

atf

**animal
task
force**

A European Public-Private Partnership



EAAP

European Federation of Animal Science



LIVESTOCK ARE MORE THAN FOOD



4th one-day symposium of the Animal Task Force & the EAAP Commission on Livestock Farming Systems: *Livestock are more than food*

“Role of livestock in circular bioeconomy systems (FAO Report)”

Philippe Becquet
FAO LEAP TAG co-chair



Food and Agriculture Organization
of the United Nations

The role of livestock in circular bioeconomy systems

FAO LEAP Report

Philippe Becquet

CBA TAG Co-Chair





Content

- Short Introduction to FAO LEAP
- The guidelines
- Livestock within the circular bioeconomy context
- Metrics and indicators
- Circular bioeconomy approaches
- Policy and regulations impact





FAO Livestock Environmental Assessment and Performance (LEAP) Partnership - Mission and Goal

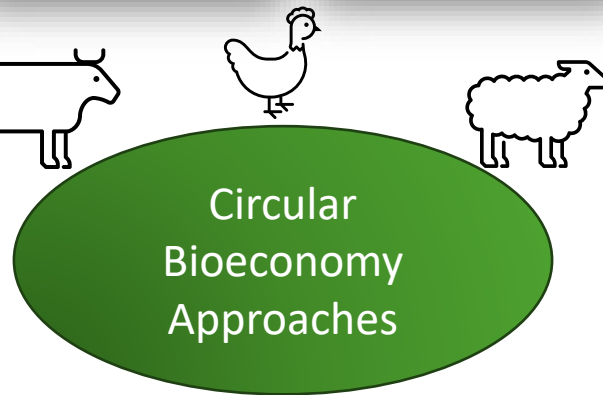
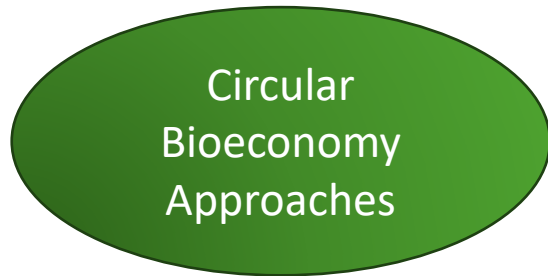
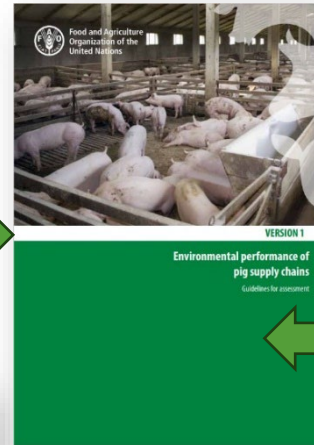
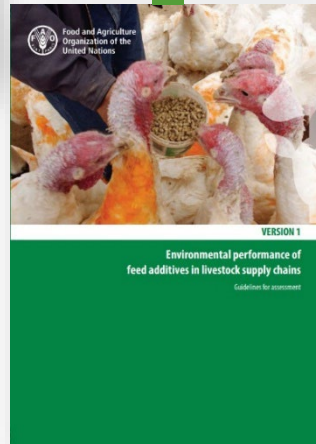
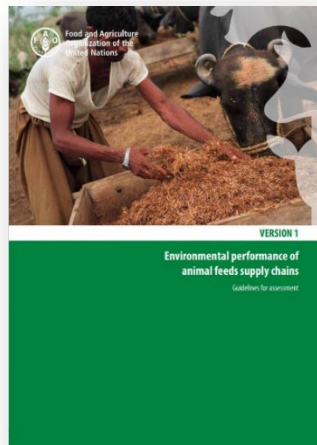
Mission: Support the transition towards more sustainable food and agriculture by improving the environmental performance of livestock supply chains while ensuring social and economic viability.

Goal: Build global consensus on science - based methodology, indicators and databases for understanding the environmental performance of livestock supply chains to shape evidence-based policy measures and business strategies.



