atf animal task force

A European Public-Private Partnership

14th Seminar
Animal Task Force

Wednesday 20th November 2024
Brussels, Belgium + online

Report

Livestock are more than food

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Background

In the context of climate change, measurement of the use of animal resources in all its components is a key question. It includes the use of animal products for human food consumption but also many other uses: fibre, feed, energy, manure for fertilisation, biodiversity and fire management, enhanced nutrition, insulation of houses, medical intervention, drugs production as well as culture and vibrant rural communities.

All these uses, in addition to food, contribute to the closing of the biological cycle, and are key points to reduce waste and valorise the contribution of animal production to the circular bioeconomy. Some of them, like manure, fibre and drug production are alternatives to the use of fossil resources and contribute significatively to improving the climate balance of animal production.

The theme covers all the species and involves all the actors including production, industry, and the co-product valorisation sector. Some important aspects of this theme are:

- Assessment methods to estimate all these non-foods use benefits with the appropriate measurement tool
- Demonstration of the contribution of these non-food uses to the overall balance of animal production and energy consumption or greenhouse gas emissions
- Fields of research necessary to increase the benefit of non-food use of animal product
- Estimation of synergies and trade-offs between food and the other valorisations
- Compatibility of these uses with health and food security (the spectrum of BSE is still present in the public opinion)

The main categories of non-food uses are:

- Wool, leather, fur, feathers: clothes, bags, equipments, insulation for houses or cars…
- By product of slaughtering: fat, protein, bones, and product extracted (collagen, gelatine [cooking])
- Methane or biogas production as a renewable energy source
- Manure to fertilise the soils
- Landscape management (forest fire, avalanches); effect on soil with pasture and trampling
- Eco-shepherding in the towns
- Used as a mediator in certain mental illnesses (autism…)
- Support of human culture (cf. classification of transhumance on patrimony of UNESCO…)
- Animal traction: skidding (forest preservation); local transportation in some villages or towns for example for waste bin or children to school…

Format of the seminar

This seminar was a follow-up to the 4th one-day symposium organised by the Animal Task Force and the EAAP Commission on Livestock Farming Systems, Sunday 1st September 2024, EAAP Annual Meeting 2024 – Florence, Italy. As usual, it aimed to engage discussion with farmers, scientists, stakeholders related to the food supply, policymakers and with the general society.

Aim

This seminar aimed to contribute to:

- Address how **research and innovation can support the livestock sector: needs in R&I to help the livestock sector contribute** to reduce waste and valorise the contribution of animal production to the circular bioeconomy;
- **Provide input to European research and innovation agendas and to public policies** to secure Europe's role as a leading global provider of safe and healthy animal-derived products;
- **Engage a dialogue with various stakeholders**;
- **Foster ownership by farmers** and industries.

Welcome and Introduction

Frank O'Mara opened the 14th ATF seminar and introduced the theme of the discussion and the role of ATF. Over 120 participants from the private sector, research, policy making, civil society and farmers' organisations were counted in the room and remotely.

All presentations are available on the ATF website.

Outcomes of the ATF-EAAP LFS Symposium, Sept. 1st, 2024: Important messages & gaps in the discussion

By Ana Sofia Santos, Animal Task Force - @SofiaSantosAna

Ana Sofia is an Zootechnical Engineer, with an MSc in Animal production and PhD in Animal Science. She is currently Head of Research and Innovation of FeedInov CoLAB, an interface structure between the livestock private sector and the research entities, based in Portugal. She is also the current Secretary General of ATF. She is married to a farmer, producing beef.

Ana Sofia Santos presented key takeaways from the recent ATF-EAAP Livestock Farming Systems Symposium held on September 1st, 2024. The symposium explored the diverse roles of livestock beyond food production, emphasizing their economic, environmental, and societal contributions. Livestock play a crucial role in biodiversity conservation and ecosystem services. Responsible grazing supports habitat management, while livestock contribute to wildfire prevention, soil erosion control, and sustainable land use. These functions emphasize the need to integrate livestock management with landscape conservation efforts.

The circular bioeconomy potential of livestock was explored through various presentations. Denmark's advancements in anaerobic digestion technology were showcased, highlighting how livestock waste contributes to reducing carbon footprints, producing bioenergy, and degrading antibiotics in manure. The leather industry's reliance on livestock byproducts was also discussed, with 99.5% of Italian leather originating from animal sources, making it a more sustainable alternative to synthetic materials. Beyond nutrition, milk was examined for its bioactive compounds, with studies showing positive effects on mood, cognition, diabetes, and gut health. Fermented dairy products like kefir were also emphasized for their health benefits. Additionally, biopolymers derived from livestock, such as gelatine, collagen, and keratin, have found critical applications in pharmaceuticals, cosmetics, and biomedical fields.

Sustainable production systems and agroecology were key themes, with discussions on balancing livestock productivity with ecosystem preservation. A case study on Alpine pastures demonstrated how livestock contribute to carbon sequestration, nutrient cycling, and wildfire prevention while maintaining cultural heritage. The need for sustainable pasture management to adapt to climate change and ensure long-term viability was underscored.

The attractiveness of livestock farming as a profession was another pressing issue, with research indicating that young people in agriculture appreciate the autonomy and diversity of tasks in livestock careers. However, barriers such as low profitability and work-life balance concerns deter new entrants. Addressing these challenges is essential to ensuring a future workforce for the sector.

A thought-provoking discussion questioned whether livestock sustainability is a "Wicked Problem," a complex challenge with no single solution due to conflicting interests and perspectives. The sustainability of livestock systems requires a multidisciplinary approach, integrating policy adaptations, technological advancements, and societal engagement.

Key takeaway messages:

- **Livestock's essential role** in biodiversity conservation, ecosystem services, and rural development.
- **The circular bioeconomy potential** of livestock products, from energy to biopolymers.
- **Challenges in attracting young farmers** and ensuring the sector's sustainability.
- **The complexity of livestock sustainability as a "Wicked Problem"**, requiring **multidimensional solutions**.

The session set the stage for continued discussions on **livestock's evolving role in sustainable food systems and beyond**.

More information in the slideshow

Public policies: vision policy maker

By Carlos Martin Óvilo, DG Agri - Animal Products Unit (Unit E3) / European Commission - @EUAgri

https://commission.europa.eu/about/departments-and-executive-agencies/agriculture-and-rural-development_en

Carlos Martin Óvilo was born in Madrid (Spain). He is an Agricultural Engineer (Polytechnic University of Madrid), member of the Agricultural Engineers of the State Body. He had been working 12 years in the private sector (consultancy) prior to becoming civil servant in the Spanish Ministry of Agriculture. He has been working in the EU Institutions since 2009: DG Regional Development (EU Commission); Secretariat General of the Council of the EU; and DG AGRI (European Commission) since 2012. Currently: Deputy Head of Unit dealing with markets for animal products.

