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# WORKING PAPER

**Uncertainty and The Pastoral schools in the  
expanded European Region**

Alessandro Dessi

European University Institute  
Robert Schuman Centre for Advanced Studies  
Global Governance Programme

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## **Abstract**

Schools to train new pastoralists are booming in southern Europe. These initiatives are conducted by NGOs, public agencies and private actors, often in partnership. They normally have very low threshold admittance levels, being open to want-to-be pastoralists from many different backgrounds. The aim of the pastoral schools is often many-folded, ranging from pure vocational training to multi-stakeholder partnerships and social innovation. On the one hand, they try to face the lack of workforce and scanty generational renewal for this profession, that is critical for producing food and managing ecosystems in difficult territories.

Most schools have though also been established as a way to stimulate a discussion and raise societal and policy awareness on the uncertainties and challenges affecting agro-pastoral systems. Pastoral regions are in fact amongst those suffering from fastest depopulation rates in Europe; the land abandonment in the mountains, drylands and islands of southern Europe is a matter of specific policy concern for policy makers at different levels.

Through this specific study, PASTRES assesses how well pastoral schools are situated to respond to contemporary uncertainties faced by pastoralists, and what lessons can be learnt for the broader management of uncertainties in training programs as well as for agricultural and conservation policies. The area investigated ranges from the Swiss Alps to the Canary Islands, which somehow proves that training pastoralist is a widespread issue. All over the region, school leaders and trainers are very much aware that uncertainty is there, and they would be very interested to exchange with pairs and experts about it – even if they all agree that it wouldn't be easy to nest as a topic within the teaching system.

## **Keywords**

pastoralism, uncertainty, governance, school, training, generational renewal

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## Introduction

This article presents the findings of a study that is part of the PASTRES research initiative ([www.pastres.org](http://www.pastres.org)), led by the Institute of Development Studies at the University of Sussex. The study was conducted in collaboration with the Appia Network for Pastoralism, a multi-stakeholder association whose mission is to defend and promote pastoralism in Italy. Within the Appia Network, a group of experts implements the SNAP project (National School of Pastoralism) that collaborated to the study as well.

The aim of PASTRES (*Pastoralism, Uncertainty and Resilience: Global Lessons from the Margins*) is to learn from the resilience of pastoralists, and their capacity to face uncertainty, taking stock of their skills as a resource to address global challenges.

## Uncertainty: What are we talking about?

Rather than defining uncertainty, according to I. Scoones<sup>1</sup>, we should admit that “*Uncertainty defines our times. Every media headline seems to assert that things are uncertain, and increasingly so – be it climate change, disease outbreaks, economic conditions or political settlements. Helga Nowotny, in her book, “The Cunning of Uncertainty”, argues that uncertainty is ‘written into the script of life’.*”

Pastoralists deal with living animals and nature in a constantly - and often unpredictably - changing environment, severely impacted by climate change, wild predators, increasingly frequent peak weather events, ecosystem dynamics affecting biodiversity, vegetation, and pastures. Human factors add to this variability through policy changes, competition over the right to access and exploit natural resources, safety regulations, tax rules, volatility of prices and market competitors, not to mention the access to rights and public services, undermining the individual and family conditions of all the “*livestock peoples*”.

On the one side, this situation has forced pastoralists to flexibly adapt to all sorts of changes, making them develop a high level of resilience and adaptation capacity that deserves to be understood and recognized, including in terms of ecosystem services and contribution to the livelihoods of the most unproductive and marginal areas. On the other hand, there is a growing need to address the increasing number of challenges that undermine the generational turnover in pastoral settings, providing innovative tools to face uncertainty and find solutions for their animals, as well as for the environment and the communities.

This research aims at understanding if and how, the existing pastoral schools have approached the topic of uncertainty, on either or both the above-mentioned sides (understanding pastoralists’ resilience, and their major difficulties). We would also like to explore if any of the topics and/or the experts involved in the existing schools touch on uncertainty as a topic. Furthermore, we ask what the interest could be, as well as the added value, of sharing resources and good practices, cooperating to improve the quality of the courses offered in Europe and beyond.

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<sup>1</sup> Scoones, I. (2019) [What is Uncertainty and Why Does it Matter?](#) STEPS Working Paper 105, Brighton: ESRC STEPS Centre  
Nowotny, H. (2015) *The Cunning of Uncertainty*, Chichester: John Wiley & Sons

## Methodology

The research is based on multiple streams of activities:

- An initial examination of available documents and materials provided by the schools, or found online (official communication, social media launch and news about the schools, news published by local and national media, etc.)
- A set of interviews by phone and videocalls to school managers, and qualified informants involved in the design of the curriculum, as well as in the creation and the activity of the school. The notes taken during these interviews were shared and further validated with the experts involved.
- An online survey accompanies the research, targeting the responsible persons of the schools to gather comparable information about current activities, the carrying capacity, the governance principles and other facts about the schools, as well as some information about uncertainty, addressed through some open questions.
- Finally, some interviews are held with a sample of former students, picking from those who undertook to become pastoralists after the course.

Based on the information gathered and processed, some trends are drafted, trying to tell the local and national situations from those who seem to belong to a broader picture, touching all the pastoral systems in Europe.

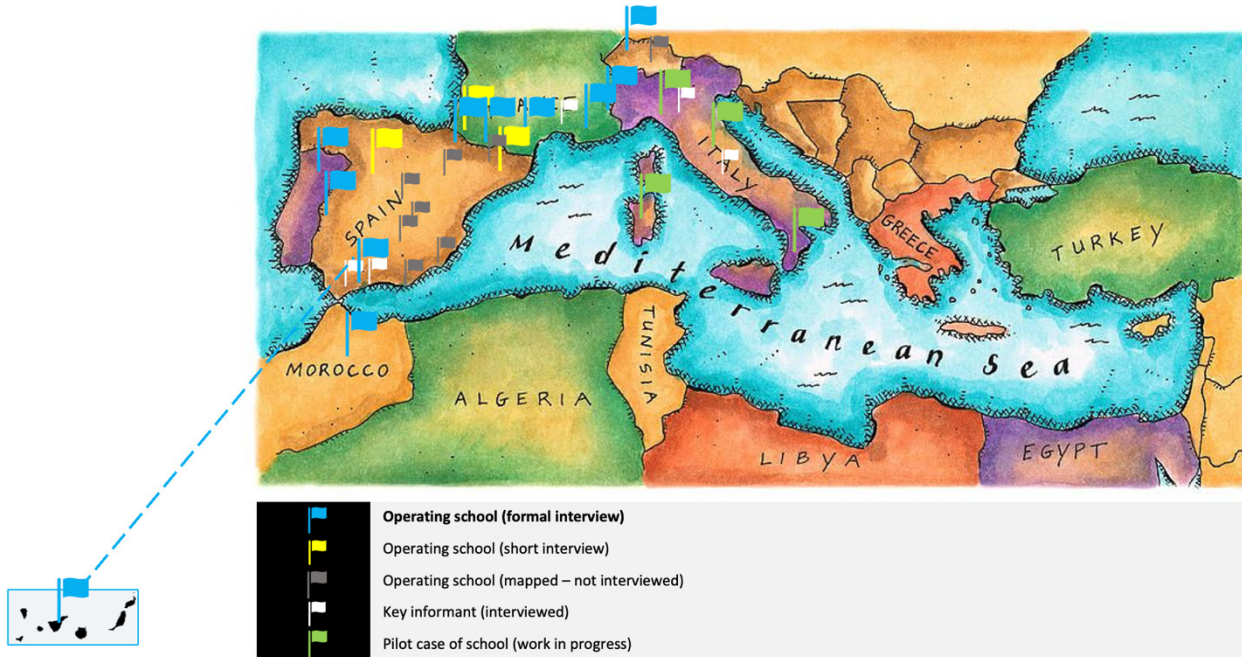
Some ideas are then elaborated about the role of the schools in addressing uncertainties. These ideas are potentially useful for decision makers and for the schools themselves. The aim is to highlight what possible innovation and adoption of best practices can contribute to increase the impact of the schools as a reference to gather, share, and teach sustainable and income-generating solutions addressing uncertainty in the pastoral settings.



## The pastoral schools in Europe – origins, first outlook and a mapping sketch

The map below shows the location of the schools involved in this research. They range from the Swiss Alps to the Canary Islands, which indicates that training pastoralists is a widespread issue.

Picture 1. Pastoral schools in Europe (and Morocco) - Non exhaustive



The oldest experiences are found in **France**, where the first courses for livestock keepers were held in the 1940's at the "*Domaine du Merle*" near Montpellier. A few others were added, mostly over the last 2 decades. Nowadays, there are at least 5 schools, and they are all part of the public life-long learning and vocational training system, serving the entire mountain range from the Alps to the Atlantic Pyrenees.

In the **Spanish** Pais Basco, a community of Franciscan Friars used to keep a small flock of sheep since the 1950's that after 4 decades was enhanced and equipped with a dairy farm, and eventually opened a pastoral school in 1997. Since then, this well acknowledged training takes place on an annual basis, with the support of the Regional Government. Other schools have been arising in many regions of the country across the last 20 years, with a boom over the last 5. Public funds are vital for most of these initiatives, implemented by a variety of actors, including NGOs, cooperatives, and public services.

The **Swiss** school is there since 2013, and it is jointly run by agriculture schools and a public-private agency (called Agridea) whose mission is boosting innovation in the agri-food sector by quickly reacting to emerging needs and opportunities.

