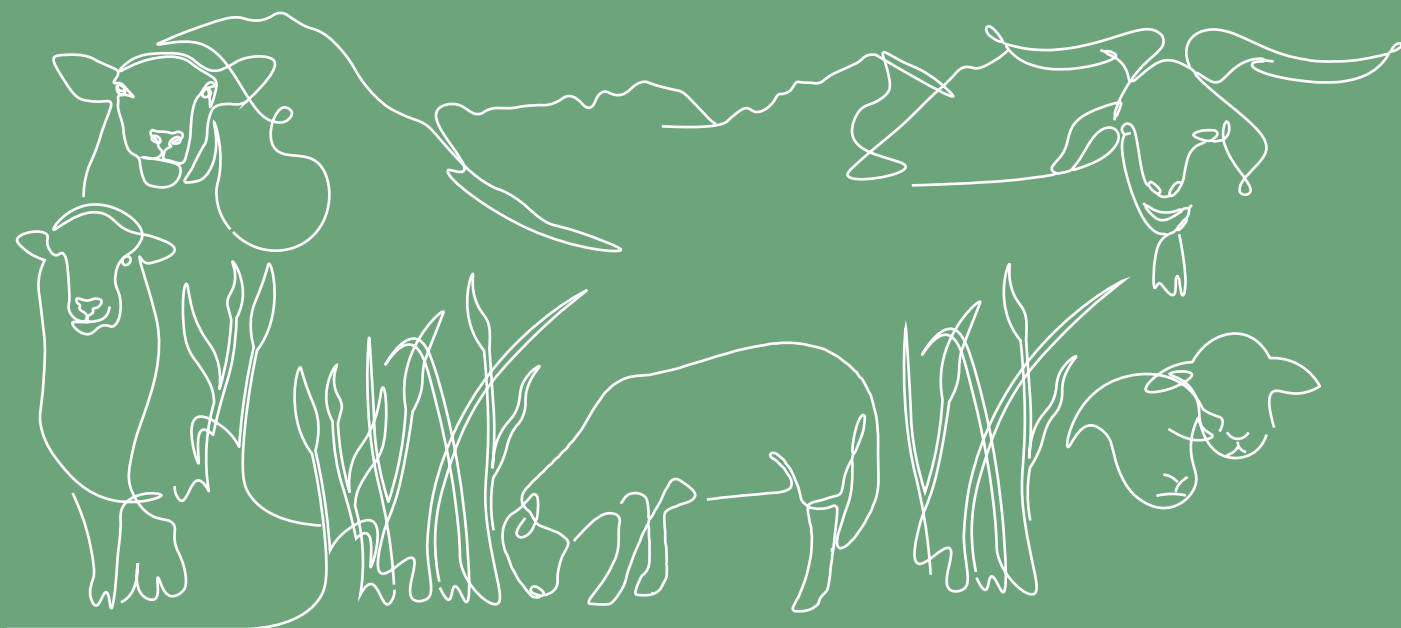


# MAPPING ALPINE WOOL

PRODUCTION NETWORK,  
VALUE CREATION,  
AND FOOTPRINT



# MAPPING ALPINE WOOL

## PRODUCTION NETWORK, VALUE CREATION & FOOTPRINT

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It synthesizes the results of Activity 1.2 (Mapping the current state of Alpine textile value chains) and is part of work package 1 (Mapping textile heritage & circularity in textile Alpine value chains to prepare pilots & solutions).

Erlangen 2024



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# INTRODUCTION

## WOOL IN THE EUROPEAN ALPS

The European Alps are home to a rich cultural heritage of sheep farming. Besides wool, sheep are used for a variety of purposes, including landscape conservation, meat production, milk and cheese. A rich history of craftsmanship in the specific processing of the wool fiber are the basis for an ancient wool processing region (Segard 2009; for more information see Alpine Textile Heritage, online: <https://www.alpine-space.eu/project/alptextyles/>). As a result, this has led to a variety of breeds (cp. Tab. 2 in the annex) and vital and robust regional value chains have developed in several Alpine countries in history.

With the upcoming industrialization in the 19th and 20th century and the peak of globalization in the late 20th century, the shift to fast fashion and a high degree of fragmentation in global textile production disrupted regional value chains (Sacchetti and Tomlinson 2006; Webber 2000). Industrial production favored large amounts of wool with homogenous quality from farms in, e.g. Australia, Argentina, New Zealand, South Africa, and China, where the purpose of sheep farming is only wool. This pushed European textile manufacturers to change their focus and sourcing practices. Consequently, demand for regional Alpine wool declined significantly and so did the prices for raw wool. Additionally, globalization fueled price competition at all stages of production, leading to the relocation of most of Europe's processing and manufacturing industry to low-wage countries.

In response, most of the Alpine wool was now wasted (burned or buried), and only a minor share was used for regional or local production. Northern Italian producers shifted to a higher value market segment by sourcing global qualities of wool. Other regions were challenged by this increased competition, leaving a void in the Alpine wool industry. The resulting need for revitalization has attracted the attention of European economic development programs.



The commented mappings at hand highlight the current situation in the Alpine area from different points of view. It presents a set of cartographic maps (Figure 4, Figure 5), schematic mappings (Figure 6, Figure 7, Figure 8, Figure 9, and Figure 10) and condensed commentaries. The focus is on the Alpine wool sector zooming in the production network, value creation and environmental footprint issues.

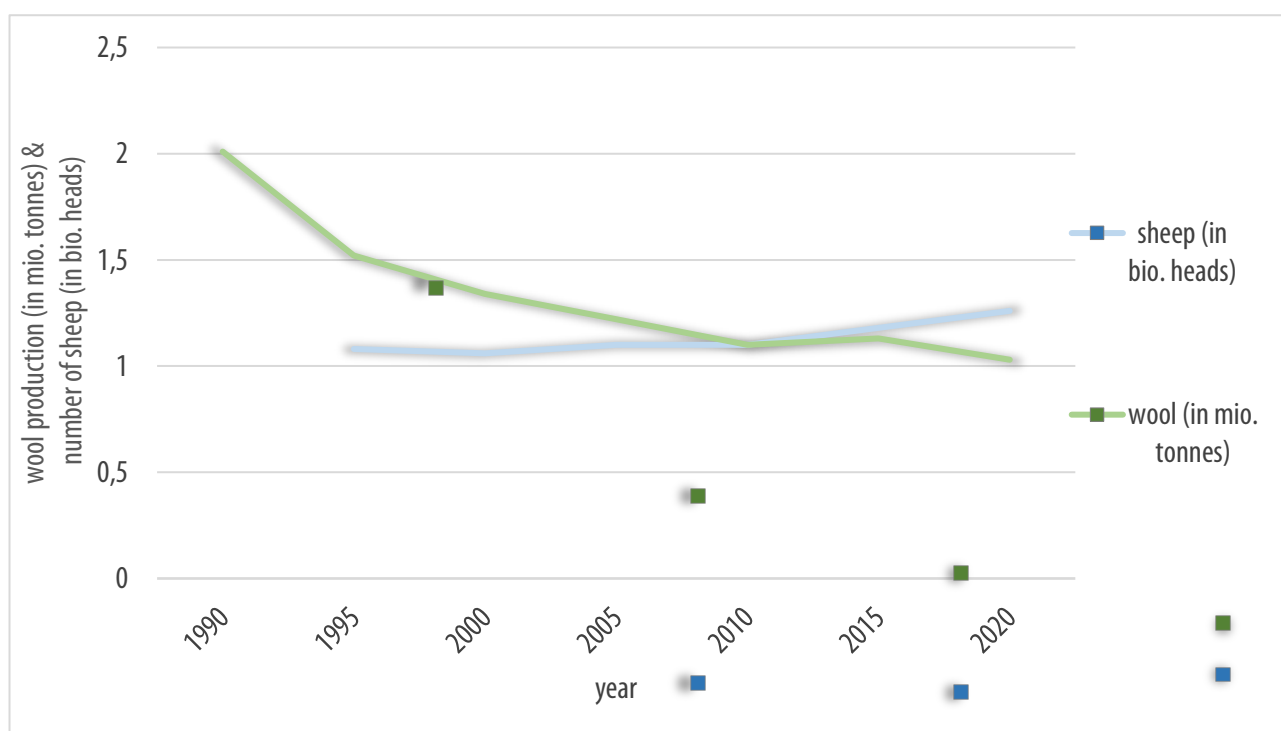
The underlying methodology is a two-step approach. First, secondary information was collected from statistical databases and from sector reports. These information are compiled in form of draft mappings. Second, these drafts were validated and further developed via expert interviews. The involved experts are selected for their sector expertise and not as representatives of individual companies (see Table 1 in the annex). This approach ensures comprehensive and reliable results in a differentiated way, serving as analytical base for the pilot and implementation phases of the project.

