

LIFE20 NAT/IT/001076 ShepForBio Project

Action C5 Creation of a School for Shepherds



LIFE SHEP
FOR BIO



LIFE20 NAT/IT/001076 ShepForBio Project

Action C5 – Creation of a School for Shepherds

General Evaluation Report and Training Modules Report, 2026

With contributions from:

Carolina Pugliese, Giovanni Argenti, Camilla Dibari, Francesco Sirtori, Chiara Aquilani, Cesare Pacini (University of Florence); Lucia Fantasia; Luisa Vielmi (DifesAttiva Association); Roberto Funghi (Rete Appia); Francesca Pisseri (Italian Agroecology Association); Gianrico Fabbri (Slow Food Valdarno); Davide Alberti (Foreste Casentinesi National Park); Tommaso Campedelli, Guglielmo Londi, Serena Corezzola (DREAM Italia); Francesca Napoleone (Sapienza University of Rome); Raffaele Spadano (Montagne in Movimento); Jacopo Goracci (Slow Food); Alessio del Tongo (Tenuta di Paganico); Martina Muggiri (ISIA Roma Design); Gabriele Galli, Deborah Bianchi (Podere Bianchi Galli Farm).

Photos by Marco Buratti.

This document was produced as part of the LIFE ShepForBio project, co-funded by the European Union's LIFE Programme.

<https://dream-italia-euprj.eu/life/lifeshepforbio/>
<https://www.facebook.com/LIFE.Shepforbio/>

INDEX

Part I - General Report

1. Foreword	4
2. The ShepherdSchool of the LIFE ShepForBio project – Action C5	6
3. Overall assessment of the ShepherdSchool experience	16

Part II - Training Modules

• Module 1 - Basic principles of biology, anatomy and nutrition of farmed livestock	20
• Module 2 - Management of pasture resources	24
• Module 3 - Managing animals at pasture and in the barn	31
• Module 4 - Health management on a livestock farm	37
• Module 5 - Quality, food safety and processing of livestock products	46
• Module 6 - Wool: from by-product to agricultural product	51
• Module 7 - Managing conflict with predators	53
• Module 8 - Starting a livestock business: regulatory and technical aspects	57
• Module 9 - The Common Agricultural Policy and regional programming	59
• Module 10 - The shepherd's role in biodiversity conservation	65
• Module 11 - Adding value to products and diversifying livestock-farming activities	70
• Module 12 - Workplace safety	78
• Module 13 - Cheese-making techniques and dairy management	83
• Module 14 - Agroecology, agroforestry and silvopastoralism	86
• Module 15 - Economics and planning of pastoral enterprises	90
• Module 16 - Working with the herding dog	94

A reflection on the contribution of pastoral schools to the promotion and enhancement of pastoralism.	98
--	-----------

1. FOREWORD

This document has a twofold aim: on the one hand, to provide further details on the experience of the Shepherd School, the school for shepherds and herders created as part of the LIFE ShepForBio project (Action C5), particularly regarding its training content; on the other, to attempt an evaluation - above all in terms of the interest and engagement shown by the students - of the impact of the training programme offered.

The document is therefore organised into a general section, which summarises the structure and content of the School's training programme, and a specific section in which, for each module, the teachers involved attempt to assess - drawing on both the impressions gathered in class and the evaluation questionnaires collected at the end of each year - the importance of the individual topics covered in training new shepherds, as well as the interest they generated among participants and the teaching methods used.

The specific contributions on the individual modules follow a defined structure that is the same for all of them, made up of two paragraphs: "Topics covered and their relevance" and "Assessment of the course's impact". In order to make this document genuinely useful in practice, individual teachers were given complete freedom in organising their content, so that it would fully reflect their own impressions and assessments. The result is considerable variability between the individual contributions. The modules described are those delivered in 2026, at the end of a continuous process of updating the training programme.

The document, which was due to be drafted by September 2026, does not, however, contain information on the course's impact in terms of the number of students who, thanks to the knowledge gained and the experience acquired, subsequently set up their own business or otherwise entered employment in the livestock-farming world. At the time of writing, the work place-

ment for participants in the 2026 edition is in fact still ongoing. A full update on this aspect will be provided, through an update of the document, at the end of the project.



2. THE SHEPHERDSCHOOL OF THE LIFE SHEPFORBIO PROJECT – ACTION C5

The school's objective is to provide the theoretical and practical tools needed to start a pastoral activity, particularly in mountain areas, where the impact of the socio-economic changes that have led to a drastic reduction in traditional livestock-farming activities has been most strongly felt and has, as a result, had the most significant negative impacts in terms of loss of biodiversity associated with pastures and grasslands. The action is therefore conceived as a way of tackling the critical issue of the poor generational turnover found in the pastoral and livestock-farming world, particularly in mountain areas.

In many European countries, particularly those in the Mediterranean and Alpine areas (France, Spain and Switzerland), training schools for shepherds have already been active for several years. These experiences have proved effective in promoting pastoral activities and, above all, in contributing to generational turnover in a sector notoriously affected by an ageing workforce, and in which, precisely because of the drastic reduction in the number of farms — especially small, family-run ones — those wishing to enter this line of work struggle to find opportunities to gain professional experience.

Essentially, these Schools ensure the transition from vertical training — once guaranteed within the family and the community thanks to the widespread presence of livestock farms — to a horizontal type of training, where instead it is entrusted to specific structures external to the social fabric of the local area. The school was organised so as to guarantee a two-fold training offer: a theoretical part, with classroom lessons and visits to farms and other production

realities in the sector, and a practical work-placement part at local farms. The theoretical lessons took place on weekends, including Fridays, between March and June, so as to make it easier for those in other jobs or in education to take part. The project originally envisaged six participants per year, later increased to eight.

The school has involved numerous parties in carrying out its training activities, including both LIFE project partners and external parties. The names of the teachers and their affiliations are given in the chapters devoted to the individual training modules.

Over the School’s four years of activity, the training programme has undergone considerable change, with continuous enrichment both in terms of modules — which increased from 10 to 16 — and of collaborations; the module “Economics and planning of pastoral enterprises”, for example, was delivered in collaboration with the Calascio School for pastoralism.

List of modules delivered in the 2026 training cycle. For each one, the party responsible is indicated (details of who actually delivered the teaching are given within the individual modules), along with its duration (each day corresponds to roughly 8 hours of lessons) and any practical on-farm visit.

No.	Module title	Responsible beneficiary	N. days	Farm visit
1	Basic principles of biology, anatomy and nutrition of farmed livestock	UNIFI	2	x
2	Management of pasture resources	UNIFI	2	x
3	Managing animals at pasture and in the barn	UNIFI	2	x

4	Health management on a livestock farm	PNFC, DifesAttiva	3	x
5	Quality, food safety and processing of livestock products	UNIFI	1	
6	Wool: from by-product to agricultural product	PNFC, DifesAttiva	1	
7	Managing conflict with predators	PNFC, DifesAttiva	2	x
8	Starting a livestock business: regulatory and technical aspects	Rete Appia	1	
9	The Common Agricultural Policy and regional programming	Regione Toscana	1	
10	The shepherd's role in biodiversity conservation	D.R.E.AM. Italia	2	x
11	Adding value to products and diversifying livestock-farming activities	PNFC, Slow Food	1	x
12	Workplace safety	D.R.E.AM. Italia	1	
13	Cheese-making techniques and dairy management	Rete Appia	1	x
14	Agroecology, agroforestry and silvopastoralism	UNIFI	2	x

15	Economics and planning of pastoral enterprises	D.R.E.AM. Italia	3	x
16	Working with the herding dog	PNFC, DifesAttiva	1	x

The improvement of the training programme has been made possible thanks to ongoing dialogue with other European experiences and to the input provided by the students themselves through the evaluation questionnaires submitted at the end of each year.

As for the work placement itself, this is without doubt the heart of the training activity, as well as the part most appreciated by participants, since it allows them to put into practice what they have learned during the theoretical lessons. The placement lasts one month, which can also be split into several periods depending on the needs of the farms and the interests of the participants. Participants were also given the opportunity to carry out their placement at more than one farm, thereby considerably broadening their training experience. The farms were selected through a public call for expressions of interest, from among those located within the municipalities of the Casentinesi Forests National Park.

The farms involved in the school's training activities numbered 30 in total, between practical field lessons and placements, spread across six regions and nine provinces.

List of the farms involved in the school's training activity.

Farm	Municipality	Practical/ theoretical lesson*	Stage
Capre Diem	Loro Ciuffenna (AR)	x	
Casa Pallino	Pratovecchio Stia (AR)	x	x
Casa Righi	Pratovecchio Stia (AR)	x	x
Casaalboso	Poppi (AR)	x	
Coveri	Torrita di Siena (SI)	x	
Azienda agricola del Monastero	Pratovecchio Stia (AR)	x	x
Eremo dei Toschi	San Godenzo (FI)	x	x
Fonte dei Serri	Poppi (AR)	x	
Gran Sasso	Castel del Monte (AQ)	x	
Il Casone	Castel San Niccolò (AR)	x	x
Il Casone	Premilcuore (FC)		x
Il Cerreto	Lamporecchio (FI)	x	

Il Fosso	Pratovecchio Stia (AR)	x	
La Porta dei parchi	Anversa degli Abruzzi (AQ)	x	
Le Casine	San Godenzo (FI)	x	x
Le Delizie di Montagna	Terranuova bracciolini (AR)	x	
Lorenzo Gori	Londa (FI)	x	x
Lucatello	Pratovecchio Stia (AR)	x	x
Mezzacà	Rocca San Casciano (FC)	x	x
Mezzavia	Abbadia San Salvatore (GR)	x	
Pecora nera	Subbiano (AR)	x	
Poggio ai Mandri	Londa (FI)	x	
Pollini Andrea	Chiusi della Verna (AR)	x	
Le Tofane	Alberese (GR)	x*	
Agrivello	Udine (UD)	x*	
Damiani	Campagnatico (GR)	x*	
De Marc	Chies d'Alpago (BL)	x*	

Farm Manufacture	Tambre (BL)	x^*	
Neri	Grosseto (GR)	x^*	
Runcasc	Sondrio (SO)	x^*	

Beyond its training programme, and in confirmation of the many roles a school for shepherds can play, the Shepherd School has also launched a number of specific projects aimed at enhancing the standing of the shepherd's profession, through the definition of an official professional qualification, and at providing concrete support to those who wish to pursue, beyond the school itself, a professional career in the pastoral field.

Following the example of what has already been achieved by the Catalan shepherding school, the Shepherd School has promoted the creation of a matchmaking platform to put aspiring shepherds in touch with farms willing to offer training opportunities. In this way, the platform also provides concrete support to the farms themselves, which can thus benefit from real help in carrying out their tasks.



As part of Action C6.2 “Support for pastoral entrepreneurship”, a number of information activities were organised specifically for shepherds and livestock farmers already in business, although they were naturally also open to students who attended the school. Although formally falling under a different Action, we considered them worth covering in this Deliverable because of their clear links with the school’s training activities.

The aim of these activities was to provide shepherds and livestock farmers with useful information to help them improve the management of their farms. The topics and the delivery format were chosen by involving shepherds and farmers from the outset, so that they could decide for themselves. During the project activities, in particular the site visits for the implementation of the interventions (Actions C1 and C2) and for the application of the Grazing Plans (Action C3), they were asked to indicate the main topics of interest and their preferred format for the activities. We therefore started with the shepherds and farmers directly involved in the project and then extended the initiative to other stakeholders and other territories. In this respect, the collaboration with the Rete Appia Association proved particularly valuable. The Association represents shepherds from different parts of Italy and organised one of the events, while a specific partnership was also established with the Calascio School.



At the end of the information-gathering phase, six topics were identified:

- Livestock registry (BDN, the National Database).
- ClassyFarm (biosecurity and animal welfare) and animal movements (electronic Form 4).
- Farming and producing amid uncertainty: the new challenge of raw-milk cheeses.
- Veterinary treatments (electronic medicine register).
- Principles and practices of the Common Agricultural Policy in support of extensive livestock farming.
- Bluetongue.

LIFE SHEP FOR BIO

LIFE20 NAT/IT/001076 ShepForBio

INCONTRI DI INFORMAZIONE PER PASTORI E ALLEVATORI

ALLEVAMENTO OVICAPRINO E BOVINO

Giovedì 6 novembre
Dalle ore 13,30 alle ore 15,30

Classyfarm (biosicurezza e benessere animale)

A cura del Dipartimento della Prevenzione Sanità pubblica veterinaria e Sicurezza alimentare Asl Sudest Toscana

PRATOVECCHIO (AR)
PRESSO LA SEDE
DEL PARCO
NAZIONALE

**SCUOLA DI PASTORIZIA
DI CALASCIO**

IN COLLABORAZIONE CON

Per partecipare in presenza
o seguire online iscriversi
al seguente link:
<https://lhb.pw/MEITH>

Per info: shepforbio@dream-italia-euprj.eu • lifeshepforbio.eu/SheperdSchool **LIFE.Shepforbio**

PARTNERS

COORDINATORE
D.R.E.A.M. ITALIA

The information and discussion sessions were held as workshops, both in person (at the Tuscan office of the Foreste Casentinesi National Park in Pratovecchio) and online, between 1:00 and 3:00 p.m.

In total, 74 people registered, most of them shepherds and livestock farmers. The involvement of the Veterinary Service of ASL Toscana Sud-Est, which led all the sessions on hygiene and animal welfare, was particularly useful and interesting. It made possible a direct dialogue with the farmers on topics that are very important for farm management, and on which shepherds and farmers often report a lack of clarity and information, partly due to the absence of direct contact with the bodies responsible for enforcing hygiene and animal welfare rules.

The workshop run by Rete Appia on issues related to raw-milk cheeses was also very well attended. This is a very delicate subject, closely linked to consumer health. On the one hand, it clearly calls for compliance with specific hygiene rules. On the other, if applied indiscriminately, it risks causing unjustified alarm, with serious negative repercussions for precisely those businesses, often small or medium-sized, that produce excellent products in difficult territories and represent the environmental and social added value that we aim to protect and promote.