The **Portuguese** school was launched in 2021 and delivered its first certificates in March 2022. It makes part of a larger synergy between local authorities, and other actors and research institutes, working together to promote the revitalization of the rural area of Vila Real District, North of the country,

The **Italian** case is the newest one, with as many as 4 schools about to start during the execution time of this research (second half of 2022). They take advantage of different funding opportunities such as the CAP Rural Development Plans, local donors, GAL<sup>2</sup> initiatives and EC-funded Life projects. Each of these pilot cases takes into account the difference in the environmental conditions characterising the Alpine, Apennine and island areas where the schools are set; however, the design of the curriculum was shared by a think-tank of experts gathering around the SNAP initiative (National School of Pastoralism) nested in the *Rete Appia*, a non-for-profit platform of stakeholders lobbying and advocating in defence of pastoralism.

Last but not least, a really interesting exchange was held with two experts from **Morocco**. In fact, a proper “pastoral school” has not started yet, but the pastoral systems in this country have many features and problems in common with the opposite shore of the Mediterranean: pastoralists suffer from worse conditions than the population of urban and coastal zones, and call for policy efforts and concrete support to remain on site, countering abandonment of agricultural activities and migratory trends.

Table 1 displays a list of the schools mapped – and in most cases interviewed for this study, providing some key-facts about them.

**Table 1: Overview of a few features of the schools mapped (where available) listed by country.**

#	Country	Place	Starting year	Total trained	Present places available	Contact person / notes
1	Spain	Andalucia,	2010	160	15	- P. De Asis (Region) - LM Sanabria (key informant – private) - JM Micheo (Malaga) <a href="https://escueladepastoresdeandalucia.es">https://escueladepastoresdeandalucia.es</a>
2		Canarias	2018	40	12	Tara Nino <a href="https://www.aidergc.com/proyecto/escuela-de-ganaderia-y-pastoreo/">https://www.aidergc.com/proyecto/escuela-de-ganaderia-y-pastoreo/</a>
3		Catalunya	2008	217 (187 finalized)	16	Laia Batalla <a href="https://escoladepastorsdecatalunya.cat">https://escoladepastorsdecatalunya.cat</a>
4		Sierra de Guadarrama/ Picos de Europa	2004			Fernando Garcia Dory <a href="https://escueladepastores.es">https://escueladepastores.es</a>
5		Pais Vasco	1997		12	Ane Gartziandia <a href="https://www.gomiztegi.eus">https://www.gomiztegi.eus</a>
6		Murcia	2021	80+		<a href="http://www.sftt.es">www.sftt.es</a> <a href="http://www.carm.es/web/pagina?IDCONTENIDO=102157&amp;IDTIPO=14&amp;RASTRO=c2889\$m">http://www.carm.es/web/pagina?IDCONTENIDO=102157&amp;IDTIPO=14&amp;RASTRO=c2889\$m</a>
7		Castilla-La Mancha	2022	17	20	13 « stand alone » <a href="#">trainings of 25/30 hrs each</a> , for around 20 students
8		Aragon	2022	8	8	<a href="https://www.escueladepastoreo.com">https://www.escueladepastoreo.com</a>
9		Valencia	2017/18			<a href="https://www.agronewscomunitatvalencia.com/la-estacion-experimental-agraria-de-elche-impartira-el-primer-curso-de-ganaderia-extensiva-y">https://www.agronewscomunitatvalencia.com/la-estacion-experimental-agraria-de-elche-impartira-el-primer-curso-de-ganaderia-extensiva-y</a> <a href="https://agroambiente.gva.es/es/web/desarrollo-rural/transferencia-tecnologia-formacion">https://agroambiente.gva.es/es/web/desarrollo-rural/transferencia-tecnologia-formacion</a>
10		Extremadura Tajo–Salor–Almonte	2016	70 (?)	10	María de los Ángeles Muriel (Fundación Cooprado) <a href="https://www.facebook.com/profile.php?id=100077305131482">https://www.facebook.com/profile.php?id=100077305131482</a>

2 GAL: Local Action Groups, public-private partnerships promoted by the EU with the aim to develop plans and interventions for the development of rural areas

11		Sierra Norte de Madrid	2019		12	Fernando Garcia Dory <a href="https://escueladepastores.es">https://escueladepastores.es</a>
12		Castilla y Leon	2014	120	20	Maria Angeles Blanco cooperativa Ovino de Campos (Villalpan- do – Zamora) <a href="https://agrama.es/escuela-de-pas-&lt;br/&gt;tores-pastoreo-y-manejo-de-peque-&lt;br/&gt;nos-rumiantes/">https://agrama.es/escuela-de-pas- tores-pastoreo-y-manejo-de-peque- nos-rumiantes/</a>
13		La Rioja (7 ayunta- mientos)	2022	?	?	Cabe destacar la vida que han aportado al pueblo los cuatro pastores contratados
14	<b>France</b>	CFPPA Montpellier Domaine du Merle	1931 Berger transhumant	Hundreds ...	14	Frederic Laurent <a href="https://www.institut-agro-montpellier.fr/&lt;br/&gt;domaine-du-merle">https://www.institut-agro-montpellier.fr/ domaine-du-merle</a>
15		CFPPA Ariège- Comminges Occi- tanie	2005	+ - 130	10	Amandine Founeau <a href="https://cfppaariegecomminges.fr/&lt;br/&gt;liste-des-formations/bpa-tpa-elevage-ru-&lt;br/&gt;minants-berger-vacher/">https://cfppaariegecomminges.fr/ liste-des-formations/bpa-tpa-elevage-ru- minants-berger-vacher/</a>
16		CFPPA Haute Sa- voie berger vacher d'alpage (3 centres)	2004	+ -140	10	Barnabé Achard <a href="https://reinach.fr/cfppa-savoie-bugey/&lt;br/&gt;formations-professionnelles-conti-&lt;br/&gt;nues-adultes/agriculture-elevage/ber-&lt;br/&gt;ger-vacher-dalpage/">https://reinach.fr/cfppa-savoie-bugey/ formations-professionnelles-conti- nues-adultes/agriculture-elevage/ber- ger-vacher-dalpage/</a> <a href="https://www.cfppa-die.fr/detail-formation/&lt;br/&gt;alias/berger-vacher-dalpage-certi-&lt;br/&gt;fiant-titre-niveau-3.html">https://www.cfppa-die.fr/detail-formation/ alias/berger-vacher-dalpage-certi- fiant-titre-niveau-3.html</a>
17		CFPPA 65 des Hautes-Pyrénées (Lannemezan)	2000 (13 edi- tions)	130	10	Mathieu Plagnet <a href="#">Press report</a> <a href="https://cfa-cfppa65.fr/forma-&lt;br/&gt;tion-CFA65-apprentissage-for-&lt;br/&gt;mation-adulte-hautes-pyre-&lt;br/&gt;nees-65-tarbes-vic-en-bigorre-lanne-&lt;br/&gt;mezan-agriculture-horticulture-jardi-&lt;br/&gt;nier-paysagiste-amenagement-paysager.&lt;br/&gt;php?id=11">https://cfa-cfppa65.fr/forma- tion-CFA65-apprentissage-for- mation-adulte-hautes-pyre- nees-65-tarbes-vic-en-bigorre-lanne- mezan-agriculture-horticulture-jardi- nier-paysagiste-amenagement-paysager. php?id=11</a>
18		CFPPA 64 des Py- rénées Atlantiques (Montardon)	1991	220	12 (ran every 2 years)	Christine Bernatas 330hrs classroom 750 field (including summering) ( <a href="#">Press article</a> ) <a href="https://agrocampus64.fr/titre-pro-berger-&lt;br/&gt;vacher-transhumant/">https://agrocampus64.fr/titre-pro-berger- vacher-transhumant/</a>
19	<b>Switzerland</b>	Chateauneuf (FR - Ecole du Valais) + Visp (GER)	2013	450 (90%drop- off)	30	Andrea Sulig (Agridea) <a href="https://www.protectiondestroupeaux.ch/&lt;br/&gt;fr/bergers/formation/">https://www.protectiondestroupeaux.ch/ fr/bergers/formation/</a>
20	<b>Italy</b>	Sardinia	2022	0	10	Antonello Franca (CNR ISPAAM ; Rete Appia / SNAP ) GAL funds <a href="https://www.edugov.it/news/Details/203/&lt;br/&gt;Prima_Scuola_di_Pastorizia_in_Sardeg-&lt;br/&gt;na_Al_via_le_iscrizioni!">https://www.edugov.it/news/Details/203/ Prima_Scuola_di_Pastorizia_in_Sardeg- na_Al_via_le_iscrizioni!</a>
21		Piemont	2022	0	10	Luca M. Battaglini, UniTorino, rete Appia, CARIPO funds <a href="https://www.reterurale.it/giovanipastori">https://www.reterurale.it/giovanipastori</a>
22		Casentino Forest National Park	2023	0 (24)	6	Tommaso Campedelli DREAM EC - Life project <a href="https://dream-italia-euprj.eu/life/life-&lt;br/&gt;sheperforbio/sheperdschool/">https://dream-italia-euprj.eu/life/life- sheperforbio/sheperdschool/</a>
23		Calabria Pastore 4.0	2023 (launched)	0	?	Mario Grillo +39 368 762 9105 <a href="mailto:mario.grillo@fattoriabio.it">mario.grillo@fattoriabio.it</a> CAP RDP Calabria Region <a href="https://www.cia.it/news/notizie/arriva-il-&lt;br/&gt;pastore-40-dalla-calabria-il-progetto-gio-&lt;br/&gt;vani-il-rilancio-delle-aree-montane/">https://www.cia.it/news/notizie/arriva-il- pastore-40-dalla-calabria-il-progetto-gio- vani-il-rilancio-delle-aree-montane/</a>
24	<b>Portugal</b>	Vila Real District	2021	21	20	<a href="https://www.facebook.com/escolapas-&lt;br/&gt;tores/about">https://www.facebook.com/escolapas- tores/about</a> <a href="https://terramaronesa.pt">https://terramaronesa.pt</a>
25	<b>Morocco</b>	National project (in the make...)	NA	NA	NA	Youssef Chebli INRA Tangier Abdelhafid KELI, Ecole Nationale d'Agric- ulture, Meknès

## 1) Paths and growing trends

Without pretending here to really enter the subject, we can probably summarize that pastoral systems have been mostly pushed towards the margins since the 1950's (or earlier) as the Green Revolution pushed towards intensive industrial livestock farming, fuelled through floods of internationally traded feed commodities, as a part of a larger urbanization and “modernization” process. However, a complex and widespread human-nature relation such as pastoralism, would not have survived for millennia without developing a great resistance: not surprisingly, pastoral systems couldn't be wiped out by a few decades of policy and cultural trends characterized by a range from carelessness to hostility.

