

ALMA MATER STUDIORUM-UNIVERSITÀ DI BOLOGNA

Nomadic shepherdism in Lombardia: The contribution to rural development

Master Degree Thesis - Pietro Meazza

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Abstract

The present work provides an updated and detailed overview of Pascolo Vagante, an entirely nomadic ovine pastoral system typical of the Italian Alpine regions. This study provides an in-depth analysis of the current state of this shepherding practice based on shepherds' views and perceptions. The overall result is a comprehensive picture of Pascolo Vagante, its related issues, and opportunities.

Nomadic shepherds in Lombardia are an example of resilience due to their ability to maintain their traditional nomadic lifestyle and livestock breeding practices within a highly industrialized region. Nomadic sheep pastoralism offers significant opportunities in terms of ecosystem services, untapped resources, low-impact animal breeding, sustainable land management, and intangible cultural heritage. Nowadays, shepherds face important challenges that seriously undermine their practices. This research aims to develop a “map” of problem-actor relationships from the shepherds' perspective and to generate updated insights into this system in accordance with the principles of dynamic system mapping methodology. Data for this research were obtained through semi-structured interviews, informal conversations, and participant observation. The interviews investigated five categories of issues in order to map the sheep breeding sector: grazing resources, resilience and mobility, natural parks, bureaucracy, and subsidies. The impact on marginal areas was investigated through an analysis of the recovery of pastoral activities on an abandoned alpine pasture in Lombardia's Alps. Investigating itinerant pastoralism offers the opportunity to develop new approaches to sustainable land management. This type of animal breeding faces a significant risk of disappearance, with severe consequences for biodiversity and cultural heritage. The preservation of nomadic pastoralism aligns with national and European goals for sustainable development. This research aims to address the gap between UNESCO's recognition of transhumance as intangible cultural heritage and the material conditions of underrepresented voices and issues within the political and academic landscape. This study concludes that itinerant pastoralism is still capable of playing an important role in sustainable rural development in

marginal areas. The wide array of issues undermining the future of Alpine nomadism is deeply interwoven with social, political, and economic marginality. Although shepherds are undertaking bottom-up initiatives to address these challenges, the need to raise public awareness and reshape the human-territory relationship remains compelling.

Key words: nomadic pastoralism, extensive grazing, transhumance, sustainable rural development, marginal areas, sustainable land management, ecosystem services.

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1 [Introduction](#)

Nomadic shepherdism or alpine nomadism is currently undermined by the expansion of intensive agriculture, climate change, and, more recently, by wolves' return in the Alps. Scientific research has widely demonstrated the important ecological value of traditional pastoral practices. However, alpine nomadism remains excluded from regional territorial planning. Indeed, nomadic shepherdism suffers from social, political, and economic marginality that hampers its efforts to face current challenges. Scientific research on itinerant pastoralism lacks a unified understanding of how issues related to shepherdism are configured. This study aims to address this gap by applying systems-mapping methodological principles in a participatory case study. The case study involves 12 participants from the nomadic shepherdism sector. The first part of the case study aims to provide a bottom-up account of the current state of itinerant pastoralism in Lombardia and the main issues undermining it. The second part of the case study assesses the impact of the resumption of pastoral activities on abandoned alpine pastures in Sondrio province to investigate alpine nomadism's role in the sustainable rural development of marginal areas.

This study aims to demonstrate how a lack of knowledge about nomadic shepherdism is affecting its sociopolitical and economic inclusion, and to provide an example of the contribution of nomadic shepherdism to the development of a new paradigm of sustainable rural development. Three specific actions will be proposed as realistic measures to enhance the condition of itinerant pastoralism: information and sensitization campaigns, the elaboration of Payment for Ecosystem Services (PES) schemes to integrate nomadic shepherdism in land management policies, and the development of an ovine studbook adapted to the needs of a nomadic form of pastoralism. The relevance of this study lies in its aim to fulfill the lack of research on itinerant pastoralism in Lombardia. Results of this study may be relevant to other alpine regions characterized by alpine nomadism and thus provide inputs for interregional land management planning across the entire Alpine system and the Po Valley. From a broader perspective, shepherdism is a practice relevant to the entire Italian

peninsula and the European Union. Indeed, the EU has the second-largest sheep population in the world, and Italy alone accounts for 8.3% of it (Petek e Marinšek Logar 2021). The increasing risk of the reduction of nomadic pastoral activities implies several negatives effects: the reduction of ecosystem's capacity to deliver ecosystem services and the related increase of natural hazards; the loss of local traditional ecological knowledge; the worsening of rural depopulation dynamics; the degradation of pastures and the increase of afforestation; the loss of the sense of identity related to cultural landscapes; the undermining of marginal areas' food security (Battaglini 2021; Battaglini e Di Meglio 2022; Teston 2023).

1.1 [Alpine Nomadism in Lombardia: fundamental characteristics, inputs, and outputs](#)

Alpine Nomadism (Mattalia et al. 2018) is an ancient method of extensive sheep breeding based on the perpetual movement of flocks in response to seasonal variations. It can be considered an extended form of vertical transhumance (ibidem), since the seasonal transfer of livestock between mountain and plain pastures defines it (Genovese, Ostellino, e Battaglini 2022). It is a herding method that showed relevant resilience throughout the drastic changes occurred in the agrarian landscape of Lombardia in the last decades, this is demonstrated by the relevance that sheep itinerant pastoralism still has in the regional ovine breeding sector as it represents the 2/3 of Lombardia's sheep population, with the 38% of ovine located in the province of Bergamo (Corti 2007; Regione Lombardia 2013; Bernardi, Tirloni, e Stella 2019; Genovese et al. 2022). This herding system, *pascolo vagante*, is identified and regulated by Italian legislation under art. 43 of D.P.R. n. 320/1954 (Genovese e Battaglini 2021). The regional administration is informed about consistency, the ID number of each animal, and the grazing areas of each herd; this information is reported in the health certification required at the beginning and end of summer transhumance (Regione Lombardia 2013). The Bergamasca and the Biellese breeds are two very similar local, alpine, and rustic sheep breeds, highly suited to this herding strategy, and make up the totality of the region's nomadic herds

(Bigaran 2012; Bacci et al. 2013; Francesca Camilli et al. 2015). This herding system depends on the direct proportionality between the ecosystem's health and the animal's well-being; it produces meat and wool, the former being a high-quality food product and the latter an untapped resource that represents an economic burden for shepherds. Meat and wool are the direct products of ovine itinerant pastoralism; indeed, this system also provides ecosystem services (Liechti and Biber 2016; Genovese et al. 2022), making it a multifunctional agricultural practice (Battaglini 2000; Corti 2007; Teston 2023). Nowadays, alpine shepherdism occupies a fragile interstitial space in our society despite the benefits it provides to the wider community. To conduct an assessment of this system, it is necessary to observe its inputs, outputs, problems, and essential pillars, starting with the physical spaces where shepherdism exists in Lombardia.



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2 [State of Arts](#)

The first aspect that emerged from the literature review is the proliferation of studies on transhumant systems following UNESCO's declaration of transhumance as immaterial cultural heritage of humanity (UNESCO 2019). At the European level, interest among researchers in pastoral systems appears to have increased, particularly in countries with a significant pastoral tradition. Several studies have been carried out in Spain and France. Also in Greece, Italy,

Romania, and Austria, there is an increased interest in pastoral case studies. All the studies reviewed show a general uniformity of aims and perspectives: the relevance of extensive breeding for the sustainable development of rural areas; pastoralism's ability to provide ecosystem services; the severe challenges undermining traditional transhumant systems; and the positive institutional recognition of pastoralism and its inability to manage the related issues and opportunities. The importance of pastoral research for the EU is highlighted by the fact that the EU has the second-largest sheep population in the world, accounting for 8% of the global total (Petek e Marinšek Logar 2021; Ganci et al. 2022). The pastoral sector is considered strategic mainly for "Euro-Mediterranean" countries characterized by great portions of land unsuited for intensive agriculture (Farinella and Nori 2020). There, pastoralism plays a crucial role in contrasting land abandonment, a concerning problem for the EU as 30% of its territories will be at risk of abandonment by 2030 (Teston 2023). Italy accounts for the 8.3% of the EU's total sheep population, and pastoral research represents a relevant field of study (Petek e Marinšek Logar 2021). Colombino and Powers underline that transhumant systems are rarely explored through the lens of food security and Alternative Food Networks (Colombino and Powers 2022). Instead, pastoral systems are often studied for their capacity to provide ecosystem services and avert land abandonment. In Italy, pastoral research is concentrated mainly in those regions where agricultural activities play a greater role in local economies. Concerning particularly ovine husbandry, it seems that mainly Sardegna, Lazio, Toscana and Sicilia have been involved in case studies. All pastoral systems face the same challenges and share many similarities; therefore, case studies yield findings relevant to other pastoral systems as well. Anyway, it is important to underline that Alpine Nomadism, or Pascolo Vagante, has unique characteristics and faces specific challenges stemming from its nomadic breeding system, which is based on mobility. In Italy, this system is specific to Alpine regions, and the regional differences between shepherds and shepherdism are more cultural than practical in terms of pastoral activities and strategies. Anyway, each regional administration is characterized by differences in the institutional attitude towards nomadic pastoralism and in

its regulation. Among Alpine regions, Lombardia lacks recent research on nomadic pastoralism if compared to Piemonte, Trentino-Alto Adige, Veneto, and Friuli. Most of the available studies on Alpine Nomadism are provided by specific authors or associations that deal with shepherdism. In particular, SozooAlp has consistently shown interest in pastoral practices in northern Italy and has often investigated alpine nomadic pastoralism (<https://www.sozooalp.it/>). Among the authors who emerge as interested in Alpine Nomadism, Luca Battaglini, Michele Nori, and Dino Genovese demonstrated particular interest in this herding system across the years. This suggests that Alpine Nomadism remains relegated to the specific interests of authors and associations, and thus confined to research niches that struggle to gain the attention of the wider academic community. As mentioned, most research on nomadic shepherdism highlights only the risks undermining it and the inherent opportunities to enhance the system. Less explored are food security approaches or perspectives that aim to describe the political landscape within which itinerant pastoralism is situated, as well as economic assessments. In general, there is relatively abundant research on the decline of shepherdism and its consequences, while there is a lack of in-depth studies focused on the specific drivers of shepherdism's decline. This might be a consequence of the recent growth of interest in shepherdism among academic environments. Certainly, assessments of the risks and opportunities inherent to Alpine shepherdism can play a role in stimulating the interest of different disciplines. Indeed, nomadic pastoralism is well-suited for multidisciplinary approaches. On the other hand, Alpine Shepherdism, and Bergamo's and Brescia's in particular, received consistent attention from anthropological and linguistic approaches due to its strong and unique cultural and linguistic identity. Thus, contributions about the shepherds' culture are considerable and established. Indeed, recent master's theses with anthropological and linguistic approaches have been elaborated, for example, at the University of Milano and at the University of Bologna. Another aspect of the current research on Alpine nomadism is the prevalence of the mountain dimension that overshadows the plain dimension. In fact, the studies reviewed in this research highlight the important role of pastoralism in providing

ecosystem services, particularly in mountain areas. In contrast, ecosystem benefits in the plains and natural protected areas are less well investigated. However, most importantly, an updated and detailed overview of Alpine Nomadism in Lombardia seems to be missing. Therefore, this research will provide an updated mapping of Alpine Nomadism in Lombardia, where shepherds still play an important role in managing resources and the landscape, and in maintaining cultural heritage and pastoral knowledge of the environment.



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3 [Context analysis](#)

This section describes the fundamental features of itinerant pastoralism, its sociopolitical position, and the current challenges undermining it.

3.1 [Spatial and temporal dimensions: access to pastures in mountains and plains](#)

Seasonal variations determine the movement of herds according to the nutritional needs of animals that graze mountain pastures in summer and plain

pastures in winter (Easdale, Michel, Perri, 2023). Mobility, based on nourishment needs, reproductive and productive rhythms, follows the seasonal vegetal variability across different complementary ecosystems (Nori e De Marchi 2015), coping with changes in the availability of resources (Marinelli, Semprebon, e Tognon 2022) and distributing grazing pressure while ensuring access to good quality rangelands (Otieno 2016). It is demonstrated that exploiting environmental variability enables shepherds to maximize production in areas otherwise unsuitable for other forms of food provision (Nori et al. 2023). Mountain and plains are two interconnected and complementary environments not only for seasonal vegetal variation, but also because access to pastures in one environment is a prerequisite for grazing the other (Nori e De Marchi 2015). Itinerant pastoralism is specialized to exploit extreme environmental niches (ibidem); therefore, marginality of pastures is also a common feature between mountains and plains, in fact, in the highlands sheep herds graze rangelands located at higher altitude characterized by lean steep pastures and difficult access (Regione Lombardia 2013; Mattalia et al. 2018). Similarly, in the plains, available grazing plots are found in areas where agricultural practices are seasonally unproductive or in unexploited plots (Genovese and Battaglini 2021). This aspect has an ecological significance because shepherds graze “renewable resources in areas unfit for intensive land uses, in unused and abandoned plots, and make a secondary, seasonal, and complementary use of spaces with other land use priorities”(Mattalia et al. 2018). Uncertain availability of environmental resources requires a degree of sustainability achieved through strategic mobility, which enhances flexibility and adaptivity (Marinelli et al. 2022). Urban and infrastructure development made the transfer of herds by truck between mountains and plains mandatory (Bernardi et al. 2019); therefore, itinerant pastoralism has lost its role in connecting the two environments ecologically, and only a minority of shepherds can still cover these distances on foot. The costs of truck-based herd transfer are significant for shepherds who prefer safe walking itineraries (Regione Lombardia 2013). The differences in the levels of mechanization of herds transfer are correlated with the management of winter itineraries: more mechanized herds graze in more concentrated peri-urban areas

where there are more interstitial or untapped plots, transhumance by foot results more dispersed (Bernardi et al. 2019), with a greater role in connecting ecologically fragmented agroecosystems (Easdale et al. 2023). Conceptually and pragmatically, mountains and plains are two indivisible dimensions. Still, here they will be separated for clarity of analysis and to highlight the differences in the modalities of access.

Mountain pastures

The verbs “monticare” and “demonticare” designate the specific activity of bringing animals up to mountain pastures by the beginning of June and down to valley bottoms by the end of September; local environmental conditions can cause slight variations in timing. It is a practice that benefits the animals’ health (Stauder, Meimberg, and Kriechbaum 2023) by providing them with high-quality grass, as shepherds claim the grass there is highly nutritious and water is abundant, therefore considering alpine pastures as “the best they can offer to their sheep” (Mattalia et al. 2018). Itinerant sheep pastoralism has strong connections with alpine agroecosystems, also due to the positive effects of vertical transhumance on mountain pastures in terms of maintenance and protection (Liechti and Biber 2016). This is reflected in a positive attitude among local people, who recognize the environmental benefits of shepherding (Genovese and Battaglini 2021). As in other northern Italian regions, access to mountain pastures is mostly obtained through a system of auctions that designate a renter, usually every five years (Mattalia et al. 2018). This fosters competition with other farming systems with higher economic resources, such as bovine husbandry, that are usually able to rent more accessible and comfortable pastures (ibidem, Regione Lombardia 2013). Summer was considered a relatively relaxed period for the shepherd, who could leave the sheep grazing in a semi-wild state; this is no longer possible due to the return of large predators in the Alps, forcing shepherds to be present nearby the herd every day, in every condition. Despite these changes, shepherds regard the mountains as the best time of year because they offer better working conditions, with a more supportive stakeholder

environment, better animal health, and greater freedom of movement due to the isolation of Alpine pastures.

Plains pastures: la Batida

By the end of September, the shepherd is ready to load the flock on trucks at the valley's bottom to transfer it to the Po plains pastures. Winter pastures are "interstitial grazing grounds" due to their location in areas of high levels of industrialization, intensive agriculture and population density (Mattalia et al. 2018). Each shepherd has a designated itinerary inherited from an older shepherd; it is called *Batida* and refers to a well-defined, specific historical itinerary proper to each herd (Regione Lombardia 2013). This zoning is an informal agreement between shepherds, and it is determined by the reiterated habit of annual transits (Genovese e Battaglini 2021). The *Batida* is the same every year, but in the day-to-day working reality each movement from plot to plot needs to be adapted to grass availability in that particular period of the year (ibidem), it has to be mediated with fields' owners, agricultural productive phases and it has to take into account motorways and day-time car traffic (Mattalia et al. 2018). These are forms of social and political negotiation among different stakeholders involved in land use (ibidem). In the management of the *Batida*, resilience emerges as a distinct characteristic of shepherds who were able to adapt their traditional pasture zoning to the reduction in grazing plots caused by urbanization and agricultural intensification (Genovese e Battaglini 2021). Shepherds do not own winter grazing resources; their access to pastures depends on their ability to maintain good social relationships with landowners and on proper management of the herd's health conditions (Regione Lombardia 2013). Normally, shepherds offer landowners cheese wheels or lambs as a token of appreciation for their permission to graze. Access to grazing ground is requested to each municipality intersecting with the *Batida*, through local health authorities (Mattalia et al. 2018). Despite the declaration to local health authorities, shepherds do not have any formal written right to graze, and in a shrinking agricultural landscape where multiple actors interact, conflicts over land access are more frequent and intense than in the mountains (Easdale et al. 2023).

Itineraries along rivers have historically represented natural paths due to the availability of water (Genovese et al. 2022); nowadays, their course allows shepherds to avoid motorways and urbanized areas (Nori e De Marchi 2015). Riverbanks play a crucial role during spring with the temperature increase and particularly with the recovery of agricultural production that pushes shepherds outside the fields, resulting in the intensification of conflicts with conservation policies and regional natural parks. During winter, shepherds interact with a multiplicity of local actors from different sectors of the mainstream society (Mattalia et al. 2018) and rely on continuous renegotiation of access influenced by the wider community (ibidem). Therefore, shepherds imply a more flexible management of resources, land use, and access (Easdale et al. 2023; Nori et al. 2023) in an urban social context that is generally unaware of the reality of herding activities and more hostile to itinerant pastoralism (Genovese e Battaglini 2021; Genovese et al. 2022). The winter period means more stressful work conditions for the shepherd who must maintain an array of social relations while constantly updating in its mind a geographical map of scattered plots split by car roads and cultivated fields; the success during the winter season depends on the shepherd's ability to navigate this mosaic context. Access to untapped crop resources, stubble fields, and fallow lands after the harvest (Genovese et al. 2022) is fundamental due to the lack of permanent grasslands, particularly in intensive agricultural areas. Itinerant pastoralism is the last breeding activity that shapes the landscape through grazing plain rangelands (ibidem); a single negative winter is enough to hamper summer mountain transhumance and end a shepherd's activity.

Local breeds

The sheep landraces bred in the region (Bergamasca and Biellese) are local alpine breeds adapted to traditional transhumance practices, particularly to the summer period spent in impervious mountain rangelands. These breeds present a natural aptitude for movement and resistance to cold temperatures, resulting in

particular adaptability to this kind of herding system and to climate change (Regione Lombardia 2013; Battaglini 2014; Valorani e Vigliotti 2022). The Bergamasca breed is the largest sheep breed in the world and a really rustic animal, capable of adapting to different environments and suited to balancing the exploitation of resources (Regione Lombardia 2013; Francesca Camilli et al. 2015; Nori e De Marchi 2015). The breed type has cultural and social importance for shepherds and is part of the factors that build passion and perseverance for sheep husbandry. Local breeds play a role in preserving social, health, cultural, and identity values in marginal territories characterized by a deficit in accessibility to mobility and education services (Sardaro e La Sala 2021; Teston et al. 2022). It is demonstrated that traditional breeds adapted to local conditions are necessary for sustainable land use in rural areas (Bertaglia 2005). This evidence is supported by several studies that state that local breeds play an important role in territorial management due to their capacity to exploit “poor grazing resources otherwise unused” (Grassino et al. 2007; Francesca Camilli et al. 2015). Thanks to this capacity, local breeds are more adaptable to harsh environments than other, more profitable animals (Battaglini 2000). Therefore, particularly in marginal pastures, sustainable management of rural internal areas with “low impact farming techniques” requires traditional sheep breeds (Sardaro e La Sala 2021). Due to market dynamics, local sheep breeds might be in danger of extinction with several repercussions for rural development: “many of the European livestock breeds have been greatly altered, and today a high percentage of local or traditional breeds are extinct or marginalized (...) according to FAO, the consistency of autochthonous sheep breeds, which are characterized by different productive attitudes, has strongly decreased in recent years with severe consequences on rural areas” (Ganci et al. 2022). Local breeds often exhibit low production levels, placing their economic sustainability at risk of extinction (Sardaro e La Sala 2021).



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3.2 [Sector consistency, inputs and outputs](#)

In European Mediterranean countries, “about 30% of pastoral farms are lost every 10 years”; in particular, sheep farms in Italy experienced a 68.1% decrease in numbers (Farinella e Nori 2020; Nori et al. 2023). Lombardia is not an exception, with a 44,4% decrease in the number of ovine farms (Corti 2007). The decline in the number of livestock farms over the last 30 years has been accompanied by a concentration of animals on larger farms. Indeed, a century ago, the average number of sheep for each herd was 100-150, and it is nowadays, according to researchers, at the lowest 400, 500, or 700 and at the maximum 1500 or 3000 animals (Corti 2007; Regione Lombardia 2013; Mattalia et al. 2018; Bernardi et al. 2019; Genovese e Battaglini 2021). The lowest possible number of animals is increased in the last century, which is dictated by economic sustainability reasons. In contrast, the availability of grazing resources usually dictates the highest, territorial accessibility in terms of the herd's movements, and environmental conditions (Cima, Cau, e Maino 2022). Lombardia counts 13.125 ovine farms and 110.021 sheep (Parlato, Porto, e Valenti 2022) with 151 itinerant herds consisting of 58.000 sheep that graze around 100-150.000 hectares of surface every year (Bernardi et al. 2019). Nomadic herds, besides sheep, always include sheep and guard dogs, donkeys, and a number of goats,

around 10% of sheep, while cows are rarer (Mattalia et al. 2018). It is also important to include small farms with 5 or 50 sheep, bred for maintaining pastures at medium altitudes (Bernardi et al. 2019).

Inputs

Pastoral breeding systems are characterized by high degrees of self-sufficiency and low economic production costs and are thus considered “low-input systems” (Teston et al. 2022). Alpine nomadism is a herding system that produces through the consumption of exclusively renewable, untapped, or marginal resources (Nori e De Marchi 2015). Nomadic herds graze only wild grasses and shrubs; they are never fed purchased animal feed or hay, as those animals never see a barn in their entire lives (Regione Lombardia 2013). As forementioned, sheep graze mountain pastures unsuited for other farm animals in summer, and “zero-cost” interstitial grazing resources during winter (Bernardi et al. 2019). Shepherds must resort to hay only during winter if heavy snowfalls occur or in particularly extended and dry weather conditions that impede the natural regrowth of vegetation, as happened during the 2022 and 2023 winters. Purchasing hay in these conditions is always a fallback choice, also because in climate-influenced conditions, hay’s price increases, making its purchase even less economically practicable for shepherds. Subsidies are a fundamental component of itinerant pastoralism’s economic viability. Shepherds can apply for forms of compensation for agricultural practices carried out in less-favored areas, namely EU subsidies aimed at preserving marginal pastoral systems (Mattalia et al. 2018; Nori et al. 2023). Most nomadic pastoralists can access only mountain pasture management subsidies because winter pastures rely solely on informal agreements, and therefore they do not possess the formal documents required for other agricultural subsidies (Mattalia et al. 2018). The intense workload and its low economic return are compensated by European agricultural subsidies, which play an important role in preserving mountain pastures; without them, “summer pasture management would hardly be feasible” (Stauder et al. 2023). Anyway, above all, the main inputs are shepherds’ passion and attachment to their profession, which also represents their livelihood and nomadic lifestyle,

despite low economic returns and harsh living conditions. Farinella and Nori conducted research on migrant workers in the pastoral sector in northern Italy and report that 2/3 of the employees in the ovine sector are international migrants (Farinella e Nori 2020). This is a strategically necessary response to the aging of the local population and the difficulty of recruiting local shepherds who normally migrate to Switzerland; therefore, the presence of international migrants is vital to the sustainability of the sector and its multifunctionality in less-favored areas (ibidem). Anyway, low pay and the absence of career opportunities intrinsic to the sector hamper young local shepherds' and migrants' tackling of the generational renewal problem (ibidem).

Main output: meat

The decrease in local wool's value and market demand pushed shepherds to specialize in their meat production, and nowadays meat is the main product in economic terms for this herding system (Battaglini 2000; Corti 2007; Mattalia et al. 2018; Bernardi et al. 2019; Farinella e Nori 2020), particularly in the last 30-40 years after the devaluation of wool. *Agnellone*, namely a lamb of 8-12 months, is the main food product; its medium weight is 45kg, and it is priced at 531 euros per 100kg (Regione Lombardia 2013; Bernardi et al. 2019). Ovine meat obtained from itinerant herds has unique features, typically determined by the typology of the herding system. Indeed, as mentioned above, animals feed only on spontaneous vegetal resources with no other supplements, the richness of the floristic composition of pastures, respect for animals' ethology, and the great movements of animals positively affect the organoleptic aspects of meat (Bernardi et al. 2019). Small-market niches for transformed products are growing, but most meat is sold fresh to wholesalers due to a lack of strong distribution channels. A small minority of farms own a slaughterhouse or a direct selling point (ibidem). The main consumer market is represented by Muslim communities, particularly during religious celebrations such as *Eid al-Adha*; secondary ovine meat requests rise during Christmas and Easter (Regione Lombardia 2013; Mattalia et al. 2018; Bernardi et al. 2019). Therefore, shepherds synchronized the herd's reproduction rhythms with the Islamic

calendar and established stable connections with Halal slaughterhouses (Mattalia et al. 2018). The exportation of ovine meat is “extremely disadvantaged” by Australian and New Zealand productions that can offer lambs at a medium price of 100/200 euros per 100kg, less than EU prices (Bernardi et al. 2019). Wool and ecosystem services are two other significant outputs of this herding system and will be treated in specific paragraphs.

Untapped output: wool

Nowadays, sheep wool produced in Lombardia has no market; its price is strongly devalued, and it represents a cost for shepherds. The shearing activity is physiologically necessary for sheep care, but its revenues do not cover the costs of shearing (Francesca Camilli et al. 2015). Indeed, the cost of shearing is around 2 euros for each sheep. An adult sheep produces 2-3kg of wool, which, if it is sold, is valued at around 0.30 euros per kg (Bigaran 2012; Mattalia et al. 2018). Sheep wool is rich in keratin; its disposal is regulated by the EU: “raw sheep wool must be sent to specialized sites for incineration or landfill, and only if it is previously washed or disinfected, it can be buried or burned without a permit” (Alyousef et al. 2022). Although northern Italy lacks the infrastructure to collect and process sheep wool, it is possible to designate regional health authorities (ASL) for wool disposal. However, this practice is costly. Therefore, shepherds prefer to give away their wool for free to local enterprises that sell raw wool abroad, due to a discrepancy between wool supply and market demand (Francesca Camilli et al. 2015). Wool produced by local breeds is considered unsuitable by the clothing market, which instead uses imported wool from abroad, Merino wools from Australia and New Zealand (Petek & Marinšek Logar, 2021). Traditional sheep breeding is unable to compete with imported wool within current market dynamics due to shearing costs, wool characteristics, and the variability in the supply (Ganci et al. 2022). There are alternative and innovative usages of wool that could provide a valid economic alternative to breeders, but imported wool is disproportionately competitive, and for example, wool building products, such as insulating components existing on the Italian market, are realized with imported wool (Alyousef et al. 2022). Moreover, EU

policies exacerbated market conditions for wool, as it is not recognized as an agricultural product (Ganci et al., 2022). In some cases, this contest may lead to illegal disposal of sheep wool, which is an ecologically dangerous practice because its chemical components and decomposition are difficult to accomplish, and it pollutes the water and the soil (Chereji e Munteanu 2022). Wool represents an opportunity since it is an untapped resource and it is relevant to the whole Italian territory since the yearly sheep wool production in Italy is esteemed to amount to “9 thousand tons, by considering a sheep population of 6 million heads” and in Lombardia sheep wool waste amounts to 172.938kg for 115.292 sheep (Parlato et al. 2022). Raw wool has a wide range of applications due to its characteristics. Not only does the implementation of alternative applications affect the economic aspects of sheep breeding, but it also has an importance for the community since it affects ecological and economic aspects. Converting wool waste into resources for the building sector represents an innovative alternative that would reduce environmental pollution and enhance the sheep breeding sector (Alyousef et al., 2022). Furthermore, sheep wool is a sustainable and recyclable resource that could be the base for sustainable growth based on the reduction of waste and valorization of local resources, also preserving the rural areas where it is produced (ibidem). Alternative applications of wool also involve the chemical industry and research, as keratin extraction offers researchers an opportunity to develop eco-friendly methods that could open the door to new materials and applications across industries (Cherrji & Munteanu, 2022). Despite these advantages and the availability of local resources, there is still no usage of local wool. In fact, the reusing of wool waste is improperly managed and not widespread across the territory (Parlato et al., 2022).



