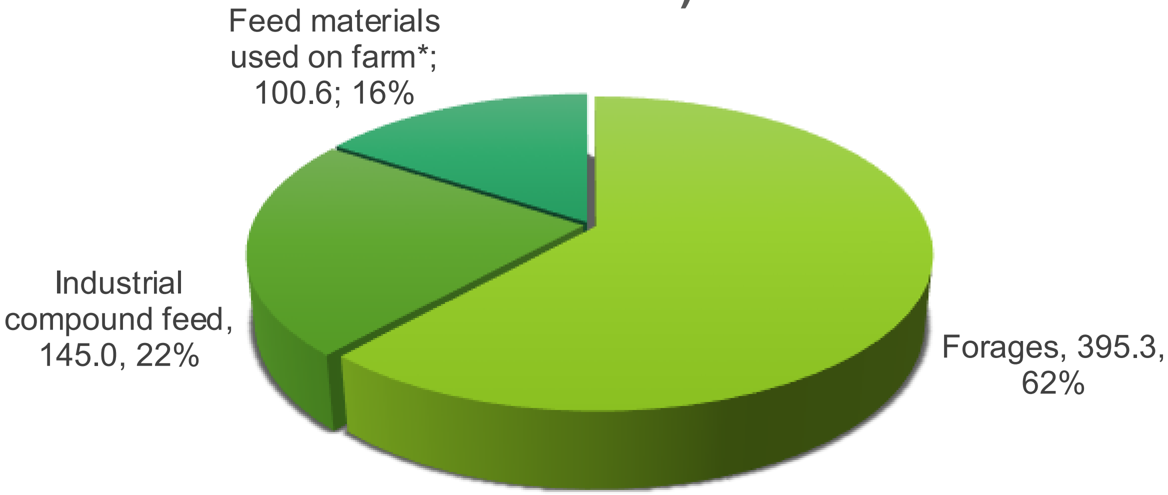
Sustainable feed in the context of the upcoming EU Bioeconomy Strategy

Anton van den Brink - FEFAC Deputy Secretary General

Who is FEFAC?

- European Association of Compound Feed & Premixes Manufacturers
- Represents 28 National Associations in 27 European countries (including Norway)
- Founded in 1959

Livestock sourcing in feed in the EU27 (640 mt. in 2022/23)



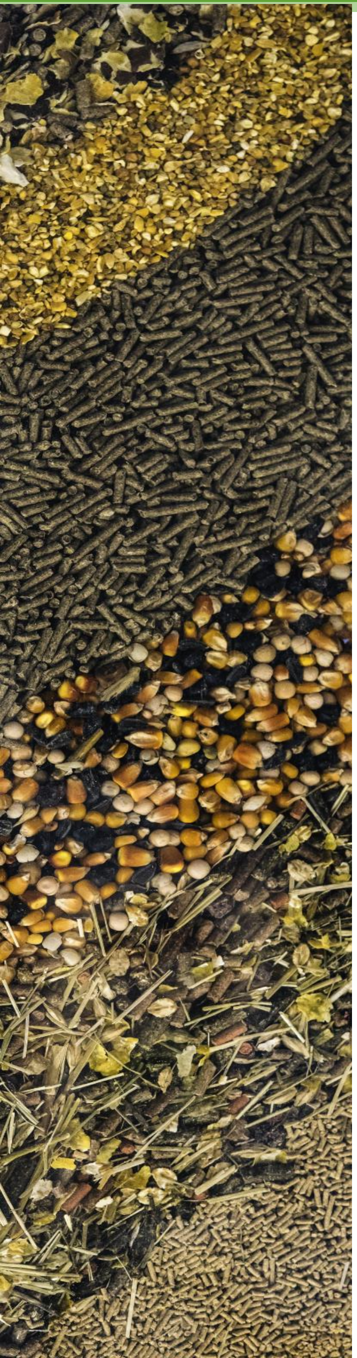
These are all kind of feed materials that can be found on the market (soybean meal, bran, etc.) that the farmer buys to mix up with his cereals to produce compound feed.

