3. Wool

3.1 Wool in the Alpine context: a brief recap

For centuries, wool was a **relevant material resource** in Alpine regions. It was embedded in traditional agropastoral systems that linked sheep breeding, shearing, fibre processing, textile production, and everyday use. This gave origin to embodied knowledge on how to make the most of wool, based on its material properties that varied by breed, territory, season, and intended applications.

Today, this system has largely disintegrated. While sheep breeding and shearing continue for reasons related to food production (milk, meat), landscape management, biodiversity, and agropastoral heritage, wool itself has frequently become an **undervalued or even unwanted by-product**. Processing infrastructures have mostly disappeared, local outlets are scarce, and market expectations are shaped by global standards favouring uniform, fine fibres associated with imported Merino wool. As a result, significant quantities of Alpine wool are discarded, exported at very low prices, or downcycled.

This situation makes wool a material with much **potential** for heritage-sensitive and circular innovation. The resource is present, and upstream practices persist. What is missing are the **connections, competences, and value-chain configurations** needed to turn wool from (mostly) waste into viable products consistent with its material properties and territorial anchoring.

3.2 Val Camonica (Lombardy): from skills documentation to heritage-sensitive innovation

The Val Camonica pilot, coordinated by Regione Lombardia through the Archive of Ethnography and Social History, represents the most comprehensive attempts within AlpTextyles to connect **heritage safeguarding, design, and product development** around local wool. Rather than starting from a predefined product idea, the pilot deliberately began with a **territorial diagnosis of skills, materials, and practices**, acknowledging both their richness and their fragility.

The valley retains a long history of wool use linked to agropastoral life, domestic production, and small-scale craft activities. Yet, as in many Alpine regions, these practices were increasingly disconnected from contemporary economic circuits. The pilot therefore focused on **making existing knowledge visible, transmissible, and usable**, and on testing how it could inform new forms of product development without falling into folklorization.

This work unfolded through a sequence of coordinated actions: ethnographic documentation, skills mapping, explained below; immersive design work; and product experimentation, most notably through the *Montagna Addosso* collection. Together, these elements make Val Camonica a particularly fertile case for extracting **replicable how-to solutions**.

HOW-TO

Map local skills and traditional products with innovation in mind

The problem

In many Alpine regions, wool-related skills still exist but are dispersed, aging, and rarely documented in ways that support innovation. Mapping efforts, when available, often result in static inventories disconnected from product development.

What was done in Val Camonica

The pilot adopted a **heritage-sensitive and process-oriented approach** to mapping. Instead of cataloguing products alone, documentation also focused on:

- gestures and sequences of work;
- tools and materials used;
- decision points (why this wool, why this technique);
- conditions of practice (seasonality, domestic vs collective work).

Traditional products were documented not as museum pieces, but as **outcomes of specific skill combinations**. The resulting materials took the form of fiches, visual documentation, and thematic groupings explicitly designed to be read and reused by designers, artisans, and intermediaries.

ALPTEXTYLES Index

category: artefacts

Title: Mittens

Source: Codadilana / Bosio

Dimensions: Various sizes

Material: Wool

Technics: Knitting

Tools: Needles

Site: Malonno, Brescia

Description:

The mittens by Codadilana are inherently linked to a well-established tradition of glove and mitten production rooted in the history of Malonno. In the twentieth century, numerous local women engaged in glove production on behalf of the Alpina company, a wool yarn firm operating in the Bergamo area. The required wool was transported by a woman appointed by the company to Malonno, where she coordinated a group of women involved in making gloves. These were subsequently returned to the local contact and then resold to the company. Codadilana revives and revitalizes this tradition, collaborating with Bosio to obtain high-quality Bergamo wool and also using its own wool. However, there are also experiments in progress using only colored Codadilana wool. The yarn used consists of two threads, as an increase in the number of threads would result in an increase in thickness and size of the mittens, making them excessive. The processing involves the use of knitting needles with the four-needle technique, giving the mittens their characteristic shape. The decorations (fig. 1) are inspired by traditional gunats typical of the area and are crafted by a woman who continues to produce these ornaments, thus perpetuating a practice rooted in local history. The collaboration between Codadilana and local artisans highlights the continuity and adaptation of these ancient techniques in the contemporary context.

Notes:

Decorations:

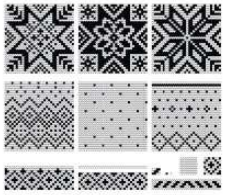


fig. 1

A04

ALPTEXTYLES Index

category: tools

Title: Manual loom

Dimensions: 2 x 1,8 x 1,2 m

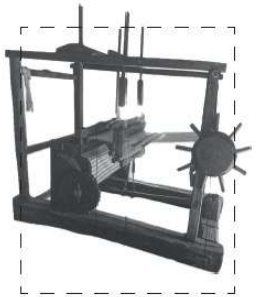
Material: Wood, Wrought iron

Weave: plain

Guardian: Gina Melotti, Gemma Zanardi

Source: Ca'Mon

Site: Monno, Brescia



Description:

The manual loom is an artisanal tool rooted in ancient textile principles passed down through generations. The loom model utilized employs two pedals that actuate the heddles in corresponding numbers. The heddles are small frames with central rings (Fig. 1) through which the warp threads pass. The shuttle, or bobbin, alternates between the two sets of warp threads, creating a perpendicular interweaving of warp and weft threads, resulting in the simplest fabric, known as canvas (Fig. 2). Weaving occurs by alternating pressure on the pedals and firmly securing the weave through the movement of the reed pulled towards oneself. The produced fabric is then gradually wound onto a horizontal cylinder located near the seated weaver. Originally, this weaving technique was employed to produce linen or hemp fabric for domestic purposes. However, with the cessation of domestic craftsmanship during the war, Monno's weavers reinvented themselves in the production of carpets known as "pezzotti." Despite the limitation of the two-heddle loom in creating intricate designs, it still provides a wide range of creative possibilities. The warp, crafted from thin cotton, linen, or synthetic thread, forms the robust structure of the fabric, while the weft allows for creativity in both color and design.