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3.3 [Unrewarded output: ecosystem services](#)

Academic research widely recognizes itinerant pastoralism and the territories involved in its unfolding as ecosystem service providers (Liechti e Biber 2016; Genovese et al. 2022; Teston et al. 2022; Valorani e Vigliotti 2022; Teston 2023). The valorization of resources in marginal areas contributes to shaping and preserving the landscape, agrarian resources, cultural heritage, and territorial identity (Nori e De Marchi 2015; Marinelli et al. 2022). The range of ecosystem services connected with itinerant pastoralism is wide, and it is directly influenced by herds' movements and the constant removal of vegetation mass through grazing. Sheep itinerant pastoralism also provides indirect ecosystem services by maintaining the health of certain interconnected environments defined as the “green infrastructure: a strategic planned network of natural and semi-natural areas with environmental features designed and managed to provide a wide range of ecosystem services” (Valorani e Vigliotti 2022). These positive environmental impacts are recognized by local communities in mountain areas, but less so among the urbanized population in the plains. Despite

the absence of a market for these public goods, there is a growing social demand not only for healthy ecosystems and landscapes but also for food production systems that maintain them (Battaglini 2000). The EU recognize the role of pastoral activities as fundamental for provision of ecosystem services, protection and maintenance of mountain areas through the production of food with sustainable farming techniques and recognize that the decline of pastoral activities is undermining the goals of Natura2000, also the UN recognize shepherds as “biodiversity safeguards” (Nori e De Marchi 2015; Nori et al. 2023; Teston 2023). Despite this recognition, shepherds don’t benefit from the positive externalities that they provide to society, neither in economic nor sociopolitical terms (Genovese et al. 2022). Besides provisioning services, which are provided with much lower environmental costs in terms of ecological footprint when compared to any other farming system, particularly sedentary farms, there are other ecosystem services connected to Alpine Nomadism: cultural services, regulation and maintenance services (Nori e De Marchi 2015; Vigliotti 2023). It is important to underline that the provision of ecosystem services and the healthy maintenance of environmental resources depend on shepherds’ knowledge and responsibility in pasture management. Indeed, overgrazing can lead to a loss in the provision of ecosystem services, grazing intensity has to be low. A modernization of this livestock herding system is not advantageous because it would increase the number of animals for each herd (Corti et al. 2010:201; Arrondo et al. 2023). Other risks may be related to endoparasite treatments’ remains, which could negatively impact invertebrates, these risks don’t seem to be particularly relevant (Ramanzin et al. 2019).

Regulation and maintenance services

Animals’ grazing controls the natural expansion of forests, the colonization of invasive species such as shrubs and brambles that have negative effects on vegetal biodiversity and ecological stability (Regione Lombardia 2013; Liechti e Biber 2016; Marinelli et al. 2022; Stauder et al. 2023). Indeed, grazing implies removing biomass, soil trampling, fertilizing ejections, and therefore structuring a prosperous turf able to fulfill the ecological needs of a rich heterogeneous flora;

it also has positive impacts on unproductive hoed crops during winter (Regione Lombardia 2013; Nota et al. 2021). This capacity of extensive livestock breeding is particularly evident on meager pastures by improving their fertility and consequently the vegetational composition (Corti et al. 2010). The natural processes of forest expansion lead to a reduction of grasslands with severe consequences not only on biodiversity but also on “socioeconomic and cultural spheres” (Nota et al. 2021; Jewell 2022; Arrondo et al. 2023). The presence of grasslands and their use through traditional low-impact farming techniques are fundamental for biodiversity. The specific biodiversity of pastoral territories is directly shaped by centuries of extensive breeding. Shepherds have a historical role in maintaining and preserving these agro-ecosystems (Ramanzin et al. 2019; Jewell 2022; Stauder et al. 2023). Transhumance itineraries can be considered ecological highways due to flocks’ capacity to disperse seeds and insects over long distances, making important contributions to the “Rete Ecologica Regionale,” which is the primary infrastructure for the territorial regional plan of Regione Lombardia, as stated by resolution n. 8/10962 dated 30/12/2009 (Regione Lombardia 2013; Valorani e Vigliotti 2022). The improvement of the vegetal composition has a positive effect on other wild herbivores and insects, therefore benefiting also pollination and wild birds that base their diet on insects and have their natural habitat in grasslands, for example, wood grouse (*gallo cedrone*), rock partridge (*coturnice*), and black grouse (*gallo forcello*) (Regione Lombardia 2013; Nori e De Marchi 2015; Ramanzin et al. 2019; Battaglini et al. 2022). Animals’ grazing also helps to generate healthy transition ecosystems between forests and pastures, further enhancing biodiversity and hampering overshadowing (Cima et al. 2022). The quality improvement of the turf and of its roots has a positive effect on the soil capacity of the filter and metabolizes potential water pollutants (Nori e De Marchi 2015; Ramanzin et al. 2019). Extensive grazing also positively impacts water flow regulation and soil capacity to counter erosion and hydrogeological instability, reducing soil degradation and regulating water availability (Marinelli et al. 2022; Teston 2023; Vigliotti 2023). The quality of grass that grows on grazed pastures also shows a better capacity of holding snow and therefore reduces the risk of avalanches (Battaglini 2014).

Biomass removal through extensive grazing reduces the dry vegetal mass and the consequent wildfire risk in both pastures and forests (Ramanzin et al. 2019; Dessi 2023; Vigliotti 2023). This role also has economic implications, as it reduces the utilization of machinery for wildfire prevention interventions by 70% (Valorani e Vigliotti 2022). Pastoralism, through the good management of pastures, also has the capacity to mitigate climate change; indeed, grazed pastures show an important capacity of CO₂ storing with a potential of 200-500kg of stored carbon per year per hectare, while maintaining and reproducing soil's fertility (Nori e De Marchi 2015; Vigliotti 2023). From the point of view of resource management, itinerant pastoralism shows potential in the cost reduction of vegetation maintenance in public areas, as happens in the municipalities of Torino and Brescia; it contributes to maintaining the productivity of marginal agricultural areas and to containing shrubs in natural parks (Regione Lombardia 2013). Pastoralism is an important driver for the conservation of genetic resources of local breeds (Teston et al. 2022; Teston 2023). While sparing feed supplements and pesticides, itinerant pastoralism contributes importantly to the management and maintenance of environmental variability proper to a mosaic agropastoral landscape and finally has an important potential role in pursuing sustainable rural development (Regione Lombardia 2013; Jewell 2022; Valorani e Vigliotti 2022; Easdale et al. 2023). Since they keep productive marginal areas, pastoral activities play an important role even in contrasting land abandonment and depopulation dynamics by enhancing the resilience of local communities (Battaglini e Di Meglio 2022; Colombino e Powers 2022).

Cultural services

In 2019, UNESCO defined transhumance as “intangible cultural heritage of humanity, because it is a respectful practice of animal welfare and seasonal rhythms, contributing to shape the naturalistic landscape and still today represents an example of a sustainable approach to natural resources” (Mastronardi, Cavallo, e Romagnoli 2023). Nomadic shepherds represent a minority culture in Lombardia, which is recognized as cultural immaterial

heritage of the region (Regione Lombardia 2013). This pastoral activity preserves the traditional herding system and the related knowledge, traditional food products, and handicrafts that are fundamental to many individuals' sense of identity and belonging (ibidem, Liechti e Biber 2016, Easdale et al. 2023). As shown in the previous paragraph, shepherding helps maintain the landscape as open and accessible, which contributes to the sense of identity for many rural and urban communities (Jewell 2022). The positive impacts on the landscape are recognized mainly by mountain communities but also by tourists who appreciate the landscape for recreational reasons, even if they are often unaware of the role of shepherds in maintaining what they seek in rural areas (Teston 2023). During winter, shepherds can also play an educational role for urban communities far from food production dynamics and provide them with contact with a rural reality that is not always appreciated (Genovese et al. 2022). To understand the extent of the shepherds' role in cultural identities, it is important to introduce the concept of cultural landscape as defined by UNESCO: "combined works of nature and human bear witness to a long and intimate relationship between people and their natural environment. Whether found in urban or rural settings, they are the results of diverse human-nature interactions and thus serve as a living testimony to the evolution of human societies" (Easdale et al. 2023).

Food security and sustainability

Together with the other sustainability aspects, the provision of ecosystem services makes nomadic pastoralism important in establishing a high-quality short food supply chain aimed to provide products suited for "responsible consumption" market niches that enhance and valorize local communities (Battaglini et al. 2022; Bindi 2022). Transhumance should be regarded as an Alternative Food Network (AFN), which is defined as a tool to avert the dynamics detaching producers and consumers and to provide knowledge about the process to produce food and its geographical origins (Colombino e Powers 2022). The demand for high-quality, healthy, traceable, and ethical food products is rising, thus potentially favoring food production systems able to activate a short supply chain characterized by complementarity between high-quality

products and ecosystem services provision (Zucaro, Genovese, e Battaglini 2019; Vigliotti 2023). The positive impact on grazed ecosystems results also in secondary food provision; these areas show an enhanced capacity to provide species important for culinary traditions, such as mushrooms, wild game, and aromatic weeds (Valorani e Vigliotti 2022). The adaptability to climate changes, the sustainable use of resources, and the conservation of animal genetic resources make transhumant breeding systems play an important role in food security and sovereignty recognized by FAO (Ganci et al. 2022; Teston et al. 2022; Easdale et al. 2023). Thus, nomadic pastoralism could represent a fundamental tool to cope with the increase in animal food product demand, climate change, and the current pursuit of sustainability in food production chains.



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3.4 [Current challenges undermining Alpine Nomadism](#)

Alpine Nomadism, despite its resilience, is a fragile system that undergoes several challenges shrinking its boundaries. Market dynamics and development

policies are the two main drivers of the difficulties undermining itinerant pastoralism. Mobility, shepherds' adaptive survival strategy, is the key to pastoralism's resilience and, at the same time, represents its weakness in the face of limitations to pasture access. Shepherds, partly by design as a strategy to access cultivated fields, have always occupied a marginal position in society and have suffered from stereotypes associated with the nomadic nature of their profession. The loss of wool's economic relevance for the regional textile industry fostered this marginal position, its political and institutional underrepresentation, and weakened its economic importance. The increased fragility of the sector made shepherds struggle harder to find their interstitial role between the expansion of agricultural intensification, urbanization, nature protection policies, and a meat market that is now more stable and reliable, while daily carrying out strenuous pastoral activities as they always did. Most of the problems related to these pastoral activities are concentrated in the plains, wolves' return to the Alps brought serious challenges also in the mountains. Extreme weather conditions such as extended rains or dry periods dictated by climate change can constitute decisive threats for those shepherds who don't have a relevant economic base capable of tackling environmental emergencies (Brilli et al. 2023). Whether physical, political, social, or natural, limitations to freedom of movement are the main driver of itinerant pastoralism's enhanced fragility.

Intensification of agriculture and urbanization

The expansion of intensive agriculture is reported by several researchers as the main driver for the reduction of plain pastures (Liechti e Biber 2016; Genovese et al. 2022; Mastronardi et al. 2023). The intensification of agriculture reduces land's accessibility for shepherds: some fields are permanently productive, other fields are dangerous for sheep's health due to high concentration of pesticides and chemical fertilizers, and finally, some fields produce hay for intensive sedentary cattle farms. Moreover, intensive agriculture is generally less inclined to recognize and value the positive impacts of grazing on fallow lands (Genovese e Battaglini 2021). These factors and the time

reduction of the season in which intensive agricultural production leaves space for pastoral land use imply a reduction of available grazing resources across the winter season. Urbanization in peri-urban areas further fragmented accessible land and forced shepherds to conduct their activities closer to populated areas (Regione Lombardia 2013; Cima et al. 2022). The resulting scattering of grazable plots forces shepherds to rely more often on car roads to move from one plot to another and to conduce their sheep closer to houses or public gardens, with an increase in residents' discontent with the shepherd's presence. The reduction of grazing resources is particularly problematic in March, when most of the agricultural activities start again; it is in this period that shepherds seek pastures along rivers and within natural parks. These dynamics reduce the ecological network of the agrarian landscape, thus undermining the land's role as an ecosystem services provider (Battaglini 2014; Mastronardi et al. 2023). At the actual state, these long-standing drivers (Battaglini 2000), alone, are unable to extinguish itinerant pastoralism; however, they wear it out by hardening working conditions and contributing to maintaining this activity in a fragile, stressful environment, over-sensitive to other difficulties.

Stereotypes and policy

Nowadays, nomadic pastoralism has inherited part of the mistrust that characterized its relationship with peasant communities, it is a mistrust rooted in the fault between nomadic and sedentary cultures and in the competition over land use. Stereotypes and intolerance have been reshaped in modern terms and are more frequent among urban populations disconnected from rural activities and without experience of pastoral activities (Genovese et al. 2022). The decreasing awareness about the pastoral world leads to conflict, misunderstandings, and stereotyped views that in small communities can influence political decision making (Liechti e Biber 2016; Genovese et al. 2022). Genovese and Battaglini researched how stereotypes about pastoralism can prevail in politics and highlighted that the idea that “shepherds steal the grass” is widespread among urban communities, oblivious of the fact that shepherds graze untapped resources (Genovese e Battaglini 2021). They also highlight the

differences between research participants from rural or urban areas, where the latter showed an uninterested and more conflictual approach to shepherdism, thus suggesting that awareness and knowledge are two important drivers of political accessibility and inclusion for shepherds (ibidem). The political recognition and representation of shepherds' rights is the way to integrate them in the decision-making processes (Nori et al. 2023). Public administrations proved to be unable to integrate shepherdism in territorial management plans; similarly, a lack of awareness can result in banning access to pastures (Genovese e Battaglini 2021; Genovese et al. 2022). Local authorities are often responsible for limitations to movement and grazing, undermining mobility and flexibility, two key strategies for shepherdism's resilience and sustainability (Nori et al. 2023). Researchers claim that across the world, the sedentary character of the national state promotes fixation of land use, thus negatively impacting nomadic pastoralism (Easdale et al. 2023). Governments often conceive pastoralism as a backward and anachronistic activity, therefore elaborating policies shaped on modernization dogmas of livestock commodification that "pursue stabilizing and controlling approaches" that undermine shepherdism (Colombino e Powers 2022; Nori et al. 2023). Nomadic shepherds are a cultural and economic minority in Lombardia and have limited means to influence political decisions; on the other hand, state institutions and development agencies are "ill-equipped" to assess complex shepherding systems (Nori et al. 2023). Shepherds' interests are often excluded from stakeholder analysis, and "many legal measures are shaped neglecting their needs" (Dessi 2023). This happens from the local level, up to the Common Agricultural Policy (CAP) of the European Union, which represents a decision-making center that is very effective in altering land's traditional uses through the distribution of subsidies (Dessi 2023). The EU, FAO and other international institutional bodies recognize the positive key roles of pastoralism for sustainable development (Teston 2023), EU in particular declared in several occasions its recognition of pastoralism in managing and maintaining high natural value farmland (HNVF) and pastures in less favored areas, through the strategies "Farm to Fork and Biodiversity Strategy for 2030" providing also financial support (ibidem, Mastronardi et al. 2023). Anyway,

herding activities are considered homogeneous by the EU, thus local herding traditions are excluded from its legislation (Genovese et al. 2022). CAP's financial support mechanisms are based on land property, disadvantaging itinerant pastoralism that doesn't own the land, but they manage it, keeping it productive (Nori e De Marchi 2015). Despite the declaration that recognizes pastoralism as an important practice for the EU's sustainability goals, the resulting impacts of EU policies penalize pastoralism (Nori et al. 2023). CAP, once conceived to enhance productivity in rural areas, resulted in degradation of natural resources, offer-demand discrepancies, land abandonment, and disappearance of traditional food production systems (Vigliotti 2023). The constant decrease in the number of pastoral farms in the EU demonstrates CAP's inconsistencies and an attitude that prioritizes some rights and interests while excluding those of pastoralists, supporting, for example, intensive livestock systems (Nori et al. 2023). The incapacity of government bodies and development agencies to tackle pastoralism's issues seems to be a long-standing problem, as declared in 1990 by the World Bank, "the pastoral sector experienced the greatest concentration of failed development projects in the world" (Nori et al. 2023). This suggests that the core development paradigm and the decision-making mechanisms are inappropriate for understanding and positively intervening in the pastoral world. EU policies have a direct impact on shepherds' decision-making and affect their "environmental, social, and political landscape" (Mattalia et al. 2018), and the difficulty of translating formal recognitions of pastoralism into actual enhancement of the sector is a source of discouragement, detachment, and mistrust towards the political landscape (Farinella e Nori 2020).

Market and economy

Market competition with imported products and competition with intensive livestock systems are the two main causes of sheep husbandry economic marginalization. Ovine farms are characterized by lower incomes compared to other typologies of farms, in particular intensive cattle dairy farms (Teston et al. 2022; Stauder et al. 2023). The industrialization of the livestock farming sector,

avored by agricultural policies and market dynamics, made it difficult for pastoral products to compete with intensive systems (Arrondo et al. 2023; Stauder et al. 2023). The intensive system does not depend on resource seasonality and is not located in marginal areas, as pastoralism and non-provisioning ecosystem services are not compensated by market dynamics and public policies; these factors further undermine the economic viability of extensive livestock breeding (Ramanzin et al. 2019; Teston 2023). As mentioned in paragraph 3.1.2, the local wool market is almost extinct due to the high competitiveness of imported wool. Similarly, despite all the itinerant flocks being only “grass-fed”, the only certified “grass-fed” sheep meat available on Italian markets is imported from Ireland (Dessi 2023). Local breeds, less productive but central for traditional breeding systems, have been marginalized by the intensification of the farming sector, leading pastoralists to abandon their local genotypes and farming systems with severe consequences on land abandonment and depopulation (Francesca Camilli et al. 2015; Battaglini 2021; Teston 2023).

Subsidies and distorting effects

As mentioned, governing institutions openly declared interest in supporting pastoral activities, even through financial support. Subsidies to support pastoral activities have been included in the EU’s development policies since 1997. More recently, the Farm to Fork strategies implemented in 2020 emerged as a new tool to financially support pastoral livestock systems (Cavalletti, Corsi, e Lagomarsino 2023; Teston 2023). Anyway, current measures are ineffective in tackling the decrease of pastoral activities (Cavalletti et al. 2023). As mentioned in paragraph 3.1.4, EU subsidies are based on land property, thus discriminating against nomadic shepherds, who, along with pastoralists in general, are “among those receiving the lowest support” (Nori et al. 2023). Subsidies for summer pasture are a crucial economic input for nomadic pastoralism (Stauder et al. 2023). However, this mechanism is considered by shepherds a mandatory trade-off with their demand for proportional reward for their food production (Mattalia et al. 2018). Subsidies for summer pastures distort the system of auctions used

to allocate rented mountain pastures (paragraph 3.1.1). Indeed, mountain pastures are often property of local municipalities that raise pasture's rents to intercept part of the support received by shepherds (Regione Lombardia 2013). This exacerbates the competition over summer pastures between shepherds and plain farms that dispose of larger economic resources to win the auctions. Moreover, attracted by the speculative interests in investing in mountain pastures generated by EU subsidies, more plain farms invest in alpine pastures with the effect of excluding local shepherds from their traditional grazing territories (Mattalia et al. 2018; Nori et al. 2023). In conclusion, the forms of agricultural support designed by CAP schemes often exclude shepherds, and the size of subsidies they receive is disproportionately limited considering the value of the ecosystem services generated by nomadic pastoralism (Cavalletti et al. 2023; Nori et al. 2023).

Generational turnover

The decreased capacity to attract workers is another relevant problem in this sector, caused by depopulation dynamics and the attraction of higher incomes elsewhere (Battaglini e Di Meglio 2022; Stauder et al. 2023). Indeed, generational turnover is a serious problem for the preservation of pastoral activities (Battaglini e Di Meglio 2022). Pastoral areas are among those experiencing the highest depopulation rates across Europe, 42.2% of farms in Italy are aged over 55 (Farinella e Nori 2020). The main cause is the discrepancy between harsh working conditions that require an “almost religious commitment” and low-income possibilities due to economic marginalization (Regione Lombardia 2013; Jewell 2022). The lack of expert personnel is also caused by outmigration to better-paid jobs in the industry, the tourism sector, or the Swiss pastoral sector (Liechti e Biber 2016; Stauder et al. 2023). Young generations without an agricultural background often don't bear harsh conditions coupled with low incomes; indeed, economic incomes are considered less relevant than lifestyle and cultural values by shepherds of all generations (Stauder et al. 2023). As mentioned in paragraph 3.1.2, international migration is an important source of workers, mainly from Romania and Morocco, often

with a pastoral background in their homeland. However, due to itinerant pastoralism's general fragility and uncertainty about its future, migrants, as young local generations, struggle to find career opportunities within it. Migration flows play an important role in sustaining the practice of shepherding, but they are not capable of tackling the sector's depopulation dynamics (Farinella e Nori 2020).



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3.5 Alpine Nomadism and Nature Conservation Policies

In the previous paragraphs, the multifaceted positive ecological role of shepherdism and its wide recognition by scientific research and institutional bodies have been highlighted. It is demonstrated that shepherdism shaped the mountain environment and landscapes already “between the Late Neolithic and the Bronze Age” (Duclos e Fabre 2022). Thus, suggesting that the pastoral itineraries between summer and winter pastures were also already characterized by biological and environmental variability shaped by pastoralism. Particularly in Europe, the landscapes that are commonly believed to be “natural” in the sense

of an environment never touched by human activities are instead the product of humans' interaction with the territory and its natural resources and owe their aspect and characteristics to low-intensity agricultural activities (ibidem). These activities have always been fundamental in creating and preserving the biodiversity of high natural value landscapes (Arrondo et al. 2023). Shepherds' strategic interest in maintaining a healthy ecosystem, their regular and recurrent activities generated unique environments different from those unaffected by pastoral activities (Nori e De Marchi 2015; Duclos e Fabre 2022). For example, the Crau plain is characterized by the *coussoul*, a steppe ecosystem habitat protected by the EU ecological network Natura2000. It is scientifically proven that the particular flora of this ecosystem wouldn't exist without a "centuries-old" sheep grazing, therefore the coussoul's ecosystem sustainability "depends upon the continuity of this type of breeding" (Duclos and Fabre 2022). Indeed, it is not coincidental that shepherding occurs in most protected areas; this suggests that shepherds have been the main actors in their conservation far before the rise of natural protection policies (Duclos e Fabre 2022). Pastoral itineraries often act as distinct ecosystems fundamental for migration, genetic exchanges, and distribution of wild species (Vigliotti 2023). Hence, nomadic shepherdism once again has a relevant role in managing protected areas with undeniable environmental benefits (ibidem). Shepherdism's role in maintaining semi-natural grasslands, important for biodiversity, is recognized by the EU directive "Habitat" since 1992 (Corti et al. 2010). According to FAO, traditional shepherdism plays a key role in natural capital's conservation, encompassing also different Agenda 2030 actions (Vigliotti 2023). Even at the regional level, shepherdism's role in safeguarding protected species of the EU directive "Habitat" and protected areas is recognized (Corti et al. 2010; Regione Lombardia 2013). Transhumant itineraries often intersect with the SPAs (Special Protection Areas, ZPS in Italian) and SACs (Special Areas of Conservation, ZSC in Italian) of the SIC (Site of European Community Interest) inherent to Natura2000 EU directive, it has been the thousand-year-old migration of herds that shaped and created the actual biodiversity of these protected areas through the benefits mentioned in paragraph 3.3.1 (Vigliotti 2023). The abandonment of

pastoral practices and the consequent reduction of grazing cause a reduction of grassland ecosystems, thus undermining habitats and biodiversity conservation (Nota et al. 2021; Dessi 2023). The abandonment of pastoral practices causes the decline and depletion of the stock of species, up to the complete loss of the habitat (Nota et al. 2021). The EU itself recognizes shepherdism's role and the severe threats that the abandonment of this practice poses to Natura2000 goals (Nori e De Marchi 2015). These aspects highlight the role that shepherdism could play in averting the actual productive paradigm and the human-territory relationship (the term nature here is neglected in order to give the nuances of something that is not separated from the human species) as it represents a sustainable productive system which has been refined by a thousand-year-old construction of knowledge (Vigliotti 2023).

Conflicts over conservation policies, riverbanks, and Natura2000

Despite the positive recognitions of shepherdism, it remains marginalized and dismissed by western mainstream conservation policies (Easdale et al. 2023). Indeed, shepherds feel underrepresented, if not excluded, from the conservation discourse whose policies directly impact their daily lives, denying them access to important grazing resources (Dessi 2023). This has the effect of detaching even more shepherds from politics and fostering distrust towards “externally dictated measures” (Duclos e Fabre 2022). For years, pastoralism has been identified as a major cause of “soil property loss and environmental degradation” (Dessi 2023). For example, in the coussoul of Crau, sheep and goats grazing was banned by the administration of “Water and Forestry” with the claim that it caused soil and forest deterioration (Duclos and Fabre 2022). The effect of the ban has been the acceleration of desertification and a severe weakening of agropastoral practices, leading some community members to emigrate or invest in tourism (ibidem). It is now clear that the relationship between shepherds and conservation policies is highly conflictual. As reported in paragraph 3.1.1, riverbanks always represented the traditional and historical grazing ground for shepherds, particularly during spring when most agricultural practices start again. Nowadays, riverbanks are even more a fundamental and

unique “haven” for shepherds because they assure grass and abundant water provision during the wait for moving to mountain pastures, which is considered the hardest period of the year for shepherds (Corti 2007). All four protection levels of Natura2000 areas, even the most restrictive, allow pastoral activities, particularly where the environment owes its composition to pastoralism (Vigliotti 2023). In this case, the gap between shepherds and scientific knowledge and policies is particularly evident. In the last decades, Natura2000 conservation policies in the northern Italian plains focused on river ecosystems (Regione Lombardia 2013; Nori e De Marchi 2015; Genovese e Battaglini 2021; Genovese et al. 2022). Mattalia provides a clear description of relationship dynamics between shepherds and conservation policies: “Traditional winter-feeding grounds along rivers have been declared protected areas by the regional legislation because of their high biodiversity. This has shortened and limited the time that shepherds can spend there, when they are not completely banned due to concerns over trampling, overgrazing, and disturbance of nesting birds. Shepherds argue that they should be allowed access for the ecological benefits of sheep grazing for that same biodiversity that park authorities aim to conserve, and further warn that without grazing, the areas will turn dirty, with adverse consequences for soil fertility and biodiversity” (Mattalia et al. 2018). The consequence is the exacerbation of conflicts between shepherds and protected areas managers; also, in this case, it emerges that in mountain protected areas, the presence of shepherds is welcomed and incentivized, while in the plains, the circumstances are reversed (Regione Lombardia 2013; Nori e De Marchi 2015; Genovese e Battaglini 2021; Genovese et al. 2022). From the shepherds’ perspective, conservation policies are inefficient, inconsistent, and detached from reality while negatively impacting both shepherdism and biodiversity. From the political point of view, these dynamics are an absolute failure in integrating pastoralism into the territorial planning. The case of riverbank protected areas is a vivid example of how unawareness and stereotyped views of shepherdism can translate into actual policies. The academic research states that it is possible to merge shepherdism and conservation policies through the *pascolo di servizio*: it is a system that implies a monetary exchange between park

authorities and shepherds that offer maintenance services through grazing, this practice could be implemented not only as maintenance measure but also as deteriorated ecosystems rehabilitation practice (Regione Lombardia 2013; Cima, Cau, e Maino 2022; Vigliotti 2023). This opportunity is particularly relevant if it is considered that park administrations and municipalities often lack the economic resources needed to carry out the expensive habitat maintenance activities with conventional methods (Cima et al. 2022).