Source: FEFAC, DG AGRI

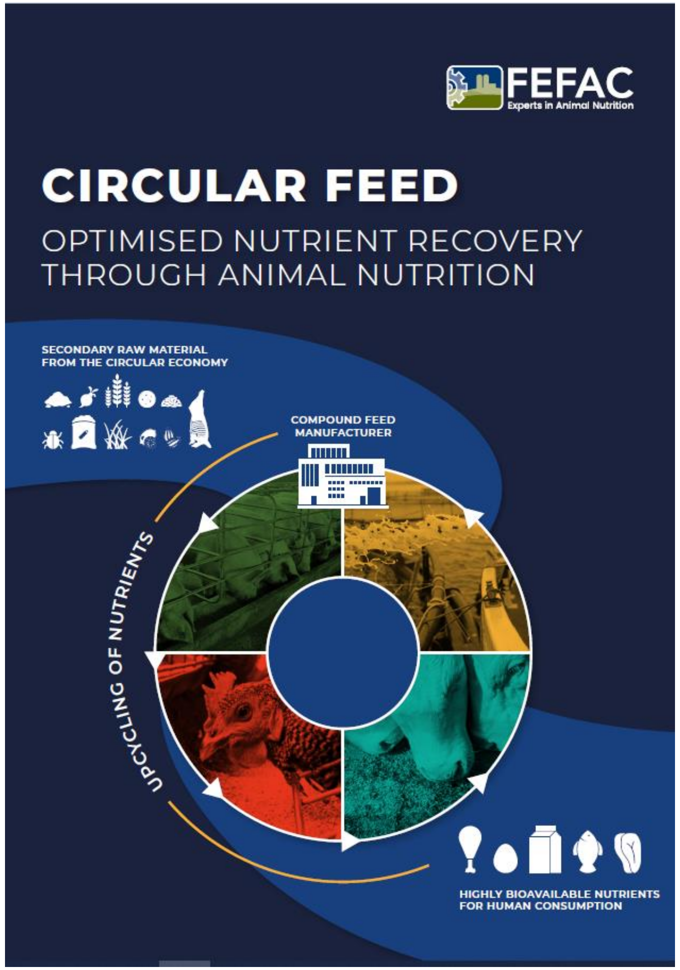
- FEFAC President: Pedro Cordero
- Member to the International Feed Industry Federation

IFIF

Feed the world



Circular Feed in the Bioeconomy



“In 2022 biomass use was dominated by animal feed (38%), followed by energy (28%), materials (26%) and food (9%).” (Biomass production, supply, uses and flows in the European Union. Integrated assessment, 2023)

(source Animal Task Force)

