June 5 – 7
Laulasmaa
Estonia

Arnaud Bouxin

Director for Feed Safety and Regulatory Affairs
FEFAC

Supporting circularity and blue economy

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EUROPEAN FISHMEAL AND FISH OIL PRODUCERS

EMFAF PROGRAMME 2021-2027

Co-funded by the European Union

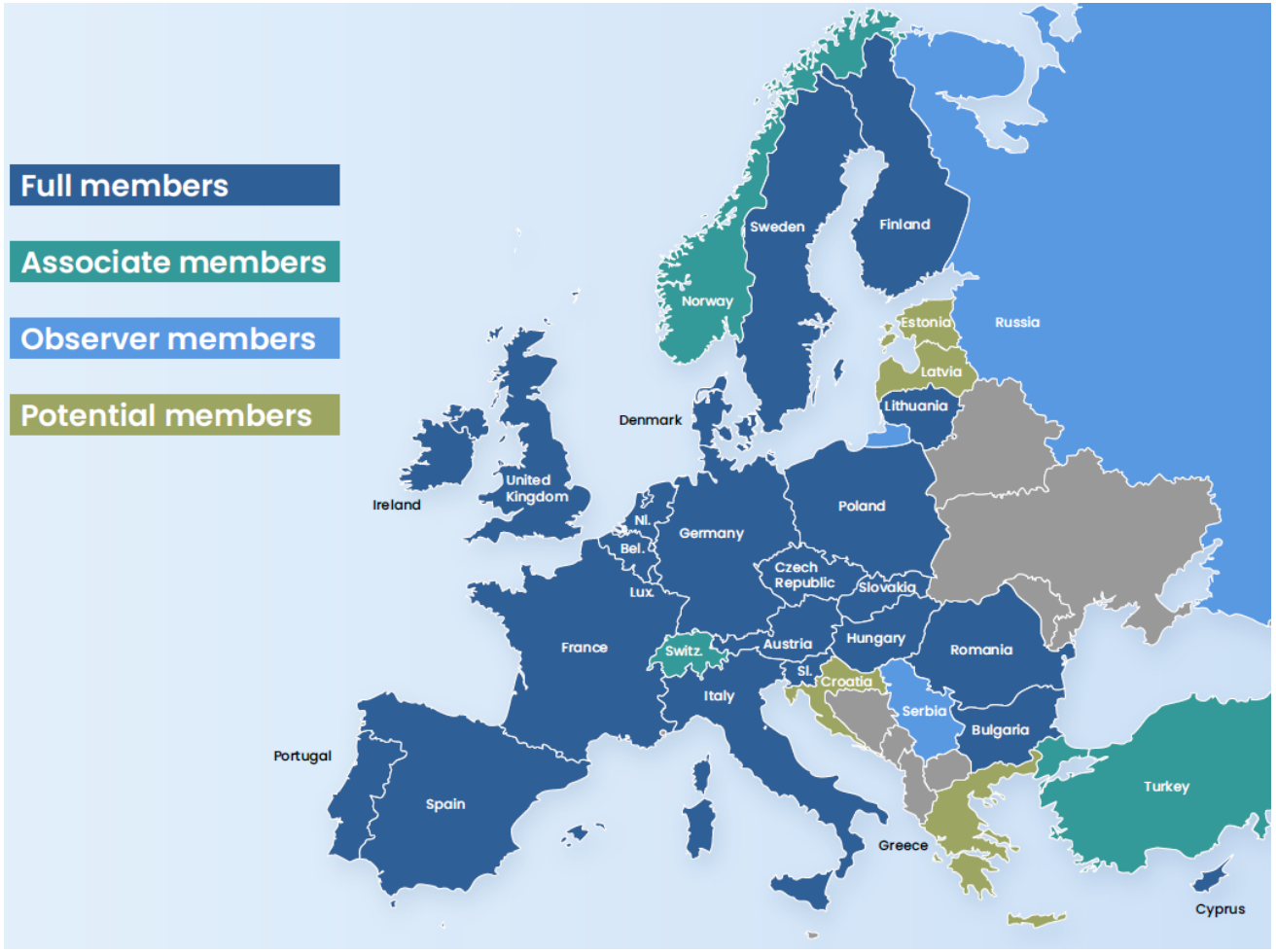
FEFAC
Experts in Animal Nutrition

Arnaud Bouxin
Director for Feed Safety & Regulatory Affairs