The Alps, here defined as the Interreg Alpine space program, cover 42 NUTS-2 regions in Austria, eastern France, Liechtenstein, northern Italy, Slovenia, southern Germany and Switzerland.



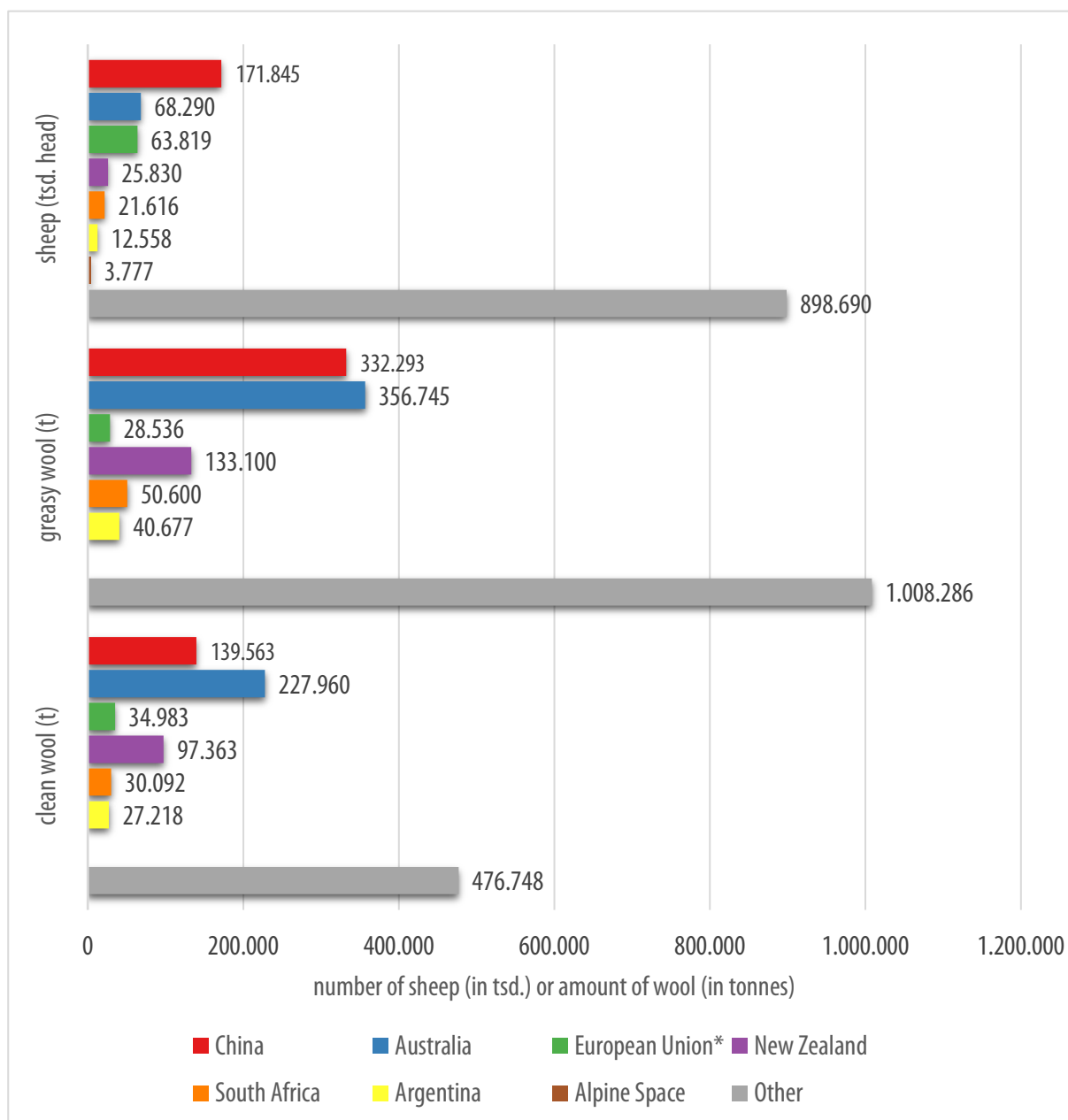
## WOOL IN THE GLOBAL CONTEXT

According to the International Wool Textile Organization (IWTO) and the European Statistical Office (Eurostat), the number of sheep worldwide remains fairly stable at over 1 billion animals, with a moderate increase. In contrast, the quantity of clean wool produced worldwide is decreasing (see Figure 1). This is closely related to the continuing development of synthetic fibers and the associated synthetic textile production (For more information about the composition of the fiber quantities produced, see the commented mapping on the Alpine textile sector. Available online: <https://www.alpine-space.eu/project/alptextiles/>).



**Figure 1:** Development of the number of sheep and wool production of clean wool (source: IWTO 2021, Eurostat 2024).





**Figure 2:** Global overview of sheep and wool quantities in 2021 (source: IWTO, Eurostat, Prodcom; \*based on Eurostat estimations).





Figure 2 shows the distribution of the total number of sheep and the amount of greasy (wool after shearing) and clean wool (wool after first processing steps) worldwide. China has the highest numbers of sheep, followed by Australia and the European Union. Wool from sheep is a natural product with different qualities depending on the purpose of breeding. In particular, the diameter and length of the fibers, as well as the coloration, determine the future processing options of the wool. There are well over a hundred different breeds worldwide (IWTO 2021). Even in the Alpine region, more than 80 different breeds have been identified (see Table 2 in the Annex).

While in Australia, New Zealand, Argentina and South Africa, the Merino breed is dominant for fine wool, in other countries wool is a by-product of meat, milk and cheese production. These quality differences result in a highly competitive market with strong price differences.

China produces a relatively high amount of greasy wool but only about 40% is converted into clean wool. In contrast, Australia, New Zealand, South Africa, and Argentina are more focused on clean wool production with 60% to 75%. This clean wool is needed for the industrial production of clothing, but also for home textiles or alternative uses of wool (e.g. insulation).

The European Union, with a comparatively high number of sheep, has relatively low figures for wool production. This is surprising because most sheep breeds, with the exception of a few, need to be sheared once or twice a year. Globalization and the associated outsourcing of production to low-wage countries have led to farmers burning or wasting their wool instead of using it for economic purposes.

This development is reflected in the data, but has also consequences that are not obvious at first glance. The loss of knowledge and the fall in prices for European farmers' wool are just two of them. In particular, price competition and minimum quantities necessary for industrial market entry led to a situation in Europe where wool production becomes economically unreasonable as a main income source.



In addition to the quality and price competition in the global wool market, further developments increase the pressure on farmers. Beside wool quality, the availability of similar wool thresholds and certification requirements become increasingly dynamic. Figure 3 shows the share of preferred sheep wool in the total clean wool market. So far, only 3% of the wool is labeled with standards such as the Responsible Wool Standard (RWS). However, as the figures from 2018 to 2020 indicate, there is a strong increase in the number of farms and processing sites certified with the RWS.



**Figure 3:** Preferred sheep wool and RWS certification (source: textile exchange based on IWTO market information 2021).

This is a positive development in terms of sustainability and animal health. In particular, it is important to prevent that animals are subject to the practice of mulesing<sup>1</sup>. However, it is often impossible for farmers and processing plants, especially SMEs with part-time production, to cover the costs of certification. In the EU and the Alpine region, these certifications are often a barrier to global market access. This is an issue for European businesses as they already have to fulfil European animal welfare law (and often organic livestock farming regulations) that are quite strict. Covering the costs for several certification types can be difficult.



## METHODOLOGY & DATA

The underlying methodology is a two-step research approach as describes earlier. First, secondary information is collected from statistical databases and from sector reports. This information is compiled in form of draft mappings. Second, these drafts are validated and further developed via expert interviews. The involved experts are selected for their sector expertise and not as representatives of individual companies. This approach ensures comprehensive and reliable results in a differentiated way, serving as analytical base for the pilot and implementation phases of the project.

The data used for the draft mapping of Figure 7 and also the maps in Figure 4 and Figure 5 are from Eurostat. The information to draft the mappings in Figure 6, Figure 8, Figure 10, and Figure 11 are from sector reports. All mappings in this report were validated and adapted via expert interviews.

To get further information about the methodology, please refer to the following publications: Bertram, Chilla and Wilhelm 2021; Wilhelm and Chilla 2023.