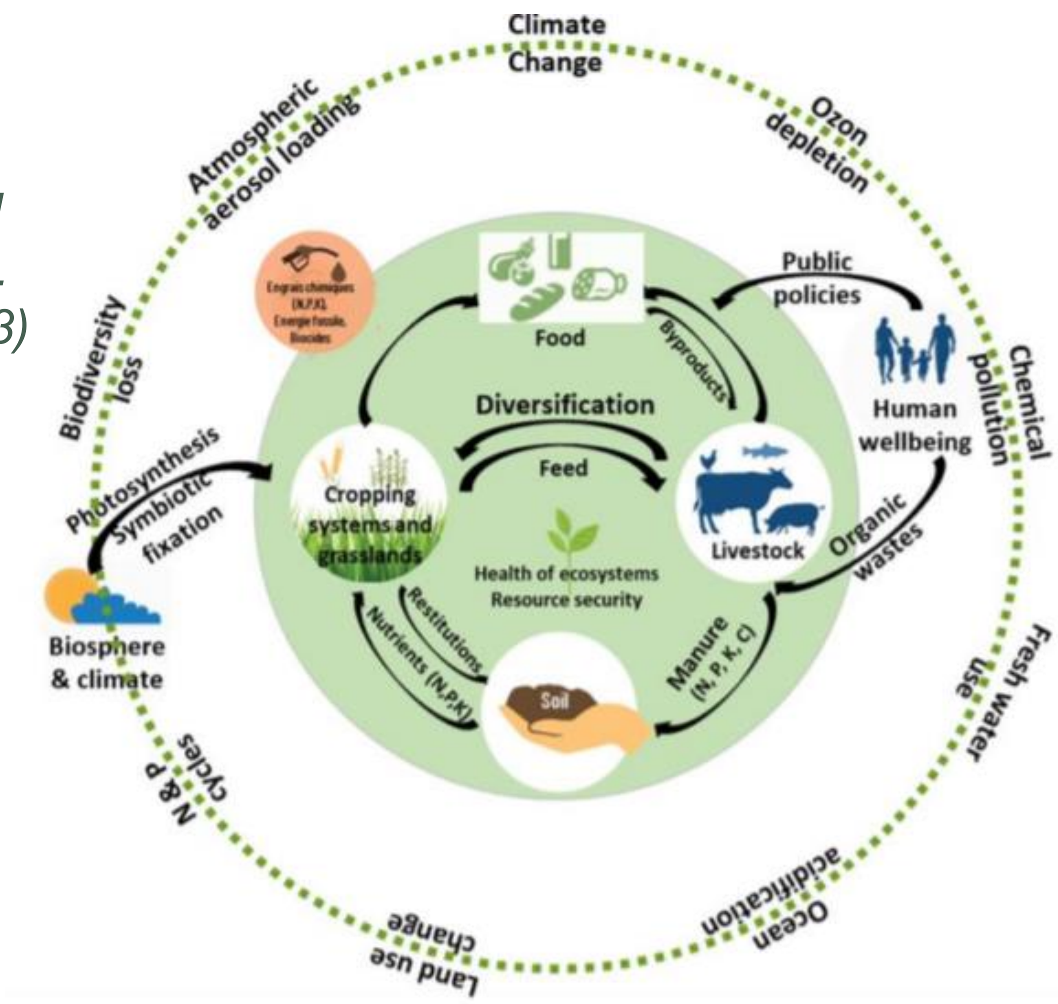


Figure 1. Role of livestock farming in sustainable agri-food systems

Food/feed grade status

Land use ratio

The proximity of origin to feed mill

Nutrient digestibility

Aligning with new political objectives

Matching three strategic axis

A Competitiveness Compass for the EU

1. Closing the innovation gap with the EU's main competitor
2. Linking decarbonisation and competitiveness
3. Reducing dependencies and increasing security

Circularity

Existing Examples of Circular Feed

Industrial processes where circular feed resources emerge

Existing Examples of Circular Feed

DAIRY PROCESSING

BEER BREWING

SUGAR PRODUCTION

MEAT PRODUCTION/ANIMAL BY-PRODUCTS

Existing Examples of Circular Feed

FOOD MANUFACTURING

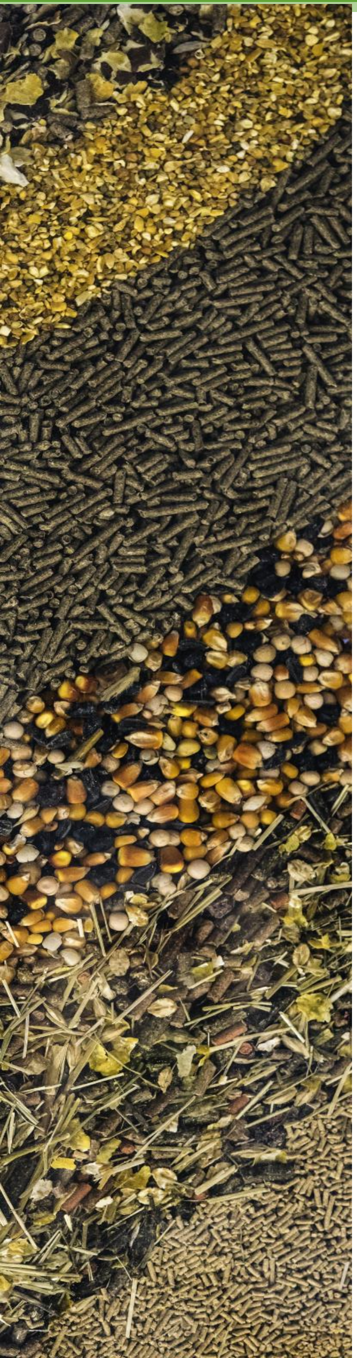
GRASS BIO-REFINING

Palm kernel meal

Cotton seed meal

Linseed meal

Fish trimmings



Animal feed and renewable energy production

FEFAC
Experts in Animal Nutrition

Synergies with crop-based biofuels

- The Renewable Energy Directive has arguably been the biggest driver of EU feed protein meals production
- “Crop-based biofuels” suffer from a negative perception, while they serve a broader bioeconomy purpose
- Disincentivizing the cultivation of a crop like rapeseed will result in more reliance on imported soybean meal