3. OVERALL ASSESSMENT OF THE SHEPHERD SCHOOL EXPERIENCE

As stated previously, the main aim of this document is to provide an assessment of the school's activity. While referring readers to the following chapters for the individual modules, it is nonetheless worth attempting to draw up a balance sheet of the experience as a whole, looking beyond the individual topics covered. The basis for these assessments remains, as repeatedly mentioned, the input provided by students through the evaluation questionnaire. From a general standpoint, the overall judgement of the school is very positive; the school is perceived as a very important opportunity for those wishing to enter this field, one of the few available nationally, capable of providing not only useful theoretical and practical knowledge but also of creating networks among the young participants, and between them and farmers already active in the field - an aspect considered central by those wishing to pursue this line of work. A positive judgement is also expressed with regard to the organisation of activities and logistics, although the facilities made available did not always live up to expectations, particularly regarding the distances between accommodation and the venue for lessons (around 40 minutes by car) or the farms visited. It should be borne in mind that participation in the school was nonetheless free of charge, apart from the cost of travel to and from the school and of meals - although the guest quarters made available to students offered kitchen facilities, thereby significantly reducing food costs. As for the aspect more specifically linked to the training activity itself, although the overall context is one of appreciation and positive judgements, both on

the topics and on the teachers, a number of aspects recur frequently over the years and clearly deserve further examination:

- the school should be organised in a more practical and less theoretical way;
- the school should provide for greater involvement of shepherds and farmers.

These two aspects are actually closely related, since a more practical approach - for example with more farm visits or practical exercises in the barn or in the pasture - would in itself call for greater involvement of shepherds and farmers. However, such involvement is not always easy to achieve: not all shepherds and farmers were willing to be more involved, and even less so on a schedulable basis, at least on certain subjects, such as the health management of the flock.

In this case, in fact, the possibility of running workshops or practical field exercises presupposes the presence of diseases and/or interventions, which are obviously not things that can be planned in advance. Moreover, these can be sensitive situations that do not always - indeed, often do not - lend themselves to being turned into group training sessions.

Given the way the school was organised, the practical component was mainly entrusted to the work-placement period, when students, sharing the daily work on the farm with shepherds and farmers, have the chance to see for themselves - and in many cases to experience directly - the various stages of the work.



We must also bear in mind that the level of knowledge and experience among participants is far from uniform, and that while some participants may already have acquired the theoretical component, for others it is instead essential, in order to then acquire the basic knowledge that allows them to put the various stages of the work into practice.

It should also be considered that participants' theoretical knowledge derives, in most cases, from practical experience anyway (internship periods on farms, WWOOFing, etc.) and could be influenced by the specific outlook of that particular farmer or shepherd, whereas it is essential to provide general and "neutral" knowledge, which individual future farmers will then need to adapt to the specific characteristics of the businesses they go on to develop.

It is nonetheless beyond doubt that a longer placement period - which, however, may conflict with participants' availability (for example, those with another job or who are studying) - could provide greater opportunities to put theoretical knowledge into practice and acquire the practical skills that undoubtedly represent the fundamental part of this profession.

Another entirely valid point, and one that should be developed carefully in any future training cycles, is greater involvement of shepherds and farmers in choosing subjects and topics, as well as teaching methods.

From this point of view, some attempts have been made within the project, both to achieve greater involvement of farmers and by organising some practical on-farm workshops on specific topics agreed with individual farmers and shepherds (e.g. animal-handling techniques). While the results of the first approach were honestly not very significant, the second recorded strong appreciation from participants.



Module 1: Basic principles of biology, anatomy and nutrition of farmed livestock

Teacher: Carolina Pugliese (Unifi),

associate professor at the Department of Agriculture, Food, Environment and Forestry, University of Florence.

● 1. TOPICS COVERED AND THEIR RELEVANCE

Module 1 provided the foundation for the entire Shepherd School training programme, giving participants the biological, anatomical and nutritional knowledge essential for understanding the management of animals raised in pastoral systems. Placing this module at the start of the programme reflects the need to build a shared technical vocabulary and to provide the scientific grounding on which to later develop the more applied aspects of farm management, production and the processing of animal-derived products. The content covered the principles of anatomy and physiology of the digestive and reproductive systems, animal nutrition, ration formulation, nutritional requirements at different physiological stages, the characteristics of the main feedstuffs, and of the cattle, sheep and goat breeds farmed in central Italy.

One of the most interesting elements of the module was the integrated approach taken to animal nutrition. Feeding was presented not merely as a tool for sustaining livestock production, but as a determining factor for animal welfare, environmental sustainability and farm profitability. The discussion of ration formulation showed how correctly formulating a diet makes it possible to meet the nutritional needs of the different animal categories, improve feed efficiency, reduce environmental excretions and contain production costs — aspects that are particularly relevant for pastoral farms operating in marginal contexts.

The module also covered the anatomical and physiological aspects of the ruminant digestive system, enabling participants to understand the biological mechanisms underlying the digestion of plant fibre and the use of natural pastures. Knowledge of digestive physiology is in fact an essential prerequisite

te for correctly interpreting animals' nutritional needs, preventing metabolic disorders and planning feed management consistent with the various production stages. Similarly, the discussion of the reproductive system provided the grounding needed to understand the topics subsequently covered in the modules devoted to managing reproduction and animal production. Overall, the module showed how feed management is one of the most effective tools for simultaneously improving animal welfare, the quality of production and the sustainability of pastoral farms. This approach fostered a systemic view of livestock farming, in which biological, economic and environmental aspects are closely interconnected and must be considered as a whole when planning farm activity.



● 2. ASSESSMENT OF THE COURSE'S IMPACT

In terms of training impact, Module 1 played a fundamental role in providing participants with the scientific grounding needed to tackle the topics developed throughout the Shepherd School programme. The heterogeneous make-up of the class, with participants coming from very different professional and educational backgrounds, made it particularly important to build a shared body of knowledge. For many students, the module represented their first genuine contact with the principles of animal physiology and livestock nutrition, helping to fill pre-existing gaps and creating the conditions for a better understanding of subsequent modules.

During the lessons, there was strong interest in the aspects most closely linked to the practical management of livestock farming, particularly topics relating to grazing nutrition, breed selection and ration formulation. These topics prompted numerous exchanges between teacher and participants, especially in relation to the different experiences gained on farms and pastoral holdings. The chance to discuss concrete cases made it possible to put the theoretical content into context and to highlight its immediate applicability to the day-to-day management of livestock farms.

The more theoretical parts, concerning the anatomy and physiology of the digestive and reproductive systems, initially proved more complex, especially for participants without a technical-scientific background. However, the constant link to practical examples and to the activities carried out during farm visits progressively made it easier to understand the more complex concepts, highlighting the importance of constantly integrating classroom teaching with direct field experience.

One of the most appreciated aspects was the constant reference to the sustainability of production systems. The discussion of the role of nutrition in reducing the environmental impact of livestock farming prompted a broader reflection on the future of pastoralism and on the contribution that extensive systems can make to the sustainable management of the land. In this context, it became clear that there is a need to combine technical-scientific knowledge with practical skills, overcoming the traditional opposition between innovation and pastoral know-how.

From a methodological standpoint, the module confirmed the effectiveness of a teaching approach based on integrating theoretical lessons, participatory discussion and direct observation during farm visits. This approach enabled students to understand how the principles of anatomy, physiology and nutrition find concrete application in the day-to-day management of animals and in the organisational choices made by pastoral farms.

For future editions of the Shepherd School, it might be useful to further increase the practical exercises devoted to forage recognition, assessing animals' nutritional status and formulating simple feed rations. Similarly, greater integration with subsequent modules would strengthen the link between the biological foundations covered in Module 1 and the practical applications relating to the management of reproduction, grazing and livestock production. In conclusion, Module 1 is an essential component of the Shepherd School training programme, as it provides the scientific knowledge needed to correctly interpret the management of farmed animals and to face the challenges of contemporary pastoralism with greater awareness. The balance between scientific rigour, attention to applied aspects and constant reference to the principles of sustainability makes this module one of the defining elements of the whole training programme, contributing to the training of professionals capable of combining technical skills, environmental responsibility and the promotion of pastoral produce.

Module 2: Management of pasture resources

Teachers: Giovanni Argenti and Camilla Dibari (Unifi),

associate professors at the Department of Agriculture, Food, Environment and Forestry, University of Florence.

● 1. TOPICS COVERED AND THEIR RELEVANCE

Module 2, Management of pasture resources, addresses a particular subject within a School intended to train farmers and shepherds, whose main interest is naturally the animal component. At the same time, however, given the great interest shown by School participants in the possibility of managing animals at pasture, in this specific context a proper knowledge of grass resources is a fundamental aspect of good animal management. A module devoted to forage crops therefore serves the dual purpose of presenting the basic concepts of forage production (both sown and natural) and of highlighting the main aspects of correctly managing pasture resources. Rational management can indeed also have knock-on effects on the ecological role played by these resources in the context of the many environments in our country where extensive livestock farming is practised. In this type of system, pasture is one of the mainstays of animal feeding for a prolonged period, albeit almost never an exclusive one, given the clear seasonality of production, which greatly limits reliance on grazing alone in permanent production settlements. In brief, the module illustrated the possibility of establishing and managing sown forage resources (mainly for grazing, but with several references also to hay-meadow ones), the management and improvement of natural pasture resources, the possibility of conserving forage using various methods, and the main challenges of managing forage resources in a context of climate change. More specifically, the topics covered in the hours devoted to the theoretical part concerned the characteristics of the main forage families and species, both in pure stands and in mixtures. Secondly, methods for correctly

managing pastures were illustrated, in terms of adopting a balanced stocking rate (suited to the productive and qualitative characteristics of the resources) and a rational technique that makes as much use as possible of rotating the areas used. With regard particularly to this second point, an effort was made to convey clearly the philosophy and benefits of using the various pasture sections in succession, also seeking to illustrate the practical technical steps needed to put this into effect. In all cases, the difficulties that must be faced in fully and efficiently adopting the grazing techniques best suited to certain contexts were highlighted (infrastructure work, costs, environmental difficulties, etc.). The possible operational measures for improving pasture and enhancing the effects of management were also introduced and discussed during the theoretical lessons, seeking to illustrate the possible actions and the operational difficulties involved, especially when working in certain environmental contexts, which are often also those where the greatest need for action exists.

Particular emphasis was also given to more innovative aspects, such as the effects of expected climate change on the characteristics of pastoral resources, in terms of production potential, growth rhythm, length of the grass-growing season, forage quality and botanical composition, which in turn may in future affect production parameters, with considerable impacts on management and possible uses. Having illustrated and analysed these aspects, the classroom sessions made it possible to present possible good management practices for adapting to climate change, both in terms of short-term operational measures and of possible solutions arising from agricultural policy, over a longer time horizon.

Classroom training was combined — with different arrangements and timing in the various editions of the school — with a significant amount of on-farm training as well. Beyond the compulsory work placement included in the training programme, it was considered essential to supplement the theoretical lessons with opportunities for discussion at farms that use grazing as their preferred means of raising animals during the grass-growing period. In every edition of the school, technical visits were made to at least two farms, often differing in the type of animal reared (sheep, cattle, horses, mixed farms) and

in their production focus (meat or dairy). In addition, attention was almost always directed to local farms, so as to reduce travel and make the best use of students' time on site, since they were often people who had come from places far from the park area. On several occasions, site visits were carried out together with colleagues responsible for the more strictly livestock-related modules, and this allowed for interactions between farm managers and students that were undoubtedly of interest and had clear benefits in terms of the training objectives.



● 2. ASSESSMENT OF THE COURSE'S IMPACT

In order to carry out a self-assessment of the training activity, an attempt can be made to identify the module's strengths and weaknesses. This exercise should not be regarded as an end in itself, but can be useful — and in the various editions of our project's Shepherdschool it certainly has been — both to improve the training activity in future and to design other similar initiatives, which in various forms are already emerging in Italy, whereas abroad (particularly in some European countries, such as Spain or France) they are already fairly well established. Since the initiatives currently underway are quite varied in purpose and source of funding, and are located in different areas of our country with very diverse aptitudes and production potential, forming a judgement on an activity that has lasted many years can provide useful pointers on the organisation to put in place, the topics to cover and the teaching methods to adopt.

The self-assessment of the module (and, more generally, of the school) can in fact be carried out not only on the basis of the individual teachers' critical judgement, but also drawing on satisfaction questionnaires given to aspiring shepherds and farmers, from which interesting insights can be drawn since they come from the initiative's end users.

Turning to the details, the strengths that can be attributed to the module can be summarised as follows.

- The module is *unique* within the school, in that it is the only one expressly devoted to grass resources. This makes it possible, on the one hand, to introduce certain basic or more advanced concepts that not all learners have and that only this module can provide, and on the other, to consolidate certain knowledge that some learners already possess, while going more deeply into certain concepts or explaining in detail the reasons behind certain interventions or cultivation operations. In general, therefore, the module aimed to bring all learners to the same level of knowledge in this field, and it is thus a prerequisite for the further in-depth study carried out in the other modules.

- At the same time, the module is considered necessary because learners, who have often had only minimal experience on a farm or in the context of

activities carried out on their own, have frequently gone into depth on various aspects relating to animal management while (almost) completely neglecting those relating to grass and pasture, at times regarded as of secondary importance compared with livestock-related ones. This is especially true for those with limited hobbyist-level experience, in which managing pasture, building up forage stocks (such as hay) or establishing a grassland resource were not perceived as fundamental factors for correctly managing animals and their feeding. In this sense, the module should help to fill these knowledge gaps and provide the grounding for a deeper exploration of the relationship between animals and grass resources, which can only be fully achieved on farms of a certain size and with clearly defined production focuses.

- Another strength of the module can be found in the fact that it has helped make future farmers more aware of the role and the important ecological function that grazing and the correct management of pastoral resources can play for open spaces and their conservation, for preserving the species found within them, and for the landscape and ecological diversification and patchworking of the local area. This aspect, often carried forward unconsciously by those still engaged in grazing in areas subject to abandonment or the scaling-back of traditional farming activities, is moreover perfectly in line with the project's aims.

- A further positive factor can be attributed to the organisation of the activities, which was in fact adjusted across the various editions of the Shepherd school. In practice, a third of the hours devoted to the module were carried out on farms, with technical visits in which practical activities closely linked to the theoretical part were regularly repeated, including recognition of the main forage families and species. In the questionnaires analysed, in fact, learners called for more time to be devoted to field activities, and this suggestion was to some extent followed by the organisers when planning the activities for the various editions.

- The part concerning the analysis of the impacts of climate change was also considered necessary in order to draw the attention of future farmers to the scenarios they will face over the coming decades, so as to propose adaptation strategies. It is also true that perception of the phenomenon may

be limited for those who have not yet been continuously engaged in pastoral activity over the years, but conversations with teachers or with farmers themselves also highlighted the need to begin tackling certain phenomena and extreme events that are set to occur with greater frequency according to future projections. The same attention will in some way also need to be given to policymakers, who have the ability to direct any public funding towards investment lines capable of helping farmers cope with the expected climate crisis.