And we shouldn't only mention the killing trends, but some non-modifiable conditions, and positive drivers helping pastoralists' survival, too. Just to mention two of them: most places where pastoral settings are still found wouldn't be productive for any other purpose; a deeply rooted set of cultural and food quality values are still associated with pastoral productions<sup>3</sup>, despite the growing safety and market constraints that face their production and trade. Certainly, some legal measure have been put in place to favour pastoralism, but they are far from balancing the threats.

**In France**, extensive farms decreased in number, while the herds became larger over the decades. The summer transhumance kept taking place, and the job of the salaried shepherds in charge of the herds eventually became fully split from the profession of the farmer - and the same happened to the educational offer. Five schools for transhumant-summering shepherds operate in the country, covering the upper Alpine pasturelands as well as the Pyrenees from the Mediterranean to the Atlantic (with the associated winter valley grounds). The trainings are held by public institutes, with a common base and specific focus, based on the potential of the breed/region **at stake** (considering factors such as wool, honey, cheese, and meat).

**In Spain** there used to be a quite efficient and widespread extension service, whose model was successful enough to be adopted in Israel and in the Soviet Union (as key informants report). That service -according to many- suffered from the entry into force of the CAP, whose measures overlapped and replaced the national policies. Many “livestock-keeper-friendly” extension agents (village-based, and much aware of the pastoral issues) were dismissed (“De cincuenta que había en Málaga ya no quedan sino ocho, y todas se hallan en cabeceras de comarca!”). They were replaced by a smaller number of town-based employees, who eventually turned into control agents of the CAP obligatory requirements. In fact, the need to fill the missing support for extensive livestock keepers and pastoralists has fuelled some of the actions that eventually led to start the pastoral schools.

The situation is similar **in Italy**, where despite the large diffusion of pastoral settings, with a sound place in the culture, as well as in the economy throughout the mountain areas of the country, the job is 100% learnt by doing in the field. Agrarian institutes -not to mention the universities- follow the mainstream focus on intensive farming, hardly mentioning pastoralism in the curricula. Many brokers are there, including farmers' unions and federations, private operators, technical agencies operating at regional level to support producers, especially to complete the paperwork necessary to get public funds. Countless initiatives stress the importance of pastoralism, under all sorts of points of view (such as cultural heritage, landscape management, ecosystem services, valuable food products, among others); yet no vocational or professional training has taken place until 2020.

<sup>3</sup> See for instance [https://www.researchgate.net/publication/353380974\\_Pastoral\\_ACTORs\\_Ecosystem\\_Services\\_and\\_Society\\_as\\_Key\\_Elements\\_of\\_Agro-pastoral\\_Systems\\_in\\_the\\_Mediterranean\\_-\\_14\\_-\\_15\\_July\\_2021\\_-\\_BOOK\\_OF\\_ABSTRACTS](https://www.researchgate.net/publication/353380974_Pastoral_ACTORs_Ecosystem_Services_and_Society_as_Key_Elements_of_Agro-pastoral_Systems_in_the_Mediterranean_-_14_-_15_July_2021_-_BOOK_OF_ABSTRACTS)  
[https://iris.univpm.it/retrieve/e18b8792-1118-d302-e053-1705fe0a27c8/D%27Ottavio\\_2018\\_Grass%20and%20Forage%20Science.pdf](https://iris.univpm.it/retrieve/e18b8792-1118-d302-e053-1705fe0a27c8/D%27Ottavio_2018_Grass%20and%20Forage%20Science.pdf)

## 2) Nature of the Schools

The first exploration of the needs who they attempt to respond to (sketched above) helps to understand the nature of the pastoral schools. Summarising by the kind of paths who led to fund them, there seem to be a few types of schools:

- Public schools established upon a policy measure, often based on a needs assessment about the livestock sector and/or the unemployment situation in rural areas. In some cases, the decision to launch a pastoral school is the outcome of a sensitization/lobby action by a given stakeholder group, such as local authorities (mayors and the like) or producers' associations/unions. A few examples include the French experience, with the pastoral schools embedded in broader agricultural education and research institutes, the Livestock Farming and Pastoral School of the Canary Islands, and the regional one in Andalusia.
- Schools that were founded through the active engagement of experts, environmental and social activists, livestock professionals, and practitioners. Often started with a public grant, the curriculum is improved and validated across the first editions. After a few years, some of these schools remain independent (see the Catalan case, and the one in Madrid-Picos de Europa, run by NGOs), while others can be absorbed in the public system of vocational training, such as the one in Andalucía, and probably, the Portuguese experience started in 2021.
- Finally, there are a few examples of schools ran by mixed private-public subjects, whose business and mission goes well beyond education and training. As far as this research has explored them, it seems that these initiatives start from an explicit request, stemming from the private sector with the aim to match a precise need or market demand. In Cáceres – Spain – traders had run short of the milk necessary to produce a highly valued local cheese. A large farmers' cooperative (whose core business is industrial feed making) undertook to start the pastoral school, adding it to many other activities, partly managed through a foundation, with a social mission aiming at strengthening the local economy and community development. Similarly, the Basque school targets a specific sheep breed and a specific cheese – and possibly also the school in Sardinia shall build on pastoralism as a strong identity element. The Swiss Agridea seems to have more of a business-oriented approach, but the same action speed of the one in Cáceres, that is, much faster than the public ones. In fact, these kinds of solutions look well adapted to turn around the stiff bureaucracy of the public sector. In this way, they can flexibly adjust to changing market opportunities and other needs of the regions where they operate.

Regarding the economic sustainability, the schools that are funded to provide a public, permanent education/vocational training service have no budget concerns, in as far as students' applications fill (or exceed) the available places (especially in France, because of the high farmers' demand for shepherds, that contributes to explain the high number of applications). Therefore, innovative approaches, expanded activities and reaching out to the territory around the school can be regarded as added values of an already valuable training quality. The schools who don't count on permanent public funding, tend to associate the educational activities with income generating ones. For instance, the in-house flock is very important for the economic sustainability of the school in the *Picos de Europa*, while for the *Domaine Du Merle* it is probably more interesting as school asset, useful for research and training purposes of the agrarian school – going beyond the practice training of 20 students admitted to the pastoral school yearly.

To face the budget uncertainties, but also to fulfill a broader mission, some schools organize other activities and income generating services. These can be paid by the users, or funded by the Regional Government (e.g. in Catalunya) for awareness raising and environmental educational purposes. This kind of activities requires a set of skills and specialized staff, that in other cases is (sort-of) outsourced, meaning that external experts on project writing and management take care of the applications, and eventually, they may support the implementation phase.

Most of the schools that don't belong to a public institute or agency apply regularly to public calls funding the implementation of vocational trainings, in so competing for both, funds and "clients" with other training providers. Generally speaking, the pastoral schools as such don't have many competitors, and they manage renewing the programmes despite the "seasonal uncertainty" of their funding base. The Spanish school of the Pais Basco belongs to this group, and even if its outstanding quality and social importance is widely acknowledged, the funding cannot be considered permanent. The "competitors" belong to a variety of patented training/education agencies, who provide the same kind of degree/certification (in terms of access to public funds) offering many courses that mostly deal with intensive farming. These trainings take place in easy access locations, with no need to afford complicated and uncomfortable field stages moving on remote farm or mountain locations. To some extent, we can assume that this facilitates a self-selection, channelling a restricted group of persons with a sound intention (and some more adaptation capacity) towards the pastoral schools.

Becoming an official school, therefore, means gaining permanent funding, and to some extent, trading stability for flexibility, to match the standards required to deliver a degree/certificate to the participants. In Spain, the title issued by the pastoral schools registered as public professional training provider (such as the Canary Islands one) enables the participants to register as livestock farmer and apply for dedicated funding. None of the Italian "schools-in-progress" is ran by a registered education institute, nor by an official provider of vocational training. Therefore, they will not be able to deliver to the trainees official titles that might be required to gain access to specific funds. Indeed, the lead of a public school is normally assigned to a public officer, following the procedures in force (which often include a direct appointment by the decision makers in charge). The power of the initial funders is somehow diluted, as they may be hired as trainers but won't necessarily sit in the governing body of the school.

