



BBioNets

Boosting the adoption
of Bio-Based Technologies

Cross-Fertilisation Meetings

Bio-Based Practices on Farms & Forests

Accelerating “Bio-Based Practices on Farms and Forests”

Key Takeaways

CFM No3 “Sustainable Sheep Wool Processing”

29 January 2026 | Online | 11:00 CET

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The third cross-fertilisation meeting on Sustainable Sheep Wool Processing showcased how wool is being repositioned as a strategic, circular bio-based resource across Europe. Presentations from Ireland, Poland, and Greece highlighted the sector’s transformation through **cooperatives, sustainable research-driven innovations, creative solutions to work around outdated regulations, and the revival of traditional practices.**

In Ireland, the Irish Grown Wool Council and research initiatives such as the Revere and SPRINGWOOL projects are driving collaboration, data-driven policy, and the development of high-value applications from luxury textiles to biomaterials and sustainable packaging. These efforts are supported by educational campaigns, traceability pilots, and a focus on greener processing technologies, aiming to revitalise the sector, transfer knowledge and techniques to farmers, and integrate wool into the circular bioeconomy.

Poland’s experience, represented by traditional shepherding in the Carpathian Mountains, emphasised the importance of local value creation, zero-waste values, and educational outreach. Despite regulatory barriers that classify wool as waste, small-scale producers are successfully marketing wool for ecological fertiliser, crafts, and regional clothing, utilising cultural heritage and community engagement as a cornerstone for the activities.

In Greece, dairy sheep farming groups are piloting innovative uses for wool waste, such as soil amendments, while navigating logistical and regulatory challenges. The sector’s approach centres on minimum viable product testing, creative adaptation to legislative restrictions, and the pursuit of new value streams for wool byproducts.

Overall, the meeting highlighted that to regenerate the wool sector it is needed coordinated value-chain development, investment in research and processing infrastructure, supportive policy frameworks, and the integration of traditional knowledge with modern innovation. These elements are essential to unlock wool’s full economic, environmental, and cultural potential in Europe’s circular bioeconomy.



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Cluster Support for a Regenerative Wool Value Chain

Presenter: *Catherine Phibbs* - Brand & Marketing Sub Committee, [Irish Grown Wool Council](#) (Ireland)

- Irish Grown Wool Council: Revitalizing a National Resource:** The Irish Grown Wool Council (IGWC) is an industry-led, all-island voluntary body working to transform Irish wool from an undervalued byproduct into a branded, value-added resource. Generated from the identified need to establish an Irish grown wool council from a feasibility study funded by the Irish Department of Agriculture, Food and the Marine, to identify wool market opportunities. The council **gathers stakeholders to focus on collaboration, innovation, and sustainable practices**. The council creates activities such as educational campaigns like "Shear Success", and a pilot traceability scheme that follows wool from farm to finished product. The council is preparing to open membership, inviting broader participation in its mission.
- Expanding Wool's Potential: From Luxury to Everyday:** Irish wool's applications are rapidly diversifying, moving beyond traditional knitwear to include luxury tapestries, avant-garde fashion, acoustic panels, bedding, fertilizer pellets, and even ropes. These innovations are driven by **partnerships with designers, manufacturers, and researchers, both in Ireland and abroad**. Outreach efforts span trade shows with young designers, festivals, and direct engagement with government and media, all aimed at **raising awareness and showcasing the versatility of Irish-grown wool**.
- The [Revere Wool Project](#): Building Knowledge for the Future:** this research project focuses on filling critical data gaps about Irish wool. Coordinated by UCC and funded by the Environmental Protection Agency, the project aims to collect local data, assess the feasibility of wool scouring in Ireland, and evaluate environmental and socioeconomic impacts. By integrating wool into the circular bioeconomy and exploring new business models, the project seeks to inform policy and support the regeneration of Ireland's wool sector

Wool research in Ireland

Presenter: *Tim Yeomans* – Manager, [Centre for Applied Bioscience Research](#) (Ireland)

- Driving Wool Research and Collaboration:** the centre works on unlocking the potential of natural products, with wool as a key area. Recognising that shearing costs often exceed the value of wool for Irish farmers, the centre has played a pivotal role in sector-wide studies and initiatives. Their work connects universities, companies, and farmers to foster innovation and practical solutions.
- A Holistic Approach to the Wool Value Chain:** to revitalise the Irish wool sector it is required a comprehensive examination of every stage in the value chain, i.e., from farm to finished product. **Challenges and opportunities exist at each link and focusing on just one area risks leaving others unsupported**. By systematically studying and addressing the entire chain, from farmer practices and processing logistics to consumer engagement and policy, the sector can develop targeted solutions that benefit all stakeholders and ensure sustainable growth.
- Data-Driven and Policy Innovation:** to support commercialization, consumer trust and sector growth it is important to fill in the data gaps with data-driven approaches leveraging university expertise and diverse funding streams. Policy innovation, robust research, and increased consumer demand are all essential to drive the Irish wool sector forward.





