



Pastoral resources and quality signs: from construction to deconstruction? Some cases in the South-East of France

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Abstract

In Southeast France, pastoralism is often highlighted by quality and origin labels as links to the territoriality (or “terroir” identity) of livestock products: pastoral resources partly guarantee the quality of the product, and, in return, pastoral production contributes to the preservation of the land and its know-how. Since the 1990s, this dual relationship has been formalised, constructed and negotiated into normative specifications.

However, climate change seriously threatens the sustainability of Mediterranean rangelands and their farming systems. Livestock farmers and stakeholders are incited to re-question the link between the use of rangelands and quality or origin-linked production. At present, farming practices guaranteed by books of specifications tend to move away from pastoral resources, with potential impacts on the quality of pastoral products and the use of rangelands.

We propose a qualitative and diachronic analysis based on a methodology which intersects with environmental history and livestock farming systems. Through a series of case studies, this paper examines the trajectory of pastoral resources in quality labels in Southeast France since the 1990’s, from their prominence in specifications to their reinterrogation. We built farm trajectories based on more than a dozen semi-structured interviews with farmers, supplemented by ten life narratives of other stakeholders. We also analysed current books of specifications and consulted public and private archives.

Quality labels stand out from standard products, particularly because of their seasonality, and represent a key market for pastoral production. They generate significant added value for producers by attracting committed purchases from demanding consumers. Moreover, the use of pasture and rangelands helps to reduce livestock production costs and contributes to sustainable development objectives supported by public policies. Confirming the importance of pastoral resources in quality labels is therefore essential if the sustainability of Mediterranean pastoral livestock farming systems is to be addressed in the long term.

Introduction

Pastoral farming is widespread in Southern France, particularly in Mediterranean and mountainous areas where it can claim very ancient roots and heritage status. These livestock production systems rely partly (or totally) on grazing spontaneous fodder resources (Nozières-Petit et al. 2021), mobilizing diverse environments such as natural pastures, rangelands, and biologically diverse Mediterranean forests. These resources are referred to as pastoral resources. Signs of quality and origin (e.g. geographical indications (GI)) often highlight pastoralism among their commitments (Aubron et al. 2014), especially in conservation areas such as regional or national parks. Indeed, the grazing practices, using spontaneous resources, enhance the unique quality of pastoral meats and cheeses (Martin et al. 2016). In return, GI are also considered to be beneficial for the preservation and management of the environment and natural resources (Milano and Cazella 2021).

In France, public research in agronomy and animal science has played a pivotal role in guiding the transformation of livestock farming systems since the 1960s (Cornu 2018). Pastoral production with a quality label has largely benefited from this scientific and political support (Le Gall 2021).

Since the 1990s, the dual relationship between pastoralism and quality has been formalised, constructed and negotiated into normative specifications with the support of research, and within the framework of both national and European policies. There is therefore an inherent political dimension between quality and environmental issues. However, climate change seriously threatens the sustainability of Mediterranean rangelands and their farming systems (Daliakopoulos et al. 2017). French livestock farmers need to adapt their practices to climate change, but also to others systemic disturbances, like predation. At present, farming practices guaranteed by specifications tend to move away from pastoral resources, with potential impacts on the quality of pastoral products, the use of rangelands and natural pastures, and thus on biodiversity. Through a series of case studies situated in Southeast France, this paper examines the trajectory of pastoral resources in quality labels since the 1990's, from their prominence in specifications to their current reinterrogation.

Methods

We employed a qualitative and diachronic methodology, intersecting socioenvironmental history and livestock farming systems analysis. Our research focuses on three key GI meat case studies (Table 1) for which we conducted 24 semi-structured interviews with farmers, complemented by 22 life narratives of other stakeholders. We also analysed current books of specifications and went through local public and private archives, but also through the national ones. Our methodological framework facilitated the collection of multi-scalar data, encompassing the local evolution of farming practices alongside national historical trends in pastoralism and quality-origin labelling. Our interdisciplinary entry allowed us to build farm trajectories (Moulin et al. 2008), based on five key dimensions: labor/capital allocation, infrastructure and land use, crop management, herd management (including feeding practices), and marketing strategies. These trajectories were supplemented by socio-technical and socio-ecological timelines.