Of course, the economic sustainability of the schools is intertwined with its legal nature, their mission, and the stakeholders behind it. The schools animated by cooperatives, or a larger share of mixed public/private partnership seem to be able to balance independence and economic sustainability, as they engage in other fields, that are much more profitable than a pastoral school. Two examples are in Extremadura, (Spain) and in Switzerland, where Agridea oversees the field activity of the pastoral school. This agency in particular, has over 100 permanent staff and many branches (such as research on germplasm and plant breeding, smart agriculture solutions, consultancy for farmers, etc.) and therefore the defence of pastoralism may not be the very mission of one such actor. Furthermore, in several cases -including public schools- the focus can be biased by the priorities of the livestock owners, i.e., owners of larger farms who need to look after other business, while salaried shepherds take care of their livestock in the mountain pastures. Shepherds, in other words, are not necessarily encouraged to become active members of a revitalized rural community, as it happens when the pastoral schools are framed within a wider regional development picture (like for instance in Ariège-Cominges and in Casentino).

### **3) Target Groups**

A low-level threshold is applied to the entry criteria: in principle, the pastoral schools admit anyone well motivated and over the age of 18, being open to students familiar with the livestock environment, but also to fully fresh, non-qualified candidates. Most of them are also used to retrain persons with different backgrounds, whether they are unemployed or employed as long as they are ready for drastic change.

The selection committees are rather similar in all the countries examined: the jury includes one lead trainer or responsible officer of the school, one experienced pastoralist, one member of a local group of stakeholders (e.g., a mountain guide, a farmer or a farmers' association member). In Occitanie (Ariège-Cominges) a psychologist joins the group, which shows the importance given to the attitude of the candidate. In fact, the personal motivation and the "pastoral potential" are very important for the selection. As a result, the courses are often attended by a mix of mid-age professionals, highly educated urban young men/women, joint with less educated ones, coming from rural settings with livestock practice already. Of course, the "city bugs" are assessed versus their true will to change life, while the others will be selected based on their readiness to "upgrade" their skills.

However, the focus of the school has a clear reflex in the selection criteria. As mentioned already, some schools respond to the specific demand for shepherds to be seasonally hired for the summering period in the mountain areas. In the Swiss case, the courses (held in French and German separately) train young people ready to spend 4 lonely months in an 8sqm "cabane", knowing that as a matter of fact, a lion-share of the demand is matched by seasonal immigrants. In fact, according to some of them, the quality of life in the summering settings is very poor, as the shelters for the employees (without toilets, water, and electricity) are almost less comfortable than those imposed for the predator-trained dogs.

To resume the difference between the pastoral schools and the farmers' ones, it can be said that the first require low (if any) education level, and in general, train a worker profile, specialized in the daily field operations necessary to take care of a flock in the often-heavy conditions of the mountain settings. Farmers schools target future farm owners, targeting higher educated students. They address a wider range of farming-related subjects with a focus on farm management, financial issues, the legal frames, and available measures for growing and trading livestock, and similar. In the French case, there is a clear split between these two offers, while in Spain especially, the business topics accompany (with variable, yet smaller time allocation) the field ones, even net of the field stage period.

Referring to uncertainty, the worker profile trained by a pastoral school will be exposed mostly to environmental variables and field situations, such as predation, seasonal lack of water, use conflict with other shepherds and tourists, animal diseases, among others. He will not be required to hold and manage financial resources, let alone making investments, as his only asset could be the dogs. His reaction capacity to uncertainty will be based on the capacity to read, and flexibly adapt to nature and environmental variability. The future entrepreneur, by contrast, is going to take strategic choices regarding the farm management (such as the size of his herds, affecting also the seasonal and permanent workers), market challenges and competitors, the price volatility of inputs and farm products. He will need to plan investments and cash flows, dealing with financial matters, taxes, and related state agencies, brokers, and service providers. Uncertainty, in this situation, affects a larger set of fields, dynamics, and actors, and there might be more ways to read and face it.

## 4) Structure of the Courses

Generally, the courses last several months, they are residential, alternate classroom with field/farm activities and foresee a more or less extended period in a farm and in a summering ground. Not surprisingly, they require important budgets. Even if many subjects are common in the curriculum of all the schools, their mission can vary, depending on the country, the nature of the institute, the problems, and the potential of the surrounding region. Some schools are clearly guided by a precise market demand, and their mission is to train good shepherds, to be hired seasonally for the summering periods spent by the herds in the top mountain areas. Some others aim at giving a larger set of competencies, targeting not only wannabe employees but also proactive actors of a new-rural, more sustainable, and less consumeristic lifestyle.

Out of many livestock keeping systems, of course the pastoral schools focus on those relying on herding animals that are grass-feed, outdoors most of the year. In all the cases examined, a seasonal displacement is practiced, moving the herds to mountain areas for the summer period.

These pastoral systems are generally extensive, and despite the variety of many other features, there seems to be a common average size of the herd, found in all these regions, which is around 300 heads. The size seems to be equally influenced by the very vision of the farmer, and by the constraints to the expansion of the farm size. Therefore, 20 heads flocks can be found (closer to a single-person hobby than a business activity) near farms with 1000+heads, run as intensive productions with salaried shepherds, and relying on a growing share of external inputs to feed the animals. In any case, the size of the herds is all but constant, being a key variable to adjust in response to a permanently changing situation. It can be managed by balancing births, natural deaths (including those caused by predators), slaughtering, and selling live animals.

The average duration of the courses is around 6 months, a number that should not hide the unbalance between very short (25 hours) to 18-month long, with long on-field/farm apprenticeship. The short ones seem to aim at offering an outlook about the main features, problems, and potential of the pastoral life. The long ones, on the contrary, aim at enabling the trainees to deal with large flocks, or to improve their skills substantially if they already belong to the sector. Major differences are found in the additional subjects, depending mostly on the focus of the school.

According to the feedbacks gathered live, and the monitoring activity of some school, the extended courses are generally appreciated for the high quality of the teachings, guaranteed through the expertise and direct witnessing brought by a wide panel of trainers from different fields and constituencies. Students report that each seminar can be inspiring, they appreciate the number of subjects examined, and the high added value of the field experience shoulder-to-shoulder with a pastoralist.

The subjects can be split between livestock care, and “all-the-rest”. In Portugal, Spain, France and Switzerland, some subjects are obligatory in order to deliver official titles- which explains the time devoted (not to say wasted) to sanitary rules and wheelchair-proof access requirements to the farm working spaces – knowing that sitting on a wheelchair would make the work impossible in any case.

The livestock-related subjects are central, and they are found in all the schools, including animal physiology, health and well-being, feed growing and distribution, shearing, lambs delivery, herd management in summering grounds, including sometimes sheep-dogs and defence dogs to fight predators. Cheese making (also in mountain settings), and other productions often find a place, also because sometimes dairy making is a must, as the animals must be milked twice a day, while pickups may reach the shepherds on a weekly basis.



Quero é perceber aqui de perto como é que é a logística toda. A parte é a tutoria: numa visita que fazemos na exploração tivemos muito boas indicações das práticas que ele utiliza, como trabalha com os animais y porque é que faz assim e no de outra forma. É uma área que já domino, eu já nasci na pecuária, os meus familiares todos trabalham nessa área, mas na mesma espécie animal há formas de maneio que faz a diferencia naquele que é a rentabilidade [...] aí isso que eu espero no fundo é aprender a forma mais pratica, a forma de gerir melhor o tempo.

*I want to see up close here what the whole logistics are like. And also tutoring: in a visit we made to a farm we had very good indications of the practices that he uses, how he works with the animals and why he does things in a way or another. It is an area that I already master, I was born in livestock, my family members all work in this area, but in the same animal species there are ways of management that make the difference in profitability [...] then what I hope, essentially, is to learn the most practical way, the way to better manage time.*

The time devoted to the other topics -non strictly related to livestock care and dairy making-varies, depending on the school. It can include transformation, marketing, business management, innovative and extra sources of revenue (e.g. hospitality), work laws and rights, funding opportunities and credit management, effective communication, risk prevention and safety procedures in case of storms and fires, and in one case, even survival techniques (an intensive training held every 2 years at the Atlantic Pyrenees school).

Sou enfermeira há 33 anos. Temos terra e uma casa na aldeia, o objetivo depois de deixáramos trabalhar, o dim para a aldeia, por isso é que estamos aqui a tentar ver as possibilidades, estudar daquilo que temos capacidade e até a parte económica também.

*I've been a nurse for 33 years. We own land and a house in the village, the goal after we quit work, or decrease, is to make this transition to the village, so we are here trying to see the possibilities, to study what we have capacity and even the economic part as well.*

Summarizing, two constant features of the sound-established schools include a major share of public funding, and the title delivered to the students who accomplish the course. The public funds are vital to run the activity, while the title is essential to enable the trainees to apply for CAP funding for livestock farming (under different lines). In fact, the second feature is less important for those schools who mostly focus on training salaried shepherds, especially for the transhumance and mountain summering stage period. The high demand for such employees can even come at crossed purposes with the accomplishment of the course, as it happens in Switzerland, where the salary is 4 to 6 times higher than the training indemnity fee.

Talking about fees, the only school that requires a payment is the Catalan one, while in Madrid the students are hosted in a guesthouse for a symbolic fee (100€ for the town-based part - 250€ for the field practice period). On the contrary, in France, in Italy and Switzerland (as said), the trainees benefit from a public support coming from the lifelong learning measures for professional relocation. Apart the activity breaches and weird on-offline blends of the pandemic years, all the courses are residential. Besides the few schools that own a low-price guesthouse with shared common spaces, attendance for non-local residents requires to afford housing costs.

