Project

LIFEstockProtect: A collaborative response to large carnivore recovery in the Alps

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Introduction

The return of large carnivores to the Alps has compelled farmers to adapt their grazing practices to the presence of lynx, bears and, especially, wolves (Fig. 1). In the transition to livestock protection, peer-to-peer exchange of knowledge and cooperation between owners are crucial, as is the engagement of widely recognised practitioners.

Responding to these challenges, the LIFEstockProtect project brought together 16 partners from the fields of agriculture, research, nature conservation and education with the aim of supporting Alpine farmers to protect their livestock (Fig. 2). The overall goal is to demonstrate and implement livestock protection as a way of actively supporting human–livestock–wildlife coexistence. The project has the following objectives:

- To train livestock owners in protection measures;
- To train livestock protection consultants;
- To support and/or set up livestock protection competence centres;
- To increase acceptance of implementation at the local level;
- To raise awareness among livestock owners, experts, youth and the general public;
- To increase the number of areas where livestock protection is implemented effectively;
- To decrease livestock damage and related conflicts within the target regions;
- To increase professional and public support for coexistence with wildlife.

In this article, we present some of the main activities and progress achieved by LIFEstockProtect, the first LIFE project to be coordinated by a farmers' association. We

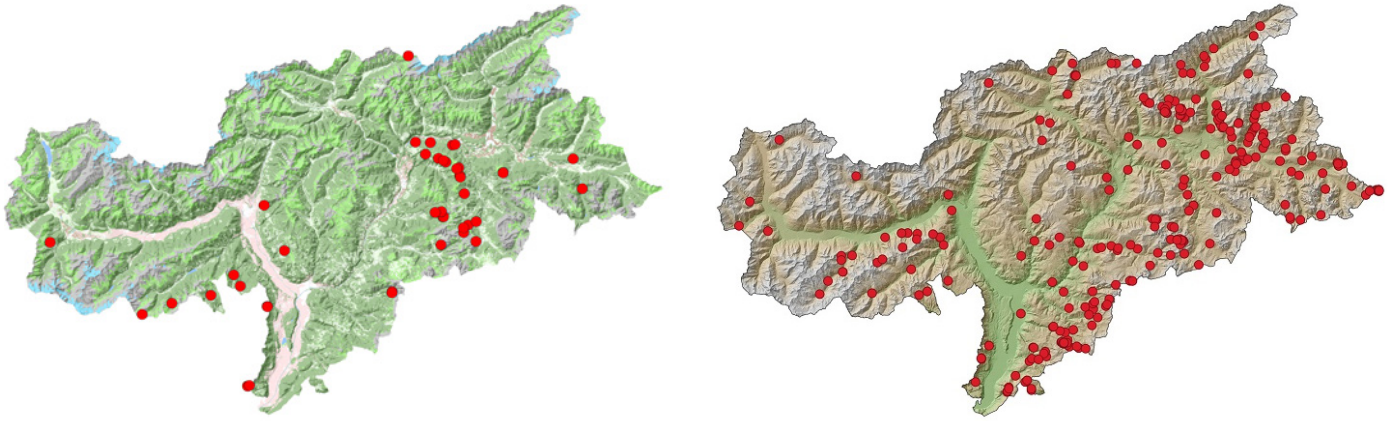

Fig. 1. Increase in the wolf population of South Tyrol from 2020 (left) to 2023. Each red dot represents a resident wolf (Source: Provinz Bozen[1]).

Fig. 2. An example of a high alpine pasture, where livestock protection can be challenging (Photo: LIFEstockProtect).

provide detailed information where significant milestones have been reached, including in relation to livestock guardian dogs (LGDs), working with stakeholders and volunteers and establishing centres of competence.