Processing Phases: 1. Warping; 2. Loom Loading (Sleying); 3. Weaving.

Notes:

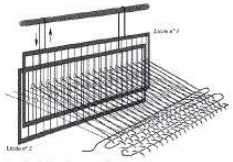


fig. 1

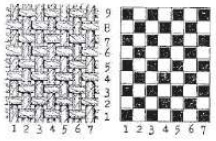


fig. 2

E38

Illustrative elements from the AlpTextyles mapping activity during the Val Camonica pilot (artefact/product, left; tool, right).

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ALPTEXTYLES Index

category: techniques

Title: Warping

Tools: Warping machine

Processing: Pezzotto

Guardian: Gina Melotti, Gemma Zanardi

Material: Variables

Location: Monno, Brescia

Description:

The "warping" process represents the preliminary phase in textile production that precedes the use of the manual loom. This operation involves the use of a wooden beam called the "stèla," equipped with holes through which one thread at a time (made of hemp, flax, or wool) is drawn. Subsequently, the threads are passed from one support to another on the warping machine without overlapping.
For the creation of carpets, cotton is used, purchased in forty-five skeins, each weighing a total of 4.58 grams. This cotton is unraveled using a "atrio" wound in twenty-four "gonitolti" and passed through the "stèla," a slat with 20 holes, positioned on the warping mill, which can be either mobile or wall-mounted.
Through the manual operation called "cèrnere," the braided skein is formed, ready to be loaded onto the loom. At the end of this complex series of actions, 32 "portate" are formed, each consisting of 40 threads, for a total of 1280 warp threads to be laid. This detailed process underscores the precision required in the preparation of the warp, fundamental for the success of the weaving process and the creation of the desired carpets.

Notes:



C22

sources:
1. Melotti, Germano. *La Natura Indosso*, 2021. http://books.google.ie/books?id=eQizwEACAAJ&dq=8894871185&hl=&cd=1&source=gbs_api.
2. Maraea.it. "Il Pezzotto Di Monno - Maraea.it," February 6, 2021. https://maraea.it/il-pezzotto-di-monno/.

ALPTEXTYLES Index

category: techniques

Title: Sorting

Tools: -

Processing: Wool

Guardian: Codadilana

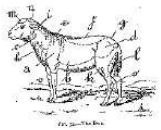
Material: Raw wool

Location: Malonno, Brescia

Description:

The initial phase of Codadilana's textile supply chain begins with the collection of wool from shepherds, who sometimes do not follow the optimal collection procedure. The wool, obtained from sheep shearing, undergoes a process of sorting and selection by Codadilana, distinguishing between the longer and finer wool and the darker and lighter colors. The finer wool comes from the upper part of the neck and back to the mid-ribs, while the coarser wool is extracted from the belly and neck. The thus divided wool is subsequently stored in large sacks, destined for the subsequent cleaning phase. The goal is to reach a quantity of one thousand kilograms, which will be later shipped to Austria for the washing process. After washing, a portion of the wool is spun for the production of items like socks, while another portion is used in the creation of felted wool.

Notes:



The finest and best wool from the fleece is that of the shoulders, a. Following in order of merit are the wool from the hips, b, the sides of the neck, c, and the flanks, d, which constitute the best parts of the fleece. Lower grades are obtained from the withers, e, the saddle, f, the rump, g, the throat and chest, h, the upper part of the neck, i, the thighs, k, the base of the tail and buttocks, l, the head, m, and the hides, o.

C24

sources:
1. MaciLit Valle Camonica. "La Raccolta Della Lana 2021 - MaciLit Valle Camonica," May 12, 2021. https://macil.it/raccolta-lana-valle-camonica/.

Illustrative elements from the AlpTextyles mapping activity during the Val Camonica pilot (techniques).

Replicable takeaway

- Map **skills and processes**, not only artefacts;
- Format documentation so it can circulate beyond heritage institutions;
- Treat mapping as the *first step of an innovation process*, not as an end in itself.

Regione Lombardia has produced several complementary documents and visual tools linked to this mapping work, which can serve as concrete references for similar initiatives, available on the AlpTextyles website.

HOW-TO
Enable designers to learn Alpine heritage without clichés

The problem
External designers often approach Alpine heritage through romantic or stereotypical representations of mountain life, leading to superficial or misleading products.

What was done in Val Camonica and other pilot areas
Designers involved in the pilot were required to engage in **situated learning before design**. This included:

- field immersion and study visits;
- direct interaction with local practitioners;
- exposure to real working conditions and constraints;
- analysis of documented techniques before any creative proposal.

Design briefs were grounded in **material and functional realities** rather than symbolic inspiration. Designers were asked to justify their choices in relation to documented skills, materials, and uses, rather than aesthetic references alone.

This approach shaped the *Montagna Addosso* collection, where garments and accessories avoided folkloric motifs and instead expressed continuity through texture, construction logic, and material presence.