- To outline a few weaknesses — bearing in mind that the judgement of School participants proved very positive and grew, in terms of the percentage of positive responses, over time (a sign of the programme’s ability to evolve following advice received from participants) — they can be summarised as follows.

- The module requires prior knowledge that is not easy to build up in a short time, also because, as mentioned earlier, those attending the school have often already had some prior experience in which the animal component predominates, and their exposure to the “plant world” is very limited. This can be a limitation that may make the module seem not very consistent with the school’s aims (a very small percentage of negative responses highlighted this idea), or in any case lead people to regard knowledge of forage resources as secondary to that of the animal.

- It is not easy to convey the ecological role (in the broad sense) of grazing activity, which lies not only in the supply of typical or particularly wholesome products, but also in the conservation function it performs — for which farmers operating in certain areas should be recognised with specific remuneration. The lack of a direct link to “monetising” the ecological services provided by farmers in maintaining grassland habitats can lead to the perception that these are matters of interest only to “insiders”.

- Some topics were covered very briefly or with certain concepts taken for granted. The clearest example is the calculation of carrying capacity, which is an estimate requiring specific skills and training (typically held by graduates in forestry or agricultural science), so it is likely that learners perceived this approach as a given fact provided without much explanation, and in any case

as a constraint the farmer “has to put up with” when taking on a given public pastoral area under concession. Clearly this point cannot be explored in depth, but an effort was made to help future farmers understand how to interpret a concession notice, briefly explaining how certain optimal stocking-rate values are arrived at. It is also true that in other project actions (such as the one on pastoral plans, for example) an effort was made to work in close coordination with farmers and concession holders, proposing shared and participatory technical choices, so as to reduce as far as possible the perception of a rule imposed uncritically from above. In the most recent edition, however, during a farm visit, learners were asked to carry out an estimate of the sustainable stocking rate for an area using an expedient method illustrated in class. This activity generated interest among the aspiring shepherds and farmers.

In conclusion, Module 2, as it is currently organised — both in terms of the topics covered and the timing and manner of delivering the training activities — is felt to be perfectly in line with the aims of the school for shepherds and farmers and could serve as a fixed reference point for similar initiatives as well.



Module 3: Managing animals at pasture and in the barn

Teachers: Francesco Sirtori and Chiara Aquilani (Unifi),

researchers at the Department of Agriculture, Food, Environment and Forestry, University of Florence.

● 1. TOPICS COVERED AND THEIR RELEVANCE

The module addressed, in an integrated way, the main aspects of livestock management, with particular reference to sheep, goat and cattle systems. Specifically, it covered topics relating to reproduction management, production (milk and meat), farming systems and pasture management, also including elements of precision livestock farming and knowledge of the main breeds.

One of the central aspects of the module was the link between the technical management of livestock farming and sustainability. Reproduction management, for example, was presented not merely as a set of techniques (oestrous cycle, insemination, reproductive parameters), but as a key element for farm efficiency and the economic and environmental sustainability of livestock farms. Parameters such as fertility, fecundity and reproductive career are in fact decisive in reducing waste and improving the resilience of production systems.

Great attention was also devoted to pasture management, an extremely relevant topic given the interest shown by School participants in farming systems based precisely on the use of this resource as the preferred means of sustaining the animals reared. During classroom discussion it was stressed how grazing, if correctly managed, is a fundamental tool for:

- conserving biodiversity,
- preventing the abandonment of marginal areas,
- reducing the risk of fires,
- maintaining soil fertility.

At the same time, the risks associated with poor management, such as overgrazing or undergrazing, were highlighted, since these can lead to degradation of the grass sward and loss of forage value. This makes the topic particularly relevant in the context of European agro-ecological policies.

A further important element was animal welfare, addressed both from a structural standpoint (housing, space, environmental conditions) and a management standpoint. The reference to Brambell's "five freedoms" (from hunger and thirst, to have comfort and shelter, from disease and injury, to express normal behaviour, from fear) shows how welfare is now a cornerstone principle that is not only ethical but also productive and regulatory — see, for example, the need to comply with the Classyfarm system in order to access a good share of the funding made available to farmers through regional calls. This aspect is also increasingly central to consumer perception and can add value to products derived from free-range and semi-free-range farming systems.

The module also examined in depth the management of milk production and milking, stressing how correct operational practices have a direct impact on milk quality, animal health and, above all, on the hygiene and health parameters of the raw material destined for subsequent processing. Similarly, the part on meat production highlighted the link between growth, feeding and the quality of the final product.

Finally, the discussion of breeds and farming systems (extensive, intensive, transhumant) made it possible to put livestock-farming practices into context within the various local areas, highlighting the value of local breeds and traditional systems, in line with the objectives of the LIFE project and of European biodiversity strategies.

In general, from the school's very first year of activity, the syllabus of Module 3 has been progressively adapted on the basis of the interest shown by participants, which has focused mainly on extensive, free-range and semi-free-range farming systems. In this context, the module has favoured the transmission of practical knowledge applicable to managing animals in such systems, also bearing in mind that, in most cases, participants did not have prior technical training but rather direct field experience.

In line with these elements, it was decided to reduce the part devoted to cattle farming in favour of a more in-depth look at sheep and goat farming, which represented the area of greatest interest. Particular attention was also given to dairy breeds and to the dairy supply chain, given that many participants were oriented towards this type of production and, in several cases, towards on-farm processing of products as well.



● 2. ASSESSMENT OF THE COURSE'S IMPACT

In terms of training impact, the module proved overall effective in giving students a complete and concrete view of livestock management, combining theoretical and applied aspects.

One strength was certainly the integrated approach: students were able to understand how the different aspects (reproduction, nutrition, welfare, grazing) are closely interconnected. This was further reinforced by the fact that some content covered theoretically during lessons was then confirmed and observed directly during farm visits. This fostered the development of a systemic view of livestock farming, essential for tackling the sector's current challenges.

As for students' response, a generally good level of interest was found, particularly regarding:

- issues relating to grazing and the sustainable management of resources,
- the practical aspects of farm management,
- animal welfare and its concrete implications.

Discussion proved particularly lively on animal-welfare issues, especially when comparing extensive systems with conventional ones, including large-scale indoor systems. In this context, an effort was made to show how the farming system is not in itself directly associated with a given level of welfare, and how problems can also arise in systems generally perceived as virtuous, such as extensive ones. The aim was to promote awareness and a critical approach to animal management, moving beyond idealised views in favour of models that are at once respectful of animal welfare and economically sustainable.

Some participants, partly because of limited practical experience in the livestock sector, initially found it difficult to accept certain management dynamics linked to farm profitability.

Another topic that sparked wide-ranging debate was the use of technology to support the shepherd's work. On this subject, two contrasting views repeatedly emerged: on the one hand, concern that introducing technological tools might mean losing direct contact with the animals and with the traditional

value of pastoral activity; on the other, a positive assessment of such tools as potentially useful in reducing workload and supporting farm management, especially in contexts characterised by a limited availability of labour.

This polarisation recurred consistently across the various editions of the module, but it was also an important opportunity for discussion, allowing for a critical examination of the role of livestock farming and of the shepherd in the current and future context.

By contrast, some more technical parts (for example reproductive parameters or specific physiological aspects) proved less immediately accessible, mainly because of the difficulty of illustrating them with practical examples or because some participants lacked direct experience. In this respect, a possible improvement could be to further strengthen the link between theory and practice.

A further relevant aspect concerns the time available and integration with related modules (particularly Module 1 and Module 5). The module covers a very wide range of topics, which in some cases overlap or intersect with those covered in other livestock-related modules. Greater integration between modules would make it possible to avoid repetition and ensure greater flexibility in developing the lessons, also making it easier to explore in more depth the topics of greatest interest to participants.

From a methodological standpoint, the value of practical, field-based activities is clear. Increasing the hours devoted to farm visits had a positive impact on the organisation of the school, increasing the module's effectiveness and making the content easier to understand. Direct dialogue with farmers and shepherds also enables the acquisition of practical skills essential for starting a business, offering concrete insights into animal management, farm organisation and the building of value chains. At the same time, these activities foster the creation of networks between new operators and already-established ones, helping to strengthen the sector and increase the chances of success for new ventures.

Looking ahead, it might be useful to provide for greater integration between the livestock-related modules, for example through joint activities or moments in which teachers are present together. This approach would make it

possible to optimise classroom teaching hours, avoid overlaps and create a more dynamic and interactive setting, fostering discussion and the emergence of different viewpoints on complex topics.

In conclusion, the module represents a solid, well-structured training experience, capable of providing skills that are useful both at a technical and a systemic level. The reflections that have emerged can help further improve the training programme in future cycles and strengthen the role of the ShepherdSchool as a pilot experience at national and international level.



Module 4: Health management on a livestock farm

Teacher: Lucia Fantasia, veterinary surgeon

● 1. TOPICS COVERED AND THEIR RELEVANCE

The topics covered in Module 4 dealt in an organic way with the main health and management aspects connected with ruminant farming and pastoral activity, with the aim of giving participants training that was as complete as possible and geared towards the practical application of the main issues and management aspects that characterise the sector.

The training programme was developed starting from the regulatory framework of reference for animal health, represented by the *Animal Health Law* (Regulation (EU) 2016/429) and by the related EU and national provisions. These regulatory references were subsequently translated into practical terms, forming the basis for exploring the health and management aspects relating to the farming of ruminants and of livestock-guarding dogs, as well as the principles of animal welfare and biosecurity, the prevention and management of intra- and inter-species infectious diseases, including zoonoses, and the overall running of the livestock farm in a silvo-pastoral setting.

The main aim of the programme was to give participants a comprehensive, integrated view of the health and management context that characterises the livestock and pastoral sector, highlighting the deep interconnections between animal health, public health and the environment, as well as the possible knock-on effects that these dynamics can have at farm, local, community level and in terms of protecting public health, from a perspective linked to the *One Health* approach.

At the same time, the module was designed to provide the knowledge base needed to develop, including through subsequent field experience, the ability to observe and interpret the condition of the individual animal or group of animals, distinguishing physiological, normal aspects from abnormal or po-

tentially problematic situations. This is in order to allow a correct assessment of the situation, to know if, how and when to intervene, through informed management of the various circumstances and through dialogue and collaboration with specialists, such as sector technicians and veterinary surgeons, in cases requiring specific expertise.

The first, fundamental aspect addressed concerned the main legislative and practical requirements needed to start a livestock-farming business, whether geared towards medium-to-large-scale production or towards self-sufficiency. Specifically, the regulatory requirements on animal registration and identification were reviewed, with their timing and practical arrangements, focusing on the species targeted by the module itself. These aspects are necessary in order to understand and embrace the concepts of traceability and traceback of animals and of the products derived from them, designed to safeguard both animal and human health.

From the outset, animal welfare proved to be the common thread running through most of the topics covered during the theoretical and practical course, and was also an important element of discussion and debate among participants. This concept was addressed through an analysis of the historical and social context that shaped its first formulations, characterised by an anthropocentric view of the animal placed in a position essentially subordinate to human and social needs, through to the emergence and gradual development of the cornerstone principles of animal welfare, up to the current view of the animal as a sentient being, capable of experiencing states of physical and mental welfare or distress. These states are influenced both by external environmental stimuli and by internal factors, capable of altering the neuroendocrine, physiological and behavioural balance of the individual animal or group, with possible repercussions on animals' health status and on their production, in both qualitative and quantitative terms. The topic was developed starting from Brambell's principle of the five freedoms, used as a key for analysing the possible practical implications arising from the many management and environmental aspects that are fundamental to maintaining animals in good health or that can, conversely, be factors that predispose to, or result from, health and management problems.



Finally, in order to understand the role that animal welfare has taken on in the current regulatory and political context, with particular reference to its integration among the pillars of EU agricultural policy and in regional incentive systems, the main relevant regulatory references were analysed from a practical standpoint, from the so-called “horizontal” provisions (e.g. Legislative Decree 146/2001 implementing Directive 98/58/EC concerning the protection of animals kept for farming purposes; Council Regulation (EC) No 1/2005 of 22 December 2004 on the protection of animals during transport and related operations, amending Directives 64/432/EEC and 93/119/EC and Regulation (EC) No 1255/97, etc.), which set out general, cross-cutting principles applicable to the various animal species, to “vertical” regulations specific to certain species, animal categories or production chains (e.g. Legi-

slative Decree 126/2011 implementing Directive 2008/119/EC laying down minimum standards for the protection of calves). To this end, the ClassyFarm system was also discussed, along with how this tool fits into the assessment of animal welfare and the categorisation of farms by risk level.

Within this same context, some elements relating to organic-farming regulations were also introduced, a topic that provided a further opportunity for discussion, prompting reflection on the strengths and weaknesses of conventional and organic farming systems.

The concept of biosecurity, originally developed for intensive farming systems characterised by large numbers of animals kept in confined spaces with the aim of maximising production, initially seemed distant from the outlook of many of the students over the years. On first analysis, in fact, the principles of biosecurity may appear not very compatible with extensive or semi-extensive farming systems. It emerged, however, that the fundamentals of biosecurity do not form a rigid set of prescriptions but rather a flexible approach, adaptable to the specific characteristics of each individual farm, within practical, logistical and economic limits. Even where it is not possible to apply all the prescribed measures in full, knowing and assessing them makes it possible to identify a farm's strengths and weaknesses and to promote measures aimed at improving health management, regardless of the size or type of the farm.

The core of the module, and the topic that generated the most interest, curiosity and discussion among students, concerned the management and health aspects of ruminants at the different stages of life and of the production cycle. For each of these, the main physiological, management and health characteristics were illustrated, with particular attention to the problems most frequently encountered. Specifically, the teaching programme covered:

- the neonatal and perinatal period;
- growth;
- weaning;
- puberty;
- reproduction;

- pregnancy, birth and the post-partum period;
- lactation;
- metabolic diseases;
- the main infectious diseases and the related national surveillance plans;
- zoonotic diseases.

These topics were addressed with a strongly applied approach, analysing the individual management, physiological, anatomical, behavioural and health-related aspects that characterise each stage of an animal's life and the main pathological conditions associated with it. This approach enabled students to acquire the tools needed to interpret the various situations that may arise on a farm, to recognise any problems at an early stage, and to understand the role of correct practices in disease prevention, safeguarding animal welfare and improving production performance.

The final part of the module was devoted to livestock-guarding dogs, a key figure in the management of free-range and semi-free-range farms, where these animals are one of the main tools for preventing predation losses.

Starting from the premise that animal welfare is an essential element in guaranteeing the effectiveness of any farming system, it was pointed out that this principle applies not only to farmed animals but also to companion animals, and specifically to the working dogs used to guard livestock. From this perspective, maintaining high welfare standards is an essential prerequisite for the dog to be able to carry out its guarding role effectively.