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3.6 [Wolf's return in the Alps](#)

In recent years, the wolf population has grown everywhere, but in the Alps, the colonization has been particularly rapid, and wolves reached a population density of 10wolves/100 km² in some localities, one of the highest density rates ever recorded at an international level (Battaglini et al. 2022, Berzi 2022). The

wolf colonization of the Alps is therefore unique in its intensity and rapidity; in a few decades, wolves reached a “satisfactory conservation status” (Berzi 2022). Wolf’s population’s ongoing growth is quickly impacting herding pastures. Scientific research demonstrated that wolves’ attacks on flocks are more frequent when one or more wolf packs share the same territory or the territory of different packs intersects (Franchini et al. 2022; Dessi 2023). Itinerant pastoralism is a breeding form particularly affected by wolves’ presence; sheep flocks are an easy target for wolves because these livestock are more difficult to guard and protect (Mattalia et al. 2018; Berzi 2022). Shepherds are unprepared and inexperienced with wolves’ renewed presence (Berzi 2022). The return of wolves occurs in a working context that is already extremely fragile and under different types of pressures, thus it exacerbates the already existent challenges while posing a further threat to Alpine Nomadism (Benciolini e Belardi 2022; Stauder et al. 2023). The ultimate negative outputs of wolves’ renewed presence in actual terms are the loss of ecosystem services and the other related spillovers caused by an eventual further reduction of pastoral activities in the mountains.

Wolf’s return impacts on Alpine Nomadism

Wolf’s impact on shepherdism is difficult to assess because it depends on different local variables. Wolf packs can cover long distances in a day, and thus one pack can affect different localities. Therefore, economic and numerical assessments of predation’s impact can be constructed for each case of predation and eventually aggregated into a broader regional picture. For example, it has been estimated that wolf predation in 2022 in South Tyrol caused “more than 130.000 euro of damage” (Stauder et al. 2023). Economic assessments of wolf predation damage are limited by the risk of underestimating the damage, and, further, the loss of an animal due to predation has significance that goes far beyond its economic value (Benciolini e Belardi 2022). However, wolves’ economic impact on pastoral farms is higher in territories that have been recently colonized, whereas it is lower in territories with a historical presence of predators (Berzi 2022). This might be partially explained by the population dynamics aforementioned, by the morphology of certain pastures, which make it difficult

to implement protection measures, and by the typology of the herding system. Sheep grazing summer pastures, particularly nomadic flocks devoted to meat production, are the most affected by wolves' predation (Mattalia et al. 2018; Berzi 2022; Stauder et al. 2023). Itinerant flocks don't sleep in a barn and graze steeper and less accessible pastures; hence, they are easier prey for mountain wolves. Wolf's return implies changes in flock management. The first change has been the further reduction in flock numbers and the increase in the number of animals per flock, which affects pasture exploitation (Battaglini 2000; Nori e De Marchi 2015; Battaglini 2021). Further changes are prevention measures such as electrified mobile nets and sheep watchdogs, mainly the Maremmano breed. Adaptive transformations induced by wolves' predations are often negative for pasture management and animal health (Nori e De Marchi 2015). Indeed, they caused the complete abandonment of certain pastures in favor of more accessible areas where prevention measures are easier to implement, increasing the risk of overgrazing and affecting vegetal biodiversity (Battaglini 2021). An excess of nitric materials has been observed in the areas where electrified nets are used at night and an overall worsening of animals' health condition with an enhanced rate of mange, foot rot, and verminous (Nori e De Marchi 2015). This undermines animals' health, ecosystem biodiversity, the quality of the productions, and good land management through low farming activities (Battaglini et al. 2022). These transformations require additional workload, increase costs, and thus push shepherds to pursue reductions in general working costs (Nori e De Marchi 2015; Battaglini et al. 2022). In Switzerland, adaptation processes began 25 years ago, leading to a decrease in sheep numbers and an increase in goat numbers because goats are easier to protect (Stauder et al. 2023). Researchers claim that it had positive effects on the permanence of shepherds on pastures and on "guided grazing" (ibidem). Predation numbers are not the only driver for negative outcomes; the features and intensity of wolves' presence itself are a driver of stress and discouragement for shepherds who feel powerless in managing the problem (Battaglini et al. 2022; Stauder et al. 2023). The stress that wolves' presence implies can trigger pasture abandonment with the inherent environmental consequences (Stauder et

al. 2023). The threat to economic security can push those whose income relies only on shepherdism to poaching as retaliation or prevention, with potential negative consequences for wolves' conservation status (Battaglini et al. 2022; Franchini et al. 2022). These factors negatively affect the fragile shepherds' system, undermining the feeling of freedom and relative relaxation that characterized mountain pastures. Coupled with the serious limitations of the plains, wolves' return can push some shepherds to quit their activity (Nori e De Marchi 2015; Battaglini et al. 2022).

Prevention measures

In the Italian legal system, the prevention of predators' attacks is a requirement set out in Legislative Decree n. 146 of 26 March 2001 (Berzi 2022). Decision EC 772 of 29/01/2019 states that herders who request the state's financial support are committed to implementing prevention measures; otherwise, they would be excluded from compensation in the event of predation (ibidem). Prevention systems produce positive effects, but they are not usable in all contexts due to territorial morphology and are worthless for certain kinds of herding systems such as nomadic pastoralism (ibidem). Indeed, despite the implementation of protection measures, the predation rate remained elevated (Battaglini et al. 2022). Prevention measures face both practical and emotional limitations. The practical limitations are the additional high workload and costs to implement these measures in a context of time and financial limitations (Battaglini et al. 2022; Benciolini e Belardi 2022; Stauder et al. 2023). Indeed, wolf predations occur mainly in mountainous areas, such as alpine pastures, where the possibility of properly implementing prevention measures is often limited. Concerning sheep watchdogs, the problem is the number of dogs needed to efficiently guard a flock of 1000 or more sheep. Already, one watchdog can assault a tourist, and in this case, the legal consequences for the shepherds would be far more problematic than wolves' predation (Dessi 2023). To efficiently guard a 1000 sheep flock, watchdogs shouldn't be fewer than 4-5, shepherds claim, but such a pack of watchdogs could be a serious threat to tourists. It is important to note that often tourists don't adopt the proper behavior in front of

flocks and often lack respect for shepherds' working needs in the mountains (Benciolini and Belardi 2022). Most shepherds implement protection measures even if they don't seek monetary compensation, because they really care about their animals (ibidem). Economic compensations do not include collateral costs and workload costs; they don't take into account the emotional and ethical values, and thus they are not able to change herder's attitude towards predators (Battaglini et al. 2022). Compensation measures entail a significant bureaucratic workload for shepherds, which often leads to discouragement (Benciolini e Belardi 2022; Berzi 2022). The long time lag between the request and the actual compensation exacerbates mistrust in institutions and pushes shepherds to renounce legally reporting predation (Berzi 2022). For example, research highlighted that in Toscana, more than 50% of the attacks were not reported (ibidem). Franchini claims that the malfunctioning of the compensation system, combined with long delays and bureaucratic difficulties, leads to the renunciation of reporting predations (Franchini et al. 2022). Compensation and prevention measures are not able to tackle the predation issue, and from the cultural point of view, these measures are considered a submission to predators and thus ideologically refused by some shepherds (Benciolini and Belardi 2022). As in the case of subsidies, the flow of monetary compensation also distorts the use of predation to compensate for livestock losses caused by other events (ibidem).

Politics and the nature of the conflict

The difficulty in evaluating the economic impact of wolves' return influences public opinion and the political response, which still lacks proper management of the issue (Battaglini et al. 2022; Berzi 2022). Some local administrators implemented mitigation actions, but in a wider context that lacks coordination and confrontation at the national level (Berzi 2022). The disagreement between local and regional administration over a plan to manage wolves' presence hampered the political elaboration of a management tool to engage the issue and mitigate the conflict that emerged among social groups (Battaglini et al. 2022). The prevention and compensation measures are

ineffective because they are based on a simplified view of the issue that neglects the physical realities of the context in which the wolf-herder relationship occurs (Berzi 2022). The current political answer envisages an easy, peaceful coexistence of wolves and herders, a view based on an ideological, stereotyped view of the human-nature relationship and on limited knowledge of the characteristics of the issue in the alpine context. The problem remains “unmanaged” at the national level, and the absence of a proper answer pushes social groups towards polarized positions more and more influenced by populist political propaganda on both sides. Local stakeholders see the return of wolves as a reintroduction imposed by an external decision-making center through the implementation of projects such as “WolfAlps”. Shepherds identify in the EU and “environmentalists” as the perpetrators of a violent bypassing of their interests and decisional capacity (Battaglini et al. 2022). Battaglini claims that this conflict is rooted in latent wider conflicts of the post-industrial society (ibidem). Indeed, on one side, there are shepherds who consider themselves as “ecosystem keepers”, they are aware of human action on the environment and of their own role in pasture and forest management, and thus predators are considered as a threat to the thousand-year-old human-mountain relationship accurately built with hard work, generation after generation (Benciolini e Belardi 2022). In this view, wolves do not belong to the agropastoral landscape (ibidem). On the other side, there are the “environmentalists”, a term that for shepherds means urban people and the European Union. Thus, environmentalists are actors external to rural territories and activities that lack knowledge of the rural context in which they aim to operate, imposing their urban-shaped idea of an idealized nature-human relationship (ibidem). Battaglini states that the wolf is used as a symbol by groups, associations, and researchers to gain the visibility needed to contrast the mainstream conservationist discourses of an “ill-equipped pseudo-environmentalist mentality rooted in the post-modern society” (Battaglini et al. 2022). The conflict surrounding wolves’ return in the Alps goes far beyond the practical, physical working problems; it seems to affect more deeply the cultural, social, and emotional dimensions of social groups (Benciolini e Belardi 2022). Thus, it is a conflict increasingly framed between different human groups rather

than between humans and animals (ibidem). Apparently, wolves' return has the capacity to revive dormant local conflicts, and sensitization campaigns proved unable to tackle conflicts that emerged in both newly colonized areas and areas with a longer wolf presence (ibidem). Shepherds are distrustful of the information provided by institutions, scientists, and faunal specialists. One of the many reasons for mistrust is the poor field presence of these actors, which limits their field research to short visits (ibidem). Finally, shepherds could see wolves as a natural presence and could easily accept that some of their animals are eaten by wolves every year, but the phenomenon of overkilling is a well-known occurrence that fosters the stereotypical view of wolves as naturally evil and thus unacceptable in the fragile equilibrium of human life in the mountains (ibidem).

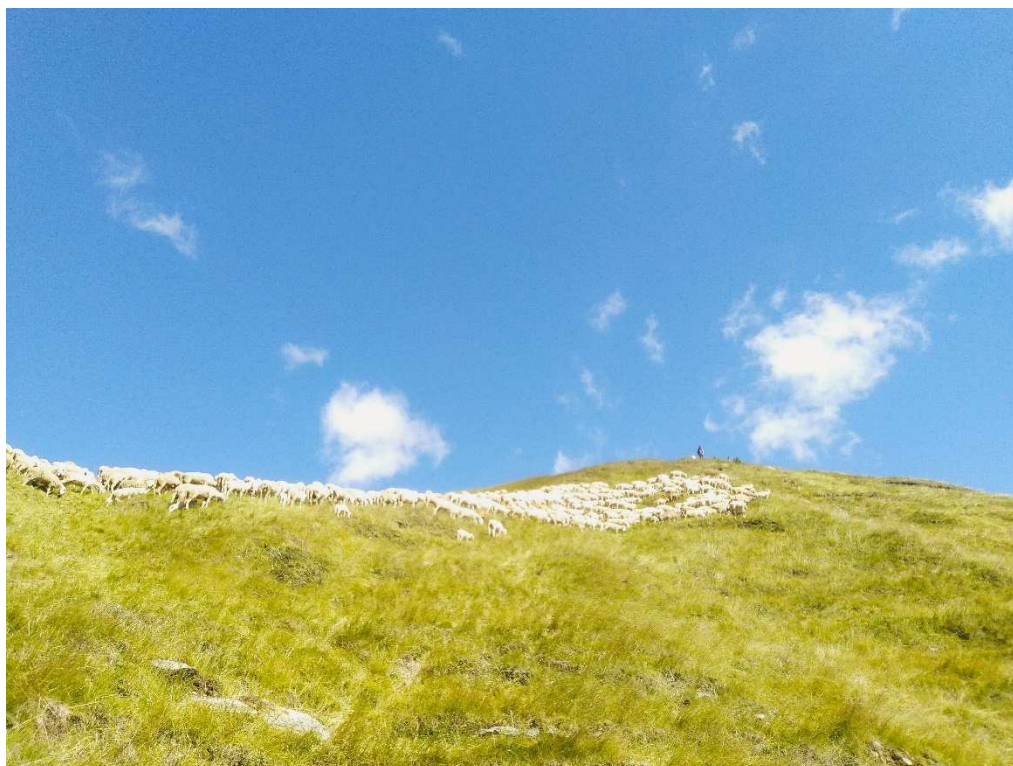


(author's personal archive)

4 [Methodology](#)

This study consists of two main steps. The first is based on literature review of the topic in order to assess the state of the art and to present the topic in its general features that characterize contemporary nomadic pastoralism in north

Italy and Lombardia. Data for the second section of the study have been collected through interviews with shepherds, field work in alpine pastures, and scattered plain pastures. Interviews have two objectives: mapping the itinerant pastoralism sector from shepherd's perspectives and scoping a specific case study on the recovery of alpine pastures through sheep grazing. This section is structured as follows: first, the case study of alpine pasture recovery will be contextualized; second, the methodological framework adopted for this study will be discussed.



(author's personal archive)

[4.1 Case study: pasture recovery in alpine pastures in the province of Sondrio](#)

Alpine pastures are mountain agroecosystems that deliver various ecosystem services to local communities, tourists, and the wider society (Teston 2023). Alpine pastures' main service is the production of high-quality fodder for farm animals that produce meat and dairy products for human consumption (Cima et al. 2022). Alpine agroecosystems' production is quantitatively inferior to that of plain farms, but they excel qualitatively, providing food products with

high-quality nutritional levels (Battaglini 2021; Mainetti et al. 2023). Alpine pastures have always been managed through extensive grazing. The important role of these agroecosystems is now recognized and included in the list of habitats protected under European Community-level policies (Battaglini 2021). Archeological and palynological studies demonstrated that alpine farming existed as early as 4500 b.c. (Lozej 2022). Historically, pastoral activities have shaped the peculiarity of alpine ecosystems and their provision of ecosystem services within a diversified landscape whose existence is linked to important ecological features (Arrondo et al. 2023; Brilli et al. 2023; Cavalletti et al. 2023; Teston 2023). Still nowadays, pastoral activities ensure the maintenance of the agroecological characteristics of alpine pastures characterized by complex morphologies (Marinelli et al. 2022). Therefore, most alpine pastures are artificial in origin and represent a “collective architecture” built over centuries of strenuous activities aimed at maintaining the human-territory equilibrium necessary for community sustenance (Marinelli et al. 2022). During the 2022 summer, I worked for one month as a “shepherd-helper” in an alpine pasture (1850-2800m) in Sondrio province in Lombardia. The location's name is omitted for participants' privacy. As in many other cases across the Alps, this pasture has been undergrazed for approximately 40 years, and certain areas have been completely abandoned due to rural depopulation. The quality of the pastures was low, and only a few rustic animals could graze there. In 2008, a shepherd started to graze part of those pastures since the local community was aiming to find someone to keep grazing their pastures. In 2013, this shepherd passed those rangelands to an 18-year-old shepherd who accessed these pastures with his 1000 sheep flock. Since then, he has come back every summer. As a consequence of the restoration of extensive grazing, the quality of the grass improved, and pastures became accessible to other farm animals. Indeed, a cattle farm in the valley bottom began to move its cows to those pastures that became suitable for cattle herding. The habits of wild animals changed, and the population of black grouse and rock partridge increased; these species were rare to see until then. The young shepherd, who already had a family when we met, has now drastically reduced his activity due to the difficulties inherent to itinerant pastoralism.

During the research in 2023, forced by circumstances, he sold most of his flock and aggregated his remaining sheep into a larger flock belonging to another shepherd. During winter, he sporadically resumes his nomadic lifestyle and follows the flock, while in summer, he retrieves his sheep and continues to graze the alp's pastures with a smaller number of sheep. Now, his plan is to keep grazing alpine pastures to access subsidies for mountain pastures needed to invest in the creation of his own slaughterhouse and process his sheep meat. His semi-abandonment of itinerant pastoralism has been received with sadness and regret by alp's stakeholders who consider the shepherd a fundamental presence for the wealth of the place and for the perseverance of traditional farming systems. The aim of the case study is to investigate the impact of the recovery of pastoral activities according to local stakeholders.

4.1.1 Case study data collection

The data for this case study have been collected through direct participation in pastoral activities and through semi-structured interviews. The participants were the shepherd and a 74-year-old hunter belonging to one of the families that traditionally "loaded" the alp every summer, every year, generation after generation, carrying out traditional mountain agropastoral activities. The hunter is also a member of the union that administers the alp. The union administers mainly grazing activities, maintenance works, and pasture rents. Due to time and financial limitations, it has not been possible to interview lodge owners who spend time in the alp (Lombardia) during the summer holidays, as their winter residences are spread across the region and it was difficult to contact them. Informants suggested not to interview the owners of the cattle farm that benefited from sheep grazing because they are said to be "jealous and false, they benefited from shepherd's work, but they will tell you that he is a problem, it is people that is better not to have contact with" (extract from hunter interview). In order to find more participants, it has been asked to the hunter to contact other local stakeholders if possible. Initially, he agreed to, but then nothing followed. The hunter seemed to be slightly suspicious of the willingness to talk with other informants. The shepherd, whose origins are in the province of Bergamo and

who sees himself as a foreigner in Val Chiavenna due to a different dialect and cultural background, warned that “in that valley, people are always suspicious”. This resulted in not insisting in order to preserve the positive and trustful relationship established with the hunter. Insisting on this point possibly meant to mistrust the information that the hunter generously provided and to overcome his role. Anyway, the hunter was really welcoming and showed vivacious recognition for the study’s interest in Alpine agropastoral activities. Further, the shepherd knew that the local stakeholders were informed about his cessation of pastoral activities and that they were worried about the risk of under-grazing or abandonment of pastures. These dynamics worried the shepherd because he thought the alp inhabitants might have been looking for another shepherd (also a participant in the study) in the neighboring valley to provide him with access to pastures and maintain a good level of grazing. Therefore, the shepherd seriously requested to investigate the hunter’s willingness to provide him access to pastures for the summer. This investigation received extremely positive feedback from the hunter. Once reported to the young shepherd, he felt welcomed and confident about access to grazing resources for his sheep in summer. His concern was legitimate. The hunter said that the neighboring older shepherd had already tried to persuade the union governing the alp to give him the pastures for the summer because he guaranteed satisfying grazing levels. The role emerged in this “negotiation” highlighted the trust established both with the hunter and with the shepherd, and allowed access to relevant information. Furtherly, this role provided the opportunity to observe and take part in the personal and emotional dynamics that evolve around mountain pasture access. The investigation of shifts in the incomes of the local municipality has been neglected because the economic impact of pastoral activities recovery is not considered relevant by local stakeholders; moreover, their residences are dispersed in different municipalities; therefore, an economic assessment of income shifts in the local municipality would have been deceptive.

4.2 [Research design and research questions](#)

The qualitative research design of this study is characterized by the following inquiries, which outline its objectives:

- Sector mapping main research question: *which is the current condition of itinerant pastoralism in Lombardia?*
- Sector mapping secondary research question: *which are the main issues undermining itinerant pastoralism according to stakeholders? How do shepherds regard their future? What would they need to enhance itinerant pastoralism?*
- Case study main research question: *which is the impact of the recovery of pastoral activities in the alp?*
- Case study secondary research question: *how the recovery of pastoral activities is perceived by local stakeholders in the alp?*



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4.3 [Methodological approach: principles of dynamic system thinking and mapping](#)

This study sources its methodological framework from the document “System Thinking, mapping and Change in Food and Agriculture” (Dentoni et al. 2022). This methodology is rooted in the idea that it is crucial to engage with

local communities and the private sector when carrying out research for agricultural development. One pillar of system mapping is the visualization of actors and problems as “two faces of the same coin” (ibidem). Systems-thinking is an analytical approach that focuses on the interdependency of the actors and their interactions in a given system. Systems-mapping refers to the collective creation of visual materials that describe the complex set of relationships and feedback loops among actors inherent to a given system. This approach involves stakeholders in participatory research strategies. The ultimate aim is to influence policies through a bottom-up process. The *bottom-up* dimension is another pillar of the methodology, and it is translated into practice with participatory approaches. The means are providing stakeholders with the opportunity and the tools to elaborate their map of the problems and actors related to their reality. The participatory research tools should “support participants in their collective sensemaking and envisioning process”. According to the theory, this process enables stakeholders to develop their theory of change and a pragmatic capacity to influence positive changes for their sector. Systems thinking and mapping are devoted to providing the tools needed to engage complex problems with innovative approaches rooted in “practices of active listening, reciprocal empathy and collective experimentation” (ibidem). This approach framed the research in a way that favored the bottom-up dimension of the information that emerged and partially helped in creating a relaxed environment for the interviews.

4.3.1 Implementation and limits of the methodological framework in the research on itinerant pastoralism

In this section, certain points of the methodology will be analyzed in relation to this study. The methodological strategies here analyzed are those that sharply emerged during the field research. Limits of the research will be highlighted. The aforementioned paper suggests involving study participants in participatory practices such as focus groups and workshops (Dentoni et al. 2022). The main limits to implementing these strategies have been time and financial limitations of the research. Focus groups and workshops imply the implementation of

practices aimed at collectively depicting causal loop diagrams and value network maps. It has not been possible to implement these practices because the stakeholders involved in the research are geographically dispersed and far from each other. Furthermore, participants lack the time required to carry out such activities. Finally, shepherds do not easily collaborate with each other if it is an external request. According to field experience specifically inherent to this study, such an approach would run the risk of distancing the researcher and participants, who would feel the pressure of “being studied” and thus corrode the quality of the information collected. These participatory activities aim to cover processes of “knowledge cocreation” and “group model building”. These processes are meant to enable participants to develop the capacity of “understanding complex problems and envisioning changes” (ibidem). *Knowledge cocreation* refers to “complementing experiences and information available to multiple stakeholders influenced by the problem at hand” and *group model building* to “collectively drawing a systems map integrating the knowledge and perspectives of diverse actors (...) and give participants a concrete understanding of how they individually and collectively relate to the problem” (ibidem). Shepherds are constantly in contact with each other through phone calls and social media. Their nomadism allows them to interact on multiple levels with diverse social actors within and outside their sector. This interaction is so enhanced that the distinction between inside and outside the sector fades away from the shepherds’ system of actors and interactions. Therefore, during the research, it emerged that shepherds are deeply aware of how they relate to issues individually and collectively. They show a clear understanding of how their problems intersect with the problems of other actors outside their sector. The forementioned methodology considers this understanding the first step to envision a “collective process of system mapping meant to collectively address a complex problem” (ibidem). Another visual tool proposed by this methodology is *the value network map*. The elaboration of a value network map aims to provide participants with the tools to recognize power structures, patterns of dependency, and trends in resource distribution. In this case, shepherds’ daily interactions with diverse actors provide a clear depiction of what value network maps aim to highlight. It can be argued that

through its interstitial dimension, nomadic pastoralism reaches a great variability of realities. Being aware of their position in society is an important part of the shepherds' work, as clarified in paragraph 3.1.1. Being aware of their position on the map of actors, issues, and resources is vital. This awareness is a refined capacity of shepherds to maintain the social relations that allow them to cross roads, municipalities, natural parks, private fields, and cultivated crops. The methodological framework considers this awareness a "necessary step to envision systemic change". Indeed, shepherds demonstrated efforts to collectively address issues when they tried to acquire and enhance the failing wool-laundering center "L' Ariete" in 2020-2021. Another example of collective action to interact with the political landscape is the creation of a section for itinerant pastoralists within the preexisting association "*Associazione Pastoralismo Alpino*" in 2021. Anyway, at the beginning of 2024, itinerant pastoralists are seeking to create their own association to address the specific issues of itinerant pastoralism. On this basis, it can be argued that shepherds own tools similar to those that these participatory strategies aim to develop and to provide to study participants. Therefore, the effects of the non-implementation of such strategies are mitigated by shepherds' deep awareness and understanding of the complex system of issues, actors, and interactions affecting them. Anyway, the process of knowledge cocreation has been adapted to the needs and limits of this study. During the interviews, previously collected experiences and opinions of other participants have been reported; some questions included confrontation with others' viewpoints on the topic. This resulted in indirect confrontations between participants. The answers and reactions provided contextualization of others' experiences. Thus, this indirect confrontation provided sights from different angles and allowed us to grasp a deeper understanding of the experiences and opinions collected.

4.3.2 Critical methodological aspects inherent to the research on itinerant pastoralism

This paragraph will discuss some limits inherent to the methodology used in this study. The methodological limits are specifically related to the research

on itinerant pastoralism. The authors of the forementioned paper argue that for participants, being aware of “their reciprocal views of the system and roles in it and of the problems entrenched in them” provides participants with “concrete strategies and narratives that influence policy makers, business actors and civil society” (Dentoni et al. 2022). Anyway, this view neglects the sociopolitical landscape in which the subjects of study are inserted. Some issues are systemic and require large-scale political interventions, and if politicians do not care about pastoralism, any sort of effort runs the risk of facing a dead end and thus fostering discouragement and disillusionment. Shepherds’ awareness of their position in the wide sociopolitical landscape is based on their practical experience. This awareness is framed in terms of a system that neglects pastoralism’s needs and offers; the system is generally seen as something malfunctioning and corrupted that needs to be reversed. Initiatives originating externally from the pastoral world are seen with skepticism; internal initiatives are conducted with solid prudence. A methodological approach that aims to enhance study participants’ capacity to influence systemic changes shouldn’t consider only the position of the subject in the map, but also how its emotional relationship with the wider system is framed, and it should consider the attitude of “the map” towards the subject. It should be included in the theory an analysis of the variables outside the subject’s intervention. For example, in the case of itinerant pastoralism, shepherds have little power to intervene in EU agricultural policies that promote permanent crops in winter and thus exclude herds from grazing them. Another critical aspect is related to the participatory tools and their feasibility in a mobility-based nomadic context in which subjects have very little time off from work. These critics highlight the need to develop a methodological approach suited for mobility-based pastoralism. The implementation of a methodological approach designed to assess sedentary contexts will likely face significant limitations in nomadic contexts. The last critical aspect is related to the attitude towards participants that seems to emerge from the expected outcomes of the participatory approach. It seems that this methodological approach, despite its good intentions of creating bottom-up depictions, remains bound to the assumption that study participants don’t know their position in the system and

thus they need the help of participatory tools such as focus groups or workshops. What is being criticized here is not the methodological tools and the methodology itself; on the contrary, it is considered fundamental. The aims of the participatory approach tools should be reversed. It is more the researcher who needs these instruments of data collection to grasp a clear understanding of the complexity of the system analyzed, not the study participants. Stakeholders are already within the system we want to analyze, and having a deep understanding of the system is part of their survival strategy. Therefore, the goals of the participatory tools expressed in the aforementioned paper should be referred to as enhancing the researcher's capacity of understanding complexity, not that of stakeholders. This approach certainly contributes to clarifying and organizing stakeholders' perceptions and thus to envision strategies of change, but it is the researcher's need to implement them.