Carlos Martin Óvilo delivered a presentation focusing on the European Commission's perspective on the multifaceted roles of livestock in the European Union and presented an overview of EU policies related to livestock markets, emphasizing that livestock is much more than just food. He began by acknowledging the growing policy focus on livestock sustainability, which has intensified over the last five years. Previously, sustainability in livestock was not a primary concern, but it has now become a central issue in discussions about the sector's future. He noted that while sustainability concerns have grown in recent years, discussions often oversimplify livestock's impact by focusing only on resource use and emissions without considering its broader benefits.

He explained that most livestock feed consists of non-edible materials, and much of the land used for grazing is unsuitable for crops. While livestock generates emissions, the EU is the only region significantly reducing them. Beyond food, livestock sustains rural economies, supporting 4 million jobs and contributing €400 billion to the food industry. Environmentally, grazing prevents wildfires, supports biodiversity, and maintains one-third of the EU's agricultural land.

Livestock byproducts play a key role in the circular economy, with materials used in wool, leather, feed, biofuels, and organic fertilizers. The EU produces 100,000 tons of wool annually, while the leather industry generates €8 billion. Around 60 million tons of animal byproducts are processed yearly, reducing waste and lowering reliance on imports like soy and palm oil. Animal fats provide biofuels that can power 2 million cars, and organic fertilizers replace synthetic alternatives.

EU policies, particularly the **Common Agricultural Policy (CAP)**, support these contributions through direct payments, eco-schemes, and funding for sustainable innovations. Additional regulations ensure safety and sustainability in areas like textiles and animal byproduct processing.

Carlos Martin Óvilo concluded by stressing that livestock is integral to economic sustainability, environmental management, and the bioeconomy. He called for a more balanced discussion, recognizing livestock's diverse benefits and the need for continued policy support and innovation.

More information in the slideshow

Life cycle and ecosystem services assessments provide opposite evaluations of the food and non-food contributions of livestock farming systems

By Frédéric Joly, INRAE - *@INRAE_France* *@JolyFrdric4*

https://www.inrae.fr/en

Frédéric Joly started his professional life in conservation, in a project working for the reintroduction of a wild equid in Mongolia. This animal had previously disappeared from its natural range and the purpose of the project was to re-establish a viable population. The project used an integrated approach, meaning that the local livestock systems that could compete for grass with the reintroduced equids were cautiously studied. Frédéric Joly used these studies to take a PhD on these local grass-based systems and in particular on their vulnerability to climate hazards, that are frequent in cold steppe environments. Now he works at INRAE, still on grass-based livestock systems and more specifically on their environmental evaluation. He is particularly interested by the combined study of the positive and negative environmental contributions of animal production systems.

Frédéric Joly presented a methodological study on evaluating the environmental contributions of livestock farming systems by combining Life Cycle Assessment (LCA) and Ecosystem Services (ES) frameworks. He outlined the key differences between LCA and ES, with LCA originating from industrial practices and focusing on environmental impacts such as CO_2 emissions, while ES evaluates positive contributions like carbon sequestration and water regulation.

Frédéric Joly highlighted that ruminant-based livestock systems generally have higher environmental impacts per kilogram of protein than monogastrics (pig and poultry) systems, primarily due to methane emissions and lower feed efficiency. However, ruminants contribute significantly to regulating ecosystem services, as they rely on grasslands, which enhance carbon sequestration, water regulation, and erosion prevention. In contrast, monogastric systems are largely based on crops, which offer fewer ecosystem services.

The study found a strong negative correlation between LCA impact and ecosystem service provision: the higher the environmental cost (e.g., CO_2 emissions), the greater the ecosystem services provided. This creates a fundamental trade-off in assessing livestock systems. Frédéric Joly emphasized that relying solely on LCA overlooks the benefits of extensive pasture-based systems, suggesting that a combined approach is necessary to balance food production with sustainability goals.

Question: Jean-Louis Peyraud questioned whether intensive dairy systems, which rely on maize and indoor housing, resemble monogastric systems in their ecosystem service profile.

Answer: such systems share similarities with monogastrics due to their reliance on crops.

Question: Another question addressed the feasibility of integrating ES scores into LCA calculations per kilogram of product.

Answer: this was technically feasible and could provide a more balanced assessment of livestock sustainability.

The presentation concluded with agreement that efforts should focus on reducing negative environmental impacts while enhancing the positive contributions of livestock systems. The discussion underscored the need for a more integrated evaluation approach to inform sustainable agricultural policies.

More information in the slideshow

Contribution of the livestock sector to the pet food industry

By Alice Tempel Costa, FEDIAF - *@FEDIAF_PetFood*

https://europeanpetfood.org/

Alice Tempel Costa holds a BSc in Agriculture from UFRGS, Brazil and a Master's Degree in Cooperation & Development from IUSS University in Pavia, Italy. She has over 10 years' experience in European Trade Associations in Brussels. Before joining FEDIAF in September 2020, she has worked for the Chocolate, Confectionery & Biscuits Association, DG AGRI of the European Commission, the Food and Agriculture Organization of the United Nations (FAO), Embrapa (The Brazilian Agricultural Research Corporation) and Wageningen University.

Alice Tempel Costa discussed the significant role of the livestock sector in providing raw materials for pet food production, particularly through the use of animal byproducts (ABPs). She outlined FEDIAF's structure, representing 15 national associations and 5 direct company members across 18 EU member states, and highlighted the organisation's three pillars: science and technical expertise, animal welfare, and sustainability.

Alice Tempel Costa explained that pet food manufacturers rely heavily on Category 3 ABPs - animal materials fit for human consumption but not used for commercial reasons. These byproducts play a crucial role in the circular economy, ensuring sustainable use of animal materials. However, she raised concerns about the increasing diversion of these materials to the biofuel industry, particularly since the implementation of the EU's Renewable Energy Directive (RED). This directive has driven about 80% increase in the use of Category 3 materials for biofuel production from 2010 to 2022, creating a market distortion. Although biofuel producers primarily use Category 1 and 2 materials, they are now using Category 3, to meet their targets, threatening its availability for pet food.

Alice Tempel Costa emphasized that while FEDIAF supports the EU Green Deal and sustainability goals, the competition for these raw materials risks making one sector sustainable at the expense of another. She called for better regulatory safeguards at the national level to prioritize the use of Category 3 materials for animal feed and pet food, in line with the EU waste hierarchy.

Question: What are the alternatives to Category 3 materials and the feasibility of plant-based pet food?