## 5) Uncertainty and the Schools

Considering the information summarized so far, uncertainty is a hard issue to address with both school officers and trainers. If on one side, we must admit that there is not a single “school of pastoralism” model, on the other, we can say that all the models found are, in their view, a place where pastoralism is mastered, that in first approximation is the opposite of embracing uncertainty. They know a lot about the subject, and work hard to hand it over to the trainees. And yet, as one of the Spanish key informants said: *Ahora el tema de la incertidumbre como tú lo planteas: eso, ¡nadie lo trabaja!*<sup>4</sup>

Therefore, with reference to the schooling approach alternatives envisaged by Dr R. Webb and Dr P. Kirby<sup>5</sup>, from the Centre for Innovation and Research in Childhood and Youth, University of Sussex, the pastoral schools can be probably approximated to the “**airplane**” model: that is, a stand-alone teaching, travelling along a fully pre-established route, as they master the subject and can provide a complete set of contents to the students, to shape their expertise and make them ready to apply it.

However, the picture is not that black-and-white, because all the school leaders acknowledge that uncertainty is there, with its endless facets, and they try to gather and show as many appropriate alternatives and good practices as possible to face them: in a way, it is a what-if, risk prevention and control approach, coming closer to the “**train system**” education approach, which traces a web of routes and suggests adjusting the direction at every crossroad, depending on the situation. This approach can be ascribed to those schools (as the Catalan one) that emphasize group work, dialogue and experimentation, and that take stock of the students’ feedback in a systematic way, involving them eventually as expert tutors to accompany the new trainees. Over time, one such approach allows to build a “library” of solutions, that can definitely be classified as a resource to face uncertainty, and all the schools are absolutely interested in sharing their libraries and building bigger ones. Even if some problems seem to belong to a remote situation, there is a growing awareness that the unpredictable environmental, social and economic dynamics may bring new, unexpected issues in very short. Many examples can be made, not only related to climate change, as they range from predation problems to the virtual fencing applications, remote monitoring, and GPS control of the flocks, to social pacts and business agreements that could result into cheaper forage production from agriculture and food processing leftovers, among many others. An emerging problem in France might be well known in Italy (wolves, for instance), and vice-versa, while the ability to face droughts from pastoral settings in Morocco, becomes suddenly very interesting for Spain.

Also, there is a total agreement on the importance of the practice period, that in some cases covers different seasons (Ariège-Comminges) in so offering a chance to better understand the seasonal cycles of the ecosystems, and of the herd management activities. In other cases, it seems to focus more on the “pastoral lifestyle” as an endurance test for the future pastoralists. According to experienced trainers and most trainees, it is fundamental to understand the real business, including the multiple facets of uncertainty within it, especially for animal behavior, health, management, and to many environmental aspects -from learning how to walk after goats, “team building” with the dogs, facing predators, and personal conflicts -even with the pastoralists and shepherds, in addition to the local communities for newcomer “urban outsiders”. To some extent, controlling uncertainty is associated to upskilling negotiation capacities, as pastoralists must interface with a wider range of actors, such as foresters, veterinaries, clients, tourists, environmentalists, and animal rights

<sup>4</sup> *Now, this issue of uncertainty, the way you address it, nobody works on it!*

<sup>5</sup> Which in turn relies heavily on Biesta’s tripartite conceptualisation of the purposes of education: *qualification, socialisation and subjectification*. See *Modelling transformative education*, Webb, R. and Kirby, P., (2019), [http://sro.sussex.ac.uk/id/eprint/80284/5/11\\_Webb\\_FORUM\\_61\\_1\\_web.pdf](http://sro.sussex.ac.uk/id/eprint/80284/5/11_Webb_FORUM_61_1_web.pdf); Biesta, G.J.J. (2009) *Good Education in an Age of Measurement: on the need to reconnect with the question of purpose in education*, *Educational Assessment, Evaluation and Accountability [formerly Journal of Personnel Evaluation in Education]*, 21(1), 33-46. <https://doi.org/10.1007/s11092-008-9064-9>

movements, among others. As the number grows, traditional knowledge lacks the resources to deal with them, which eventually hands the challenge over to the schools.

In addition to the importance of field practice with an experienced pastoralist or shepherd, the interviewees agree that a lot is learnt through the observation of nature, animals, environmental dynamics, and even social ones. Referring again to the work of Biesta –cited by Webb and Kirby (see note 3 above)- the field practice then, and the lessons learned from it, could be seen as an example of the “**ship**” learning model, with no route, and the need to adjust to winds and waves, exploring new situations and solutions in ways informed by, but not restricted to, what has gone before and what is known already. It’s interesting to note that some pastoral schools, despite a rather strict (and “vertically” designed) curriculum in terms of subjects and time allocation, are also recognizing the fundamental role of the field practice, taking a large number of hours and even spread over different seasons, so to cover several phases of the ecosystem cycles, as well as a larger number of the livestock management seasonal activities. Somehow, the future shepherd is exposed to a broader range of uncertainties, navigating through them to accomplish a mission that goes way beyond the animals. Again, as a shepherd from the French side of the Pyrenees said:

Là-haut, le berger il s’occupe des bêtes, mais il est guide aussi pour les gens qui se sont perdu, il est secouriste parce qu’il n’y a toujours quelqu’un qui vient de se blesser.

*Up there, the shepherd takes care of the animals, but he is also a guide for those who get lost, and he is a first-aid operator since there’s always someone coming with some wound.*

Partir en montagne faut être équipé un minimum, même pour quelques heures, c’est le brouillard qui monte en quelques minutes, c’est la pluie qui arrive, un orage, donc le conseil c’est pour le fond-de-sac un imperméable, un peu de nourriture et de l’eau, quelque chose de chaud et puis signaler qu’on part, passer dans les cabanes, voir les bergers, se renseigner sur la météo ... on ne part pas comme ça ici, quoi.

*To hike in these mountains, one must have some good equipment, even for a few-hours trek. It’s about fog raising in a few minutes, rain coming suddenly, storms, so the advice is to carry always a waterproof jacket in the backpack, some food, some water, something warm and to warn someone that you’re leaving, passing by huts and meet the shepherds, check the weather ... you can’t just be easy and go, up here.*

Most of the interviewees were keen to ask and exchange information on the adaptation practices and innovation strategies that are reported in the next paragraphs and can be labelled as their way to approach the concept of uncertainty.

In the end, therefore, it is much easier to attach the idea of uncertainty to the contents, than to the educational approach of the training courses.

In order to proceed, uncertainty has been sub-divided according to the same sub-categories found in other PASTRES research works: environment, market, governance and overall challenges, surfing through problems and solutions as summarized below.

## 5A) Environment

What teachings and what kind of experts are addressing **environmental change**? How? What different strategies are offered in the courses, and to what extent do they contribute to providing a repertoire of options to the students?

Many examples emerged from the interviews. The problems refer mostly to climate change, in the form of growing difficulty to find good pastures and water points, impacting also on animal stress and milk/meat production. The solutions start from an accurate planning and constant adjustment of the herd size based on the carrying capacity of the pastures and available water. Trainers, shepherds and students stress the fundamental importance of **mobility**, in time and space, which in turn would require measures that are neither under control of the schools, nor the herders: good roads and infrastructure, accessible pastures on a wider range of locations – calling the decision makers to take concrete measures. Public policies and resources are required also to rescue former pastures, evolved into shrubs, then forest after decades of abandonment, which presently reduces the options for mobility and adaptation to seasonal variability.

Water harvesting and trucking, appropriate building of (even mobile) water points are other examples shown to the students at many schools. Most of them emphasize investments in local hardy/rustic breeds of cows, goats, and sheep, well adapted to altitude, resistant to parasites and for their grazing performance. In fact, also farmers and pastoralists refer that climate change causes an increase in the overall costs of livestock feeding and healing, that are not compensated by the price. In this context, local breeds become more reliable, as they are suited for arid climate and deliver lower, but stable production of meat, milk and wool requiring less care and investments. In some cases, the schools work in collaboration with goat/sheep breeders, pushing for an expansion of local breeds. Other cases are there, of schools working in close collaboration with Life Projects for the conservation of habitats and local breeds (such as the Maronesa cow in Portugal). Other examples focus on innovation in the production and use of fodder, such as the use of leftovers from other sectors as animal feed. This happens for example, in Andalusia, where goats are with leftovers of tropical fruits transformation industry (mostly avocado), which allows to reduce the dependency on external inputs, cutting feeding costs and making it possible to maintain the size of the herds (instead of destocking).

After decades of blaming grazing/overgrazing as a major cause of soil property loss and environmental degradation, a positive impact of pastoralism on conservation and biodiversity is being increasingly documented, by academic and field research on pastoralism, wildlife, and ecosystem health<sup>6</sup>. The examples found in the pastoral schools include agro-ecological subjects and practices such as grazing charge management, electric and virtual fencing, training dogs to defend the herds from wolves, mobility to make the best use of pasture and fertilize soils, use of leftover/fodder from combined agriculture practices. The schools are involving vegetation and ecology experts to teach how livestock should be managed to make its presence functional to the conservation of soil properties and biodiversity in pasturelands. They get involved in participatory research programmes and conservation projects (Habitat, management of Natura 2000 sites, ...)

