environment: "do it right and let people know."





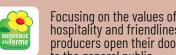
By-products to improve the multi-performance of dairy and beef cattle farms in the Grand Est region.

TERRITORIAL VITALITY



Support project initiators in becoming farmers.







Focusing on the values of hospitality and friendliness, producers open their doors to the general public.

HERITAGE AND QUALITY OF LIFE



Support cheese producers who promote their local regions.

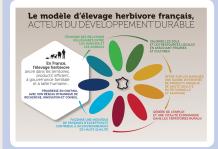






Quality and origin initiatives: protect and promote traditional food products.

GENERAL VISION





Study on the French herbivorous livestock model, a key player in sustainable development: expressing and sharing the specific characteristics of French herbivorous livestock farming and its contributions to sustainable development.

SERVICES PROVIDED BY RUMINANT LIVESTOCK FARMING













Beyond supplying high-quality food products, ruminant farmers provide society with numerous services that are sometimes overlooked and often underestimated. These services demonstrate the richness of their profession and the need to preserve their activity.

Without livestock farming, our summer pastures and hedgerow landscapes would not be maintained. The 13 million hectares of grassland and rangeland, which only ruminant farming can make use of, are valuable allies for our environment; these areas are excellent carbon sinks, filter water, and promote biodiversity. In rural areas, employment in livestock farming, related industries and services, as well as direct sales and farm visits, contribute to the vitality of the region. In this booklet, discover all the services provided by ruminant livestock farming, presented in the form of key figures, as well as the main actions taken by farmers and industries to make further progress.