Replicable takeaway

- Require immersion and learning before design;
- Use documentation as a constraint, not just inspiration;
- Translate heritage into **functional and material parameters**, not decorative motifs.

c. Typical Structure of a Study Visit

1	Introduction and welcome	- Welcome of the participants. - Introduction to local culture and practices.
2	Exploration of the Local Context	- Guided tour of areas of cultural, historical and productive interest. - Introduction to local artisan and textile practices.
3	Practical workshops	- Practical training sessions on specific techniques (e.g. weaving, natural dyeing). - Direct involvement with local artisans and experts.
4	Interactions with Local Actors	- Meetings with artisans, entrepreneurs, institutions and researchers. - Discussion on the challenges and opportunities of the sector.
5	Networking session	- Sharing experiences between participants and the local community. - Creating contacts and potential collaborations. - Reflections and closure

Outline of study visits during the AlpTextyles pilots. Author: Designer Francesco Ferrero.
Full report on Study Visits available on the AlpTextyles website.

Report **Study Visit**

to. Itinerary of activities

Workshop Practical

The reception takes place at the Codadilana headquarters, where participants are introduced to the local wool manufacturing process. The morning continues with a practical workshop on natural dyes and wool sorting, offering an overview of the valley's traditional techniques and the role of queues in the local wool supply chain.

03.

Report of Study Visit in Valcamonica (part). Author: Designer Francesco Ferrero.
Full report on Study Visits available on the AlpTextyles website.

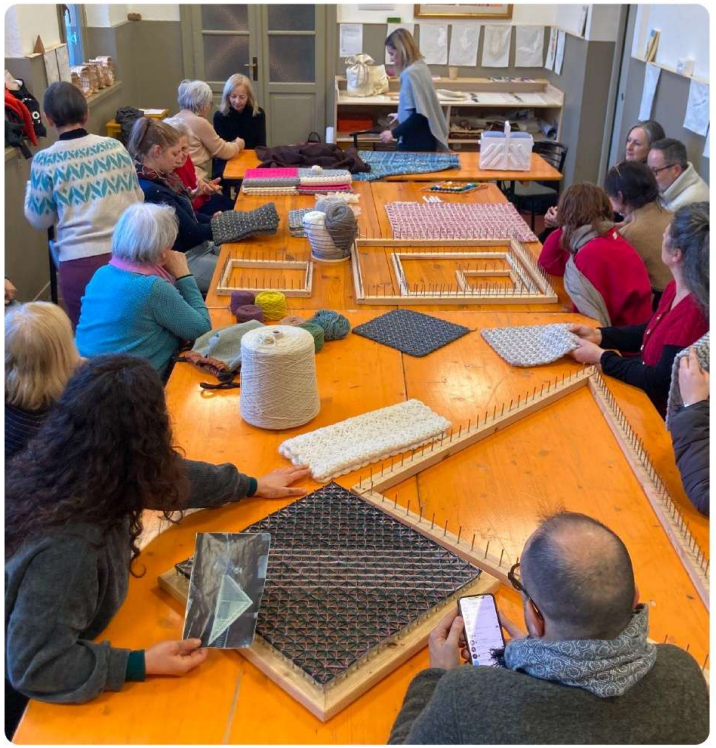
Report **Study Visit**

to. Itinerary of activities

Exploration of the Local Context

Visit to Ca'Mon for a meeting with the Donne del Filo collective, a group of women engaged in manual activities at the community center. Participants have the opportunity to explore traditional textile practices in use, such as the use of the loom for the "pezzotto", directly observing the techniques and collective work that keeps these local traditions alive.

03.



Report of Study Visit in Valcamonica. Author: Designer Francesco Ferrero.
Full report on Study Visits available on the AlpTextyles website.

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b. Description of the Actors Involved

The study visit experience involves two key players in the area, both committed to valorising local textile traditions. These realities work to preserve artisanal skills and promote sustainable practices, offering a space for exchange and learning for communities.

Codadilana

Codadilana is an association founded in Malonno in 2012, dedicated to the recovery and valorisation of local wool. Through the collection, processing and promotion of artisanal products, Codadilana aims to preserve the textile traditions of Valle Camonica, supporting pastoralism and local craftsmanship.

https://www.facebook.com/CodadiLana/?locale=it_IT

Ca'Mon

Ca'Mon is a community center for art and crafts located in Monno, in Valle Camonica. The center presents itself as a meeting place and cultural exchange, hosting artists, artisans and residents. Ca'Mon promotes the valorization of traditional knowledge and innovation.

https://centrocamon.it/

Report of Study Visit in Valcamonica. Author: Designer Francesco Ferrero.
Full report on Study Visits available on the AlpTextyles website.

Report **Study Visit**

c. Takeaways

Mastery in Traditional Practices: Acquisition of specific skills in natural dyeing and traditional weaving.

Strengthening Product Quality: Reflections on how artisanal techniques can raise the quality of textile products in terms of aesthetics and durability.

Rediscovery of Traditions and Community Work: Importance of collective and intergenerational activities in maintaining traditions.

Story of the Territory Through Fabrics: Understand how textile heritage can become a means to tell and promote local history.

Development of Documentation Tools: Importance of documenting practices and knowledge to enable their transmission and application in other areas.

03.

Report of Study Visit in Valcamonica. Author: Designer Francesco Ferrero.
Full report on Study Visits available on the AlpTextyles website.

