

Valorisation of agricultural waste through large-scale bioeconomy in Norway

It is frequent that only meat and dairy products are valued outputs from mountain farms. Nonetheless, by-products generated in producing meat and dairy products can be transformed into high-quality products, thereby creating an additional income for farms. The Norwegian company Norilia ensures that by-products are refined and reused.

The potential of circular and bioeconomy in mountain farming

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

Receiving by-products from the Nortura cooperative, each year Norilia transforms around 150,000 tons of by-products – often from small Norwegian farms - into products like pet food, hides and wool. Through this, an added value is created to what else would be considered waste, contributing thereby to the bioeconomy and creating circularity in the Norwegian livestock sector. Reusing by-products such as wool create important circularity opportunities, knowing that a sheep annually produces between 2 and 5kg of wool, which can make up to 6 sweaters per animal each year.

As the company's mission is to use every part of the animal, research and innovation projects are carried out, aimed at creating sustainable and high-quality products that can be sold on the market. Moreover, skilled craftsmen are used for the transformation of products, such as wool.

Credits: Norilia



Credits: Sune Eriksen

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Sustainability from farm to fashion



Credits: Norilia

Norilia handles nearly 80% of the annual Norwegian wool volume by working together with the Norwegian Association of Sheep and Goat Farmers (NSG). This wool comes from sheep that often graze on uncultivated semi-natural mountain grasslands. To give recognition to the sustainability and traceability of Norilia wool, it has been granted the Nordic Swan Ecolabel guaranteeing a transparent value chain and low use of chemicals in the areas where the sheep graze.

Norilia also opened in 2012 a hide plant at Skjeberg. In the transformation process, almost 99% of the salt used in salting gets recycled, making the process more sustainable.

The activity fosters the economic sustainability and diversification of mountain farms while also developing the potential of agricultural by-products for the circular and bioeconomy sectors, it was therefore promoted by OREKA MENDIAN as a replicable practice benefiting mountain pastoralism (see OREKA MENDIAN's [booklet of good practices](#) and [report](#) on the sustainable management of mountain grasslands).



Innovative aspect

By using these by-products, added value is created to make agriculture more profitable, while also increasing the sector's sustainability as less resources are wasted through this bio- and circular economy approach. While different initiatives exist in mountain areas to collect and reuse animal by-products, the national recognition of Norilia allowed to upscale circularity to the whole country.