Competition with advanced biofuels

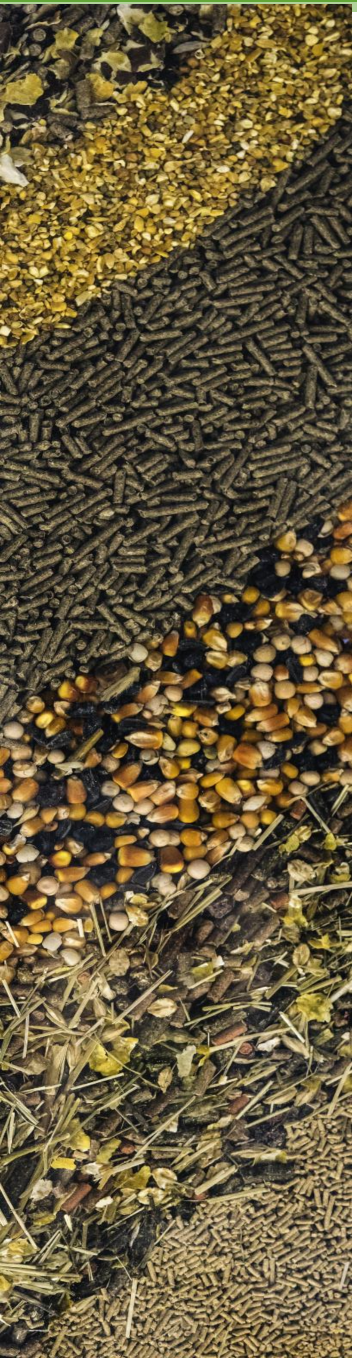
- Annex IX of the RED lists advanced biofuels feedstocks
  - Minimum production targets and eligibility for “double-counting” in the EU transport/renewable energy targets
- Examples
  - Biomass fraction of industrial waste not fit for the food or feed chain (Annex IX Part A), for biogas production
  - Animal fats classified as Category 1 and Category 2 in accordance with Regulation (EC) No 1069/2000 (Annex IX Part B), for biodiesel/aviation fuel production
- Implementation flexibility at Member State level and relative freedom for waste/residue classification by advanced biofuels certifiers fosters downgrading of product quality and disturbs the level playing field for ‘residual biomass’

Putting things in perspective

- RED in principle has the right safeguards in terms of hierarchy of biomass use and sustainability criteria, but in practice somehow it works differently
- It's difficult to criticize (primary) food processors using their own residual biomass flows as an energy source, in an effort to achieve carbon neutrality and reduce energy costs
- EU Emissions Trading System (ETS) and CSRD also influence the dynamics >> Feed cannot compete with fuel in terms of carbon emissions reduction potential using the same biomass

What could help in defense of circular feed?

- Increased transparency in residual biomass creation, the terminology applied and the destinations (a kind of EU Biomass Factsheet)
- Support for circular feed use as instrumental to increased sustainability in livestock & aquaculture production, e.g. tackling the barriers for owners of residual biomass to choose feed, while maintaining safety
- Concrete demand from the downstream value chain (food manufacturers/retailers) for circular feed to enhance the economic proposition as well as remove market barriers
- Review the EU regulatory framework to enable access to more circular feed resources



Future of Circular Feed?

Future of Animal Feed in Nutrient Upcycling? Towards more Circularity in Animal Feed?

Algae production

Algae production represents a comparatively new branch of aquaculture, with a variety of bio-economy applications including feed. As plants, algae have a fairly unique capacity to absorb and convert 'waste-based streams' into biomass of high nutritional value, without the need for the use of arable land. There are numerous research projects that are investigating the potential of using wastes such as anaerobic digestate, livestock manure or municipal and industrial waste, as a substrate for the production of algal biomass with a use in animal feed. The use of manure in these kinds of processes can in addition help with improving circularity at livestock farm level, as the nutrients lost at feed digestion stage

Insect farming

Insect farming is a good existing example of a "nutrient upcycling" sector, with currently already converting inputs of lower value into high value outputs in feed for all farm animal species.[1] Currently in the EU, the substrates on which insects are fed can only be of materials of vegetal origin and other products of animal origin which are also authorised for other farmed animals. The European insect sector can maximise its contribution to enhancing circularity in food production and unlock its full potential if the spectrum of inputs authorised in the rearing of insects is diversified. In turn, this would allow for indirect access of the European livestock and aquaculture sector to a large range of valuable biomass, as the bio-conversion properties of insects can upcycle these