HOW-TO
Connect safeguarding and product development through translation

The problem
Safeguarding initiatives often stop at documentation and inventorying, while product development often proceeds without reference to heritage processes.

Safeguarding and innovation were treated as **two phases of the same process**. Documented techniques informed product experimentation directly. Rather than reproducing historical garments, the design team identified **core transferable elements**, such as:

- types of stitches or weaves;
- material thickness and density;
- construction principles linked to durability and use.

These elements were translated into contemporary product typologies, adapted to present-day contexts while maintaining continuity of skills. The result was not replication, but **informed transformation**, in line with the UNESCO notion of living heritage.

Replicable takeaway

- Identify which parts of a practice are transferable across products.
- Accept small adaptations as a condition for keeping skills alive.
- Prototype early to test both material limits and market relevance.

Report **Collection**

a. Context and objectives

The project aims to enhance Codadilana's work through interventions on multiple levels:

1 ..... 2 3

Research and documentation

Mapping raw materials, semi-finished products and production processes available locally, while investigating the poetic, narrative and iconographic value of the world of wool and sheep farming.

Development and design

Create a contemporary collection of artefacts linked to transhumance and the reuse of wool, integrating ethics, sustainability and respect for traditional knowledge in design and production.

Impact on the territory

Promote the involvement and trust of the local community, generating economic and cultural opportunities by promoting an exchange of innovative practices and solutions between realities.

01. **Create a wool valorization system that is sustainable, rooted in the territory and projected towards the future, respecting cultural memory and community dynamics.**

Stages in the «Una Montagna Addosso» product development process.
Full report «Una Montagna Addosso, the Collection» available on the AlpTextyles website.

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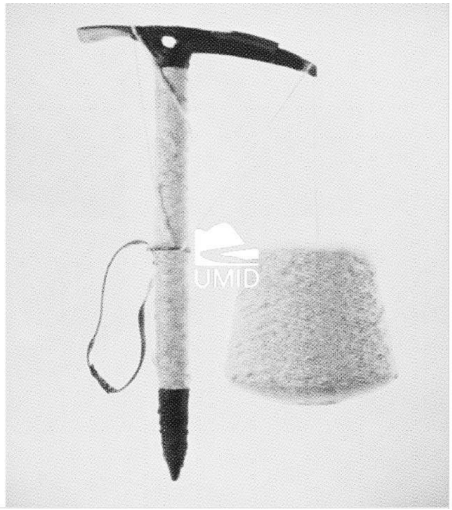
Report **Collection**

c. General concept

It was born from these intentions *Una montagna indosso*, a collection of products developed by Codadilana to celebrate the use of wool in mountain clothing across generations. The collection traces a journey that starts from shepherds, passes through domestic knitting and arrives at modern clothing, valorising a raw material rooted in the territory. Wool, with its extraordinary versatility and universal use, has dressed generations and continues to do so. Today, considered a special waste difficult to dispose of, wearing it becomes not only a gesture of sustainability, but also an act of cultural resistance and reconnection with the roots.

01.



Report **Collection**

c. General concept

Territory identity

- Inspiration from transhumance and the knowledge handed down by shepherds.
- Exploration of traditional clothing and their symbolic meanings.
- Rooted in the culture and landscapes of Valle Camonica and the Alps.

Wool enhancement

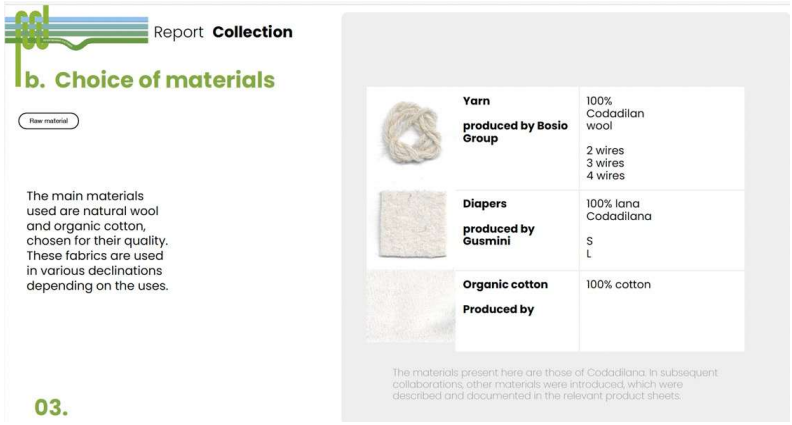
- Wool as a symbol and resource: a fiber that embodies nature, memory and innovation.
- Experimentation with artisanal processes and modern techniques to reimagine its use

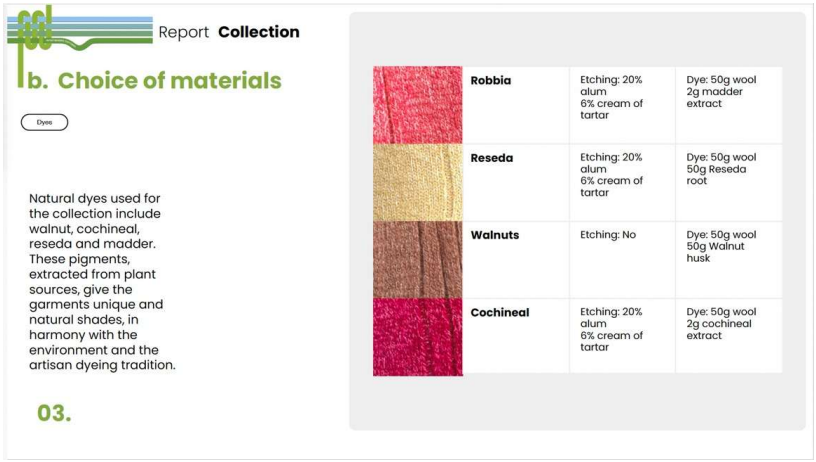
Social and environmental impact

- Support for local communities through practices that respect the custodians of traditional knowledge.
- Promotion of a production cycle that protects the environment and promotes sustainable relationships.

