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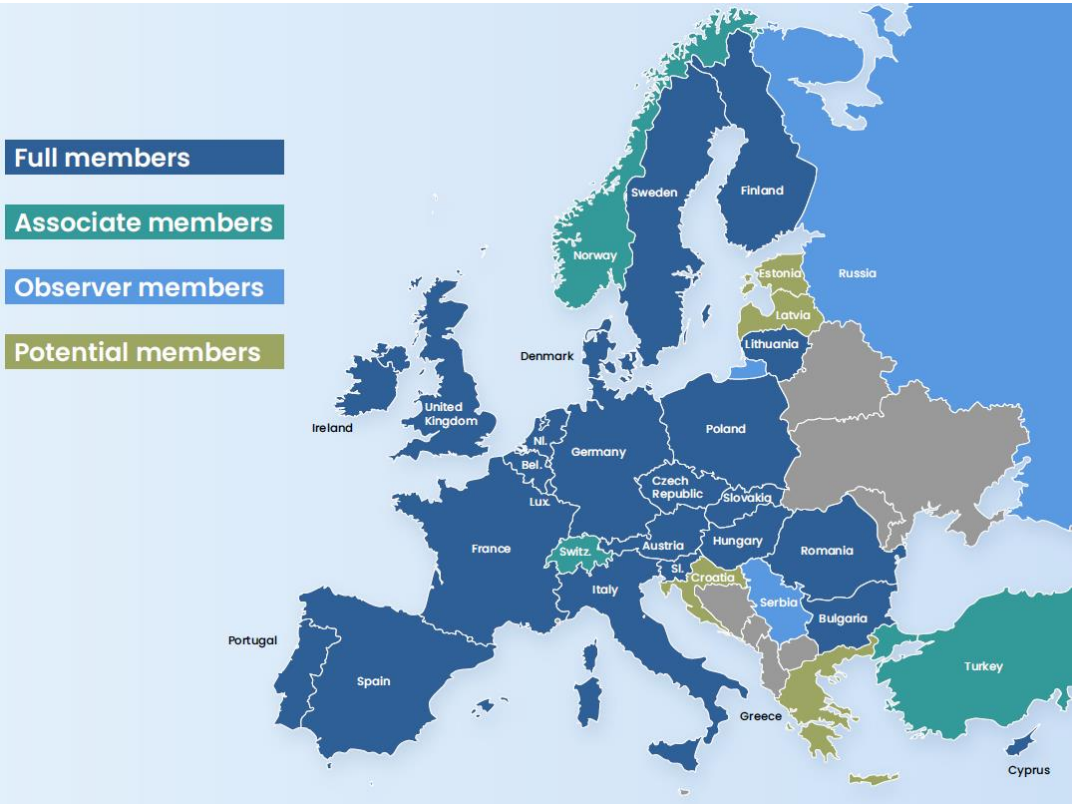
Ruud Tijssens
FEFAC Board member

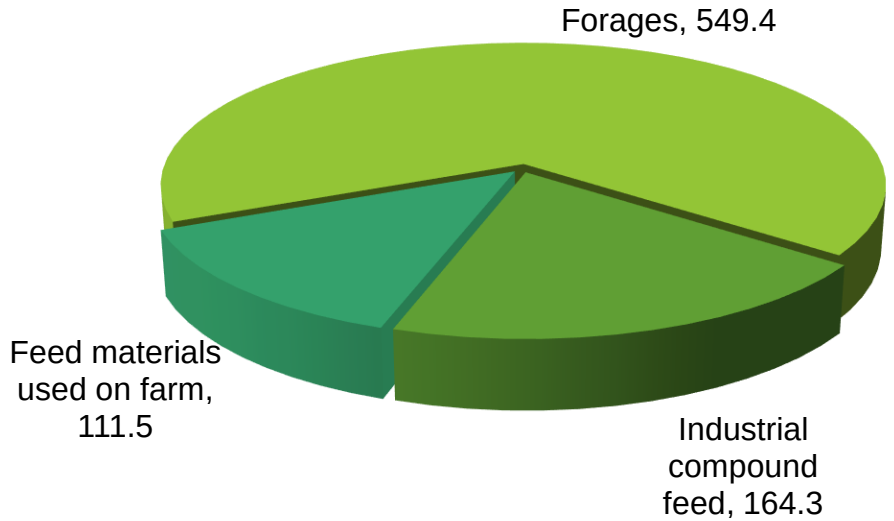
“Novel concepts and methodologies around the assessment of sustainability in livestock farming: One nutrition”

Who is FEFAC?