Particular attention was devoted to the importance of correct health, nutritional and behavioural management from the very first stages of the animal's life. A dog raised and managed under optimal conditions is in fact more likely to develop sound psycho-physical balance and to fully express the behaviours typical of its species and of its working aptitude, with positive effects on the effectiveness of livestock protection. Conversely, inadequate management can compromise the animal's welfare and, as a result, its ability to carry out its task effectively.

The main canine diseases were also covered, with particular reference to infectious diseases, given the context in which these animals operate, characterised by coexistence with farm animals, wildlife and humans. The topics were developed with an applied approach, giving students the tools to recognise the main clinical symptoms, understand the predisposing factors and modes of transmission, identify the most effective prevention strategies and assess the correct courses of action.

The days spent in the field gave students the chance to get hands-on experience of the content covered in class, through direct observation of the animals, facilities and equipment. The practical activities also allowed students to become familiar with the correct ways of approaching and restraining animals, essential for working safely and with respect for their welfare. Particularly valuable, too, was the exchange with the farmers who hosted us, who generously shared the wealth of knowledge and experience gained in the field, thereby enriching the teaching activity and fostering constructive, fruitful dialogue with the students.

● 2. ASSESSMENT OF THE COURSE'S IMPACT

The module's impact was particularly significant in that it gave students not only a broad and detailed body of knowledge on the health management of ruminant farming and of livestock-guarding dogs, but above all a method for reading and interpreting the various situations that characterise livestock-farming reality. The choice to address the topics with a strongly practical approach, linking regulatory, health, management and animal-welfare aspects to the concrete problems that can arise on a farm, made it possible to move beyond a purely theoretical treatment, fostering a more complete and informed understanding of the sector.

Despite the complexity and the large number of topics covered relative to the limited time available, students consistently showed interest and engagement, displaying curiosity even towards the more technical and initially less intuitive aspects. In particular, for many the programme represented an important opportunity to engage with a livestock-farming reality that is more complex and multi-faceted than an initial outlook sometimes marked by a romanticised view of extensive and pastoral systems. In several cases, in fact, students found themselves confronted with content that challenged some of their initial beliefs about livestock farming, often shaped by limited direct experience in the livestock and farming sector, which may have contributed to a more idealised, and at times preconceived, view of extensive and pastoral systems.



This initial outlook sometimes led students to regard certain health and management problems as mainly associated with intensive farms, generating surprise or bewilderment when faced with the complexity of the dynamics addressed during the module. Exploring the various topics in depth, the dialogue developed through theoretical lessons, classroom discussions and, above all, practical field activities, nonetheless fostered a gradual reworking of these beliefs, leading students to understand that managing a farm, regardless of the production model adopted, requires specific knowledge, constant attention and the ability to weigh up the balance between animal welfare, production sustainability and health protection. In this context, it emerged that correct health management, disease prevention and the adoption of appropriate management strategies are elements common to all types of farming, albeit with different arrangements and challenges. This process allowed them, in many cases, to develop a more informed, balanced view, better attuned to the complexity of livestock-farming reality.

During the module, topics common to other modules of the shepherding school also took on a different significance within this programme, thanks to the health and management perspective from which they were addressed. The direct link to practical situations, farm examples and field activities made it possible to consolidate previously acquired knowledge, prompting new reflections and fostering active dialogue among students. Experience at the host farms was a fundamental part of the programme, allowing direct observation of the animals, facilities and operating methods adopted by farmers, and relating theoretical content to the complexity and variability of real farming conditions.

Overall, the module was an important opportunity for training and growth, enabling students to develop not only specific knowledge relating to the health management of ruminant farms, but also a greater capacity for observation, analysis and interpretation of the dynamics that characterise livestock-farming reality. The integrated approach adopted, based on linking regulatory, health and management aspects, animal-welfare principles and direct field experience, made it possible to move beyond a fragmented view of livestock farming, fostering a fuller understanding of the complex inte-

reactions between animals, the environment, production and public health. In this sense, the module fitted fully with the ShepherdSchool's objectives, helping to train people capable of managing pastoral livestock farming with a background that integrates traditional knowledge, technical skills and the ability to assess health and management issues. The in-depth study of aspects relating to animal health, welfare, disease prevention and correct farm management was in fact a fundamental element in giving students concrete tools for tackling the complexity of contemporary pastoralism. The health and management training on offer was a fundamental element of this programme, since the ability to ensure health, animal welfare and correct resource management is an essential component for the continuity and sustainability of pastoral activities.

The integration of theoretical lessons, dialogue with farmers and practical activities at host farms also allowed students to turn the knowledge acquired into concrete tools for reading farm reality. The experience gained during the module thus fostered a greater awareness of the farmer's role, understood as a complex figure called upon to combine sensitivity, technical skills, management ability and attention to the balance between animals, the environment and the local area. From this perspective, the aim of Module 4's training programme was to help train and develop better-prepared professionals, capable of facing the challenges of contemporary pastoralism through an integrated and responsible outlook, investing the shepherd with a responsibility that goes beyond the purely productive dimension and recognising them as custodians of pastoral areas, of the local territory and of its environmental and social balance.

Module 5: Quality, food safety and processing of livestock products

Teacher: Carolina Pugliese (Unifi),

associate professor at the Department of Agriculture, Food, Environment and Forestry, University of Florence.

● 1. TOPICS COVERED AND THEIR RELEVANCE

Module 5 covered the main issues relating to the quality of livestock production, food safety and the processing of animal-derived products, rounding off the Shepherd School programme with content essential for anyone intending to start or develop a pastoral business geared towards adding value to farm produce. Having acquired, in previous modules, knowledge relating to animal management, nutrition and farming systems, participants had the opportunity to explore in depth the aspects relating to the final stage of the supply chain, understanding how product quality depends on the entire production process and not solely on the processing operations.

A significant part of the module was devoted to food safety and, in particular, to the principles of the HACCP system (Hazard Analysis and Critical Control Points), presented as an essential preventive tool for ensuring food safety throughout all stages of production, processing and marketing. It was pointed out that the aim of the system is not to intervene on the finished product, but to identify and pre-emptively control the potential biological, chemical and physical hazards that can compromise food safety. This approach enabled participants to understand the importance of prevention and of correct farm organisation in protecting consumer health.

Particular attention was paid to the regulations governing food production and to the responsibilities of operators in the sector. Through the analysis of the fundamental principles of HACCP and of the main legislative provisions, it was shown how quality is not merely a regulatory requirement but is also a strategic element for the competitiveness of farms. In a context marked by

growing consumer attention to the origin of food, the transparency of production processes and the sustainability of supply chains, compliance with self-monitoring procedures plays a decisive role in increasing the value of farm produce.

The module also explored the processing of livestock products in depth, with particular reference to the dairy supply chain. This topic generated considerable interest among participants, many of whom expressed an intention to develop farm businesses geared not only towards primary production but also towards processing milk directly and selling the resulting products. In this context it was pointed out how product quality stems from a set of closely interlinked factors, including farm management, animal feeding, correct milking practices, hygiene and health conditions, and the organisation of subsequent processing stages.



A further aspect addressed during the module concerns the concept of the agri-food supply chain. It was stressed that every stage of the production process contributes to the final quality of the food, and that operators need to develop an overall view of the system, integrating livestock-related, hygiene and health, organisational and economic skills. This approach is particularly consistent with the objectives of the Shepherd School, which aims to train new farmers capable of managing multifunctional farms and of directly adding value to pastoral produce through short supply chains and direct-sales systems.

During the lessons, the importance of quality as a distinguishing feature of pastoral produce also emerged clearly. Products from extensive and semi-extensive systems can in fact acquire considerable added value when accompanied by adequate guarantees of food safety, traceability and clear communication with the consumer. In this sense the module helped to reinforce awareness that sustainability does not concern only the management of animals and the land, but also the ability to offer products that are safe, recognisable and compliant with current regulations.

Overall, Module 5 rounded off the training programme by giving participants an integrated view of food quality, showing how livestock production can only be enhanced through an approach that combines technical skills, regulatory responsibility and entrepreneurial ability.

● 2. ASSESSMENT OF THE COURSE'S IMPACT

From a training standpoint, Module 5 was of particular interest to participants, since it addressed aspects closely linked to the professional prospects of many course-goers. Several participants in fact expressed an intention to develop farm businesses geared towards directly processing products and marketing them through short supply chains; as a result, the topics relating to food safety, regulations and the organisation of production processes were seen as immediately applicable to their future work.

One of the module's main strengths was that it showed how food quality is the result of the entire production process and not just of the processing stage. This approach fostered a systemic view of the supply chain, linking the topics covered in previous modules to the requirements of food production and consumer protection. Participants were able to understand how animal feeding, welfare, health management, milking practices and processing form part of a single system geared towards producing safe, high-quality food.

The discussions that developed during the lessons mainly concerned the opportunities offered by on-farm processing of dairy products. Strong interest emerged in short-supply-chain models, in which the farmer retains control of the entire production process, increasing the added value of their produce. This topic prompted numerous exchanges on the economic prospects of pastoral farms, highlighting how quality can be one of the most effective tools for improving the profitability of small agricultural businesses.

At the same time, the module helped to overcome some initial beliefs that tended to regard regulatory requirements solely as a set of bureaucratic obligations. Through the analysis of the HACCP system and of self-monitoring procedures, it was instead possible to show how these tools provide concrete support for improving farm organisation, preventing risks and strengthening the relationship of trust with the consumer. This awareness is a particularly significant outcome, given that many participants were interested in starting new business ventures.

From a methodological standpoint, linking theory to practical cases proved particularly effective. The analysis of concrete examples, relating to small on-farm processing units and to the processing of dairy products, aided under-

standing of the regulatory principles and operating procedures, making content more accessible that, if addressed solely from a legislative standpoint, might otherwise have proved less immediately clear.

For future editions of the Shepherd School, it might be useful to further expand the practical activities devoted to completing simple self-monitoring procedures, organising small on-farm processing units and analysing real cases of processing and marketing. Similarly, greater integration with farm visits would allow participants to directly observe the application of HACCP procedures and good hygiene practices at already operating farms.

Overall, Module 5 is an essential element of the training programme, as it broadens participants' perspective beyond livestock management, providing skills fundamental to adding economic value to pastoral produce. Attention to quality, food safety and on-farm processing indeed helps to train professionals capable of combining technical skills, responsibility towards the consumer and entrepreneurial ability. From this perspective the module effectively rounds off the Shepherd School programme, strengthening the link between environmental sustainability, product quality and the development of rural areas.



Module 6: Wool – from by-product to agricultural product

Teacher: Luisa Vielmi,

natural-sciences graduate, DifesAttiva Association.

● 1. TOPICS COVERED AND THEIR RELEVANCE

The subject of wool is now frequently addressed in various fields and regional areas, since it is regarded by the sheep-farming sector almost as waste, or as a disposal cost.

Until the end of the last century, wool had genuine economic value as an agricultural product, holding a solid place in local, national and international markets. However, starting with the first EU regulations of 2002, it was reclassified from an agricultural product to a Category 3 animal by-product, reduced to waste material and consequently suffering a collapse in market value.

Module 6 addresses this topic by offering an in-depth analysis of the relevant Italian and international regulations, while also examining the various value-enhancement projects funded by European and regional programmes (such as LIFE, LEADER and Horizon).

The module's training content was organised around the following key points:

- Evolution of shearing techniques: through explanatory footage, the differences between traditional (tied) and modern (untied) shearing were analysed, also including material on combing Cashmere goats and shearing alpacas.
- Tools and teaching materials: various shearing tools and different types of fleece were shown in class, useful for understanding and examining the characteristics of wool by breed.
- Washing and processing: washing techniques were analysed and the centres currently authorised to carry out this process locally were mapped.

For this module too, the teaching was enriched by the active participation of businesses in the sector, both livestock farms and others. In particular, a business specialising in turning raw (greasy) wool into fertiliser was hosted: a presentation that illustrated how the project came about, its future developments and the benefits for the shepherds who supply the wool. This case study showed students how it is possible to create innovative business and employment opportunities even outside the direct running of a farm.

Lastly, for two editions of the course it was possible to have students observe shearing operations directly on-farm, offering hands-on field experience.

Finding new uses for wool not only helps eliminate disposal costs, but also gives back dignity and economic value to a resource that is fundamental to, and always present in, sheep farming.

● 2. ASSESSMENT OF THE COURSE'S IMPACT

See the assessment for the following module.



Module 7: Managing conflict with predators: prevention and protection on livestock farms

Teacher: Luisa Vielmi,

natural-sciences graduate, DifesAttiva Association.

● 1. TOPICS COVERED AND THEIR RELEVANCE

When a farm chooses free-range or semi-free-range livestock farming, adopting a correct anti-predator strategy becomes a fundamental variable that must be analysed with great care. Predators can be wild or domestic: this makes it essential to put in place a system capable not only of protecting livestock, but also of ensuring their calm and safety during grazing hours.

This topic, of central importance in livestock farming, is widely reflected in the scientific literature of the last twenty years and is a focus of EU calls and funding and of specific projects (such as LIFE projects).

In this context, Module 7 provided the scientific grounding for understanding predators' identity and behaviour in relation to their aims (e.g. trophic purpose for wild predators, hunting activity even without consumption for domestic ones). Particular attention was given to the wolf (*Canis lupus i.*), starting from official data on its distribution in Italy (2021 national ISPRA monitoring). However, understanding a predator's behaviour also requires assessing several other variables:

- Species farmed: behavioural differences linked to different breeds.
- The terrain's topography.
- Type of farm management: specific management choices and environmental characteristics can be major risk factors.

For this reason, the interaction between environment and management was explored in depth both through classroom lessons and during practical field trips.

Although a tailored anti-predator strategy helps mitigate the problem, the module also provided skills on how to manage the aftermath of a predation event:

- A brief overview of the damage-assessment procedure (who carries it out and why).
- Guidance on how, where and within what timeframe and procedures to apply for compensation.
- The key distinction between business risk and damage, with a focus on the emotional and social burden these places on the farmer and the farm.

The central section of the lesson focused on prevention tools:

1. Physical and technological measures: night shelters, various types of fencing and materials, deterrents, ultrasound and pheromone collars. For these tools, construction methods, site-suitability assessments and bureaucratic aspects (permit applications, technical reports) were analysed. It was stressed that it is not enough to build the structures correctly: it is also essential to manage and monitor them over time, taking action in the event of wear or damage from extreme events. Approximate cost figures were also provided for each type.

