

# Sustainable Management of Mountain Grasslands

A Collection of Good Practices





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# Introduction

**OREKA MENDIAN** is a seven-year project (2016-2022) funded by the European Union's LIFE Programme. It aims to develop a preservation strategy for mountain pasturelands in the Basque country (covering both the French and Spanish regions), seeking to create a sustainable balance between the environmental preservation and socio-economic uses of these grasslands. In the project framework, Euromontana conducted a study of the current status of mountain grasslands **throughout Europe**, in order to have a precise picture of these grasslands in 2020.

## Why do we focus on mountain grasslands?

Grasslands cover 15.9% of the area of the EU-28 and represent the third most dominant ecosystem in Europe. Nonetheless, more than 75% of the grassland area in the EU-28 is considered to have an unfavourable conservation status. Grasslands are one of the most widespread habitats in mountains. Besides being central to food production, mountain grasslands deliver a number of public goods and ecosystem services of great added value to the EU such as:

- Provisioning services – e.g. food, biomass, livestock, fresh clean water;
- Supporting services – e.g. buffering/accelerating/slowing down of and nutrient cycling; soil formation; primary production;
- Regulating services – e.g. erosion and flooding control, wildfire control, carbon storage in soil, greenhouse gas mitigation; flood regulation; disease regulation; water purification;
- Cultural services – e.g. aesthetic, spiritual, educational, recreational.

Mountain grasslands have an important, yet under-recognised, role to play in dealing with the global challenges reflected in the UN Sustainable Development Goals 2015-2030 and numerous European priorities for the year 2030 (e.g. Green New Deal, Biodiversity Strategy, Farm to Fork Strategy, Circular Economy Action Plan, EU Climate Pact).

## Why support their sustainable management?

Permanent grasslands are the only habitat whose conservation status generally deteriorates when they are not managed. The state of mountain grasslands – and thus, the services and goods they provide – depends on environmental and socio-economic factors. Changes in the environment and climatic conditions, unsustainable management practices and socio-economic changes are strongly affecting grasslands in European mountains. For this reason, to preserve mountain grasslands, we should consider all three dimensions of sustainability: the environment, the economy, and society.

Supporting the environmental sustainability of mountain grasslands is key in preserving the public goods and services that they provide. Moreover, these grasslands often depend on human activities for their long-term conservation, and so it is equally important to develop competitive economic activities for the mountain communities that manage these grasslands, while also ensuring the quality of life for those living in these communities.

## What will you find in this booklet?

Creating a balance between the three dimensions of sustainability can be challenging. For this reason, we gathered 31 inspiring examples of good practices selected across 18 European countries. These good practices will inspire farmers, breeders and other local actors to



increase the biodiversity of mountain grasslands, tackled climate change impacts and better market their products, amongst many others.

## Methodological note

Good practices were selected through desk/web research and a survey done at EU level in December 2018, using the following main criteria:

- Integrate the definition of “sustainable development” as defined by the Brundtland report (1987) – i.e. the ability to meet the needs of present and future generations without overpassing planetary boundaries.
- Relate to at least one of the three pillars of sustainability: economy, society, or environment.
- Be relevant to the challenges and opportunities identified during data collection (desk research, interviews and survey).
- Occurred ideally under the current EU programming period (2014-2020), or in limited cases in the previous programming period (2007-2013), to facilitate comparison of data and the elaboration of policy recommendations for the next programming period (2021-2027).
- Be balanced between public and private funding.

- Have a balanced spatial distribution across the European continent (east – west, north – south, EU – non-EU), to represent the diversity of European mountains.
- Potentially be transferable to other mountain areas.

Some limitations arose during the selection of the good practices. First of all, geographical coverage, i.e., the difficulty of finding practices and information from outside the Alps. Indeed, most research organisations focussing on mountains are located in the Alps, while other mountain regions of Europe remain less represented. Second, specific topics were challenging: bioeconomy/circular economy, improvement of working conditions, land access, generational renewal, and payment for ecosystem services. Though good practices exist in these domains, the above-mentioned terms are mainly used in the scientific literature, while local actors and practitioners rarely use them. Finally, there are inherent limitations to desk research, such as the availability on the web of information and good practices, and the responsiveness of contacts when requesting additional information.



# Biodiversity conservation

Currently, 33% of the mountain area of the EU-28 can be considered as High Nature Value farmland\* thanks to the high levels of biodiversity found there. There are close links between mountain biodiversity, and traditional farming practices and cultural landscapes. By maintaining open landscapes, pastoralism contributes to the conservation of grasslands with a higher biodiversity index than shrublands or mountain forests, and thus considerably influences mountain biodiversity. Because of this, several mountain grassland habitats are nationally and internationally recognized by the EU Habitats Directive and other designations such as UNESCO, Cultural and/or Natural World Heritage Sites, and Biosphere Reserves.

However, factors such as overgrazing, undergrazing, changes in pastoral management, land intensification or abandonment, tourism, and climate change are negatively impacting mountain grassland habitats. To counter the different drivers of biodiversity loss, actions can be taken, such as seeding with local species; mowing and cutting; extensive grazing (preferably using local breeds); fertilising with the manure from the grazing animals; and carrying out controlled burns.

\* EEA Report (2010), *Europe's ecological backbone: recognising the true value of our mountains*.



# GIVING LIFE TO SLOVENIAN GRASSLANDS

## Context

Biodiversity decline in agricultural landscapes has been problematic for decades in Slovenia, and extensive grasslands are one of the most threatened habitats in the country. With € 3,898,582 budget, the LIFE project [Conservation and Management of Dry Grasslands in Eastern Slovenia](#) (2015-2020) addresses biodiversity conservation in agricultural environments. The project's main aim is to improve the unfavourable status of dry grasslands and ensure the long-term conservation of these habitats, as well as their plant and animal species, in the following areas: Haloze, Pohorje, Kum and Gorjanci-Radoha. All four areas face problems of overgrowth and abandonment of agricultural use on one hand and unsuitable (intensive) agricultural use of land on the other.

## Activities and results

The LIFE project "Life to grasslands" contributed to the implementation of a Natura 2000 Management programme by improving the unfavourable conservation status of some of the most endangered grassland habitat types in Slovenia (*Semi-natural dry grasslands and scrubland facies on calcareous substrates*). One of the challenges was to recultivate once-abandoned agricultural land, and



thus show that the production of quality agricultural products and protection of nature can be compatible.

Some of the actions developed within this project included: a) organisation of workshops to involve farmers/landowners in the project's actions; b) mowing and grazing of abandoned grasslands; c) active involvement of landowners in grassland management (around 181 landowners are involved, covering 518 ha of land); and d) elaboration of farm management plans to ensure appropriate long-term use of grasslands.

Other actions developed within this project included: **structural and technical interventions** for the sustainable management of grasslands (e.g. rental and purchase of abandoned grasslands; mapping of overgrown areas and removal of overgrowth; supply of grazing equipment and free rental of lawnmowers; restoration and establishment of traditional orchards; **planning activities** for the medium-to-long term management of grasslands (e.g. preparation of farm management plans for selected farms) **trainings and actions for stakeholders involvement** (e.g. creation of an agri-environmental programme in the field of sustainable management of grasslands; communication and networking of landowners and farmers; promotional and educational activities).

## 2

# WINTER SEEDING AT KERKINI LAKE

## Context

The grasslands surrounding Kerkini Lake in Greece are the primary grazing land for water buffaloes and birds, many of which are endangered - such as the Lesser White-fronted Goose. However, food availability for domestic and wild herbivores is very limited during the wintering period. Consequently, overgrazing and grassland degradation pose a major threat to this vulnerable habitat. Moreover, there is competition over scarce grassland resources between livestock raising and biodiversity conservation, and farmers have to handle significant costs associated with providing their buffaloes with supplementary food.

To solve the above issues, a [research project](#) was set up in 2014, coordinated by the Hellenic Agricultural Organisation and funded through both national funds and the European Social Fund (ESF).



## Conclusion

The Life to Grasslands project established 164 agreements with farmers and landowners, and involved 181 landowners/tenants in project activities, over a total area of 688 hectares. Through a) the involvement of farmers in the project's activities and b) signed agreements with farmers and landowners to be included in the project activities, they have so far managed to ensure sustainable management of 518 ha of dry grasslands. Conservation guidelines for sustainable management of grasslands have been prepared in all four sub-project areas using a participatory approach that involved experts, partners and relevant stakeholders.

## Innovative aspect

'Life to grasslands' focussed a large part of its activities on informing stakeholders of the importance of mountain grasslands, including farmers, NGOs, land managers, schools and universities, local inhabitants. Overall, 7,853 pieces of information on the project was sent to various addresses, and the project staff made 1,200 farm visits. Also, the Institute of the Republic of Slovenia for Nature Protection has prepared an educational program targeted to teachers "[Dry grasslands as a model for learning about the environment, science and biology](#)" which has been included in the national "Catalogue of additional educational programs and training for educators" (KATIS) at the Ministry of Education, Science and Sport.



# 3

## RESULT-BASED SCHEMES: A PARADIGM SHIFT IN THE REWARD SYSTEM FOR FARMERS?

### Context

In the Târnava Mare and Pogányhavas regions, Romania, species-rich grasslands habitats constitute part of Romania's extensive High Nature Value (HNV) farmland. These grassland habitats have some of the highest floristic diversity recorded in the world and support substantial populations of rare vertebrate and invertebrate fauna. However, 5,000 ha of this area is threatened by overgrazing in most accessible sites and the abandonment of less accessible grasslands (causing spreading of thorny scrub). The effects of the deterioration of Romanian dry grasslands are obvious but still easily reversible by the re-establishment of traditional management.



© Fundatia ADEPT

### Activities and results

The research project investigated and assessed the effectiveness of seeding winter wheat (*Triticum aestivum*) to increase available winter forage and thereby support the raising of livestock and the conservation of the ecosystem. Seeding was done without previously preparing the soil, with the aim to cause minimal impact to the natural vegetation on which the geese also depend.

Results from comparing the seeding sites with control sites showed that the total plant cover increased by 30%, and above-ground biomass increased by 40%. In consequence, bare soil was reduced by 20%, and only two months after the seeding, geese increased their herbage utilisation rate by more than 40%.

### Conclusion

Winter seeding proved to be effective in supplying enough grass during the wintering period, which is especially important for the survival of endangered bird species. In addition, the extra forage lowered costs for farmers, who otherwise would have had to buy supplementary food in the winter season for their buffaloes.

### Innovative aspect

The innovative seeding practices caused minimal effects to existing natural vegetation, helped to increase food availability and lowered costs of livestock raising, and is therefore recommended to be carried out in other ecologically similar areas at an international level.

## Activities and results

To preserve and improve the status of dry permanent grasslands (mainly hay meadow and pasture) in these two regions, the Fundatia ADEPT worked alongside with the Romanian government in testing the suitability and practicality of results-based agri-environment payment schemes (RBAPS). The RBAPS have been used to finance management regimes which produce good quality hay and protect wild species in the long-term.

