



EFPPRA

European Fat
Processors
and Renderers
Association.

Driving safety,
security and
sustainability in
the European food
supply chain.

Sustainability Charter

for a Circular Bioeconomy





Sjors Beerendonk
EFPRA President

Foreword

Business is key to the success of the Policies within the EU Green Deal¹, Farm to Fork Strategy² and United Nations Sustainable Development Goals (SDGs)³. Companies that align sustainable business models with the SDGs can unlock significant value in current and emerging markets and create more jobs. At the same time, the development of partnerships can drive industry transformation on the road to 2030 and beyond.

Our integral role in the animal-based food value chain gives us a fantastic opportunity to work alongside our supply value chain partners to help drive the transition to a low-carbon and circular future, fixed in renewable, natural resources.

Our vision is for our members to make a significant contribution to a circular bioeconomy for sustainable, safe and healthy animal-based food by optimal utilisation of animal by-products (ABP) and edible co-products (ECP).

As a proactive organisation, EFPRA works with our members, sector peers and stakeholders to help the supply value chain navigate the huge challenges that lie ahead and we want to promote our industry's positive sustainability credentials more widely.

By encouraging creativity and sharing knowledge we aim to help our members to continue providing innovative solutions for animal by-products and edible co-products that contribute towards a sustainable, resilient and inclusive future.

To help facilitate this, we have devised a Sustainability Charter based on three core

sustainability pillars around our central role in the circular bioeconomy model for utilisation of ABP and ECP from the animal-based food value chain. Our actions, aims and ambitions linked to the "Climate", "Health" and "Society" pillars are presented in separate sections of this publication.

Our Charter seeks to collaboratively help maximise the supply chain's contribution towards the EU and UN sustainability Policies through best use of ABP and ECP and help unlock the immense business opportunities along the way.

This Charter offers our members and value chain partners a framework for making the most significant contributions through process, product and partnership innovation while providing attainable pathways to help realise the ambitions of the Green Deal, Farm to Fork and SDGs.

Our members' diversity enables them to adopt different elements of sustainability while meeting their local drivers and demands of the animal-based food value chain. Our Charter does not therefore aim to drive our members to meet common targets, milestones or performance standards – we leave it for them to define their own commitments, inspired by individual characteristics, business models and local conditions.

We hope our Charter helps guide, inform and influence decision-making and actions along the animal-based food value chain and inspires action-oriented collaboration among industry peers and beyond.

A Collective Commitment for Action

“We are at a critical time for action to adapt to the challenges of a warming world with more people and competing demands on resources. Livestock production is the most resource intensive stage of the animal-based food chain. But 30–50% of each animal produced for meat, milk, eggs and fibre, is not eaten by humans. We are committed to securing a circular bioeconomy which converts animal by-products, edible co-products and food waste into low carbon materials for re-use in food production and other applications. We will work with supply chain partners to enhance the sustainability of the European food value chain, safeguard the health and welfare of citizens and animals, and the livelihoods of farmers and employees.”

“EFPPA members have an opportunity to leverage their scale and influence to help drive a sustainable transformation of agricultural markets. Agriculture can and must be part of the global climate solution. We believe through innovation, investment and collaboration, net zero is within our collective grasp.”

Alistair Collins, Chairman, FABRA UK

“We transform animal by-products into new resources and our sector is an essential ally for achieving circular livestock production. The time is now for action and to rethink our business models to improve the welfare of society, based on decarbonisation and the protection of nature. This Charter promotes the most resource efficient, climate and biodiversity friendly animal by-products processing sector management practices.” **David Codina**
Copocinter, President of ANAGRASA, Spain

“The European animal by-products processing sector is in a strong position to help influence the EU’s response to the challenges posed by the UN SDGs. Our sector can make a positive impact on the 2030 Agenda for Sustainable Development by taking a principles-based approach to business.”

Bernd Sroka, President of VVTN, Germany



By adapting to changes in markets, consumer demand and policy, EFPRA members are key players in driving societal benefits from an effective circular bioeconomy. Creating low carbon products with sustainable applications that preserve natural resources.



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*Readers will see 9 short case studies in the Sustainability Charter. Full length versions of these case studies are available at efpra.eu



Executive summary

This publication provides a clear understanding of the concept of a circular bioeconomy for the animal-based food value chain. It highlights where there are sustainability benefits and opportunities through optimal utilisation of animal by-products (ABP) and edible co-products (ECP) from the value chain.

Our established, essential role in collecting and processing ABP and ECP, and returning some of the derived products back into the value chain in animal feed and fertiliser makes us a key player in closing the circular bioeconomy loop and preventing food waste from an otherwise cradle to grave linear value chain.

Our broad range of product applications, from food, animal feed, renewable fuels, oleochemicals, pharmaceuticals to fertiliser provide solutions for everyday needs. These products and the animals they come from capture and store carbon and offer many environmental, health and societal benefits. Our central position in the supply chain gives us a fantastic opportunity to contribute to a circular bioeconomy with a sustainable, low-carbon and circular future, based on renewable and natural resources.

Our aim is to guide our members to make a significant contribution to advancing the circular bioeconomy for a modern and efficient animal-based food value chain that sustains healthy productive agriculture and human well-being and adapts to changing societal demands.

EFPPA's Sustainability Charter is a blueprint for our members to create and share business solutions to stimulate sustainable development within the European animal-based food value chain, helping it reach the highest levels of sustainability from farm to fork.

Our members are encouraged to seek out innovative forms of collaboration and partnerships and commit to implementing proportionate measures most relevant to their business.