01.

General concept of the «Una Montagna Addosso» collection.
Full report «Una Montagna Addosso, the Collection» available on the AlpTextyles website.





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Steps in the collection development process: choice of materials, prototyping.
Full report «Una Montagna Addosso, the Collection» available on the AlpTextyles website.

Report **Collection**

b. Innovations introduced

The project aims to enhance Codadilana's work through interventions on multiple levels:

1 2 3 4

Items

- Fusion of functionality and artisanal heritage
- Adapted for practical and contemporary use

Materials

- Synergistic use of natural materials
- Experiments on natural dyes

Production Processes

- Collaborations with local artisans
- Experimentation with modern knitting techniques

Identity

- Definition of a coordinated identity
- construction of a new storytelling

06. **Creating a constantly evolving collection that not only responds to current needs, but is able to evolve into the future, drawing strength from craftsmanship and experimentation.**

Designer and report author Francesco Ferrero reflections on innovation introduced through the pilot.
Full report «Una Montagna Addosso, the Collection» available on the AlpTextyles website.

UMID – Una Montagna Indosso
Francesco Ferrero with Regione Lombardia

Garments as guide, form, gesture.
Born from a dialogue between **land, labor, and legacy,** the collection retraces the long thread of wool in Alpine life. Conceived by the Codadilana association (IT) as part of a collective research process, designed by Francesco Ferrero, and co-created with **local craftswomen**, UMID utilizes a **hand-woven fabric from Tessitura di Valposchiavo —** paying homage to generations of mountain practices, from shepherds and spinners to contemporary makers. It explores how **vernacular knowledge and traditional techniques can meet new ways of thinking and making**, reactivating wool as both material and cultural resource.

Francesco Ferrero is a multidisciplinary designer working at the intersection of **place-based research and community engagement**.
UMID emerged from his studies in Eco-Social Design at the Free University of Bozen-Bolzano and his current PhD in Design for Cultural Heritage. His practice combines artisanal experimentation with participatory processes, seeking forms of innovation that grow from shared knowledge and rooted, situated practices.

Each piece in the collection is **a distilled essential: a tool for everyday survival shaped by care**, simplicity, and purpose. They embody gestures of protection and resilience, echoing a landscape where beauty and necessity are deeply entwined. Wearing UMID means inhabiting a story in which **the mountain is not a backdrop but a guide —** and wool is more than fabric. **Wool is memory.** It is resistance. It is a **living companion** connecting body, craft, and territory in one continuous gesture.

©Photos: Courtesy of Francesco Ferrero

This printed booklet you are leafing through is the culmination of a year-long effort and the result of extensive research carried out by Codadilana. A journey that moves between the artisanal heritage of the past and the ambition to reactivate a small wool supply chain in Malonno, in Valle Camonica. The project, promoted by Regione Lombardia in collaboration with the Comunità Montana di Valle Camonica within the framework of the European Alpine Space Programme AlpTextyles, focuses on the textile traditions of the territory. Valle Camonica, with its rich history tied to wool processing, pastoralism, and Alpine transhumance, thus becomes the focal point of a path of cultural and productive revitalisation. This commitment takes shape, among other things, in a collection of garments developed in collaboration with a network of local artisans and small manufacturers, using wool sourced through the fleece collection programme promoted by Codadilana.

Production | Archivio di Etnografia e Storia Sociale – Regione Lombardia (IT)
In collaboration with | Comunità Montana di Valle Camonica (IT), Codadilana Association Malonno (IT)

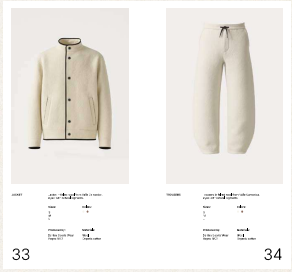
Administrative Officer in charge of the Heritage Unit – General Directorate of Culture | Carmen Ragno

Project Manager | Agostina Lavagnino
Organizational Secretary | Elisabetta Vento
Administrative Secretary | Lise Aline Begalli

Art & Executive Director | Elena Turetti

Concept & Collection Designer | Francesco Ferrero

Textile | 100% Bergamasca sheep from Valle Camonica (IT)



33 34

Each piece was created with local craftswomen and SMEs and embodies the mountain as "a guide — not a backdrop," blending Swiss handwoven fabrics from Val Poschiavo with Lombardy industrial knitting using Bergamasca and Montafon Stone Sheep wools.

@ AlpTextyles at Milano Unica 2025.

AlpTextyles
INTERTWINING CULTURES
SCRAPBOOK

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Source: AlpTextyles (2025), Young designers' Collection Scrapbook. Available on the AlpTextyles website.

HOW-TO
Build a local wool business model starting from a local resource

The problem
Local wool is often perceived as economically unviable due to its heterogeneity, limited volumes, and lack of processing infrastructure.