2. Livestock-guarding dogs (LGDs): being living creatures with their own mind, individuality and behaviour, they cannot be regarded as simple “objects” that either work or don’t. After a brief look at their origins and the various breeds, the focus turned to ethology, correct rearing and training of the dogs, identifying critical stages of development and the most common problems. General management tools were provided, with a reminder of the importance of calling on experts for more complex situations. Finally, the topic of stress was covered, and of how dogs handle stimuli (predators, strangers and the surrounding environment).

All topics were supported by practical examples and video materials.

To round off the module, every edition included direct sessions (in person or remote) with livestock farms that had already gained field experience, as well as practical outings to pasture in the presence of livestock-guarding dogs. These occasions allowed participants to engage directly with shepherds, exa-

mining the advantages, disadvantages, effectiveness, efficiency and the real level of satisfaction on farms.

● 2. ASSESSMENT OF THE COURSE'S IMPACT

For logistical reasons, Modules 6 and 7 have always been delivered within the same weekend and have shared the same farm visit. For these reasons — as well, of course, as the fact that they share the same teacher — we feel it more appropriate and useful to provide a joint assessment of the two modules.

Over the years, albeit with some differences, classes have consistently proved attentive, collaborative and interested, as confirmed by the results of the evaluation questionnaires. This active engagement has produced, particularly with livestock farms and other bodies involved (e.g. Agrivello), stimulating exchanges of considerable practical interest.

Among the strengths of the two modules is certainly the practical approach that characterised both the classroom lessons and the field activities, creating a stimulating working atmosphere. Creating opportunities for direct exchange (questions and answers) between young livestock businesses and already established ones proved an excellent tool for clarifying the pros and cons of different management and operational choices.

No particular problems have emerged, at least in relation to the organisation and structure of the course, although, based on the experience of these four years, some proposals can be identified that, if implemented, could improve the training offer of the whole cycle.

- Organise a one-day get-to-know-each-other meeting at the start of the course, bringing together students, teachers and all the businesses involved in the exercises or placements;
- Introduce an entry-level assessment test to identify each student's individual training needs and adjust the teaching offer accordingly;
- Draw up and distribute standardised teaching handouts, also useful as reference material after the course and for making up any missed sessions;

- Provide for a final project in which students describe their own plan for setting up a livestock farm;
- Organise multi-day study days and educational visits to farms other than those chosen for the individual placement, so as to broaden the training offer, particularly on practical and applied matters;
- Enrich the training offer by involving sector experts and supply-chain providers for specific lessons: for example, producers of prevention systems, structures specialising in the management and processing of wool, professional shearers specialising in various fleece types, or raw-material traders.



Module 8: Starting a livestock business: regulatory and technical aspects

Teacher: Roberto Funghi,
agronomist, Rete Appia for shepherding.

● 1. TOPICS COVERED AND THEIR RELEVANCE

The lesson covered the requirements that an agricultural and livestock-farming entrepreneur must deal with when starting a business. Ample space was also devoted to describing the various types of advice farms make use of (agronomists, veterinarians, construction-related professions, accountants, etc.) and their respective areas of expertise.

As regards specifically the starting up of a livestock business — the module's central topic — the various stages involved in opening a new farm were reviewed, starting with the start-of-business notification via the SUAP portal and the assignment of the herd code by the competent local health authority (ASL) office.

The procedures to follow for purchasing the first animals were then examined, including the relevant authorisations for their movement to the farm and, an aspect of particular importance, their registration in the BDN. The National Data Bank is in fact now an essential tool for any farmer and, although most farms delegate the management of their record to a third party (usually the farm veterinarian), it is essential that new shepherds and farmers know its basic functions and, above all, the main requirements placed on the farmer and the related deadlines.

Particular attention was devoted, within the module, to analysing the procedures and related authorisations needed to process and sell products on the farm, and the requirements involved, both in terms of facilities and health-related obligations. Specifically, the topics covered included:

- starting to produce milk – requirements for milking and for storing milk;
- on-farm processing and direct sales;

- buildings for agriculture, livestock farming and processing, with particular regard to the construction and management of an on-farm dairy;
- management of livestock effluent;
- certified products and PATs (traditional agri-food products);
- Starting from this practical approach and from the many questions raised by course participants, the related issues of agricultural law were addressed;
- the figure of the agricultural entrepreneur under the civil code;
- the IAP (professional agricultural entrepreneur);
- the direct farmer ("coltivatore diretto");
- the legal form of the agricultural business (sole proprietorship, partnership, company);
- forms of land tenure and agricultural contracts;
- formal requirements for starting the business (opening an agricultural VAT position, registration with the chamber of commerce and with INPS, opening the farm file).

● 2. ASSESSMENT OF THE COURSE'S IMPACT

In terms of training impact, the module proved overall effective in giving students a realistic view of the complexity of business management, providing an orientation framework on the necessary requirements and on the various types of advice they can draw on. The module's duration was sufficient to cover the various topics thoroughly.

Despite these being complex topics, with numerous regulatory and disciplinary references, students consistently showed keen interest and good engagement. The direct, practical approach certainly fostered direct dialogue, very often prompted by the doubts and needs linked to the projects of aspiring shepherds and farmers.

Module 9: The Common Agricultural Policy and regional programming: opportunities for farmers

Teachers: Silvia Anichini, Stefania Bellini, David Braccia, Riccardo Buti, Francesca Cappè, Lapo Nannucci,

officials of the Tuscany Region's Directorate-General for Agriculture.

● 1. TOPICS COVERED AND THEIR RELEVANCE

The module's main aim is to give learners an overview of the opportunities offered to the livestock sector by the Common Agricultural Policy (CAP) and by regional programming, both of EU funds and of state/regional funds. In order to address a particularly complex and structured topic more effectively, the module was divided into two parts.

The first part, of a more general nature, provides the elements needed to understand the context of the Common Agricultural Policy (CAP) and of rural development through the CAP Strategic Plan, and reviews the main livestock-related measures supported by the Tuscany Region's Rural Development Complement (CSR). Specifically, the following aspects were covered:

- Evolution of the CAP and market orientation: the historic transition from the era of productivism and surpluses (1960s–80s) to the total decoupling of aid (the MacSharry and Fischler reforms). This evolutionary path turns the manager of an agricultural or livestock business into a genuine entrepreneur geared towards quality, economic stability and environmental protection.
- Financial resources and agro-ecological policies: analysis of the CAP Strategic Plan (around €37 billion in Italy) and of the Tuscany CSR (almost €749 million). The relevance lies in the strong emphasis on the "Green Share", which allocates 47.08% of the Tuscan budget to commitments for the Environment, Climate and Animal Welfare, directly supporting extensive and pasture-based systems.
- Animal welfare as a 'regulatory and ethical cornerstone': focus on the

2026 SRA30 call and on public inspection systems (in the context of animal welfare and farm management, this means the technological infrastructure, health authorities and verification mechanisms put in place to monitor, assess and objectively certify compliance with the rules on farms). Animal welfare is no longer just an ethical choice or a matter of consumer perception, but a quantifiable technical requirement, with three-year commitments to reduce animal stress and antimicrobial resistance.

- Digitalisation and scientific assessment (ClassyFarm): use of the ministerial platform to categorise farms by risk level. Through checklists completed by the farm veterinarian, key areas are monitored, such as biosecurity, drug use (DDD) and structural parameters, eliminating bureaucratic fragmentation.
- Single certification and added value (SQNBA): operation of the National Animal Welfare Quality System, used to label meat and milk from sustainable supply chains. It gives farmers a recognised public mark and is the key to accessing the highest CAP payments (Level 2 Eco-schemes).



The second, more specific part analysed the size of the Tuscan livestock sector and set out, in operational terms, the funding and public-protection policies for animal welfare, genetic biodiversity and land management.

- Register and size of the livestock sector: presentation of official data from the National Data Bank (BDN) of the Teramo livestock register. A strong meat orientation emerges in the cattle sector (2,653 farms and 53,449 head), against a numerically substantial sheep-and-goat sector (274,801 head in total), clearly dominated by dairy farms (216,020 head). The official data from the National Livestock Register confirm the strategic relevance of sheep-and-goat pasture-based systems.
- Application of Eco-scheme 1 (Levels 1 and 2): technical definition of the payments and national requirements for animal welfare and countering antimicrobial resistance.
 - Level 1 provides an annual payment per LU linked to a verified reduction in drug use (e.g. €51.36/LU for sheep and €75.70/LU for goats) measured via ClassyFarm.
 - Level 2 requires, from 2025, formal membership of the SQNBA system, requiring the whole cycle, or part of it, to be carried out at pasture (e.g. €210.0/LU for cattle).
- Improving genetic stock: an annual measure under the de minimis regime to encourage the purchase of breeding animals registered in Herd Books, with particular reference to native breeds.
- Conserving genetic stock and native breeds: measures under specific calls (SRA–ACA14) to support the upkeep of breeding animals registered in Herd Books. The focus is on saving from the risk of abandonment breeds historically adapted to the Tuscan territory (such as the Chianina or Garfagnina cattle, the Massese and Pomarancina sheep, the Cinta Senese pig). The calls award a three-year payment, until 30 June 2026, differentiated by breed, reaching up to €600/LU/year (e.g. Pontremolese cattle).
- Improvement and data-collection programmes: annual activity to monitor production and reproduction among animals registered in the herd books (40,067 head under monitoring in Tuscany in 2025), managed by

technicians of the Regional Farmers' Association (ARAT) and co-funded at 86.6% by MASAF and by the Region.

- Measures to promote coexistence with wildlife (wolf predation): targeted compensation (governed by Regional Council Resolution 299/2026) to cover the direct costs (loss of the animal) and indirect costs (veterinary expenses for injured animals) caused by wolf attacks (*Canis lupus*). The public scheme makes payment conditional on the mandatory adoption of at least one prevention measure (fencing, shelters or guard dogs).
- Active biosecurity against animal-health emergencies:
 - Management and zoning of the territory under EU Regulation 2025/1072 to counter the spread of African Swine Fever (ASF) in wild and domestic pigs.
 - Serological surveillance plan for Bluetongue (a febrile disease of sheep), with a flat-rate payment of up to €8.33/head to compensate farmers who make their animals available for periodic sampling by the ASL.



● 2. ASSESSMENT OF THE COURSE'S IMPACT

Based on students' assessments, the module "The Common Agricultural Policy and regional programming: opportunities for farmers" is among those that have encountered the greatest problems — not so much because of the topic itself, which is nonetheless considered important and worth exploring, but more because of how the course was organised. The main problems relate to how the lesson was delivered — apart from the most recent year, the course was always held remotely — and to the fact that, again except for the 2026 edition, the material provided related solely to the Tuscan case.

As for the first aspect, there is no doubt that a remote lesson is not well suited to a topic that is already inherently complex to follow, and the lack of direct interaction with the various teachers who took turns during the lesson clearly made it even harder for participants to follow. This situation, resolved in 2026 with the in-person participation of two officials, is linked to the objective difficulty of scheduling field missions for Tuscany Region staff, who have in recent years been subject to increasing restrictions in this respect. In-person participation in the 2026 cycle was appreciated by students, who were able to interact with the teachers and raise more specific questions in line with their actual needs and project ideas.

As for the issue of the focus on the Tuscan case, this is indeed a limitation, especially considering that, over the years, the proportion of enrolees coming from outside the Region has been steadily increasing. To try to address this problem, which emerged particularly in the third year, the module's organisation was revised and the general section on how the CAP works was expanded. Although these adjustments have certainly improved participants' perception of the module, it is equally true that the lesson's approach is nonetheless mostly perceived as distant from the needs of those wishing to try their hand at this line of work. This is certainly linked to the fact that the teachers, all regional officials, take an approach to the subject matter — including the more practical aspects, such as analysing individual calls — that inevitably differs from that of a professional technician (e.g. an agronomist) or a farmer. The lack of concrete examples of how to apply for the calls, which are instead

provided in the module “Economics and planning of pastoral enterprises”, has certainly undermined the perceived usefulness of a subject that is nonetheless central for anyone wishing to enter this world and try to start their own business.



Module 10: The shepherd's role in biodiversity conservation

Teachers: **Tommaso Campedelli**, **Guglielmo Londi**, **Serena Corezzola** (DREAM Italia), **Francesca Napoleone** (Sapienza University of Rome), **Davide Alberti** and **Matteo Ruocco** (Casentinesi Forests, Mount Falterona and Campigna National Park).

● 1. TOPICS COVERED AND THEIR RELEVANCE

Although it might be considered the least “farming-related” of all, the module “The shepherd’s role in biodiversity conservation” is the one most closely linked to the objectives of the LIFE ShepForBio project, namely promoting and enhancing the role of extensive livestock farming, and of pastoralism in particular, in biodiversity conservation.

The module was designed with a twofold aim: on the one hand, to develop in aspiring shepherds an awareness of the role that grazing — and hence extensive livestock farming — plays in biodiversity conservation; on the other, to provide technical and practical guidance on how to strengthen and enhance this role, starting from ways of managing pastures and animals that have a positive impact on the natural value of open habitats.

The module was structured so as to clearly pursue these two aims, with a general section summarising the evidence underlying the positive impact of extensive livestock farming on biodiversity, based both on the most recent available literature and on the results of other projects, not only LIFE ones, and a more specific section on managing pasture and its impact, positive or negative, on some fundamental components of open ecosystems, in particular:

- nesting birds
- vegetation and habitats
- day-flying butterflies (Lepidoptera)
- amphibians

As regards the general section, some specific topics were also addressed, such as the Natura 2000 network and how it works, particularly with regard to site-management policies (e.g. Appropriate Assessment and Management Plans), ecosystem services, regenerative grazing and the synergies that can develop between livestock farming and biodiversity conservation — including significant positive effects for farmers, not only in terms of financial recognition or various kinds of support (e.g. building pastoral infrastructure), but also in terms of involvement in territorial policies, all topics that are central to the LIFE ShepForBio project.

Awareness of one's own role — in this case linked to an activity that, if properly managed, can have a significant positive impact on biodiversity — is not only the essential first step towards actually being able to manage one's activity in line with nature conservation, but also gives future shepherds and farmers a fundamental tool for self-determination and for protecting their own work, especially towards those who, even today, despite all the available evidence, continue to see grazing and the presence of farmers as a problem to be managed rather than a resource to be valued.