# MAPPING REGIONAL DATA PERSPECTIVES ON ALPINE WOOL

Figure 4 shows the development of the number of sheep over time. The data is from Eurostat, the statistical office of the European Union. The green and red gradient color logic indicates the development between 2010 and 2020. Whereas the southern parts (Italy and some parts of France) and also the eastern parts of Austria show a very positive trend, the situation is more negative in other parts. Especially in Bavaria, Switzerland and Slovenia, a clear decline in the number of sheep is obvious. This marks a partly contrary picture compared to the development of farms (see below). This might be a consequence of centralization processes, especially in the Italian fashion sector.

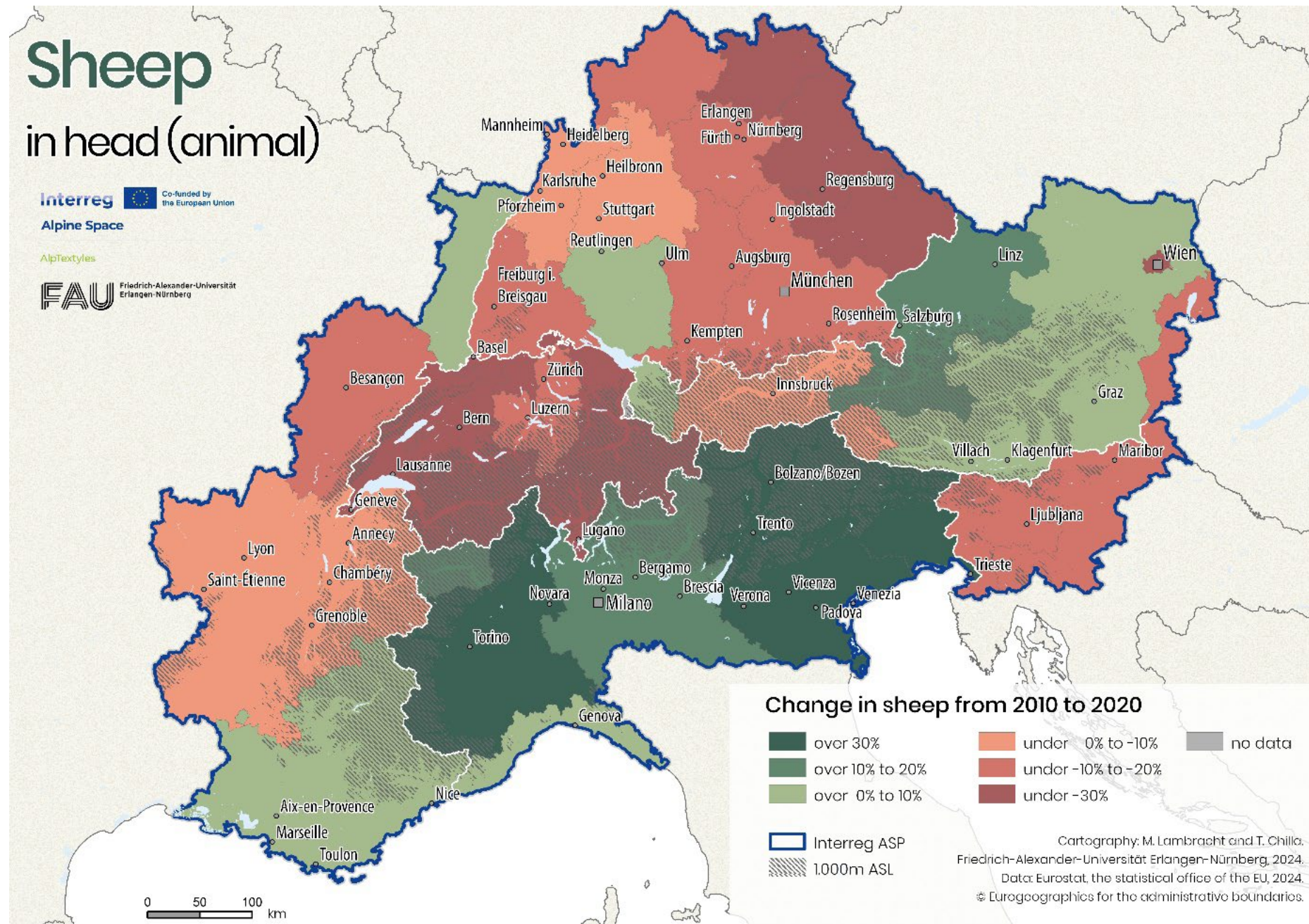
Figure 5 shows the development of the number of farms over time. The color gradient indicates the development between 2010 and 2020. It shows a decline in all of the regions even if there are significant differences. Whereas some parts of the inner-Alpine regions (e.g., South Tyrol, Aosta-Valley, Friuli) show only minor decrease, other parts (e.g., large parts of western France, east Slovenia, east Germany) suffer from immense decline up to 80% loss of farms.

This development can be explained with the lacking perspective for European farmers (low prices for wool, missing subsidies, etc.). The sheep farming associations and also the farmers complain about the current situation and the future perspectives of their profession. The specific Alpine qualities of wool are challenging. Whereas shorter, greasier wool from regional breeds can be used for different types of textiles and insulation, longer, finer wool from overseas breeds is indispensable for the production of clothing and high-fashion.



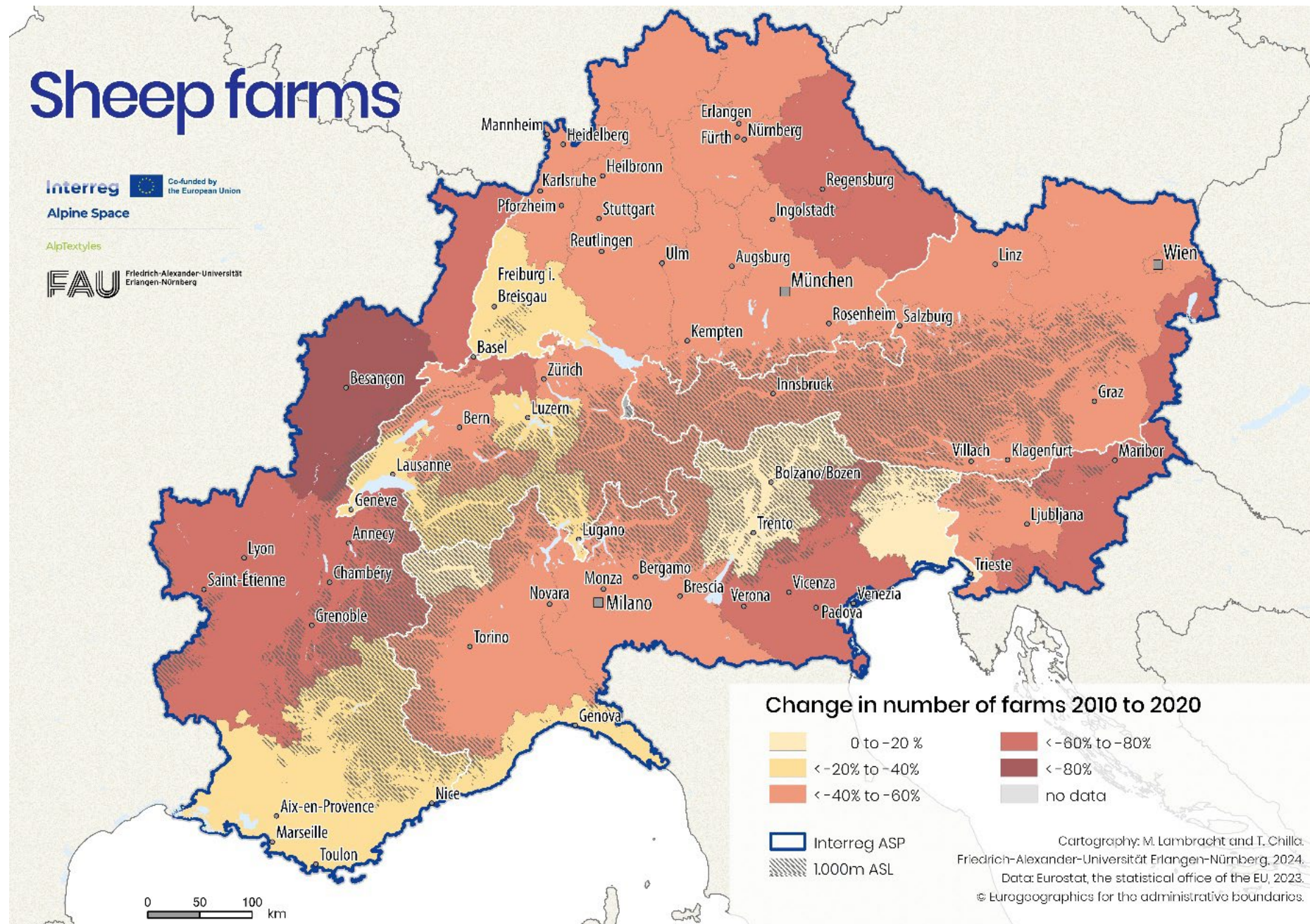


> Figure 4 | Change in number of sheep in the Alpine region from 2010 to 2020.