- European Association of Compound Feed Manufacturers
- Founded in 1959



Livestock sourcing in feed in the EU+UK (825 mt. in 2020)



- Represents 28 National Associations in 27 European countries
- Industrial compound feed production in 2020 (est): 164,3 mt.

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EU Green Deal:

- The European Climate Law

EU Green Deal:

- EU Circular Economy Action Plan

EU Green Deal:

- The Biodiversity strategy & Protection of World Forest

EU Green Deal:

- The Farm to Fork Strategy & Sustainable Food Systems

EU Green Deal:

- Greening of the Common Agricultural Policy
- Zero pollution action plan

AMBITION 1: Contribute To Climate-Neutral Livestock & Aquaculture Production Through Feed

AMBITION 2: Foster Sustainable Food Systems Through Increased Resource & Nutrient Efficiency

AMBITION 3: Promote Responsible Sourcing Practices

AMBITION 4: Contribute to Improving Farm Animal Health & Welfare

AMBITION 5: Enhance the Socio-Economic Environment and Resilience of the Livestock & Aquaculture Sectors

EU Green Deal:

- Methane strategy: Reduction emissions 35%
- Carbon Border Adjustment Mechanism

EU Green Deal:

- Reduction of food waste by 50%
- Reuse of waste (Nutrient recovery)
- Use of by-products

EU Green Deal:

- Due diligence law for deforestation

EU Green Deal:

- Reduction of use of antimicrobials
- Innovative feed (additives) solutions for environment
- Increase organic land 25%

EU Green Deal:

- Reduction of ammonia emissions
- New hazard classification for endocrine disruptors

FEED SUSTAINABILITY CHARTER 2030

Role of animal nutrition to support the sustainable and competitive livestock and aquaculture production

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FEED SUSTAINABILITY CHARTER 2030

FAO sets the record straight–86% of livestock feed is inedible by humans

Ambition 2

Foster Sustainable Food Systems Through Increased Resource & Nutrient Efficiency

UN Strategic Development Goals

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

EU Green Deal objectives

Reducing the excess of nutrients

Boost a circular bio-based economy

Reduce food waste

NUTRIENT LOSSES

Reduce nutrient losses by 50% whilst retaining soil fertility, resulting in 20% less fertilisers

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The circular economy: role of livestock sector (ATF)