Each of these topics was addressed by researchers and sector specialists who, drawing on their own professional experience and the most recent available information, illustrated the possible positive and negative impacts of extensive grazing on biodiversity, while also providing practical guidance and concrete examples on how to manage grazing, and livestock farming more generally, so as to help conserve pasture biodiversity. Just to give a few examples: managing shrub and tree vegetation within pastures — that is, how these elements, if not dominant, can help create environmental conditions suited to the presence of numerous species of particular naturalistic interest — or how correctly managing stocking rates and animal movements can help conserve, or restore, rich populations of orchids or butterflies, or again the importance that drinking troughs, or water points more generally, have for numerous animal species (breeding sites for amphibians, drinking points for bats).

The module included a field trip, again organised within the Pratomagno intervention area, within the "Mountain pastures and scrubland of Pratoma-

gno" Special Area of Conservation/Special Protection Area, during which the topics developed in the classroom were addressed with a practical approach.



● 2. ASSESSMENT OF THE COURSE'S IMPACT

The main objective of the LIFE ShepForBio project is to “Improve the conservation status of three grassland habitats recognised as being of European importance under the Habitats Directive (codes 5130, 6210* and 6230*), by developing pastoral activities in marginal mountain areas, so as to ensure sustainable, long-term management of these environments”. The decision to include, within the school, a specific module on the role that extensive livestock farming plays in biodiversity conservation is certainly consistent with this objective; less certain, at least initially, was how participants would respond. Only in recent years, in fact, have topics such as the positive impact of extensive livestock farming on biodiversity and the need for appropriate management of pastoral resources (for example in relation to the effects of climate change) gained a certain importance, though almost always within specific projects or activities (such as, precisely, shepherding schools), and they still struggle to find concrete, widespread acceptance within the livestock-farming world. However, beyond the project’s objectives, it was the awareness that these issues will become central not only to environmental policies but also to those more specifically concerning livestock farming that reassured us in our decision to organise this module, and the students’ response confirmed that our approach was the right one.

The topics covered in fact consistently generated considerable interest, with a high level of participation and discussion, both on general topics and on more specific ones. Beyond personal interest in specific subjects, evidently linked to each learner’s own background, we recorded, throughout all four years — something far from a foregone conclusion — considerable general interest in these topics.

Trying to analyse in detail the reasons behind this interest, there is certainly the fact that, among those who decide to enter the world of livestock farming and pastoralism in particular, there is undoubtedly a strong interest in nature. The chance to live and work in close contact with nature is indeed one of the main drivers behind choosing this path. It is an interest that a superficial narrative might dismiss as arising from a distorted, almost naive view

of this work (the little flowers, the butterflies, and so on...), but which in fact, based on our experience, is not only driven by sincere, concrete interest but is understood as closely connected to farming activity itself. There is broad recognition and acceptance of the fact that a healthy, biodiversity-rich environment, and correct management of animals and pastoral resources not driven solely by productivity targets, have a positive effect on livestock farming (including in economic terms). There is, however, generally less awareness of the importance of being fully conscious of one's own role — in this case in terms of nature and biodiversity conservation — and of the practical implications this can have for managing a farming business, especially in areas, such as mountain areas, where protected or otherwise constrained areas are more common, and where conflicts are more likely to arise. This lower level of awareness, however, was the basis for a very engaging and engaged discussion, in which students took an active part, including by requesting further information and specific materials.



Module 11: Adding value to products and diversifying livestock-farming activities as a way of supplementing income

Teachers: **Gianrico Fabbri** (Slow Food Valdarno), **Davide Alberti** (Casentinesi Forests National Park).

● 1. TOPICS COVERED AND THEIR RELEVANCE

Module 11 addresses a topic that, within the overall design of the School for Shepherds and Farmers, has a special function: it does not directly teach people how to produce or farm, but helps farmers understand how to add value to what they do, how to become part of wider local-economy networks, and how to turn their farm into a place that is open — to tourism, education, hospitality — without giving up their identity as producers. This shift in perspective is by no means a given, and understanding the why is as important as explaining the how. The module is built around three broad thematic areas.

● **Adding value to farm products and the role of Slow Food**

The first part of the module is devoted to the mechanisms through which an agricultural product can gain recognisable added value on the market and in society. In this context, the Slow Food Association is presented: its history, structure and aims, and in particular the activities most relevant for farmers. Slow Food is presented not simply as a body to work with or join, but as an example of a view of the agricultural world that is an alternative to the dominant one: that of “good, clean and fair” food, in which the shepherd is not just a producer of raw material, but a custodian of the land, of biodiversity, of age-old knowledge. This perspective — which runs through the whole experience of the Slow Food Presidia and the Slow Food Foundation for Biodiversity — was deliberately chosen as a point of reference because it helps farmers recognise the value of their own work not only in economic terms, but also as a cultural and environmental contribution.

The more concrete part concerns the protection of native breeds and of processed products linked to the local traditions found in the area covered by the LIFE ShepForBio project. Real-world cases are presented: the Cornigliese sheep Presidium, the Maremmana cattle breed, the Romagnola cattle breed, and raviggiolo cheese from the Tuscan-Romagnol Apennines. These are not museum pieces: they are living experiences, showing how the distinctive quality of a product can become a genuine economic lever for small businesses located in marginal areas.

In this sense, the module answers a question that many participants carry with them, more or less consciously: “My product is good, but how do I get it recognised?” The answer is not a universal recipe, but an invitation to work on one’s own production identity, to build ties with those who share similar values, and to understand that the market need not be a hostile place for those who know how to tell their own story.

- **Hiking, hospitality and farm diversification**

The second thematic area addresses the diversification of livestock-farming activities as a way of supplementing income. Agriculture — and livestock farming in particular, in protected or mountain areas — has for some time no longer been a sector identifiable solely with the production of goods. It is also a way of safeguarding the landscape, passing on rural culture, and an opportunity for sustainable tourism.

Drawing on the experience of the Casentinesi Forests National Park, the module concretely illustrates how a hiking network is built, what role Environmental Hiking Guides (GAE) play, and how farms can become part of existing tourist circuits or create new offerings. The “From Refuge to Refuge” and “Sacred Forests” projects, as well as initiatives linked to “Slow Autumn” and the “Taste Trails”, are presented as case studies: real experiences, with verifiable figures, structures and partnerships, which help convey not just the idea but also its operational feasibility.

The regulatory aspect of rural hospitality is also addressed: the various forms provided for under regional legislation (agritourism, family rural hospitality, room rentals, B&Bs, hiking refuges) are presented with their specific featu-

res, access conditions, limitations and opportunities. This aspect, seemingly technical, actually proves very concrete for those thinking of opening their farm to the public without knowing where to start.

The example of Zooristur — an agro-pastoral project combining livestock farming, research, development and tourism, born in the middle of lockdown and completed in under two years — is used as an emblematic case: not to be replicated as such, but to show that diversification is not a strategy reserved for large operations, and that combining a solid production identity with openness to the local area can create something new and sustainable.

- **Environmental education, schools and traditional crafts**

The third thematic area concerns the opportunities offered by schools and environmental education as a further way of supplementing income and putting down roots in the local area. The Casentinesi Forests National Park's experience in this field is well established: the "School in the Park" projects, the Sustainability Education Centres (CEAS) and food-education activities carried out in partnership with Slow Food form a rich, varied repertoire from which farmers can draw inspiration.

The European Charter for Sustainable Tourism in Protected Areas and the Park Mark — in its "recommended farm", "recommended business" and "recommended guide" variants — are presented as concrete tools for recognition and promotion. These are not mere labels: they are the result of a process of meeting quality standards and joining a network of relationships that increases the visibility and credibility of those involved.

The underlying idea running through this part of the module is that the farmer is not just a producer, but also a potential educator: someone who knows the land, the animals, the natural cycles, and who can pass on this knowledge — to children, tourists, city-dwellers far removed from the rural world — directly and authentically. This awareness, when it emerges, often has a significant impact on participants' self-esteem and on their view of their own professional role.

● 2. ASSESSMENT OF THE COURSE'S IMPACT

Module 11 occupies a particular position within the school's training programme: it is one of the modules furthest removed from the core technical, livestock-related content, and also the one in which the narrative, project-based and relational dimension of being a farmer emerges most strongly. This peculiarity has made the teachers' work as stimulating as it is demanding.



● Overall assessment

Perhaps the most significant finding to emerge over the various editions concerns the type of participant who responds most strongly to this module's content. It is not necessarily someone already active in tourism or education, but rather someone — often young, often in the process of planning their own farm — who already senses that simply producing is not enough to build something sustainable in the long term.

For these participants, the module does not just convey information: it offers a conceptual framework with which to make sense of intuitions they already had but struggled to put into words. These are not abstract categories; they are tools that allow them to think of themselves differently, to imagine a farm that holds together tradition and contemporary planning.

This effect was all the more evident the more the content was presented through real cases and first-hand accounts. Experience teaches that a chart on the economic impact of rural tourism is far less convincing than a concrete story: that of Italia and Pietro with Zooristur, or that of the Slow Food Presidia that have given renewed economic life to breeds and products that were about to disappear.

While the module succeeds effectively in “opening up” new horizons, on the other hand a recurring difficulty clearly emerges: the gap between “I’d like to do it” and “I know how to do it”. Many participants, during discussions, express enthusiasm for the possibilities offered by diversification, but come up against a series of concrete obstacles, chiefly the bureaucracy involved in opening accommodation facilities and the difficulty of being among the animals while also being available for tourists at the same time.

This gap is not a shortcoming of the module: it is an honest snapshot of the complexity of the transition being asked of farmers. It does, however, suggest that a possible improvement for future editions could be to introduce, alongside the case studies, more structured individual or group project-work sessions: spaces in which participants are guided to think through the concrete potential of their own specific situation, not just that of others.

Similarly, the topic of communication — how to tell the story of an extensive farm, how to build a digital presence, how to work with an environmental guide to offer a hike that includes a farm visit — comes up across the board but is never addressed systematically. This is an area where many farmers are ill-prepared, and one that would deserve more space, perhaps even in a dedicated module.

- **The value of the field visit**

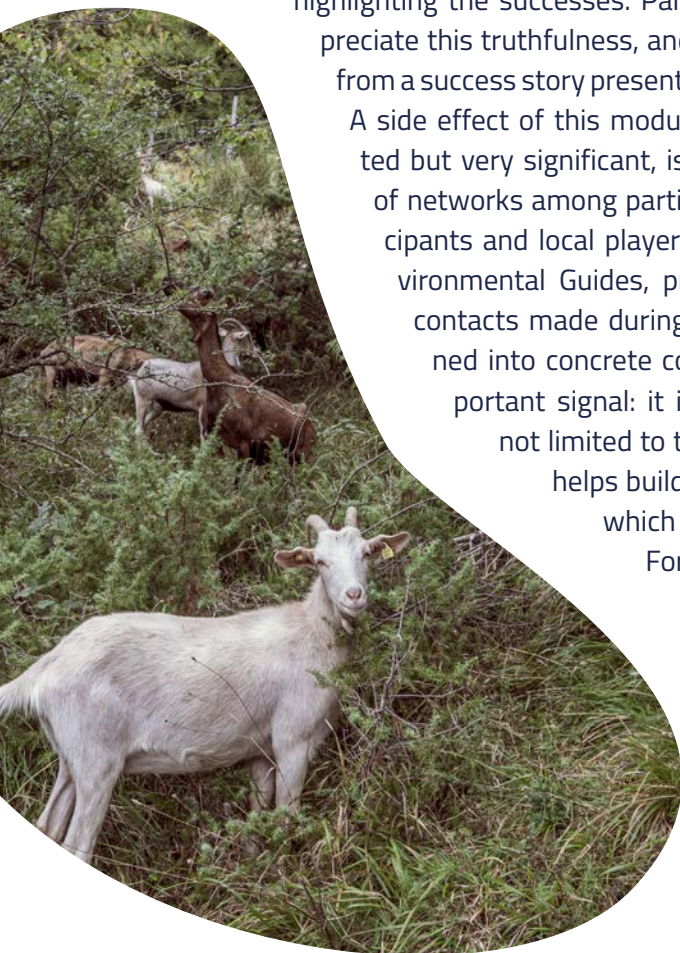
The module includes a field visit to a local farm, and this activity has proved to be one of the most effective in the entire programme. The visit is not a supplement: it is often the moment when everything said in the classroom takes on substance. Seeing a farm that has chosen to open up to tourism, talking to the person running it, getting a first-hand feel for the difficulties and satisfactions of that choice, is something no presentation can replace.

In this sense, the choice of farm to visit is a critical factor: the activity works because it takes place at a business run by someone capable of talking about themselves authentically, without hiding the difficulties or only

highlighting the successes. Participants recognise and appreciate this truthfulness, and get far more out of it than from a success story presented in an overly polished way.

A side effect of this module too, not always anticipated but very significant, is that it fosters the building of networks among participants, and between participants and local players (the Park, Slow Food, Environmental Guides, producers). In several cases, contacts made during lessons or visits have turned into concrete collaborations. This is an important signal: it indicates that the School is not limited to transferring information, but helps build a relational ecosystem into which new farmers can integrate.

For those working in marginal, often isolated areas, this dimension is anything but secondary.



- **Reflections for anyone wanting to run this experience again**

For anyone attempting to organise a similar course, a few pointers emerging from our experience seem useful.

The choice of teachers matters enormously. Technical expertise is not enough: what is needed is someone who knows how to tell a story, who has direct experience of what they are talking about, and who is willing to share failures too. A teacher who has personally experienced building a Slow Food Presidium or running a rural-tourism project communicates something completely different from someone who knows that experience only through books and reports.

The local area of reference must be present as a protagonist, not as a backdrop. The most effective case studies are those anchored to the place where the school is held, or better still to a place of interest to the students: local breeds, the Presidia present in the area, farms that have already travelled that road — without excluding examples from elsewhere.

Consistency with the rest of the training programme is essential. The module on diversification works better if participants have already developed their own vision of the farming system they want to build, the products they are focusing on, and the local area in which they intend to operate. Without this groundwork, it risks remaining a catalogue of appealing but abstract possibilities.

It is necessary to include practical modules on communication and promotion. The ability to tell the story of one's own farm, to establish a presence on digital channels and to promote agro-tourism activities is a key skill for the economic sustainability of the business. Including workshop sessions dedicated to how to convey the value of extensive-farming products, or how to reach specific tourist targets, stops a good project from remaining invisible.

Clear information support on the bureaucratic aspects of hospitality needs to be offered. The regulations for setting up and running agricultural accommodation facilities (agritourism, farm campsites, educational activities) are often complex and discouraging. Including detailed procedural guidance — walking people step by step through health authorisations, licences and administrative requirements — makes it possible to turn participants' aspirations into real, workable paths.

In conclusion, Module 11 is one of the moments in which the school most clearly expresses its own vision: it does not train only a livestock-farming technician, but a person capable of being part of the local area, of building relationships, of imagining a future for their farm that goes beyond immediate economic survival. This ambition is not always easy to pursue, and the results are not always immediate. But it is precisely this complexity that makes it interesting.