With a budget of € 145 000, financed by DG Environment and Deutsche Bundesstiftung Umwelt, the [project](#) carried out the following activities between 2015 and 2019:

- Project experts conducted studies to test the eligibility of the grasslands proposed by farmers for RBASP. To this end, experts selected and tested 30 species or species groups as indicators of HNV meadows, as they only grow in hay meadows managed at low intensity, and are associated with high plant and animal species richness as well as good quality hay.
- Fundatia ADEPT signed three-year contracts with 73 eligible farmers and issued the payments (one in 2016, one in 2018).
- During a three-year period (2016-2019), farmers were asked to record yearly the presence (or not) of species belonging to the list and mow the meadows at least once a year, with a first cut after the 10<sup>th</sup> of June in order to allow controls to take place. In return,

farmers received payments € 213 – 259 per ha according to the number recorded of species.

## Conclusion

At the local level, the project has proven to be very popular among farmers, who appreciate the flexibility it offers and have sent many applications to take part into it. Through RBAPS, farmers have the freedom to manage their grasslands according to the local conditions and weather, and they are directly rewarded for the service they provide for nature. As a result, both the Romanian government and the European Commission are giving high priority to wider application of this innovative payment system in the post-2020 CAP, which will support small-scale farming communities in Romania and in other EU countries<sup>1</sup>.

### Innovative aspect

Instead of typical agri-environment schemes - which pays for the implementation of management specific practices- result-based agri-environment schemes pays for the “results”: the presence of certain species as indicators of good quality meadows. In such a way, the role of farmers is less constrained by EU/national prescriptions in how to set appropriate management practices and it rather valorises their expertise, knowledge of the territory and capability to adapt their practices over time.

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<sup>1</sup>The European Commission financed [other pilot projects](#) for the adoption of RBASP in Ireland, United Kingdom and Spain. Similar schemes are also carried out in France, Germany and Switzerland.





# *Climate change mitigation & adaptation*

Mountain grassland ecosystems are key to mitigate climate change, as they cover 33% of the utilised agricultural area in the EU-28 and their soil organic matter has the capacity to sequester carbon. Conversely, grassland degradation leads to the release of carbon into the atmosphere. Rising temperatures, decreased precipitation, glacier/permafrost retreat, more frequent and intense weather events are some of climate change effects which are now having a high impact on plant and animal species inhabiting mountain grasslands, leading to degradation of grassland habitats.

Climate-related changes in mountain regions have repercussions beyond their geographical scope in lowlands and adjacent regions, significantly altering food systems, drinking water supplies, agricultural livelihoods, economic activities (e.g. tourism and recreation activities), ecosystem services etc. As climate change is already affecting mountains, pastoral systems need to go beyond mitigation and start adapting to the changing climate.

# CLIMATE CHANGE ADAPTATION STRATEGIES FOR ALPINE PASTURES



## Context

Alpine permanent grasslands are extremely sensitive to climate change, but measures to effectively manage these areas in the face of climate change are limited.

The LIFE project [PastorAlp](#) (2017-2022) combines biophysical and socio-economic approaches to reduce the vulnerability and increase the resilience of Alpine pastures to climate change. The project's budget amounts € 2,314,400 (out of which 60% is financed by the EU LIFE programme)

## Activities and results

This project started off by researching the vulnerability of Alpine pastures under the changing climate. The project downscaled future climate scenarios for the study areas, both national parks - Ecrins in France and Gran Paradiso in Italy - by collecting homogenised data for pastures (six pasture typologies) and climate (20 datasets). Through scientific mapping and impact assessment and feedback from stakeholder workshops, the project established local climate scenarios for the two national parks.

Moreover, a set of indicators and thresholds to monitor the evolution of mountain grasslands have been defined. These include biodiversity indicators such as greening index, timber line altitude, counting of

indicative flora, and characterisation of the litter layer. Another category is climatic indicators, covering aspects such as freezing degree days, measure of maximal dry spell, wind speed, maximum snow height. Socio-economic indicators have also been defined, to measure variables such as diversification, sense of place, social network, attachment to occupation, environmental awareness, conflict, etc.

## Conclusion

The next step consists of proposing viable adaptation measures for the alpine pastures, based on the scientific assessment. The effectiveness of the measures will be tested in both parks, so that they become real-life examples to be shared and adopted by mountain areas both across the Alps and in other European mountains, ensuring replicability and transferability of the proposed methodology. The final output is an online platform to support and promote the improved adaptation strategies, as well as guidelines to effectively cope with the effects of climate change in grassland management.

### Innovative aspect

PastorAlp tackles a global challenge such as climate change at the very local level, to ensure the best possible strategy for climate adaptation and improved resilience. The innovation is not only in the place-based approach, but also in the project methodology which considers socio-economic factors as well as environmental and climatic ones.



# 5

## SOWING BIODIVERSE PASTURES

### Context

In Southern Portugal's Montado area, decades of harmful agricultural practices, through the intensive use of fertilisers and ploughing, has degraded the permanent pastures. Research showed the area had less than 1% of soil organic matter, associated with decreased carbon sequestration, soil degradation and biodiversity loss.

To deal with these issues, the SME Terraprima carried out the [Sown Biodiverse Pastures project](#) between 2009 and 2012. The Portuguese Carbon Fund funded this project, as it contributed to Portugal's national objectives of the Kyoto Protocol.

### Activities and results

Between 2009 and 2012, 1.000 farmers sowed biodiverse seed mixtures across 50.000 hectares of grasslands. These seeds require no ploughing, and further management of the biodiverse pastures is based on livestock grazing to avoid shrub invasion, thus reducing fire risk and the need for mechanical shrub removal.

The seed mixtures contain a large number of local plant species – up to twenty, including both grasses and legumes, adapted to each area and soil type – to create biodiverse permanent pastures. Legumes provide a renewable source of nitrogen, which increases pasture productivity and allows higher stocking rates. Soil organic matter increased with an average rate of 0,2% per year, thanks to the plants' dense root systems and grazing, through which biomass returns to the soil by animals trampling the plants and manuring. Moreover, the

resulting permanent pastures do not need reseeded for at least 10 years.



© Terra Prima

The farmers involved in the project received between 140-200€ per hectare and had to meet several obligations such as no ploughing, using the right seed mixtures, and no use of nitrogen fertilisers. To ensure the project's success, farmers were monitored and provided with a clear implementation plan including technical support and field visits, e-mail, and phone contact.

### Conclusion

The project contributed to the sequestration of 1 million tons of CO<sub>2</sub>. Additional environmental benefits were improved soil organic matter, improved soil fertility, increased water retention, reduced erosion, and conservation of grassland biodiversity. Moreover, the project also positively impacted livestock breeders, as animal production increased. As farmers contributed to the ecosystem service of carbon sequestration, they were remunerated by the Portuguese Carbon Fund.

### Innovative aspect

This project shows how to successfully make use of funds set up to comply with (inter)national agreements (such as the Kyoto Protocol in this case) to finance climate change actions, while indirectly also creating additional long-term benefits, such as the conservation of grasslands and increased sustainable livestock production.

## 6

# GRASSLANDS AND LIVESTOCK FARMING ADAPTATION TO CLIMATE CHANGE



### Context

In the Massif Central region in France, grasslands cover about 85% of the total surface and store more than 2 million tonnes of carbon each year. Grasslands play a beneficial role in the fight against climate change while preserving open herbaceous environments. In particular, in this territory, the effects of climate change are putting pressures on the functioning of livestock and mixed farming systems.

### Activities and results

The [Adaptations of Cultural Practices to Climate Change project](#) (AP3C) was born from the desire of agricultural stakeholders to no longer have to only react to climate change but to be able to anticipate it. During the project (2015-2019), € 1,2M was allocated to partners within the framework of the Interregional Convention of the Massif Central by the Ministry of Agriculture, the Auvergne-Rhône-Alpes Region and the New-Aquitaine Region. The project focuses on adaptation of grasslands in the Massif Central. It aimed at obtaining localized information allowing detailed analysis of the impacts of climate change in the territory, with a view to adapting the production systems and raising awareness among all stakeholders. To this end,



the main activities comprised: analysing climate trajectories and possible adaptation paths for the agricultural system and livestock; adapting counselling, and research and development instruments to the observed impacts of climate change in the territory, and; raising awareness on the impacts of climate change and on the knowledge required by agricultural actors and general public to face this challenge.

The main results delivered by the AP3C project are:

- Specific climate projections for the 2016-2020 period and the underpinning methodology. Local actors are strongly encouraged to apply this methodology to create their own climate projections and question the practical usefulness of the usual “state of the art” climate projections;
- An analysis of the impacts, especially on crop and grass growth, and the adaptation options that can be implemented to cope with climate change;
- Proposed adaptation measures at plot and farming system scale.

## Conclusion

Research during the AP3C has shown that climate variations will cause a change in the vegetation cycle and plant diversity in grasslands. This will cause a shift in cultivation practices and an overall change in the functioning of the operating system. In particular, an increase in the stock/pasture ratio, the development of rotational grazing, the shifting of calving dates, changes in crop rotation, an increase in storage capacity of carbon emissions, changes in harvesting chains, etc. have to be anticipated.

## Innovative aspect

The compatibility of climate projections with the observed climate trajectories, which seems to be a singularity, as it ensures the active participation of territorial actors.





# *Prevention of natural disasters*

Natural disasters in mountain areas - landslides, floods, erosion, rock falls, avalanches etc. – have a long history. Today these events are reinforced by both climate change and under- and over-grazing linked to changes in land use.

By keeping and clearing up mountain landscapes – and hence limiting the colonization of pastures by shrubs and forests -, pastoral practices play an active role in the prevention of natural disasters. In the context of higher temperatures, more droughts, and higher plant growth rate, pastoral systems can reduce the accumulation of forest fuel due to grassland abandonment, shrub invasion and afforestation, which are major trends in mountain areas. Also, restoring the vegetation cover and soil helps to decrease the risk of landslides and avalanches on eroded and degraded slopes.



## REVEGETATING THE PYRENEES WITH WILD SEEDS

### Pyrégraine *de nèou*

© Ecovars

#### Context

At high altitudes, the reconstitution of a vegetation cover after construction activities (ski slopes, pastoral paths, water pipes, etc) takes a lot of time. During this period, the risk of disasters such as landslides and rock falls is high. The [Ecovars](#) programme, initiated in 2003, has promoted the implementation of local projects aimed at the conservation and restoration of high-altitude Pyrenean herbaceous environments. As successful revegetation depends on the adaptation of plants and their genetics, preference is given to wild seeds from the summer pastures of the Pyrenees.

#### Activities and results

Led by the Pyrenean Botanical Conservatory, the Ecovars programme has aimed to develop new techniques for ecological revegetation in the Pyrenees since 2003. It started out with a first scientific phase (2003-2005) studying the cultivation of selected alpine and subalpine species, in collaboration with farmers and universities.