Project area

The project focuses predominantly on the German-speaking regions of the Alps within the EU: Austria, Bavaria in Germany and South Tyrol in Italy (Fig. 3). In all three regions, cattle are the most important species of livestock but sheep and goats, which are more vulnerable to predation, are the main focus of the project. Husbandry practices differ among the regions. While professional shepherds managing flocks of over 500 animals is typical in Bavaria, the number of small flocks (up to 20 animals) is significantly greater in Austria. Conflicts related to depredation occur on different levels. For example, tech-

[1] https://www.provinz.bz.it/land-forstwirtschaft/fauna-jagd-fischerei/fauna/wolf-suedtirol/situation-in-suedtirol.asp

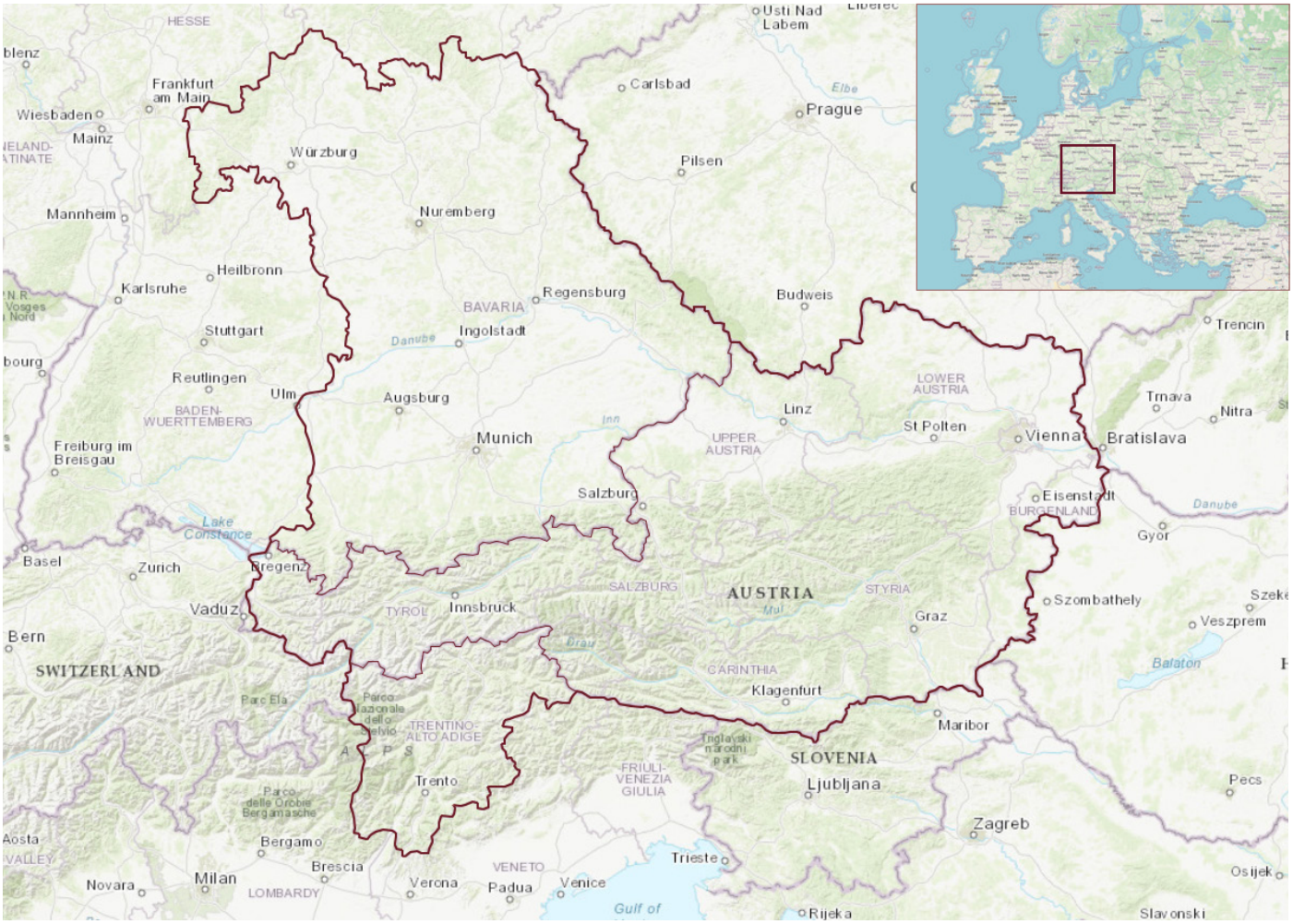

Fig. 3. Map showing the location of the LIFEstockProtect project regions in Central Europe (Source: © OpenStreetMap).

nical questions about funding have prevailed in Bavaria whereas political discussions about how to manage large carnivores have been more prominent in Austria and South Tyrol.