The EU Green Deal, Farm to Fork Strategy and UN Sustainable Development Goals (SDGs) present our sector with an opportunity to apply our knowledge and creativity to provide innovative solutions that work towards a sustainable, resilient and inclusive future for all. Industry peers and animal-based food value chain partners can utilise the universal framework of the SDGs to inform their actions, identify new forms of collaboration, unlock investment opportunities and accelerate the transition to 2030.

We present our circular bioeconomy model for utilisation of ABP and ECP from the animal-based food value chain and our ambitions linked to the sustainability pillars of "Climate", "Health" and "Society" around our central role. While we interact with most of the 17 SDGs and recognise the interactions and potential trade-offs among the Goals, we have identified seven core Goals where our sector and the value chain have the most potential to influence, create long-term value and drive sector transformation.

A clear and transparent narrative on our Sector's most significant contributions to attaining these SDGs is provided for our stakeholders (NGOs, industry associations, governments, consumers and customers). Summaries of several case studies are included along the way with more details available on our website. We hope our Charter inspires and fosters collaboration throughout the animal-based food value chain and stimulates cross sectoral cooperation to amplify SDG impact.



A Circular Bioeconomy for the animal-based food value chain

A Circular Bioeconomy is defined by the European Commission⁴ as an economy in which renewable biological resources and their residues are produced and converted into value added products, such as food, feed, bio-based products and bioenergy.

Each part of the animal-based food value chain is a steward of the resources invested to make the products that consumers value. While major strides have been made to improve efficiency and reduce environmental impacts at individual parts of the chain, this can only take us so far and can create inefficiencies elsewhere. To achieve more, an integrated approach is needed to ensure we use resources efficiently, minimise our environmental impact, safeguard human and animal health and welfare, and protect the livelihoods of local communities that rely on agriculture.

Figure 1 shows the benefits of a Circular Bioeconomy for animal-based food production. Our model for the Circular Bioeconomy is shown in **Figure 2**.

The model is built around our members' essential central role that enables them to make a significant contribution to the ongoing transition to a low-carbon and circular future fixed in renewable, natural resources.

Our primary aims are linked to three key sustainability pillars which connect with seven core SDGs. These are the areas where we make our biggest sustainability contribution and assist our supply chain stakeholders in achieving their own high levels of sustainability.



Figure 1 –
Benefits of
a Circular
Bioeconomy



Our vision is to make a significant contribution to a circular bioeconomy for a sustainable, healthy animal-based food value chain



Climate

We aspire to a climate positive bioeconomy where our natural, low carbon footprint products and renewable fuels help to decarbonise the value chain



Health

We are dedicated to safeguarding animal, human and environmental health, and achieving the highest standards for safe and nutritious ingredients



Society

We aim to contribute towards a better socioeconomic environment by applying innovative solutions to ABPs and ECPs



Figure 2 – EFRA Circular Bioeconomy Model for utilisation of ABP & edible co-products from the animal-based food value chain



“The SDGs are the blueprint to achieve a better and more sustainable future for all. The animal by-products processing sector is contributing to the SDGs by providing low-carbon, bio-based solutions that are renewable and recyclable. This Charter provides us with a tool to help maximise our impact.”

Rainer Betken, Centravo, Switzerland



Our role in the animal-based food value chain circular bioeconomy



Our vision is to make a significant contribution to a circular bioeconomy for a sustainable, healthy animal-based food value chain

Processing animal by-products (ABP) became a widespread and efficient practice in the meat industry in the 19th – 20th century yet most people outside the industry are probably unaware of this essential activity. The optimal utilisation of ABP is often overlooked in discussions on food and food waste yet this is one of the key elements in the sustainability of agriculture and food production.

Up to half of each animal produced for meat, milk, eggs and fibre is not for human consumption and, if not managed adequately, this material could create a biosecurity risk to society. The products of an animal are split

between edible meat, edible co-products (those requiring further treatment to be edible) and ABP.

The cooking and drying ABP destroys pathogens and stabilises the material, enabling separation of the fat or oil and protein components into a range of marketable products. This process is known as rendering and is the most common ABP treatment process our members undertake.

A simple example of this, showing the % composition of the segregated fractions is shown in **Figure 3**.

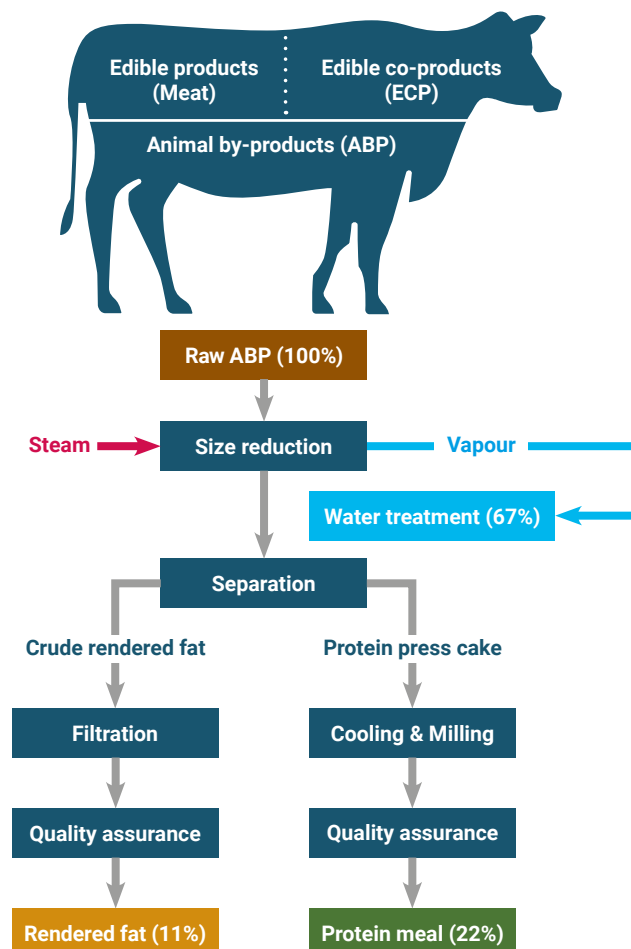


Figure 3 – Typical rendering process & ABP composition

**Our Circular Bioeconomy Model
is sustainable and low carbon
while helping meet society's needs
for food, products and energy.**