Positive results led to the second phase (2005-2008) of the Ecovars programme with a new aim of promoting the restoration of wild flora in high-altitude development operations. Field multiplication tests

were made, as well as genetic studies on the adaptive aspects of revegetation species. At the end of that phase, several operators (ski areas, forestry organisations, local authorities, etc.) became the driving force behind the approach. Thanks to this, the third phase (2008-2012), focused on the transfer of know-how in replanting and seed multiplication, through three projects aiming at:

- The multiplication of wild seeds (ARTEMIS, 2008 to 2012),
- the development of a Geographical Information System to manage the environment and the revegetation of pilot ski stations (2008-2011),
- the in-situ collection of wild seeds by the n'Py group's ski resorts (2009-2012).

#### Conclusion

The Ecovars programme has developed support for project owners and space managers in the implementation of ecological revegetation techniques. The Pyrenean Botanical Conservatory even registered a collective seed trademark for them to use - "*Pyrégraine de nèou*" - in 2010. The fourth phase of Ecovars programme (2014-2019) is now capitalising on its past results to generalize revegetation techniques with seeds of Pyrenean origin, through knowledge transfer and specialisation of local organisations (i.e. along the seed production value chains).

# 8

## INTEGRATED SILVOPASTORAL MANAGEMENT TO PREVENT FOREST FIRES

### Innovative aspect

The Ecovars programme, although initiated by a Botanical Conservatory, gained the support of local operators and users by taking into account the environmental and economic gains of ecological conservation.



### Context

The mosaic fields, pasture, and forest landscapes of the Montserrat mountain in Spain - managed traditionally by agriculture and livestock farming – have become overgrown by shrubs and dense Aleppo pine forests. Key factors are the abandonment of traditional farming practices and the devastating fires that took place 30 years ago. The current lack of firebreaks in the woods, accumulation of biomass, and homogeneity of plant species create a low-biodiversity ecosystem that is very vulnerable to major forest fires, especially in the current context of climate change and increasing temperature.

To enhance biodiversity and actively prevent forest fires, LIFE [Montserrat](#) (2014-2018) focussed on developing a management model based on ecosystem-based measures to recover the mosaic landscapes provided in the past through traditional land management. Funding: € 3,561,825 (50% EU LIFE).

## Activities and results

By involving stakeholders such as farmers' organisations, a private foundation, and a landowner association, the following activities were carried out:

- *Implementation of silvopasture:* ten livestock management units were set up around strategic fire prevention areas, and agreements were made between livestock and forestry owners to allow extensive grazing on 1.400 ha of private land. Furthermore, investments were used for infrastructure (pens, fences, and water supplies), purchasing almost 550 head of livestock, and elaborating specific plans to reconcile the economic viability of each operation with the project's management aims.
- *Restoration of woodland:* over 1.300 ha of woodland were cleared to reduce the density of Aleppo pines. As a result, the wooded area now resembles more an adult pine wood, substantially improving biodiversity, including shrub and grassland species.
- *Recovering open areas:* Around 150 ha of open areas were recovered by a combination of prescribed burning and mechanical clearing. This helped to increase biodiversity associated with open habitats, provide pasturelands for livestock, and create firebreaks.

## Conclusion

Key to the success of silvopastoral management are the breeders and farmers, who offer an example of resilience. These people commit themselves to maintain a livestock management model that provides key environmental services, despite the lack of short-term profits. LIFE Montserrat's interventions, such as restoration of the habitat, investing

in key infrastructures etc., enable people to carry out grazing activities in low production areas in the long term.

### Innovative aspect

The introduction of a silvopastoral management model which allows the generation of multiple benefits for the socio-ecological system at the same time: enhancing forest fire resilience and prevention; improving biodiversity management; and increasing socio-economic opportunities in rural areas, with new jobs in traditionally neglected sectors and investments to boost the local economy.





## GOAT GRAZING AGAINST WILDFIRES

### Context

Vila Pouca de Aguiar is a County located north of the Douro Valley, in the north of Portugal. In this region, as in many other mountainous areas, land abandonment led to an increased risk of forest fires. Land abandonment results in landscapes that are more homogeneous, and an accumulation of dry matter in forests and rangelands, which in turn increases the risk of fire.



### Activities and results

The [EconoMountain](#) initiative is coordinated by Aguiar Floresta with the financial support of the EDP- Biodiversidade Fund. EconoMountain proposes a new approach to livestock management which also significantly reduces forest fuel and forest fires. The approach is to use targeted grazing with goats in less accessible pastoral lands. Goats are well adapted to targeted grazing due to their agility and flexible behaviour and they can access most places, adapt to most weather conditions, and graze in small plots. The usual pattern is that the farmers intensively graze their livestock in the areas of the fire breaks, as defined by the forest services, thereby reducing vegetation fuel loads. In exchange for this service, the farmers receive monetary or in-kind remuneration. The intensity, period and timing of grazing are carefully managed.

Besides placing the herds in trial pens, local shepherds and other local stakeholders are involved in awareness raising and information activities such as “kitchen workshops”, which aim to connect consumers and producers while raising awareness about sustainable consumption and the evolution of eating habits.

### Conclusion

The initiative has implemented a new system of land management, redefining the use of animals in the landscape and increasing the area and purpose of targeted grazing. By grazing, goats contribute to avoiding the abandonment of land (especially in more peripheral areas) thanks to pastoral activity, provide environmental benefits, and reduce brush cutting costs by 50% compared to mechanical techniques. Other benefits include rebalancing pastoral activities across the entire area used for pastoralism, increasing job opportunities for local shepherds and reducing the risk of wildfires.

### Innovative aspect

The biggest innovation is related to models of sustainable management. Innovation is the use of small ruminants for targeted grazing as a tool for biodiversity management in mountain areas. Herd management becomes understood as producing services in the management of scrubland, rather than a subsidiary outcome of traditional production. Targeted grazing turned out to be cost-effective and to contribute to the valorisation of traditional pastoral activities in mountain areas.



## *Valuing products and services*

Due to the environment, quality of natural resources, traditional techniques and know-how used to produce them, mountain products are characterized by a higher quality in terms of taste, aromas, colour, texture, etc. Consumers perceive mountain products as environmentally friendly products which support the local economy and culture and contribute to the maintenance of landscapes that are dear to them.

However, in an increasingly competitive market, some mountain farmers tend to intensify their farming practices, sometimes at the expense of the environment, or completely abandon their farming activity. The challenge of mountain farming systems is therefore to increase their competitiveness by investing in high-quality well-differentiated products and creating an added value that consumers will appreciate. To this end, well-organised collective supply chains, labelling, payment of ecosystem services, direct sales and online commerce are some of the tools that can help mountain farmers to increase the value of their products in the market and increase their revenues.



## LABELLING MOUNTAIN PRODUCTS IN ROMANIA

### Context

29.9% of Romania is mountainous and 19.7% of Romanian utilised agricultural area (UAA) is in mountain areas. 9.15% of Romanian agricultural production occurs in mountain areas. Therefore, Romania's mountain regions have important economic, social, cultural and environmental potential.

### Activities and results

The country is one of the most active EU Member States in developing the Optional Quality Term (OQT) for "mountain products". Since 2016, the government has defined the institutional framework and measures for the implementation of the use of the OQT 'mountain product' (Regulation 665/2014), with subsequent amendments in 2017 (Order No.52/2017).

The [National Mountain Area Agency](#), which is a part of the Ministry of Agriculture and Rural Development, oversees the implementation of the quality term by the local authorities. The farmers ask the agency for a pre-authorisation before they can use the OQT, and the agency uses this record to keep track of all the users in their National Registry of Mountain Products. The analysis of requests to use the OQT, and the authorization and the monitoring of the users of the term are done at the local level. The National Consumer Protection Authority is responsible for the controls on the market and checks if the producer has been granted an authorisation to use the OQT and if the labelling

is in norm with the national regulation. Since 2019, the use of national logo for the OQT and the measures are regulated according to the national regulation, to make it easier for the farmers to certify their products.



### Conclusion

Since July 2017, 579 products have been registered under the OQT for mountain products ("Produs montan") in Romania: 264 dairy and dairy products, 9 meat and meat products, 183 fruits and vegetables, 107 bee products, 9 fish products, and 1 bread, bakery and pastry product. Starting as a project to improve the sustainability of agriculture in the Romanian mountains, it has led to the successful development of a nation-wide labelling scheme specifically aimed at mountain products, thereby raising their added value and supporting small producers in the Romanian mountains in becoming economically viable.

### Innovative aspect

The implementation of the EU optional quality term "mountain product" into Romanian national legislation is one of the most successful in Europe. It supported the development of a new label for mountain products in the country, which allows mountain producers to increase their prices and expand their sales while conserving traditional farming practices.

## 100% PASTURE-FED LIVESTOCK

### Context

Many upland farms in the United Kingdom struggle with being profitable and depend heavily on subsidies. To make business models in the uplands economically viable and environmentally sustainable, the [Pasture-Fed Livestock Association](#) (PFLA) brings together since 2011 British farmers committed to producing high-quality food through 100% pasture-fed livestock.

### Activities and results

PFLA researched how to make 100% pasture-fed livestock profitable. Key elements are reducing production costs through sustainable pasture management, including prevention of overgrazing and using livestock breeds adapted to the local soil, climate, and plants. This reduces costs and increases product quality and the pasture's ecosystem services.

To support farmers in switching from conventional grain-feeding to pasture-feeding, PFLA brings together farmers to exchange knowledge and know-how. The most important tool is the online forum, with currently over 500 farmer users, complemented by additional activities such as farm visits, networking events and study tours. Activities are financed by certification fees, membership fees, sponsors, and research projects.



© Pasture for life

Once a farmer successfully switches to raising animals exclusively on pastures, he or she is granted the Pasture for Life Certification Mark. This certification promotes the product's unique quality and associated environmental, health and animal welfare benefits. Furthermore, the certification mark on products has a QR code, which customers can scan to learn more about the product's origin. Farmers can use the [Pasture for Life website](#) to promote their products for direct sales, which are often essential for the farm's economic viability. These direct sales, together with tools such as the QR code, allow consumers to become familiar with where their food comes from and learn about the stories behind the products.

### Conclusion

PFLA promotes and supports pasture-fed livestock and the associated environmental, health and animal welfare benefits. To do this, they use a wide range of tools and practices, including i) research and the online forum to improve knowledge and good practices; ii) the Pasture for LIFE certification mark to give added value to the products; iii) direct sales, which allow people to experience farmer stories and thereby value the benefits from purchasing (local) products from pasture-fed livestock.

### Innovative aspect

A large part of Pasture for Life's success is based on using online platforms to facilitate direct sales, increase consumer awareness, and allow the exchange of knowledge and experience between farmers.