What was done in Val Camonica
The pilot reframed wool as a **territorial resource whose value lies in coherence rather than scale**.
Business logic focused on:

- small series and semi-finished products;
- uses consistent with fibre properties;
- short and transparent supply chains;
- involvement of shepherds as active economic actors, including early-stage sorting.

Rather than competing with global wool markets, the model emphasized differentiation, traceability, and alignment between material, product, and use.

Replicable takeaway

- Start from what local wool can do, not what it cannot.
- Prioritize semi-finished products and niche applications.
- Build value through coherence and transparency, not volume.

Conclusion

The Val Camonica pilot demonstrates that heritage-sensitive wool innovation can rely on **methodical sequencing**:

- mapping skills with future use in mind;
- enabling designers to learn rather than project their a priori views;
- translating documented practices into products;
- grounding business models in material realities.

This sequence is **highly transferable** and provides a concrete reference for other Alpine regions seeking to mobilize wool as a circular and culturally grounded resource.

Readers interested in replicating this approach are encouraged to consult the additional Regione Lombardia materials linked to this pilot, which provide detailed methodological guidance, visual documentation, and design outcomes.

3.3 The Alpine Wool Library: making material diversity visible and usable

The **Alpine Wool Library**, developed by **emlyon business school** in collaboration with **Fibershed DACH**, was conceived as an experimental and pedagogical device to address a recurrent obstacle in Alpine wool valorization: the **systematic devaluation of local wool due to its heterogeneity and misalignment with dominant industrial standards**.

The Library is a material knowledge infrastructure designed to make **Alpine wool diversity visible, comparable, and usable** for product development. It was conceived as a **working tool** for designers, SMEs, craftspeople, and business support organizations.

The Wool Library brings together **physical samples of wool from six Alpine sheep breeds**, selected to reflect the diversity of fibre qualities, territorial contexts, and valorization challenges encountered across the Alpine arc. For each breed, the Library combines **material samples, technical information, processing experiments, and performance testing**, allowing users to engage directly with the fibres and to understand both their potential and their limits.

The Alpine Wool Library showcase at Milano Unica.

Source: AlpTextyles Milano Unica 2025 Scrapbook

The six breeds documented in the Library include:

- **Bergamasca sheep** (Italy);
- **Engadin sheep** (Switzerland);
- **Jezersko–Solčava sheep** (Slovenia);
- **South German Merino** (Germany);
- **Merino d'Arles** (France);
- **Montafon Stone sheep** (Austria).

These breeds were selected as **contrasting cases**, illustrating the wide range of Alpine wool characteristics, from relatively fine Merino-derived fibres to coarser and more heterogeneous wools traditionally used for robust and functional textiles.

For each breed, the Library documents:

- the **territorial and pastoral context** (geography, scale of farming, organization of breeders);
- the **material characteristics of the fleece** (fibre diameter ranges, length, crimp, heterogeneity);
- the **traditional and historical uses** associated with that wool;
- the **constraints and opportunities** for contemporary valorization.

Alpine Wool Library

Altextyles x Alix Arto, Emma Casella, Nina Conrad from Fibershed DACH

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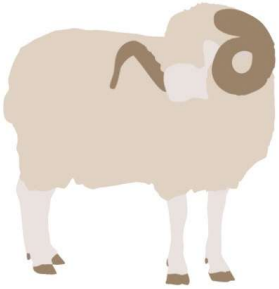
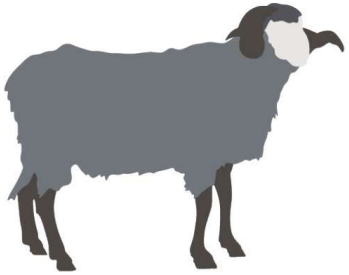
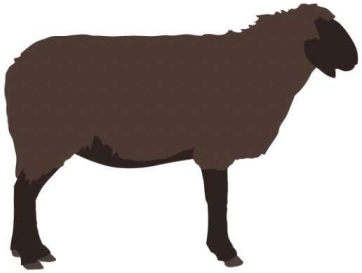
Pecora Bergamasca, Italy