In fact, when the herds abandon a pasture, the natural evolution path of the vegetation cover goes towards shrubs, then forest, with a step decrease in biodiversity, especially referred to herbaceous species that disappear as the tree canopy expands. In many places, an accurately planned alternate opening of pastures by cows, followed by goats and sheep is adopted as a vegetation management

<sup>6</sup> A growing number of research essays has been confirming the evidence of the essential role of pastoralism for the conservation of biodiversity and rangeland ecosystems all over the world. A few examples include "A GLOBAL PERSPECTIVE ON THE TOTAL ECONOMIC VALUE OF PASTORALISM" by IUCN -WISP, 2008 ([https://www.iucn.org/sites/default/files/import/downloads/tev\\_report.pdf](https://www.iucn.org/sites/default/files/import/downloads/tev_report.pdf)); "TOWARD A HOLISTIC UNDERSTANDING OF PASTORALISM" by P. Manzano et al, 2021 (<https://doi.org/10.1016/j.oneear.2021.04.012>); "THE ROLE OF PASTORALISM IN REGULATING ECOSYSTEM SERVICES" Seid MA, Kuhn NJ, Fikre TZ.. Rev Sci Tech. 2016 Nov; 35(2):435-444. doi: 10.20506/rst.35.2.2534.

strategy to maintaining biodiversity and feeding the animals adequately.

Equally important for the defence of nature is the “fire brigade-herd” experiment, with concrete implementation already in Spain and growing attention in other countries, especially Italy. Observation shows that the summer fires naturally (more or less) happening in many places throughout the Mediterranean region are much easier to control, and less damaging, if the grass vegetation layer is kept under control by grazing animals. This is particularly true in the current climate change context, with shorter rainy seasons, higher temperatures, and recurrent droughts, that explain the expansion of summer fires over a larger season and on larger areas. In the Canary Islands, the office in charge of the pastoral school has been assisting farmers to fill the applications to get funds for the fire prevention service provided by their herds, with different payments according to the season and the fire risk in the plots chosen for this protection measure.

The interviews with pastoralists and former school trainees show that they feel empowered by the recognition of the ecosystem services provided by their animals and personal work. The agro-ecological teachings are mostly considered as inspiring principles, whose application -apparently- depends on a balance between the “green-mindset” of the pastoralist, and policy or market incentives. The “money rules” principle is also very effective: economic subsidies (as for the fire-brigade herds) obtain their goal much faster than sensitization and awareness raising of pastoralists. Therefore, research outcomes, school teachings and best practices should be coherently aligned with market and public funding.

Furthermore, research could help balance some “too-green-biased” policies. In fact, the laws on protected areas and species have a role not only in the out-of-control expansion of some wild species that are becoming a threat for conservation (and even for humans in some case). The reduction of grazing herds favours the evolution of the vegetation towards bushes and trees that in the end, cause a contraction of grassland ecosystems, with an overall loss in habitats and biodiversity.

In Morocco for instance, one problem is to balance the livestock charge and the carrying capacity of the pasturelands to avoid overgrazing that threatens vegetation and compromises soil properties in the long term. The social value of a large herd is at least as important as the revenue it can generate, and therefore, the farmers are reluctant to cut the herd size in the dry periods. They rather tend to move tens of thousands of heads towards those areas where a little rain gives hope of finding grass, which can cause severe impacts, considering the fragility of arid ecosystems, as well as the lack of studies to define the suitability of lands and the optimal herd size, versus a total stock of around 21 million sheep and 180,000 camels. In 2013 a law was approved with the aim of managing the transhumance movements. This measure was not accompanied by the sensitization and extension effort necessary, which helps to understand why livestock keepers do not seem to understand its importance. State authorities have been announcing the launch of a pastoral school since the 1980's, but this initiative has never seen the light.

Another very sensitive issue, at the overlap between ecology, conservation policies and pastoralism, is the damage caused by predators. The growing populations of wolves and wolf-dog crossed packs is already causing important damage to pastoralists across the Italian Apennines and the Alpine region, and it is expanding quickly on the other mountain areas occupied by herders across the French and Swiss Alps, as well as in the Pyrenees where bears are also threatening the herds. A lively debate goes on in several places, between protection agencies and the general public versus pastoralists, involving also the danger that defence dogs represent for tourists and their pet-dogs. Pastoralists feel at the very least underrepresented in this debate and condemned to undergo huge livestock and capital losses due to the prevalence of the conservation discourse.

A good practice adopted in Switzerland might be of help in the other settings: defence dogs are trained by a specialized official service who rents them for the summering season to the shepherds, while for the work with the herds they count on their own border collies. These defence dogs are generally able to face predators without threatening humans, provided that tourists also behave appropriately when they come across a herd. In fact, in France several sensitization initiatives have tried to instruct people on the right behaviour, however in general, the legal consequences of a dog aggression to a *randonneur* fall heavily on the shepherd (and the farmer), which is why in some cases they prefer not to have dogs at all, and to sacrifice many heads to the wolves at each season. This is particularly valid for the most popular and visited landscapes, where according to French informants, during the high season there can be 5,000 visitors a day, somehow contributing to keeping wolves away, too. Coming back on the Swiss solution, specialized dog training is costly, and requires an organization that should be run for the entire year, breeding, training, and keeping dogs to lend for the summering season.

The pastoral schools could probably invest something in providing a similar service for an affordable cost, and they could improve the capacity of future pastoralists to train and handle defence dogs.

### **5B) Institutions and Governance**

This issue refers mostly to the decision-making processes, and the rules governing the access to land and infrastructures, as well as to public and private rangelands, down to food processing, labelling, marketing and others. In the opinion of many interviewed persons, because of the prevalent governance mechanisms, pastoralists are poorly considered within the list of stakeholders, wherever their interests make part of the picture. This would explain why many legal measures are shaped neglecting their needs, from local grazing plans to the CAP negotiations and implementation procedures. Access and use restrictions in (and out) protected areas, wildlife coexistence as well as conservation measures are made and updated without consulting them, wasting sometimes their substantial contribution to the conservation of wilderness and the knowledge about it.

Dieci anni fa, passando a quest'ora su questa strada avresti visto decine di cervi. Ora si sono spostati più a valle, c'è chi dice a causa della pressione dei lupi ma sarebbe da approfondire, per esempio, i pastori non hanno subito un aumento altrettanto forte di attacchi.

*Ten years ago, passing this late on this road you would have seen dozens of deer. Now they have moved further downstream, some say because of the pressure of wolves but it would be to be deepened, for example, the shepherds have not suffered an equally strong increase in attacks.*

Io voglio bene al lupo. Lo nutro io, con le mie capre [...] La porto io l'acqua sulla montagna, l'estate, la pago io e la bevono i lupi e i cinghiali, la salamandra sta nel mio abbeveratoio e le porto l'acqua e la controllo, le guardie del Parco non sanno certi posti dove si trova [...]

*I love the wolf. I feed it, with my goats [...] I bring the water on the mountain, the summer, I pay it and the wolves and wild boars drink it, the salamander is in my watering hole, and I bring the water and control, the Park guards do not know certain places where it is [...]*

This kind of claims is expressed also with regards to the safety standards imposed to dairy productions, and to the slaughtering systems, in addition to the “classic”, widespread frustration for the unsatisfactory compensation measures of predation damages. Also, the “competition” with trekking tourists brings up the need to establish common rules, the tourists should know how to behave when they come across a flock, and the shepherds should count on especially trained dogs.

Within one such broad issue, the schools have a very variable approach to lobbying and advocating for the needs and rights of pastoralists at large. From the interviews it appears that each centre focusses on some issues that impact the local situation directly, and they don't address the broad policy framework, as for the future farmers and shepherds, it is possibly hard enough to understand

and learn all the laws in force (and necessary capacities and/or assistance to match them).

Talking about governance, the decision-making bodies and education boards of the schools are also interesting to explore. Of course, they must comply with all the laws and rules to be observed by all the similar subjects (be it a private training centre providing courses and official titles, an NGO, a public school etc.) to be allowed to hold vocational and professional education courses, which sometimes implies matching unreasonable standards (as for instance the wheelchair access). Apart of that, it is remarkable that the selection of candidates and the validation of the curricula is made involving many stakeholders, including trainers, livestock keepers' association representatives, pastoralists, and others. Even in the more institutionalized cases, there seems to be a recognized role for the 'moral authority' and the expertise of some outstanding expert/activists from various stakeholder groups (such as public vets and extension officers, CSO members, farmers' union delegates, experts from cooperatives, actors in the dairy value chain etc.) especially based on their past/present active role, in lobbying and mobilizing energies to initiate the school. These "elders" are sometimes formally enrolled as teachers, with no official place in the decision-making boards. Nevertheless, this (sort-of) "founder share" is not granted, and it is exposed to a variable degree of attention, depending especially on the turnover in the lead of the school, and/or the institution that sponsors it.

The Italian case is remarkable, because the leading group has built a common space for sharing knowledge, information and for lobbying purposes at national scale. Through a participatory approach this group has shaped the key modules of a pastoral school, and this backbone is being adapted to different funding and implementation opportunities. So far, the trainings have been funded by Local Authorities, which means that 2/3 (the third being nested in a LIFE project) were funded as single, pilot experience, whose sustainability is yet to be built.

When talking about the governance of the schools, "tuning" the subject around the word *uncertainty* is not easy at all with these persons, and the following might be a conclusion forced by the very purpose of this research. Anyway, they seem to agree on that consulting these "elders", adapting the curriculum by changing subjects, and by involving experts based on an updated assessment of problems, needs, opportunities, and potentials ... even if they are not explicitly made on purpose, all these measures help to address uncertainty.

A final note from several exchanges is that, even if the governance mechanisms were designed and executed in the most pastoral-friendly way, the direct participation of pastoralists keeps being limited to the field experience of the trainees. Not that they lack specific competences to be included as teachers in the school programmes: in many cases they lack other resources, starting from someone (be it a familiar or paid person) to take care of the flock for the time necessary to participate in the design and execution of a training.