The sustainable processing of ABP and ECP derives products with high added value and maximises nutrient retention within the food value chain.

In processing ABP and ECP from our supply chain partners and returning some of the derived products back to the cycle as feed and fertiliser, we are key in closing the circular bioeconomy loop. This ensures that the precious resources used in raising livestock are not wasted and helps our customers to ethically maximise value from the animal. This contributes to the sustainability of agriculture and food production, reducing the overall carbon footprint of the animal-based food value chain.

Every year around 18 million tonnes of ABP and ECP are collected from farms, slaughterhouses, butchers, meat processors and other sources. They are then processed and dried by EFPRA members into around 6 million tonnes of products⁵.

With their ability to capture and store carbon, ABP derived products supply a broad array of renewable solutions that can substitute non-renewable and fossil-based materials in products we use every day. These range from traditional products such as food and animal feed ingredients, fertiliser and personal care products to more innovative biofuels and bio-ingredients for the pharmaceutical sector.

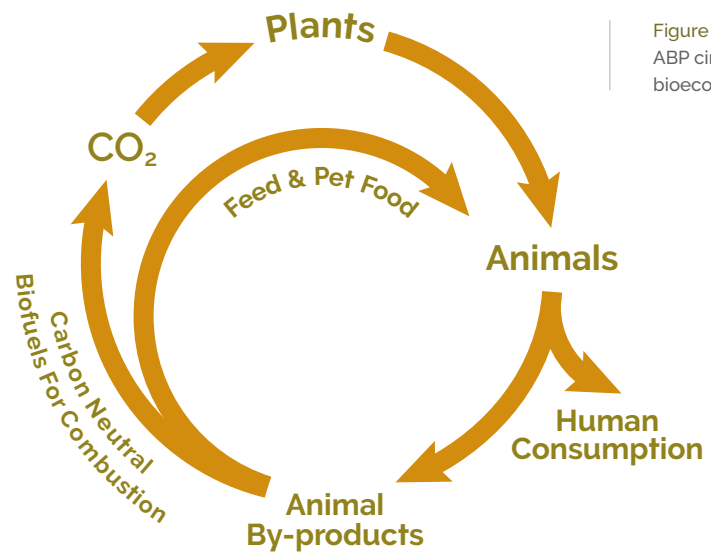


Figure 4 – ABP circular bioeconomy

ABP and ECP are not classed as waste because they are transformed into useful products but their processing options and applications can be considered in a similar way to the food waste hierarchy. However, it is not as simple as choosing the highest value option. The derived products and their applications are subject to strict legislative controls, relating to the risk category of the ABP (1 – higher risk; 3 – lower risk) and the species of the source material as illustrated in Figure 5.

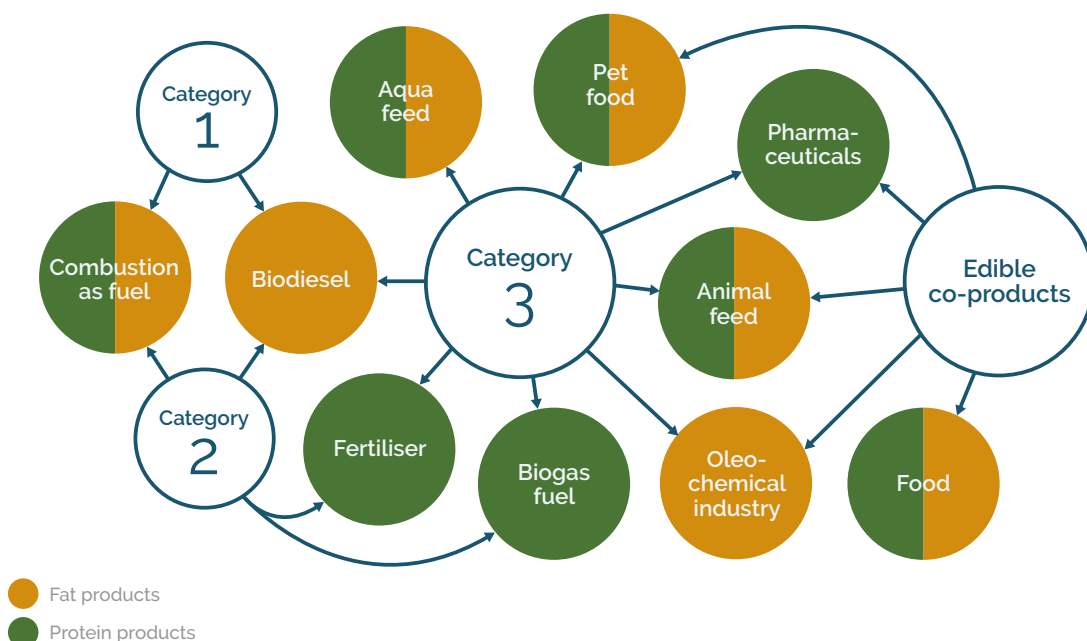


Figure 5 – Applications for products derived from ECP & ABP

“Creating value for all stakeholders for generations to come is at the core of our Sustainability Charter – by sustaining agriculture, investing in people, improving the planet, creating innovative products and delivering inspired performance. This Charter will help the continued sustainable development in the animal by-products processing sector and help realise our unique potential for positive impact.”