## PAYING FOR ECOSYSTEM SERVICES

### Context

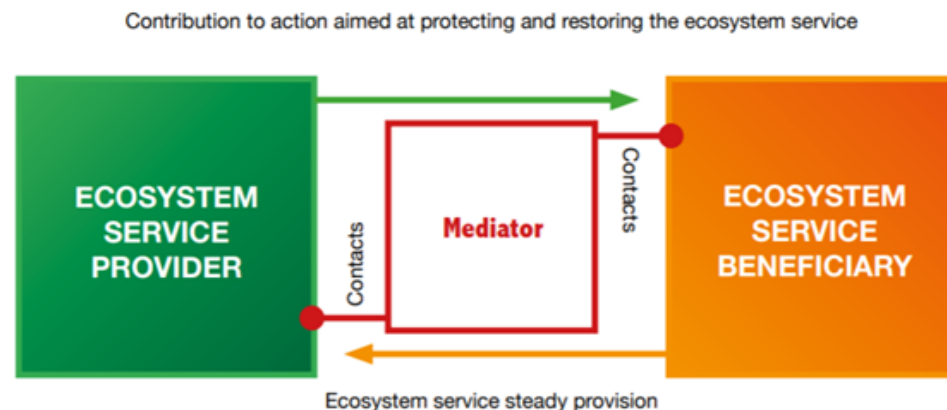
Scarce financial resources often limit nature conservation. To recognise the monetary value of ecosystem services and create innovative financial incentives to support conservation measures for protected areas, the LIFE project [Making Good Natura](#) was set up between 2012 and 2016 in 21 Natura 2000 sites Italy. Funding: 3.751.684 € (50% EU LIFE).

### Activities and results

The project started with a comprehensive study of the biophysical and socio-economic context of 21 Italian Natura 2000 sites. At each site, key ecosystem services (ES) were identified, assessed and valued. This helped to develop new environmental governance structures and support the creation of diverse payment for ecosystem services (PES) schemes. The site-specific PES developed under this project basically consists of 'ES beneficiaries' paying 'ES providers' to continue a specific ecosystem management strategy generating a specific ES. Often, a 'mediator' is involved to facilitate the development of the ES payment and management scheme.

For instance, in the Parco regionale Orobie Valtellinesi, the "provider" are livestock farmers and the "beneficiary" is the Park authority. Here, the estimated annual ES value of pastures is 1,575,176€/year for 22.815 ha. By committing to good conservation practices on the alpine pastures, farmers are allowed to use the Coldiretti brand (created by the mediator, a farmers' association) for their produce. This brand guarantees the product's added value, so farmers can charge higher

prices and thereby are compensated for the effort in adopting good practices supporting habitat conservation.



© LIFE Making Good Natura

### Conclusion

PES schemes are valuable in protecting ecosystems which provide goods and services necessary to sustain economic activities and human well-being in mountain areas. The different PES schemes allow the translation of environmental values into actual financial incentives, which local actors can use to promote and support nature conservation.

#### Innovative aspect

Estimating the value in economic terms - at the local level - of ecosystem services deriving from pastoralism helps to better understand the overall value of such practices. In turn, this created innovative schemes to compensate ecosystem providers and supporting good practices for habitat conservation.



## *Economic diversification*

Giving an additional value to products and services linked to mountain grasslands is only one way to ensure the economic sustainability of pastoral systems. Another path is to diversify the livelihoods of mountain societies by a) improving existing products/services through innovation (e.g. change to organic farming, direct sales, labelling), b) adding new products/services (e.g. care farms, by-products, recreational activities), or c) substituting traditional or conventional products (e.g. cultural and educational activities).

For instance, the development of by-products, the exploitation of bioeconomy value chains in mountains and multifunctional farms are becoming increasingly popular methods to match the economic needs of mountain farmers with the social and environmental sustainability of local ecosystems.



## NOTHING GOES TO WASTE

### Context

In Norway, often only meat and dairy products are valued outputs from mountain farms. Nonetheless, by-products generated in producing meat and dairy products can be transformed into high-quality products, thereby creating an additional income for farms.

Since 2000, the Norwegian company [Norilia](#) focusses on ensuring the whole animal is used, thereby contributing to a more profitable and sustainable agriculture. Norilia is part of the Norwegian farmers' cooperative, Nortura, which has over 18,000 Norwegian farmers and handles much of the country's livestock production.

### Activities and results

Receiving by-products from the Nortura cooperative, each year Norilia transforms around 150,000 tons of by-products – often from small Norwegian farms - into products like pet food, hides and wool. Through this, an added value is created to what else would be considered waste, contributing thereby to the bioeconomy and creating circularity in the Norwegian meat industry.

As the company's mission is to use every part of the animal, research and innovation projects are carried out, aimed at creating sustainable and high-quality products that can be sold on the international market. Moreover, skilled craftsmen are used for the transformation of products, such as wool. Norilia handles nearly 80% of the annual Norwegian wool volume by working together with the Norwegian



Association of Sheep and Goat Farmers (NSG). This wool comes from sheep that often graze on uncultivated semi-natural mountain grasslands. To give recognition to the sustainability and traceability of Norilia wool, it has been granted the Nordic Swan Ecolabel guaranteeing a transparent value chain and low use of chemicals in the areas where the sheep graze.

### Conclusion

Norilia transforms livestock by-products – commonly considered as waste – into high-quality products and successfully sells them on the international market, with 70% of its turnover coming from export. By using these by-



© Sune Eriksen

products, added value is created to make agriculture more profitable, while also increasing the sector's sustainability as less resources are wasted through this bio- and circular economy approach.

### Innovative aspect

Norilia considers by-products to be important resources for value creation, tackling the non-valorisation of by-products such as wool. Moreover, as the company handles a large part of the country's wool volume and aims to be transparent, it can advocate for sustainable practices on mountain grasslands, such as extensive grazing and minimum use of chemicals such as pesticides or antibiotics.

## NEW VALUE CHAINS IN THE ALPS

### Context

Alpine hay is a raw material that comes from the cultivation of steep mountain meadows. This activity is extremely challenging due to the steepness of mountain slopes, but it has an inestimable value in preserving the Alpine landscape, maintaining its biodiversity, and contributing to tourism and the regional identity. Therefore, to maintain hay cultivation, and its multiple socio-environmental benefits, an additional (economic) added value is needed.



### Activities and results

[AlpBioEco](#) (2018-2022. Funding: 2.141.960€, 85% ERDF) is looking for new ways to create economic value from vegetable products, that is, enhancing the bioeconomy in the Alpine area. For this purpose, the value chains of walnuts, apples and hay are being examined in terms of their bioeconomic potential. Based on market studies, laboratory analyses and the exchange of knowledge between the various players involved in the project, they develop new business concepts. These concepts will be tested and further developed through pilot studies in selected Alpine regions.

Hay is one of main value chains analysed by the AlpBioEco project, for which the team produced a market and SWOT analysis to assess its market potential. Based on these first results, the team will further work on designing and validating eco-innovative business models for the three value chains: hay, apples and walnuts. Ultimately, policy

guidelines to foster transregional and interdisciplinary cooperation in the bioeconomy will be produced.

### Conclusion

Initial results of the project point out great bioeconomic potentials of the hay value chains in the food and not-food sectors, including animal feed, wellness/therapy, food and drinks, construction and housing, use for energy, processes, etc.

A conscious focus on quality in production and processing, as well as marketing as high-quality products with a clear connection to origin, would offer a higher development potential, in line with current market trends and consumer behaviour.



© AlpBioEco

### Innovative aspect

AlpBioEco's approach has been designed to develop transferable bioeconomic business concepts to other crop products and, in the long term, to other regions. The innovative aspect is hence delivering a set of transferable tools (roadmaps, business models, policy recommendations) which allows practitioners, industries, SMEs and policy makers to replicate the project's results in order to make use of the market potential and opportunities of hay, as well as to apply these tools to other bioeconomy value chains.



## MULTIFUNCTIONAL FARMING

### Context

Currently, farms struggle to be economically viable, while at the same time many of the characteristic agricultural landscapes across Europe – dependent on sustainable farming practices – are disappearing. In this context, the multifunctional [Farming for the sustainability of European Agricultural Landscapes](#) (FEAL) project, funded through ERASMUS+ (€ 374.951), was carried out between 2016 and 2019.

The project aimed to guarantee the socio-economic viability of farms through multifunctional farming, while also maintaining and promoting European agricultural landscapes. This was done particularly by conducting case studies in Spain, Italy, Germany, Belgium, Slovenia and Slovakia to show best practices of multifunctional farming, serving as inspiration for farms across Europe.

### Activities and results

An inspiring example from the FEAL database (for more, see [here](#)) is the AFRA Odorica farm in Slovakia. The farm covers 30ha, has three full-time and one part-time workers, and was founded in 1990. Based on a family tradition, the main focus of this farm is growing medicinal plants. These products are sold at the farm, in the village through the company AFRA BIO, and through their online shop ([www.afrabio.sk](http://www.afrabio.sk)). Further related to the medicinal plants, the farm owner takes part in lectures and consultations on the use of these plants, and collaborates with the national organic farming association, Ekotrend Slovakia.

The farm offers additional products and services, mainly based on agritourism. Organic food is produced and sold at the farm, with animals grazing naturally and fed exclusively with natural fodder. There are diverse activities, such as summer eco-camps for children and voluntary work through WWOOFing. And thanks to its location close to the UNESCO medieval town of Levoča and the High Tatras National Park, many tourists visiting the area use the multiple services and products offered by this farm. For instance, visitors can sleep at the farm, either in the main building or the barn or outside in tents and can participate in farming activities such as caring for the animals or making cheese.



© Zuzana Homolová. Picture of Odorica farm

### Conclusion

This concrete example of the Slovakian AFRA Odorica farm shows just how many different ways there are to diversify a farm's economic activity. By diversifying their activities, farmers can secure different income sources while at the same time promoting the cultural and natural heritage of their territory.

#### Innovative aspect

Through positive synergies between the landscape and farming practices and creating different income sources, multifunctional farms can become economically and socially viable, whilst also environmentally sustainable.



# *Innovation through modern technology*

Technological innovation can contribute to the development of the pastoral professions and the monitoring of grassland habitats and species. Technological systems based on GPS, Internet, satellites, drones, 3D mapping and virtual fences, can be used to: gain information on the state of the pastoral system (for example, the state of vegetation, or the herd's location); develop grazing plans; apply management decisions; inform and train livestock farmers; mitigate land use conflicts; and prevent and reduce conflicts with large carnivores.

Such innovations could help to minimise human intervention in grazing management and make pastoral practices more resource and labour-efficient, thereby tackling the lack of labour force; reducing costs; and supporting more sustainable grazing practices.



## VIRTUAL FENCES IN THE PYRENEES

### Context

Fences in mountain pastures are used to prevent livestock from wandering off and avoid under- or over-grazing of pastures. However, the maintenance and use of fences (either fixed or mobile) is both resource- and labour-intensive.

To increase the productivity of mountain farms through technological innovation, the project [E-Barana](#) (2018-2020) is developing an intelligent system for livestock management through virtual fences and GPS collars. The project, led by the Pyrenees Business School and coordinated by the Ordesa-Viñamala Biosphere Reserve, receives combined EU and regional funding €158.800, 80% EAFRD, 20% Autonomous Region of Aragon) and is located within multiple Natura 2000 sites in the Pyrenees and pre-Pyrenees in Spain.