Which brings up again the key-issue of the number of persons necessary to run one healthy, sustainable pastoral business, with a sales volume big enough to enable each of them to address other tasks beyond those strictly demanded by the flocks,– and to reach a decent quality of life as well.

## 5C) Market Integration

The market-related issues have a variable weight in the curriculum of the pastoral schools, depending on the focus of the school itself. They are mostly referred to dairy making and other kinds of transformation processes, and focus on local resources and potentials, such as the processing of wool, milk, or even honey making. However, all the schools agree on that pastoralism is about living animals, and dealing with them takes most of the training, as it is the mission of the school, and it is complex enough.

On the other hand, there are plenty of support opportunities for new economic activities launched by young/women entrepreneurs, startups (with coaching programmes and incubators), innovation in the agri-food sector, promotion of typical productions, while most (if not all) of the schools emphasize local breeds and related productions, in so building strong connections with the surrounding ecosystems and communities. A growing trend is evident, of enriching the travel/tourism offer<sup>7</sup> with enjoying local productions, explorations of the territory, and the live experience of typical/traditional activities. Many rural locations (big old farms, village centres, hotels) associate these features with full logistic facilities for corporate meetings, trainings, team-building events, and the like. In all the areas where pastoral schools operate, short-term trainings are available, dedicated to all the economic activities of this kind. And apparently, pastoral schools are not catching much of this all: they seem to focus mostly on direct selling (on farm) and marketing (shop distribution and online sells) – in addition to legal measures to fulfil (labelling, sanitary standards etc.) to go to market.

Another potentially relevant (and anyhow growing) field for the economy of pastoral systems would be the provision of environmental services (fire prevention, maintenance of landscape and habitats, ...) and social ones (reverting depopulation, providing employment, ...) either directly or indirectly contributing to attract tourists and to accompany their explorations.

The potential role of pastoralism as bridge between ecosystem conservation and services, and the socioeconomic development of rural areas should be further explored - and fuelled.

Perhaps, a few more interviews here -or training experiments- should be made to understand this better, and especially from the students' point of view, it could be interesting to understand if their view of a good living standard could be reached -also- by improving their market and entrepreneurial skills, by catching training and support chances offered by other actors, as an additional resource for their flexibility and resilience (as the ability to diversify even the sources and kind of possible support).

In fact, the LIFE *Grace* project being executed in Lazio (Italy) is successfully exploring the involvement of the public trade support agency (Chamber of Commerce) as a broker for linking grass-fed productions with Horeca operators, within a broader action aiming at both, pastureland conservation, and helping to build a sound pastoral economy. In the mid-term, this shall (hopefully) lead to raise public awareness not only about the quality of the products, but also about the role of pastoral and other extensive livestock farming systems, in terms of nature and landscape conservation.

The school heads interviewed say generally that they can't figure how to devote much more time to market and trade lessons. However, they find that making alliances with other operators in the economic/trade field would be important, helping the trainees to catch more opportunities and to improve their skills over time. Within the mosaic of public services, trade organizations, private brokers (among others) that offer support to the development of economic activities, the pastoral schools could make a difference, at least in orienting their former trainees towards the most relevant opportunities.

<sup>7</sup> <https://www.itinerairespartages.org/26-au-31-JUILLET-2022-STAGE-UNE-VIE-DE-BERGER-IMMERSION-PASTORALE>



## **6) The Challenges**

New pastoral schools keep starting to operate, in Spain and Italy, at the regional level, upon spot local government economic support and other unstable sources of funding, (e.g. LIFE projects) but despite the lack of permanent funding they all have the ambition to last. However, starting over on a yearly basis, upon the approval of single applications can be an obstacle to design and work on mid-term programs. In Morocco, for instance, the plan to train pastoralists, farmers, and other operators along the whole value chain (dairy makers, trade and even tourism operators) is still pushed by some very committed researchers. The same actors pushed for the opening of a pastoral school, lobbying at national level, and participate in international research and cooperation networks, working with researchers, NGOs, and Aid agencies from Europe (such as CIRAD, and Bari University among others) and US -Aid. The very nature of this kind of actions, though, forces them to achieve verifiable goals within a short term, which almost mechanically makes it very hard to have a lasting impact on the most important drivers of rural poverty and of the hard living conditions of the small-scale livestock farmers in pastoral settings.

Moreover, the changing shapes of uncertainty are difficult to address from a short-term project perspective. Which leads to recommend that pastoral schools, especially if they are established in poor countries, should be entrusted to stable state agencies and services, and supported in the long term through permanent funding.

In any case the school trainees, just as anyone willing to start an extensive livestock farm, enter a challenging business, with a minority of innovative healthy farms opposite to a majority of discouraged livestock farmers, ready to present endless lists of reasons why the “pastoral life” is in the verge of disappearing.

In France and Switzerland, on the contrary, the participants to the courses have a 100% probability to get hired for the next summering season. According to the coordinators, 75% of the trainees remain in the profession as employees. One-out-of-four of these shepherds quits the sector in few years, of which only a small percentage does it to mount his own herd and business.

On a yearly basis, however, the schools train a minimum percentage of the operating shepherds and pastoralists – around 15 candidates per edition (yearly, or even for 18-month trainings) in areas (such as Andalucía and Extremadura) where the number of extensive farmers can easily be around 1500. The same is valid for the French centres, such as Le Domain du Merle or the FCFPPA Ariège-Comminges.

In Switzerland, too, the number of persons trained represents but a minor percentage of the shepherds employed in the alpine summering grounds. A 90% drop off is recorded (“30 begin, 3 only resist beyond the beginning of the summering stage”) simply because the allowance offered by the school during the summering is worth  $\frac{1}{4}$  of the salary paid by the farmers, to do the same job.

Of course, the output is determined by the input, in terms of selection of the candidates. From the comparison between the well-established and the new-born schools it seems that finding candidates is not always easy at the beginning (despite the “need analysis” that justifies the launch of the school. After few years though, the schools receive tens of contacts after the launch of a new course. Not all the requests lead to a full application, but there is always more demand than places. However, this is not the only reason to run a selection: the schools tend to deeply evaluate the chance for a candidate to complete the course successfully. And a mention is certainly worth for the gender balance: the traditional dominance of male shepherds is disputed by the pastoral schools, where female trainees range around 50% approximately. Coming back to the admission, the schools have generally to shortlist and select the best candidates. Education background is definitely less relevant than motivation, and other qualities that seem to be more important to go pastoralists successfully. In some case the legal constraints and/or favourable family settings are also considered in the selection, such as the access to common/public pasturelands, or the possession of livestock and

cattle sheds. Those who don't come from rural settings in general take longer to become good shepherds, and then pastoralists. The French experience shows that longer and more accurate courses can shape reliable salaried "outdoor" workers for the mountain season, however those who have no rural background take longer.

"Pas même se déplacer, en marchant dans la brousse c'est la même chose..."

*Not even moving, walking in the bush is the same thing...*

" es que no sabía siquiera caminar por ahí"

[...]

"Se va el dueño y se marcharon los perros atrás de él, y yo me iba a quedar solo con las cabras sin perros"

*I didn't even know how to walk around on that ground...*

[...]

*The owner leaves and the dogs go after him, and I was going to be left alone with the goats without dogs.*

Since they must select the candidates, some schools prefer to low-rank the applications of this kind of profile. In so doing, they probably increase the success rate of the trainings in the mid-term, but they risk neglecting the potential highlighted by the schools who are open to the "outsiders": as they could trigger innovation, social renewal and vitalize the sector.

According to many stakeholders -and not only in the pastoral school environment- a blooming of initiatives around pastoralism is the result of several overlapping trends. The concerns about climate change and the impact of industrial food chains raise public attention. Care for the sustainability of food products and habits is high as well. However, consumers can't easily find concrete options to buy responsibly, and they are often targeted by green washing campaigns and tricky, green-labelled products, that in the end shade the ecosystem services provided by pastoral systems, whose productions could meet much better the concerns about sustainability, healthy food and the preference for organic and agroecological products. Connecting producers and consumers (demand-offer) on a short mileage, and with no-or few brokers in between seems a promising way for pastoralists to face uncertainty, at least regarding access to markets and the increase of profits. However, not many have taken advantage of this opportunity yet, and the pastoral schools lack a business teaching sound enough to trigger innovative projects in this direction, so much so that the only "grass-fed" labelled meat available in Italy is imported from Ireland. The LIFE project mentioned above (Grace) promotes the birth of local business networks with extensive farmers, pastoralists and Horeca (i.e. hospitality, restaurants and catering) operators. The action is implemented in a region where no pastoral school is operating yet; a first experiment is planned in 2023, and it should be built in collaboration between the LIFE project and the national school of pastoralism.

Moreover, on a social balance and food justice perspective, pastoralism also matches the demand for short-mileage food value chains, going hand-in-hand with the revitalization of marginal and rural areas. Among other benefits, one such trend accompanies the rescue, conservation and revival (through active use) of neglected plant varieties and local livestock breeds, as well as of the traditionally associated foods and other cultural habits. These are just few of many positive impacts of a healthy pastoral setting, compiled from many interviews. The school leaders and trainers acknowledge their importance; and nevertheless, this kind of topics find much less space than those required to release a title (such as animal welfare).

The growing number of pastoral schools, therefore, could be one of the outputs of the favourable wave of concern for healthy and sustainable food, even if the undermining structural problems affecting pastoralism remain there – some getting even worse.