Alberto Grosso, EFPPA Vice-President and President of Assograssi, Italy



Hierarchy of uses for ABP and ECP

Our products are used in a variety of applications as shown in the hierarchy in Figure 6. This illustrates the products where most added value is achieved, where feasible.

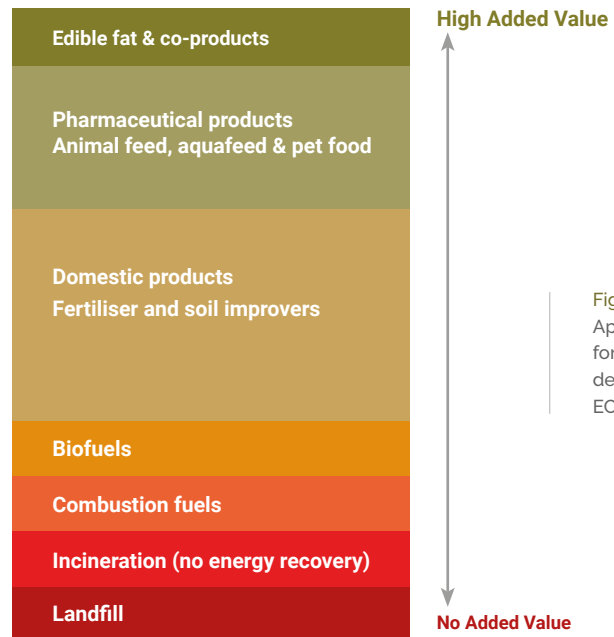


Figure 6 – Applications for products derived from ECP & ABP

Edible fats and oils

Our high-grade edible oils and fats are an established and essential part of a healthy human diet. They provide a source of energy, fatty acids and vitamins (A, D, E, K and oleic acid), and may support nutrient utilisation. They have a lower carbon footprint than vegetable-based alternatives such as palm oil from non-sustainable sources.

Pharmaceutical products

Carefully segregated by-products from cattle, pig and fish are made into pharmaceutical products for medical treatments and dietary supplements for humans. These include pharmaceutical ingredients like Heparin (a blood thinner), Chondroitin Sulphate, Glucosamine, Hyaluronic Acid and Collagen Peptides (bone, skin and joint health supplements).

Animal Feed

Processed Animal Protein (PAP) can form part of the feed rations of omnivorous and carnivorous animals – as long as there is no intra-species consumption. Category 3 fat is a feed ingredient because of its binding, preservative and nutritional properties.

Aquafeed

PAP is an ingredient of aquafeed – particularly for commercially grown carnivorous fish like salmon. PAP has better nutritional properties than vegetable proteins for fish and can also substitute for wild-caught fish in feed rations.

Pet Food

Raw ABPs, animal fats and PAPs are ideal pet feed

ingredients for carnivorous pets such as cats and dogs, providing a natural diet with superb taste and flavour. These ingredients correspond perfectly with the nutritional needs of pet animals and supply essential proteins, fats and minerals.

Domestic products

Animal fats are used in the manufacture of oleochemicals which are an ingredient for household soaps, detergents and cosmetics. They substitute vegetable fats like palm and coco in these applications.

Organic fertilisers and soil improvers


PAP is commonly used as an agricultural fertiliser, providing plants and crops with readily available nitrogen and phosphorus as well as micro-nutrients that are essential for growth and photosynthesis. As soil improvers the organic material helps restore the organic matter in the soils, improving soil fertility and water binding capacity.

Biofuels

Animal fats are increasingly used in manufacturing biofuels (biodiesel and green aviation fuel) which are used to supplement primary fossil fuels to create affordable, cleaner energy.

Combustion as fuel

Category 1 and 2 meat and bone meal (MBM), and tallow are excluded from return to the food chain but have applications as renewable fuels for high energy users, such as cement works and power stations, replacing fossil fuels.



ABP derived products offer a solution to finding more sustainable, highly nutritious animal feeds that can help reduce the carbon footprint of the most intensive stages of the supply chain.

Case Study 1

Renewable heat and power and fertiliser from MBM

The SecAnim facility in the UK safely disposes of Category 1 MBM produced from onsite rendering and external sources using fluidised bed combustion technology, providing complete destruction of pathogens and protein. There is no waste and the 0% carbon ash material remaining “KalFos” is used as a carbon neutral, high phosphate sustainable fertiliser. Renewable heat and power is derived from the biomass material, supplying steam and electricity for the site and electricity back into the grid.

Climate

We aspire to a climate positive bioeconomy where our natural, low carbon footprint products and renewable fuels help to decarbonise the value chain

The Climate pillar is our key strength. Our members directly support environmental sustainability by utilising by-products that would otherwise be treated as food waste, thus diverting it from landfills and other undesirable disposal options. This helps to maximise the value from the animal and by returning some of the derived products back into the value chain the bioeconomy loop can be closed.

The low carbon footprint of ABP-derived products helps decarbonise the supply chain by substituting higher impact primary resources such as imported vegetable-based feed ingredients like palm oil and soya, chemical based fertilisers and fossil fuels.