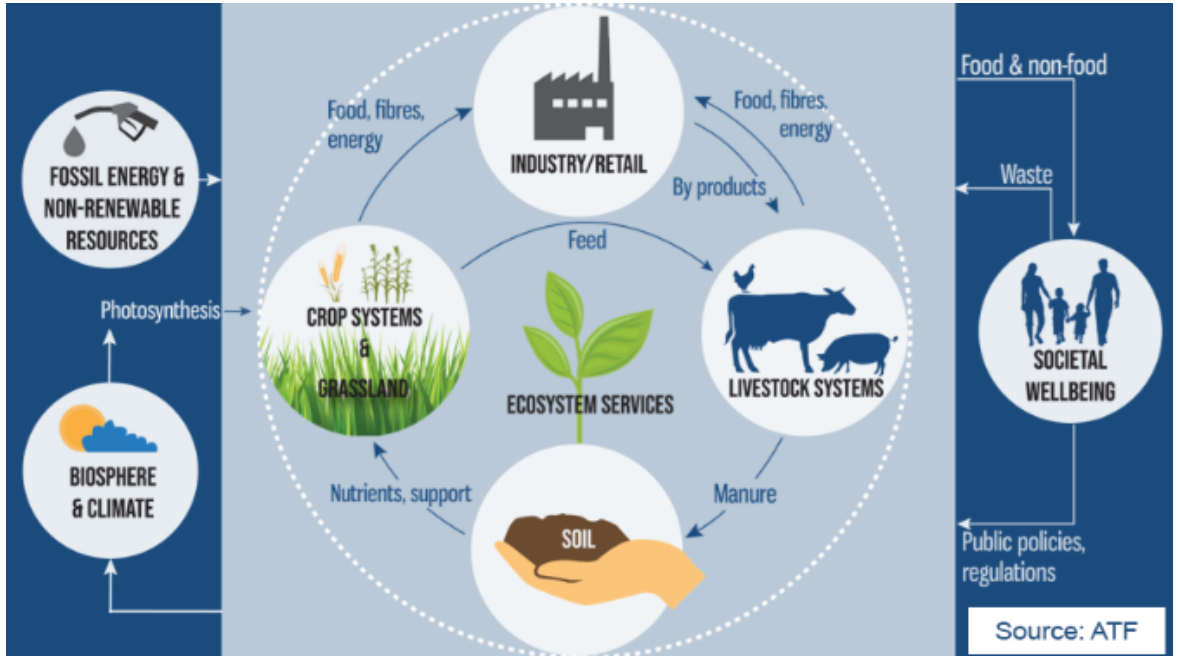
Exploring opportunities for policy cooperation and joint efforts on developing “circular feed systems”
Towards a circular feed platform

FEFAC in a nutshell

- European Association of Compound Feed Manufacturers
- Premix and compound feed for food producing animals
- Founded in 1959
- Represents 28 National Associations in 27 European countries