Among them, the falling rate of generational turnover. And as we have seen, the schools have little impact in terms of numbers: nowadays, there is apparently no way to imagine that the existing -aging- livestock keepers are to be replaced by a significant share of trainees of the pastoral schools. Better said, to be replaced at all.

Summarising, the schools are just one out of a much larger large set of actors and drivers of the pastoral settings. The quality and level of the courses are highly appreciated, but considering the numbers, the impact would be relevant only if the schools were largely out-scaled, which requires a clear commitment, and a supporting vision of the decision makers.

But even if policies are weak, time can make a difference: as in the Basque case as well as in the French Pyrenees, the persistence of the school activity in the long term, joint with the efforts to make the shepherds settle, and plant roots in the surroundings, results in a permanently growing number of former trainees operating in the region, which makes the school eventually give some imprinting to the larger extensive livestock keepers community.

In general, it is important to examine if, and to what extent, the schools help building and strengthening social relations and networks, fuelling community support schemes and the growth of social capital, that are key-assets to gain adaptation capacity and develop resilience. However, there doesn't seem to be any established approach to uncertainty, rather some good practice to be shared, and applied to both, the uncertainty affecting the sustainability of the school, and the one surrounding the pastoral world (and beyond).

Schools with their **own land and herds** have the double advantage of using them as a training ground, and to produce dairy and other products, contributing at the same time to generate income, and to raise awareness on the importance of pastoralism. They also work as living test of the integration between production and other activities.

Schools ran by private subjects, or by partnerships with a relevant private component are generally more flexible than the 100% public ones, and a bit less than those relying mostly on annual calls for public funds. Financial sustainability seems to be inversely proportional to flexibility, which suggests that “blended” solutions with an enlarged number of activities requiring more staff and expertise, seem to be more stable and sustainable.

The schools should learn from existing best practices, to make and strengthen alliances and networks with economic development agencies and the private sector. Many other players have (or can have) synergic missions with the sustainable economic growth of pastoral systems through improved market skills and wealth. This could be an opportunity for expanding the curriculum as well as the impact of the schools. The pastoral schools could consider enriching their activities, covering the overlap between follow-up, networking and acting as an “honest broker” for the pastoral sector. This could in turn generate resources for the sustainability of the school itself.

There is also a clear agreement on the importance of empowering the students through skills that are not ordinarily mastered by the schools - but might be of great use to face uncertainty. This applies to many fields, such as diversifying the business to stabilize income, harnessing opportunities for economic support, such as public funding for young entrepreneurs, incubation programmes for innovative business and so on. The capacity to change trainers every year is very important to present fresh and successful best practice cases to the trainees. As an internal rule of the Catalan school, the lessons are always centred on the direct experience of the trainer.

The schools address single students, while innovation in pastoralism -especially in Europe- seems to require a team approach. Taking care of livestock is one of the functions, besides many others that keep gaining importance and absorbing time. In fact, the schools who manage their own flocks, transform and sell products and count on a larger staff besides the teaching activities (even counting on project proposal writers and managers, communication and marketing staff etc.). Practically, they are living examples of team-based farming, that they don't really teach. This might not be an issue for the French and Swiss cases, if we only accept that their mission is to fulfil the demand for seasonally employed shepherds, in so matching the need of farmers, rather than tackling other social environmental and personal issues of the pastoralists. For instance, at the *Domaine du Merle* the students share a guesthouse, and practically none of them considers moving with the family, or to find a housing solution within the hosting community. In any case, even these schools could be interested in facilitating alliances between shepherds and farmers -who are the target of separate courses. The low education threshold and the peculiar kind of entry criteria applied to the courses for "Berger-Vacher-Transhumant en Alpage" are not the same as those used for the other trainings of the same schools, and the trainees wouldn't necessarily be interested in, and/or capable to acquire all the skills involved. This issue could be faced through a team-based approach to the livestock farming business.

On the other hand, the French Schools of the Pyrenees try and contribute to encourage the trainees to become permanent residents of the region. In the *Hautes Pyrénées* region, the school makes part of a broader architecture, including an association whose mission is managing the summering activities. This includes the contracts of the shepherds, as well as the distribution of the flocks in different places, the assignment of the mountain shelters to the pastoralists, the maintenance of the paths and measures to face predators. The school helps students to find accommodation and living conditions inside the hosting community for the indoor training period, and supports the search for alternate jobs after the summering time. Shepherds are then found in the same area working seasonally in the tourism sector (skiing stations, hotels etc.) in addition to the jobs available in agriculture and livestock farming.

Similarly, the first Portuguese pastoral school was designed and managed as a component of a larger programme for the revitalization of a rural territory, involving 14 actors among local authorities, universities, farmers and dairy makers, mobilizing multiple funding and policy support opportunities (such as the Life project "Maronesa", among others). Similarly, according to the news after the launch of the newly born school of *la Rioja* (Spain), local authorities warmly welcomed the (very few) young pastoralists willing to move to an area with a sharply decreasing, aging population: 2 people only, but they make a difference.

Some schools have a clear orientation towards facing social issues, such as the integration of newcomer urban youth in rural settings, and perhaps all the schools could also serve as reference for advocacy activities that a pastoralist will hardly have time and energy to address alone. On this front, the Italian experience seems very interesting, as the school was born as a project within a lobby group with the mission to defend pastoralism, with multiple activities and the contribution of a variety of stakeholders.

However, while the mission of the schools often mentions the will to address the general problems affecting the rural and marginal areas, it seems hard for them to impact on the same problems, because they target single students and future pastoralists, involving small numbers of local herders as mentors, with a vital role in the field practice part of the training.

Again, on overall policy and governance issues: the access to land, water, rural infrastructure and other resources is key for pastoralism. And so is the access to credit and other support measures, as well as access to markets. However, most schools don't seem to consider themselves in the position to face the matter at this level. In the *Pais Basco*, for example, the selection criteria of candidates consider their personal projects, giving priority to those more likely to succeed because they already

belong to a livestock-farming family, can count on land properties, and/or access to public lands and other supporting conditions. Similarly, all the other schools try to reduce the drop-off share, and in fact, they show very high accomplishment rates (except for the Swiss case).

However, this aim can lead to different impacts, depending on the very focus of the school. The school in Catalunya for instance tries to rebalance the aging rural population by encouraging young pastoralists to join the sector and helping them to find effective communication methods with the hosting community (elder farmers, perhaps hostile against the urban newcomers). The French ones are part of a larger and more complex mosaic, where not only different education opportunities -and higher entry requirements- address farm managers, but also different institutions and agencies operate, that by mandate address explicitly the broader issues, such as climate change, predation, maintenance and assignment of mountain shelters and infrastructure (to make some examples). See for instance the website of the CERPAM (*Centre d'études et de réalisations pastorales Alpes -Méditerranée* – [cerpam.com](http://cerpam.com)) operating in the Mediterranean Alpine region, which is covered by the pastoral school at La Motte – Servolex with its “*Berger – Vacher d’Alpage*” training course. The same applies to the [CIP-GRPGE](#), a *Public Interest Group* composed by a large panel of authorities, agencies, associations, and private operators dealing with different aspects of “pastoralism and land management” – as the acronym says (Study Center on Pastoralism and Land Management).

As closing remarks, then, we could say that as uncertainty hits all aspects of pastoral life, from the biodiversity of pasture to the final consumer, including a very broad range of fields, we cannot expect that one single actor will be able to address them all. Pastoral schools seem well placed to cover some of these fields, such as teaching the tools of the job, bridging the field ability to cope with all sorts of situations across generations, facilitating spaces for nurturing and launching many kinds of innovation in the sector, putting experts together to channel environmental and social activism towards new synergies between conservation and food consumption, within a sustainability framework.

Many other issues though, need to be tackled together, within a larger set of policy, land use, technical assistance, and market measures, which requires the engagement of a larger panel of stakeholders starting from decision makers, all the way to the final consumer. Under the right conditions, then, the schools could help facing uncertainty in many other fields, as they have a potential role in offering support to participatory research on new herd management techniques (virtual fencing, use of drones, ...), and ecosystem services, which would support the recognition of the stewardship of pastoralists for the conservation of rangelands. The schools could also be involved in testing solutions to face predation, as well as the conflict between shepherds (and their dogs) and tourists and park management authorities.

A larger scale set of issues should be faced outside the schools, and this includes the fundamental reasons why it is nowadays very hard to start or continue a pastoral activity with a staff large enough to guarantee a better quality of life to the single operator, as well as the necessary specialization to deal with the expanded set of dimensions acquired by pastoralism – way beyond the traditional herd management and delivery of milk, meat and dairy at the farm gate. If suitable measures were adopted, the generational turnover could regard many more people than the actual and very narrow set of hereditary pastoralists and urban drop-outs from the edges of unemployment and burn-out experiences.

Coming to uncertainty -again, and finally- the topic itself is quite complicated to explain to the school leaders, not because they lack tools of understanding: on the contrary, they see the issue clearly, often fragmented in countless cases and examples, and they would be more than open to share and discuss about it. In fact, this research was carried out between June-December 2022 and over the same period, several initiatives ran under different projects proved that not only is pastoralism gaining attention (and pastoral schools are blooming), but each school is also very much ready to exchange with the other schools about basically any subject, including also the sustainability

strategy of the school itself, and the prevailing uncertainty that characterizes all pastoral systems.

At the same time, they highlight the difficulty to figure an effective way to include uncertainty in the approach to teaching. As they often acknowledge, this subject would require a dedicated training of trainers, making it a very interesting subject for a course to be designed yet, that could be based on the lessons learned, and the whole legacy of PASTRES.

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