Underutilisation of Wool — Discussion points extracted from Irish case

- Irish wool faces significant challenges, including a decades-long collapse in prices and the loss of domestic processing infrastructure. Cheap synthetic fibres have flooded global markets, while COVID-19 devastated demand in carpets and hospitality. Agricultural policy has prioritized meat and cheese instead of wool in the past decades wool, leading to a poor farm-level preservation of wool and a lack of transparency for consumers seeking authentic local Irish-grown wool products.
- To address these issues, there is a need to address and support all links of the wool value chain to highlight the potential of each chain to the other actors, unite stakeholders and drive innovation. Innovative policy solutions, such as adopting New Zealand's model of mandatory wool use in public procurement, are being considered to boost demand. Rebuilding parts of the value chain and structuring research around validated, data-driven claims will support commercialization and ensure that Irish wool regains its place as a strategic, sustainable resource.
- Educational campaigns like "Shear Success" are also helping farmers improve wool quality and presentation, while outreach efforts aim to raise consumer awareness about the sustainability and value of Irish-grown wool.

SPRINGWOOL project - Wool Biorefinery

Presenter: *Tielidy Lima* - Postdoctoral Scientist, [Centre for Applied Bioscience Research](#) (Ireland)

- **Wool Biorefinery and High-Value Extraction opportunities:** through the [SPRINGWOOL project](#), biorefinery of Irish wool is being researched. The aim is to extract valuable compounds such as keratin and ceramides. Wool is composed of nearly 95% keratin, which can be broken down into peptides and amino acids for cosmetics, medical devices, and advanced biomaterials (packaging films reinforced with wool fibres, and materials for wastewater treatment). Moreover, the research investigates isolating internal lipids, i.e., ceramides, which have applications in skincare and wound healing. This highlights the versatility of wool to create high-value bio-based products.
- **Greener Processing and Product Innovation:** the project also works with innovations that **support sustainable, clean and efficient wool processing**. It compares traditional chemical extraction methods with greener technologies, such as supercritical CO₂ extraction, which reduces solvent use and processing time.
- **Bridging Laboratory Science and Farm Practice:** this work also supports sustainable processing as it is **developing practical models for farmers to test water quality after wool washing (wool scouring)**, using measurable indicators for chemical oxygen demand, nutrient loads, and solids. The objective is to repurposing waste wool from the scouring to be used for compost, while also extracting valuable compounds for use in cosmetics and healthcare. This will help farmers monitor and improve environmental outcomes while valorising wool side-streams, making scientific advances accessible and actionable at the farm level.

"The main idea here is try to create a model that can be used by the farmers and develop how can they do by themselves while using greener technologies."



Zero waste sheep farm in the light of Low-tech Traditional Ecological Knowledge (Lo-TEK)

Presenter: *Maria Kohut* - General manager, [Shepherding Centre in Koniaków](#) (Poland)

- **Shepherding, Tradition, and Local Value Creation:** Traditional pastoralist farming in the Carpathian Mountains of Poland is rooted in cultural heritage, with cheese production as the main economic activity, more than wool, skins, and meat which are also additional high-value products. Local, traditional and small-scale processing and direct sales to tourists are the keystone of economic survival for sheep farmers in the region, **treating wool as a treasure and a vital part of regional identity rather than waste.**
- **Overcoming Regulatory and Market Barriers:** “EU regulations classify wool as waste, complicating processing and sales for small farmers”. Despite these barriers, wool is successfully being marketed in the region for **ecological fertilizer, traditional crafts, and regional clothing.**
- **Zero Waste Philosophy and Educational Outreach:** A zero-waste philosophy ensures that even coarse or “waste” wool is repurposed for fertilizer or forest protection. Educational workshops and farm events are used to raise awareness and build local demand. Educational farms host tens of thousands of visitors, teaching the value of wool through hands-on workshops and cultural events. Tradition, sustainability, and community engagement are leveraged to overcome institutional obstacles and revitalize wool’s role in rural economies.