Events and peer-to-peer learning

The project officially began in September 2020. The COVID-19 pandemic[2] underway at that time forced us to adapt quickly and many preparatory activities took place online. Nevertheless, the project kick-off conference and webinar with three active shepherdesses, held in early 2021, had more than 500 online attendees and thousands of viewers via social media live-streaming, confirming the high level of interest in the topics.

During the project numerous meetings, excursions, conferences and peer-to-peer training sessions have taken place in Bavaria, South Tyrol and Austria as well as online. The latter proved to be highly important and effective for communication, saving time and money that would otherwise have been spent on travel. Project partners held webinars on topics such as the basics of livestock protection in different areas, fencing, LGDs, shepherding and encounters with large carnivores, attracting more than 1,000 registered participants. A particular highlight was an online thematic conference on protection of cattle and horses, where researchers, livestock owners, representatives of government and NGOs shared their knowledge and experience. All presentations are available on the project's YouTube channel[3].

In order to achieve its overarching goal, a network of livestock owners implementing protection measures was established to endure beyond the end of the project in August 2025. Members of this network inform, advise and

[2] https://www.ecdc.europa.eu/en/covid-19
[3] https://www.youtube.com/@lifestockprotect/featured

support each other on practical, political and social levels. During the first year, potential collaborators were identified and visited. Using social media, personal contacts and networks, project partners reached out to farmers who were using any form of livestock protection. In Bavaria and Austria, more farms than needed contacted the project team but in South Tyrol the search was more challenging. Farms were selected to represent the widest possible diversity in terms of size, type of livestock, protection measures and level of professionalism.

On-site training events began in January 2021. Fence-building courses, testing of the latest technology and site visits took place across the three project regions to give farmers an insight into the opportunities that protection measures can provide (Fig. 4). Participating farmers were recruited by word-of-mouth and peer-to-peer as well as via a newsletter and online booking. About 90 training events were held with a total of around 1,400 participants.

Fig. 4. Setting up an electrical net fence in South Tyrol (Photo: LIFEstockProtect).

Information materials and training curricula were developed. Livestock protection topics were included in the curriculum of young farmers in the Fachschule für Land- und Hauswirtschaft Salern agricultural school in South Tyrol and Land- und Forstwirtschaftliche Fachschule Grabnerhof agricultural school in Austria. In addition, a professional shepherd training course was started by the Salern agricultural school from which about 50 shepherds graduated (Fig. 5).

Project partners held around 50 youth educational

Fig. 5. Shepherds graduating from an agricultural school in 2023 (Photo: LIFEstockProtect).

workshops on livestock protection for agricultural and general school classes, involving about 500 participants in the project regions. A public exhibition focused on livestock protection was created to tour the regions. The project was also represented at various agricultural fairs and gatherings such as local sheep breeders' festivals, organic farming trade shows, the world's largest agricultural fair[4] and 14 events organised within other LIFE projects, with a total attendance of more than a million people (Fig. 6).

Fig. 6. Project exhibition stand at Green Week, Berlin (Photo: LIFEstockProtect).

Continued education and certification of 20 scat-dog teams has been, and continues to be, carried out in Austria. These teams are able to assess evidence of large carnivore presence after an alleged depredation event. Dogs were trained under the guidance of Dr. Leopold Slotta-

[4] https://www.gruenewoche.de/en

Bachmayr, who has also trained dogs to detect cheetah sign in Kenya.

To gain experience with the use of various fence materials, about 30 testing sites were established. At these "fence labs", livestock owners and shepherds test fence reels and electrical nets of differing heights, manufacturers and numbers of wires, to identify weak spots as well as advantages and disadvantages in their practical application (Fig. 7).

Fig. 7. Testing different materials and designs at a "fence lab" (Photo: LIFEstockProtect).