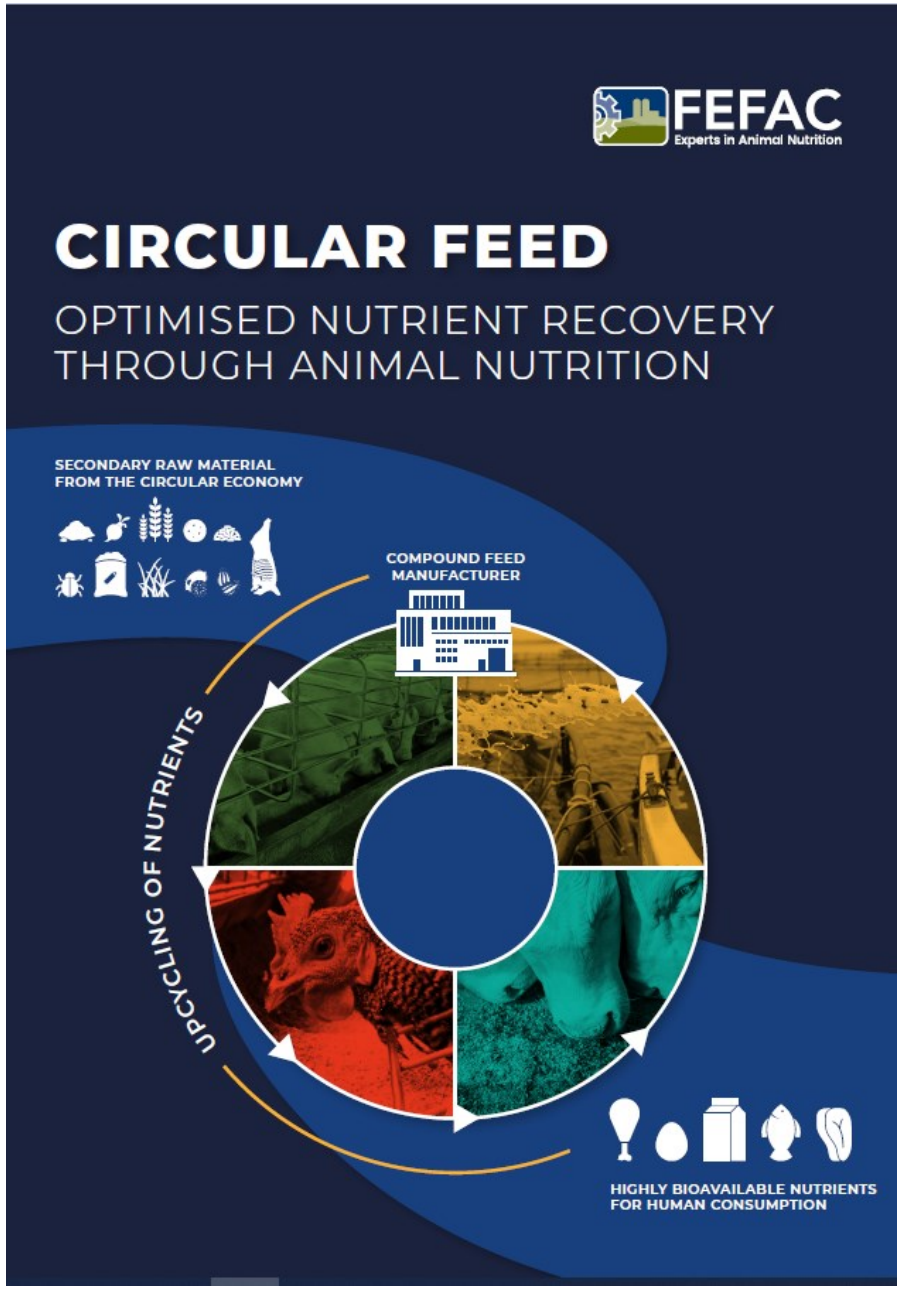


86% of the feed used globally is non food grade (FAO)



Ambition 2

Foster Sustainable Food Systems Through Increased Resource & Nutrient Efficiency



THE CIRCULAR FEED CONCEPT

- **Food/feed grade status**
- **Land use ratio**
- **The proximity of origin to feed mill**
- **Nutrient digestibility**

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Continue using the co-products we use

Co-products / by-products from food / non-food processing industry

TRADITIONAL CO-PRODUCTS ALREADY WIDELY USED

SUNFLOWER OIL CAKE

CORN GLUTEN FEED

RICE BRAN

SOYBEAN MEAL

SUGAR BEET PULP

BLACKSTRAP MOLASSES

BREWERS' GRAINS

WHEY POWDER

Continue using the co-products we use

Co-products / by-products from food / non-food processing industry

TRADITIONAL CO-PRODUCTS ALREADY WIDELY USED

GRAPE POMACE

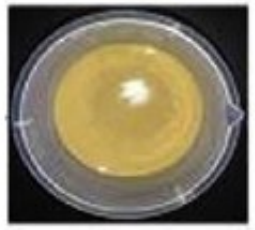
DRIED DESTONED VIRGIN OLIVE POMACE

CHICKEN FEATHER HYDROLYSATE

APPLE POMACE

CAMELINA MEAL

ANIMAL PLASMA



FISH PROTEIN HYDROLYSATE

TOMATO POMACE

Looking for new resources

Emerging uses

- **Former foodstuffs:** means foodstuffs, other than waste, which were manufactured for human consumption in full compliance with the food law but which are no longer intended for human consumption for practical or logistical reasons or due to problems of manufacturing or packaging defects or other defects and which do not present any health risks when used as feed.