Module 12: Workplace safety

Teacher: Paolo Bazzini,

forestry graduate, Dream Italia Cooperative.

● 1. INTRODUCTION AND REGULATORY FRAMEWORK

In the agro-livestock sector, worker training is a cornerstone of the company's prevention and protection system. In accordance with Legislative Decree 81/2008 (the Consolidated Act on Occupational Health and Safety) and the State-Regions Agreements in force, the agricultural macro-sector was classified as Medium Risk at the time the Course was delivered. This requires an integrated mandatory training programme (General Training and Specific Training) aimed at transferring cognitive, behavioural and operational skills designed to counter accidents and occupational diseases specific to the sector.

● 2. TRAINING PROGRAMME CONTENT AND OPERATIONAL RELEVANCE

The training programme opens with a general part, which provides the reference framework on safety. Past and current regulations are illustrated, and the concepts of hazard, risk and harm are clarified. The figures that make up the prevention and protection service, including mandatory ones, are then presented, together with how prevention is organised within the company and the system of participation of workers and their representatives provided for by Legislative Decree 81 of 2008. Finally, the module covers the rights, duties and sanctions of the various company stakeholders, along with the supervisory, control and assistance bodies. Technical in-depth modules follow, set within the reality of the agro-livestock sector.

Biological risk and zoonoses cover pathogens (bacteria, viruses, parasites), transmission routes and the main zoonoses, such as brucellosis, leptospirosis and tuberculosis. They also address the management of waste and stables and the use of respiratory and skin PPE. The relevance is extremely high, because those working in this field are in direct or indirect contact with animals, blood fluids and organic material. This module is therefore essential for preventing occupational infections and for biosecurity.

The module on machinery and equipment covers licences (the so-called “patentino”) for agricultural and forestry tractors, telescopic handlers and combine harvesters. It also deals with moving parts, the power take-off (PTO), ROPS and FOPS devices, noise and vibration. The topic is critical: tractor rollover and entanglement in power take-offs are among the main causes of fatal accidents. The module ensures compliance with Title III and considers the risk of long-term hearing loss.

Manual handling of loads (MHL) teaches how to assess risks using the NIOSH method and explains spinal biomechanics. Examples include feed sacks, hay bales, equipment and milk containers. Its importance is high, because the module prevents chronic-degenerative musculoskeletal disorders, such as low back pain and disc disease, which have always been common among stable and field workers.

The module on hazardous substances and plant protection products introduces the REACH/CLP Regulation, classification and labelling. It also illustrates the storage and handling of agrochemicals, milking-system detergents and silage acids. It serves to prevent acute and chronic poisoning, chemical burns and environmental contamination, and it integrates with the licence for the use of plant protection products (patentino).

Confined spaces and microclimate are considered of maximum relevance. The module concerns work in confined environments or those suspected of pollution, such as silos, slurry tanks and settling pits. It includes the monito-

ring of asphyxiant gases (H_2S , CH_4 , CO_2) and heat stress. The risk of asphyxiation or poisoning in tanks and silos is in fact highly lethal, while microclimate management is essential for outdoor work, both in summer and in winter.

General electrical risks are addressed by providing information on the regulations in force, on the existence of a system design, on checking the earthing and on the presence of a residual-current circuit breaker. The relevance is maximum, owing to the risk of fire and of electrocution of animals.

For PPE, people are taught to read labels correctly, as these state the characteristics of the device. The aim is to choose the right PPE for one's own activity.

Safety signage is covered by showing how to position the pictograms needed to read a risk quickly. These also make it possible to identify fire-fighting and first-aid equipment and escape routes. The goal is the correct use of signage.

The module on incidents and near misses teaches how to interpret near misses and how to decide which measures and precautions to adopt. The programme closes with information, training and drilling activities, which recall the criminal and administrative consequences of failing to provide training and the obligations of the employer.



● **3. TEACHING METHODOLOGY, DRILLING AND ASSESSMENT**

Training in the livestock sector is not limited to theoretical delivery in the classroom, but requires an experiential and practical approach (contextualised drilling). Pursuant to Article 37 of Legislative Decree 81/08, practical drilling is mandatory for work equipment (e.g. tractors, handlers) and for Category III Personal Protective Equipment (e.g. self-contained breathing apparatus, fall-arrest harnesses for silos). The effectiveness of the training is verified through summative learning tests (multiple-choice questions and practical field tests) and must be maintained through the mandatory five-yearly refresher training.

A rigorous training programme calibrated to the specific risks of livestock farming and crop production does not merely fulfil a legal obligation, but increases company productivity, reduces the downtime expected from accidents, protects animal welfare and ensures compliance with the biosecurity standards set by EU regulations.

● **4. ASSESSMENT OF THE COURSE IMPACT**

In terms of training impact, the module proved overall effective in giving students a complete view of the main risks present in the activity, through real examples drawn from the instructor's experience. Unfortunately, it was not possible to carry out specific company visits so as to combine theoretical and applied aspects directly on site.

A strength was certainly the preparation of interactive lessons made up of questions from the learners but also of discussion of the topics, identifying or proposing solutions to be evaluated through the application of the regulations and with the help of the prepared slides. On some topics, such as emergencies, simple "games" were used that make it possible to understand how effective the presence of signage is.

As regards the students' response, despite the subject matter, a generally good level of interest was observed, in particular for:

- topics related to biological risk, plant protection products and manual handling of loads;
- animal welfare seen as a consequence of applying the regulations.

The discussion was particularly lively on the topics covered, seeking to promote awareness and a critical approach to safety management, overcoming past cultures in favour of new proposals and operating systems that are at the same time respectful of the welfare and safety of animals and operators. Those most interested were people who had little knowledge of the subject or only second-hand information.

A further relevant aspect concerns the time available; unfortunately, the regulations provide for training which, given the hours available and the topics to be covered (12 hours), is insufficient for applying methods such as visits, questionnaires or direct discussion with farmers, which require more time than is available.

The course allowed learners to acquire useful information, both theoretical and practical, for starting an activity with a minimum of awareness of a subject that is always treated dismissively by those who start up a business. Looking ahead, having at least one day available, placed at the end of the course, to verify directly on the farm what has been learned in classroom teaching would also make some topics easier to understand.

In conclusion, the module represents an experience, regulated in terms of hours and topics, capable of providing useful technical information. The reflections that emerged can help to further improve the training offer in future cycles and to strengthen the role of Shepherd School as a pilot experience at national and international level, where learners can be granted recognition of their training for the purposes of the regulations in force.



Module 13: Cheese-making techniques and dairy management

Teacher: Roberto Funghi,
agronomist, Rete Appia Association.

● 1. TOPICS COVERED AND THEIR RELEVANCE

The module, made up of a theoretical part held in the classroom and a practical part with exercises at local on-farm dairies, gave an overview of the various techniques for making, preserving and ageing dairy products, particularly those made from goat's and sheep's milk. Particular emphasis was given to exploring in depth the equipment needed for processing milk and for building and running a dairy — a subject already partly covered in the module "Starting a livestock business: regulatory and technical aspects", but explored further here, in particular thanks to the chance to talk directly with producers during the practical on-farm exercises.

The discussion focused in particular on the aspects, problems and opportunities relating to small and medium-sized on-farm dairies, thus leaving aside larger, industrial-scale operations, towards which, over the four years of activity, students have always shown little or no interest. In organising the module and covering the topics, an effort was always made, as far as possible, to take a practical approach, taking into account the input and interests of course participants.

The discussion began with milk as a raw material, covering its chemical and microbiological aspects; the possible products derived from processing were then described, moving on to the processes and technologies for producing cheese, ricotta and fermented milks (yoghurt and kefir). The requirements for processing buildings were then considered, looking both at new construction and at adapting existing buildings. Space was also devoted to the various types of equipment, both large (milk chillers, planetary mixers) and small, needed for processing, considering the needs both of very small operations or

those in their early start-up stages and of larger, more complex ones. The topic of product ageing and preservation was then addressed, exploring both the technical and structural requirements and the related hygiene and health regulations. The theoretical part ended with a discussion, through the analysis of practical cases, of packaging, labelling and selling the products.

As mentioned above, in compliance with hygiene and health regulations, the module included practical sessions and discussions with local producers, during which students were able to get hands-on experience of the various processing stages covered in class. Dialogue with operators and the chance to explore, in a practical way, directly on-farm, the various aspects of cheese-making — from milking and storing milk, to processing it into the various products, through to technical, structural and economic issues (equipment, compliance with hygiene and health regulations, sales and marketing) — gave participants a thorough, complete overview of the subject.



● 2. ASSESSMENT OF THE COURSE'S IMPACT

The topics covered generated keen interest among course participants, who took an active part in the lessons, asking questions geared to their specific needs and projects. The practical approach that characterised the organisation of the whole module, including its theoretical part, certainly fostered participants' interest, helping to establish direct dialogue that then continued beyond the end of the module itself, through direct contacts. The soundness of the approach followed is also shown by attendance at the lessons, particularly the practical ones, including by students from previous years, who took the opportunity, time and again, to discuss technical matters with the various local producers.

The very interest shown, and the objective centrality of the subject within the broader context of developing a livestock business — especially of the sheep-and-goat type, and particularly in the mountainous areas of the Apennines, the geographical area most students came from — prompt reflection on the need, in any future editions of the school, for a longer module, giving the opportunity to explore the theoretical topics further and to give participants more practical experience.

The lessons, aimed at people who in most cases did not have a basic technical and scientific background, had to condense the many topics relating to milk processing into just two days (one for theory and one for practice), too little given the complexity of the subject.



Module 14: Agroecology, agroforestry and silvopastoralism

Teachers: **Francesca Pisseri**, agroecological veterinary surgeon, expert in pasture-based livestock farming, Italian Association of Agroecology;

Cesare Pacini, associate professor at the Department of Agriculture, Food, Environment and Forestry, University of Florence.

● 1. TOPICS COVERED AND THEIR RELEVANCE

The teaching approach was interactive and participatory: through engagement with the course participants, a dialogue developed that helped bring into focus the skills acquired and the needs that emerged.

The exchange allowed participants to voice doubts, problems and ideas, and to co-construct knowledge based on each person's experience.

The following topics were covered, partly in the classroom and partly in the field, at a Tuscan dairy sheep farm run as an agro-silvopastoral system, where agroecology is put into practice.

Theory: The principles of agroecology. Dynamics of agro-silvopastoral systems. Interactions between animal and plant components on the farm: soil fertility. Multifunctionality and pastoralism. Herbaceous and tree components: interactions and ecosystem services.

Agroecology applied to pastoralism. Rational grazing methods. Raising ruminants in agro-silvopastoral systems: the grazing chain. Territorial forage nutrition for ruminants, and how to build a farm ration based on local resources. Designing a livestock farm in agroecology. Integrated management of animal parasitic diseases.

Practice: Field assessment of livestock, health, environmental and socio-territorial indicators for pastoralism. Practical construction of the Grazing Plan. Observation of the grass sward and of animals' Body Condition Score. Good

hygiene and health practices in pasture-based farming. Participatory action research in the management of pastoralism.

The topics were addressed in a transdisciplinary way, which was greatly appreciated by the students, who expressed a need for an integrated view of the disciplines covered and for a clear link between theory and practice. Grazing is an evolving, integrated system and, as such, requires constant adaptation of livestock practices in order to achieve efficiency and economic sustainability, putting into practice a process of action research.

So, for example, we correlated grass growth dynamics and composition with the types of supplementary feeding to be given to animals at pasture.

We showed and explained how the tree component can contribute to animal health and welfare through bioactive compounds, nutritional contributions, shelter from heat and wind, and protection of the grass sward.

We explained what indicators are and how they can be used in livestock practice, both through discussion with technicians and researchers and with farmers, also to guide and re-guide farm decisions and management set-up. Together with the students, we practised assessing indicators of soil health, animal nutritional status (Body Condition Score), and the quantity and quality of forage available on pastures.

Participants shared many reflections on the physiological and ethological characteristics of the different species of domestic ruminants, asking for our view on the advisability of raising cattle, sheep or goats depending on the characteristics of the territory, people's skills, and requirements for space, facilities and feeding.

As regards animal nutrition, the students asked many questions on how to set up and manage territorial forage nutrition for ruminants, and how to build a farm ration based on local resources. According to the agroecological view, in fact, dependence on sources external to the farm makes the enterprise less resilient, as it ties it to global market dynamics. Strengthening territorial and local relationships is very useful for selling products, for collaborations, and for purchasing animal feed.

The students were very interested in our field and consulting experience with pasture-based ruminant farms, and asked many questions about their size, location, management methods, work organisation and sales methods. There was particular interest in design methods in agroecology, for which we recommended reading the volume *“Progettazione dell'allevamento in agroecologia”* (Pisseri, 2024), published by Veneto Agricoltura.

We discussed the areas to be devoted to pasture-based farming, in particular the inner areas of our country, examining their characteristics, opportunities and limitations.

We covered agroecological practices that support both climate change mitigation and adaptation, such as agroforestry techniques, compost bedding, and the rearing of dual-purpose breeds.

As regards health aspects, we stressed that veterinary management must be based on a collaborative relationship between the consultant and the farmer. We highlighted that calendar-based treatments for animal parasitic diseases should be avoided, as they are largely ecotoxic and have limited effects due to antimicrobial resistance, and that an integrated management plan should be set up instead. This is based on periodic monitoring (scheduled testing), and on agronomic practices and pasture management methods that limit the parasite load and/or interrupt the parasites' life cycle. The dynamics of animal parasitic diseases were related to livestock practices (nutrition, housing management, etc.) and to the grazing plan.



● 2. ASSESSMENT OF THE COURSE'S IMPACT

A characteristic of the students is their different backgrounds and cultural settings. On the one hand, this requires calibrating the language of the course so that it is understandable to everyone; on the other, it is a teaching opportunity when the different approaches and experiences are linked together to define, actively and jointly, the founding elements of pastoral and livestock practices. Participatory methods are therefore particularly appropriate.

The assessment of the course's impact must come from those who attended it. Our impression was that our lessons were very much appreciated, and that more time would have been needed to explore some topics in depth. Most of the students showed great interest in agroecology as a whole and asked to delve deeper into numerous topics, without there being time to do so.

We asked for their opinion on the participatory model of our lessons, and they confirmed that they found it very productive.

As regards the structure of the lessons, we consider it useful and worthwhile to alternate field hours and classroom hours within the same day. We suggest designing the lessons to be interactive, for example in the form of focus groups or project work.