Livestock guardian dogs

In modern cultural landscapes, used by many different people, societal compatibility is almost as important for LGDs as their ability to protect livestock. This was a key consideration when developing guidelines for the use of LGDs in Alpine regions. In Austria, especially, LGDs are a recent innovation. South Tyrol has a similar situation whereas farmers in Bavaria started using them earlier and have benefited from know-how gained in other parts of Germany, where LGDs have been used for several years. The most popular breed in the project area is the Maremmano Abruzzese from Italy (Fig. 8). The Sila shepherd dog (Pastore della Sila), also from Italy, is used in some high pastures in South Tyrol while the Pyrenean Mountain Dog (Chien de Montagne des Pyrénées) can be found elsewhere. Other breeds are used only sporadically, especially in Austria.

Practical certification guidelines for the use of LGDs were developed within the LIFEstockProtect project by partners from all regions. External experts on dog behaviour and training, such as Agridea (the Swiss Association for the Development of Agriculture and Rural Areas), were consulted during this process. The first edition of the guidelines, based mostly on the Swiss certification scheme[5], has been available since spring 2023 (Box 1). As part of the certification process, LGDs are observed to see how they behave in standardised situations (Fig. 9). These include, for example, a hiker (with and without a dog) passing through a flock, a cyclist passing by livestock and visitors coming to the home farm outside the grazing season. Certification does not only concern the LGD itself but also its owner and other people working with it. Dog handlers must show that they can manage it adequately and are aware of its needs and behaviour.

The first LGDs were certified in Austria according to these guidelines in summer 2023 by a commission of three experts under the lead of the Austrian Bear, Wolf

Fig. 8. Maremmano Abruzzese protecting livestock in the Majella, Italy (left), and in Obere tilfser Alm, South Tyrol (Photos: LIFEstockProtect).

[5] https://www.protectiondestroupeaux.ch/fileadmin/doc/Herdenschutzmassnahmen/Herdenschutzhunde/4474_D_23__EBUE_EAT_Def.pdf

Box 1. Guidelines for practical certification of LGDs in Austria

Admission requirements

- Parentage: parents are from working lines and have actively worked as LGDs (older dogs must have experience of working as LGDs themselves);
- Age: the dog is at least 18 months old at the time of certification;
- Health: a veterinary certificate, not older than one month, confirming that the dog is healthy according to a comprehensive examination.

Behavioural testing

1) Dog–owner relationship and behaviour on the farm and elsewhere:
   - Handling and manageability, including behaviour in stressful situations both in familiar and unfamiliar surroundings, away from the flock;
   - Behaviour towards strangers (e.g. hikers, cyclists, passers-by) and unfamiliar dogs in various situations, including away from the flock.
2) Interactions with livestock and other dogs:
   - Degree of social bonding to livestock, with and without distractions;
   - Response to other dogs in the working environment, including other LGDs and herding dogs in the same flock, and ability to work as part of a team.

Required traits

When the dog is working with the flock, walkers or other strangers should be perceived as a normal part of the environment.

- Positive: the dog generally remains neutral, barks briefly (at most) and stops immediately when the stranger moves away;
- Acceptable: minor signs of insecurity, such as continued barking after the stranger has left the area.

Traits leading to disqualification

- Excessive shyness;
- Excessive fearfulness;
- Biting livestock or other dogs in the flock;
- Excessive aggression;
- Persistent barking;
- Cannot be managed by the owner;
- Lack of bonding to the flock;
- Excessive playfulness;
- Scaring or chasing animals around the pasture;
- Jumping over fences.

and Lynx Centre[6]. A total of 14 dogs had been certified as of July 2024. To bring the guidelines into widespread use in Austria, a working group was established within the Austrian Centre with representatives of the federal states, stakeholders and experts. Certification of LGDs is now a precondition for their deployment in pastures according to new Austrian animal welfare legislation[7], for which the project lobbied, and to obtain subsidies for their upkeep when used in high alpine pastures. Based on experience gained during certifications in 2023 and 2024, and in consultation with experts from Alpine countries, the guidelines will be evaluated and adapted as necessary until the end of the project in order to establish a professionally sound, practice-oriented programme.