Results

Recognition of the usefulness of pastoral resources by the public authorities and the scientific community

In pastoral meat production, the focus on quality linked to origin emerged quite belatedly. However, in difficult areas, farmers sought a competitive edge early on, leading to the development of the first origin-protected cheeses in pastoral areas, such as Roquefort (1925), Saint-Nectaire (1955), and Laguiole (1956). Initial specification documents were minimal, emphasizing processing practices over breeding as the primary justification for specific quality. At the time, applied agronomic research was carried out in these areas, but it was focused on increasing productivity, particularly in the case of Roquefort (artificial insemination, genetics).

Table 1. Overview of pastoral commitments in PDO and PGI case studies

Geographical indications main case studies	Commitments relating to pastoral resources
PDO Fin Gras du Mézenc (beef)	<ul style="list-style-type: none"> - Mandatory grazing on natural pastures from June 21st to September 21st - Fattening period with hay from local natural pastures for at least 110 days during winter
PDOs <i>Charcuteries de Corse</i> (cured pork product from free-range pigs)	<ul style="list-style-type: none"> - Pigs growth period (>2 months old) on rangelands (supplement authorised; max 1-2kg/days/pig) - Finishing period under oaks and chestnuts for at least 45 days between October and March
PGI Agneau de Sisteron (lamb)	<ul style="list-style-type: none"> - Mandatory grazing on pastoral lands for at least 180 days - At least 10ha of rangelands

To implement the link between origin-linked quality and meats, a political and scientific shift beneficial to pastoralism was needed. In the early 1970s, public authorities began acknowledging the unique characteristics of pastoral areas and their livestock systems. Public research was asked to give more attention to the risk of territorial imbalance in development schemes (Cornu, 2021). The 1972 Pastoral Law aimed to maintain pastoralism in mountain areas and recognise its specific technical and social traits, supported by new subsidies in 1973 and 1976. In 1977, a technical journal for sheep farmers devoted a landmark article to "*pastoral ecology*", which was seen as "*a new expression of an ancient tradition*". Meanwhile, French public research on pastoralism was gaining momentum. In 1978, J. Poly, director of the INRA, published a report entitled "*For a more economical and autonomous agriculture*". In 1981, a collective publication about mountains highlighted the economic interest of meat production in maximising the nutritional requirements of grazing livestock. Researchers also proved that rangelands could be managed by adjusting grazing methods and selecting appropriate supplementary feed for hardy breeds. For instance, in the 1970s-80s, the production of quality Corsican cured pork products was linked to feeding pigs chestnuts and acorns, prompting research to sustain free-range farming and develop suitable compound feed.

The shift in scientific views on pastoral resources and the rise of systemic approaches legitimized pastoral systems, offering an alternative to failed agricultural modernization. From the 1990s, livestock farmers leveraged these changes to promote pastoral products through quality and origin signs, still with a strong help of public research.

Pastoral resources: a cornerstone of quality and origin signs

Protected Geographical Indications (PGI) and Protected Designations of Origin (PDO) were recognised by the European Union in 1991-1992. In France, the *Institut National de l'Origine et de la Qualité* (National Institute of Origin and Quality), previously reserved for the wine sector, was given responsibility for GIs in the agri-food sector. This doctrinal change paved the way for the strengthening of pastoral resources as key elements to justify the typicality and territorial anchorage of animal products. Pastoral meat GIs met a strong development during this decade, particularly in the wake of the "Mad Cow crisis".

The development of food tracers, such as terpenes, enabled a precise correlation between geographical origin and livestock dietary practices on pastures. A study commissioned in 1995 on *Fin Gras du Mézenc* showed that the richness of the flora found in natural pastures was reflected in the meat. These scientific advances met the need for legal and scientific proof of the specific nature and substantial quality of pastoral products.

This emphasis on pastoral resources in the specifications required a cognitive adaptation on the part of those involved in the sector. In the case of *Agneau de Sisteron*, pastoralism 'was a strong choice, it was a precursor to saying that pastoralism is a specific feature of our region, we have to write it down' (former project manager). In 2001, the stakeholders met with a research centre specialised in pastoralism. After developing a specific indicator, they set a target of 10 hectares of rangelands for pasture in the book of specifications.