&gt; Figure 5 | Change in number of sheep farms in the Alpine region from 2010 to 2020.

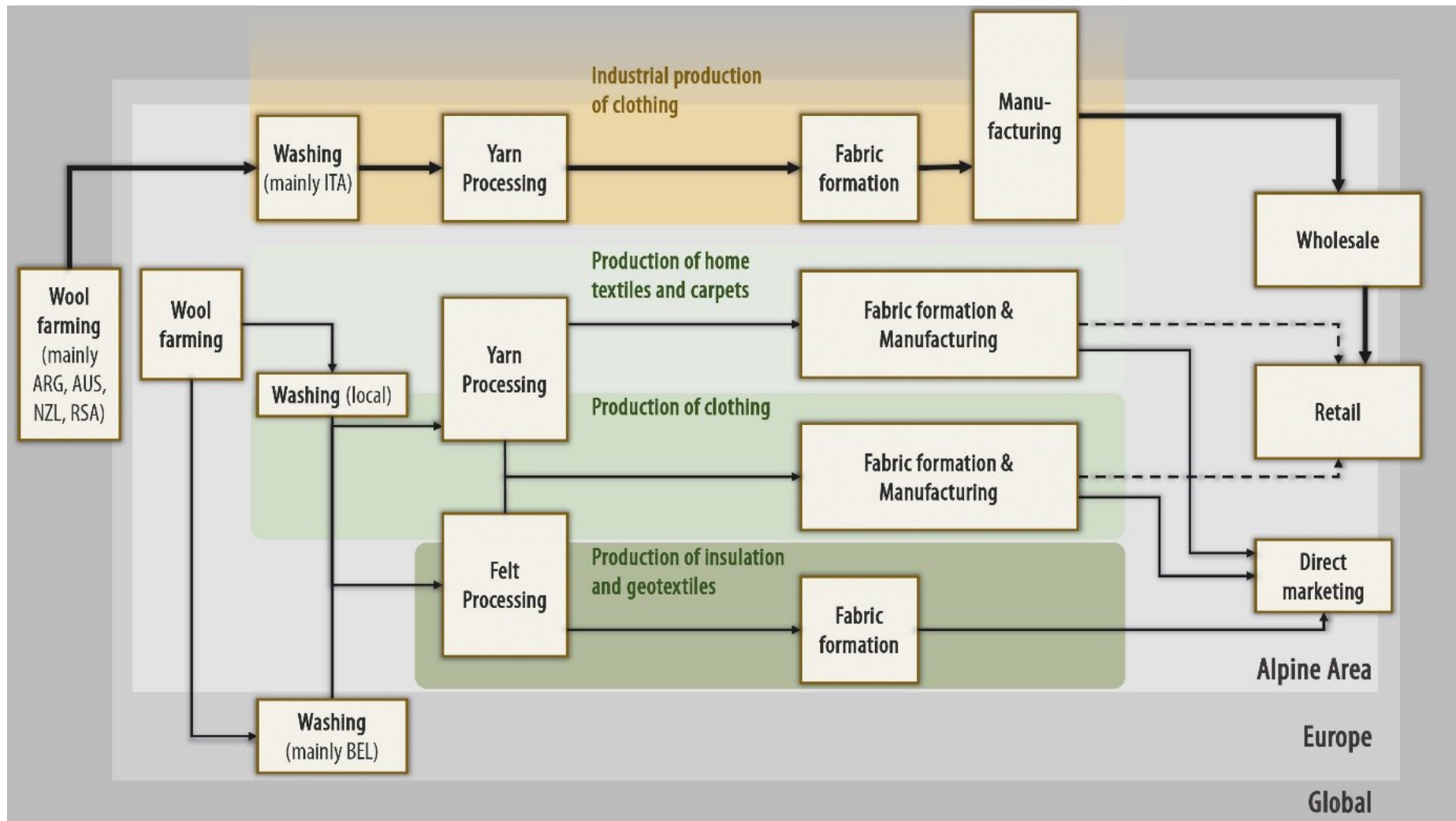


## DESCRIPTION & FINDINGS

The main finding in this mapping can be described as a ‘scale split’ and a ‘product split’. Due to the availability of different wool qualities, two separated value chains have developed. First, the global value chain with a focus on the apparel segment has established strong linkages to the farms in Australia, New Zealand, etc. and low wage production sites in Asia. Second, regional value chains focus on the production of home textiles and carpets, outerwear, insulation and geotextiles. They are strongly embedded in their local and regional contexts and use the raw wool produced in the Alps, if necessary, complemented with wool from the global market.



&gt; Figure 6 | Production network and splits in the European Alps



### Alpine Wool | Production network and splits in the European Alps

#### Actors:

Stage within the production network

#### Splits:

Global **apparel** segment  
 Regional **textile** segment

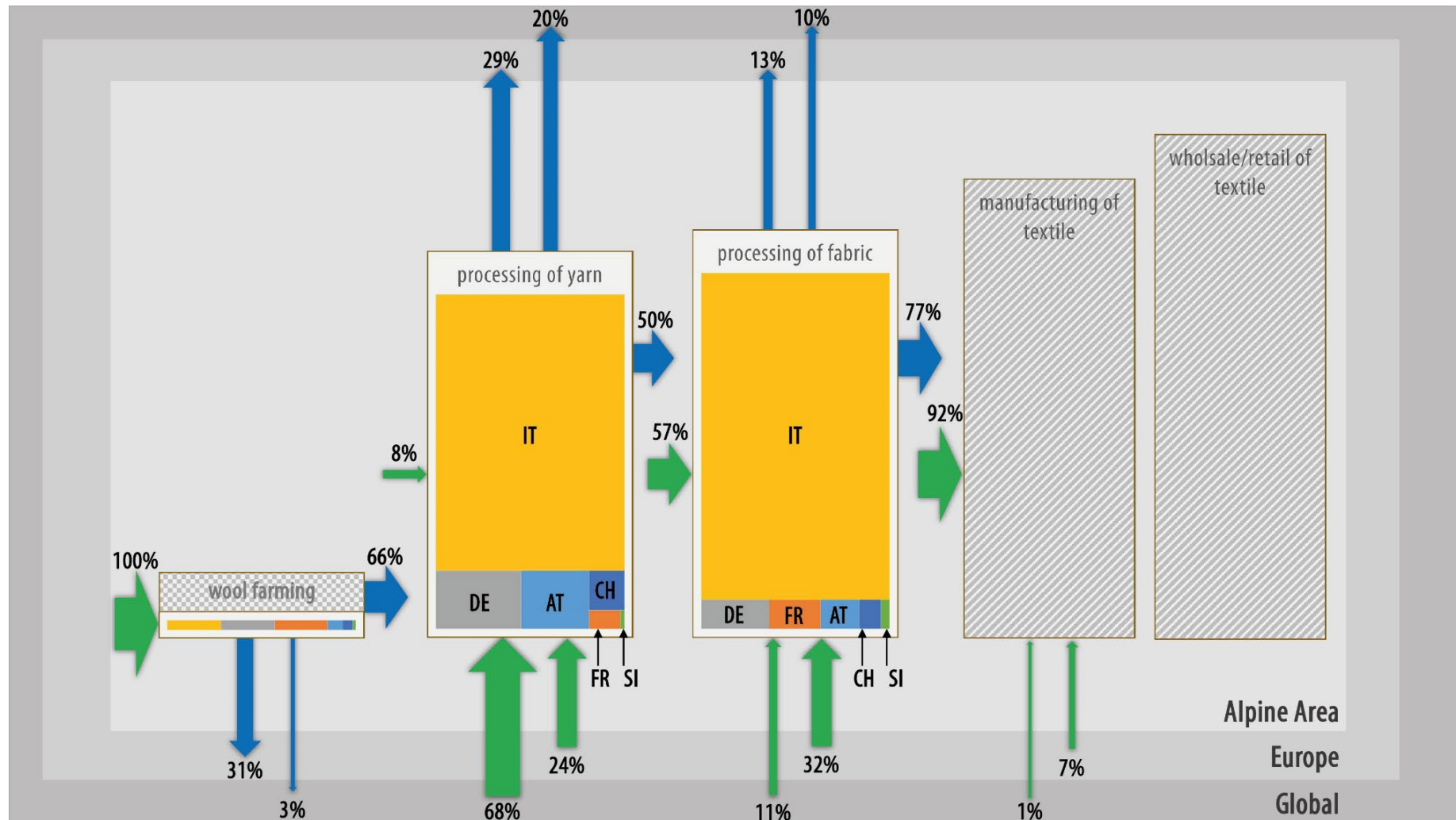
#### Flows:

Flow between different stages  
 Partial flow between different stages  
 Flow with higher value creation





&gt; Figure 7 | Production network and splits in the European Alps



### Alpine Wool | Value creation and flows in the European Alps

Signatures:

- Value creation stage
- Non-clothing use
- No data

Spatial distribution (share of value creation):

- Italy
- Switzerland
- Germany
- France
- Austria
- Slovenia

Flows:

- Inputs
- Outputs

Data: Eurostat and National Statistical Offices 2023, validation via expert interviews from the Interreg Alpine Space Project: AlpTextiles, 2023 & 2024

Concept & Visualisation: M. Lambracht, C. Wilhelm and T. Chilla, Friedrich-Alexander-Universität Erlangen-Nürnberg, 2024.