Underutilisation of Wool — Discussion points extracted from Polish case

- Wool remains underutilised in the Carpathian region due to its classification as waste under EU regulations, which complicates on-farm processing and direct sales.
- Bureaucratic barriers and lack of supportive policy further impede small farmers, while the market for coarse mountain wool is limited and undervalued.
- Institutional challenges and risk of penalties discourage innovation, and a general lack of awareness among policymakers and the public about wool’s potential leads to missed opportunities for local economies.

"We run the traditional cultural pastoralism in Poland, Koniakow. So, from May to September, we transhumance with 1200 sheep, which belong to 10 owners from the region and 400 sheep are from our own farm... We keep the society alive, the cooperation and we try to find some pastures for our sheep in the area. So, this comes back to the history of the Vlach tribes, and we still follow it in nowadays time... With huge respect to the nature and cultural heritage."

Disrupting Dairy Sheep Farming

Presenter: *Nikolaos Koltsidas* - Member, Livestock Studies Consultant, [Proud Farm Group of Farmers](#) (Greece)

- **Dairy Sheep Farming and Sector Impact:** Dairy sheep farming in Greece is organised through collaborative groups, with milk as the primary product and wool as a secondary byproduct. Sector initiatives focus on demonstrating the societal, economic, and environmental impact of sheep farming, including innovative projects and participation in energy communities and agri-food competence centres.





- **Wool Waste and Value Creation:** Wool is largely undervalued and often wasted, with millions of kilograms discarded annually. The quality of wool is affected by milk production and farm conditions, making it suitable mainly for carpets or soil amendments.
- **Market and Logistics Barriers:** The logistics of wool collection, cleaning, and processing face significant challenges, as most farmers focus on milk profitability and lack incentives to manage wool. Transport costs, limited scouring facilities, and regulatory hurdles further restrict wool's use. Initial efforts to commercialise wool products have relied on outsourcing processing to other countries and targeting small growers and gardeners.
- **Testing and Innovation Approach:** The sector adopts a “minimum viable product” approach, piloting new uses for wool and soil amendments before investing in machinery or scaling production. **Legislative restrictions on fertiliser licensing have led to creative solutions, such as marketing wool pellets as soil amendments rather than fertilisers.** These efforts aim to create value from wool waste and encourage broader adoption of sustainable practices.

Underutilisation of Wool — Discussion points extracted from Greek case

- Wool is largely undervalued and often wasted, with millions of kilograms discarded annually.
- The focus for farmers is milk production, so wool is treated as a secondary byproduct and is rarely prioritised for value creation.
- The quality of wool is affected by farm conditions and animal welfare, making it suitable mainly for carpets or soil amendments.
- Logistics and transport costs, limited scouring facilities, and regulatory hurdles further restrict wool's use.
- Most farmers lack incentives to manage wool, and commercialisation efforts are hampered by the need to outsource processing and navigate complex legislation.

[Download the presentations](#)

[Watch the recording](#)

What are Cross-Fertilisation Meetings?

BBioNets' **Cross-Fertilisation Meetings** are essential events designed to connect the project's regional **Forest and Agriculture Networks (FANs)**. While each FAN addresses unique **regional realities and specific challenges**, there is significant common ground regarding biomass availability, exploitation potential, and shared needs. By networking across borders, the project aims to collectively increase the impact of local work significantly.

These meetings were designed to help participants:

- **Share Difficulties:** Exchange common challenges and concerns regarding the application and scaling of **Bio-Based Technologies (BBTs)**.
- **Discover Opportunities:** Outline new breakthroughs, emerging technologies, and potential market opportunities across regions.
- **Promote Knowledge:** Capture, validate, and widely promote practical knowledge created by national EIP-AGRI Operational Groups (OGs).
- **Forge Collaborations:** Facilitate bilateral and multilateral collaboration opportunities among FANs and OGs.















The Six-Part Series: Topics and Schedule

1. **Innovations in Nutrient Recovery:** 11 December 2025
2. **Innovative Hemp Practices:** 15 January 2026
3. **Sustainable Sheep Wool Processing:** 29 January 2026
4. **Efficient Woody Biomass Utilisation:** 12 February 2026
5. **Circular Approaches in Olive Groves:** 26 February 2026
6. **Opportunities in Green Biorefineries:** 23 April 2026

BBioNets Project Identity

Full Project Title	BBioNets – Creation and promotion of Forest and Agriculture Networks to boost Bio-Based Technologies adoption and Value Chain development (GA No 101133904)		
Start – end date	1/11/2023 – 31/10/2026 (36 months)		
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