An ongoing decline of pastoral resources in livestock farming practices engaged in quality and origin signs

Although pastoral resources were thoroughly negotiated in the specifications, our interviews with farmers tend to assert that these are now being more and more challenged. Firstly, most farmers in the different areas point to the growing uncertainty over grazing resources, linked to climate change. In the *Fin Gras du Mézenc*, cutting dates are increasingly uncertain, and older farmers are concerned about the decline in floral diversity. Droughts and resource uncertainty in Corsica are pushing farmers toward more secure, non-pastoral fodder sources. Since the 1990s, the use of wraps by *Fin Gras du Mézenc* farmers has increased considerably. In Corsica, the use of supplementary feed is gaining pace, making farmers more dependent on price trends and geopolitical hazards (Covid-19, Ukraine...). A Corsican pig farmer explained that "for me, droughts do not affect me... because we know that we have to feed them anyway. We work with living things, so we can't rely on natural resources". Although extreme, these words reveal a profound crack in the logic of quality signs and their link to the "terroir" model. In the same way, the image of the pastoral territories is being turned upside down, leading to painful cognitive divergences in highly patrimonial territories.

Livestock farmers are increasingly adapting their specifications to the current constraints by modifying feed requirements. For instance, after two temporary derogations in 2018 and 2020, the *Taureau de Camargue* PDO reduced the proportion of supplementary feed from local sources in 2022 and dropped the explicit reference to 'rangelands' and 'moorlands' for a more general "pastures". Carefully designed strategies are replaced by short-term adjustments, rational in themselves, but dangerous for the cohesion of the collectives involved.

Discussion and implications

If the decline in the use of pastoral resources within quality or origin labels persists, it could challenge the concept of terroir. Economic pressures could lead farmers to abandon pastoral practices, jeopardizing traditional landscapes and terroir-linked quality. This radical reconsideration could have a strong impact on the typicality of products, potentially undermining their organoleptic qualities and consumer perceptions.

Our observation that pastoral resources are declining in meat livestock farming practices is also evident in other productions, such as dairy products. Between 2016 and 2022, 35 French PDO cheeses requested temporary derogations, all of which concerned the feeding system: 86% requested at least once to reduce the proportion of locally sourced feed, 54% to increase compound feed, 40% to shorten the grazing period (e.g. INAO, pers. comm.). In *Picodon* (PDO cheese), farmers are adapting to climate change mainly by altering grazing areas, purchasing fodder, and housing goats indoors (Loiodice 2024). While traditional pastoral systems offer opportunities to adapt to climate change, these adaptations may come at the expense of farm economic margins and food self-sufficiency (Munoz-Ulecia et al. 2024).

However, the use of pastures and rangelands helps to reduce livestock production costs and contributes to sustainable development objectives supported by public policies (Ickowicz and Moulin 2023). Quality labels represent a significant part of pastoral livestock production in the South of France. The decline of pastoral practices under their specifications could therefore affect the maintenance of open landscapes, but also the pastoral socio-ecological systems. In this respect, although the recent Common Agricultural Policy (2013-2017) has had mixed results, especially in mountain areas (Giannoccaro et al. 2015), public policy has a role to play in reaffirming the importance of pastoral practices.

Our methodology, combining historical and zootechnical analysis, has highlighted the long-term but ever evolving relationship between quality signs and pastoral resources, the related problems that hinder their development and the evolution of socio-technical perceptions among both producers, researchers, and policy makers. As political and scientific paradigm shifts in the 1970s and 1980s advanced pastoralism and led to original and highly valued systems, continuous reassessment of approaches to pastoral practices is crucial to ensure their sustainability amid current challenges. This is true in France, but also in other agricultural systems around the world (Perley 2021). Whatever the odds, confirming the importance of pastoral resources in quality signs and helping producers through their present hardship is therefore essential if the sustainability of Mediterranean pastoral livestock farming systems is to be addressed in the long term.

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