### Activities and results

The project goes from designing and prototyping collars for diverse types of livestock, to testing them in the field, making technological and software adjustments, and solving issues related to robustness, design, and power generation. Likewise, farmers and veterinaries involved in the project receive training on the use of this innovative technology.

The system consists of a GPS collar and an application on which farmers can locate the virtual fences. When an animal approaches this



virtual fence, the collar warns the animal – either through sound, vibration or a small electric shock – not to go further.

Pilot tests show that the animals' behaviour adapts quickly to the virtual fencing system. Further investigations will study the response of larger livestock groups in open environments, as well as optimise the hardware and software used for the virtual fencing device.

### Conclusion

The virtual fence can be moved at any time and, through the GPS collar, the farmer can check on the animal's whereabouts and identify possible issues, for instance when the animal is not moving. Moreover, these fences can keep animals away from dangerous areas, thereby avoiding unnecessary animal suffering and loss. Lastly, by integrating data on the quality and quantity of the pastures, plus the animals' location, activity and routes, pasture management can be improved and optimised. As long as there is a GPS signal and the farmer has the software and collars, this technology can be applied to any mountain area.

### Innovative aspect

By just using a mobile app and GPS collars, livestock owners can manage where and when their livestock graze, while also keeping track of the animals at all times and identifying possible issues, therefore increasing animal welfare. Moreover, the collected data allows a more sustainable pasture management, avoiding thereby under- or over-grazing, and increasing the farm's productivity.

## GPS TRACKING FOR EXTENSIVE LIVESTOCK

### Context

A challenge to selling mountain products is obtaining and strengthening the trust of consumers in the added value (e.g. environmental sustainability of livestock raising) of such products.

In cooperation with the EU-funded project LACTIMED (Promoting Mediterranean Dairy Products), the Greek cooperation [Terra Thessalia](#) developed a GPS tracking system in Thessaly. This innovation is part of the Participatory Guarantee System for the 'Terra Thessalia Lactis' label for dairy products and is used to guarantee the producer's extensive pastoral practices.

### Activities and results

During the project, new techniques to geolocate herds were developed and tested at 15 livestock farms. This resulted in the development of a GPS tracking collar. By outfitting livestock with this collar, the herd's daily movements in mountain areas can be tracked. The collected data allow farms to be certified with sustainable grazing practices and sell their products under the Terra Thessalia Lactis label.

Moreover, the livestock tracking data are stored in an online database and can be accessed by consumers so they can verify the extensive grazing of livestock. The GPS tracking has other benefits too, like facilitating herd and pasture management; allowing data collection for



pasture quality control; and preventing conflicts between farmers and foresters.

### Conclusion

The GPS-tracking serves as a certification tool for the extensive grazing of herds and contributes to the added value of the products. The availability of data on livestock movement reinforces the confidence of consumers interested in supporting the multiple benefits linked to the extensive farming system, such as sustainable quality.



© Terra Thessalia

Moreover, it allows these farms to differentiate their dairy products from other products produced in other Greek regions. The GPS-tracking can be installed on any extensive livestock holding with a mobile signal.

### Innovative aspect

By tracking livestock with GPS, extensive farming practices can be certified. This allows farmers to sell their products under a label and thereby getting an added value.





## *Coexistence with wildlife*

After decades or even centuries of absence, large carnivores have returned and consolidated their presence across Europe and their populations are increasing. One third of Europe's area is currently populated by at least one large carnivore species i.e. wolf, lynx, brown bear, wolverine) not just in remote regions but also in areas near to human habitation and activities. The reasons behind the proliferation of these species relate to their strong legal protection, reforestation on abandoned land, recovery of wild prey populations, and reduced human presence due to rural depopulation and land abandonment.

As a result, conflicts linked to large carnivores have (re)emerged between pastoral workers and wildlife, as well as among different stakeholder groups. Economically, the direct and indirect damages caused by large carnivores on herds of domestic animals can have serious impacts on the livestock breeders - such as loss of herds, reduced productivity, and increased costs for more labour-intensive husbandry methods. In addition, the social and psychological dimensions of these conflicts, such as psychological stress on shepherds, changes in lifestyle, conflicts with tourists etc., are detrimental to the sustainability of pastoral professions in mountain regions and require further attention.



## DYNAMIC ALERT AND MAPPING SYSTEM OF SUSPICIOUS ATTACKS FROM LARGE CARNIVORES



### Context

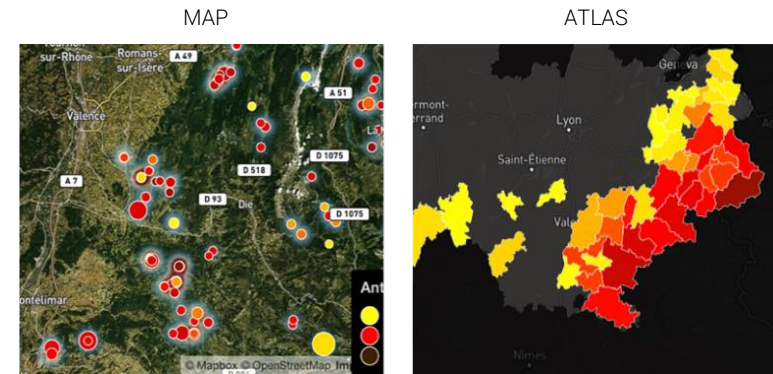
In the last decade, wolf populations in France have shown a significant increase (from approx. 100 individuals officially estimated in 2008/2009 to 530 in 2018/2019), sometimes in areas close to human activities. This phenomenon is expected to lead to more conflictual situations between humans and wolves, and among different stakeholder groups.

### Activities and results

[MapLoup](#) is an alerting portal which helps breeders and officials of the Auvergne-Rhône-Alpes Region of France to detect and analyse predation risk in their territory. First tested on the Massif des Belledonne in 2017, the system has been extended over the years and now covers a large part of the Alpine massif. It is financed by the Auvergne-Rhône-Alpes Region and Pastoral Network (20%).

The main elements of the MapLoup portal are two online spaces: a dynamic map of points corresponding to suspected wolf attacks which generate an automatic alert SMS for all registered users within 10 km of the point of attack; and the ATLAS screening, which provides an interactive and long-term overview of predation at different

administrative scales, from the Region to the Municipality. These tools integrate data from public sources with real-time data, which are provided to end users through visual interfaces. MapLoup had about 361 subscribers in 2019 and detected 1113 attacks this same year.



© MapLoup © Open Street Map

Thus, MapLoup goes beyond alerts. The analyses of detected data on predation events and their integration with other public datasets provide decision-makers (and other stakeholders) with elements to: better understand the predation issue at the territorial level; contribute to initiatives and support processes for breeders and shepherds; and forge effective political responses to address the conflict situations in the mid and long term.

### Conclusion

The MapLoup platform has been effective in offering accessible and real-time datasets on wolf attacks at multiple scales. Beyond this, its database management system, which combines public datasets with detected data, provides analyses which can be used to increase the

level of knowledge of predation and, based on these observations, to build adapted responses.

### Innovative aspect

MapLoup puts regional predation data at the service of not only political decision-makers but also herders and pastoralists. Its real-time notification system makes it a real tool for preventing herd attacks. Another innovative aspect is the integration of multiple datasets and the detection system to identify wolf attacks and to use this knowledge for developing potential solutions.



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## THE BEAR-FRIENDLY LABEL

### Context

The northern Dinaric mountains in Slovenia and Croatia have one of the highest bear densities in Europe. Food attracts them to human settlements, where they can cause damage to crops, properties, beehives and livestock. As part of the EU's LIFE programme, the [Dinalp Bear](#) project (2014-2019) supports the conservation and management of brown bears. Funding: 5,987,478 € (69% EU LIFE)



### Activities and results

The project supports coexistence between humans and bears in various ways, such as promoting the use of [non-lethal solutions](#) to reduce human-bear conflicts, developing local-based bear ecotourism, and creating a “bear-friendly” label. This private label promotes bear-friendly practices such as using bear-proof garbage bins; developing responsible tourism programmes; active promotion of large carnivore conservation; and protecting livestock, beehives and orchards. The people who apply these bear-friendly practices can then use the label for the services or products they offer, thereby getting additional value and recognition for their efforts.

The label is currently used for more than 70 products and services in Slovenia and Croatia: food products such as honey, meat and milk; tourist accommodation; tourist guiding; and souvenirs. Moreover, a [bear-friendly map](#) promotes these bear-friendly products to tourists,



showing where these products can be found, together with the location of (sporadic) bear populations and recommendations on how to behave when encountering bears.



© LIFE DINALP BEAR

## Conclusion

The bear-friendly label shows how to use labels as a way of raising awareness about bear conservation, responsible tourism practices and ways for humans and large carnivores to coexist. By using this private label, people can communicate bear-friendly stories to their customers. Moreover, the label gives symbolic value to bears, making people think about them in a different way – as a useful tool for promotion.

### Innovative aspect

The Dinalp Bear project makes creative use of a private label - the Bear-friendly label – to help people consider bears as a tool to promote their products and services in exchange for using bear-friendly practices, thereby supporting the coexistence of humans and bears.

# 20

## WIND FARMS & WOLF CONSERVATION



### Context

Most wind farms in Portugal are located in remote mountain areas, which are also the main habitat for the Iberian Wolf. According to the Portuguese Environmental Impact Assessment (EIA) law, the developers of new infrastructures (such as windfarms) must conduct an EIA study under certain circumstances, such as when is the proposed project is within wolf territory. The EIA study serves to evaluate possible negative impacts on wolves. If the species is affected negatively, mitigation and/or compensation measures must be presented before the project can be approved.

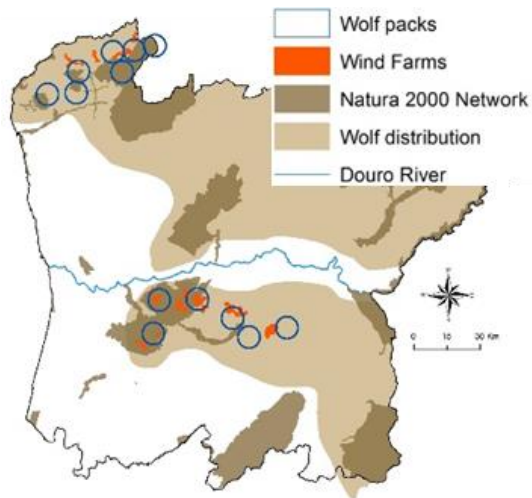
From EIA studies, it has become clear that about one third of all Portuguese wolves share their territory with wind farms. Both wolves and their prey species are impacted, both by habitat changes (such as habitat loss and fragmentation) and disturbance. To balance the environmental impacts, in 2006 several renewable energy companies created the non-profit association [ACHLI](#).