We found that the students were very interested in meeting the farmer on whose farm we held the lesson. The importance of farmer-to-farmer teaching is emphasised in agroecology. It is therefore necessary to provide funds to give fair remuneration for the time farmers can devote to teaching.

Two notes on the original: "antimicrobicoresistenza" would more correctly be "antiparasitic resistance" (or "anthelmintic resistance") in the context of parasites, but I kept it as written ("antimicrobial resistance"). Likewise, "monitoraggio periodico (analisi a calendario)" sounds slightly contradictory next to the criticism of calendar-based treatments, so you may want to reword it in the Italian, for example "analisi periodiche mirate".

Module 15: Economics and planning of pastoral enterprises

Teachers: **Raffaele Spadano** (Montagne in Movimento), **Jacopo Goracci** (Slow Food), **Alessio del Tongo** (Tenuta di Paganico, GR), **Martina Muggiri** (ISIA Roma Design).

● 1. TOPICS COVERED AND THEIR RELEVANCE

The module, organised in collaboration with the Calascio School for the advancement of extensive sheep and goat farming, addressed the subject of business management starting from the specific characteristics of pastoral enterprises and from the local, economic and social context in which they operate. The overall aim was to give participants tools useful not only for understanding their own farm's economic situation, but also for guiding future choices, assessing investments and identifying possible development strategies.

A first point for reflection concerned the role of pastoralism in inland and mountain areas. The pastoral enterprise was considered not solely as a production unit, but as an activity closely linked to land management, landscape upkeep and the presence of communities and economic activities in rural areas. From this perspective, the sustainability of the business takes on a broader dimension than livestock production alone: keeping a pastoral activity economically viable also means helping to keep people, skills and services in the local area.

An important part of the Masterclass was thus devoted to the fundamentals of the pastoral enterprise's economics. The main components of farm costs were analysed, distinguishing between fixed costs, variable costs and less immediately visible or "hidden" costs. Particular attention was paid to the need to know the actual cost of the various production factors and, above all, to correctly value the work of the farmer and their family. Using examples relating to the various species farmed, such as cattle, sheep and goats, some

simple indicators for assessing profitability per head, per species and per unit of area were discussed.

The subject of the farm balance sheet was addressed mainly as an operational tool to support decision-making. Rather than focusing on strictly accounting-related aspects, attention was placed on the farmer's ability to read a few essential figures in order to understand the state of health of the business: revenue, main cost categories, gross and net margin, and the weight of labour and other production factors. Through exercises and concrete examples, the concept of break-even was also introduced, useful for understanding the minimum level of production or revenue needed to cover the costs incurred by the business.

The economic analysis was linked to the main critical issues that characterise pastoral businesses today. These included, in particular, the availability and cost of labour, predation, the presence or shortage of infrastructure, the availability of hay and other feed, and the effects of drought. The discussion highlighted how these factors are not merely technical problems but have direct economic consequences and must therefore be factored into business decisions. An investment, or a change in how grazing or work is organised, must be assessed by considering production, environmental and economic aspects together.

A second core theme of the Master-



class concerned the support and funding instruments available to pastoral businesses. A structured overview was presented of the main opportunities offered by the CAP and by rural-development policies, looking at measures for farm investment, grazing, animal welfare, water infrastructure and agro-climatic-environmental measures, as well as eco-schemes, compensatory allowances and instruments aimed at inland areas. The opportunities offered by Local Action Groups (GAL) and the LEADER approach were also considered, along with those linked to taking part in innovation projects.

The central point, however, was not simply to present a list of available funding, but to develop the ability to assess when a grant is genuinely worthwhile for the business. Access to funding in fact entails obligations, constraints, upfront financing, administrative timelines and management costs that must be weighed against the expected benefit. Through examples and exercises, participants discussed how to set up a simple cost-benefit analysis of an investment, comparing scenarios with and without public funding and considering how consistent the investment is with the business's overall objectives. The economic and planning section was finally linked to the theme of creating value from pastoral products and services. In many pastoral contexts, in fact, economic sustainability cannot depend solely on increasing the quantities produced or on cutting costs. It therefore becomes important to succeed in transferring into the product the value of the production system it comes from: grazing, biodiversity, breeds, animal welfare, landscape, local knowledge and the relationship with the land.

From this perspective, the module covered food design, packaging, product identity and the building of a narrative consistent with pastoral activity. The discussion was also extended to diversification opportunities linked to agritourism, on-farm experiences and pastoral tourism, thus considering not only the sale of a food product but also the possibility of turning knowledge, practices, landscapes and relationships with animals into components of what the business has to offer.

The classroom lessons were supplemented by visits and activities at local farms, making it possible to compare the tools discussed during the Masterclass with real production situations. Overall, the programme presented a

view of business management in which economics, work organisation, use of local resources, access to public instruments and adding value to products are closely interconnected elements. The ability to design a sustainable pastoral enterprise therefore comes not from a single technical or financial solution, but from the ability to read these various factors together and adapt them to the characteristics of the business and of the local area in which it operates.

● 2. ASSESSMENT OF THE COURSE'S IMPACT

The module “Economics and planning of pastoral enterprises” is the most recently added to the ShepherdSchool’s training programme, and its introduction, thanks also to the collaboration established with the Calascio School, provided a concrete response to numerous requests made in previous years by participants in the project’s School.

Given the complexity of the subject matter, the module followed a practical, hands-on approach in every respect, from the choice of topics and speakers to the teaching and knowledge-sharing methods. The choice of speakers in particular — all professionals in the sector with extensive field experience — made it possible to cover, in a highly applied way, topics that, although of primary importance, can be difficult and certainly less able to spark students’ interest. This was made possible by grounding all the material in real, concrete business realities, often experienced first-hand by the speakers themselves. This approach generated considerable interest among participants, who appreciated the course’s practical approach. Particular interest, for example, was sparked by the hands-on exercise of drafting a farm budget, or the group exercise during the marketing lesson, in which participants had to identify, starting from a real case study, ways and themes useful for making the most of their own products, seen as vessels for conveying the narrative of the local area, environmental sustainability, and so on.

The module’s success was certainly helped by the chance to talk directly with two long-standing businesses in the Abruzzo sheep-farming sector, Azienda Gran Sasso di Castel del Monte and Porta dei Parchi di Anversa degli Abruzzi, which have made the added value of their products their hallmark.

Module 16: Working with the herding dog

Teachers: **Gabriele Galli and Deborah Bianchi**, owners of Azienda Agricola Podere Bianchi Galli; in the Parma Apennines they raise a flock of around 350 Cornigliese and Ciuta sheep, and the farm processes and sells directly its own products made from heavy lamb meat.

● 1. TOPICS COVERED AND THEIR RELEVANCE

Herding dogs, a generic term that does not do justice to the versatility and the many tasks these animals perform within a farm, have by now become essential collaborators in the management of flocks, and not only flocks, especially for those practising extensive farming. Until not long ago the use of these dogs was fairly limited in our area, but now very many farms use them to manage their animals. The enormous versatility these animals display allows them to be used even in confined spaces, such as barns, where they are now routinely used to move animals, for example to manage movement towards the milking station or to separate groups of animals for veterinary treatment or other purposes.



The module had a twofold objective: to provide basic theoretical and practical tools for understanding the potential of using herding dogs in animal management and, at the same time, to give useful guidance for identifying, according to how the animals are managed and the characteristics of the farm, the type of dog that best suits the farmer's specific needs. The module, organised over a single day, consisted of a first theoretical part, in the classroom, and a second practical part outdoors, at a local farm, where a genuine working session with a demonstration of the use of the herding dog was organised.

Although these animals' aptitude for work is essentially innate, there are factors that significantly affect the quality of a herding dog, and these must be duly considered when choosing one. While each breed has its own characteristics that make it more or less efficient at performing particular tasks or at adapting to the territorial conditions in which it will work, a great deal depends on the quality of the genetic line of the individual dogs. To this is obviously added the importance of the training phase, which requires in-depth knowledge of the ethological aspects of individual breeds (stress tolerance, emotion management, motivational characteristics). These were the two main themes explored in the theoretical part of the course, which was followed by the practical part, organised at one of the farms collaborating with the project, which made available a small group of sheep so that demonstration sessions of the dogs' work could be held. In this second phase, which was also open to other farmers in the area, working sessions were organised involving the dogs of Podere Bianchi Galli, engaged in various herding and flock-gathering operations.

● 2. ASSESSMENT OF THE COURSE'S IMPACT

The module attracted considerable interest from the students; the topic of herding dogs, as already mentioned, has by now become of absolute interest, and some of the students had already had experience of these dogs (e.g. on summer mountain pastures), where they were able to judge first-hand their effectiveness in helping to manage flocks.

The decision to divide the module into a theoretical phase, in any case built around very practical elements such as the management of behavioural characteristics, and a practical phase certainly helped make the module particularly well received. Organising the practical phase was not simple because, as we were unable to bring our own sheep, we had to organise the demonstration sessions using animals belonging to another farmer, which therefore did not know our dogs and were not used to their way of working. Despite this, the sessions lived up to expectations; in some phases it was even possible to involve the students directly, who, always accompanied, were able to try out some of the stages of the work first-hand, such as approaching the flock with the dog and giving some commands.



Having concentrated all the activity into a single day, and not being able to use our own sheep, already accustomed to the presence and work of the dogs, for the demonstration session, objectively limited the effectiveness of the module, which, however, we believe achieved its intended objective. We must nevertheless consider that holding the activity at the Podere would in any case have raised logistical problems for transporting and lodging the students.

The involvement of other shepherds from the area, in addition to the School's students, was a very positive factor, both as an opportunity for training and updating and as a networking activity with the students.





A REFLECTION ON THE CONTRIBUTION OF PASTORAL SCHOOLS TO THE PROMOTION AND ENHANCEMENT OF PASTORALISM

One of the specific objectives of the LIFE ShepForBio project was to establish a network of pastoral schools at European level, in order to promote the exchange and sharing of good practice on the subject of pastoral training.

Although a description of these activities falls outside the scope of this document, we believe it useful to report some considerations that emerged from the numerous networking activities carried out at national and European level, culminating in the hearing held before the European Commission's DG AGRI (Directorate-General for Agriculture and Rural Development) on 26 March 2026, "Pastoral schools and generational renewal in Europe", on the role that pastoral schools can play in promoting and enhancing pastoralism (details of the activities carried out are already available on the project website, in particular on the [Shepherd School page](#), and in the forthcoming report on European pastoral schools).

● Schools provide an opportunity to learn the practices.....something not so obvious in a sector where, traditionally, training has mainly taken place in a 'vertical' manner (i.e. within the family or the communities, from generation to generation) and where there are few other opportunities to acquire skills, particularly in the field of extensive livestock farming. At least in Italy, the agricultural secondary schools treat livestock only from a productive point of view (fixed livestock housing and so on...). Even if pastoral schools are not always well considered by established shepherds, they can play a very important role in passing on traditional knowledge, helping to adapt it to new contexts.

● Schools create networks, amongst aspiring shepherds, between them and herders (e.g. on the farms where work internships take place), and amongst herders themselves.... These relationships continue, providing, particularly for young people, a form of ongoing training and mentoring.

● Schools have tremendous power in terms of positive communication about pastoralism... shifting the narrative from the notion that 'if you don't study, you'll end up looking after the sheep' to "I want to study so I can look after the sheep!"..... this represents a radical shift in the perception of becoming a shepherd, particularly from the society's perspective, where this profession is burdened by deep-rooted stereotypes that are very difficult to eradicate and can cause loneliness; a very important positive message that could empower schools to play other, new roles in the promotion and enhancement of pastoralism. Among these:

- Schools can improve services for young and aspiring shepherds, i.e. by offering initial support and, at the same time, providing opportunities for further training for 'established' shepherds. In the LIFE ShepForBio project, we're setting up a platform to help match the needs of livestock farms – in terms of support and labour – with opportunities for aspiring shepherds to gain professional experience. This idea has already been developed, among others, by the School of Catalunya.
- Other areas where schools could play a role include the "access to land"

– another major issue, particularly for young people – as well as the provision of specific professional services... Take, for example, the role of the assistant shepherd, who, particularly in alpine regions during the summer grazing season, can make a vital contribution to the sustainability of farm operations.

- Schools can also act as advocacy groups, engaging with institutions on pastoralism issues, which are typically under-represented by sector organizations.

Shepherd Schools will not solve all pastoralism problems, but they can make a significant contribution both to addressing the issue of generational renewal and, more generally, to promoting extensive farming and all the added value it brings, from an environmental, social and cultural point of view.

However, they must be allowed to operate to their full potential. In recent years, Europe has co-funded many projects (Erasmus, LIFE, Horizon, Prima, etc.) focusing on pastoral training, school curricula, training exchanges among shepherds, etc. Now is the time to put all these experiences into practice and fully implement a model which, in other countries – Spain and France in particular – has already proven to make a significant contribution in promoting pastoralism.



- Recognize, within the framework of agricultural and rural development policies, the role of schools as an instrument capable of contributing to improving generational renewal, whilst ensuring the social and environmental integrity of local communities and territories in the local area;
- Provide stable financial resources that enable schools to plan their activities over timeframes normally precluded by project-based funding;
- Create a network of European pastoral schools (along the lines of what already exists at national level in some countries, such as Spain and France) for the sharing of projects, activities, etc.;
- Establish mechanisms to promote the schools' activities (tax incentives for companies hiring aspiring shepherds who have graduated from the schools? Introduce preferential criteria for access to calls for proposals/grants for graduates of the schools?);
- Systematise all European experiences related to pastoral training by creating a basic European training curriculum (with national variations on specific topics) and an official European professional designation that recognises the role of shepherds and extensive grazing in the conservation of biodiversity and the landscape, in fire prevention, and in various ecosystem services (useful for updates, etc.)

Action C5 – Creation of a School for Shepherds

General Evaluation Report and Training Modules Report, 2026



"Realizzato con il contributo
dell'Unione Europea"

COORDINATORE



D.R.E.A.M.
ITALIA

PARTNERS



Regione Toscana



SAPIENZA
UNIVERSITÀ DI ROMA



UNIVERSITÀ
DEGLI STUDI
FIRENZE

DAGRI
DIPARTIMENTO DI SCIENZE
E TECNOLOGIE AGRARIE,
ALIMENTARI, AMBIENTALI E FORESTALI



EUROMONTANA



**STUDIO
VERDE**



CASENTINO
UNIONE DEI COMUNI MONTANI



Unione dei Comuni
del Pratomagno



Unione di Comuni
valdarno e valdisieve



UNIONE
ROMAGNA
FORLIVESE
UNIONE MONTANA