Recommendations for breeding and raising LGDs on farms have been developed since 2024. They focus on the rearing and training of LGDs up to certification, which can take place from the age of 18 months. The goal is to ensure that dogs grow up in healthy environments that foster their protective instincts and interactions with people. This process increases the likelihood of successful certification and ensures that LGDs serve as reliable helpers in livestock farming. The recommendations consider three aspects: socialisation with livestock; adaptation to the local context, including the human environment; and exercise in stables and farmyards, home pastures and mountain pastures.

[6] https://baer-wolf-luchs.at/

[7] The new animal welfare law defines exemptions for LGDs from the usual requirements for keeping dogs. It allows them to be kept within electric fences or in stables together with livestock. The law specifies that at least two LGDs must be kept together and that a shepherd must be present for most of the day.

Fig. 9. Observing LGD behaviour as part of the certification process according to guidelines established within the project (Photo: LIFEstockProtect).

Working with stakeholders

To raise awareness and engage stakeholders in livestock protection, a series of discussion rounds and seminars were organised (Fig. 10). In the first step, a stakeholder analysis was conducted by rating 328 representatives using a specifically developed interest-impact matrix. This analysis provided a clearer overview of key stakeholders, context setters and the stakeholder group most directly affected, i.e. livestock owners.

Fig. 10. A stakeholder workshop in Mals, South Tyrol (Photo: LIFEstockProtect).

The next step was an internal workshop, during which three major challenges to implementing livestock protection measures were identified: framework conditions (such as financing, legal aspects, consulting), tourism and media. Stakeholders identified by the analysis as related to these issues were then invited to on-site and online seminars.

Three on-site seminars on framework conditions were held in each project region. The main target group was livestock owners, along with other locally active individuals such as mayors and damage inspectors. The challenges most often mentioned included (i) insufficient financing for livestock protection; (ii) lack of knowledge transfer and consultancy; and (iii) shortage of staff, particularly shepherds. Proposed solutions emphasised the need for extensive support in preparing and implementing livestock protection measures, including funding for additional workloads and investments, as well as high-quality consultancy that is readily available. About 60 % of people who returned feedback forms agreed that livestock protection measures enable coexistence with wolves. The results were further discussed with experts in each project region to develop specific recommendations for decision-makers on how to enhance livestock protec-

Fig. 11. Livestock Protection Competence Centre training (left) and annual meeting (Photo: LIFEstockProtect).

tion measures and minimise conflicts.

Two online seminars were organised on the topic of livestock protection and tourism. In the first of these, active members of Alpine associations (e.g. mountain guides) were informed about appropriate behaviour in areas with large carnivores and LGDs. Mitigation measures were discussed, such as integrating information about pastures with LGDs into the Alpine club hiking map application. During the second seminar, tourism operators shared their views on what is necessary to balance livestock protection measures with other land uses such as hiking trails. The meeting revealed different needs (safety for hikers, planning certainty for landowners, sustaining the image of the landscape) and highlighted the complexity of introducing livestock protection measures into a multi-interest landscape. Excursions to tourism regions with LGDs are planned to discuss possible solutions on-site.

An online media briefing was attended by over 500 journalists from Bavaria, Austria, and South Tyrol. They were provided with detailed information on the complex issues arising from the return of wolves. The goal was to foster more nuanced reporting on large carnivores and livestock protection. A wildlife management expert shared insights on maintaining low-risk potential from wolves for people in Europe, while livestock owners presented their daily work and highlighted the economic challenges of extensive livestock grazing. Factsheets on the topics discussed were provided to participants and made available for download on the project website[8]. The immediate outcome of the briefing was an increase in media articles on the topics covered. The long-term impact cannot yet be assessed but further briefings might, if viewed as a trusted source of information, help maintain accurate reporting.

A catalogue of good practice in livestock protection in the three project regions has been compiled to guide decision-makers and inspire owners. The final step will be a workshop in 2025 for key stakeholders, where the findings from previous steps will be presented and discussed. The aim is to generate concrete goals to improve the overall conditions for livestock owners to implement effective protection measures.

Competence centres

Farms that successfully implement protection measures such as fencing and LGDs are designated Livestock Protection Competence Centres. About 30 such centres have been established across all project regions. Their mission, beyond safeguarding their own flocks, is to act as role models, inspiring other owners to adopt similar measures. The Centres have considerable expertise in livestock protection and receive ongoing updates from the project. They meet online quarterly and in person annually to enhance their knowledge and address challenges (Fig. 11).