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4.4 [Field research](#)

This paragraph will present the list of participants involved in the research, the main questions of the semi-structured interviews, and the ways in which interviews have been conducted.

4.4.1 Study participants

Study participants have been chosen according to direct personal knowledge in the first steps. Secondly, other participants have been suggested by shepherds contacted in the first moments of the research. Another criterion of choice has been the profession practiced, for example, one of the participants is a veterinarian who works with many itinerant pastoralists in Lombardia and owns a flock too, another participant owns a flock and a slaughterhouse that produces cured sheep meats, and finally another participant is one of the last merchants working with local wool. The geographical area of the shepherds' winter grazing batida is found in the provinces of Brescia, Cremona, Bergamo, Monza-Brianza, Como, Milano, Varese, Pavia, Alessandria, and Novara (Piemonte). Summer grazing areas of study participants are found in the provinces of Sondrio, Bergamo, and Brescia. Participants' real names have been substituted with artificial ones invented ad hoc to protect their privacy. Artificial names are preferred to numeric ones in order to give a lively identity to the individuals involved. It is reported the section in which each participant is involved, the age, the years of pastoral activity, when possible, and the gender. Years of activity are just an approximation based on the official entrance into the world of work. Indeed, all participants carried out part-time pastoral activities already as children, driven by passion or their family's needs.

-Profeta: shepherd, sector mapping, 36 years old, 20 years of activity, male

-Monte: shepherd, sector mapping, 18 years old, 2 years of activity, male

-Gengis: shepherd, informal "leader-spokesperson" of shepherds in Lombardia, sector mapping, 42 years old, 26/24 years of activity, male

-Oste, shepherd, sector mapping, 22 years old, 6 years of activity, male

-Vagabondo: shepherd, sector mapping, 20 years old, 6 months of activity, attended the first Italian pastoral school, male

- Anellodoro: shepherd, sector mapping, 50 years old, 33 years of activity, male
- Il Buono: veterinarian and part-time shepherd, sector mapping, male
- Occhiofurbo: owner of a slaughterhouse and part-time shepherd, sector mapping, 12 years of activity, male
- Macco: local wool merchant, sector mapping, male
- Eremita: shepherd, sector mapping, alp case study, 28 years old, 12 years of activity, Rida's husband, male
- Rida: part time shepherd, sector mapping, alp case study, 24 years old, 6 years of activity, Eremita's wife, female
- Il Saggio: hunter, alp case study, 74 years old, male

4.4.2 Questionnaire

The questions inherent to sector mapping are based on the main problematic aspects that emerged from the bibliographic research. Questions are gathered according to theme. According to specific contingencies, questions have been slightly modified during interviews.

Sector mapping

Grazing resources:

- What are the problems in finding grazing resources in the mountains/plains?
- Which actors are involved? for whom is it easier to find resources? how are the actors involved part of the problem?

Resilience and mobility

-What are the physical problems that prevent the free movement of wandering pasture?

- Which actors are involved? Who benefits from an ungrazed pasture? how are the actors involved part of the problem?

Bureaucracy

-How does bureaucracy limit your work? How does it impact the work time of the day?

-Who makes the laws? who monitors their implementation? are you consulted in decision-making processes?

Natural parks

-What is your relationship with natural parks? what does their land represent to you in terms of grazing opportunities?

- How could they be managed in a way that favors both stray grazing and the interests of governing bodies?

Subsidies

-Do subsidies help you? do they have distorting effects?

-Who gets the subsidies? do they favor some rather than others? who manages their provision

Meat production

-What does meat represent as a product in economic terms? Which is the meat market, who is involved? Is it a reliable income?

Personnel recruitment

-Are employees relevant to carry out all the herding activities? Who are the employees, how do you connect with them? Is it difficult to find personnel?

Untapped resources: wool

- Why wool has not its fair price anymore?
- How these impacts on sheep breeding activities such as genetic selection?
- Is the lack of wool-processing infrastructures important?
- Is the problem of wool undermining the perseverance of shepherding?
- How do you face the problem?
- Is it meat selling a good and reliable alternative?
- How much wool do you produce every year?
- How much is the production cost for you?

Alpine pasture case study:

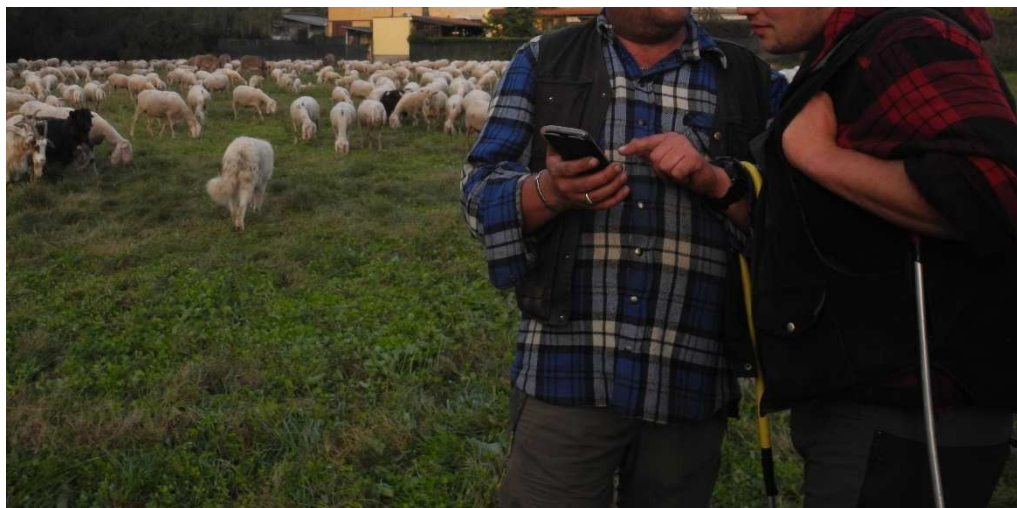
- What's different here since the resumption of sheep grazing?
- Is it a positive presence for the community?
- Was the presence of the sheep flock fundamental for the resumption of cow grazing?
- What are the problems and positive outcomes related to pastoralism?
- Economically, has anything changed?

4.4.3 Participant observation and interviews

Interviews occurred in person and have been recorded with a smartphone only after obtaining informed consent from participants. Only the interview with the wool merchant occurred through a phone call. Vocal recordings have been manually transcribed, as the use of verbatim software has been futile due to dialectal expressions and pronunciations. After the first interview, questions have been shaped in a more adapted form. Each interview provided quality improvements in terms of question management. Interviews have been conducted as informal conversations; questions provided hints to spur the continuation of the conversation. All participants engaged in the study with reliability and enthusiasm. Participants demonstrated positive feelings at the end

of the research. Shepherds saw their participation in the research as an opportunity to express their point of view, which contributed to their active participation. Indeed, the bottom-up process of knowledge cocreation inherent to the methodology was explained during the first meeting. All stakeholders wanted to clearly understand the aim of the research and showed appreciation for the informal participatory methods, particularly for the bottom-up dimension. Phone call interview excluded, only 3 interviews occurred in a meeting designated to carry out the interview. Besides the period of summer work with one of the stakeholders, all the other interviews have been related to the participation in pastoral activities or connected activities. Most of the interviews occurred only after spending the whole day helping shepherds with their activities, sharing daily meals, and off-work moments. Working with the shepherds helped to break the ice on both sides and shorten distances. It helped to materially experience the research topics and to gain the trust of shepherds. It ensured a better understanding of the information collected and gave shepherds the feeling of talking with somebody who is not completely external to their environment. Knowing the general functioning of itinerant pastoralism allowed to avoid redundant explanations. Therefore, it allowed access to a deeper layer of study participants' perceptions. The most relevant activities have been helping with the inoculation of anti-mange vaccine and helping during particularly difficult transfers. Other related activities have been the rescue of semi-wild goats and the care of orphan lambs. With two shepherds, the relationship evolved particularly deeply, and sharing of meals became a habit. In the case of a shepherd who does not own a driving license, it often happens to drive him to food and working materials shopping. In some circumstances, I participated in informal meetings in a local bar aimed at investigating the availability of resources related to other shepherds' movements. It occurred to be present during disputes over access to grazing resources, with unexpected unfolding that will be cleared in the next section. In general, the relationship established with study participants has been positive, and interviews occurred in an informal and friendly environment. Excluding 2022 July, interviews occurred between November 2023 and January 2024. All the participants made themselves

available for further doubt clarifications and questions. Indeed, it occurred to contact some of them through vocal messages and phone calls to collect specific information about secondary details.



(author's personal archive)

5 [Research's results](#)

This section reports interviews' shreds. The section is organized in order to follow the structure of the first chapter as much as possible. Question reported in section 3.2.2 provided the external boundaries of interviews. Only the main questions will be reported, accompanied by certain secondary questions that emerged during the interview. In order to valorize the bottom-up dimension of the study, an important space is given to shepherds' statements.

5.1 [Sector mapping](#)

Interviews' results inherent to sector mapping will be reported first. The case study's results will be reported in their specific section.

Plain pastures, PAC, and cover crop

This section shows how access to plain pastures is managed and how shepherds perceive themselves in relation to landowners. It also shows issues that emerged this winter (2023-2024).



(author's personal archive)

How do you find plain pastures and what are the problems in finding it?

-Madonna, the pasture. The problems are not very serious, then it's the people who have become a bit brawler against herders. With the batida for the moment we are doing well. - Profeta.

-The main problem for winter grazing is that we have nothing of our own, we always have to go to grazing where agriculture has a deficit, where agricultures have winter standstill. Weather changes affect us a lot, for example if it rains 15 days later or earlier, in winter it can change our life. Nothing depends on us for winter. That is the big problem. – Gengis.

-To roam around you have to understand that nobody cares if the shepherd doesn't pass. If you show respect everyone will let you in, at least in all private fields. They basically pity us, they let us eat. – Anellodoro.

-I went to a barn to ask if they cut or not the grass, if they let me graze or not. A small gesture, a cheese, maybe a lamb, it's always a good behavior. - Profeta.

- On the plains you must look day by day, know all the private stuff. If you've been passing for a few years, they know you. It's convenient for some, they let you in, you give your clean to the field, and they save some fuel. -Eremita.

- If it rains a lot, the fence tonight, I have to put it in a fallow place or a place they plow. These things make the difference. Shepherds who don't understand these things, they damage agriculture. - Anellodoro.

These statements highlight the social tools implemented by shepherds to maintain good relations with landowners. Shepherds perceive themselves as borrowers towards the landowner that “let them graze”. Therefore, shepherds pay attention to respect other land uses of the each plots they graze, adapting their activities accordingly. Another aspect that should be scrutinized with more attention is the positive economic return for farmers. Indeed, particularly for corn fields after the harvest, sheep grazing corn stubble fields reduces an important amount of mowing workload for the farmer. Profeta once reported that a farmer thanks him each time for allowing him to save 30% of the fuel normally needed to clean up stubble corn fields after the harvest.

Does it still make sense to talk about *batida*?

- Maybe it makes more sense than it used to. We usually declare a path to ASL. And this is very important because if anything happens, they manage it, they also create a lot of order within Lombardia. In Veneto and Friuli, they don't have this kind of management and there is a lot of disorder. - Gengis.

Would a formal document for the right to graze lowlands help?

- I think in Italy there is not that concept yet. The shepherd is seen as a poor man, a wretch. Instead, in Switzerland it is already a whole different thing, the state gives you your area for the winter. They cut many, many more fights like that. – Anellodoro.

Would you prefer it if there was the possibility of moving between mountains and plains without trucks?

- Eh yes! It's 15,000 each time! In Piemonte, there is the river, so they follow the Po on the embankment. So, then you are out of the traffic, those who have the big main rivers still go on those rivers that are not within a natural park. – Anellodoro.

Participants who have their batida in intensive agriculture areas immediately reported the negative effects of the new CAP, claiming that it affects them negatively.

- *This year, with the new 2023/2027 CAP they put in a second crop with a 2 or 3% increase in the annual CAP grant. Those who do now a second crop on corn, they used to harvest around the beginning of August and then leave that land uncovered until March. From November to March, we had that pasture. April and May, we would go into the fallow lands. That was where we used to go all winter, in the lower Bresciana area, now there is very few plots left... – Occhiofurbo.*

- *Maybe you have land for a month or two, between harvest and new planting, you could be there with 2000 animals. And suddenly there's no more space for even 50! You don't know anything about what they're planning to do unless you know the landowner and he tells you what land you can graze for a period. You have to go on crazy laps to get from one field to another. The problem of the cover crop is very tough. This one is a turning point year. If in January, February you don't have anything left, you sell the sheep or you are forced to give them hay, or else you have to change region, where they don't do these things. Some people are starting to think about going elsewhere, like Tuscany, and it means higher costs for trucks and not going home anymore... tougher working conditions and maybe somebody will quit. - il Buono.*

- *Shepherds who go around in the lower Po Valley where there used to be a lot of grass are the most penalized. In Varese and Como area, acorn forests can be found, meadows are there anyway. Farms' needs change, regulations change for them, and consequently life changes for us. - Gengis.*

- *I heard many farmers, good people who are like "I love you to death, however, I'll take the CAP money, I won't let you in, because if by chance a drone goes by and takes a picture of sheep in my field, my CAP grant will be gone. – Eremita.*

- *Here there is not so much intensive farming, here they don't do double planting, here there are many meadows that just stay meadows. Already in S. I had to leave*

some fields behind. I have already grazed some pieces because I have known the owners well for so long. This year especially down to Brescia, with the swine fever, 20km or 30km from the farm is red zone. Some shepherds have big problems because of that story. - Anellodoro.

The communication between the shepherds and the owner can be fundamental to knowing when certain pastures are accessible. In this case, the array of social relationships between farmers and shepherds is part of the system of flexible resource management. Another relevant aspect is how agricultural policies and the emanation of subsidies in other sectors influence pastoral activities since they share the same land resources, but they are not taken into account as stakeholders. This fact underlines the lively interconnection between conventional agriculture and shepherdism.

Before taking this sort of decisions at the agricultural level, do they involve pastoral stakeholders?

-Noooo! But we went to make complaints. They say that land in winter must always be covered by something. But if you let the land rests, it will cover itself in greens. – Gengis.

-It's a sorrow because they didn't think about pastoralism, that we were going to be in trouble. Our good governors have seen the rules of the European Community long before, however they probably didn't take us into account. – Occhiofurbo.

-Instead, they could do something like, since the sheep fertilize, to give the money to the farmer to bring in the shepherd. It's a reversed thing, doesn't the sheep fertilize? The sheep pass, eat and fertilize. It's an upside-down world. - Eremita.

- Bring in the sheep who leave the nitrogen anyway, certainly cheaper on their part too, because they have to plow and sow anyway. They did it not thinking that anyway pastoralists too were using all this land. – Occhiofurbo.

Not considering shepherds as stakeholders of agricultural policies fosters their detachment and mistrust of politics. It is clear how in shepherd's perspective the cover crop policy is counterintuitive.

I thought that infrastructures, urbanization and car traffic were more problematic

-At the end of the day you knew the road you were crossing at night, you knew that the village there was busy, then you just leave early in the morning. It wasn't a problem. – Eremita.

-You can have the Everest to climb if there is grass on the other side, but if there is not, there is not. I'll maybe stop a herd or two for a month this year and feed them with bought hay. Nowadays it is difficult the whole year. Today it is a disaster, as these two years... I have never seen it. This year it's a big question mark. – Gengis.

The reduction of pastures due to urbanization and the limitation of movements due to the increase of infrastructures are an example of the many obstacles that shepherds have faced and overcome. Anyway, these factors contributed to shrinking pastures, to undermine shepherdism's stability and to make itinerant pastoralism more sensitive to further pastures reductions.

Why is this year a turning-point-year?

-It caught us unprepared; they postponed the new PAC implementation. In theory it was supposed to be a year like any other. But farmers actually had already prepared for the change, so we are at the turning point. When you're not on yours... when I realized it was too late. – Gengis.

-Fortunately, there are some who have not done it. The sheep are thin because they are eating less than previous years. As soon as they allow to fertilize the land with pig sewages, we can't get into those either. They always did it, but they were waiting for us to pass by. There was a lot of fallow land, now there is little land where they can spread sewages. – Occhiofurbo.



(author's personal archive)

Summer pastures and distorting subsidies

Related to summer pastures, participants mentioned that subsidies for mountain pastures in the previous years created distorting effects that still affects the system of auctions to access mountain pastures. As mentioned in paragraph 3.1.1 summer pastures are rented by shepherds each five years through a system of auctions. Usually, summer pastures are property of local municipalities that manages those auctions.

Are there issues for summer pastures?

-That summer that keeps storming you'll bring them (sheep) down bad, the summer that it gets too dry some pastures are without water. – Gengis.

-Having the animals outside, stability of the weather is so important. It's a few years, 3, 4, that we have strange weather. Now, there is difficulty for transhumant herding even in summer. Ten years ago, it used to hail sometimes, it was more distributed, now instead, maybe it's 20, 25 days of rain. If it is dry from half July to August, then the grass doesn't grow again. Because it's not warm enough at 2000m. It's a problem because you work on animals' fattening. - Occhiofurbo.

-The municipalities inflated the rents because they knew that certain shepherds or herders could take 50.000 € of subsidies, so they raised rents up to 30.000 €. – il Buono.

Other distortions are related to incentives given to young agricultural entrepreneurs that enter the pastoral world. These incentives are supposed to stimulate young people to enter the agricultural world. In some case they provided the financial means to win auctions over longer established shepherds.

-It comes a young farmer, fresh out of the agricultural school and they give the young farmer 50.000€ to start. Now from this year the law has changed. Back then they kept the sheep for 5 years, they took the 50.000 each year for summer pasture, made that 300,000€ and then sell everything. Roberto, a lifelong shepherd! Where he used to go to, it is a beautiful mountain and they took it away from him, young herders! Because they had more money to win the auction. In four, five years, these people don't have a single sheep left. Now, they throw the auction up to 30.000€. But if the mountain gives you 45.000€ of subsidies, how can you give them 30,000€ for the rent? So many who go to the auction of big pastures, only graze the comfortable areas and they leave behind the bad ones. That is not correct, the mountain has to be cleaned. The mountain remained dirty, and they took the money anyway. Maybe those who have children, so many shepherds are left stranded because of these young farmers that don't even know what a sheep is, they don't know how to give them a puncture, they don't know what it is to live in trailers. They only participate the auctions for the money. But you also have to consider those ones that sweat for an entire life. In a mountain, they burned down two lodges just because of jealousy of subsidies. - Profeta.

Do subsidies favor some over others?

-Now they made new rules. Our problem was that farms with economic possibilities would come up and throw the pastures' rents sky-high. They would buy cattle to send it to the alpine pastures in the spring and sell them as soon as they came down. They ruined the market a little bit. The little, tiny farms were cut off. However, the small farms go up because we need to. Some people are

there all year round. That one (plain farms) comes up and takes money away from the territory. Because if I'm from the village, I redo the little wall, or the roof of the hut, I invest there. But if I'm there with the water at my throat and you also take away the pasture... –Anellodoro.

- If it's an already established farm, nice and stable, you're more likely to get them (subsidies). Subsidies always favor those who already have big shoulders. They don't help the smaller one. Put a limit. Then the pastures would stay cleaner because they would be grazed better. – Eremita.

-Maybe he already has another job and anyway he moves ahead of those who do that (pastoralism) as life profession. – Rida.

-Then he has no interest in cleaning the mountain. You have to load the pasture for 60 days. By the 61st maybe the sheep are already sold or are already slaughtered. But he doesn't take care of the mountain, he does the mandatory days and that's it. – Eremita.

-In the end subsidies almost went to zero because I compete with you and you compete with me for rents, so the margins are finished. The shepherds of the past didn't have subsidies and they did something, much more than I did with subsidies. Now this problem is ending. Before they had very high fattening-related bonds per hectare, these bonds could be related to the land and it didn't matter where the hectare was located, bingo! They found that in the mountains the land was much cheaper than in the plains... We go to the mountains, in any case, because it's our job, those people are the first ones to abandon it. And now there is a risk of abandonment of the mountains because the rents remained high, and if you rely only on the subsidy, you stop. The high rent does not go down until the next auction; however, the auctions have to go empty. But if you have the animals, you don't have the privilege of deserting the auctions in May. The auctions should be done in November. There has been a 60% drop in contributions, rents are high, costs as well, a lot of people now will wait the end of their contract and then that's it. – Gengis.

-They should have given a TOT per hectare. The mechanism whereby the more hectares I take the more money I receive is wrong. The one who has money keeps taking hectares. The one who is poor, loses them. Then it is the poor who takes care of the mountain, because he lives there! The one in Milano takes all the pastures and doesn't care of the mountain. Most of those who have the pastures, are insurance companies, important surveyors, accountants, doctors. They have the mountains! It is our politics that have to intervene on these things. But they are the first ones gaining from this system. – Occhiofurbo.

The previous mechanism for subsidies emanation caused negative effects that still affects alpine pastures access. Shepherds suggest that subsidies for summer pastures should be proportionate to the average size in terms of hectares of the mountain pastures of Lombardia's mountains. The system of subsidies and incentives in some cases excluded local stakeholders from accessing their mountains and resulted in under-grazing and degradation of pastures. These dynamics enhanced the risk of a further abandonment of alpine territories.

Is there competition for pastures between cattle and ovine farms?

-On the beautiful, comfortable mountain, where cows have always gone, it's RIGHT for cows to go. Because the higher you go the fresher the grass, the more the sheep heal. Let's go on the tradition of our grandparents, the cows stayed on the mountain, nice and comfortable, and the sheep up high, the sheep lived equally on high nice and fresh pastures. Now so many shepherds are holding mountains where the cows once went. – Profeta.

-If there was a nice mountain, even used for cows, the shepherds came in, certain had more strength than the farmer who went before and the shepherd won it. The municipalities no longer really look at the type of animal they want on that pasture, not thinking about the degradation of the structures for dairy farming. – il Buono.

Economic relevance of subsidies

Subsidies are considered fundamental for itinerant pastoralism despite the distorting effects. Anyway, they are seen mainly as a survival necessity rather than a desirable income.

How important are subsidies for you?

-Contributions have allowed many people to start and get by. If you want to live only on what the animal gives you, you have to make a life as it used to be once, no jeeps, no trucks, no caravan. But if you have expenses, you can't make it without contributions. – il Buono.

-Very much. especially those years that the animals were just not going (not getting sold) when the market was stationary. Now the market is going enough, however the expenses are many, without contributions you would still live but you would have only the '80s fiorino that yesterday left me stranded. You would make another life. – Anellodoro.

-They are the half (of our gain). If they take away subsidies, half of us close. Let's say they're nice because it's money you don't sweat, but if meat and wool had the value they should have there would be no need for the subsidies. – Eremita.

The importance of subsidies is recognized but they are still regarded as mandatory trade-off for meat and wool markets. In this view, subsidies are the result of systemic economic distortions that makes markets unable to properly valorize shepherdism's production.



(author's personal archive)

Meat market and production

Currently, meat is the only traded good produced by itinerant pastoralism. And, together with subsidies, it is the only source of income.

From the economic point of view, how important is meat?

-Ah, that's so important. And it will be even more important. Because the alpine pasture subsidies have been cut in half. – Profeta.

-The meat is the other half of the subsidies. Let's say the subsidies 50, the meat 30, and after there's the 20 that we go bad. – Eremita.

What is the cost of sheep, live weight per kilo?

-Wholesale by live weight depends on the category of the animal. It ranges from 1.20€ to 1.50€/1.60€ of the adult sheep. It depends on the category. - Gengis.

- The average sheep is 80 to 90 kg. - Occhiofurbo.

And when did it become the only source of income?

-So, let's go back in time, until the 60s, 70s there was meat and wool. From the 80s, the more you come forward to us, the more it's meat. – Gengis.

But has the fact that it's just meat changed anything in the way the herd is managed?

-Wool used to be the key resource. Select animals, once the Bergamasca had wool everywhere, even in the face. Now if we have a male shearing a little bit on his own you keep him as stud. wool production has changed a lot today, much decreased. – Gengis.

Is it a good alternative to wool?

-The alternative to wool is immediately done because shearing is a debt. Meat allows you to get by a little bit but not much more, because the expenses are so much. If pastures are shrinking, it's unthinkable to drop the number of animals (to make them fit in smaller pastures), that's the problem because you don't have the grass ... it becomes very difficult, you don't live anymore. – Gengis.

-It took a while but now it started again. The years before covid, like me, so many wanted to stop. Now the arrostiticini stuff is catching on. So many people are enjoying it. It's growing in demand because it's catching on even to Italians, arrostiticini is going a lot. –Anellodoro.

-Our animal, being a meat animal is also marketed well compared to dairy sheep. Once they drop the milk production, somehow the animal is reused, and its meat goes much less. Ours, being a meat animal is marketed well. – il Buono.

-Mah, it's 2, 3 years that's not bad. As long as the subsidy lasts. The meat is not worth how it should be. In Switzerland one-year-old lamb is 7 francs a kilo, live weight, here, live weight, it's 2,50€. – Eremita.

Is it a reliable income?

-There is nothing reliable. It has happened already many times that you have the stuff there and there is no one to sell it to. – Gengis.

-For a fair price or not, you will always be able to sell it. It depends on the years. Now, an old sheep is already on 120€, lamb goes to 4€ a kilo when it's Ramadan, the other time of the year 2.50€ always. The sure thing is Ramadan. When the

Muslims disappear the shepherds disappear, they are the only ones who really pay it, they pay it willingly. It's all undefined though. It's a few years we pull a little on the price. But they came to know that with 5 roosters they can make the feast and they can forget about buying the lamb, if money ends also for them, they say "a lamb 5€ a kilo! Let's go get 5 roosters, kill them down and my God is happy". The funeral is the same, one called me yesterday "my cousin died, you don't have two Lambs to sell?" For funerals they have to sacrifice a lamb to send the relative to heaven.... – Eremita.

The relation between itinerant pastoralism and Muslims delivers benefits for both the partes. Shepherds obtain their income, Muslims have the possibility of carrying out religious practices. Shepherds adapted to this kind of meat market and some of them developed a deep knowledge of the Islamic calendar and recurrences.

What is the meat market nowadays?

-The big lamb, goes for Muslims. The fat sheep, goes for the Italian market, especially arrostiticini. Here we make the lamb that goes from 40kg and up and the fat sheep. – Gengis.

-Italians eat only arrostiticini. People don't know how to cook sheep meat anymore. It's expensive to live in Italy as well, so you can't pull the meat price much higher. But it's not bad right now, however it's everything else that costs a lot. – Eremita.

To live on meat, do you necessarily have to slaughter for your own?

-Everybody makes do, eh! Some a lot, some a little, we all do it eh. Slaughtering, you soon make 80 € more per animal. Under Christmas something little starts in supermarkets too. –Anellodoro.

-Other nations have the average farm much larger than ours. So, the cost of processing is less and the yield is much higher than us. Rules here are much stricter on meat controls; therefore, much higher costs. These factors take us out of price. We were approached by several companies that make arrostiticini in

central Italy. They wanted our sheep. We never found a deal because they pay them much less abroad. Now some small companies like ours have decided to go to the more quality market, maybe having fewer customers, but quality and propose us to the restaurant industry. For those who sell live, the market is Muslim, luckily for now there are them buying daily, the Muslim market still manages to help Italian shepherds. Even butcher shops, very few of them have sheep meat, they buy ribs from New Zealand already packaged and frozen. Ditto even those in central Italy. Most of the arrosticini are foreign meats – Occhiofurbo.

Even in Abruzzo they can't make arrosticini with their own sheep?

-No, because the consumption is much higher than the production. They had to necessarily rely on various European markets. Both because of the price and the quantity, we would not have them. Even large retailers like Conad and other brands wanted to ride the wave of meat “with the four I”: born, raised, slaughtered and cut in Italy. Arrosticini producers pay the meat much less in Slovenia, Poland, Spain, etc. – Occhiofurbo.

The meat you produce is even high-quality

-It's extraordinarily good. But it's cheaper to go abroad to get it. – Rida.

Despite the high-quality of the meat produced by itinerant pastoralism, imported meat is too competitive to let shepherds' sheep meat overcome its market niche.