Answer: while some pet food producers are exploring alternatives, there is no direct replacement that matches the nutritional value, palatability, and sustainability of Category 3 materials. Options like palm oil raise additional sustainability concerns. While vegan or vegetarian pet food exists, particularly for niche markets, it is not a viable large-scale alternative. Another concern was whether pet owners might turn to human-grade food for pet diets if Category 3 materials become scarce. We acknowledged that this could happen, though it would be undesirable from a sustainability perspective.

The presentation concluded with a recognition of the often-overlooked contribution of livestock to pet nutrition. With the rising number of pets in European households, ensuring a stable and sustainable supply of raw materials for pet food remains critical.

More information in the slideshow

The importance of animal manures for the biogases industry

By Lucile Sever, EBA – European Biogas Association - @European_Biogas

https://www.europeanbiogas.eu/

Lucile Sever is the Senior Policy Advisor in charge of following the Circular Economy dossiers. She is dealing with legislation related to agriculture and environment and coordinates the EBA Working Group Circular Economy. Before joining the EBA in January 2023, Lucile worked for INRAE - the French Research Institute for Agriculture, Food and Environment - for three years implementing the advocacy strategy of the Institute and assisting researchers in the emergence of new EU projects. Previously, Lucile worked as a public and legal affairs officer in the Wine and Spirits sector. Lucile holds a master's Degree in European Studies from the Catholic University of Louvain and a master's degree in Vine and Wine Law from the University of Bordeaux.

Lucile Sever presented on the crucial role of animal manure in the biogas and biomethane industry and the reciprocal benefits of biogas production for sustainable manure management. Representing over 8,000 stakeholders across 35 countries, the European Biogas Association (EBA) aims to scale up biogas production and use in Europe, advocating for its role in the circular economy.

The speaker highlighted that in 2022, Europe produced 21 billion cubic meters of biogas, including 16.8 billion m^3 of biogas and 4.2 billion m^3 of biomethane. Biomethane, being chemically identical to natural gas, can be directly injected into existing gas grids, making it a vital renewable energy source. The *REPowerEU* plan, introduced in response to the energy crisis following the Ukraine war, has set ambitious targets for biomethane production - 35 billion m^3 by 2030. However, studies suggest that production could reach 41 billion m^3 by 2030 and up to 151 billion m^3 by 2050, with 85% of gaseous fuel demand potentially covered by biomethane by 2040. Manure is expected to be one of the three main feedstocks, contributing 19% of this potential.

Beyond energy production, Lucile Sever emphasized that biogas systems provide additional benefits, including digestate, a nutrient-rich organic fertilizer, and biogenic CO_2 for industrial use. Digestate improves soil quality by increasing organic matter, enhancing microbial activity, and improving water retention. In 2022, Europe produced 31 million tons of digestate (dry matter), which could have replaced 15% of nitrogen-based fertilizers, 11% of phosphorus fertilizers, and 6% of potassium fertilizers. This substitution could have saved 2 billion m^3 of natural gas and reduced greenhouse gas (GHG) emissions by 10 million tons of CO_2 equivalent. She further noted digestate's potential for carbon storage, referencing a 2022 study that showed digestate retains organic carbon better than raw manure, improving soil health and stability. These findings suggest that digestate application should be recognized as a viable carbon farming practice.

EBA's policy priorities for the new EU mandate include supporting anaerobic digestion (AD) in rural areas through funding mechanisms like the Common Agricultural Policy (CAP) and advocating for the recognition of AD's role in reducing agricultural emissions. Lucile Sever pointed out that livestock farming faces growing scrutiny regarding its environmental impact, with increasing calls for dietary changes and a shift away from animal agriculture. She argued that rather than reducing livestock numbers, integrating biogas production into agricultural systems provides a cost-effective and practical way to mitigate emissions. To support this, she presented a graph from a Joint Research Centre (JRC) study ranking various agricultural GHG mitigation strategies, that was used as part of a study from DG CLIMA on policy options for climate mitigation in the agri-food sector. AD ranked as the second most effective low-cost solution for reducing emissions, yet she acknowledged that breeding improvements - another viable mitigation strategy - were not included in this particular graph. However, she assured attendees that the ongoing EU study by DG CLIMA does consider breeding advancements in emission reduction strategies.

Audience: we have noted the absence of breeding improvements in the graph of the JRC report.

Answer: the broader study by DG CLIMA does account for genetic improvements in emissions reduction.

More information in the slideshow

Importance of livestock to the gelatine sector: challenges, needs and future perspectives

By Line Jensen & Dennis Witthöft, GME – Gelatine Manufacturers of Europe

https://www.gelatine.org/en/gme.html

Line Jensen is responsible for the Secretariat of the Gelatine Manufacturers of Europe (GME), a Sector group part of Cefic Specialty Chemicals - Food and Feed Cluster. Line has worked 16 years for GME. She has a large experience and knowledge about the gelatine and collagen peptides industry.

Dennis Witthoeft is Regulatory Affairs Manager at GELITA AG, one of the global leading companies in the production of Gelatine and Collagen Peptides. Dennis graduated in 2007 at the University of Applied Sciences in Fulda, Germany, with a degree in nutritional science. Since then, he has gained more than 16 years of experience in the regulatory environment of the food industry, more than 7 years of them in the gelatine industry. Since beginning of 2023 he is Chair of the Regulatory Committee of GME, the Gelatine Manufacturers of Europe.

Line Jensen and Dennis Witthoeft delivered a joint presentation on the significance of livestock to the gelatine industry, its sustainability, challenges, and future outlook. They highlighted that the gelatine sector exemplifies circularity by upcycling animal byproducts into valuable products, reducing waste, and contributing to various industries.

Line Jensen provided an overview of GME, which was founded in 1974 and represents 11 members covering nearly 100% of European gelatine production and 70% globally. The organisation operates through multiple committees focusing on regulatory affairs, sustainability, technical research, and public relations. GME actively monitors carbon and water footprints, animal welfare standards, and regulatory changes to ensure high standards in quality, safety, and sustainability.

Dennis Witthoeft explained that gelatine and collagen peptides are pure proteins derived from collagen-rich animal byproducts such as skins and bones. These byproducts, sourced from meat and leather industries, would otherwise go to waste. Gelatine undergoes an extraction process, while collagen peptides are further broken down using enzymes. The industry adheres to stringent EU regulations, ensuring that only raw materials from animals deemed fit for human consumption are used.