# MAPPING GOVERNANCE AND POWER RELATIONS

## DESCRIPTION & FINDINGS

Figure 8 shows the governance setting and power relations in the wool sector in the European Alps. The stages within the production network are visualized by colored boxes. Each light-yellow box represents a stage according to the production network (see Figure 7). The blue boxes highlight institutional actors and the green boxes highlight collective actors (e.g. associations or NGOs). Some actors cover different roles, playing an important role in the production network.

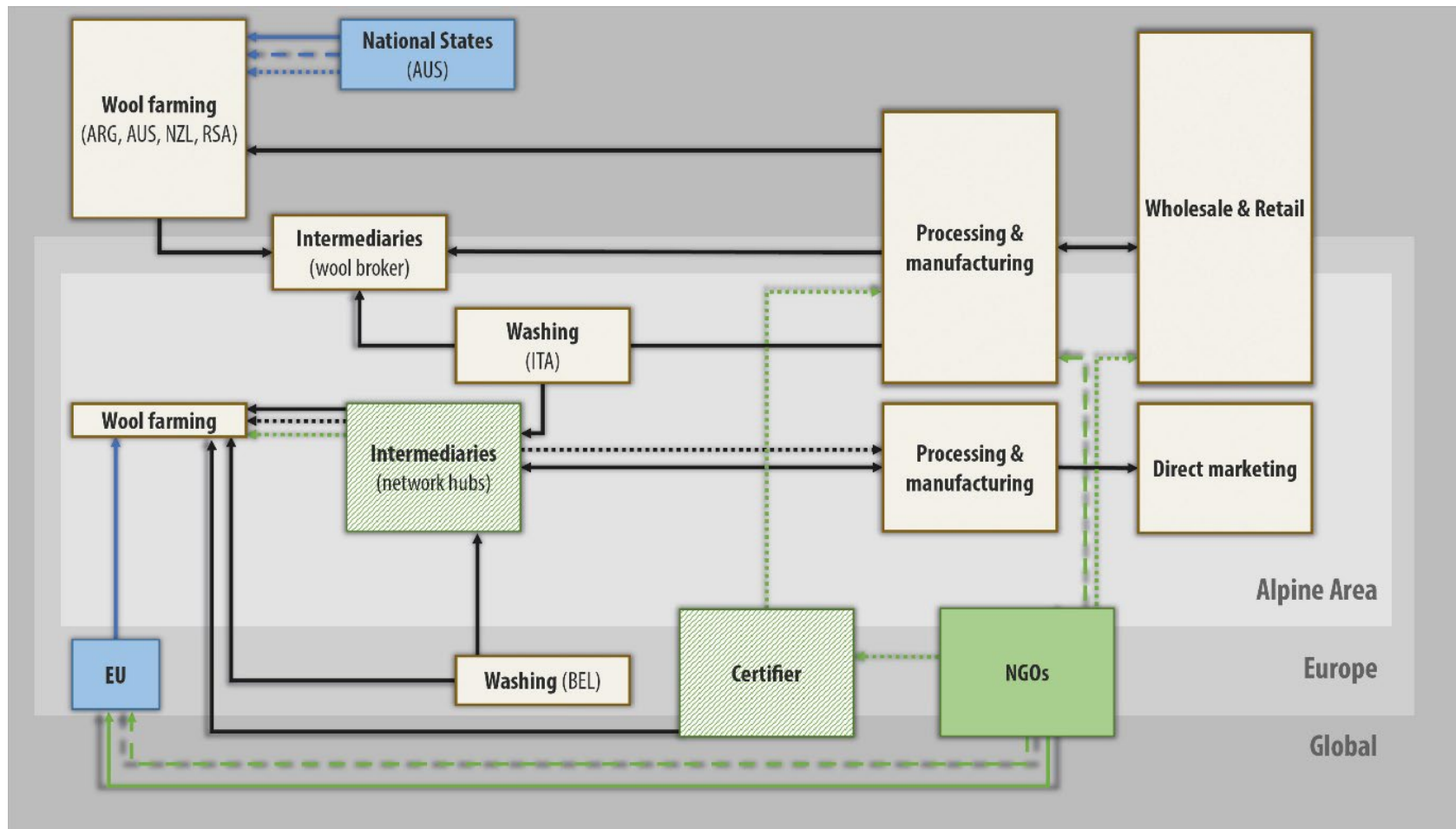
The links between the boxes represent power relations between the actors and stages. They show corporate power (through transactions, innovation or marketing), institutional power (through legal and financial frameworks, R&D support or promotion) and collective power (through economic interests, societal interests or campaigns). The arrows indicate the direction of influence and power.

The results show that there are three main settings that frame the Alpine wool sector. First, the different qualities of wool determine the price of wool and the access to the market. Second, certification, especially in the global production network, is a barrier for small local wool producers and therefore crucial for market access. Third, the quantity of wool qualities produced per farm is decisive for market access and hinders the integration of regional wool production in the global textile market.

Besides economic interests, networking hubs play an important role as intermediaries between the stages. They are increasingly successful in linking regional actors and bringing together local stages. This is a positive development for the regional level. Recently, some links have even been established with medium-sized international companies willing to valorize Alpine wool (Salewa, Orthovox, etc.). Nevertheless, the biggest challenges today are still related to the regional collection, combing, scouring, and storage of wool from the European Alps.



&gt; Figure 8 | Governance setting and power relations in the wool sector in the European Alps

**Alpine Wool | Governance setting and power relations in the European Alps****Actors:**

- Stage within the production network
- Institutional Actor
- Collective Actor
- Stage within the production network but also Collective Actor

**Corporate power relations:**

- Transactions
- Innovation
- Marketing

**Institutional power relations:**

- Legal & financial framework
- R&D support
- Promotion

**Collective power relations:**

- Economic interests
- Societal interests
- Campaigning

# MAPPING THE ENVIRONMENTAL FOOTPRINT

## DESCRIPTION & FINDINGS

Figure 9 and Figure 10 show the environmental impacts and potentials of wool in the Alps. In lifecycle assessment (LCA) publications, wool value chains are often marked as highly harmful to the environment (Smith et al. 2022). This refers to sheep emitting greenhouse gas, including methane, nitrous oxides and carbon dioxide. Also, water consumption in the processing of wool (especially washing and yarn and fabric processing) is often criticized in terms of environmental impacts. These impacts, however, should not be overstated.

First, wool is characterized by a high recyclability meaning a higher recycling rate compared to other textile fibers. In particular, textiles of 100% wool are easy to reuse and can easily be returned to the environment.