The only Grass-Fed sheep meat in Italy is imported from Ireland. However, all the flocks are Grass Fed, maybe not certified but in facts

-We have a Grass-fed association in Italy too, it was created by a private farm. It is probably milder than in other countries where this thing is much more felt. If you are interested in registering, you pay a fee and they verify if your livestock meets their standards. Most shepherds sell live, grass-fed or not, for traders the sheep is worth €1.50 per kilo, Muslims too care about the cost per kilo. I joined the association because I care to, I was also interested in doing organic meat. In

summer, the pasture is yours and it is possible to do it. The problem is in winter, I can't do organic, not even because of me but because of intensive agriculture. I would have to rent lands in the plains, cultivate them and in the winter sustain the sheep with organic hay, though it becomes too expensive. I have many customers who buy the meat, sheep fat, sheep bones because sheep bones collagen contain is very high and so it is very important for those who have collagen problems. We sell our fat to a lot of people who use it as butter. I used to give the fat to some companies in Trentino who spread it on fruit plants, the wild animals stayed away. – Occhiofurbo.

The high-quality of animal products goes beyond meat and food consumption. Intensive agriculture affects also the quality of itinerant flock's meat, thus underlining pastoralism's dependence on mainstream agriculture. The fact that this high-quality meat struggle to find its valuable market niches stress the shepherdism's marginal position within food markets.

Wool

Wool is an untapped resource produced by itinerant pastoralism. But before, it was the main source of income for shepherds. Despite wool could be used for many purposes, it remains an economic burden for shepherds.

When did wool ceased being valuable?

*-More or less, you covered shearing costs, but for the last 10 years it's all a loss.
– il Buono.*

-So, my grandfather in the 1950s was getting 1100,1200 liras per kilo (1000 liras 1950s = 8/10€). I loaded a truck of wool in October and got 64€ and I'm so happy because I don't have to pay for disposal. – Gengis.

-Wool in 2000 started to be worthless. Now per kg we get nothing, just the empty bags. Shearing a sheep costs 2,20€, it's just loss. This year they kept only the lanolin and they throw away the rest. – Anellodoro.

-The first years I had sheep they would give you 40 cents per kilo. Now, however, nothing at all. It costs 2 euros for a sheep to shear. It's a loss to shear. – Eremita.

Roughly, how much wool does a sheep produce per year?

-Very little today. Now the culture has also changed, many shear in the fall and not in the spring. Sheep lose a lot of wool in summer. 1.30kg per sheep with one shearing per year, average, but I shear even the small ones, it will be 2kg in the big ones. – Gengis.

*-2.2/2.3kg, more or less. Shearing it once a year. A flock does 30 quintals of wool. Wool is a debt, though. So many people bury it, at night you make a hole down...
– Anellodoro.*

Being wool not anymore the main product, did something change in flock management?

-We started shearing once a year. You used to shear them twice, also because it is good for sheep's health. Now it's just a cost, for that they all start doing it only once a year. – Anellodoro.

-Then everyone does as they see it, whether they shear in the spring or early fall. Most shear in early fall. – Eremita.

Why doesn't it have a fair price anymore?

-It is a cost to wash it. There is a tiny washing center in the south and that's it. L'Ariete went out of business in 2017. –Anellodoro.

-Because it's too big to spin. Then there's all the synthetic stuff, and that's why nobody wants it. Something they'll make, my wool goes in China. I knew some of it was used on oil rigs, if there was some leakage, they would put it in to recover the oil because it absorbs the oil but not the water. – Eremita.

-Our wool is not a fine wool. It's a coarse wool and it stings. There was the construction outlet for this wool. – Gengis.

*-We made insulation panels for buildings, but after that it hadn't gone through.
– Eremita.*

Why insulating panels didn't worked?

-The owner of the washing center said it was a political game, they kept it down on purpose. – Anellodoro.

-I wouldn't put wool in my house, if you make a mistake in giving mothproofing, you eat your house with termites. However, they give you the mothproof guarantee for 20 years. In the last few years, you don't see advertisements of these things, 10 years ago you did. There was a project to pave the roads to reduce noise. Mine (wool) I've sent it to make fertilizers twice. There was a project to restart the wool plant in Gandino valley (L'Ariete). The project was 10 million euro grant from Regione Lombardia. But with all the accounts there were to run the washing, there was a lousy net income, and nobody wanted to go ahead anymore. – Gengis.

-How much wool is there in Italy? Lanolin is also a product that is critical for cosmetics. We throw it away and then go and buy lanolin from other countries. We should make a center in central Italy, and we all take wool there, do you know how much wool it would be? – Occhiofurbo.

If wool had a fair value would change much for you?

-Eh! At least to pay shearing costs! – Anellodoro.

What could be done to enhance the local wool market?

-The Bergamasca sheep has no longer been cared for to have a better fleece but has been left to decay over time, it is among the least valuable in Europe. They use wool for everything, there are so many alternative uses. You need a serious washing center. A rustic wool is also beautiful, but in order to sell a rustic product, the merchant has to argue much more. You can mat it and you get softer and more beautiful products, but it is difficult to produce and sell it. It's impossible to sell anymore. The first problem is that there is no washing center, the second is to propose a rustic item. Maybe stylists take it over and make it an elite thing. If fashion houses promoted this style, perhaps something would move, but the problem of washing would remain. The only solution would be for someone to take care of the promotion at the fashion level, but they would end

up going back to the wools permanently on the market, the product of Bergamasca wool is variable both in terms of quality and quantity. Processing centers are all abroad. Wool is not enough of an asset to build the structures that there were once. – Macco.



(author's personal archive)

Employees recruitment

Rural depopulation dynamics and absence of positive perspectives are heavily affecting nomadic pastoralism's generation renewal.

Are there problems in finding employees?

-If we want to be blunt and decisive, they used to have the "fameglio", people of the old times that don't exist anymore, from mountain areas, they would help the shepherd and share with the shepherd sleeping on the ground, they ate together. They were capable shepherds, but they didn't want the commitment of having their sheep or they had about 50 or so and they would aggregate them to another larger flock. Now they have been replaced, by Romanians, Albanians and Moroccans. It has been good for a while because they were getting 20€, 30€ a

day, which is 24 hours. The shepherd was feeding them, and they were getting maybe even 900€ or 1000€ a month, some even 1200€ or 1300€. But they would save it all because the shepherd had to give you everything. The shepherd had the advantage that this one was there 24 hours in the sheep. Now they have increased the wages in Romania and so they stay in Romania. Often, maybe because underpaid, they were doing their best to steal your sheep. Now you can't find anybody, zero Italians. And in the end some shepherds have to work all the time. – il Buono.

-As soon as you talk to them about caravans, they don't like it, it's not the money the problem, but the life you make. Those from the east are no longer the drunks they used to be who were also doing well, now they are organized, and they steal things from you. Even in Switzerland that overpays, they are without workers. There, the salaries are three times as much as ours and yet they can't find staff. – Anellodoro.

-Someone started with Moroccans. If you go to Morocco, they are all shepherds, some come here, but first they want all the papers, to come here you need a mess of papers and a lot of money. If you don't even know if they are really coming... The period of Romanians is over. Young Italians who do it for a living go to Switzerland where they get better salaries. Or else they buy their sheep and go. You can find maybe someone from the city who wants to try. – Eremita.

-Finding staff is difficult for everyone, it's a mess. Impossible. We had the Romanian influx that was strong in the early 2000s. Now they go to Belgium or stay there because some work has been created. I work only with Moroccans, two are here from 17 years. – Gengis.

-There are few people and so far, okay. But Anellodoro has to understand that we are no longer 50 years ago. Since I left my home, the wages have doubled. But not because they have been good and want to give more. They have doubled because people have learned to say “no”. The first year I started, if I think back on it, who was making me do it? 600€ a month. Now I get 1500€. According to salary, you have to know how to do. But a guy, who is here 4 years, on 700€ a

month and tells you “Give me something more”, then he is fed up. Also, because, after 4 years you are a Mr. Shepherd. Look, it's a bit of a sacrificed life. Also because you don't have Saturdays you don't have Sundays. – Oste.

-Even he, to go home he has to take at least two days. I've been asked a lot of times “come have a beer with us”, no I can't. Then you know the guys nowadays, they ask you once or twice, the third one, they already start to tell you “Ué, stay there alone then”. – Vagabondo.

-A little bit people don't want to do anything anymore. Life is sacrificed. I come from farming villages after all. – Oste.

-I also have the farm, my dad and his brothers, small stuff. And everybody says to me “but the farm is there, why don't you stay there”? Because I still feel locked in. It's nice because today you're here, tomorrow you go to another village or city, there's always new people. – Vagabondo.

They opened the school of pastoralism now in Italy. This year was the first. Will they be able to solve that problem?

-Practicing nomadism is not as simple as being a shepherd in a barn. Here all the work is camped, it's different, you are with your nets, the battery the dog and the caravan. Wandering and settled shepherds are two different things. – il Buono.

-They didn't learn anything, you learn the computer stuff well but, in the field...
–Anellodoro.

How was the school you attended?

-It went well if I have to tell you the truth. For people who already do it as a profession I don't know if it's useful, I don't know if maybe it can give you something you don't know. But for people who have never worked with animals it is useful. First you do all the theory. Then occasionally they take you to some farms, you have a visit there, you see the animals, the method they have of processing cheese, because it was all dairy stuff at the end. – Vagabondo.

So, do you say that for itinerant pastoralism has little to do?

-I was the only one, everybody had goats or Sardinian sheep. – Vagabondo.



(author's personal archive)

Social perception

In this paragraph it is highlighted how shepherds perceive people's attitude towards pastoralism. Contact with other social actors and the wider community is a fundamental part of itinerant pastoralism.

You've been a shepherd for 33 years, does people's attitude towards shepherds changed?

*-All as*holes, ba*tards! As*holes, as*holes! They all demand and look at you badly. People have changed a lot. It used to be that not a day went by without someone bringing you coffee or inviting you to lunch or dinner! Those things are gone. -Anellodoro.*

*-When we're around, people don't respect you at all, they drive by with cars at 200kph. While you're crossing the street they tell you to f*ck off. We come to an area where there are a few houses, and they call the carabinieri because they're afraid we're thieves. I am also a family man with children who is trying to support his family and bring home his salary! – Occhiofurbo.*

*-After a while you'll see that they'll start busting my balls because the sheep are under the rain. Then they manage to get you to get denunciations, then you even win the lawsuit but in the meantime it's a pain in the *ss. You have to hide as much as possible and try to stay off the roads. Once I got a 350€ fine because I tied up the maremmano who is a bit nervous with the bicycles and at 10 in the morning I tied him, and they called the ASL! – Anellodoro.*

Bureaucracy

Does bureaucracy lengthen the working hours of the day? how much is it a limitation?

-Bureaucracy is a lot. If you're dealing with contributions, it's a lot. – il Buono.

-For these flocks, we have a person on purpose who follows us on the bureaucracy. – Profeta.

-Nothing I don't look at it, there's a girl who does it for a living. But the bureaucracy always turns it, and turns it again, they simplify one thing well, but they make the other more problematic. You maybe do the right things but those who follow you, like the vets, they get things wrong, the old ones are retiring, and the young ones are finicky on some things but they are not competent on the other and they can't find solutions to the problems. They only look at the papers and the “approximately” doesn't exist anymore, you can't reason with it. It worked more before when it was all paper based. You know the bureaucracy, if you did your steps and it worked...but then when you least expect it, problems pop up! –Anellodoro.

-To me little, you have to ask her. – Eremita.

-It's not something to do every day, it's still challenging, especially because if you make a mistake the fines come. But there are so many things, and you make mistakes and do those electronic things you can't change them. You have almost fear to do it. – Rida.

-It's all proportioned according to the activity one has. For a normal shepherd I would compare it to almost zero. I think I'm the only one who told you it's not a

problem. I have my uncle there. But in the end to make a certificate, it doesn't take that long. They can't stop there. Time changes and it's not that drastic. So many times, you just encounter walls from some shepherds. And so many are against it, without even a reason, and they have time. That's where we have the problem, when you propose to them to do things, out of 50 they run after you in 4 or 5. Being a shepherd is not just being out grazing sheep. – Gengis.

Involvement in decisional processes

In order to assess the degree of shepherds' involvement in decision-making processes, it has been picked up an actual example: the proposed change in the method of marking animals.

For example, it will be required to substitute ear tags with an internal chip. When these decisions are taken, are people from the sector consulted?

-They collect a number of reports. These letters, certifications, come in at the union level. If you have a Coldiretti or Confagricoltura behind you and they carry something forward... because what does the farmer on his own? He goes to the union, he goes to the ASL. If they take care of your complaint, maybe the thing goes at least to the Regione, if there is someone in the Regione that takes over your certificate and those of so many others, these complaints then maybe over time they can get to Brussels. They don't give a damn if it costs, if it's difficult to put it in, if it creates complications to the animal. We need the trade associations. – il Buono.

*-Nono, THEY decide at the ministry and that's it. Then they are putting it to two or three (farmers) who are as*holes who are stealing sheep, slaughtering illegally. The mortality is very high though. We're insisting on it. Not because we don't want the chip but because if you put 300 chips and 30 sheep die and no one pays... Like those wretched people, they are on their back today, even if 30 died they remained silent. They used them as test subjects – Anellodoro.*

-They invent it, then they tell you to do it. – Eremita.

-You're updated when it's already decided. – Rida.

-It's almost better, because you have the bolus down and if they steal your sheep... it's not a bad thing. But geez, with a flock of 1000 sheep, they want to take away their ear brands and put the chip bolus right away. It could be done differently, in 10 years the older ones are taken out, you go ahead and in 10 years everybody has the bolus. But why starting immediately, that is an expense? Because it also costs 4€ or 5€ per bolus and we have to pay for them. It is not wrong as an idea, however, it is that story that they have to do everything right away. The cost is more that you don't know how it goes. And it's then two days of work at least. You don't know how to put them. Even the vet knows less than we do. – Eremita.

-Some ASL asks you what you think about it, but just approximately. But then if they have to take the decision, they take it. It's very simple, you can't make me buy the bolus and you ASL don't know how to put it. So first you train your vet, then come. If you ASL don't know... You have to make me learn... Yes, half consultation but just... But still if they want to take the decision, they take it. We count less than zero. – Gengis.

And how do you oppose to it?

-With our associations and now we are also coming with Gengis, our associations follow us. –Anellodoro.

Does passing through trade associations work? Because I've heard complaints

-Hell no, it doesn't work. It's the trade associations that have to bring these things forward. Because if there is no interest of any of these people, you don't move, you don't do anything. – il Buono.

So, there is no real communication, let's say between policy and shepherds

-Nono, there have been no meeting with shepherds about the bolus, it comes to you now that you have to put them and that's it. – il Buono.

-Yes, today the relationship (with politics) is very good. Then, that communicating leads us to something, that is another story. At least they listen

to me a lot. Even the associations, I realize that on many things their hands are tied. – Gengis.

Itinerant pastoralism's political weight

Itinerant pastoralists always had a marginal position in the society. Once upon a time this position was partially a strategy to avoid conflicts with sedentary peasants. Nowadays conflicts with sedentary farmers over plain lands use are over, but modern nomadic pastoralism inherited this marginal position within the socio-political landscape.

-We are a small percentage of agriculture, we have little say, compared to intensive farming, they have not taken us into account, despite the great ecosustainable value of transhumant farming, whether for erosions, for fires, for fertilizing. The help has to be given to us by the institutions, we are few. What do you want us to do? We have our work, we don't even have the economic power, we are not like those who make milk. In Lombardia, how many shepherds are there? 100 shepherds? Do they benefit us at the landscape and ecosystem level? Yes, a lot! But they don't even know that, they only look at what brings money. Transhumance should be sustained by our institutions, also working from the schools, telling the life of pastoralism, the issues, doing promotion, doing culture about what transhumance farming can benefit our world. And this then makes the institutions probably move as well. Look at Switzerland, there are companies that have the money to hire a worker with 12 cows, with 12 cows here you die. Because they understood that agriculture is the primary sector of their country and must be maintained at all costs. Not promoting the factory. They preferred to give money to factories and malls. Instead of saying we must have our own food, we must be self-sufficient. – Occhiofurbo.

-We are a small, small, small part of agriculture, we are the agriculture that matters the least. They tell you “Ah yes of course, right, yes, yes”, however then they get pressures from above, they can't do more. If you want to make a living you have to run after the change they make. – Gengis.

-It's here in the North that it's like that, in Abruzzo, pastoralism is taken into account. Here in the north, it was not considered. Here they gave the importance to industry and not to pastoralism. Politics is starting to take it into consideration, in Switzerland they almost bow to you if you are a shepherd, here in Italy you are a bum almost. And you see that in people's attitude when you are around. –Anellodoro.

-I don't know what your professor says if you ask him if it's something still from the European Union that Italy should not farm, agriculture in Italy should not be there, it should be in the other states and here it has to end. Here it's THE industry, the industry, but enough also the industry, it is years we go on with the industry. We have seen well that it is not going. There will come a point that agriculture will come back afterwards, but it will be late. In the meantime, all those who have always done it will be gone and all that knowledge will be lost. There are ecologists and animal rights activists now, but nature is going to hell and they make us stop. It is a well-prepared shit. – Eremita.

Bottom-up initiatives

The continuous increase of issues undermining nomadic pastoralism seem to have pushed shepherds together and to take up initiatives to try to face nowadays challenges.

-Now shepherds have come together, eh, there is even a WhatsApp group. This year Gengis was able to get to Rome, he said “they listened to me, but they just listened” and that's it. We were able to get together, we are reunited. Shepherds are peculiar. There is this group, and if there is some news that is sent, one says one stuff, one says the other, some talks, no? The shepherds' fair, in Spirano, it is two years they have been doing it. That's a good event too. It is the only one around just about sheep. – Eremita.

-10 years ago, I said let's make a network of shepherd enterprises. Then other shepherds didn't believe it. Probably because it was me to say it, me, who was a nobody and worked in an office before. Probably if a shepherd, shepherd from four generations said it, someone would have listened. They complain a lot. But

afterwards, when there would be something to do, they don't do it. I made my workshop and I take all the Italian “starred catering” and you see out of jealousy, they burned my lodges down. What would be nice is to do a business network. To be able to resist. Do a business with processing, distribution, promotion an e-commerce site, at the agribusiness level, the funds are there. – Occhiofurbo.

Natural parks

Natural parks in the plains are often situated along riverbanks which represents important grazing ground for shepherds. Particularly during spring. The relationship between shepherds and natural parks is mainly conflictual.

How is the relationship between pastoralism and natural parks?

*-My personal charges are of illegal grazing. I, as a shepherd, in spring maybe you see a nice meadow, with grazing ban on it. It's a force that overcomes my brain, mind and heart not to take my sheep there to eat! If you see there a nice green pasture and the sheep is hungry... you free them in, later if nobody comes, well. Now many municipalities are putting grazing bans. It is what I told you before, it is because certain shepherds have misbehaved, I don't even call them shepherds. If you know how to respect the regulations a little bit, they don't forbid you to cross a piece of park. There I go into the park. It is already two years that I go in, I steal 7 or 8 days of grass, always with respect: I watch that the goats, the sheep don't damage the plants. I graze it responsibly. There are so many areas that are important, we would love to get in. In another park, we give him 3 cheeses and he pretends not to see us. I did a test with a farmer, when ryegrass has two months that is on 10cm/ 15cm, you eat it and after that it starts again thicker, with more sprouts. They let me try a little piece, now they let me have it for 15, 20 days of grass. However first, you have to make them understand it. If it is a young guy working in the park, you get the fine right away. If it is an older person, you can talk about it. A young guy wants to climb the park administration ladder, he wants to give handful of fines. The ones who are not paid are ba**ards because they want to get ahead too. – Profeta.*

-It depends on who is transiting. You know it's park and then you behave accordingly. If you behave properly, they understand it a little bit too. Animal rights activists are really annoying. Shepherds have the main problems on rivers, do we ruin wild birds' eggs in the nest? If you don't clean it up, the wild game changes. –Anellodoro.

*-Madonna... it's a love-hate relationship. Park authorities, basically from my point of view, don't understand sh*t, on the other hand you have volunteer guards who go around all day pissing us off, without even knowing that anyway since before there was a park, there was pastoral grazing. If we have a flowery park, it is because it was cultivated not by a farmer, but by a shepherd. You take a piece of land, leave it alone, it's brambles and thorns. You can't enter it anymore, even the wild rabbit can't access it anymore. And they don't understand it. Maybe there is such a person who understands a little bit more eh. – Gengis.*

Do parks have lands that are important for you to graze?

-Especially the river parks, which are the Po, the Adda, the Serio, the Ticino... There are too many constraints for us, they don't let us go in. That park in the Serio River, last year there was little water and they didn't want us to let the sheep drink because they said sheep take the water away... Before they used to dig rivers in the middle and the river kept its way, now they don't dig it anymore and with the flood every time it raises its bed, it ate so much agricultural land! Then the sheep can't go in because... troubles! But if it wasn't us keeping it clean, then it dries up and burns. – Gengis.

Many parks maybe don't let sheep in because of wildlife protection. But if the sheep no longer graze there, how does the environment change?

-Natural parks here are all dirty, what park is it full of brambles? What do the sheep do at the hatching of eggs? I don't believe it, those are all things in their brains. Just see the floods what they do... – Profeta.

-Studies have shown that when the sheep pass by, the soil and the turf improved because it was cleaned and as a result rock partridges return and nests again there. But also because of wildfires. But yes, they know these things. – il Buono.

-One person in a valley, for 5 years never let me graze in his property. After 5 years I managed to convince him. When I went in, there was weed inside that the sheep was almost struggling. I now do 12 days with a flock there. The sheep is the most beautiful thing there is to clean, to revive. This year, when I came down to the village, he told me "You made me realize something important." Now, if you look up at the pasture from the village, his property is more beautiful and cleaner, before you just saw a no-sense dry mass. He is overjoyed now. I'm also happy for the cleanliness of the mountain. It is a very important thing. It is the most beautiful satisfaction. Really you come down from a mountain, I look over my shoulder and say, "I cleaned it again this year." – Profeta.

PES schemes

With all the participants, payments for ecosystem services have been brought up as a topic. PES schemes have been explained and imagined in order to investigate shepherds' consideration of PES as a possible way to reshape a positive relationship between them and natural parks. It has been proposed to see PES as an income alternative compensating wool's lost income.

-To keep clean, they might say let's let the sheep do it. This summer we were in San Colombano, where a lot of meadows have not been managed for years. I did a good job, and the municipality was happy. An abandoned pasture gets better if you bring in the sheep. – il Buono

- I've already heard about this thing in Valtellina. As a shepherd if they let me live... I think no shepherd would do it to collect the money. If you give me grass, I am just happy, for me it is already earning. Instead, the one in the park gives me down a big fine! You can graze mountain park areas. It's the law, it really says that. Who knows why in the mountains you can and in the plains you can't. I never understood it either. – Profeta.

-They know it very well but if they give the money to you then they can't share it among themselves for the little maintenance works they do sometime. – Anellodoro.

-There in the “G.park” they were starting to understand. They allocated 10.000€, there were some areas where they wanted to rip out some shrubs, grind and go in with the sheep. In 4 years, they would give me that money, but I had nothing left because you had to call the tractor with the grinder to uproot the plants, the money all went there. I would have gained nice grass in the spring and that was a good thing because in the spring it's hard. Maybe with time, they will get to these things. It is a crap the G.park, it's all a thorn. It used to be a meadow with flowers, birch trees, there were wild bunnies, deer and now there's nothing left. In some places even bunnies can't go in because of brambles. Now to have something like that, you don't even do it in 100 years of maintenance. It's a long recovery, you calculate that it's 40 years since no animals graze it. – Eremita.

-The park towards L. started to give us a few areas to clean up to see how it results, even to keep away drug dealers they said. Where the sheep pass, if you pass responsibly, it becomes a garden. Now the G.park is a pile of thorns, you see fires all the time, at the G.park there's a straw this high! It often burns in wildfires, and they don't let us go there because there is the slug and the bird. They could put 50 donkeys that keeps it clean, mushrooms come up, the little bird comes and you don't have fires. –Anellodoro.

-We already have this thing in Lombardia. No park does it though, basically because no one wants sheep, there is no park that wants sheep. There is not this mentality in any park. We apply to the Serio Park. I ran after it for many years, but I got tired of it. It depends a lot on who is there, the person who gets to be in charge at that time. With the Serio Park, we were also willing to do something educational with children or help clean up certain areas. However, they basically made fun of you. If we didn't have the river in spring and even part of the fall, it would be a big problem. Since there is agriculture, the animals have been

grazing in the river, even the cows, so the river is like this, there is this kind of vegetation because it has always been grazed. There is no such thing as untouched nature. – Gengis.



(author's personal archive)

Wolf's return

Wolf's return in the Alps is affecting particularly itinerant pastoralism due to its characteristics. This issue comes in an already fragile system.

How much is the wolf an issue?

-They will realize it more and more. It's more difficult to chase a chamois than a sheep or a donkey, when they will fence them all (farm animals), where will wolves go to eat? All these beasts... They will also come into villages and attack animals in barns if barns' doors are not closed. – il Buono.

-We're starting to have problems now. It was better before they weren't there. They give you the anti-wolf nets and stronger batteries. It's an extra job, then the wolf no longer attacks at night but during the day. It studies you. The problems

of attacks are especially on foggy days, the fog covers the smells and even the dog does not notice it. Those with 30 or 40 sheep are the most affected by predations, many of them are quitting, their sheep are not fenced at night, pastures are turning bad, it is the little farmer who maintains the mountain, who cuts down trees and makes the path. – Anellodoro.

*-It's a serious problem because it's rampant. It increases every year, but we don't have means to defend ourselves. The problem is not the lamb that it can eat, the fox eats two or three lambs a year, but I almost laugh. It's in the employment contract. They told me "But you have to stay up with the flock". Why do I have to stay with the tent up at 2500m and what tool do you give me to defend myself from the wolf? Do You know at 2500m with the tent when it's bad weather? But if I can stay up and I know it's coming, if it comes... tum tum... But I go in troubles if I sing that song. I'm also scared to stay up in the tent. And he said to me, "no but they don't do anything to you", f*ck you, you are at your home, is the wolf mine or yours? It's not a matter of compensation, it's the state of mind you live. Then in some mountains, if they are all scared and go down into a ravine, you go under a bridge because no one pays you. They tell me, "You don't have to look at extreme cases." You take your salary anyway, but if those up there go down a precipice, I'll go beggar. In Val d'Aosta those 50 heifers that went down a ravine, crossed 3 huts at full throttle and jumped down, they must have been wolves, but since they say they cannot prove that they were wolves they can't compensate the loss. Wolves are too protected. – Gengis.*

-I'm very fussy when I put up my fences. Every year I buy 5 new nets, I try to secure my animals, it's the first thing to do to avoid predations. My mountain neighbors were preyed on the last two years. I have never had predations. The wolves are there and for us shepherds it is an extra worry, for the one who is in the office, he can care less. The damage? Compensations are fine, but it's the continuation of the season that's the problem. I can't live with stress every night, sheep's fences are not always close to the lodge like cows. I have them very far away; you can't do 20 km every morning to go grazing higher pastures. You spend the rest of the season badly, with fear. It's not a good thing for us. I don't

give a damn about compensation! I want my animals healthy and happy. I want to sleep at night. Institutions should control the movements of large predators and if there are dangerous, very aggressive subjects, contain them, put them in a park or kill them. For the less aggressive ones, the fence is enough. – Occhiofurbo.

Do predations occur often?

-In Lombardia, predations have been almost everywhere. Then many times one doesn't even declare it. They push you not to declare it, it's so intricate the procedure– Gengis.

And do compensation measures work?

-Here nearby I have 16 donkeys, and I don't have the maremmano there. If you don't have a guard dog, or you have not joined on of these associations with guard dogs, they don't pay you anything. If they eat one of the donkeys, the next day I have to take them away so that they don't eat another one, and so there will be pasture degradation because then no one will want to go there anymore. Those who have maybe 40, 50 sheep and who stay up in the mountains all year round, that is, in the valley, they are the first ones to strike. – il Buono.