The high phosphorus content of PAPs that are utilised in different applications reduces the demand for inorganic phosphorus, a scarce natural resource. The EU depends on imports for more than 90% of its mined phosphorus. Phosphate rock and white phosphorus P4 are both on the EU List of Critical Raw Materials.⁶

The climate related benefits of some of our products are discussed in more detail below.

Applications in animal, fish and pet feed

Traditional vegetable-based feed ingredient production represents the largest share of the carbon footprint of an animal product, particularly for pork, poultry meat, eggs, and farmed fish⁷. Under the EU Green Deal there is a commitment to reduce the EU's dependency on non-sustainable soya-based feeds.

Extending the utilisation of ABP derived products

in animal and fish feed will improve sustainability across the value chain. Using processed animal protein (PAP) and animal fat in farmed animal feed is a low carbon alternative to vegetable-based feeds, with around 10% of the greenhouse gas (GHG) emissions of soya-based feeds⁸. In the food waste hierarchy the re-use of ABP derived fats and PAP in animal feed attains the highest value from ABP.

This contributes to reducing the EU's dependency on non-sustainable imported soybean meal and vegetable oils which are linked to deforestation. Non-sustainable palm and soy cultivation have a relatively high land use change contribution to their climate change impact, which also includes a large share of the agriculture activities associated to their production. This is not the case for our products, with the majority of agriculture and animal farming impact allocated to fresh meat production. The higher digestible protein content of PAP amplifies their benefit per kilogram of protein, an important aspect of feed performance.

EFPPRA notes the environmental and sustainability merits of insect meal and its potential to contribute alongside PAPs to reducing the environmental impact of animal feed. We will continue to engage with our animal-based food value chain partners, Government stakeholders and NGOs to promote the use of ABP derived products in feed applications. See EFPPRA's video "**Step up Sustainability with Processed Animal Proteins.**" which outlines the annual benefits of using PAPs in animal feed, as illustrated in **Figure 7:**



Figure 7 – Annual benefits of PAP use in EU animal feed

Our products help protect natural resources by replacing fossil carbon, nitrogen, phosphates and non sustainable imported materials such as soya and palm oil, capturing maximum value from natural biological resources.

Pet Food Ingredients

Half of all global households now own a cat or dog.¹⁰ There is ever more focus on the welfare of pets and the health and environmental impacts of pet food. Using our products in pet food gives it a lower carbon footprint than using non-sustainable vegetable-based alternatives and makes good use of natural protein, energy and phosphorus content.

Organic fertilisers and soil improvers

Natural, renewable protein fertilisers and soil improvers are recognised for sustainable farming and can replace non-renewable sources. Our fertilisers are particularly valued for phosphorous content helping to close nutrient cycles and reduce mining of rock phosphate.

Biofuel manufacture

Biofuels made from animal fats can substitute fossil fuels, lowering the environmental impact. Biodiesel manufactured from Category 1 and 2 fats qualifies for RED renewable fuel incentives. Many EFPRA members also generate biogas through anaerobic digestion of various materials.

Biomass Fuels

Category 1 and 2 meat and bone meal (MBM), and tallow can be used as renewable fuels for high energy users such as cement works and power stations. Subject to end of waste regulatory approval, the ash remaining from the combustion of MBM can be used as a fertiliser, a much better option than landfill.

Some of the key climate related sustainability credentials of our ABP derived products are illustrated in **Figure 9**:

Case Study 2

Converting Category 1 and 2 fats into biodiesel

Daka ecoMotion in Denmark produces over 50 million litres of biodiesel per year from Category 1 and 2 fats. This is blended with fossil diesel for various transport fuel applications and eliminates 7.5 times the carbon dioxide equivalent of Daka ecoMotion's own transport and production emissions.

Case Study 3

Carbon footprint study of ABP derived products and plant-based alternatives

EFPRA commissioned an independent life cycle analysis (LCA) study to better understand the environmental performance of feed products. The study report⁸ compares the carbon footprints of European ABP derived feed ingredients to those made from imported plant-based ingredients. The calculation methods follow a global standard, established by nations, the industry, societal groups and NGOs in partnership with the Food and Agriculture Organisation of the UN (FAO). The Global Feed LCA Institute (GFLI) approved the data and it is available on their database⁹. The study shows ABP derived feed ingredients have much lower carbon footprints, as explained earlier and this is illustrated in **Figure 8**.

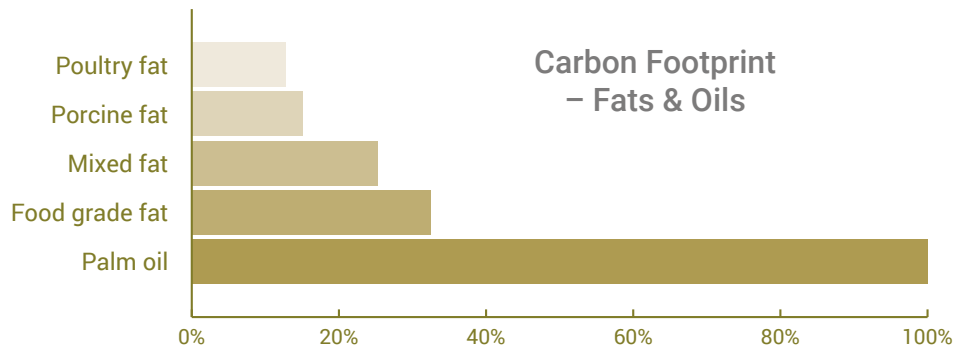


Figure 8 – Carbon footprint of ABP derived products as % of vegetable alternatives' carbon footprint from GFLI database, more details in Case Study 3