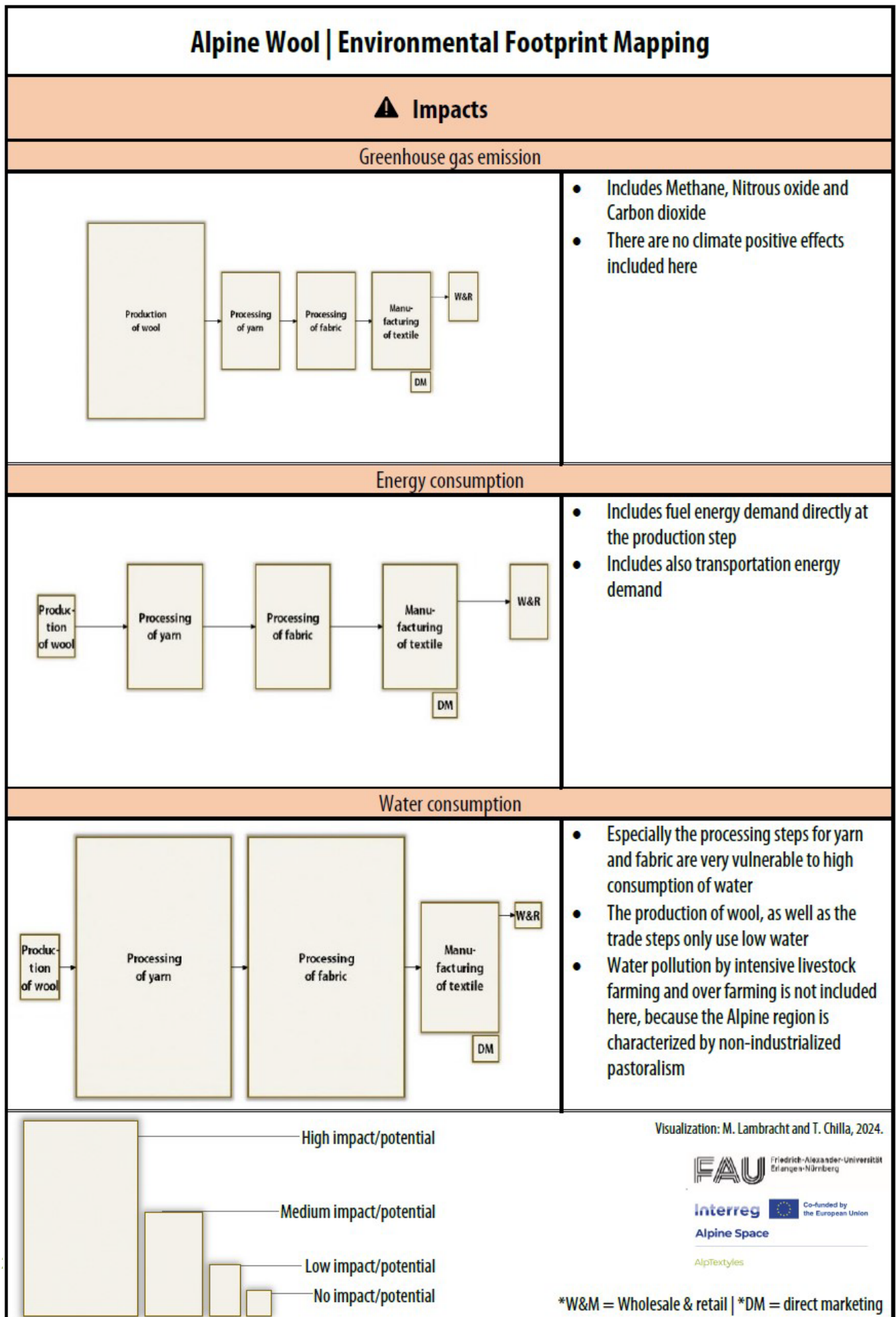
Second, the multiple use of wool is a huge potential. Fine qualities (e.g. Merino-wool) can be used for clothing, even for the fashion industry. If the wool is of rougher quality, the potential products include fertilizer, insulation and home textiles or outerwear, e.g. Loden.

And third, the wool is often a by-product whereas the main purpose of the sheep is landscape maintenance or the production of meat and cheese. This also leads to climate positive effects that are often not considered when with an LCA. The increased biodiversity through open landscapes and reduced wildfire and erosion risk, as well as a better flood dam security must be taken into account (Henry et al. 2015). Finally, in a traditional way of sheep farming (intensive livestock farming must be excluded), it is even possible to increase CO<sub>2</sub> storage in soils (Brock et al. 2013).

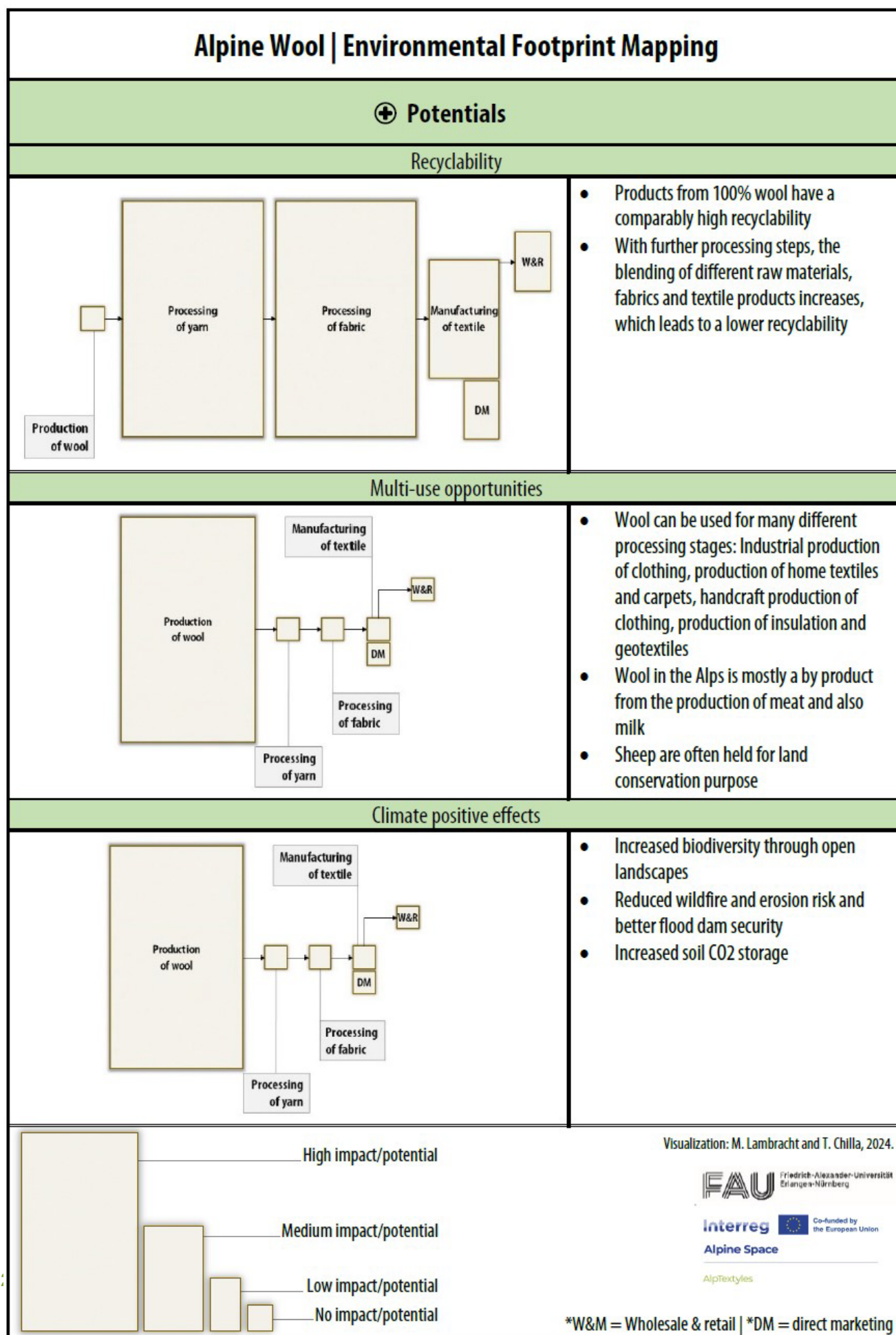




&gt; Figure 9 | Environmental footprint mapping: impacts



> Figure 10 | Environmental footprint mapping: potentials



Visualization: M. Lambracht and T. Chilla, 2024.

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Erlangen-Nürnberg

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AlpTextiles

\*W&M = Wholesale & retail | \*DM = direct marketing





# OUTLOOK ON PILOTS AND SOLUTIONS

The insights and information gathered in Activity 1.2 and summarized in this report formed the basis for the pilot actions in Work Package 2. In Work Package 3, these findings were incorporated into various solutions presented by the AlpTextyles project (<https://www.alpine-space.eu/project/alptextyles/>).

In the projects outcomes this report was primarily used for:

## 1) “The living textile heritage of the Alps and its sustainable circular future” Massive Online Open Course (MOOC):

The AlpTextyles MOOC is a free, open-access course on sustainable, circular, and place-based textile practices in the Alpine region. It explores historical techniques, digitized archives, and innovative approaches to support cultural heritage, local economies, and capacity building.

## 2) Policy Brief:

It reports on the traditional Alpine textile heritage & current state and potential of the Alpine textile sector, providing multi-sectoral strategic recommendations for cultural and textile policies at the regional and macro-regional (i.e., EUSALP) level, also considering the EU strategy for sustainable textiles & the coming EU regulation on geographical indications for heritage textile craft & industrial products.