### Activities and results

ACHLI manages the Iberian Wolf Habitat Conservation Fund, with financial contributions coming from the members who must conduct compensatory measures under the EIA. The sole purpose of the Fund, based purely on private funding, is to support projects related to the conservation and management of the Iberian Wolf and its habitat.

Between 2017 and 2019, ACHLI carried out several activities, including:

- *Decreasing the wolf's impact on livestock*, through three complementary actions. Firstly, the Cão de Gado (livestock guarding dog) programme, through which 47 livestock guarding dogs were provided to herders. Secondly, the reintroduction of 102 Roe deer to provide a reliable food source for wolves. Thirdly, the creation of restricted hunting zones covering 2300 hectares to provide refuge for prey species.
- *Awareness-raising activities* to minimize conflicts through the exchange of experiences and information with local inhabitants.
- *Forest management*, to reforest, improve and maintain the ecological mosaics which provide refuge and food for both wolves and the wild ungulates they prey on. In addition, forest management benefits biodiversity; conserves autochthonous species; eliminates invasive species; combats erosion; and contributes to forest fire reduction.



© ACHLI

## Conclusion

The various projects complement each other, and through their financial sustainability it is possible to focus on long-term conservation outcomes, going beyond just improving the conservation status of wolves, but also improving their habitat with associated species, and the relation between local communities and wolves.

### Innovative aspect

This example shows how the compensatory framework for environmental impacts resulting from infrastructure development can be used creatively to create a private funding structure, which in turn helps to finance nature conservation.







# Improving working conditions and access to land

There are diverse reasons why people abandon the shepherding profession, including harsh living and working conditions linked to *“limited access to public services, scarce connectivity and few opportunities for leisure and alternative activities. The growing presence of predators and climatic vagaries add further hardening factors”*<sup>\*</sup>.

Additional aspects making work conditions unattractive are: the seasonality of the job, with the high season in summer when livestock are in the mountain pastures; insufficient or inexistent infrastructure in terms of housing, transport, communication and sanitation; low income, especially in the case of hired shepherds; and limited access to grazing land for their livestock. Actions aimed to improve these aspects are key to make the shepherding profession more attractive and increase the quality of life for shepherds.

<sup>\*</sup> Conseil fédéral Suisse (2019), *Ordonnance sur les paiements directs versés dans l'agriculture*. 910.13, p.25



## SUPPORTING LAND ACCESS FOR FARMERS



### Context

In Romania, land grabbing is a major issue. At present, 2% of the farms cover over 60% of the farmland, and land prices have increased over 1600% during the last 15 years. As such, the farming sector is becoming more intensified and there are very few opportunities available for newcomers to small-scale agriculture.

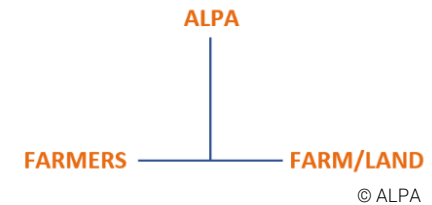
Resulting from the work of the Land Rights Working group ([Ecoruralis](#)), the Romanian NGO [ALPA](#) (Access to Land for Agroecology) was founded in 2019. ALPA seeks to secure equitable land access for people wishing to enter the agroecological farming profession and aims for: higher numbers of young agroecological farmers; the protection of the socio-ecological landscapes; the production of healthy and nutritious food; and the creation of local circular economies.

### Activities and results

ALPA is just starting, but already has support from various organizations, such as the [European Network of Access to Land](#) and the Ashoka Romania Lokalizer Programme, while taking inspiration from similar land access organisations across Europe such as [Terre de Liens](#) (France). ALPA's work is based on investments and donations of money, land, and farmhouses. This allows them to organise

activities such as farm management and agroecology training; connect local food producers with consumers; and provide information on national/EU regulations and funding opportunities.

To support land access, ALPA either buys land and farms with the donated money or accepts donated land and farms. These are owned by ALPA and stewarded by the farmer, with a contract between the involved parties to describes their relationship and commitments. The farmer agrees on managing the land according to agroecological principles and paying rent to ALPA, while the NGO provides the farmer with access to education and professional advice to make the enterprise successful.



### Conclusion

ALPA focusses on tackling several interconnected issues at once, such as land grabbing, unsustainable agriculture and lack of job opportunities in rural areas. While it is too soon to evaluate their success, similar land stewardship initiatives like the French *Terre de Liens* are contributing to the environmental, economic, and social sustainability of agroecology.

### Innovative aspect

By using an alternative system of land governance, based on land stewardship, ALPA enables farmers, donors and citizens to work together in supporting farmers to set up agroecological farms and thereby support the local economy, secure local production of healthy food, and take care of the environment.

## KEEPING TRACK OF LIVESTOCK

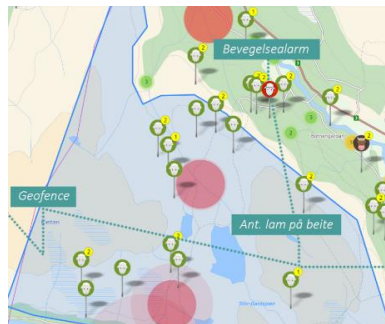
**Context** find°my | KJÆRLIGHET TIL NORSK LANDBRUK



FindMy is a Norwegian company proposing innovative livestock monitoring options. It was created by Marit Mjøen Solem, a farmer who breeds sheep near Røros, Norway. She created the company in 2009, after 22% of her lambs were missing by the end of summer. Monitoring livestock is an important activity in Norwegian mountain grasslands. The end of summer is a busy period for farmers, who need to gather their herd before the snow starts falling. The loss of animals during this period badly affects farmers' working conditions, since it sometimes leads to hours of searching to find missing animals. Moreover, the remoteness of grasslands makes it impossible to use monitoring devices based on broadband coverage, which is usually unavailable in these areas.

### Activities and results

To improve the working conditions of herders, specially at the end of the grazing season, FindMy developed a monitoring system for livestock that uses satellite technology. The system works by electronic bells sending signals to satellites. The location data are then available using a dedicated software, developed by FindMy. Farmers can access the software on their computer and phone and then easily locate missing animals.



© FindMy

Moreover, farmers can adjust the software to receive different types of notifications. These alerts can signal that an animal does not move or has an abnormal activity, indicating a possible illness, death, or risk of escaping.

### Conclusion

Monitoring is an important part of pastoral activities but can be time-consuming for farmers in remote grasslands. Moreover, looking for animals, without knowing if they are wounded, trapped, lost or even dead, is a psychological burden for farmers. The electronic bells developed by FindMy are thus an innovative solution, avoiding unnecessary stress and improving working conditions for farmers. Farmers using FindMy's devices in Norway stated that they brought back animals from the mountains two times quicker than without the devices.

This technology is fully transferable to any other mountain pasture. There are already 40.000 electronic bells on the markets, mostly used for reindeers and sheep.

### Innovative aspect

While satellite technology already existed, its use for livestock monitoring was new. FindMy was innovative in inventing a monitoring system that facilitated the working conditions of all mountain farmers, including in the most remote areas where mainstream broadband devices do not work.

## A PASTORAL NETWORK TO PROVIDE AND SHARE TOOLS AND KNOWLEDGE



### Context

In recent years, French Alpine pastoral services and other stakeholders linked to this lifestyle have joined forces to create an [Alpine Pastoral Network](#), financed both by membership fees and public funding. Through this network, they aim to "contribute to maintaining robust and dynamic pastoral activities and attractive pastoral landscapes" by developing and disseminating a wide range of tools to support pastoralists in their everyday life.

### Activities and results

The Alpine Pastoral Network works on four themes:

*Reconciling and enhancing the multi-purpose nature of pastoral areas:* the network conducted a study in 2016 and 2017 on the legal responsibilities in pastoral areas for elected representatives, farmers, pastoral groups, shepherds and owners. Following this work, the network shared the experiences supported by each pastoral service on the management of conflicts linked to the multiple use of pastoral areas (guard dogs, ski lifts, outdoor sports, hiking, hunting), through 17 case studies in a wide variety of situations.

*Accompanying the evolution of pastoral professions:* the professions have experienced profound changes since the 1990s. These changes

have put a strain on these professions and increased their need for pastoral services which could help shepherds in finding solutions to urgent issues, such as how to: make employer-shepherd relations as secure as possible; look at the various stages involved in employing a shepherd or cowherd; monitor the progress and termination of employment contracts; and propose shared tools on an Alpine scale.

*Developing pastoral techniques in the face of shocks and opportunities,* in particular climate change (through the Alpages Sentinelles project) and predation (through a survey and analyses dealing specifically with the use of guard dogs).

*Valuing ecosystem services provided by pastoralism:* especially on the link between pastoral practices and the habitats of small mountain fauna in the Alpine massif.



© Réseau Pastoral Auvergne-Rhône-Alpes

### Conclusion

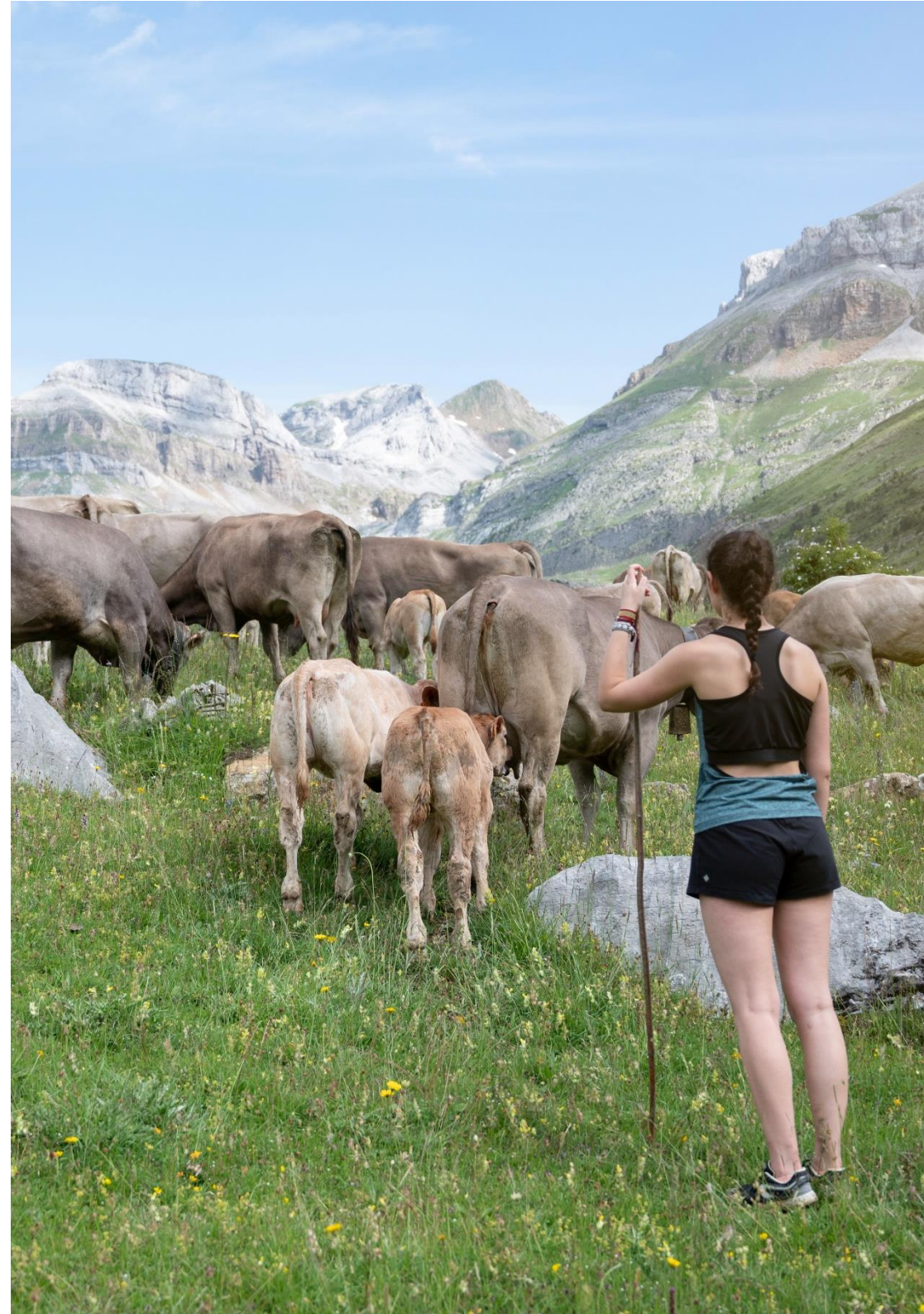
This network between various actors is a way of protecting and promoting the pastoral lifestyle. The collaboration has already led to the implementation of some concrete tools over the years, such as: the alpine pasture market and the job fair to find an alpine pasture or