The speakers emphasized gelatine's essential role in circularity, as its production relies on upcycling materials rather than driving additional animal farming. Since animals are slaughtered primarily for meat, gelatine production depends on the continuation of livestock farming. If meat consumption declines, gelatine manufacturers may face raw material shortages, potentially forcing production to shift outside of Europe, where sustainability and animal welfare standards may be lower. Gelatine and collagen peptides serve critical applications beyond food, including pharmaceuticals, pet food, and industrial uses. The industry contributes significantly to food security, with gelatine used in diverse products such as confectionery, dairy, and meat processing. Capsules for medicine and supplements are another key application, demonstrating gelatine's widespread necessity. Despite increasing interest in plant-based alternatives, the speakers pointed out that gelatine cannot be simply replaced in above mentioned applications. Plant-derived gelatine substitutes do not offer the same functional properties and would require additional agricultural resources, raising concerns about sustainability

and food security. The industry remains committed to maintaining a sustainable supply chain while supporting responsible livestock farming practices.

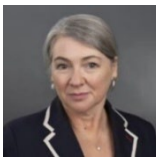
The presentation concluded by underscoring the need for scientific evidence-based policymaking to avoid disrupting a well-established circular system. While plant-based trends grow, the gelatine industry and its customers favour upcycled and sustainable products, highlighting the continued importance of livestock byproducts in multiple sectors.

More information in the slideshow

Contribution of the livestock sector to textiles - wool

***By Dalena White - IWTO - International Wool Textile Organisation** - @iwto_wool*

https://iwto.org/



Dalena White has more than 20 years' experience in clothing design, textile manufacturing, merchandising and product sourcing for fashion retail. She served as a board member of a clothing factory for 6 years, before joining the wool industry in 2008. She managed brand developments for South African Merino wool products, including styling, wool textile innovation and marketing projects with retail partners. Dalena White was appointed as the Secretary General of the International Wool Textile Organisation, based in Brussels, Belgium, in June 2016.

Dalena White presented on the role of wool in the textile industry and the challenges faced by natural fibres in a market dominated by synthetic materials. She highlighted the alarming state of the textile sector, where wool represents only 1% of global fibre use, while synthetic materials, particularly polyester, continue to dominate. The rise of fast fashion has exacerbated waste and pollution problems, with the fashion industry emitting more CO_2 than international flights and shipping combined. Dalena White noted that the average European consumer discards clothing after just eight wears, contributing significantly to textile waste.

A key issue Dalena White addressed was the European Union's Product Environmental Footprint (PEF) method, which is intended to measure environmental impact in the textile sector. However, she criticized PEF for failing to account for crucial factors like microplastic pollution, circularity, and fibre biodegradability. She warned that the current measurement tools, including the Higgs Index, are flawed and risk being written into European law, unfairly penalizing natural fibres while promoting recycled plastic-based textiles as "green." It was argued that this bias against natural fibres like wool distorts sustainability assessments. While polyester production continues to increase, natural fibres are being overlooked in legislative and funding frameworks. She stressed the importance of recognizing the ecological benefits of sheep farming, including land management, carbon sequestration, and biodiversity preservation. Farmers should be rewarded for their contributions to ecosystem health rather than being misrepresented as environmental burdens.

To address these challenges, Dalena White called for a shift in how sustainability is measured, advocating for more accurate assessment methods that account for the full life cycle of textiles. She emphasized the need for stronger partnerships between the public and private sectors, more support for small-scale farmers, and improved funding for wool production to ensure that sustainable materials have a place in the future of textiles. In response to the growing threat of synthetic dominance, IWTO and other natural fibre organisations launched the "Make the Label Count" campaign, urging policymakers to revise sustainability criteria to reflect the true environmental impact of different textile fibres.

More information in the slideshow

Role of livestock in circular bioeconomy systems (FAO guidelines)

By Barbara Amon, ATB / FAO - *@LeibnizATB* *@FAO*

https://www.atb-potsdam.de/de/ https://www.fao.org/partnerships/leap/en

Barbara Amon is senior research scientist and board representative for research at the Leibniz Institute for Agricultural Engineering and Bioeconomy in Potsdam, Germany, and Associate Professor in Environmental and Agricultural Engineering at the University of Zielona Góra, Poland. After many years of research and practical experience in agriculture, she completed her habilitation in Agricultural Engineering at the University of Natural Resources and Life Sciences in Vienna, Austria in 2007. Barbara also participates in many panels dealing with sustainable agriculture, including the Intergovernmental Panel on Climate Change, the United Nations Environment Programme and the FAO LEAP Partnership. She is co-chair of the Agriculture and Nature Panel under the UNECE Task Force on Emission Inventories and Projections and co-chair of the Expert Panel on Mitigation of Agricultural Nitrogen under the UNECE Task Force on Reactive Nitrogen.

Barbara Amon presented on the role of livestock in circular bioeconomy systems, based on the forthcoming FAO guidelines. She emphasized that livestock contributes beyond food production, playing a crucial role in nutrient recycling, land management, and ecosystem preservation.

Barbara Amon introduced the forthcoming FAO LEAP (Livestock Environmental Assessment and Performance) guidelines, which aim to integrate circular bioeconomy principles into livestock environmental assessments. Traditionally, livestock production is evaluated based on greenhouse gas (GHG) and nitrogen emissions, often neglecting its broader benefits. The guidelines seek to address this by defining methodologies and metrics to assess circular bioeconomy approaches in livestock systems. Alongside this initiative, FAO is also developing guidelines for evaluating ecosystem services in livestock systems, expected to be finalized in early 2025. The guidelines are being developed by a technical advisory group of 30 experts from 25 countries, ensuring a global perspective. They build upon existing FAO LEAP work on methane emissions, nutrient cycling, and water resource efficiency. Barbara Amon highlighted that livestock production systems must transition towards circularity to maximize their benefits while minimizing negative environmental impacts. She illustrated this with a case study from Uruguay, where extensive livestock farming supports high-nature-value grasslands. Studies show that removing livestock from these grasslands would not lead to reforestation but desertification, as the soil is too shallow to support forests. These systems also contribute to biodiversity conservation and rural employment while supplying feed exports to Asia and other regions. Uruguay's livestock sector has already reduced its GHG emissions through improved practices, but further reductions would require intensification - such as planting higher-yield grasses and feeding concentrates - which could disrupt the ecosystem. This example underscores the limitations of assessing livestock sustainability solely through LCA (Life Cycle Assessment) or GHG emissions, without considering broader environmental and social impacts.

The content of the FAO LEAP guidelines was outlined, which include:

- **Circularity indicators** to measure nutrient recycling and resource efficiency.
- **Environmental footprints**, integrating LCA methodologies with circularity metrics.
- **Sources of co-products** from both plant-based and animal-based production, including meat processing byproducts, milk and hide processing, and manure management.
- **Policy and regulatory considerations**, recognizing that legal and food safety barriers can influence the adoption of circular practices.
- **Prioritization of biomass use**, reinforcing that food production should take precedence, followed by feed, biomaterials, and, lastly, disposal.