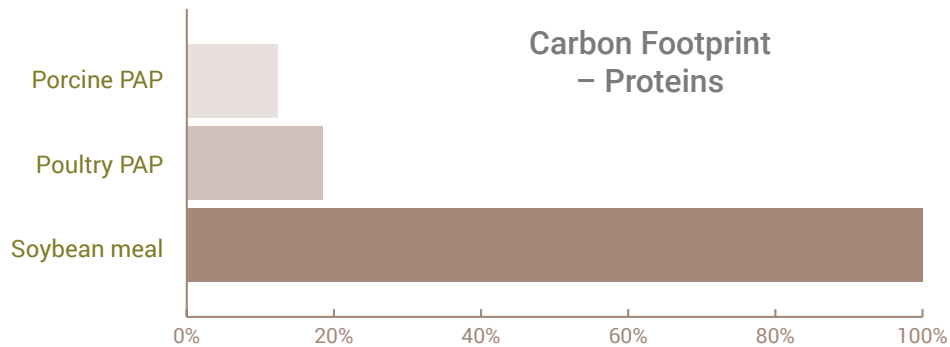


Figure 9 – Key sustainability credentials of ABP derived products

Rendering is the only bio-secure option for sanitised collection, transport and treatment of all three categories of ABP which also produces safe, nutritious and valuable low carbon products.



Health

We are dedicated to safeguarding animal, human and environmental health, and achieving the highest standards for safe and nutritious ingredients

Our role is to safely collect and process ABP and edible co-products into useful healthy products. Our members contribute to animal health and welfare through utilisation of our nutritious products in animal feed and through disease prevention and control.

Biosecurity, disease and fallen stock control

If ABP are not managed appropriately by well trained staff, they present a serious health risk and the primary purpose of treating or disposing of ABP is the protection of environmental, animal and public health against these potential microbiological threats.

The collection and disposal of fallen stock without undue delay is an important component of farm biosecurity in both normal and

disease outbreak scenarios. Member States have obligations to ensure the safe disposal of fallen stock to safeguard both public and animal health which normally means disposal by rendering or incineration. At times of crisis, EFPPA members also provide essential secure animal disease control and waste disposal services to health authorities.

Treating ABP by rendering provides safe and secure treatment of ABP using strictly controlled and regulated storage, collection, transport and processing. The rendering process destroys pathogens and stabilises the ABP to eliminate disease risk, breaking the disease cycle and produces sanitised, safe, low carbon products for re-use in various applications. See **Figure 10**:

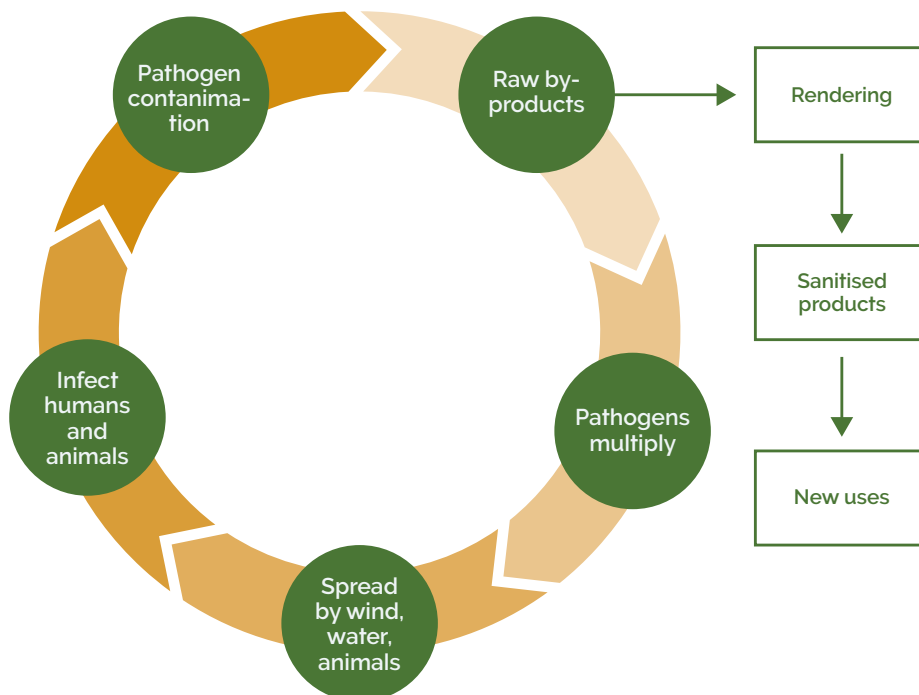


Figure 10 – Rendering breaks the disease cycle



Case Study 4

PAP nutritional studies

EFPPRA commissioned two nutritional studies at Wageningen University to investigate the benefits of using PAPs in poultry and pig diets as well as obtain up-to-date values for nutrient content and digestibility of PAP for their optimal use in poultry and pig diets.

The poultry¹¹ and pig¹² feeding trials showed feeds containing PAPs are highly palatable, digestible, nutritious and contain a variety of minerals, such as calcium and phosphorus for strong bones and growth development. The studies showed animal welfare benefits too.

Our members deal with Avian Influenza outbreaks most years and African Swine Fever continues to spread in many parts of the world, including eastern Europe. The animal feed and ABP processing industries must be ready to address animal health and feed safety concerns around transmission of viruses via ABP derived products from harvested diseased fallen stock.