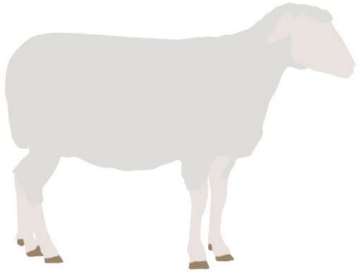
Merino d'Arles, France



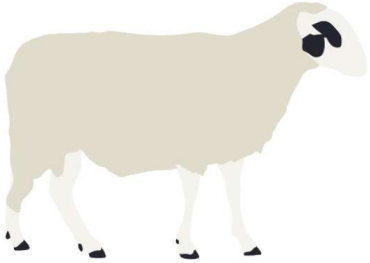
Montafoner Steinschaf, Austria



Engadinerschaf, Switzerland



Merinolandschaf , Germany



Jezersko–Solčava , Slovenia

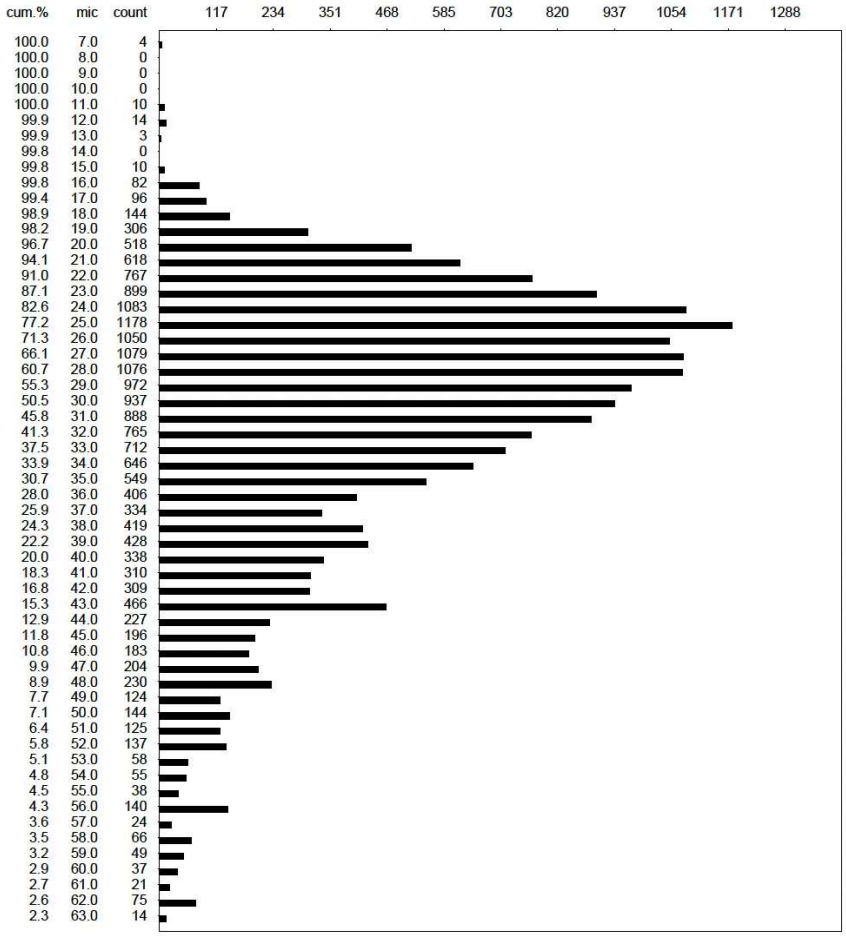
Beyond descriptive documentation, a key component of the Library is the **technical testing of fibres**, carried out to assess how Alpine wools behave under different transformation and use conditions. Technical data was complemented with knowledge developed working with the fibres through a wide range of competencies. Thanks to this, it was possible to bridge heritage knowledge and contemporary product development, developing **operational information** for industrial use.

Depending on the breed and fibre characteristics, testing included:

- assessment of **spinnability** and yarn regularity;
- evaluation of **felting behaviour**, density, and cohesion;
- testing of **knitted and woven samples** to observe elasticity, resistance, and surface qualities.

These tests were intended to **identify realistic application domains**, clarify limits, and inform design and value-chain decisions. In doing so, technical testing complements craft knowledge and sensorial evaluation, providing a shared reference point for dialogue between breeders, craftspeople, designers, and industrial actors.

Example of OFDA fiber test (Bergamasca sheep wool)



cum.%	mic	count
100.0	7.0	4
100.0	8.0	0
100.0	9.0	0
100.0	10.0	0
100.0	11.0	10
99.9	12.0	14
99.9	13.0	3
99.8	14.0	0
99.8	15.0	10
99.8	16.0	82
99.4	17.0	96
98.9	18.0	144
98.2	19.0	306
96.7	20.0	518
94.1	21.0	618
91.0	22.0	767
87.1	23.0	899
82.6	24.0	1083
77.2	25.0	1178
71.3	26.0	1050
66.1	27.0	1079
60.7	28.0	1076
55.3	29.0	972
50.5	30.0	937
45.8	31.0	888
41.3	32.0	765
37.5	33.0	712
33.9	34.0	646
30.7	35.0	549
28.0	36.0	406
25.9	37.0	334
24.3	38.0	419
22.2	39.0	428
20.0	40.0	338
18.3	41.0	310
16.8	42.0	309
15.3	43.0	466
12.9	44.0	227
11.8	45.0	196
10.8	46.0	183
9.9	47.0	204
8.9	48.0	230
7.7	49.0	124
7.1	50.0	144
6.4	51.0	125
5.8	52.0	137
5.1	53.0	58
4.8	54.0	55
4.5	55.0	38
4.3	56.0	140
3.6	57.0	24
3.5	58.0	66
3.2	59.0	49
2.9	60.0	37
2.7	61.0	21
2.6	62.0	75
2.3	63.0	14

Date	: 09Apr25	Diam	= 32.32[10.94] um
Sample ID	: Italian wool unwashed(Av3)	CV	= 33.85 %
Description	: white	CEM	= 20.94 um
Lot/Client	: 336	CF	= 54.23 %
Operator	: ca	Spin fineness	= 35.46
		Sample size	= 20001
OFDA2302:5.410 Cal: D = 4.7954*WH -2.37		Curve	= 44.21[41.95] deg/mm
Filename: Fibershed Wool Analysis April 2025.mes			

Source: Spycher Handwerk

By combining **breed-level documentation, processing experiments, and technical testing**, the Alpine Wool Library allows users to move back and forth between **material properties, transformation techniques, and potential product uses**. This integrated approach addresses a critical bottleneck in heritage-sensitive innovation: the lack of shared, evidence-based understanding of non-standard fibres.

The Library was designed as a **replicable format** that can be adapted to different regional and national contexts.

Detailed breed fiches, processing protocols, and technical testing results are available in the AlpTextyles deliverables produced by emlyon business school within WP2, available on the AlpTextyles website, which readers are encouraged to consult to adapt this approach to their own territorial contexts.