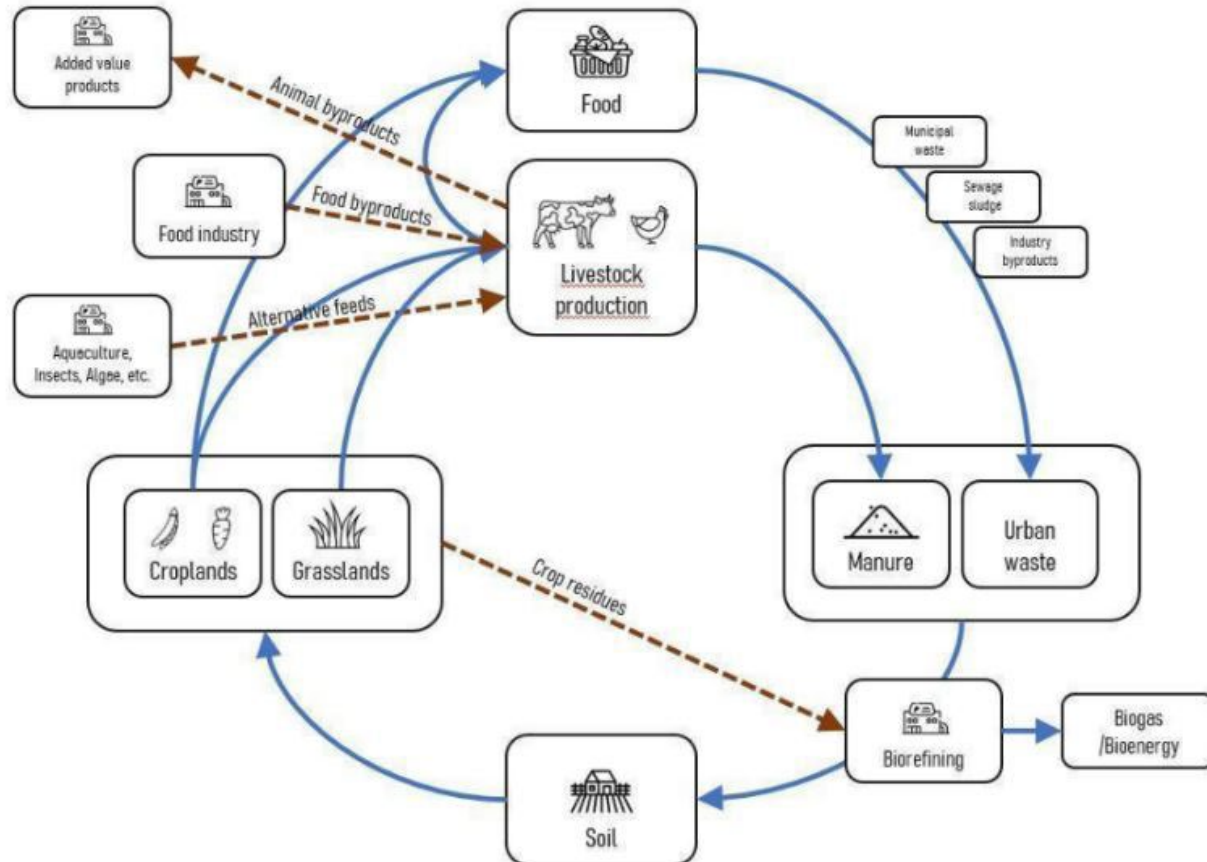


Circular bioeconomy approach guidelines in LEAP



- BIODIVERSITY
- NUTRIENTS MODELLING
- SOIL CARBON STOCK CHANGES
- WATER FOOTPRINTING

Livestock within the circular bioeconomy context



Plant Based Co-Products
Animal Based Co-Products
Manure management and energy



Circularity indicators for Nutrient Use Efficiency

- ➔ Promoting the importance of circularity in livestock production system
- ➔ Differentiating types of inputs and outputs

Partial Nutrient Balance (PNB) = Inputs (IN) – Outputs (ON)

Nutrient Use Efficiency (NUE) = $(ON/IN) * 100$




Nutrient Recycling Index (NRI) = $Nutrient\ Recycled\ (NR)/(IN+NR)$

Input Circularity Indicator (ICirc) = $IN\ Recycled\ (IR) / IN$

Output Circularity Indicator (OCirc) = $ON\ Recycled\ (OR) / (ON\ products + OR)$



Environmental Footprint

- Life Cycle Assessment
 - Attributional (allocation principle)  Insight on impacts
Hotspots
 - Consequential (system expansion)  Impact outcomes outside the
boundaries
 - Food systems modelling and circularity  Total food chain impact