The 2024 annual meeting, held in Raumberg-Gumpenstein in central Austria, was attended by farmers from 13 Centres. On the first day there was an excursion and participants learned about the Ennstal Lamm EU LEADER project[9], which led to managed grazing of sheep

[8] https://lifestockprotect.info/press-center/
[9] www.ennstal-ausseerland.at/de/projekte/details/ennstal-lamm.php

Fig. 12. Setting up livestock protection fencing (left) and loading a Tornado Master 5.0 machine for rapid mobile fence installation (Photos: LIFEstockProtect).

and regional marketing of lamb products. The second day featured presentations on LGDs and predator-repellent fencing as well as interactive hands-on workshops.

To make livestock protection more accessible, training sessions are conducted at other locations besides the Centres. Participants have the chance to learn how to construct predator-resilient fencing (Fig. 12) and more than 100 livestock owners have also been introduced to LGDs (Fig. 12). Webinars are held to extend the project's outreach even further, reaching additional livestock owners, volunteers and other interested people.

Volunteer help

An essential element of implementing and maintaining livestock protection measures is the support provided to farmers. It is often claimed that lack of time and manpower preclude the use of protection measures, especially in challenging landscapes such as alpine pastures or extensive lowland areas [1,2]. To address this, LIFEstockProtect collaborates with Progetto Pasturs[10] and WikiWolves[11] to provide volunteer assistance to livestock owners and shepherds [*Editor's note: see the article on WikiWolves by Soethe (2020) in CDPnews issue 19*]. People interested in volunteering can register on the project website[12]. They receive basic training before joining the network and helping for 1–2 days or a week or more. Tasks may include erecting and dismantling fences, checking their functionality, pasture maintenance and herding flocks.

Over 50 training sessions and outreach activities have taken place since 2021 with more than 300 volunteers.

Fig. 13. Livestock guardian dog training event in Lower Saxony, Germany (left), and visiting LGD breeder Mirko di Francesco in the Majella, Italy (Photos: LIFEstockProtect).

[10] Progetto Pasturs (https://pasturs.org) is a project in the Italian Orbie Alps in which volunteers support shepherds in their daily work in summer pastures, especially in view of new challenges posed by the return of large carnivores.
[11] The WikiWolves (http://www.wikiwolves.org) platform in Germany matches people who need assistance protecting their livestock with volunteers who want to help them.
[12] https://lifestockprotect.info/en/volunteer-workforce/

Fig. 14. Shepherdess Anna Huber meeting Dietmar Woidke, Minister-President of Brandenburg (left), and project representative Max Rossberg meeting Steffi Lemke, Federal Minister for the Environment and Nature Conservation (Photos: LIFEstockProtect).

The initiative promotes dialogue between agricultural workers and people from other backgrounds, fostering mutual understanding and coexistence across the project region. Livestock owners and shepherds receive practical help free of bureaucracy. Volunteers gain firsthand experience of rural life and the challenges of working with livestock and learn about the importance of pasture grazing. Positive feedback from all sides proves the utility of this approach.

Funding

One of the main obstacles to widespread adoption of livestock protection measures in the German-speaking Alpine region is lack of funding. The project has lobbied for expansion of financial instruments within the Common Agricultural Policy (CAP) to include support for shepherds, LGDs, fencing materials and maintenance (Fig. 14). In Austria, this led to a new CAP-financed support programme for LGDs and modification of the existing programme for shepherding. Discussions on CAP financing for livestock protection measures in South Tyrol and Bavaria are underway.

Conclusion

Resistance to implementing protection measures is prevalent among agricultural associations and farmers. Protecting livestock is often equated with protection of large carnivores, which is unwelcome in many rural areas. Despite this, there are livestock owners across the three project regions who view livestock protection as essential and, facilitated by the project, have formed a network to share ideas and experience. The project has demonstrated that predator-resilient fencing is a good approach in lowlands but has its limits in high alpine pastures. Here, shepherds with LGDs are the most viable option. Greater financial support is needed for the material costs and additional work associated with implementing these measures, as demanded by everyone involved in the project and almost all livestock owners in the area.

Acknowledgements

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