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HOW-TO
Develop a wool library

The problem

Local and regional wools are often excluded from valorization because their heterogeneity does not fit dominant industrial norms. This exclusion happens early, before fibres are explored in relation to their actual properties and potential uses.

What the Alpine Wool Library shows

Heterogeneity can become a resource if it is **made visible, interpretable, and experiential**. Rather than simplifying diversity, the Library builds conditions for actors to *work with it*.

Concrete steps

- ***Inventory locally available breeds:*** Start by identifying sheep breeds present in the territory and the volumes of wool they produce. This does not require exhaustive coverage: even a small number of breeds can already generate positive outcomes.
- ***Gather information on heritage uses and practices:*** For each breed, document how the wool was used (garments, blankets, felting, technical uses), historically and surviving local uses. This anchors material exploration in local knowledge.

- ***Inventory locally available breeds:*** Start by identifying sheep breeds present in the territory and the volumes of wool they produce. This does not require exhaustive coverage: even a small number of breeds can already generate positive outcomes.
- ***Combine technical testing with qualitative experimentation:*** Subject fibres to basic technical tests (spinnability, comfort, resistance), but complement these with experimentation carried out with a **network of craftspeople, semi-industrial and industrial processors**. This combination allows quantitative data to be enriched with qualitative insight from multiple expertises.
- ***Develop material samples across processing modes:*** Produce samples using different transformation logics (spinning, knitting, weaving, needle felting, wet felting). These samples function as *material arguments*, helping designers, craftpeople and industrial users imagine applications in clothing, home textiles, or interior design.
- ***Use the library as a tool for aesthetic inspiration as well as technical learning:*** The tactile, visual, and sensorial qualities of material libraries can "seduce" designers, manufacturers, and craftpeople, creating interest where abstract data would not.
- ***Showcase the library in targeted contexts:*** Present the library during textile fairs, interior design fairs, professional events, or curated workshops. This situates local wool within contemporary professional arenas rather than heritage-only settings.
- ***Make the library consultable and lendable:*** Allow designers, SMEs, and institutions to consult or temporarily borrow samples. Circulation increases impact and supports experimentation beyond the original project.
- ***Start small and expand progressively:*** A library does not need to be complete from the outset. New breeds, samples, and tests can be added over time, following interest and available resources.

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Alpine Wool Library: Woven, knit, and felted samples made with wool from 6 Alpine sheep breeds

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HOW-TO

Add value-chain information to material libraries to support early feasibility decisions and reduce innovation risk

The problem

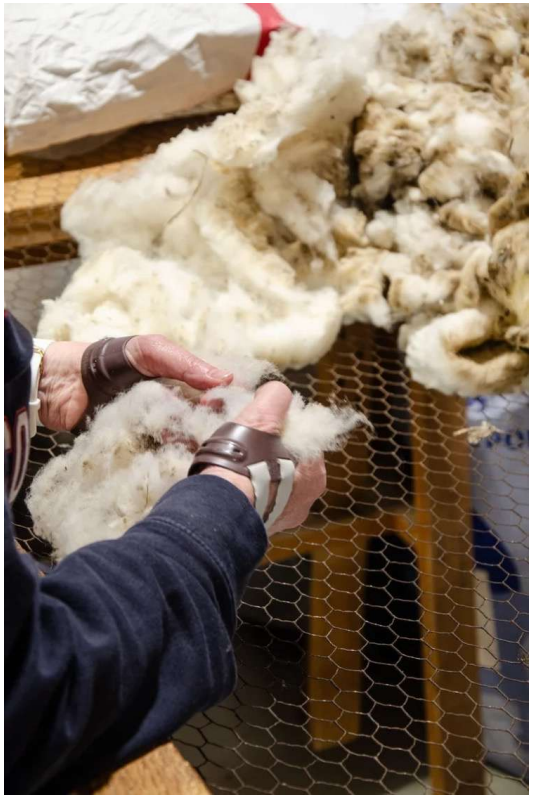
Wool-based innovation initiatives often fail for two opposite reasons. In some cases, feasibility problems emerge too late, after time and resources have already been invested. In other cases, projects are abandoned prematurely because using regional wool is perceived as “not feasible” for contemporary products, based on assumptions rather than evidence.

What the Alpine Wool Library shows

Material libraries become significantly more powerful when they integrate **value-chain information alongside fibre samples**. This transforms them into early diagnostic tools rather than inspirational showcases alone. By reducing both late-stage failure and premature abandonment, this approach encourages **realistic experimentation with existing resources**, minimizing wasted effort and avoiding unnecessary substitution with imported materials. And by making value-chain configurations visible early, actors can prioritize **shorter, geographically contained chains**.

Concrete steps

- ***Link each wool to its points of availability:*** For each breed or wool type, indicate where the wool is available (farmers, cooperatives, wool collectors), in what approximate quantities, and at what price ranges.
- ***Map processing options by transformation type:*** Specify where the wool can realistically be processed depending on the intended transformation (e.g., washing, spinning, knitting, weaving, needle felting, wet felting). Document what is already possible with local/regional partners. Document also cross-border options.
- ***Use the library to support go / no-go decisions:*** Before committing to a product concept, use the combined material and value-chain information to assess feasibility. This supports informed decisions, whether the outcome is to proceed, adapt the concept, or postpone investment.



Wool sorting (left picture) and scouring (middle) at Laines d'Ici. Wool after washing (right). Pictures taken at Laines d'Ici.

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