Plant Based Co-Products

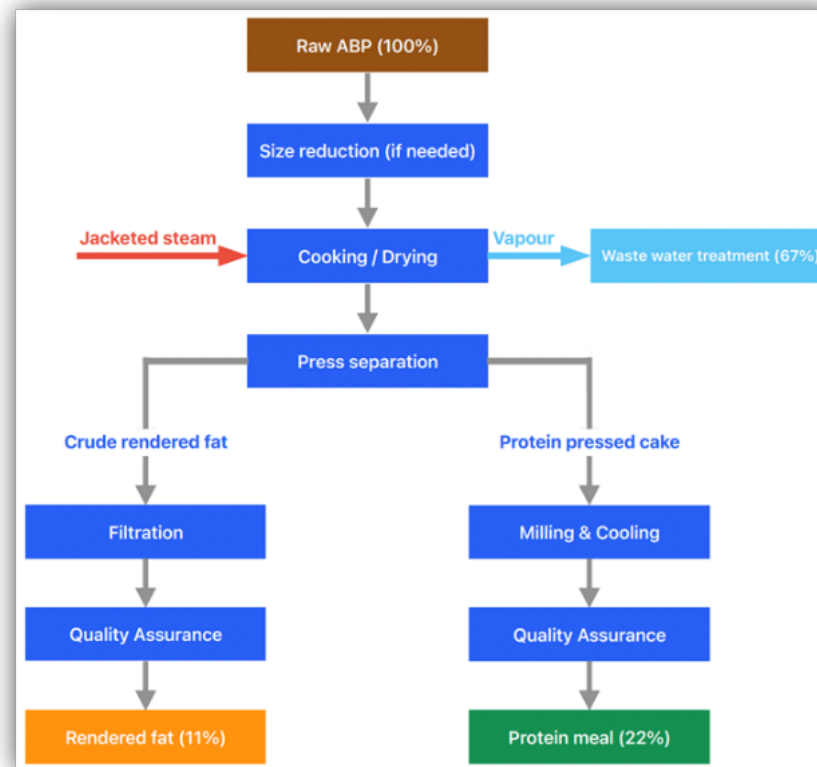
- Residuals (Straw, Husks)
- Fermentation Co-Products (DDGS)
- Industrial Co-Products (Fruit pulps, Oilseed meals)
- Food loss and processing (Bakery, Vegetable waste)



- Food Safety (contaminants, toxins, hygiene)
- Physical characteristics (liquid vs solid)
- Nutritional value (ruminants, monogastric animals)
- Registration systems

Animal Based Co-Products

- Livestock processing (Meat and Bone Meal/Processed Animal Protein, rendered fat)
- Milk processing (Whey)
- Hide and skin (Leather)
- Egg processing (Shell, Egg Membrane)

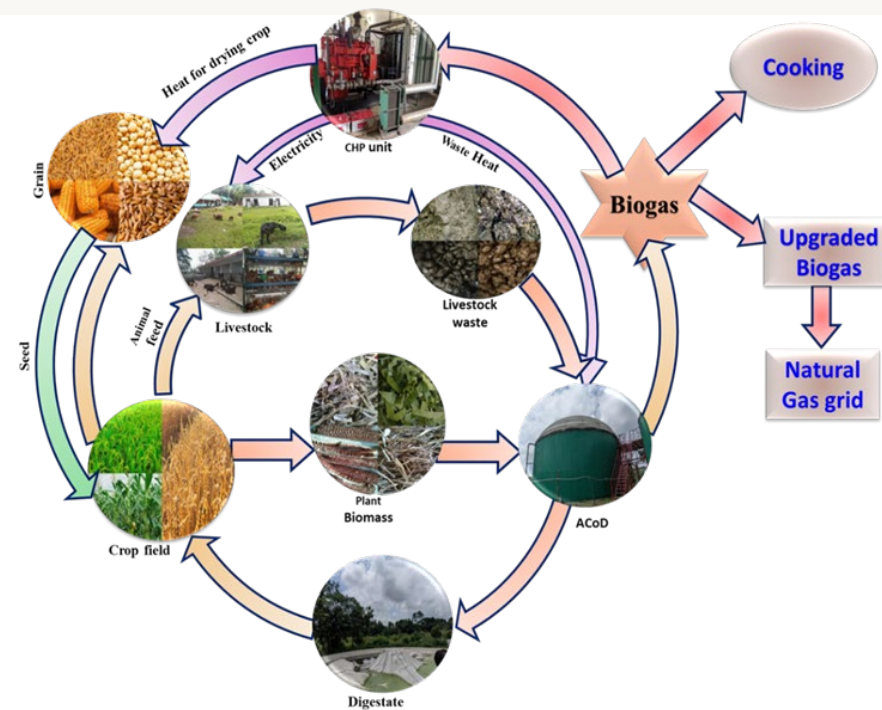


- Food Safety (contaminants, hygiene)
- Regulatory limitations (intra-species use, prohibition ruminants)