## 3) Orientation Guides:

Output will make accessible project insights to Target Groups. Orientation Guides will help textile SMEs & business support organizations to establish circular & heritage-sensitive value chains meeting consumer need for post carbon lifestyles.



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# ANNEX

**Table 1:** List of interviewed persons

Stage of value chain	National State	Institution
Wool farming (production)	GER	Part-time shepherd
	SLO	Part-time shepherd
	GER	Organisation representing the interests of shepherds
Processing and manufacturing	AUT	Regional wool processor
	SUI	Regional wool processor
	ITA	Regional wool processor
	FRA	Regional network for wool
	SUI	National Textile Industry Association
	ITA	National Textile Industry Association
	FRA	National Textile Industry Cluster
	GER	Managing director of large wool processor
	ITA	Global enterprise for outdoor textiles
Trade	N.A.	Organisation of the international trade in wool textiles
Other	AUT	Expert on European wool (former Austrian carpet producer)
	SLO	State Chamber

**Table 2:** Sheep breeds in the Alpine area (own research)

We emphasize that no guarantee of completeness can be given here. Also, it is possible that sheep breeds are tagged twice due to different spellings of the names in different Alpine countries. For more information also look here: Marsoner et al. 2018.

Name of breed (in original language)	Region	Characteristics	Source
Juraschaf/Schwarz-braunes Bergschaf	Austria (Vorarlberg, Tirol, Salzburg, Kärnten, Oberösterreich, Steiermark, Niederösterreich); Switzerland (Kantone Bern, Freiburg, Solothurn, Aargau, Luzern, Zürich); Italy (South Tyrol)	Mountain sheep (land maintenance, meat, wool)	<a href="https://www.oebisz.at/rassen/schaf-rassen/juraschafsbis">https://www.oebisz.at/rassen/schaf-rassen/juraschafsbis</a>
Tiroler Bergschaf	Austria (Vorarlberg, Tirol, Salzburg, Kärnten, Oberösterreich, Steiermark); Italy (South Tyrol)	Mountain sheep (land maintenance, meat)	<a href="https://www.oebisz.at/rassen/schaf-rassen/tiroler-bergschaf">https://www.oebisz.at/rassen/schaf-rassen/tiroler-bergschaf</a>

Braunes Bergschaf	Austria (Vorarlberg, Tirol, Salzburg, Kärnten, Oberösterreich, Steiermark, Niederösterreich); South Germany	Land sheep (land maintenance, meat, wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/braunes-bergschaf">https://www.oebisz.at/rassen/schafрасsen/braunes-bergschaf</a>
Tiroler Steinschaf	Austria (Vorarlberg, Tirol, Salzburg, Kärnten, Steiermark); Italy (South Tyrol)	Mountain sheep (land maintenance, meat)	<a href="https://www.oebisz.at/rassen/schafрасsen/tiroler-steinschaf">https://www.oebisz.at/rassen/schafрасsen/tiroler-steinschaf</a>
Walliser Schwarznasenschaf	Austria (Vorarlberg, Tirol, Salzburg, Kärnten, Oberösterreich, Steiermark, Niederösterreich); Switzerland (Wallis, Region lemanique)	Mountain sheep (land maintenance, meat, wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/walliser-schwarznasenschaf">https://www.oebisz.at/rassen/schafрасsen/walliser-schwarznasenschaf</a>
Weißes Alpenschaf	Austria (Vorarlberg); Switzerland (Region lemanique)	Mountain sheep (land maintenance, meat, wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/weisses-alpenschaf">https://www.oebisz.at/rassen/schafрасsen/weisses-alpenschaf</a>
Merinolandschaf	Austria (Vorarlberg, Kärnten, Oberösterreich, Steiermark, Niederösterreich); Southern Germany	Land sheep (land maintenance, meat, wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/merinolandschaf">https://www.oebisz.at/rassen/schafрасsen/merinolandschaf</a>
Kärntner Brillenschaf	Austria (Vorarlberg, Salzburg, Kärnten, Oberösterreich, Steiermark, Niederösterreich, Burgenland)	Land sheep (land maintenance, meat, wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/kaerntner-brillenschaf">https://www.oebisz.at/rassen/schafрасsen/kaerntner-brillenschaf</a>
Krainer Steinschaf	Austria (Vorarlberg, Kärnten, Oberösterreich, Steiermark, Niederösterreich, Burgenland); Slovenia; Southern Germany	Land sheep (land maintenance, meat, milk, wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/krainer-steinschaf">https://www.oebisz.at/rassen/schafрасsen/krainer-steinschaf</a>
Waldschaf	Austria (Vorarlberg, Tirol, Kärnten, Oberösterreich, Steiermark, Niederösterreich); Germany (Bavarian forest)	Land sheep (wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/waldschaf">https://www.oebisz.at/rassen/schafрасsen/waldschaf</a>
Shropshire	Austria (Vorarlberg, Kärnten, Oberösterreich, Steiermark, Niederösterreich)	Land sheep (wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/shropshire">https://www.oebisz.at/rassen/schafрасsen/shropshire</a>
Alpines Steinschaf	Austria (Vorarlberg, Salzburg, Kärnten, Steiermark); Deutschland (Oberbayern)	Land sheep (land maintenance, meat, wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/alpines-steinschaf">https://www.oebisz.at/rassen/schafрасsen/alpines-steinschaf</a>
Montafoner Steinschaf	Austria (Vorarlberg); Southern Germany (Bavaria)	Land sheep (land maintenance, meat, wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/montafoner-steinschaf">https://www.oebisz.at/rassen/schafрасsen/montafoner-steinschaf</a>
Zackelschaf	Austria (Tirol, Steiermark, Niederösterreich)	Land sheep (wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/zackelschaf">https://www.oebisz.at/rassen/schafрасsen/zackelschaf</a>
Coburger Fuchsschaf	Austria (Vorarlberg, Salzburg, Kärnten, Oberösterreich, Steiermark)	Land sheep (wool)	<a href="https://www.oebisz.at/rassen/schafрасsen/coburger-fuchsschaf">https://www.oebisz.at/rassen/schafрасsen/coburger-fuchsschaf</a>

Ostfriesisches Milchschaaf	Austria (Oberösterreich, Steiermark, Kärnten, Niederösterreich)	Milk sheep	<a href="https://www.oebisz.at/rassen/schaf-rassen/ostfriesisches-milchschaaf">https://www.oebisz.at/rassen/schaf-rassen/ostfriesisches-milchschaaf</a>
Lacaune	Austria (Tirol, Oberösterreich, Steiermark, Vorarlberg, Niederösterreich)	Milk sheep	<a href="https://www.oebisz.at/rassen/schaf-rassen/lacaune">https://www.oebisz.at/rassen/schaf-rassen/lacaune</a>
Suffolk	Austria (Vorarlberg, Tirol, Salzburg, Kärnten, Oberösterreich, Steiermark, Niederösterreich, Burgenland); Italy (South Tyrol)	Meat sheep	<a href="https://www.oebisz.at/rassen/schaf-rassen/suffolk">https://www.oebisz.at/rassen/schaf-rassen/suffolk</a>
Schwarzköpfiges Fleischschaf	Austria (Vorarlberg, Kärnten, Steiermark, Niederösterreich)	Meat sheep	<a href="https://www.oebisz.at/rassen/schaf-rassen/schwarzkoeufiges-fleischschaf">https://www.oebisz.at/rassen/schaf-rassen/schwarzkoeufiges-fleischschaf</a>
Texel	Austria (Vorarlberg, Salzburg, Kärnten, Oberösterreich, Steiermark, Niederösterreich)	Meat sheep	<a href="https://www.oebisz.at/rassen/schaf-rassen/texel">https://www.oebisz.at/rassen/schaf-rassen/texel</a>
Dorper	Austria (Vorarlberg, Salzburg, Kärnten, Oberösterreich, Steiermark, Niederösterreich)	Meat sheep	<a href="https://www.oebisz.at/rassen/schaf-rassen/dorper">https://www.oebisz.at/rassen/schaf-rassen/dorper</a>
Berrichon du Cher	Austria (Vorarlberg, Kärnten, Steiermark, Niederösterreich)	Meat sheep	<a href="https://www.oebisz.at/rassen/schaf-rassen/berrichon-du-cher">https://www.oebisz.at/rassen/schaf-rassen/berrichon-du-cher</a>
Ile de France	Austria (Vorarlberg, Tirol, Steiermark, Oberösterreich)	Meat sheep	<a href="https://www.oebisz.at/rassen/schaf-rassen/ile-de-france">https://www.oebisz.at/rassen/schaf-rassen/ile-de-france</a>
Heidschnucke	Austria (Oberösterreich)	Wool sheep	<a href="https://www.alpinetgheep.com/heidschnucke.html">https://www.alpinetgheep.com/heidschnucke.html</a>
Karakul	Austria	Wool sheep	<a href="https://www.alpinetgheep.com/karakul.html">https://www.alpinetgheep.com/karakul.html</a>
Schwarzbraunes Bergschaf	Italy (South Tyrol)	-	<a href="https://www.kleintiererzucht.it/schafe.html">https://www.kleintiererzucht.it/schafe.html</a>
Schnalser Schaf	Italy (South Tyrol)	-	<a href="https://www.kleintiererzucht.it/schafe.html">https://www.kleintiererzucht.it/schafe.html</a>
Vilnösser Brillenschaf	Italy (South Tyrol)	-	<a href="https://www.kleintiererzucht.it/schafe.html">https://www.kleintiererzucht.it/schafe.html</a>
Schwarznasen Schaf	Italy (South Tyrol)	-	<a href="https://www.kleintiererzucht.it/schafe.html">https://www.kleintiererzucht.it/schafe.html</a>
Ouessant Schaf	Italy (South Tyrol)	-	<a href="https://www.kleintiererzucht.it/schafe.html">https://www.kleintiererzucht.it/schafe.html</a>
Schwarzes Bergschaf	Southern Germany (Bavaria)	Mountain sheep (land maintenance, meat, wool)	<a href="https://www.g-e-h.de/index.php/rassebeschreibungen/72-rassebeschreibungen-schafe/334-schwarzesbergschaf">https://www.g-e-h.de/index.php/rassebeschreibungen/72-rassebeschreibungen-schafe/334-schwarzesbergschaf</a>
Deutsches Karakul	Germany, Austria	Veld sheep (wool, meat)	<a href="https://www.g-e-h.de/index.php/rassebeschreibungen/72-rassebeschreibungen-schafe/97-deutsches-karakul">https://www.g-e-h.de/index.php/rassebeschreibungen/72-rassebeschreibungen-schafe/97-deutsches-karakul</a>