A key challenge is the absence of a universally accepted methodology to assess circularity in livestock systems. The guidelines aim to bridge this gap by showcasing best practices and case studies to support their practical implementation. The second round of expert reviews is currently underway, with finalization expected by the end of 2024 and an official launch in early 2025.

More information in the slideshow

Daroeira farm: An integrated agrifood and environmental system

By Manuel Chaveiro Soares, Portugal

Manuel Chaveiro Soares was born in Lisbon (Portugal) in 1944 and obtained a Degree in Animal Science, Post Graduation in Agriculture Tropical, a PhD and Aggregation at Technical University of Lisbon. He was Professor of animal production at Instituto Superior de Agronomia (Technical University of Lisbon) from 1980 to 2004. He has been Consultant of Valouro Group in animal nutrition area since 1982 and responsible production at a very large broiler breeder company since 1986. Fruit-grower at his farm and Director of Cooperative Frutus. He is the Co-founder of the Portuguese Section of World's Poultry Science Association (1982). His main scientific papers were published in Poultry Science and Journal of Applied Poultry Research.

Manuel Chaveiro Soares presented an integrated agricultural system that combines broiler production with crop cultivation, emphasizing circular economy principles and sustainability. His case study focused on a poultry farm in southern Portugal, which operates on a large property historically dedicated to forestry, cork, and olive production, making it an ideal location for biosecurity and sustainable farming. The farm was developed with three key objectives: enhancing **biosecurity** by locating poultry production away from traditional poultry-farming areas, promoting **circular economy** principles by integrating crop and livestock production, and reducing the **carbon footprint** of broiler farming through localized feed production and renewable energy. The speaker described the **farm's layout**, which includes **nine broiler farms**, each with six poultry houses, a **feed mill**, a **slaughterhouse**, a **composting unit**, and a **byproduct processing facility**. These components work together in a closed-loop system. Corn is cultivated on the farm using irrigation from an on-site **dam**, providing all the feed needed for **15 million broilers annually**. The feed mill processes this corn along with soybean meal sourced from another facility in northern Portugal. The farm also maximizes resource efficiency through **broiler litter recycling**, which is used as organic fertilizer to improve the **clay-rich soil**. Before implementing this system, corn yields were around **7 tons per hectare**, but with the addition of organic fertilizer, productivity increased to **16 tons per hectare**. Composting is another key element, allowing sanitized organic fertilizer to be sold to nearby vegetable growers who require strict sanitary standards for exports, particularly to the UK. In addition to sustainable farming practices, the **farm generates photovoltaic energy**, significantly reducing fossil fuel dependence. While the energy produced on-site is not yet sufficient for all operations, across all company farms, renewable energy fully powers poultry houses and other facilities. Even company vehicles are transitioning to electric, using self-generated solar energy.

Question: About the existence of **crop rotation**.

Answer: while corn is the dominant crop, they occasionally rotate it with wheat to maintain soil health. The farm uses **genetically modified (GM) corn**, which reduces the need for pesticides. Portugal and Spain are the only EU countries cultivating GM corn, with a total of **100,000 hectares**, in contrast to the **200 million hectares of GM crops grown globally**.

Question: What are the benefits of an **integrated farming system** compared to specialized poultry production?

Answer: The primary advantage is **biosecurity** - the farm's isolated location and controlled environment significantly reduce disease risks. In contrast, traditional broiler farming often relies on multiple, scattered small farms, increasing disease transmission risks. The company manages **40 small breeder farms** in different locations under strict biosecurity controls.

More information in the slideshow

Lampela dairy farm: keeping the countryside alive and productive

By Perttu Sirviö, Finland

Perttu Sirviö owns a farm together with his wife and they are also the main employees. Important themes for Perttu are the future of Finnish agriculture, (local) economy, development of rural areas and role that agriculture has in comprehensive security. He also speaks about these issues as a trustee in MTK which is the union of Agricultural Producers and Forest Owners in Finland.

Perttu Sirviö discussed how farming sustains rural communities, strengthens local economies, and enhances national security. His **family-run dairy farm**, located in the centre of Finland, has **90 cows**, produces **12,500 kg of milk per cow per year**, and manages **180 hectares** of land, growing cereals, peas, and biodiversity fields. He emphasized **biosecurity, circular economy, and sustainability**, highlighting Finland's **strict antibiotic regulations** and **salmonella-free** food production. His cows are out year-round (however in winter no pasture is available) benefiting from outdoor access. The farm **reduces synthetic fertilizers** by integrating **manure, ammonium sulphate from a local nickel mine, and pulp industry byproducts**, while maintaining **soy-free feeding practices**.

Grass silage is the farm's main fodder, yielding **9,000-10,000 kg per hectare annually**. His **biodiversity fields** contain **diverse plant species**, enhancing soil fertility and pollinator habitats. The farm's **€750,000 turnover** supports local contractors, reinforcing dairy's vital role in the regional economy, where **80% of agricultural income comes from livestock**.

Beyond its economic and environmental contributions, livestock farming plays a **strategic role in Finland's national security**. Perttu Sirviö noted that with a **1,300 km border with Russia**, Finland has developed a **comprehensive security model**, ensuring resilience in food production, rural development, and economic stability. A Finnish saying reflects this philosophy: **"A border with inhabitants is a safe border."** Perttu Sirviö also expressed support for aspects of the **Common Agricultural Policy (CAP)**, particularly in **ensuring fair farmer income, promoting biodiversity, and strengthening food security**. However, he called for:

- **More subsidies allocated to active farmers** rather than passive landowners.
- **Better payment scheduling**, as current delays create financial uncertainty.
- **A stronger focus on food production** at the centre of agricultural policy.

Perttu Sirviö confirmed, while discussing with the audience, that he values biodiversity fields beyond CAP incentives, as they provide both environmental and community benefits. His farm exemplifies **resilient, sustainable dairy farming that integrates economic, environmental, and security considerations**.

More information in the slideshow

Panel discussion with speakers and the audience

With:

- Barbara Amon, ATB / FAO
- Carlos Martin Óvilo, DG Agri - Animal Products Unit (Unit E3)/ European Commission
- Stef Denayer, Bio Base Europe Pilot Plant https://www.bbeu.org/

Stef Denayer is an industrial Engineer in Chemistry and postgraduate Environmental Technologies at University of Leuven (KUL). He has extensive knowledge about material upcycling, cradle to cradle and industrial symbiosis. Past experiences include triple helix cleantech cluster management and European collaboration projects with sustainability as focus area. Since 2020, he has been the stakeholder relations manager of Pilots4U, the European network of 'open access' pilot and demo facilities for the bioeconomy, bringing innovation closer to the market.