a shepherd; a Guide for Employers in Pastoral Situations to know all the steps to take as an employer; a guide to legal responsibilities in mountain pastures; a Facebook page to share resources, tips, information, contract and legal advice, job offers, classified ads, etc.

### Innovative aspect

The involvement of civil society and associations to coordinate a regional informal network responding to the shepherds' needs is innovative here. The small scale of this initiative enables the use of practical, accessible and free tools which have a real and positive impact on the everyday life of shepherds.







# *Transferring knowledge and skills*

The knowledge of pastoral societies has been accumulated over millennia. Pastoral knowledge, and the skills connected to it, are essential for successfully managing pastoral systems. This is especially key in the case of young people whose capacity to innovate can support the continuation of pastoralism. However, most EU countries are gradually losing their pastoral knowledge due to the ageing of the farming population and the shift of pastoralism to part-time activity.

The loss of knowledge leads to the unsustainable use of resources needed for livestock; conflicts between pastoralists and other land users; increased attacks from large carnivores; and the loss of natural biodiversity and local livestock breeds. Therefore, shepherding schools, research projects and the sharing of innovations across Europe are essential to avoid losing pastoral knowledge and know-how, while also supporting the integration of new knowledge acquired through research.

## THE BASQUE SHEPHERDING SCHOOL

### Context

The survival of extensive livestock breeding in the 21<sup>st</sup> century faces diverse challenges, including the need to transmit necessary knowledge on sustainable pastoralism, the training of qualified professionals and how to bring people living in an increasingly urbanised society and livestock owners living in rural areas closer.

As a response to such challenges, diverse shepherding schools are emerging in countries such as Spain, focussed on training young shepherds so they can develop their farming business while maintaining, communicating, and enriching the pastoral activity and all its associated services. Such schools address the shortage of qualified professionals. One example of a shepherding school is Artzain Eskola.



© Artzain Eskola

### Activities and results

In 1997, the [Artzain Eskola](#) was created to revitalise and maintain grazing in the Basque Country (Spain), increase the professional level of shepherds, and conserve the latxa sheep breed. The school is located in the Gomiztegi farmhouse and receives help from the Basque government, HAZI Foundation and regional sheep associations. Over the past 22 years, this shepherding school has trained 278 people. While most have been men, one-fifth have been women, and 9% of people have come from abroad.



© Artzain Eskola

The annual courses have a duration of 900 hours, spread over 5 months. Two-thirds of the time is devoted to building theoretical knowledge on topics such as: feeding, reproduction, health and management of the herd; the process of milk transformation; and marketing the final product. The remaining third is practice-orientated, involving a 6-week stay at collaborating sheep farms and undertaking an entrepreneurial project. In addition, new livestock owners receive help through the mentoring service, in which a mentor gives advice throughout the process of setting up the own sheep farming business.



## Conclusion

The Artzain Eskola has supported the professionalisation of livestock breeders for over two decades. Their success is based on teaching both through theory and practice, and on collaborating with other institutions and collectives. In this way, (aspiring) livestock breeders are best prepared for the challenges of livestock breeding in the 21<sup>st</sup> century.

### Innovative aspect

The students of the shepherding school have to undertake an entrepreneurial project during the course, and after the course can benefit from the mentoring service which supports them in setting up their own business. Such attention to the entrepreneurial side of livestock breeding is key in supporting the economic viability of the sector.

## INTEGRATED TRAINING TO INCREASE SOIL PRODUCTIVITY IN MOUNTAIN FARMS

### Context



**polyfarming**

In Europe, around 271 000 km<sup>2</sup> of Mediterranean mountain ecosystems (31% of their total area) have degraded soils. In most cases, soil degradation is the result of inappropriate management practices and land abandonment. These lead to environmental and socio-economic consequences, e.g. vulnerability to climate change, biodiversity loss, territorial imbalances, lower productive capacity, increased risk of fires. Teaching farmers how they can improve soil quality is key to increase the productivity of the agro-silvo-pastoral systems in mountains and hence the economic viability of these activities.

### Activities and results

Coordinated by the CREAM research centre, the LIFE funded [Polyfarming](#) project (2016-2021, total budget: €1,135,787) developed two-month training courses to teach how to improve the soil productivity of mountain farms in the Mediterranean countries. The course targets farmers and ranchers, agrarian students, and volunteers in organic farming. It introduces participants to a new agro-silvo-pastoral method (Polyfarming system) which can be used for improving the structure, fertility, and water retention capacity of soil at

the farm scale. The Polyfarming method integrates different techniques, including:

- Integrated forest management based on the use of by-products (e.g. from thinning and cleaning of the understory) as a resource for other farm activities and, in particular, the improvement of soil organic matter;
- Combined management of fruit trees with the production of grass to meet the needs of livestock; and
- Self-sufficient management of mountain orchards using forest resources.

The training takes place on the Planeses farm (80 hectares, region of La Garrotxa, Spain) where the Polyfarming system has been piloted and validated. Over two months, participants live in Planeses and assist the project technicians in the implementation of the Polyfarming system. A substantial proportion of the training sessions is devoted to deepening the participants' knowledge of the techniques that they learn through practical work within **four theoretical modules**: i) the context, ii) the principles of Polyfarming, iii) tools and application of Polyfarming, iv) practical application of Polyfarming. Each participant has at his/her disposal abundant references from the web and bibliographic material (that can be used during his/her entire stay in the farm). At the end of the training, participants can receive a certificate of attendance.

## Conclusion

In the agricultural domain, showcasing farmers techniques that work is the most efficient way to enhance their replication. In order to

reproduce the results obtained with Polyfarming in the Planeses pilot in other farms, a series of activities have been designed in which all the technical material developed in the project is used: agro-silvo-pastoral guide, videos, technical sheets etc. The combination of different types of activities within the study area itself boosts the learning capacity of farmers: from practical and theoretical training courses, advice to local farmers through visits to guided visits to the farm. For further exploitation of the project's results, it will be essential to organise similar demonstration courses in other regions of Spain and across Europe.

### Innovative aspect

At Spanish level, there is a lack of real-scale and practice-based demonstration courses in active multi-functional management systems and related training opportunities for farmers. This makes the Polyfarming project a benchmark for the rest of the country.

## SUPPORTING HIGH NATURE VALUE FARMING BY SHARING INNOVATION



### Context

High Nature Value (HNV) farmland is a vital component of European agricultural landscape for its natural values, cultural heritage, quality products and contribution to rural employment. However, farmland abandonment / intensification and socio-economic decline threaten these extensive and nature-friendly farming systems.

Funded by the EU Horizon 2020 programme (€ 2,230.218), the [HNV-Link](#) project (2016-2019) aims to increase the socio-economic viability of HNV farming while maintaining HNV farmland and the public services it provides. This project builds upon the [Focus Group on HNV Farming of EIP-AGRI](#).

### Activities and results

HNV-Link has created a thematic multi-actor network on HNV farming, including researchers, farmers, practitioners, and policymakers. Through this network, various activities have been conducted to support HNV farming.

Based on the project's 10 learning areas throughout the EU, the network has contributed to the collection of innovative technical, commercial, social, institutional, and policy solutions. Examples are: [mobile abattoirs](#) (Sweden), [agro-environment measures](#) (Romania), [mobile advisory teams](#) (Bulgaria) and [flexible governance](#) (Greece). At

the same time, relevant innovation gaps have been identified, together with assessments on which innovations are transferable to other HNV areas.

The major outputs of HNV-Link include creating an inventory of grassroots innovations in each learning area; organising "Innovation Fairs" to foster peer learning; elaborating [policy recommendations](#); and making an interactive [Atlas of Innovations of HNV farming areas](#).

### Conclusion

Built upon the HNV Farming EIP-AGRI focus group, HNV-Link contributes to a sustainable future for HNV farmland. Both the established network and the compiled knowledge are key elements to share innovations and inspire other actors working in, or with, HNV areas across Europe.



© HNV-LINK

### Innovative aspect

Multi-actor networks such as HNV-Link drive innovation and policy change, as they connect research, policy and practice and foster co-innovation. Here innovation is considered in the broadest sense of the word, including social, management, policy, technology, etc, and at different scales (from local to EU).





## *Revaluing pastoral and rural life*

The sections above have provided good examples on how to improve the quality of life of mountain farmers, share innovations, and learn how to become a shepherd. However, a major challenge to the continuity of pastoralism is the “disaffection related to the folkloric perception” of pastoral and rural life, with shepherds being seen as poor, solitary people who work without a minimum of comfort.

However, there are many people and collectives who do recognise the cultural and natural values of rural and pastoral life, and creatively use storytelling in all its forms to improve the image of shepherding life (e.g. through documentaries, blogs, songs, photos) while also raising awareness on the challenges and the need to conserve rural and pastoral life. In parallel, several European countries have successfully included transhumance, a form of pastoralism, in the UNESCO List of Intangible Cultural Heritage.