Brillenschaf	Southern Germany (Oberbayern, Schwaben)	Mountain sheep (land maintenance, meat)	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/98-brillenschaf">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/98-brillenschaf</a>
Merinofleischschaf	Southern Germany (Bayern, Baden-Württemberg)	Wool and meat sheep	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/103-merinofleischschaf">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/103-merinofleischschaf</a>
Rauhwolliges Pommersches Landschaf	Southern Germany (Baden-Württemberg)	Milk sheep	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/102-rauhwolliges-pommersches-landschaf">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/102-rauhwolliges-pommersches-landschaf</a>
Rhönschaf	Southern Germany (bayrische Rhön)	-	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/104-rhoenschaf">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/104-rhoenschaf</a>
Rouge du Roussillon	France; Switzerland; Germany	Transhumance sheep	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/105-rouge-du-roussillon">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/105-rouge-du-roussillon</a>
Skudde	Germany	Land maintenance, wool	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/106-skudde">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/106-skudde</a>
Walachenschaf	Germany	Land sheep (land maintenance, wool)	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/109-walachenschaf">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/109-walachenschaf</a>
Weißköpfiges Fleischschaf	Southern Germany	Meat and wool sheep	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/112-weisskoepfiges-fleischschaf">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/112-weisskoepfiges-fleischschaf</a>
Weißes Bergschaf	Southern Germany (Oberbayern, Schwaben)	Land sheep (land maintenance, meat)	<a href="https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/113-weisses-bergschaf">https://www.g-e-h.de/index.php/ras-sebeschreibungen/72-ras-sebeschreibungen-schafe/113-weisses-bergschaf</a>
Walliser Landschaf	Switzerland (Wallis, Region lemanique); Southern Germany (Bayern)	Land sheep (land maintenance, wool, meat)	<a href="http://www.alpinetgheep.com/bergschafe.html">http://www.alpinetgheep.com/bergschafe.html</a>
Geschecktes Bergschaf	Austria	-	<a href="http://www.alpinetgheep.com/bergschafe.html">http://www.alpinetgheep.com/bergschafe.html</a>
Bündner Oberländer Schaf	Switzerland (Ostschweiz)	Stone sheep (land maintenance, meat)	Alpine Space

Fuchsfarbenes Engadiner Schaf	Switzerland (Ostschweiz)	Mountain sheep (land maintenance, meat, wool)	Alpine Space
Spiegelschaf	Switzerland (Ostschweiz)	Land sheep (wool, meat)	Alpine Space
Alpagota	Italy (Veneto, Friuli Venezia Giulia)	Meat, milk and wool sheep	Alpine Space
Bergamasca	Italy (Lombardia)	Meat and milk sheep	Alpine Space
Biellese	Italy (Piemont, Vallée d'Aoste)	Meat and wool sheep	Alpine Space
Brentegana	Italy (Lombardia)	Wool, meat and milk sheep	Alpine Space
Brianzola	Italy (Lombardia)	Meat sheep	Alpine Space
Briagsaca	Italy (Seealpen, Grenzraum zu Frankreich, Vallée d'Arroshia, Valle Argentina)	Meat, wool and cheese sheep	Alpine Space
Brogne	Italy (Lombardia, Piemont)	Meat, wool and milk sheep	Alpine Space
Ciavenasca	Italy (Lombardia)	Meat sheep	Alpine Space
Corteno	Italy (Lombardia)	Wool and meat sheep	Alpine Space
Delle Langhe	Italy (Piemont, Ligurien)	Milk and cheese sheep	Alpine Space
Finarda	Italy (Piemont, Lombardia)	Meat and wool sheep	Alpine Space
Frabosana	Italy (Piemont); France (Provence-Alpes Côte d'Azur)	Milk and cheese sheep	Alpine Space
Garessina	Italy (Piemont); France (Provence-Alpes Côte d'Azur)	Meat and milk sheep	Alpine Space
Istrian	Italy (Veneto, Friuli Venezia Giulia)	Meat and milk sheep	Alpine Space
Lamon	Italy (Prov. Auto. Trento, Friuli Venezia Giulia)	Meat, wool and milk sheep	Alpine Space
Marrana	Italy (Lombardia)		Alpine Space
Plezzana	Italy (Friuli Venezia Giulia); Slovenia	Milk and cheese sheep	Alpine Space
Pusterese	Italy (Prov. Auto. Bolzano, Prov. Auto. Trento)	Meat and wool sheep	Alpine Space
Rosset	Italy	Meat and wool sheep	Alpine Space
Saltasassi	Italy (Piemont)	Meat sheep	Alpine Space
Sambucana	Italy (Piemont)	Meat and wool sheep	Alpine Space



Savoiarda	Italy (Piemont)	Meat and wool sheep	Alpine Space
Tacola	Italy (Piemont)	Meat sheep	Alpine Space
Vilnösser	Italy (Prov. Auto. Bolzano, Prov. Auto. Trento)	Mountain sheep (Meat and wool)	Alpine Space
Varesina	Italy (Lombardia)	Meat and wool sheep	Alpine Space
Zerasca	Italy (Piemont, Ligurien)	Meat and wool sheep	Alpine Space
Bela Krajina pramenka	Slovenia (Adlešiči, Črnomelj, Semič, Vinica)	Land maintenance, meat	Alpine Space
Bovška ovca	Slovenia	Milk and cheese sheep	Alpine Space
Istrska pramenka	Slovenia	Milk sheep	Alpine Space
Jezersko-solčavska ovca	Slovenia	Meat and wool sheep	Alpine Space
Brigasque	France (Provence-Alpes Côte d'Azur)	Milk, cheese and wool sheep	Alpine Space
Grivette	France (Rhône-Alpes)	Meat sheep	Alpine Space
Merinos d'Arles	France (Provence-Alpes Côte d'Azur, Rhône-Alpes)	Meat and wool sheep	Alpine Space
Mourerous	France (Provence-Alpes Côte d'Azur, Rhône-Alpes)	Meat sheep	Alpine Space
Préalpes du Sud	France (Provence-Alpes Côte d'Azur, Rhône-Alpes)	Meat and wool sheep	Alpine Space
Thônes et Marthod	France (Rhône-Alpes)	Meat, milk and wool sheep	Alpine Space





AlpTextyles is an Interreg Alpine Space project that gathers the heritage of Alpine textile ecosystems to develop collaborative business and cultural solutions toward a circular and sustainable textile industry.

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