More information in the slideshow

Stef Denayer highlighted the **challenges of scaling up bio-based innovations** from lab-scale to industrial production. While many bio-based technologies exist, they often struggle to reach large-scale commercialization due to **technical and financial barriers**. **Bio Base Europe Pilot Plant** aims to bridge this gap by providing **open-access pilot and demonstration infrastructure**, which allows innovators to test and refine their processes before full-scale production.

Several **bio-based products** under development were discussed, including:

- **Alternative proteins** (plant-based, insect-based, microbial, and cultivated meat).
- **Specialty carbohydrates** such as **human milk sugars and sweeteners**.
- **Sustainable materials**, including **vegan leather**, **bioplastics**, and **bio-based textiles**.
- **Functional ingredients**, such as **bio-based surfactants** for detergents and **bio-pesticides** to replace fossil-based chemicals.

Stef Denayer also emphasized the importance of **carbon upcycling** rather than mere **decarbonization**. Instead of reducing carbon emissions outright, **carbon capture technologies** can convert greenhouse gases into valuable products like **biofuels, fish feed, and bio-based chemicals** through **gas fermentation**.

The presentation underscored the **growing opportunities in the bioeconomy**, particularly for **agriculture-based industries** seeking to create **higher-value products from biomass and byproducts**. The transition from **fossil-based to bio-based industries** is critical for sustainability, and **collaboration across sectors** will be key to achieving **scalability and economic viability**.

This short presentation was followed by a round table and Q&A discussion with Barbara Amon, Carlos Martin Óvilo and Stef Denayer.

Question: What about the increased animal disease risk in circular bioeconomic systems?

Barbara Amon: The **FAO has initiated RENOFARM, an initiative that follows the One Health principles (i.e integration of animal, human and environmental health) and aims at reducing the use of antimicrobials**. Circular bioeconomy approaches must carefully manage animal health risks, especially when dealing with manure recycling, feed byproducts, and waste management. Regulatory frameworks and biosecurity measures are crucial in preventing the spread of diseases in a more interconnected agricultural system.

Question: How could circularity indicators for manure use be used to better assess livestock systems? Should manure circularity be part of the assessment of a livestock system? How could these indicators help individual farmers manage their livestock systems more effectively?

Barbara Amon: The optimal use of manure as a nutrient source for crops is crucial in improving both circularity and environmental sustainability. A major goal of circular systems is to reduce reliance on external inputs, such as synthetic fertilizers, by maximizing internal nutrient cycles. If manure can effectively replace mineral fertilizers, it would enhance both sustainability and farm efficiency.

Question: One way to reduce nitrogen surplus on a farm is to export manure to another farm. However, this reduces the level of circularity within the original farm. How do we reconcile these different concepts?

Barbara Amon: A key challenge in livestock production is ensuring that manure is not overproduced in some areas while being underutilized in others. The long-term goal should be to balance manure availability and demand across regions, reducing the risk of nutrient overload in certain locations while making organic fertilizers more accessible where needed. Circularity should not necessarily be confined to a single farm, as achieving balance at a regional level is often more practical and effective.

Question: Where should we draw the boundaries for circularity? Should it be at the farm level, regional level, national level, or even at the EU level?

Barbara Amon: There is no universal agreement on how to define and measure circularity in livestock systems. However, it was suggested that regional collaboration should be the minimum target. While a fully self-sufficient farm may not always be possible, regional networks of farms can work together to close nutrient loops more efficiently. The broader the scope, the easier it is to integrate livestock and crop production in a way that optimizes nutrient use and minimizes waste. Ultimately, circularity in manure management should focus on optimizing nutrient use at a broader scale rather than being restricted to individual farms. By fostering collaboration within regions, livestock systems can become more sustainable while also addressing environmental concerns related to manure management.

Question: How can circularity indicators for manure use help assess livestock systems and improve farm management?

Barbara Amon: Circularity indicators should account for **nutrient cycling and reducing external inputs**. Optimizing manure use to replace synthetic fertilizers enhances sustainability. However, **regional circularity** (rather than farm-level circularity) is more practical, ensuring that livestock numbers align with land and resource availability.

Question: How should policy account for the trade-off between ecosystem services provided by livestock systems and greenhouse gas emissions per kilogram of protein?

Carlos Martin Óvilo: there is no "one-size-fits-all" solution. Both extensive and intensive livestock systems have benefits and trade-offs, meaning policies must be designed to accommodate these differences. Sometimes when improving one aspect of sustainability (e.g., reducing emissions), another aspect (e.g., ecosystem services) may be negatively impacted. Policymakers must balance these aspects rather than focusing on just one metric. A major challenge moving forward is the measurement of greenhouse gas emissions. Different methods of calculation lead to inconsistencies, making it difficult to compare systems fairly. Therefore, one of the European Commission's key objectives will be to establish a **harmonized methodology** for estimating emissions, ensuring that all policies and discussions are based on a common framework.

Question: How can the policy system better integrate these multiple deliverables (ecosystem services, emissions, biodiversity) into a holistic assessment of livestock systems?

Carlos Martin Óvilo: a more comprehensive approach is needed. Greenhouse gas emissions are often used as the primary metric in assessing sustainability, but this approach overlooks the broader role of livestock in maintaining grasslands, biodiversity, and soil health. The goal should be to create an assessment framework that considers multiple factors rather than prioritizing one over the others. **Current policy discussions often lack a unified approach to sustainability**, leading to fragmented

policies that do not fully reflect the complexity of livestock systems. A more integrated, holistic model should be developed to guide decision-making.

Question: How do we ensure European farmers can compete fairly with imports from countries that do not follow the same sustainability standards? There are concerns about how European farmers, who are increasingly adopting circularity and sustainability practices, can remain competitive against imports from countries with lower sustainability requirements.

Carlos Martin Óvilo: this is a **complex issue**, but one that is being addressed through **sustainability chapters in EU trade agreements** with third countries. However, the enforcement and effectiveness of these provisions remain a challenge. The EU's ambition is to encourage its trading partners to align with its sustainability goals, but ensuring fair competition on a global scale requires **further policy development** and stronger international cooperation.

Barbara Aman: coming back to previous question on how to integrate LCA with ecosystem services, LCA often prioritizes reducing greenhouse gas (GHG) emissions, which can lead to unintended consequences, such as pushing already environmentally friendly and circular systems toward intensification in an effort to lower emissions. A key example was Uruguay, where livestock systems operate in harmony with natural grasslands. If these systems were altered solely to reduce emissions, they could lose their biodiversity and sustainability benefits. Similarly, in Finland, the local conditions do not support certain types of agricultural production like poultry and peas. Instead, farmers work in partnership with nature, utilizing systems that suit their specific regional conditions. Sustainability assessments should not be solely focused on carbon footprints. Instead, policies must adopt region-specific approaches that recognize the full spectrum of environmental services, such as biodiversity, soil health, and circularity, rather than forcing a one-size-fits-all model based on GHG reductions alone.