With the exception of BSE, the EU allows the treatment of all animal diseases as Category 2 ABP. The derived protein products from Category 2 are approved for use as fertiliser. The EU's approval for this is based on scientific evidence which shows that the ABP processing methods are sufficient to eliminate all known classical diseases, making the derived products safe.

ABP derived products used in feed are safe

Our feed grade products are produced from safely sourced and traceable Category 3 raw materials. The highest standards of hygiene and traceability mean our products are safe and suitable as healthy ingredients for animal feed or fertiliser. Strong traceability measures eliminate the possibility of intra-species consumption. Processing is undertaken at facilities with strict hygiene procedures based on Hazard Analysis Critical Control Point (HACCP) principles to comply with health rules; facilities are accredited to QS and GMP+.

ABP derived products are nutritional and palatable

PAPs are a valuable source of protein for pigs, poultry, farmed fish and pets. Animal proteins also have a relative abundance of essential amino acids, resulting in high feed efficiency and good animal welfare. PAP is an important organic source of phosphates which are highly digestible compared to plant origin phosphorus. High quality feed also contributes to better health and robustness of animals. For example, blood products supply natural immunoglobins which can reduce the need for animal medication.

Our high-grade edible oils and fats are an established and essential part of a healthy human diet, providing a source of energy, fatty acids and vitamins (A, D, E, K and oleic acid) and they support nutrient utilisation. As a component in compound feed for

livestock, food grade animal fats have different properties than vegetable fats. The animal fat component can contribute to a harder consistency of the carcass, especially the bacon. Animal fat is rich in energy and has a high content of essential fatty acids. Fat also binds dust in compound feed. Our feed products also satisfy natural omnivores and carnivores' dietary needs without reliance on unnatural vegetable diets.

Case Study 5

Pharmaceutical applications of ABP ingredients

Swiss Nutrivalor AG, Centravo AG and Van Hessen supply carefully segregated ABP and edible co-products to pharmaceutical partners like Bioiberica and TenKate who produce pharmaceutical ingredients and products such as Heparin, a blood thinner and bone, skin and joint health supplements like Chondroitin Sulphate, Glucosamine, Hyaluronic Acid and Collagen.

Case Study 6

Healthy meat protein substitutes derived from edible co-products

Sonac, a Darling Ingredients brand produces a fibrated protein derived from pork or beef-based plasma edible co-products. This revolutionary healthy new ingredient can replace up to 25% of the meat in products such as hamburgers and sausages as well as in fresh, cooked and cured products. Meat products supplemented with fibrated protein are healthier, with lower fat and salt content.



**Our industry is highly
adaptable to the societal
challenges we face.**

Case Study 7

**Sustainable treatment of ABP
processing wastewater**

ABP processor Rendac Son in the Netherlands uses innovative Annamox water treatment technology to purify their wastewater into clean water. This produces biogas that is converted by Ecoson into green electricity or green gas. The sludge created is processed by Rendac into sustainable biofuels. The innovative process provides an annual reduction of approximately 5000 tonnes of CO₂ emissions, helping to optimise the sustainability and energy management of the production facility.



We aim to contribute towards a better socioeconomic environment by applying innovative solutions to ABPs and ECPs

The animal by-products processing industry's established role in the animal-based food value chain and our circular bioeconomy credentials are generally unknown yet we make a significant contribution to society every day and have a great story to tell.

We are a professional and responsible industry

EFPPRA members are a significant employer in many rural areas and our industry is economically relevant and viable (>3 billion euros turnover/year) with global markets for our products and blue-chip customers. Our local partners in the value chain who rely on our services employ significantly more and this provides support to our farmers and rural economies. Our valued, skilled staff have excellent career development opportunities and rewarding roles so staff retention rates are high.

Processing ABP in Europe is a highly regulated industry which operates to the highest standards in the world. Where possible we go beyond compliance with our permits and licences, using modern, reliable, state of the art facilities and technologies to produce our products efficiently and to prevent or minimise emissions to the environment. This ensures we operate within our environmental boundaries, helping protect local watercourses and air quality in harmony with our neighbours.

Our management systems address environmental, quality, health and safety, and energy management aspects and there is wide adoption of accredited systems to recognised international standards, including quality certification of our products such as QS and GMP+ for feed and ISCC PLUS sustainability certification for biofuel.

Promoting animal health and welfare

EFPPRA recognises its animal health and welfare responsibilities and we contribute to this through the animal health benefits of our products and disease control. Our supply chain partners also

have an important role in providing quality care for livestock and EFPPRA is committed to supporting humane animal treatment via feedstuffs, pasture management, handling, transportation and slaughter practices. We trust and rely on livestock and animal feed producers to adhere to the legal requirements on animal welfare and verification of compliance throughout the value chain. EFPPRA strongly supports implementation and enforcement of animal welfare legislation as outlined by the World Organization for Animal Health, the European Commission and its Member States.

We are innovative and adapt to societal changes

Our resilience and adaptability during the COVID-19 pandemic enabled our ABP collection and processing facilities to remain operational throughout, helping keep the food supply chain running, ensuring food availability on the shelves while guaranteeing animal welfare. We also have to adapt to changes in consumer demand and EU policies. One challenge we face is the growing trend for low meat diets or meat substitutes at a time when we are trying to increase the use of sustainable ABP derived products in animal feed. EFPPRA will continue to provide clear, accurate information on our products and industry to assist well informed consumers in making educated choices based on the social, nutritional, environmental and ethical merits of their food options.