-They tell you take the guard dog for the wolf... But guard dogs are a problem for tourists. But they don't understand it. You have to be careful when you cross the flock, because the guard dog does its job. If they admit that dogs are a problem, they can't go on with that theory anymore. Even with the wolf they brought home a lot of money. It was endangered and within 2 or 3 years they reintroduced the wolf with reintroduction projects costed millions of euros. The “Pastour” project was to please the shepherds by giving him the nets and 4 university students who give him free workforce with fences and batteries but only to keep shepherds good because there is a round of money behind wolves projects. There are too many of them, it will take some time before they admit it, otherwise they can't milk any more money from reintroduction projects. You're an animal rights activist and that's fine, but the sheep or goats that are eaten by wolves or bears are still alive. Doesn't that animal suffer? “No, that's

biodiversity” ... Then you don't really love animals! Why don't they try to get eaten alive?! – Anellodoro.

-Higher ant-wolf nets are bullsh*t. The wolf jumps as well. They are very intelligent, they come as wolfpack rushing towards the nets and scare the sheep that knock the nets down by running on them. So, there are even those who strangle themselves in the net. Dogs are an added problem for tourists. At some point, you have to decide whether you want to lose animals or risk your dog creating big problems to people. It's better to lose livestock. Try to think every flock having 10 or 15 dogs in Lombardia, where do you tourists go? Try to stop 15 guard dogs. In Toscana and Abruzzo many have given up leaving sheep outside and it becomes a more sedentary pastoralism, thus distorting an entire territory. We already have them in the Po Valley as well. In the plains it is worse than in the mountains because the flock runs away on the road and kills people. Do you want them (wolves)? We can't bear negative consequences because you want them. You don't give me the weapon to defend me, you don't want to compensate me properly, so what? We can't even say something because then we're wretches... You don't see the wolf around anyway, the normal city tourist doesn't see the wolf. Those who live in the mountains see it. – Gengis



(author's personal archive)

Why do shepherds often refuse to implement prevention measures?

-Having very high fences that you can't even load on the donkey, fencing, making the double fence, etc., is very complicated and there is much more work to do. Once upon a time the sheep went to the mountains and there were no nets, they were left in a semi wild state. – il Buono.

-One person of "Eliante", from Milano, says to me: "Gengis, look, I've never seen a wolf jumping a net" and of course you've never seen it jump the net, idiot, you've never seen a wolf except at the Cornelle Park! I have a dog with 3 legs that jumps the net, even the maremmano jumps the net and it's heavy eh! I bought two abruzzese guard dogs with these associations. Complaints upon complaints, they are dangerous, they are big, once they ate a chihuahua, and on top of that is the quarrel you have with the owner of the chihuahua. 10 of these dogs are unmanageable, but only two are useless. If you look a little further, you understand that they push for guard dogs because there is a business behind it. Check on YouTube "Piero wolves Abruzzo". He has 15 dogs, 10 of which are females, and he has 100 sheep, let's say that 100 lambs if all goes well are 10.000€. On the other hand, 10 dogs, 2 times a year, 100 puppies = 60,000€... So long live the wolf. No? Then the associations make these interviews, they sell the dogs, they do the PSR and they live on these things, not with the sheep, you struggle to live on 3000, imagine 100. They sell those dogs for 500/600€. They tell you "They have the pedigree, if you make puppies don't give them away for free" because giving them away ruins a market. You have the pleasure of giving them as a gift, also to see how they behave. – Gengis.

How, in your opinion, should the wolf issue be handled?

-Certainly, by knocking down a certain number of them, the only check to be done is this. You have to keep an eye on the number at the start. – il Buono.

-Remove them. They reintroduced them because there was a round of money. We can't lose for them. 28 million euros have been allocated for a monitoring project, put on the GPS and let's see where they are, where they go, monitor them if they are approaching the flock. Not even a GPS, and all that money? Eaten! Animal rights activists are not animal rights activists, they are money eaters. As long as there's money for the wolf, you see people walking around in wolf projects T-shirts – Gengis.

Scrapie and studbook

During interviews, it emerged the topic of scrapie. It is a sheep disease apparently related to genetics, more specifically to blood types. Genetic selection provides important improvements for scrapie immunity and animal's health. The blood type that is considered immune to screpie is ARR-ARR. Usually, local flocks selected only studs with ARR-ARR. In most of nomadic flocks, females are not yet ARR-ARR selected because it is a matter of numbers, it is easier to select and control 15 males in a 1000 sheep flock. Anyway, participants reported that having the whole flock ARR-ARR selected would improve animal's health.

-Sheep have 4 or 5 bloodlines, in one bloodline, the scrapie has never been found. The other nations have all the ARR-ARR animals because they have gone ahead with the studbook, we are late on this topic because we only have the ARR-ARR certified males and not the females. – Occhiofurbo.

-Three years ago, in this place, they seized my flock because our flock tested positive for scrapie. They didn't want other shepherds to approach our flock until the total slaughter of the sick ones was done. Now we have managed to get a first-class flock. A first-class category. The females are also now as pure as the males. There is also a difference in births, you see more beautiful, thicker lambs. Now we castrate all the males because we want only the ARR-ARR males to inseminate the sheep so we are sure that scrapie will no longer come. If a young ram is ARQ we castrate him it's not that he's sick, it is just not immune to scrapie. – Profeta.

On this topic, two participants mentioned another issue related to itinerant pastoralism. The studbook, indeed, none of the itinerant flocks are inscribed to the ovine studbook.

-We still can't get the registration in the studbook. All the Bergamasca sheep you have seen, there is not one registered in the studbook. Perhaps 400 animals throughout Italy are registered as Bergamasca sheep in the studbook, because you have to give a paternity and a maternity. And since we have large and wandering flocks, we are not able to guarantee these requirements. We have been

tribulating with the APA in Rome for 3 years to find an exemption, but with no results yet. As they have already done with some sheep breeds, we will make a parallel studbook without having to depend on AIA and APA. – Gengis.

Among other things, Gengis told me that one of the problems of the Bergamasca sheep is that it is not inscribed in the ovine studbook.

-It's a big problem, it means that we can't do genetics, we can't improve the breed, we can't be part of other requests for aid from the European Community, for those who breed breeds that are in danger of extinction. To sign up, you need to know who the ram that inseminated the sheep is. Already, in the 1000 sheep flock you have 10 or 15 rams and how do you know who is the father of this lamb? To enroll you must have dad, mom and grandparents for each lamb, you have to weigh it each now and then. Doing all these things becomes difficult for an itinerant herd, without a barn. This is why it has never been done for the Bergamasca sheep. In fact, we are working on being able to make a herd book that is less restrictive and adapts to wandering pasture. Other nations are far ahead of us because they are all registered in the herd book, even the females are all ARR-ARR... In the early years when I was a shepherd, I had contacts through the Chamber of Commerce with Moroccans who wanted our males for reproduction, but we didn't have the pedigree, they rightly didn't buy them. Those of the APA should understand, inform themselves how other European nations do to have the studbook on transhumant pastoralism. Those who manage the studbook must understand that itinerant pastoralism has specific needs and make slightly different rules. – Occhiofurbo.



(author's personal archive)

Interstitiality and illegal trades

Another topic emerged is related to the interstitiality of winter grazing areas. Often this marginal interstitiality makes pastoralism and drug dealing areas intersect and share the same woods. This occurs particularly in the areas between Varese, Como, Lecco and Milano provinces.

-They say flocks disturb wild animals but nowadays there are no more wild animals, there are all drug dealers in these woods. – Vagabondo.

-In my first year I was in the G.park. There is a huge meadow with a secondary small road. It was spring. I see someone coming down with a machete as long as this, the other with two pistols and the shotgun on the back. It looked like the Old West. Only the music was missing underneath. I stopped there a little bit earlier and asked "Guys, any problem?", "No, no, don't worry." They went to another grove, where there were other dealers, I just heard "Bum Bum Bum". Stop. I haven't seen or heard anyone anymore. To tell you how beautiful places those are. – Oste.

One of the participants had important problems with the managing and maintenance of the *batida* from November to the end of January. Indeed, other herders were competing for the same grazing areas despite they entered it later,

as outsiders and thus without respecting the traditions and informal rules existing between shepherds to manage grazing resources.

-Nowadays, if you want to keep your batida, then you either go and beat each other up or you go to kill yourself. Because unfortunately there are many shepherds who come in, they don't even know what a sheep is. It's not the strongest that remains, it is the right one, the one that people have always seen, that will remain. If the conflict exacerbates, among us shepherds, there are no complaints. It is slaps or beatings. It's not easy at all, so you have to go around it (the other flock), you have to move, understand where it's headed, this (the other herder) is the shepherd who has no respect. – Profeta.

Profeta, has been grazing this area for nine years. Recently, another flock entered the area, the flock is said to be managed by organized crime affiliated that are well know by local police. A thing that also other shepherds reported is the presence of certain flocks that function as cover for the management of prostitution, weapons and drugs smuggling. Those flocks are composed mainly by stolen sheep. To a shepherd's eye, the bad health of the animals of those flocks is a clear sign of the cover function since these health conditions couldn't allow a sustainable income. If this topic is brought up with shepherds, all of them will have a personal or reported story about encounters with these cover-flocks, violences and death threats. These cover-flocks enter various pastures and *batida* without respecting itinerant pastoralism customs and challenging them. In this case, cover-flock owners were already well known by Profeta. They already tried to seize the part of his *batida* in that area, they already beaten up one Profeta's colleague two years before because he didn't want to give up his traditional grazing path. This year the conflict raised up again. Once that Profeta started approaching to the "hot" area as he always did, cover-flock owners started to move their flock towards him and started directly claiming all the pastures in the area despite the limited size of the flock didn't justify this claim. Indeed, they claimed the totality of the grazing area and Profeta's permanent abandonment of this part of his *batida*. Worried for his own and his young colleague safety, Profeta started to expose his worries and his strategies to face the conflict over

pastures. Thanks to his long-established presence and relations with locals, Profeta activated a network of informants that kept him constantly informed about the cover-flock's movements. This information were collected in local bars, from people visiting him during pastures and visive medias shared through smartphones. An important part of the time spent with Profeta has been conditioned by these dynamics, the involvement in the management of this conflict has been important not only during the research period. One afternoon, it happened to be visiting the shepherd in the pasture, an older relative of cover-flock owners showed up to discuss with Profeta about an agreement. Profeta proposed to divide in half the area between each other, but the agreement was not found because they claimed the whole area and warned Profeta: "If you involve the police, there is the grave". At this point, it started a game whole made up of constant information and strategic synchronic movements, the two flocks have never been closer than 1km from each other. Shepherd's strategy has been to forestall time-pastures schedules of his *batida*. He strategically moved his flock much forward towards the cover-flock in order to blockade the access to other pastures and to push it back on previously grazed pastures. The strategy worked out well and Profeta believes that will never see this cover-flock again, also due to recent legal problems that the cover-flock had with unattended guard dogs that assaulted two people. Cover-flocks allow to maintain a constant presence in rural plain areas in periurban or densely populated provinces. The pastoral activity allows to occupy areas hidden from busy roads and thus provide safe spots for comfortably managing the illegal activities that are carried out in many woods between Varese, Como, Lecco and Milano. Certain woods surrounding pastures grazed by Profeta are drug dealing spots, it is thus believed that this cover-flock was aiming to ensure control over dealing spots and to stealthily managing supplies to dealers and profits collection. These cover-flocks are also accused of causing damages to agriculture and to neglect health regulations, for example leaving behind dead animals or leaving free unattended guard dogs. These misbehaviors are said to result in problems with municipalities and thus resulting in grazing bans. Furthermore, shepherds complaint that these "fake-shepherds" foster people's mistrust towards

shepherds, reinforce stereotypes and in general worsen people attitude towards itinerant pastoralism. Indeed, as happened in the recent case of guard dog's aggression, consequences of other shepherd's misbehaviors have implications also for the other shepherds. For example in the case of this dog aggression, the same day, health authorities conducted strict controls on all the itinerant flocks of the area. Monte, reported that while passing with the flock on a bike lane, people was filming them and accusing them of being responsible for the dogs' aggression.

Main problems, perspectives on future and young shepherds' aims

This paragraph contains participants perception towards itinerant pastoralism's future. Firstly, it has been asked to point out the main problems affecting nowadays pastoralism in order to establish a ranking of the issues emerged during the interviews.

To sum up, also looking to the future, what are the main problems for itinerant pastoralism in your opinion?

-Bureaucracy. For the rest we can't complain, now let's see, the meat is going. We receive contributions, yes, but there are also a lot of expenses, up to a few years ago it was 450€, 500 € to make the trucks move, now it takes 1,000 € per truck, it changed so much within 3 or 4 years. – Anellodoro.

-It's changing everything in one moment and it's not good. – Profeta.

-The pasture now. If we can graze, we combine something. If there were no problem for pastures, the first would be that of the wolf. You can also fill me with contributions but if I can't graze, if I die in December, in June I'm gone, I don't go to the mountains. – Gengis.

-Surely it is that of the pasture. The difficulty of grazing has been increasing more and more for winter pasture. The summer pasture has its part too, with these hailstorms and droughts. It's been three years since I last saw the fat sheep I used to see coming down from the mountain. With the Cover Cup we are in trouble, and I don't see sheep fattening. It means fewer milk from brood mares,

very weak lambs and therefore it takes little, and the lamb dies. It entails a considerable economic loss. The damage is not quantifiable, because no one keeps track of how many animals are born, how many die. The two big problems are the weather and the winter pasture. – Occhiofurbo.

What future do you imagine?

-It's all stuff they want to put an end to. I didn't sell my sheep because I couldn't anymore, I could still go, but you'll see how many will quit, those who are really big won't stop, who made the money before managed to put something aside, drops flock's numbers and stays there with a few sheep. There will be many young ones who quit if it goes the way it is. It's something they really want to stop, because, apart from pastoralism, farmers are getting more and more messed up too. – Eremita.

-I'm ready to change tomorrow morning. In my case for the next 4 years, I will try to plant something for the sheep I have, this year caught me unprepared and I failed. If it becomes an excessive cost, the little we gain makes us disappear. I don't see kids being able to do this by clinging to another and learning. You don't live. – Gengis.

-I see it getting worse and worse, there are very few young people. Some young people who are with someone older than 50 or 60 years old. But when that old one stops, that young guy there, in my opinion, also stops. You're having more and more difficulties. Income is getting less and less. There is no one from the institutions to help you, the costs are higher and higher, the land is less and less, it becomes more and more difficult to find pastures, so much that they begin to fight. – Occhiofurbo.

What would you say to a young person who wants to start today?

-I would say to forget it. There are too many question marks. – Gengis.

-Institutions don't do anything, no one helps you. You have to be there 7 days a week, from morning to night. How could you have a family? If one earns well, one also accept sacrifices and if with what one earns could afford an employee

and go home every now and then... Some young people who have started, they see older ones who are fine now. Now they can allow themselves to be it with the sacrifices they made before, but now if you make those sacrifices, you will never get to be like the shepherds who are fine now. – Occhiofurbo.

This last section is dedicated to the youngest shepherds encountered during the research. Monte is 18 years old, Vagabondo 20 and Oste 22.

Passion is fine, independence too, but looking at the 50 years old yourself, what do you expect from itinerant pastoralism?

-Even if they tell me “Look, you have one day left to live, I’ll give you 10 million euros, come and work at the company”. I’d stay with animals my whole life. If I have to die, I will die in a trailer or in the middle of the herd. And then it’s nice because, if there is no one left who does those jobs, they are lost. The Sumerians and Babylonians already did these jobs too. – Vagabondo.

But then your fear for the future of this work is not so much economic? Is it more that you say pastoralism will not go on?

-If I have to tell you the truth, I don’t give a damn about money, I do it out of passion– Vagabondo.

-That’s right, but if you don’t have them, you don’t get by. – Oste.

What future do you imagine in your personal life and work with the wandering pasture? Or what future would you like to imagine? What would you like to change in the wandering pasture?

-I imagine a future where I can feel good and that my job brings me a lot of satisfaction and new things to learn. As a job, I don’t want anything to change, but I would like people to understand a little more about the sacrifices we make and to be a little less of a pain in the ass. – Vagabondo.

-I always imagine my future doing this job, maybe one day having a flock, or at least being able to have my sheep in a flock. I would like it to change people’s way of thinking, when we pass on the roads it seems that we are only annoying.

It's nice to see sheep in the fields, but if we pass by on the roads, we hear just blasphemies. And the bureaucracy, a lot of paperwork for what? We are more controlled than thieves. – Oste.

-I imagine that in the future there will be many more problems. Because there are already problems in wandering around with the flock. There will be less and less pastures because they will continue to build stuff. The number of shepherds may decrease, but it will be more and more difficult. I'd like to imagine a future where maybe I'll have my own flock, I'll change jobs to earn a little more and then slowly I buy my sheep, find my area where to roam in winter... This is my future that I would imagine. I would like it to change, for people to become a little bit kinder, but no, they all curse us because we block traffic. That's the only thing I would like to change, otherwise everything is fine. – Monte.



(author's personal archive)

5.2 [Case study](#)

In the last century, mountain rural areas experienced outmigration towards plains, cities and industries with consequences on land management and sustainability. In this section results of the case study will be presented and discussed. This section is organized as follow: brief history of traditional

management of the alp, nowadays access and management rules, impacts of the recovery of grazing activities, renewed competition for pastures.

Once upon a time in alpine pastures

In this paragraph, rules and customs inherent to alpine farming are reported. The aim is to show the continuity of certain practices and to provide an historical background of the territory involved in the case study.

-We used to leave from here on foot to bring the animals up, it was a column of people and animals all along the valley. There was a rule, before the middle of June you couldn't load the alps. There were several alpine pastures and each one had its own rules. You would watch the grass when it was ready and go up. Back then it was very busy on the alp. It was overpopulated and overloaded. Before there was a whole harmony, with the mountain, with the people, everybody helped each other. There were some large families that didn't know how to eat at the end of the month, so they sent the boys up to take care of other families' cows when they were 7/8 years old because then, once 14 years old you made the certificate to go to work. They took board and lodging, if you found an honest owner, he would buy you new shoes. There were at least one hundred cows there. Until September 15 or 20, you could not go out in the meadows around the village below because they were all cultivated. By the month of August, the 3 ones, the alp president and the two counselors were passing by. There could be as many as 5 but they had to be odd, either 3 or 5, otherwise two could plot to block everything. They measured the withers of the cows. A cow is one "erbata", one hectare, that's how we call them. About every cow was one hectare. A horse was two "erbate", it eats twice of the cow, because it was used to work, whoever had the horse once was a lord because it was like having the tractor. They measured the cows, I if you had 3, 4 "erbate" and 3 or 4 cows you didn't pay anything. If you had more animals than the grass, you had to pay. They were all "bruna alpina" cows. They were not as big as they are now, now the cows are disproportionate, they were more adapted to mountains. Up in the alp we didn't cultivate, we used to put potatoes down at the bottom. Back in the

days there were mills in M. we put down corn and rye. The mills have collapsed now. Sheep also paid according to erbate, but it was calculated on a forfeit basis. Sheep did not affect cows' pastures, they were left wild. They would go up to 3000m at the beginning of the glacier, they didn't bother the cows because the pasture was precious. In the summer, there were no men there, they were working down in the quarries or in Switzerland. The husbands would come on weekends to bring up the wood that was used to make cheese. You couldn't find wood everywhere. The wood was down so much lower. Later in '61, '62 they did reforestation projects. Then we made the road. In my time there was no deers like now, there were chamois, but you had to go high, roe-deers but rarely, and white hares. The hare that turns white in winter. There were more hares because there was more grazing, even in the woods the cows roamed. Now it's changed, deer and marmots have come, which were unavailable then. Now it has become harmful because it goes down in the woods where the galliformes are, the black grouse and the rock partridge, it disturbs them when they brood, it goes in the nest and eats their eggs or destroys their nest. Things seen with photo-traps. Basically, there used to be more fauna, feathered fauna in particular. There are even the white partridges that as snow comes, they change color too. – il Saggio.

This statement highlights the high levels of grazing that characterized the alp before the drastic reduction of pastoral activities. It emerges how pastoralism was synchronized with agricultural activities at the valley bottom. Depopulation dynamics affected not only agropastoral activities but also the degradation of important structures such as mills. The agropastoral system provided sustenance to locals and some surplus that allowed small monetary trades. Grazing resources were collectively managed by the consortium system that still exists and still manages pastures. The collective management of resource was obtained through the election of consortium's members among the community. Cows were the primary source of sustenance; thus, they had priority for those pastures near the lodges. Sheep and goats were left free in a semiwild state and didn't interfere with the cows' pastures. This aspect also emerged in Profeta's statement in paragraph 4.1: "The cows stayed on the mountain, nice and comfortable, and the

sheep up high". This practice is not possible anymore due to wolves' return, therefore, ovine and bovine have to share the same pastures more often with an increased risk of rising conflicts among herders. Another important aspect is the difference in the fauna; indeed, there was more feathered fauna because it is more related to the effects on pastures provoked by grazing. It is relevant that the common presence of the rock partridge, which is nowadays an endangered species.

When was the alp abandoned?

-It was never completely abandoned because they used to go up with horses, the cows in the years after the 1980s no longer went. A few families still went with goats and sheep, but few, not like Eremita. – il Saggio.

Locals kept bringing their animals up to the alp and spent the summer there. These activities were not enough to prevent afforestation and pasture degradation because the levels of grazing were too low. These practices continued to be devoted to self-consumption rather than commercial purposes. It can be argued that on the local scale, pastoral activities carried out as a hobby contributed to families' food security and provided high-quality food products without relying on conventional food markets.

Access and management rules

Rules that regulated the management of resources and the access to pastures remained the same through time. Indeed, the rules of the alp are still the same as a hundred years ago.

-The pasture is private, we have the statute of the alp that says that if you bring up 3 cows and you have 3 erbate, you don't pay anything. However, if you want to rent your grass to someone else, the money goes into the alp's treasury, not to the owner. Because if not, how do you do maintenance works, the road, the aqueduct, if one administers on his own? Who has more erbate does not command more, we all count the same, even those who have two "sedicine" (1 erbata = 12 sedicine). Before we were 3 but now, we want to do 5, always odd!

Now they (forestall service) go in with the drone, it bothers me. They look at the advancing of the forest. Before our alp was 100 hectares of pasture, now it has become 80 because they say the forest has grown and the pasture is gone. And they take the pasture acres away from your property, it remains yours but as woodland not as pasture. They see the rocks and they say “here is rock” but it is not rock because if you go up and look, cows and sheep graze there. Even in the woods they graze, they don't go up anymore on foot. Now only few are making milk and cheese. The cows in the alp are almost all for meat or those 4 private people who do it for them, maybe selling it but privately. - il Saggio.

In this case, the peculiarity of the management of resources is the horizontal dimension of decision-making and the collective dimension of rent's incomes. The willingness to maintain the few infrastructures that are crucial for the alp, the dirt road, and the aqueduct, seems to foster the maintenance of the community's governing structures and collective management of resources. What enhances the willingness to maintain the alp livable and accessible is the attachment to the place, to agropastoral traditions, and the aim of maintaining the health of the alpine agroecosystem. Modern techniques of monitoring afforestation and mapping pasture resources seem to fail in addressing the reality on the ground and neglect local customs, such as bringing animals to graze in the forest. In the words of il Saggio, afforestation causes changes in an individual's private possession from a formal point of view. It also emerges that there is a general negligence of institutions in properly managing mountain areas, for example, by avoiding visiting mountain pastures in person. This aspect has also been reported by some shepherds who claimed that in some cases of wolf predation, health authorities never show up to verify the case despite being involved by the herder.

-In the mountains, animals, you have to run after them, you can't just leave them going around. In that valley they leave the beasts outside and go to see them once in a while. To leave them like that, they graze badly, they only eat the good one and the old one not. You work them badly, graze them badly and clean pastures poorly. – Eremita.

Shepherds with big flocks, as in this case, always follow and conduce their sheep during daily grazing and contain them in specific areas until they reach satisfying grazing levels in order to properly exploit resources in a way that guarantees a better quality of grass regrowth. Here resides one of the reasons why itinerant pastoralism has important positive effects on pastures compared to cattle farms. Shepherds seem to be very attentive in properly exploiting pastures because they will come back on those rangelands at the end of the summer and the next year too. It could be said that they cultivate pastures in order to always guarantee high-quality forages for their sheep.

-There were people from the Po plain who came up and took hectares to take subsidies, but they didn't send up animals. And the pasture remained there like that. Before you had to come in person to talk, instead with internet they just came up. We had to protest to the agricultural office. They were loading the hectare here and not paying us anything. It was all about subsidy money. Instead, now who wants to come up, has to bring the animals up here and then we give you the grass. – il Saggio.

Subsidies had distorting effects also on the traditional management of pastures, bypassing the local community's self-governance system. This mechanism not only neglected locals' demands but also left pastures ungrazed. It sharply emerges how the emanation of subsidies is organized in such wide terms that it is ill-suited to adapt to local contexts.

-Eremita does it professionally, nets, guard dog, it's less easy for wolves to go get his sheep. But me, being someone who doesn't do it professionally and I'm here all year round... Here in the valley, there are a lot of those who have a dozen sheep or goats, in the summer you leave them free in pastures, those are the ones that keep clean, even for the shepherd who comes later. Half or more of them have sold the beasts, but what happens is that all the wild game, rock partridges, grouse, white partridges disappear. Here Eremita grazes. But the other alps?

As mentioned by many other participants, wolves' return is affecting small private animal owners who keep animals as a passion and for self-sustenance.

These small herders maintain constant low grazing levels throughout the whole year in marginal rural areas and continue to contribute to local food security. Small herders don't have the means to implement predation prevention measures and are consequently the main victims of wolves' predations. The consequences for the environment are biodiversity loss, in particular the reduction of those species that are strictly related to the pastoral agroecosystem.

Pastoral activities recovery

-The alp has the Eremita's income, there is not much to administer. If you get 1,000 euros a year it is already a lot. We manage the alp, maintain the road, clean the alp. Load and unload the waterworks for summer and winter. We do everything volunteering. I go to the alp to mow, bring the hunters to do the restoration cut, clean, then I prepare food for them. It's the hunters who take an interest in keeping it clean, so the wild game stays. – il Saggio.

Nowadays, the alp is maintained by locals through volunteering and through the involvement of hunters who are said to be the most interested in keeping the alp healthy in order to guarantee the presence of the wild game they aim to hunt. This aspect highlights the role of responsible hunting in species conservation. Also, in this case, the main driver to undertake such activities seems to be passion. Another important role of the self-governing body of the alp is the maintenance of the alpine agropastoral environment.

-Anellodoro came first, he was going to a neighboring valley already. We asked him to come here because we were loading the alp but little. And we wanted someone to load, to clean and keep clean. He sent up a Romanian and I often invited him to eat. You see them gladly. Then Eremita came and worked for Anellodoro. He went on after that. The sheep do a good work. The sheep and the donkey I think are the beasts that clean the most. Because the donkey also eats the big, old grass. – il Saggio.

Shepherds' return to the alp occurred on a specific locals' request to see their pastures grazed again. The need for pastures of the shepherd and locals' aims met providing benefits for both the parts. In this aspect, it can be argued that

subsidies played a positive role. The first shepherd, indeed, probably didn't need to access more pastures and to split his flock, which means paying another salary to someone. The opportunity to access a larger share of subsidies by accessing more pastures allowed the recovery of grazing levels in the alp and thus the related positive effects on the environment. This dynamic contributed to fulfilling the local community's aim to maintain the traditional management of alpine pastures.

And what has changed since the alp has been grazed again?

-It's cleaner, a lot more. The pasture is maintained. Rock partridges are more because in spring they eat the grass that sprouts especially where the herd is fenced at night, there the grass is very fat, the soil is more fertile and little weeds come up and the deer are the first to come up. There you see even 15 or 20 deer together because there is the best grass. Then the hares and partridges come out to eat it too. All the game gains from that. Because the rock partridge lives on the dung of the sheep and goats, when it rains especially the goat finds the natural caves and there is lot of manure so that it dries and crumbles, we call it "pulvin" and there are lot of worms there, in winter rock partridges go there to eat and live off that thing. – il Saggio.