## THE SHEPHERD'S LIFE

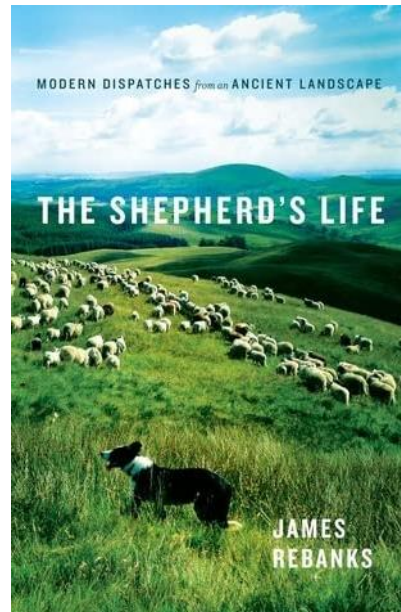
### Context

England's Lake District is a UNESCO World Heritage Site that attracts millions of tourists each year. However, the number of families sustaining the farming culture is decreasing, while more and more tourists visit the area – often with little idea of, or interest for, the stories behind the iconic cultural landscapes they seek to admire.

### Activities and results

James Rebanks published in 2015 the book *"The Shepherd's Life: A Tale of the Lake District"*, in which he describes life as a shepherd, and why this life has value in today's world.

The book calls for action in protecting ancient ways of life that are slowly disappearing due to gentrification, globalization and urbanization, and for valuing the 'nobodies' who have created and sustained the iconic cultural landscapes that today attract so many tourists. In Rebanks' words, *"it isn't about subsidizing a tiny number of farmers for nostalgic reasons. It's a very contemporary argument about defending older ways of being and not letting everything get swept away by an industrial, cheap food model"*.



According to the French Historian, Fernand Braudel, *"what really shapes history is the way people live"*. Thus, in his book James Rebanks tries to explain how cultural landscapes are affected and managed by pastoralism and human activities, and how the management of his farm could have a direct impact on the cultural and natural heritage, appreciated by all these tourists. He is adamant in the idea that a business, like a farm, is not just about the economic activities but also about the values it brings to society. Thanks to new ICT, such as smartphones and Twitter, compelling stories can be told to tourists and values can be shared.

### Conclusion

This bestselling book, together with Rebanks' activity on social media, is now raising much awareness and igniting necessary discussions on the key role of farming in today's society. Shepherds and farmers need to be trained to better tell and market stories about their landscapes and their activities, and tourists should be able to better recognise this added value. Some of the income generated by tourists should also come back to these local actors on the ground as, without them, the landscapes would be completely different – or cease to exist.

### Innovative aspect

James Rebanks demystifies the romantic view of mountain areas, while promoting better recognition and valorisation of the activities that shape these landscapes. The innovation lies in fighting for historical values and traditions while managing in a modern way the social, economic and environmental consequences of tourism – notably through social media.



## TRANSHUMANCE AS UNESCO INTANGIBLE CULTURAL HERITAGE



### Context

Transhumance - the seasonal movement of livestock flocks across migration routes - is one of the most ancient form of pastoralism. Transhumance has been at the centre of the lives of many pastoral communities across the Alpine and the Mediterranean regions.

The wide range of practices, know-how, skills, ethnographic elements, toponyms, festivals, gastronomy, and events linked to transhumance, together with its socio-environmental benefits, prompted Italy, Austria, Greece, joined by France and Spain, to present Transhumance as a candidate for the UNESCO's List of Intangible Cultural Heritage in 2019.

The nomination encompassed the following aspects:

- Sustainable livestock farming, landscape maintenance and customary use of transhumance-related areas, including forms of governance and management of pastoral resources;
- Human-animal relation, including animal care practices, as well as heritage elements related to the management of autochthonous breeds;
- Know-how related to the development of pastoral products and co-products, or elements related to transhumance (e.g. bells, practices related to vernacular heritage and buildings);

- Know-how and exchange of professional techniques;
- Social practices, rituals and festive events that determine a cultural and traditional identity of transhumance

### Conclusion

This nomination process was a collaborative demand from several Member States who joined the procedure as it evolved. More countries can join the dossier, if they already acknowledge and protect pastoralism at the national level. During the 14<sup>th</sup> Intergovernmental Committee for the Safeguarding of the Intangible Cultural Heritage, held from 9 to 14 December 2019 in Colombia, representatives of various Delegations (Romania, Croatia, Albania, Luxembourg and Switzerland) also expressed their wish to join the multinational candidature project which will make it possible to broaden the basis of the "Transhumance" designation. In parallel, Norway is considering submitting an application for summer farming (*seterkultur*) and Switzerland for the "Alpine pastures lifestyle".

### Innovative aspect

For most countries, the application to UNESCO derived from the Ministry in charge of Culture, which is a step forward to recognising that transhumance is more sustainable than intensive livestock farming, both providing important ecosystem services and increasing human well-being in manifold ways. It is not just cultural heritage, but a way of living through a sustainable relationship between humankind and nature.





# Rural urban linkages

Enhancing rural-urban linkages can be one way to revalue pastoral and, more generally, rural life. Although most people now live in urbanised areas, rural areas are not isolated regions. Rather, they are closely linked to urban areas in many ways, as rural areas are where: food products come from; many people have their roots; essential public goods are produced; and people from urban areas go back to, either for holidays, or to settle permanently\*.

Strengthening the linkages can improve territorial cohesion, or as the Cork 2.0. Declaration says: *“improved interrelations and partnerships among them [urban centres and rural areas] are important preconditions for economic viability, environmental performance and social cohesion of the Union as a whole”* \*\*.

\* Euromontana (2017), *Cohesion Policy in Mountain Areas: How to increase the contribution from mountains and benefits for mountain territories?*

\*\* European Union (2016), *Cork 2.0. Declaration. A Better Life in Rural Areas*, page 4.

## THE BERGWALDPROJEKT

### Context



The [Bergwaldprojekt](#) (literally “mountain forest project”) Foundation was established in Switzerland in 1987, and today is present in Switzerland, Austria, Germany and Spain.

The foundation’s aim is to conserve, care and protect mountain forests and cultural

landscapes. This is done through renovation work in volunteer camps. Working together with experts, volunteers learn about the conditions and interrelationships of fascinating mountain ecosystems.

Through their work, volunteers experience mountains up close and make an active contribution to preserving mountain forests and wider cultural landscapes. The objectives of the work assignments are also to make participants aware of the significance and endangerment of natural resources, and to encourage the general public to adopt an environmentally compatible approach to managing natural resources.

### Activities and results

Forests protect mountain villages from avalanches, rockfalls and landslides - but only if the protection forests themselves are in good condition. Dry summers, for instance, can cause a lot of damage to forests. Groups of Bergwaldprojekt volunteers work for a week to make forest and wider cultural landscapes fit for the future. For instance, their activities might involve removing bushes from pastures,

planting new trees, clearing paths, equipping hiking trails with new railings, etc.

For example, Bergwaldprojekt organises volunteer weeks throughout Germany with around 2,500 participants each year. In 2019, 117 project weeks took place in 51 different locations, of which 15 were part of the Bergwaldprojekt Forest School in cooperation with educational institutions.

### Conclusion

The Bergwaldprojekt was founded over 30 years ago in Trin, Graubünden, Switzerland. Since then, the project has grown every year. Five full-time employees now coordinate reforestation projects throughout Switzerland and other countries. Around 5000 volunteers – pensioners, students, families - help to maintain protection forests every year. This initiative is fully transferable although it relies on volunteers, so communication is essential to its success.

#### Innovative aspect

Turning a conservation mission, often the work of NGOs or national organisations, into a volunteering opportunity combined with a training component is the innovative aspect of this good practice. This approach offers the double benefit of raising awareness about forest conservation and undertaking major conservation work at low cost.

## MEET DE MOUT', LA SCHAAP PARADE

### Context

Ten sheep and two lambs from the [Ferme du Chant des Cailles](#), a urban farm located in Brussels, participated in the "[Meet the mout, la schaaap parade](#)" in June 2018, a mini-transhumance from Keym Square in Watermael-Boitsfort to the Royal Park of Brussels (~6 km). According to local police, some 150 people animated the event.

### Activities and results



© Meet the mout – La Ferme du Chant des Cailles

According to its organizers, the objectives of this civic and playful action were to reclaim public space in the city, and to reconnect the means and places of production with places of consumption.

After the parade came to its end in the Royal Park, several animations were organised, such as: a sheep make-up session and fairy tales about sheep in the city for children; debate and discussion; a picnic; and the sale of cheese from the sheep who took part in the parade. An information stand was also set up to raise public awareness of urban agriculture projects, eco-grazing, local production and consumption, transhumance and land use planning.



© Meet the mout – La Ferme du Chant des Cailles

### Conclusion

The organisers aimed at rethinking the place of Nature and of farm animals in the city; as well as launching a collective reflection on how setting up farms in urban areas could favour direct sales. This event was also part of a broader urban eco-grazing project (the management of public or private green spaces by herbivores) managed by the Ferme du Chant des Cailles, located in the city of Brussels.

### Innovative aspect

'Meet de mout' brings the rural dimension to urban areas, instead of attracting urban people to the countryside. This inversion shifts the focus from a touristic, perhaps folkloric, perspective to a reflection on spatial multifunctionality and the future of production and consumption in urban areas.



## RØROSREIN: A TASTE OF DIVERSIFICATION

### Context

The Sami people are Indigenous people who live in four countries (Finland, Norway, Russia and Sweden) and are also considered as an ethnic minority in these States. It is estimated that around 80,000 people, half of the Sami people, live in Norway, mostly making their living from herding reindeer or other activities close to nature (e.g. fishing, livestock farming and hunting). Many Sami are also starting to engage in the service and public sectors, industry, and tourism.

### Activities and results

[Rørosrein](#) is a local cooperative created by a Sami family who breed reindeer in the Røros area. The natural surroundings of Røros are the historical area for reindeer breeding. Sami people were originally nomads who lived from hunting. Progressively, they started taming reindeer, to eat their meat and milk but also to use their hides and horns to make handcraft items.



© Rørosrein

In the mid-North part of Norway, between Trondheim and Elga, the 26 Sami families who belong to Rørosrein are breeding more than 13.000 domestic reindeer and intend to preserve Sami customs.

Rørosrein has its own shop in the small town of Røros, where people can buy these regional and traditional products, particularly cured reindeer meat. To diversify their activities and sources of incomes and compensate for the significant losses they sometimes face (70 calves in 2016 due to carnivores), they developed other activities. Local people and tourists can visit and eat at the Rørosrein's traditional gâetie (Sami dwelling), buy their products directly at their farm or during Christmas markets, and participate in numerous traditional activities such as driving or walking with reindeer, feeding and lassoing a reindeer, attending lectures on Sami culture and language, have a look at different kinds of woodworking, and try making similar handcrafts.

### Conclusion

Rørosrein's activities take advantage of the tourism sector as well as the commercialisation of its products and activities, to promote Sami traditional practices, and as such, ensure the sustainability of ancient knowledge and tradition.

### Innovative aspect

Rørosrein succeeded in raising the interest of Norwegian people in the cultural heritage linked to Sami traditions, activities and products. Hence, the innovative aspect is in their ability to turn this tradition into a diversified range of activities, promoting quality food products and handcrafts and extensive pastoral systems.



<http://www.lifeorekamendian.eu>

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