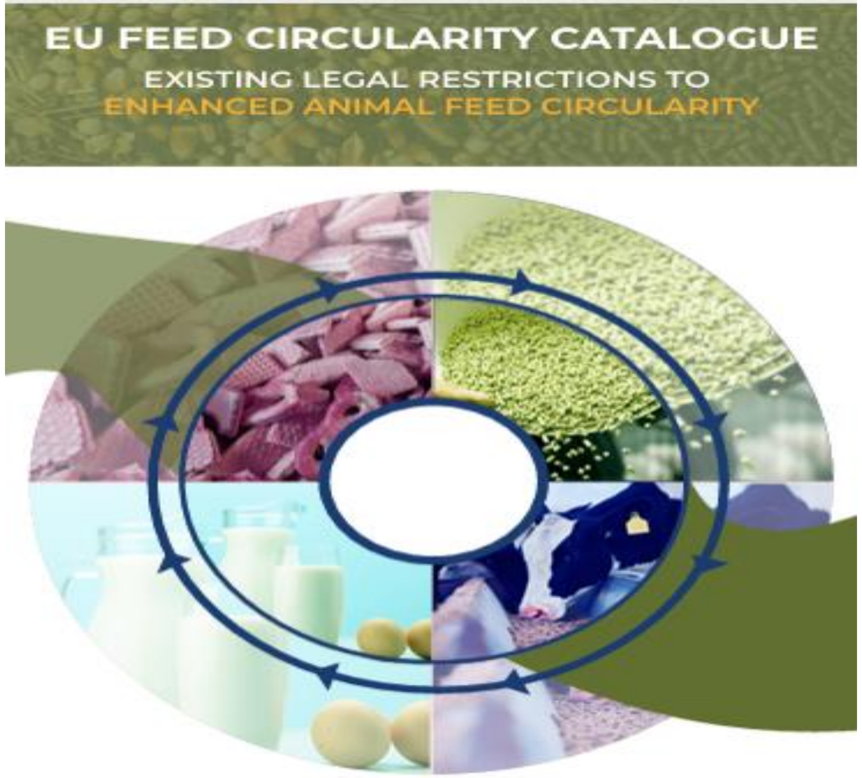
Credit: Entogourmet

Phosphate minerals

Current use of phosphate minerals used in animal feeds comes primarily from rock phosphate mines, located in for example Morocco or Russia. Innovation in recycling, driven by phosphorus recovery obligations in some countries, today enables recovery of phosphorus from sewage sludge incineration ash. The current EU regulatory framework does not allow for phosphates processed from such recovery to be used in animal feeds. If the incineration process ensures sanitary safety and if the incineration and phosphorus recovery processes are placed under supervision of control authorities, EFSA and the EU legislators should clarify conditions for safely and legally allowing use of such recovered phosphates in animal feed production.

Single cell proteins

Single cell proteins are often mentioned as a promising protein of the future. Research is investigating a wide-variety of substrates that single cell proteins such as bacteria and yeasts could be grown on. These substrates are in general all waste-based resources of substances that have no direct purpose in animal nutrition. The examples range from gases such as CO, CO_2, ammonia and methane to waste-based streams such as manure. Legislators should anticipate the potential use of single cell proteins in animal feed, as this could also provide viable solutions to emissions-related challenges in livestock farming.



EU CIRCULAR FEED PLATFORM

- Evaluate the **potential for increased** feed circularity
- Stimulate the **"circular feed" culture** within the bioeconomy chain
- Convince the EU legislator of the interest to invest (time and resources) for the launch of a **Circular Feed Roadmap** including
  - (Review of) Risk Assessment (by EFSA)
  - Research topics
  - Review of legal requirements

→ Position circular feed as solution to enhance sustainability of food systems

Overview of case studies
Estimated enabled volumes

10 – 100 kT	500 – 1,000 kT	>5,000 kT
100 – 500 kT	1,000 – 5,000 kT	

CS 1: Use of catering waste for feeding intermediate organisms	CS 10: Maintaining Category 3 status for ABP containing technically removable foreign bodies
CS 2: Use of meat & fish containing former foodstuffs for feeding insects	CS 11: Expand the definition of fish meal and fish oil
CS 3: Allowing intra-species recycling	CS 12: Use in feeds of purified mineral nutrients from sewage or manure
CS 4: Use of ruminant PAP in non-ruminant feed	CS 13: Use of DCP from bones in ruminant feed
CS 5: Cat 2 MBM (method 1) for export as feed to third countries	CS 14: Biomass grown in or fertilised by waste
CS 6: Use of former foodstuffs containing ruminant gelatine in feed for ruminants	CS 15: Risk-based management of contaminants overload
CS 7: Use of fishmeal in feed intended to ruminants	CS 16: Maintaining Footnote 1 of Regulation 396/2005
CS 8: Inclusion of processed proteins from edible gelatine and animal fat production under the definition of PAP	CS 17: Use of microbial biomass from genetically modified micro-organisms
CS 9: Operational thresholds for controls of compliance with “feed ban” provisions	

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