The role of livestock in circular bioeconomy systems (FAO Report)

Manure

- Manure management (Storage)
- Field application (Fertilizer)
- Nutrient recovery (Phosphorus, Nitrogen)
- Energy (Biogas)

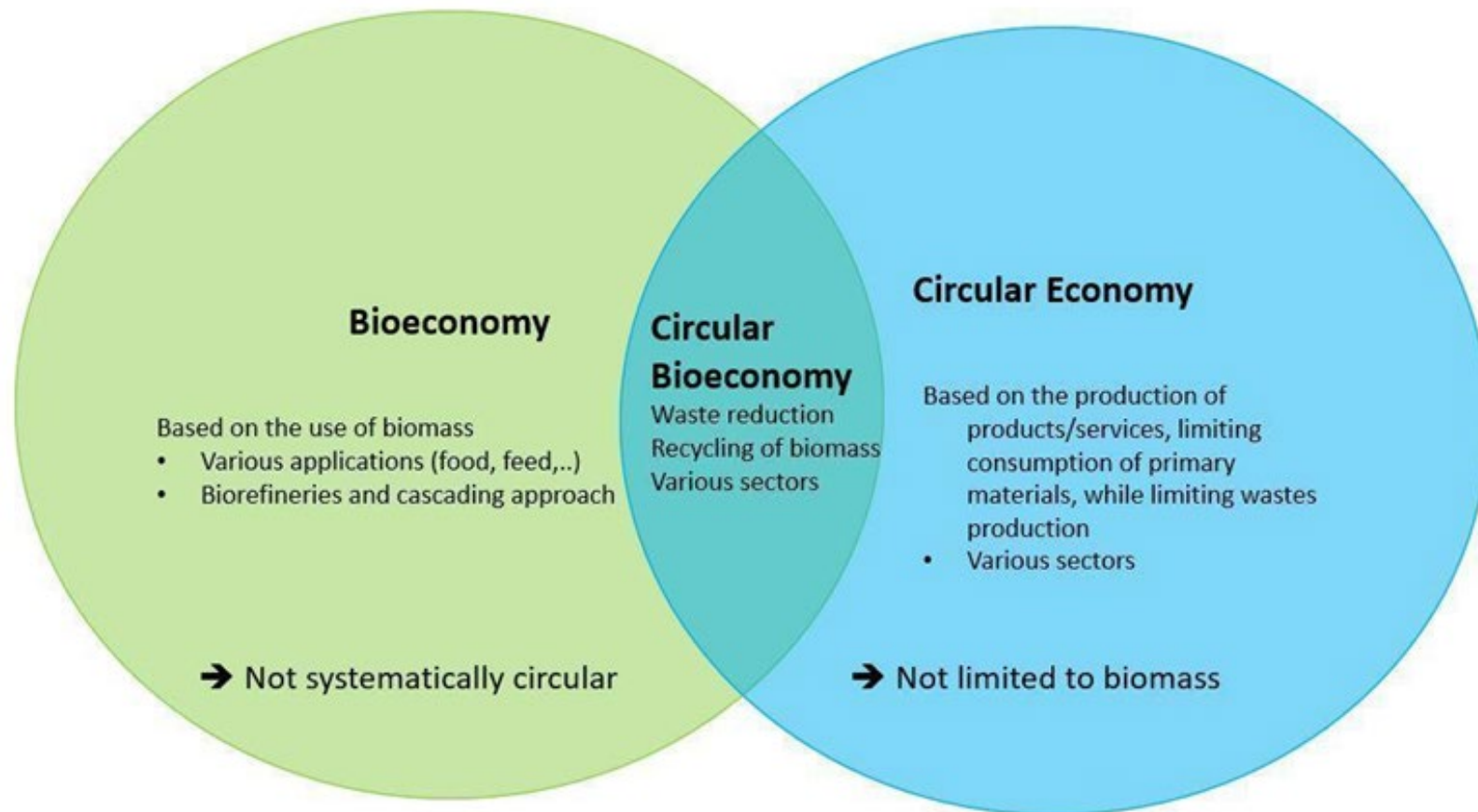


- Food/Environment Safety (contaminants, hygiene)
- Regulatory limitations (transport, field application)