Dalena White: there is a global influence of European standards on GHG measurement in livestock production. Countries like Japan, the U.S., and Canada are waiting to see Europe's approach before defining their own. Current methodologies disadvantage natural fibres and biopolymers, as they are assessed similarly to fossil-based products under the PFCR (Product Footprint Category Rules) model. This presents a major barrier to moving away from fossil-fuel-based fibres, underscoring the need for better methodologies to reflect the environmental benefits of natural and biobased materials.

Audience: one-third of Europe’s agricultural land is grassland, and its preservation is a major policy priority. Livestock is the most effective way to maintain these grasslands, preventing land degradation and ensuring biodiversity and ecosystem stability. Livestock's role as a land manager should be more central in policy discussions.

Question: Are there new innovations using livestock byproducts for high-value materials or industries beyond food?

Stef Denayer: livestock byproducts are underutilized and could be upcycled into high-value materials rather than just being converted into energy. He referenced previous innovations like anaerobic digestion but emphasized that this process still results in CO_2 and methane emissions, which contribute to climate concerns. Instead, he suggested focusing on carbon upcycling - using byproducts to create valuable new materials rather than simply producing bioenergy. A recent innovation at the Bio Base Europe pilot plant in Belgium, where food waste was processed into bio-surfactants (cleaning agents) rather than being wasted. This 97% food-waste-based product is now on the market, demonstrating that side streams can be turned into valuable commodities rather than being discarded or burned for energy.

Question: Are companies in the livestock sector coming to Bio Base Europe with ideas for upcycling byproducts?

Stef Denayer: while companies from various industries are exploring upcycling options, there is currently little engagement from the livestock sector. There is significant untapped potential for livestock side streams (such as bones, hides, and other waste products) to be transformed into higher-

value materials for industries like textiles, cosmetics, and biomaterials. However, the sector has yet to fully engage in this innovation space.

Question: There are concerns about the dominance of U.S. companies in alternative protein innovation. What is happening within the European Union (EU) in this field? What about the potential competition between alternative proteins and traditional animal-source proteins and the expected timeline for their expansion?

Stef Denayer: alternative protein development is not a distant future concept - it is already happening in Europe. Some examples of European companies that are scaling up production and commercialization of alternative proteins.

- Example from Scotland:
    - A mycoprotein (fungus-based meat alternative) was developed by the company Enough in Scotland and initially tested at the Bio Base Europe Pilot Plant in Belgium.
    - It was scaled up from a lab setting to industrial-scale fermentation, moving from 150L to 1,500L fermenters, with further expansion to 15,000L.
    - A new production facility was set up in Sas van Gent, near Ghent, co-hosted by Cargill.
    - The plant currently has a capacity of 10,000 tons per year, primarily supplying mycoprotein for the production of vegetarian “chicken nuggets” and “fish sticks”.
    - It aims to expand to 50,000 tons within five years, using a side stream from Cargill’s bioethanol production site as a feedstock.
- Other European Initiatives:
    - Belgium: The company Naplasol is also producing mycoproteins, contributing to Europe’s expanding market.
    - France: Another company, Maash In, has started developing mycoproteins at a demonstration scale.

While many of these projects are still in pilot and demo phases, they are progressing quickly toward commercial productions. Expected short-term growth: alternative proteins are rapidly scaling up in Europe, but they won’t replace animal proteins overnight. Hybrid products: many food companies are blending plant-based and animal-based proteins to appeal to flexitarian consumers rather than strict vegetarians. Cultivated meat: unlike mycoproteins, cultivated meat (lab-grown meat) is still in early development and will take at least another 5 to 10 years before reaching large-scale production and mainstream consumer markets.

Question: How the antagonism between attributional Life Cycle Assessment (LCA) and the development of extensive, grassland-based livestock systems approaches could be reconciled and whether more holistic assessments should be adopted?

Barbara Amon: LCA alone is insufficient for assessing the full environmental impact of livestock systems. At FAO, they are working on ecosystem and circular bioeconomy guidelines to incorporate a broader range of sustainability indicators.

- Environmentally friendly, circular systems already exist, and care must be taken not to intensify them unnecessarily just to reduce greenhouse gas emissions.
- FAO is focusing on multi-criteria assessment rather than relying solely on LCA, involving extensive research and support from experts.
- Importance of educating the public about livestock’s role beyond greenhouse gas emissions and highlighting its contributions to ecosystems and rural economies.
- At a recent FAO Latin American Conference, this broader role of livestock was strongly emphasized to move the discussion beyond just emissions.

Carlos Martin Óvilo: we acknowledge the complexity of the issue and agree that it requires considering multiple factors when evaluating livestock sustainability.

- Extensive ruminant systems face profitability and competitiveness challenges, particularly compared to imports from third countries.

- Need for a holistic approach, emphasizing that no single livestock model is perfect - each has its pros and cons.
- Key realisation from the discussion:
    - "Livestock is more than food, and livestock is more than just farmers."
    - A vast network of industries, businesses, and families depend on livestock beyond just meat and milk production, including those involved in co-products and byproducts.

There is a critical question for industries relying on livestock-derived materials:

- Many companies depend on raw materials from livestock (e.g., hides, wool, gelatine).
- However, livestock numbers - especially extensive ruminants - are declining each year, with no expectation of reversal.
- How do these industries plan to sustain their business models in the next 10 to 20 years if their primary raw material is continuously decreasing?
- Policymakers must ensure that any decline in livestock production is not artificially induced by policies but occurs due to natural market dynamics.

Question: On behalf of scientists regarding the feasibility of using food waste as livestock feed, we acknowledge the potential benefits, but significant research is required before its practical implementation, namely on two key concerns: biosecurity risk - ensuring food waste is safe, and nutritional value - assessing if it provides a viable alternative. What about funding and actually having food waste as animal feed, what legislative and funding mechanisms exist to support further research into turning food waste into livestock feed?

Stef Denayer: we categorize food waste into different generations:

- Second-generation food waste - byproducts from food production, which are often already used in livestock feed.
- Third-generation food waste - post-consumer waste (leftovers, discarded food), which is more challenging to use due to legal and safety concerns.

In Belgium, food waste is collected and typically sent for anaerobic digestion, which produces organic fertilizer and biogas. While this supports circularity, it releases CO_2 and methane, which raises concerns about efficiency.