As mentioned, the recovery of pastoral activities positively affected the wildlife through the improvement of the pasture's quality. What seems to be particularly effective in improving the quality of grass is the *mandra*. It is the area where mobile electrified nets are placed to contain and protect the flock during the night. The *mandra* is moved according to grass availability within its perimeter, thus the shepherd's knowledge and experience are crucial in managing this practice and consequently in guaranteeing positive turf outcomes. This aspect stresses the interconnection between human activities, vegetation, and wild game in mountain ecosystems. Particularly relevant is the increase in the population of rock partridges because it is considered an endangered species under the legislation of the EU's conservation policies.

-What has changed so much is the pasture. Before it was thinner now there are more flowers, especially then the feathered game increased. It's back to the way it used to be, so many animals and so many flowers were gone. No one ever complained about the sheep, there are no problems, just little management things, where to put the fence, etc. – Eremita.

Do sheep disturb bird's brooding?

-No because I say "Look don't pass there please because there are nests". – il Saggio.

Rock partridges and black grouses nest on the ground in larch forests, where sheep also graze. The cooperation between locals and the shepherd stands out as fundamental for the protection of wild animals' reproduction areas. The combination of the hunter's deep knowledge of local wild game's habits and the shepherd's knowledge of pasture proper management seems to be the key to positively using pastoralism for environmental conservation. The participatory involvement of local stakeholders in the management of rangeland access allows a direct connection between the shepherd and the community. Therefore, the local system to allocate pastures to external individuals provides the space for this kind of cooperative interaction.

If the sheep hadn't come through first, would the one with cows have come back the same?

-Well, in some pastures they made Eremita clean up first, then, the next year they didn't give him those pastures anymore and they graze with the cows because it's no longer wild pasture, it's domesticated. It went for the benefit of the cows. Even further down in certain places it was coming up everything of weeds, Eremita cleaned it up and now they graze there with the cows. It benefits them, the cow is delicate, it needs the soft grass because it eats it with the tongue. The donkey and the horse with their teeth clean more thoroughly. – il Saggio.

-I've never had a problem with cow herders. Down at the village there are only a few cows, 20 in total, before I cleaned this pasture with sheep. Since the alp

has been cleaned, many with cows would like to graze those places. In the alp they prefer sheep because there are lodges and the sheep pass by once or twice. The cows herder is always trying to take pastures from me to get more subsidies.
– Eremita.

As stated by il Buono in paragraph 4.1 “*The municipalities no longer really look at the type of animal they want on that pasture*”. Instead, in this case, the private ownership of the alp is collectively administered, allowing the community to decide what kind of herding will take place in the alp. Despite ancient rules of the alp reserving certain pastures for cows in order to guarantee their grazing, competition between cattle and sheep over new fattened pastures seems to be present even if in a mild form. Anyway, it is clear that the effects of sheep grazing on pastures stimulated the interest of other cattle owners. This underlines the important role that itinerant pastoralism can play in recovering degraded rangelands inaccessible for other types of pastoral activities. Therefore, itinerant pastoralism can be considered a tool to stimulate agropastoral activities in mountainous environments.

How does it make you feel that there is someone coming up with animals again?

-We are very happy, yes. Because otherwise everything goes abandoned, everything wild, the sacrifices of our old people are lost away. For a pride, to keep our customs, that's also why we do all that maintenance works. It's a good thing that he came up because he grazes, he keeps clean, he maintains the paths, even in the woods it would be everything covered up. We are lucky that here the brambles don't come up, otherwise you don't get saved anymore. It's a good thing that Eremita is there, and he is still coming in. It's either him or Anellodoro. I have to tell him though, he has to come good. Next week we have the assembly, and we'll talk about it. - il Saggio.

Economically, has anything changed?

-The income is the cleanup, that's the income. Not for the money, but for the environment. It's good because the forest stopped to expand, that's already a good thing. It used to be all grassland above the village, like Switzerland. If you

look at the older plants up here, they are 30 years old. Larches and white spruces. – il Saggio.

It can be argued that the economic effects are still related to the private's food security. Indeed, sheep grazing ensures a good quality of pastures. Therefore, it allows locals to keep bringing up to the alp their animals and it encourages others to do the same. Afforestation containment is another relevant aspect. Its relevance is due to the aforementioned positive aspects of mountain pastures both for human activities and wildlife enhancement.

Is it a positive presence for the community?

-Urca! We would need even more of them. To bring up more beasts. But look at the one that goes up with the cows, the first years he didn't want the shepherd, now they would all want them. Even there in R. they go in with 15 cows and they can't clean up everything, they do the comfortable areas, they don't go up as high as they used to when there were more cattle and pasture was scarce. And larches come up everywhere. They let the sheep clean and then they send them out again to bring the cows. Even down there, now they have understood, however, in the early days they were a little wary. Now farmers have seen that for meadows is good! – il Saggio.

-In the beginning some were wary, even a little now, but more those from the village. Shepherds were never seen well. With those up from the alp everything was always fine. The locals came to terms with it because even if I am the outsider from Bergamo, they see that if I don't go, nobody goes anymore. – Eremita.

Again, it emerges that sheep grazing has a positive role in recovering degraded environments. What emerges is the initial mistrust towards shepherdism and the final positive feelings of local stakeholders. As reported in paragraph 4.1, "However first, you have to make them understand it" (Profeta), it seems clear that among people there is an important lack of knowledge about shepherdism in general, and thus its positive role for the environment remains unknown. Anyway, the positivity of the effects is so clear that practical examples

are enough to change skeptical minds. It is important to state that the recognition of the positive effects in these two cases derived from individuals who have the intellectual and practical tools to notice the changes in pasture quality.

Renewed competition

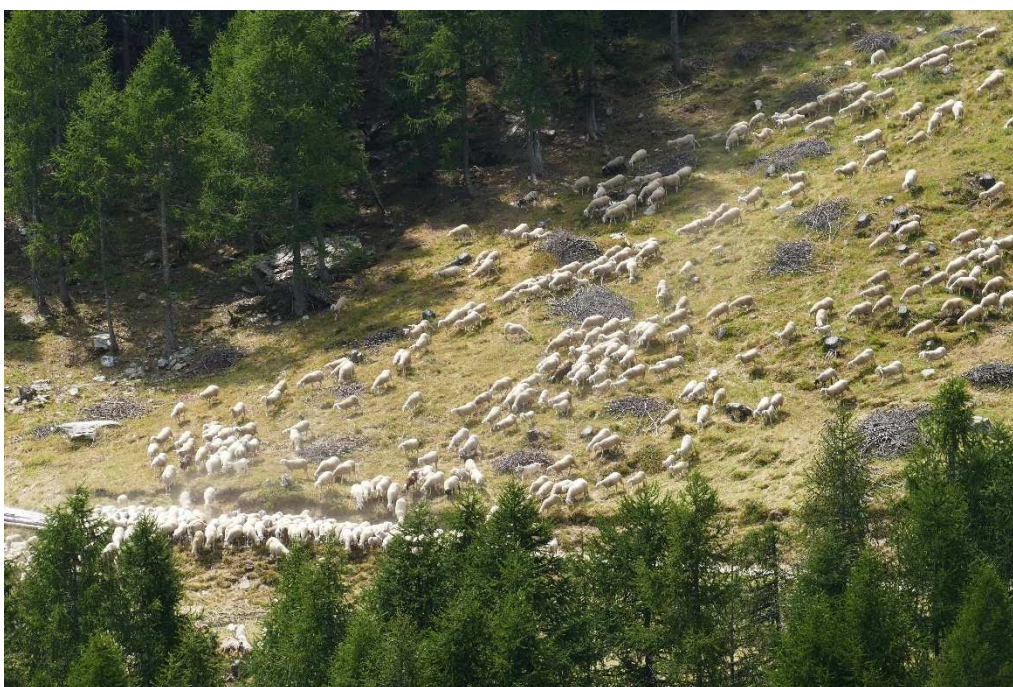
It has become a beautiful pasture that one.

-Eh, sure, some others have already been asking us those grassy pastures. Eremita doesn't know it, but Anellodoro keeps coming and bothering us, because "That one sold the sheep!", he would like to get back on those pastures. But we promised it to Eremita. But he has to guarantee us that he will come up with a lot of sheep, otherwise you won't clean the alp. I know he sold them because Anellodoro told me. He came to find me in person. The president of the consortium down in the village told me, Anellodoro was here " Anellodoro says that here it is his stuff". And next came up Anellodoro "You know he sold the sheep. He will take someone else's sheep to keep getting summer pasture subsidies. I should take these pastures!" Then he is also cunning, Anellodoro. But there in the village, they prefer Eremita. – il Saggio.

-Today there was the consortium meeting with the 30 owners, and they all told me they want me and not Anellodoro. The sheep are less, I cover the erbate I have. Anellodoro is offering more for the rent to get the alp hectares to get more subsidies. Now he tries to take the mountain away from me. Anellodoro is constantly trying to persuade them. So many people say I have the lodge, I'm young, they want to incentivize young people who revive the alp, especially then I have a little daughter and it's been years since you've seen a little girl in that alp. Then I bought the lodge, it means I will continue to want to go up there. – Eremita.

This last paragraph involves personal dynamics between two shepherds who know each other very well. As Eremita stated, shepherds are peculiar, and in this case the analysis would be more anthropological. Anyway, it is still possible to detect subsidies as a source of conflict for mountain pastures. It is also interesting to notice how on both sides, subsidies are used to accuse the other part of

something. This suggests that subsidies are seen as something necessary but still controversial to the extent that they can be used to undermine someone's public opinion and honesty. Another relevant aspect is the local community's long-term alp management; indeed, they don't seek just the satisfaction of grazing levels, they also seek something that can make sparkle the hope to see the revitalization of the alp and the continuity of the elders' aims. They seek something that allows them to believe that their and their ancestor's strenuous efforts and sacrifices in creating and maintaining a livable mountain will not be lost.



(author's personal archive)

6 [Discussion](#)

This section will discuss the results found during this research. Results inherent to sector mapping will be discussed first in order to present the actual state of itinerant pastoralism and to outline the framework for the discussion of the case study on the recovery of abandoned alpine pastures. The discussion of the results will be structured to maintain the bottom-up dimension of knowledge co-creation as much as possible. Indeed, this discussion aims to reconstitute shepherds' perceptions in order to be grounded in the material reality of the

issues that emerged in this study. The discussion of results will be introduced by reminding the research questions of this study.

6.1 Sector mapping discussion

Sector mapping main research question: *which is the current condition of itinerant pastoralism in Lombardia?*

Alpine nomadism's position within the wider society has always been characterized by marginality. As already mentioned, this marginality was partially a shepherds' strategy to avoid conflicts with plain farmers over access to resources. Anyway, this marginal position was influenced and shaped by the contrast between a sedentary and a nomadic society. This feature of itinerant pastoralism always implied a marginal position within the political landscape and, consequently, within agricultural development policies. Since the '80s, wool's market value has steadily decreased, pushing shepherds to rely more on meat production and negatively affecting their economic stability and their capacity to overcome the sociopolitical and economic constraints of their marginality. It is important to note that this marginality has always been realistic only in political, institutional, and economic terms. Indeed, nomadic pastoralism has always been an integrating part of the regional agroecological landscape both in mountains and plains, playing a fundamental role in maintaining healthy and interconnected wild ecosystems and agrarian landscapes. The social marginality of shepherdism lies in the middle between the two preceding extremes: on one side, indeed, the itinerant flock's yearly passage has always been a well-known recurrence; on the other side, there has always been a certain distance between shepherds and the urbanized population in particular. The stereotypes and mistrust that characterized the relationship between shepherds and peasants have been reshaped in modern terms and transferred to the non-farming population. Indeed, today the nomadic-sedentary dichotomy has been integrated with the urban-rural dichotomy. Even the elaboration of development policies continued to neglect alpine nomadism's grievances. Following the expansion of governance's borders towards the European Union, this sort of negligence is today reflected in all the institutional levels, from the local dimension to the

European dimension. Local institutions present different degrees of negligence; they will be higher in the plains and lower in the mountains. Over the last two decades, these dynamics have demonstrated the governing bodies' inability to integrate this form of pastoralism into development policies. Consequently, agricultural development policies and other development trends have constantly weakened nomadic pastoralism. However, it can be argued that the industrial development of the region overshadowed the agricultural development of the region; this trend is reflected by the lack of academic research on shepherdism in Lombardia, "*Here in the north, it was not considered. Here they gave the importance to industry and not to pastoralism*" (Anellodoro). Shepherds faced all the challenges that emerged during the last fifty years, demonstrating themselves to be resilient. Itinerant pastoralism's resilience is based on mobility, flexible resource management, and shepherds' capacity to endure hardships and make sacrifices. Even alpine pasture subsidies allowed shepherds to survive in the 10/15 years before COVID when ovine meat's prices were stuck in the '90s. However, mobility also represents one of the drivers for political exclusion since the sedentary character of institutions promotes sedentary land uses (Easdale et al. 2023). Today, shepherds' freedom of movement has been greatly altered and limited, particularly by agricultural development policies. Moreover, nature conservation policies are oblivious of shepherdism's great role in maintaining healthy ecosystems and territories' capacity to deliver ecosystem services: "*they have not taken us into account, despite the great ecosustainable value of transhumant farming*" (Occhiofurbo). Alongside agricultural development policies, nature conservation policies imposed additional constraints on shepherds. Nowadays, itinerant pastoralism's only income derives from meat production and relies mainly on the Muslim population resident in Italy. A small share of Italian consumers seems to be rising thanks to the popularity of *arrostiticini*, but it is not enough yet to sustain shepherdism, in the words of Eremita: "*When the Muslims disappear, the shepherds disappear*". Nomadic pastoralism's wool's economic return is not enough to cover production costs; therefore, it remains an economic burden and an untapped resource available in important quantities. Finally, due to conservation policies' obliviousness of

shepherdism's provision of ecosystem services, alpine nomadism continues to deliver a series of benefits to the environment and to society without seeing its role recognized, neither ecologically, socially, politically, nor economically. Itinerant pastoralism reached 2024 through the sustainability of its input resources: agricultural fallow lands and alpine pastures. It reached 2024 in a fragile state and continues to face challenges, according to the study's participants. This year is a turning point year. The fragility of this herding system hampers shepherds' capacity to adapt to new challenges, such as the return of wolves in the Alps. Now, for shepherds, every year is a question mark. Anyway, they still walk on their grazing paths, they reunited themselves, and they struggle to enhance their and their herds' existence and to keep alive their yearly return to their mountains.

Sector mapping secondary research question: *which are the main issues undermining itinerant pastoralism according to stakeholders? How do shepherds regard their future? What would they need to enhance itinerant pastoralism?*

From sector mapping interviews, it emerges that the geographical position of the *batida* within the region is determinant for the perception of which the main issues are. Participants who, during winter, graze the area between Varese, Como, Lecco, and Milano suffer less from the CAP implementation of cover crops. In this area, intensive agriculture is almost absent going north, going south, its presence increases. In this regard, the *batide* don't have the same degree of reliability in terms of grazing resources. From this point of view, CAP policies influence the economic reliability of the traditional *batide*, thus altering their role in ensuring grazing resources to shepherds. This alteration is a further factor outside the control of shepherds despite it directly affects them. In this regard, looking to the future evolution of the implementation of cover crop policies, the geographical distribution of intensive agriculture and *batide* may determine which herds will be forced to cease their activities and which will survive. This determination has to be related to the degree of cover crop implementation and to the effectiveness of shepherds-landowners relations in

allowing shepherds to access fallow land plots in reduced temporal interstices, *“You don't know anything about what they're planning to do unless you know the landowner and he tells you what land you can graze for a period”* (il Buono). The participants of this study that are most affected by this agricultural policy, have their *batide* in the lower parts of the provinces of Bergamo and Brescia, and the eastern side of the province of Milano. There, intensive agriculture almost covers the entirety of the land. An added limitation is the swine fever, particularly in lower Brescia's province due to the high concentration of swine farms. Indeed, a wide forbidden area around swine farms has been outlined and is adding to the limitations caused by cover crops. The pasture reduction that occurred this year (2023-2024) is particularly severe for two interconnected reasons. The first is that pastures are itinerant pastoralism's main input, and during winter, those pastures have no monetary costs of access. The second is deducible from Gengis' words *“I'll maybe stop a herd or two for a month this year and feed them with bought hay”*. The feasibility of this alternative is determined by the economic resources of the shepherd. Anyway, it represents a cost, and therefore it can't be a long-term alternative. Long-term alternatives are more drastic *“you sell the sheep (...) or else you have to change region”* (il Buono). Selling the sheep means ceasing the activity; changing the winter-pasture region would affect the flow of ecosystem services and the ecosystemic interconnections among scattered plots provided by itinerant pastoralism. A more expensive but reliable solution is to purchase fields and plant them with ryegrass to ensure enough grass during the most difficult periods. Even changing region implies higher costs; solutions that imply an increase in production costs can't be regarded as good alternatives for itinerant pastoralism as a whole. It is possible to believe that the eventual negative effects of cover crop policies on shepherdism's future will push shepherds with low economic resources to quit, and other shepherds to adopt more sedentary grazing strategies, and others to change region. In any case, the ecological health of plain pastures and fallow lands will be negatively affected. The development of this agricultural policy demonstrates the neglect of shepherds as stakeholders in European and regional development plans: *“They did it not thinking that, anyway, pastoralists too were*

using all this land” (Occhiofurbo). Indeed, shepherds have been completely not taken into account, despite the fact that they are using these lands, and they are already providing the fertilizing effects that cover crops aim to produce *“It's a reversed thing, doesn't the sheep fertilize? The sheep passes, eats and fertilizes. It's an upside-down world”* (Eremita). Another relevant issue reported by shepherds is the instability of the weather caused by climate change: *“Having the animals outside, stability of the weather is so important. It's a few years, 3, 4, that we have strange weather”* (Occhiofurbo). Weather conditions affect shepherdism in different ways in the mountains and the plains. In the mountains, weather conditions cause issues related to grass growth and pasture conditions, while in the plains, the weather influences agricultural practices' timing and needs: *“If it rains a lot, the fence tonight, I have to put it in a fallow place or a place they plow. These things make the difference”* (Anellodoro). An interesting aspect that emerged from the study is the fact that urbanization and infrastructures don't represent a problem from the shepherds' point of view. Indeed, they adapted to the physical changes of the territory. Certainly, urbanization and infrastructures contributed to pasture reduction and created a more stressful working environment. It can be argued that physical limitations can be better handled than changes in land management. Urbanization had more important effects on the relationship between shepherds and the urban population. It is not shepherds that moved closer to inhabited areas, it is inhabited areas that moved closer to shepherds' grazing grounds. Carrying out pastoral activities between scattered plots close to urban areas implies crossing more streets and blocking car traffic more often. Participants often lamented the aggressive attitude of car drivers when crossing streets and lamented in general the negative attitude of people towards them. As reported by Occhiofurbo, *“We come to an area where there are a few houses, and they call the carabinieri because they're afraid we're thieves.”* This negative attitude is grounded in stereotypes and a lack of knowledge about the pastoral world. People's attitude doesn't have only an emotional dimension for shepherds, which is still very important since it influences their self-perception in society, but it also has a practical dimension. Indeed, it can cause shepherds to be charged or at least to

discuss with the police. In most cases, these charges and discussions derive from people's misperception of animal abuse. As the case of Anellodoro, who tied up the guard dog in a busy moment of the morning to prevent it from assaulting people and got a fine for animal mistreatment, there are other similar cases that provoke stress and further issues in the daily life of shepherds. The fault between the two parts can be seen as the rural-urban population fault and as the farming-non farming population fault.

It can be argued that the same fault shapes the intra-human conflict around wolves' return to the Alps, second, itinerant pastoralism's main issue nowadays. "*Is the wolf mine, or yours?*" (Gengis), the human nature of the conflict has been described in paragraph 3.6, and it is a factor that exacerbates shepherds' perception of wolves' return. None of the participants reported predations to their flocks, however all of them regard wolves as severe threat for summer pasture. Wolves seems to affect mainly herders of small flocks with 10-50 animals. These small herders graze valley bottoms for the whole year and alpine pastures for longer periods than shepherds, therefore their activity is an important contribution to pasture maintenance and afforestation containment. The several wolf predations occurred in Lombardia are related mainly to this kind of flocks that are indeed left unprotected and unattended. The impacts of this kind of predation result in the cessation of these small pastoral activities, thereby affecting pasture quality and forest expansion. Secondly, these flocks provide sustenance to herders' families; thus, the reduction of their activities undermines local food security. The extent and intensity of this consequence should be examined more closely. However, wolves' return is seen as an additional threat to itinerant pastoralism, as it is deliberately caused by animal protection agencies through the implementation of reintroduction projects funded by the EU. Shepherds identify animalists, the regional administration, and European policies as responsible for a new issue, of which they have to bear the negative consequences, "*we can't bear negative consequences because you want them*" (Gengis). Furthermore, shepherds feel underrepresented in the management of wolves' reintroduction in the alpine environment. Indeed, they seem not to have

been taken into account in the stakeholder analysis of reintroduction projects. They have been involved in the “Pasturs” project, which aims to support shepherds and provide volunteers to implement protection measures. Anyway, none of the shepherds interviewed participated in the project except one, who participated for a period and then ceased it when one of the young volunteers died in a mountain accident caused by the volunteer’s inexperience in arduous mountain contexts. In general, this project is regarded as a sop conceded to shepherds; it is not seen as an effective support, nor as a possible solution to the problem. Indeed, as for compensation measures, the matter is the emotional state that shepherds live every day and every night, *“it's not a good thing for us. I don't give a damn about compensation! I want my animals healthy and happy. I want to sleep at night”* (Occhiofurbo). The compensation mechanism seems to be ill-suited to tackle the issue because of its complex bureaucratic requirements and its vagueness in ascertaining wolves’ predations. The prevention measures required to access compensation are implemented by all the participants. However, they report that these measures are ineffective in providing a reliable solution. Particularly, guard dogs entail greater issues than the wolf itself. All the participants have one or two guard dogs according to the herd’s size. This number of guard dogs can be efficient for livestock theft prevention in the plains. However, one or two dogs could be effective in preventing a single wolf from attacking the herd, but they are totally futile in facing a wolf pack's aggression. Shepherds report that for properly defending a 1000-1500 flock, it would be necessary to have 10-15 guard dogs within the flock. Such a number of guard dogs is not only an important economic cost but is also a severe danger for shepherds themselves and for other people, particularly mountain tourists. *“You have to decide whether you want to lose animals or risk your dog creating big problems to people. It's better to lose livestock. Try to think every flock having 10 or 15 dogs in Lombardia, where do you tourists go?”* (Gengis), this statement exemplifies the complications related to guard dogs; indeed, in case of aggression, the legal, economic, and emotional costs would exceed the benefits of having a guard dog within the flock. The human nature of the conflict hampers the possibility of finding a proper solution, as for many other social conflicts of

our days, the two parts involved in the conflict are entrenched in their position. Politics is failing in managing this conflict; instead of seeking a proper management of the issue, the conflicting positions are exacerbated through populist propaganda on both sides. Shepherds recommend controlling the number of animals through calculated killings and monitoring the movements of wolf packs. The second action should be considered a first meeting point between shepherds and animal conservationists, serving as a starting point for dialogue between the two. Even in the case of wolves, it seems that shepherds suffer from stereotyped views that picture them as backward people who only want to shoot wolves because they can't adapt to changes. On the other side, shepherds' grievances are not taken into account, and they are left to face wolves' return with ill-suited measures "*You don't give me the weapon to defend me, you don't want to compensate me properly, so what? We can't even say something because then we're wretches*" (Gengis). The extent of the wolf's return issue is worsened by the fact that the wolf's return occurs in an already fragile context, where anything can be "the final straw". It can be argued that the improper management of this issue is the failure of politics and civil society to involve itinerant pastoralism in the decision-making process and in the management of the issue.

Once the two main issues of itinerant pastoralism are described, the fragility of the context will be described in its economic terms. Participants reported that the meat market is currently positive because its trend has been enhanced after the COVID years, due to the interest of a larger share of the Italian population for sheep meat in the specific form of *arrostiticini*. The Muslim market is more reliable and provides higher incomes than wholesale markets. Indeed, the average price of sheep meat on the market can range from 1,50 to 1,60 € per kg. Instead, during the Eid al-Adha recurrence, sheep meat price can reach 4/5€ per kg, during the rest of the year, sheep meat price is stable at 2,5€ per kg on the Muslim market. However, participants stated that it wouldn't be possible to rely only on meat as a source of income. Life and production costs increased

significantly during the same period as the sheep meat market's enhancement: "it's not bad right now, however, *it's everything else that costs a lot*" (Eremita).

Therefore, itinerant pastoralism is not feasible without subsidies; its economic marginality seems to foster its dependence on subsidies. It can be argued that subsidies play an ambiguous role; on the one hand, they sustain itinerant pastoralism, on the other, they create distortions that undermine its economic stability. The previous mechanism of emanation sparked speculation that fueled competition for mountain pastures and brought large-scale farming actors into the system of alpine pastures auctions. The mechanism, clarified by shepherds' statements in paragraph 5.1, induced mountain municipalities to raise pastures' rents. Today, despite the fact that the emanation mechanism has been changed, pasture rents remain much higher than they were before. This factor is further contributing to maintaining itinerant pastoralism's economic marginality and insecurity. High mountain pasture rents, a general increase in life costs, and a drastic reduction of subsidies enhance the risk of mountain abandonment with the inherent negative consequences for alpine ecosystems. "Now *there is a risk of abandonment of the mountains because the rents remained high. There has been a 60% drop in contributions, rents are high, costs as well, a lot of people now will wait the end of their contract and then that's it*" (Gengis). Participants claim that these factors made subsidies incapable of overcoming itinerant pastoralism's economic marginality. It can be argued that subsidies nowadays have the only effect of keeping itinerant pastoralism alive without enhancing its economic condition "*In the end subsidies almost went to zero because I compete with you and you compete with me for rents, so the margins are finished*" (Gengis). Participants state that they could live without subsidies, but it would mean much harsher life conditions: "*If you want to live only on what the animal gives you, you have to make a life as it used to be once, no jeeps, no trucks, no caravan*" (il Buono). In this context, the meat market doesn't represent a source of trust for itinerant pastoralism's future; shepherds remain very cautious in trusting the stability of meat's income. As subsidies, meat production allows shepherds to resist but not to enhance their stability. The high-quality meat

produced by itinerant pastoralism struggles to find the proper market niches that valorize its organoleptic qualities. This inaccessibility to high-quality market niches is exemplified by the fact that all the flocks involved in the study are grass-fed, but only one is grass-fed certified. This is not due to difficulties in obtaining grass-fed certifications, but it is caused by the lack of interest of shepherds' main target markets for grass-fed certified meats. Among all the flocks involved in this study, only one accessed high-quality market niches. It can be stated that the access to market niches, alternative to the shepherds' mainstream markets, provides higher degrees of reliability and stability of the meat's income. Therefore, overcoming the Muslim and the wholesale markets' boundaries and integrating them with high-quality market niches could represent a good path to enhance shepherdism's economic stability. Another important aspect affecting alpine nomadism's economic marginality is wool. Indeed, it has no value, and shearing costs can't be avoided because shearing is necessary to maintain the sheep's health. According to shepherds, shearing a sheep costs 2€/2,20€, considering that shepherds nowadays shear only once a year, for an average flock of 1500 animals, it means 3300€ per year. Participants report that on average an adult sheep produces 2,2/2,3kg of wool per year with one shearing, while the average wool produced in a year with one shearing is 1,3kg, taking into account also lambs. Therefore, a 1500 sheep flock, considering 1,3kg as average wool produced per sheep each year, produces 1950kg of wool. In this case, in order to cover shearing expenses, wool should be valued at 1,7€. Given the multiplicity of wool's alternative uses, it should be possible to enhance wool's value and cover shearing expenses. However, the lack of wool processing infrastructures, the high competitiveness of synthetic materials, and imported wool hamper the feasibility of local wool enhancement projects. These factors prevent local wool from representing a resource capable of attracting investments. In this regard, more research on alternative usages of wool and more information campaigns should be done.