Policies

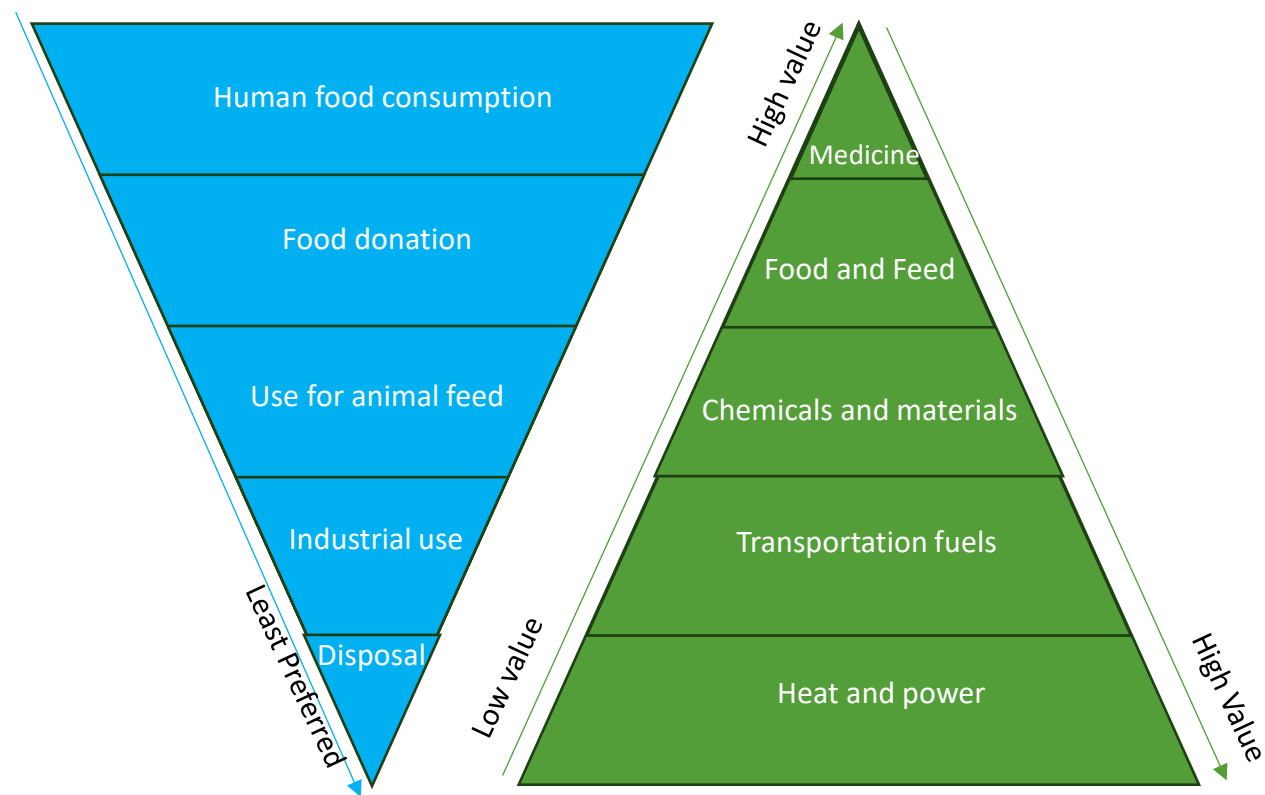
- Circular Economy
- Bioeconomy





Prioritization

- Use of recycled biomass needs to be prioritized
- Utmost priority = Prevention
- First Priority = Food use





Biomasses

- Current biomasses
- Bioprospection
- Enlarge use of co-products
- Upcycling and development of new biomolecules



Your contribution

- Guidelines currently under public consultation
- Interested in your inputs and information
- Adopt and disseminate the use of LEAP guidelines in assessing sustainability of livestock production systems



FOR PUBLIC REVIEW

Guidelines on the role of livestock
in circular bioeconomy systems



Thanks to all the Contributors to the Guidelines

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Thank you!