We have already outlined the sustainability benefits of ABP derived products in feed and we think this is a compelling case. Nonetheless, we have seen reductions in the use of Category 3 animal fats in livestock feed over recent years and we aim to influence a reversal of this trend and the wider uptake of PAP in feed.

Nonetheless, by using innovation and working with our renewable fuels sector partners our valuable fats are not wasted and new applications have been developed with high economic and social value. Bio-aviation fuel is



another emerging sector where animal fats are being utilised as we strive for lower impact air travel. By adapting to these changes in the animal fats market we have contributed to meeting the growing demand for clean and safe fuels by supplying sustainable low carbon renewable fuels to substitute fossil fuels, in line with the Renewable Energy Directive.

Safeguarding EU food and water supplies and conserving native habitats

By utilising our products back in the supply chain and in other local applications we help the EU to be more self-sufficient and less dependent on food supplies from further afield. This not only improves our sustainability, it also facilitates more affordable food for our citizens and reduces the risk of food shortages due to the impacts of climate change such as floods and drought.

Where feasible our processing plants capture and re-use the water component of the ABP materials processed. State of the art wastewater treatment technologies are used to return purified water back into the environment making us net savers of water. Our fertiliser products also help to prevent and minimise diffuse phosphorous and nitrogen water pollution.

Greater uptake of our products in feed and biofuels can contribute to less demand for non-sustainable soya and palm. This, in turn, can have wider societal benefits by reducing deforestation and land use change in rainforest areas. This will help protect and conserve local habitats and societies, enabling small farmers and family run businesses to remain in their local native communities alongside the natural environment.

"We close the loop in a Circular Bioeconomy by providing an additional pathway for utilising organic materials to create sustainable products."

Case Study 8

Category 1 ABP converted to heat and power for district heating network

Products from the GZM Extraktionswerk AG Category 1 ABP processing facility in Switzerland are converted into heat and power for the Wärme Lyss Nord district heating scheme providing local residents with sustainable, environmentally friendly and cost-effective heating.

Case Study 9

Solar and waste heat drying of wastewater treatment plant sludge

Approximately one tonne of water is evaporated per tonne of ABP processed by rendering. To minimise the carbon footprint, it is essential that waste heat energy is recovered from this energy intensive step.

The Oldenburger Fleischmehlfabrik GmbH, Kampe, Germany (OFK) rendering plant recovers high grade waste heat from the evaporated water and reuses this for evaporation or in waste heat recovery systems. A considerable amount of lower grade heat energy remains in the waste air stream after condensation and, along with free solar energy, it is used to dry sludge from OFK's wastewater treatment plant and from local municipal sewage treatment plants. The dried sludge is used as a biomass fuel in power generation and the whole energy recovery scheme helps reduce the carbon footprints of OFK, the meat supply chain and the community.

Glossary

Anaerobic Digestion (AD) / Biogas plant	A sequence of processes whereby microorganisms break down biodegradable material in the absence of oxygen. The process is used for industrial or domestic purposes to manage waste or to produce biogas fuel. Biogas, approximately 60% methane and 40% CO ₂ is mainly used to generate electricity for local use and for feeding into the electricity grid.
Animal-based food value chain	A supply chain includes all physical steps involved in the production of a particular output for consumers. The value chain approach provides a more comprehensive perspective and includes all activities and interests of different actors along the supply chain. The structure of the animal-based food value chain accommodates different stages that lead to the final product, which is then delivered to the consumer.
Animal by-products (ABP)	Any material derived from an animal not intended, or in the case of surplus food, no longer intended, for human consumption. Examples are bones, skin and surplus milk, eggs, fat, flesh, and blood.
Circular bioeconomy	An economy in which renewable biological resources and their residues are produced and converted into value added products, such as food, feed, bio-based products and bioenergy for re-use in the supply chain.
Category 3 ABP	ABP from animals passed fit for slaughter for human consumption, as defined in Article 10 of the Animal By-Products Regulation 1069/2009 (ABPR).
Category 2 ABP	ABP rejected as carrying a risk to animals or humans as defined in Article 9 of the Animal By-Products Regulation 1069/2009 (ABPR).
Category 1 ABP	ABP having risk to humans or animals, including Specified Risk Material (SRM) as defined in Article 8 of the Animal By-Products Regulation 1069/2009 (ABPR).
Edible Co-product	Parts of an animal intended for human consumption but require further processing before they are fit for human consumption
European Fat Processors & Renderers Association	EFPPA – The European trade organisation for the rendering & fat melting industry.
Global Feed LCA Institute (GFLI)	Global sustainability certification system and data bank for all sustainable feedstocks.
ISCC PLUS	A certification system to document and trace sustainable feedstocks for biofuel production.
Meat & bone meal (MBM)	The protein fraction derived from rendering Category 1 & 2 ABP.
Non-sustainable palm and soya	Palm and soya sourced and cultivated in a way that does not protect against tropical deforestation and conversion of native vegetation.
Processed Animal Protein (PAP)	Protein meal derived from Category 3 ABP only.
QS and GMP+	Global assurance schemes for feed safety.
Tallow	Another term for the oil or fat fraction derived from rendering animal by-products.

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EFPRA is the European Fat Processors and Renderers Association. It represents the European animal by-product industry. It is a leading authority on the manufacture, usage and regulation of animal fats and proteins.

EFPRA works with partners in the supply chain, research institutes and regulators to develop safe, sustainable and healthy uses for animal by-products.

EFPRA members employ over 15,000 employees and process raw material on approximately 400 separate production lines across the entire membership.

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Disclaimer

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