A more feasible and effective tool for intervening in the economic conditions of itinerant pastoralism is payment-for-ecosystem-services schemes.

The extent of this tool is not only economic but also social and political. Indeed, it would imply changing the regional territorial planning in order to consider shepherds as stakeholders and as active actors in the management of the regional ecological network. The most direct form of PES schemes is represented by *pascolo di servizio*, there are already many examples of these interventions. *Pascolo di servizio* refers to the use of animals' grazing for a variety of interventions on the vegetal composition of different areas. Indeed, this practice has been implemented to recover degraded pastures both in the mountain and in the plains, to reduce maintenance costs for public parks, to recover and protect the vegetal composition of protected areas (Corti 2007; Corti et al. 2010; Regione Lombardia 2013; Battaglini 2021; Nota et al. 2021:2; Battaglini e Di Meglio 2022). The possibilities for implementing this practice are many and represent a double-edged opportunity. On the one hand, it would provide shepherds with more grazing resources, which could help address new agricultural limitations on pasture access in the plains. On the other hand, it would reshape the conflictual relationship between natural protected areas and itinerant pastoralism. Other related positive outcomes concern the health of the environment, the reduction of costs of maintenance works for natural parks, and the integration of itinerant pastoralism in the management of the territory. This latter aspect is particularly relevant because it could stimulate the further implementation of similar practices, enhance shepherds' sociopolitical condition, and provide a highly effective tool for managing the territory sustainably. Finally, it could enhance the social recognition of the value inherent in alpine nomadism, thereby increasing interest in a meat product closely linked to the flow of ecosystem services and the sustainable maintenance of natural environments. The main economic implications of *pascolo di servizio* are two. One is the availability of grazing resources, indeed from shepherds' point of view, as stated by Profeta: *"I think no shepherd would do it to collect the money. If you give me grass, I am just happy, for me it is already earning."*, the access to grazing resources within natural protected areas along riverbanks would be already an important gain in terms of resource security. Its importance is even greater today; indeed, shepherds pointed out the drastic reduction of plain

pastures as the main current issue. The other one is the income provided by PES schemes that would allow shepherds a reliable, stable income capable of mitigating the instability of the meat market, the missing income of wool, and the high additional costs related to pastoral activities such as transfer by trucks or mountain pasture rents. Moreover, PES schemes would reduce itinerant pastoralism's dependence on subsidies while relying on a source of income that valorizes their profession and enhances their condition. A PES scheme that aims to generate positive outcomes in the long term shouldn't be related just to the recovery and restoration of degraded environments because these projects have a fixed duration. Instead, PES schemes based on maintenance of natural parks and protected areas represent a more reliable practice because these activities have to be regularly carried out. Furthermore, these practices imply a more stable involvement of shepherdism in land management. When the concept of PES was presented to participants, they all affirmed that similar examples already exist in Lombardia and expressed their willingness to participate in such mechanisms. On this topic, they also stressed the degraded conditions of many natural parks in the plains that evolved into shrublands to the extent that neither wild animals are present there anymore. *"It used to be a meadow with flowers, birch trees, there were wild bunnies, deer, and now there's nothing left. In some places, even bunnies can't go in because of brambles. Now to have something like that, you don't even do it in 100 years of maintenance"* (Eremita). They also stressed that all plain areas that are now natural protected areas have always been part of traditional *batide* and have therefore always been grazed. Shepherds declared that they would be enthusiastic for such territorial management strategies; they affirmed that this concept of land management is not widespread among institutions and natural park administrations: *"No park does it though, basically because no one wants sheep, there is no park that wants sheep"* (Gengis). This suggests that institutions and natural park administration should become aware of itinerant pastoralism's role and value in sustainable land management. Therefore, even in this case, an important gap between scientific research and institutions should be filled.

Alpine nomadism's economic instability and limits in grasping a better future affect two other important issues: generational renewal and the capacity to attract workers. These issues are interconnected to each other. Indeed, the incapacity to attract workers negatively affects generational renewal. Most of the shepherds involved in the study spend most of the year away from their homes and families. Profeta, for example, hasn't gone back home in more than one year; anyway, he states that his home is "being in the sheep". Among the other issues, Eremita ceased to practice nomadic pastoralism in winter because he has a little daughter and chose to stay closer to his family. Indeed, the impossibility of finding capable coworkers required him to "be in the sheep" for very extended periods. The lack of qualified personnel worsens working conditions, and this perspective, coupled with poor future career perspectives, hampers the capacity to attract personnel. For many years, migration flows provided capable workers; nowadays, the effects of migration flows have significantly decreased. Outmigration towards pastoral activities in Switzerland and towards other jobs further affects itinerant pastoralism. Participants say that the hard working conditions are an important disincentive for possible workers: "*Look, it's a bit of a sacrificed life*" (Oste). Anellodoro states that "*it's not the money the problem, but the life you make (...) Even in Switzerland (...) they are without workers. There, the salaries are three times as much as ours*". Here, an expert shepherd earns around 1500€ per month with board and lodging, which means caravan, food, and sometimes cigarettes. An expert shepherd has a very advanced level of specialization in pastoral activities; for example, the shepherd knows the batida and its characteristics, decides the route to take each day, provides veterinary care for the animals, and sells the lambs. For secondary workers, monthly income is between 600€ and 1000€, board and lodging included. The working week is 7 days long, and each day is 24h of commitment. Considering these aspects, it is arguable that an increase in salaries, particularly for secondary workers (shepherd helpers), could help mitigate the harshness of the occupation. However, shepherds' economic availability is heavily limited: "*if with what one earns could afford an employee and go home every now and then...*" (Occhiofurbo). Therefore, the problem of generational renewal remains. Its resolution is too dependent on itinerant

pastoralism's economic and social marginality; thus, it seems that tackling the issue of the aging of the shepherds' population is subordinate to the resolution of itinerant pastoralism's other issues. The first Italian pastoral school started in 2023, and one of the study participants attended it. Anyway, the pastoral school is focused on sedentary dairy pastoralism, and arguably it is ineffective in providing a new flow of workers to the only pastoralism in Italy that practices nomadism. Enhancing shepherdism's sociopolitical marginality and social recognition could make itinerant pastoralism more attractive. Indeed, economic solutions to the problem seem ill-equipped to effectively assess the issue because alpine nomadism is a lifestyle before being an occupation. Therefore, cultural aspects related to occupation need to be seriously taken into account, "*I'd stay with animals my whole life. If I have to die, I will die in a trailer or in the middle of the herd (...) If I have to tell you the truth, I don't give a damn about money, I do it out of passion*" (Vagabondo).

Finally, an important issue that didn't emerge in the literature review is itinerant pastoralism's difficulties in accessing the ovine studbook. The issue is clarified by the shepherds in paragraph 5.1. In this case, the institutional difficulty of integrating nomadic shepherdism emerges again. Indeed, the requirements to access the ovine studbook are conceived for sedentary herds and are unfeasible for a nomadic flock. Being excluded from the studbook prevents shepherds from accessing EU subsidies for the conservation of local breeds and hampers the pursuit of genetic improvements in the "*Gigante Bergamasca*" breed. Genetic improvements are related to sheep blood types; indeed, there is one blood type, ARR-ARR, that resulted in immunity to scrapie, a sheep disease. Currently, most of the flocks have selected only stud males with this blood type. Only a few herds have all the animals selected with the ARR-ARR blood type. Profeta works with one of those and affirms that "*Now we have managed to get a first-class flock (...) the females are also now as pure as the males. There is also a difference in births, you see more beautiful, thicker lambs*". Shepherds reported examples of exceptions that allowed other itinerant flocks to inscribe their local sheep breed in a parallel studbook. Indeed, they are pursuing, through

their association, the creation of a nomadic ovine studbook to overcome the limitations of existing studbooks.

In conclusion, shepherds have regard for their future with skepticism. The insecurity of their activity forces them to focus on the short term. Indeed, they have to face an ever-changing reality that requires constant adjustments and ever-evolving strategies of adaptation: *“It's changing everything in one moment and it's not good”* (Profeta). Their perception is deeply negative towards the future: *“It's all stuff they want to put an end to (...) there will be many young ones who quit if it goes the way it is”* (Eremita). The skepticism towards itinerant pastoralism's future is mainly related to the issues related to itinerant pastoralism's marginal sociopolitical position and to the increasing limitations to their access to lands: *“There is no one from the institutions to help you, the costs are higher and higher, the land is less and less, it becomes more and more difficult to find pastures”* (Occhiofurbo). Older shepherds who have been able to save money in the past will probably be the only ones to continue their activity, while young shepherds face many more constraints and, above all, are not allowed to foresee career opportunities: *“Now if you make those sacrifices, you will never get to be like the shepherds who are fine now”* (Occhiofurbo). On the other hand, the youngest participants of this study all reported that they see their future still practicing nomadic pastoralism, although they believe that difficulties will increase: *“I imagine that in the future there will be many more problems. Because there are already problems in wandering around with the flock. There will be less and less pastures because they will continue to build stuff. The number of shepherds may decrease, but it will be more and more difficult”* (Monte). When asked what they would like to change, they all complained about people's attitudes. Therefore, it emerges again that shepherds' social marginality is an important issue that heavily affects their feeling and their job. The attitudes of people are particularly relevant because they reflect shepherds' self-perception of their position within society and the institutional obliviousness of shepherdism.



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6.2 [Case study discussion](#)

Case study main research question: *which is the impact of the recovery of pastoral activities in the alp?*

Case study secondary research question: *how the recovery of pastoral activities is perceived by local stakeholders in the alp?*

Before the drastic reduction of farming activities, the alp was characterized by a degree of pastoral activities that maintained pastures highly grazed. At that time, pastures were predominant in the area, and this affected the kind of wildlife. There were indeed many more rock partridges and alpine hares. In general, there was more feathered fauna because it is particularly interconnected with grassland ecosystems. Grazing resources were collectively managed. Cow herding was the main activity of this agropastoral system that was devoted to the local people's sustenance. Pastoral activities were managed according to the needs of the agricultural activities at the valley's bottom. The distribution of pastoral activities was organized to set aside the most comfortable pastures near the lodges for cows' grazing. Sheep and goats were left in a semi-wild state and grazed the upper pastures up to 3000m. Around the '80s, pastoral activities

started to constantly decrease, and the alp's pastures have been grazed only by a few animals kept by families for self-consumption purposes, contributing to the local high-quality food security without depending on mainstream food markets.

This small size of pastoral activities that contribute to maintain pastures for the whole year is currently undermined by wolf's return since small herders lack the means to prevent predations "*Eremita does it professionally, nets, guard dog, it's less easy for wolves to go get his sheep. But me, being someone who doesn't do it professionally and I'm here all year round...*" (il Saggio). Indeed, as reported by participants, wolves' return is damaging mainly small herds devoted to self-sustenance in rural marginal mountain areas. However, the size of these pastoral activities didn't hamper the degradation of pastures and their reduction caused by afforestation. Nowadays, the alp is still managed collectively through the alp consortium, and maintenance works are carried out through passion and locals' dedication to the alp. The distinctive trait of the alp self-administration is its horizontal dimension, the collective management of resources and of the access to pastures of external individuals "*how do you do maintenance works, the road, the aqueduct, if one administers on his own? Who has more erbate does not command more, we all count the same*" (il Saggio). The alp consortium is devoted to maintaining the agroecological health of the alp and the few infrastructures that allow access to the alp and support people's permanence during the summer months. The extended permanence on the alp during summer is what allows locals to carry out maintenance activities and to manage pastoral activities in the most proper way.

Pastoral activities resumed on the alp at the request of locals. Their aim was to find a shepherd who would graze their pastures to restore and maintain them. In this case, it can be argued that subsidies proved to be a positive tool to fulfill locals' aims. Indeed, Anellodoro agreed to graze those pastures even though he didn't need to access more pastures, and subsidies provided an incentive to do so. Therefore, subsidies contributed to fulfilling the need of the local community to resume pastoral activities on their alp. Moreover, the private ownership of the

alp and its collective management empower locals to the extent that they can decide what kind of pastoral activities will occur in their alp and who will carry them out. Shepherds who manage big flocks, like those involved in this study, always carry out a controlled management of grazing even in mountain pastures. Namely, they leave their sheep free to graze in quite big areas but always keeping them there until a proper level of vegetal resources exploitation is reached. This kind of pasture management is aimed at ensuring the high-quality regrowth of vegetation. From this point of view, this management is a form of pasture cultivation carried out through grazing. After Anellodoro, Eremita accessed these pastures with his 800 Bergamasca sheep flock and bought a lodge in the alp to return every year. After 9 years of sheep grazing, changes in the alp environment were already noticeable. *“What has changed so much is the pasture. Before it was thinner, now there are more flowers, especially then the feathered game increased. It's back to the way it used to be, so many animals and so many flowers were gone”* (Eremita). The improvement of pasture quality in terms of grass quality and thus of nutritional content is the main driver of changes in the wildlife composition and of the resumption of other pastoral activities. In particular, the practice of mandra (see paragraph 5.2) provides areas of extremely nutritious vegetation that are appreciated by diverse wild animals, such as deer, alpine hares, and rock partridges. The most relevant changes strictly connected with sheep grazing related to wildlife concerns the increase of the population of endangered species, namely, rock partridges. Indeed, rock partridges are under the legislation for the protection of endangered wild species. Rock partridges are particularly related to grazing because they appreciate the fresh, tiny grass that grows in the mandra areas. Sheep's and goats' excrement increases the population of those insects that are part of rock partridges' diet, particularly during winter (*pulvin*, see paragraph 5.2). The direct contact between local stakeholders and the shepherd guaranteed by the modalities of access to pastures has been revealed to be fundamental even for the protection of rock partridges' reproduction areas. Indeed, it is the local hunter's deep knowledge of the alp and of wild animals' habits that ensures attention to nesting areas. On the other hand, the shepherd's experience in managing grazing and the practice of

the *mandra* are fundamental for the proper and sustainable management of pastures. The positive outcome for the wildlife of the alp derives from these two deep knowledges combined with the local horizontal collective management of the alp. The positive interrelation between mountain agroecosystems, alpine wildlife, and human activities originates from the inherited self-governing customs of the alp on one side and from the inherited accumulation of practical knowledge of the shepherd. This case demonstrates how these dynamics are capable of ensuring the conservation of an endangered species.

From the point of view of other pastoral activities, the improvement of degraded pastures paved the way for the resumption of cattle herding on the alp. Indeed, the pastures where cows used to graze became unsuitable for this kind of livestock after the abandonment “*Well, in some pastures they made Eremita clean up first, then, the next year they didn't give him those pastures anymore and they graze with the cows because it's no longer wild pasture, it's domesticated. It went for the benefit of the cows. It benefits them, the cow is delicate, it needs the soft grass because it eats it with the tongue*” (il Saggio). The cleaning of these pastures carried out by the sheep flock restored the vegetal composition that cows need to fulfill their nourishment needs. The restoration of pastures provided by sheep stimulated the interest of other cattle owners in these pastures and stimulated a mild competition for pasture access between herders. The recovery and maintenance of pastures also allows locals to bring their few animals to graze in areas that were inaccessible before, and thus the effects of sheep grazing contribute to maintaining locals' food security. This case demonstrates the role that itinerant pastoralism can play in recovering degraded, abandoned pastures and stimulating the resumption of agropastoral activities in mountain marginal areas. Among the other aspects, from a more narrowed point of view, this case demonstrates the role that itinerant pastoralism has in re-making degraded rangelands accessible to other types of herding activities. The responsible and proper management of pastoral activities through traditional local knowledge ensures the sustainability of alpine rural development by

enhancing wildlife's status and by maintaining agroecosystems' capacity to deliver ecosystem services to the community.

Another aspect that emerged in this case study is the ambiguity of subsidies. Indeed, as mentioned, in this case, subsidies played a positive role. By the way, the previous mechanism of subsidy allocation had negative effects on the traditional management of the alp. The pasture access managed by authorities through the internet bypassed the local self-governance system, neglected their grievances, and left pastures ungrazed (see paragraph 5.2). The ambiguity of subsidies in the mountains and among itinerant pastoralism is also demonstrated by the fact that, despite subsidies being necessary for pastoralism, they are considered controversial, and they are regarded with concern.

Concerning the local community's perception of the resumption of sheep grazing, what is relevant is the initial mistrust towards the shepherd. It was particularly cattle herders and other landowners who disliked the presence of sheep. However, the pragmatic outcomes of sheep grazing proved to be enough to change their perceptions: *"But look at the one that goes up with the cows, the first years he didn't want the shepherd, now they would all want them (...) now farmers have seen that for meadows is good!"* (il Saggio). Even in this case, stereotypes and mistrust towards itinerant pastoralism are widespread and underline a lack of knowledge of the environmental benefits of shepherdism. In general, the community is really satisfied and happy with the shepherd's presence in the alp. These positive feelings derive from the improvement of pasture's quality, from afforestation containment, and from wildlife enhancement. The intrinsic value of the impact of sheep grazing is mainly cultural. Indeed, the effects are related to keeping the mountainous landscape open and accessible. But the emotional-cultural reasons rely on a deeper sense of place attachment, the resumption of pastoral activities maintains the last areas that reflect locals' ancestors' strenuous efforts and sacrifices to shape a livable mountain. The presence of the shepherd allows for the maintenance of a sense of identity with the place and a sense of continuity with the past. Moreover, the

shepherd of this case is young and has a young family; this fact is a source of further joy for locals. The presence of young people and of a child on the alp allows local elders to foresee the future continuity of their past, their efforts, their agricultural traditions, and the continuity of their present. In this regard, the economic aspects of the resumption of pastoral activities are still important but are subordinated to the human-nature equilibrium deriving from the traditional management of mountain rural areas.

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6.3 Final considerations

Concerning the goals that the methodology implied for this research study, it can be argued that the results are positive. Indeed, by reporting other participants' statements and opinions during interviews, the effect of knowledge cocreation has been outlined. Furthermore, through participants' statements, it is possible to detect a sector map in which actors and issues are related to each other, power structures and dependence patterns are recognized and pointed out, and finally, the self-positioning within the map stems out very clearly. These

outcomes derive from shepherds' solid awareness of their system and of the systems that itinerant pastoralism intersects through its journeys. This kind of awareness is directly related to shepherds' self-organization to actively assess the issues affecting them by trying to find discussion opportunities with institutions and by undertaking their own initiatives, such as the elaboration of a nomadic ovine studbook and the shepherdism annual fair. Therefore, it can be argued that to a certain extent, this case study confirms the methodological theory implied in this research.

The main feature that emerges from this study is marginality, which assumes different shapes and is translated into the material reality in diverse forms of exclusion on different levels. Indeed, marginality encompasses the political, social, economic, and cultural spheres of Alpine nomadism. Therefore, intervention measures that aim to enhance itinerant pastoralism should start by taking into account this dimension.

The aim of this section is to provide suggestions for fields in which it is possible to intervene realistically in the short term, since the current condition of itinerant pastoralism is severely at risk. The three fields of intervention are thought from the general to the specific: social awareness, territorial land management, and nomadic ovine studbook. Currently, academic interest in pastoralism has increased, but it is still relegated to the academic environment. To overcome academic boundaries, information efforts should be undertaken to spread knowledge among society about the benefits of itinerant pastoralism. These efforts would show their effects in the long term and are needed to contribute to breaking the borders of shepherdism's marginality. On one hand, rising awareness among society would then influence institutions and politics. On the other hand, it might enhance people's interest in the ovine meat produced sustainably while maintaining ecosystems' capacity to deliver ecosystem services.

The second intervention aims to reshape the regional territorial land management in order to include itinerant pastoralism in sustainable land

management in the plains and rural development in the mountains. This intervention could be based on the planning of highly suited payment for ecosystem services schemes. The implementation of PES schemes concerns natural park administrations. Indeed, these schemes aim to reshape the conflictual relationship between natural protected areas and itinerant pastoralism. Involving shepherds in regional land management would compensate for their exclusion as stakeholders from conservation policies. Furthermore, shepherds' involvement would importantly contribute to overcoming their political marginality by officially becoming managers of the regional ecological network. This aspect would contribute to the sensitization efforts of the first intervention by pragmatically allowing shepherds to fulfill the role of ecosystem keepers within the wider society. This intervention could play an important role in the wider alpine context; indeed, the other alpine regions share many similarities with Lombardia. Such a scheme of land management could be a valid example of sustainably reshaping the human-nature relationship. Of course, it could be a virtuous example for the whole Italian peninsula and other territories characterized by a historical and present relevance of pastoral activities. Finally, PES schemes would provide long-term and reliable incomes, therefore they would enhance shepherds' economic marginality and reduce their dependence on subsidies.

The last field of intervention concerns the elaboration of parameters suited to assess nomadic flocks' genetic resources. This intervention is the most practical and direct. Its aim is to overcome nomadic pastoralism's exclusion from sedentary ovine studbooks and to provide reliable assessment parameters that can play an important role not only for itinerant pastoralism in Lombardia but also for other forms of nomadic pastoralism in other territories. The most immediate effects would be the possibility of accessing EU subsidies for the conservation of local breeds, the possibility of genetically improving the Gigante Bergamasca breed, and the possibility of obtaining a pedigree that would facilitate international trade. Despite the second intervention's aim to reduce shepherdism dependence on subsidies, it is believed that access to other

subsidies in the short term would help itinerant pastoralism to survive the next 5 years of PAC policies that are severely undermining alpine nomadism's access to winter pastures.

Another field of intervention that needs more attention and research is related to wolves' return to the Alps. Firstly, monitoring projects should be seriously implemented in order to provide precise information to shepherds on the wolf packs' position. Monitoring projects should also control the size of the wolf's population and calculate, on that basis, the eventual possibility of reducing the number of wolves through relocations.

Concerning the research field, the ecological benefits that itinerant pastoralism has on plains environments deserve more attention. In order to approach nomadic pastoralism, the academic environment should deconstruct its sedentary approach. Itinerant pastoralism shouldn't be conceived only in its mountain dimension. Indeed, its nomadic character binds it to several different types of environments, such as rivers, plains, hills, forests, periurban areas, and mountains. Nomadic shepherds connect through their paths, the periphery of Milano with the beginning of the last glaciers in the Alps.



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7 [Conclusions](#)

The aim of the study was to investigate the current condition of alpine nomadism in Lombardy and its role in the sustainable development of marginal rural areas. This study concludes that itinerant pastoralism is still capable of sustainably exploiting the natural resources of rural areas while enhancing ecosystems' health, and its importance today is greater than ever due to the current compelling need to reshape the human-territory relationship. Alpine nomadism demonstrated a relevant adaptive capacity that allowed it to cope with the several changes that occurred in the last thirty years. This year, 2024, is the beginning of a breakthrough; the new CAP regulations undermine shepherds' access to winter grazing resources. The wide array of issues undermining Alpine nomadism's future is all interwoven with a marginality that has ancient origins and affects Alpine nomadism's political, social, economic, and cultural spheres. Nomadic shepherds, once reluctant to cooperate with each other, are now

reunited to find paths to overcome the increasing intensity of the challenges undermining their resilience. Mobility, flexible resource management, and commitment have always been the shepherd's survival strategy. The constant reduction of space where shepherds could exist limited their mobility. Forced by circumstances, shepherds implemented cooperative actions to actively engage their issues. Despite their willingness not to give up their lifestyle, they look at their future with pessimism and feel like living in a world that wants to cease their nomadic pastoralism. Acknowledging the ways in which marginality hampers their integration with the rest of the spheres of our society is fundamental to comprehending their grievances and to elaborating proper intervention measures.

The social rise of ecological discourses and demand for sustainable land management and food products represents an opportunity to reverse the sociopolitical marginality of alpine nomadism. However, society must first be sensitized and informed about the positive effect that alpine nomadism has on the health of ecosystems and their capacity to deliver ecosystem services. The recent increase of attention for the pastoral world, demonstrated by the academic environment, needs to cross its boundaries. Regional institutions need to take into account alpine nomadism to create a new paradigm of natural resources exploitation and land management based on the traditional ecological knowledge of shepherds, starting with the elaboration of PES schemes aimed at rebalancing the relationship between shepherds and natural parks. A new ovine studbook, adapted to the needs of an itinerant flock, has to be developed to allow shepherds to take care of the genetic health of their sheep. The return of large predators in the Alps has to be managed by considering mountain stakeholders without assuming ideological positions rooted in a mythicized idea of nature as something distinct from humans.

The issues undermining itinerant pastoralism deserve the attention of the academic community. Mountains and plains shouldn't be considered anymore as separate but as part of the same landscape. The effects of itinerant pastoralism on plains ecosystems and agriculture need to be investigated in more detail. The

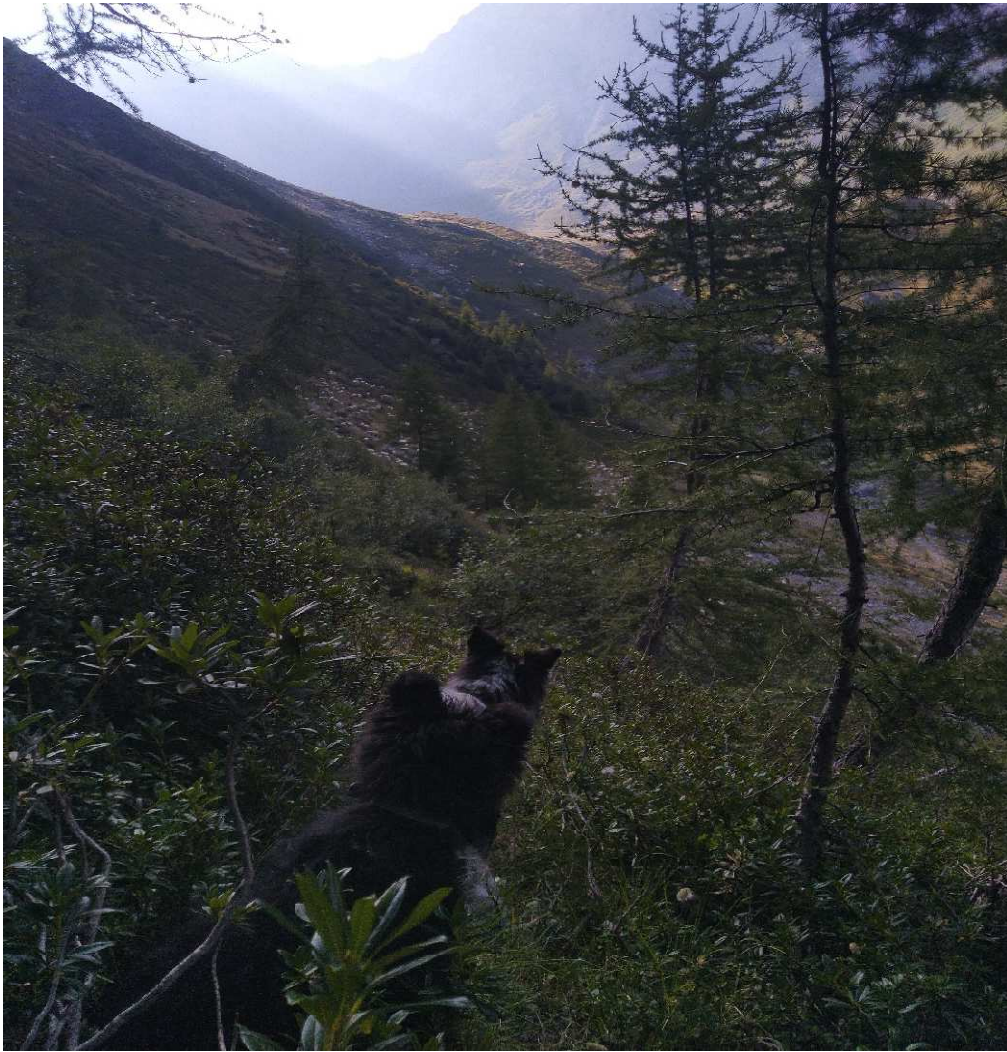
need for the enhancement of itinerant pastoralism is compelling, and the consequences of an eventual end of nomadic pastoral practices would severely impact the regional ecological network and the conservation of shepherds' traditional ecological knowledge.



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