- **Insects, microbial biomass**
- **Grass proteins for feeding monogastrics**
- **Marine resources from low trophic levels**: krill, polychaetes, macro-algae

Asking our suppliers to be more circular themselves

- Fishmeal:
  - More use of trimmings
  - Use of by-catch
- Insects
  - Use of non-edible material as substrate

Resources NOT available because of legal restrictions

- Material prohibited for feed use by law (e.g. food waste, Annex III of R767/2009, ruminants PAPs, Cat 1 and 2 ABP) whatever the process undergone

- Material above standards set based on feed/food safety (mycotoxins, heavy metals, other contaminants)

- Material non compliant with feed (or food) law but safe (pesticides MRLs, etc).

Innovative technologies – emerging processes

- Recovery of nutrients via physical treatment :
  - **Sewage Sludge Incineration Ash**: phosphorus (precipitated calcium phosphate, phosphoric acid, dicalcium phosphate)
  - **Municipal solid waste incineration**: potassium salts
  - Sewage sludge: nitrogen recovery from ammonia stripping from digestates
  - **Printed circuit boards and batteries:** copper
- Recovery via anaerobic digestion
  - **Manure or sewage sludge**: **ammonia salts** from nitrogen recovery by stripping of ammonia gas from digestate after anaerobic digestion
- Recovery of nutrients via growing unicellular organisms (algae, bacteria, yeasts) or insects
  - **Food waste**: potential growing of insects for feed use
  - **Sewage sludge, manure**: algal biomass (RAS), duckweed lemnae, microbial biomass

Timeline on EU Regulatory Framework on Feed Safety & Restricted Nutrient Access

- **1990-2001: Times of crises and restrictions**
  - Feed ban
  - Ban on dilution
- **2001-2010: Times of improved safety management**
  - Feed Hygiene & Official Controls regulations
  - Feed Hygiene guides
- **2010-2021: Times of initiating the lifting of certain restrictions**
  - Re-authorization of Pig&poultry PAPs in fish feed
  - Re-authorization of insects in fish, pig and poultry feed
- **2021-2030: Times of waste minimization / resource optimisation**

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Joining forces in a Circular Feed Platform

- Call to **EU trade organisations of the feed&food chain and beyond**
- **Mapping** of unused resources and evaluation of circularity potential with two categories
  - legally usable but not used to full extent due to restrictions (incl. legal)
  - not legally permitted
- Guidance to newcomers on **circular feed culture**

→**PAVING THE WAY FOR A EU COMMISSION CIRCULAR FEED ROADMAP**

Circular feed culture

Prerequisites for the use of new feed resources

- Safety Assurance: safety for feed means safety for all animal species, safety for consumer of animal products, safety for the environment, and also impact on animal's performance
- Responsibility: Suppliers of new feed resources shall apply feed hygiene principles (subject to authorization) and be placed under supervision of competent authorities
- Transparency: we are in the world of innovation and that means intellectual property / competition: safety should be the limiting factor to know how protection
- Social acceptance: intra-species recycling, religion, ethics

In short…

- Increased circularity in feed is key to a more sustainable livestock and aquaculture production
- Metrics / methodology to measure feed circularity is missing
- Increased in feed circularity may require reconsidering the suitability of existing legal restrictions when safety is not at risk

- The time is right for a EU Commission roadmap on circularity

Are you a potential partner of the circular feed platform?

- Do you aim at reducing “waste” and favoring the use of residues/co-products of your process as feed?
- Do you deal with biomass not used as feed yet?
- Are there any legal restrictions to the use of your residues/co-products as feed ?
- Have you developed innovative technologies that could make non-compliant materials fit for use as feed (detoxification / recovery processes)?
- Contact FEFAC fefac@fefac.eu

Thank you for your attention

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