However, higher-value uses should be prioritised. For example:

- Instead of converting food waste into energy, it could be repurposed for biochemicals or bio-based products with higher economic and environmental value.
- If food waste is to be used as livestock feed, it must be safe, legally allowed, and economically viable compared to other uses.

The key challenge is the economic viability - the industry needs a reliable feedstock supply and a guaranteed market for products made from repurposed first, second and third generation sidestreams. Without a stable value chain, innovation in this area will struggle to scale up.

Carlos Martin Óvilo: food waste and animal feed regulations fall under different divisions within the European Commission: one unit focuses on reducing food waste and promoting recycling - another unit regulates animal feed safety. While these two areas have potential for synergy, ensuring food waste is safely converted into feed requires strong regulatory oversight. Some progress is already being made.

Question: there is a lack of fair remuneration for livestock farmers, particularly regarding byproducts (e.g., hides, offal). While livestock contributes to food production and high-value byproducts, farmers do not see economic returns for these additional outputs. Where should fair remuneration come from? Should it be addressed through public policy (such as CAP payments), or should it come from the industry that uses and purchases livestock byproducts? There is also a lack of economic circularity, meaning that there is little to no direct financial benefit for farmers from byproducts that are widely used in other industries.

Carlos Martin Óvilo: remuneration must come from both the market and policy support. Three key areas where farmers could improve their economic situation:

1. Market-based solutions - Farmers should seek ways to increase the value of their livestock and byproducts. More added value means better returns across the supply chain.
2. Policy support - While CAP and other EU policies support farmers' incomes, they are not direct payment schemes for byproducts. The policy helps stabilize income, but it is not a primary driver of value creation for livestock products.
3. Stronger Bargaining Power & Fair Trading Practices - Policies offer tools for farmers to strengthen their negotiating position with processors and buyers. This includes cooperation, vertical integration, and protection against unfair trading practices.

While policy can help stabilize farmers' incomes, the market must also play a significant role in ensuring fair payment.

Frank O'Mara: By comparing the transparency of the meat pricing system versus the lack of transparency around byproducts such as offal and hides. While farmers can access market information for beef and pork, there is little visibility into what processors and retailers earn from livestock byproducts. For example, 45% of the animal is offal and other byproducts, yet there is little transparency in the supply chain regarding how much value is captured beyond the farm level. Without clear pricing data, farmers have no way of knowing if they are getting a fair share of the revenue generated from byproducts.

Stef Denayer: cooperation among farmers could help improve market access and negotiate better prices. Farmers should work together to understand what types of crops (first generation feedstock) or livestock products are in demand from biotech and industrial sectors. A key takeaway from my experience at a farmers' union event was that farmers often lack clarity on what to produce for the emerging bioeconomy. While there is demand for certain byproducts, a stronger connection between farmers and industries is needed to close the economic gap and ensure that farmers receive a fair price.

Question: Concerns on the impact of emerging bio-solutions on small and medium-sized farms, noting that while innovations in bioeconomy could be useful for farmers, market dynamics favour large players. The participant also linked this issue to the declining number of livestock farmers, with smaller farms facing greater financial and operational challenges than larger ones. The key question was **whether public R&D funding could be better directed to ensure these technologies benefit all farmers, not just the largest operations.**

Stef Denayer acknowledged the validity of the concern but did not have a direct answer. Bioeconomy innovators often start at the lab scale but face significant challenges in scaling up, particularly because of high technological risks and funding constraints. Private investors tend to be hesitant due to economic uncertainties such as inflation and high interest rates. To address this, public voucher schemes could play a crucial role. These government-backed funding mechanisms could help de-risk the pilot and demonstration phases, making private investors more willing to engage. Similar schemes could be explored to support farmers in adopting innovative crops and technologies, reducing their risk when experimenting with new bio-based farming approaches. There are existing European regional initiatives where voucher systems help startups scale their technologies. A similar approach could be applied to farmers, allowing them to access new technologies and markets without bearing the full financial risk. More work is needed to develop structured support mechanisms for small and medium-sized farmers in the bioeconomy sector.

Question: there are economic struggles of wool production in Ireland which has led to wool being treated as a waste product rather than a valuable commodity. Ireland lacks wool processing infrastructure, forcing farmers to export raw wool to the UK for cleaning and processing. Additionally, barbed wire fencing damages sheep hides, reducing the quality of another potential revenue stream.

Given these issues, could the European Commission **support investment in wool processing and circular economy initiatives to turn wool from a financial burden into an added-value product?**

Jean-Louis Peyraud (former ATF President): I agree with these concerns: circularity and mixed farming systems are crucial in Europe. Reintroducing sheep grazing into arable land could support more sustainable land management while also enhancing the value of wool as a product. Wool has a high potential for textiles and insulation, particularly in climate change mitigation, given its excellent insulating properties.

Carlos Martin Óvilo acknowledged the shocking low price of wool and questioned why wool is being sold at a loss when costs exceed market returns. Market demand ultimately determines price, and there needs to be a better understanding of alternative uses and revenue streams for wool. Regarding policy interventions, Carlos Martin Óvilo pointed to CAP Network and EIP-AGRI projects, which fund research, cooperation, and pilot initiatives for rural development. Wool-related projects could fit within these programmes, particularly through bottom-up or leader-led rural development approaches, where farmers and local industry players could work together to explore processing and market opportunities. However, he cautioned that this is a narrow-scope issue, best addressed through targeted projects rather than large-scale EU-wide policy initiatives.

Take away messages and closing

Frank O'Mara, President of ATF, concluded with a reflection on the insightful discussions held throughout the morning, emphasizing the importance of exchanging knowledge and real-world experiences. He thanked the speakers and all the participants, both in-person and online, with a special acknowledgment to farmers and industry representatives, whose contributions helped bridge conceptual discussions with practical applications in agriculture and sustainability.

Key takeaway messages:

- Circular bioeconomy strategies should optimize nutrient use, reduce external inputs, and integrate regional collaboration.
- Holistic environmental assessment is needed to balance GHG emissions with ecosystem benefits.
- Biobased industries are expanding but need investment and regulatory clarity to scale.
- Alternative proteins are growing, but hybrid solutions may bridge the gap with animal products.
- Market transparency and policy incentives should ensure fair pricing for livestock byproducts.
- Livestock farming's economic viability requires better alignment of production, sustainability goals, and rural development strategies.

This discussion reinforced that livestock is more than food, providing vital ecosystem services, rural employment, and circular economy opportunities.

In 2025, the topic the Animal Task Force will be discussing is "Livestock farming systems in next generations: can we imagine the future?".

2 events:

- **A joint session with the EAAP Commission on Livestock Farming Systems, EAAP annual meeting – Innsbruck, Austria, 25-29 August 2025**
- **15th ATF seminar, Brussels, Belgium, 26 November 2025**