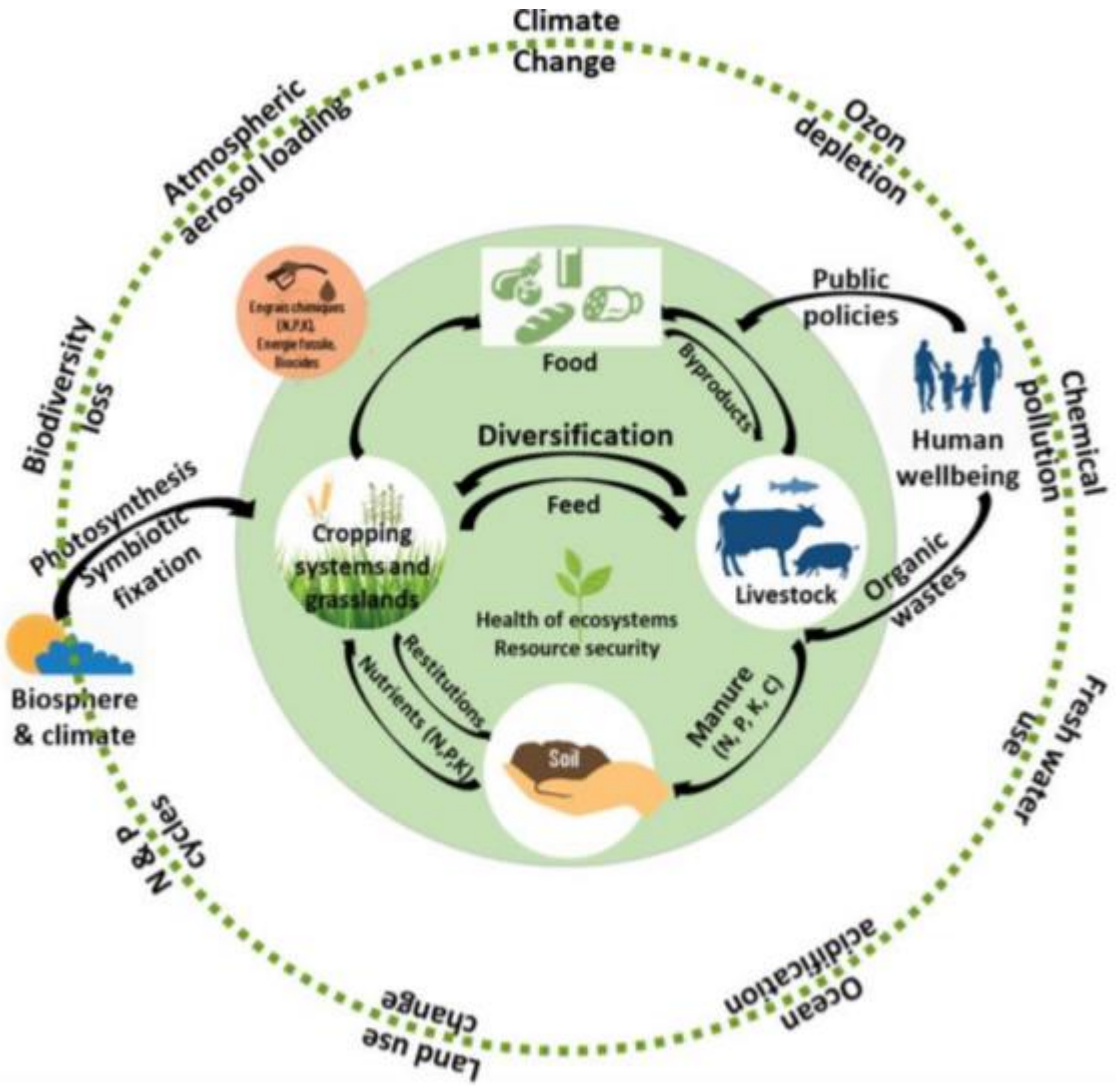
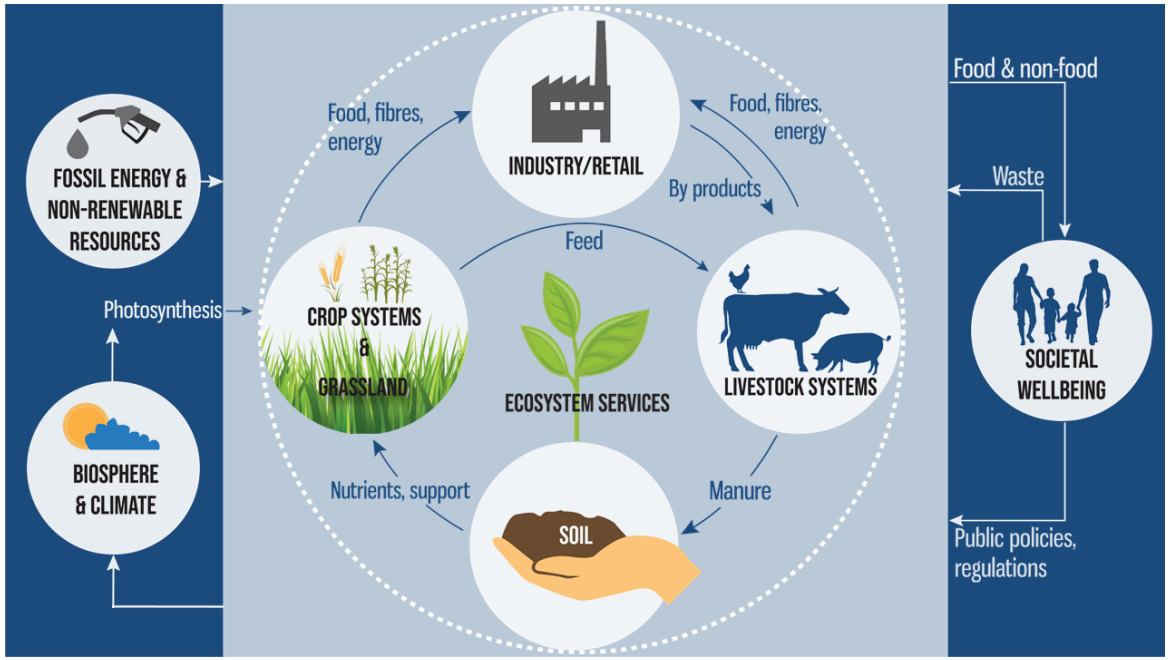


Figure 1. Role of livestock farming in sustainable agri-food systems



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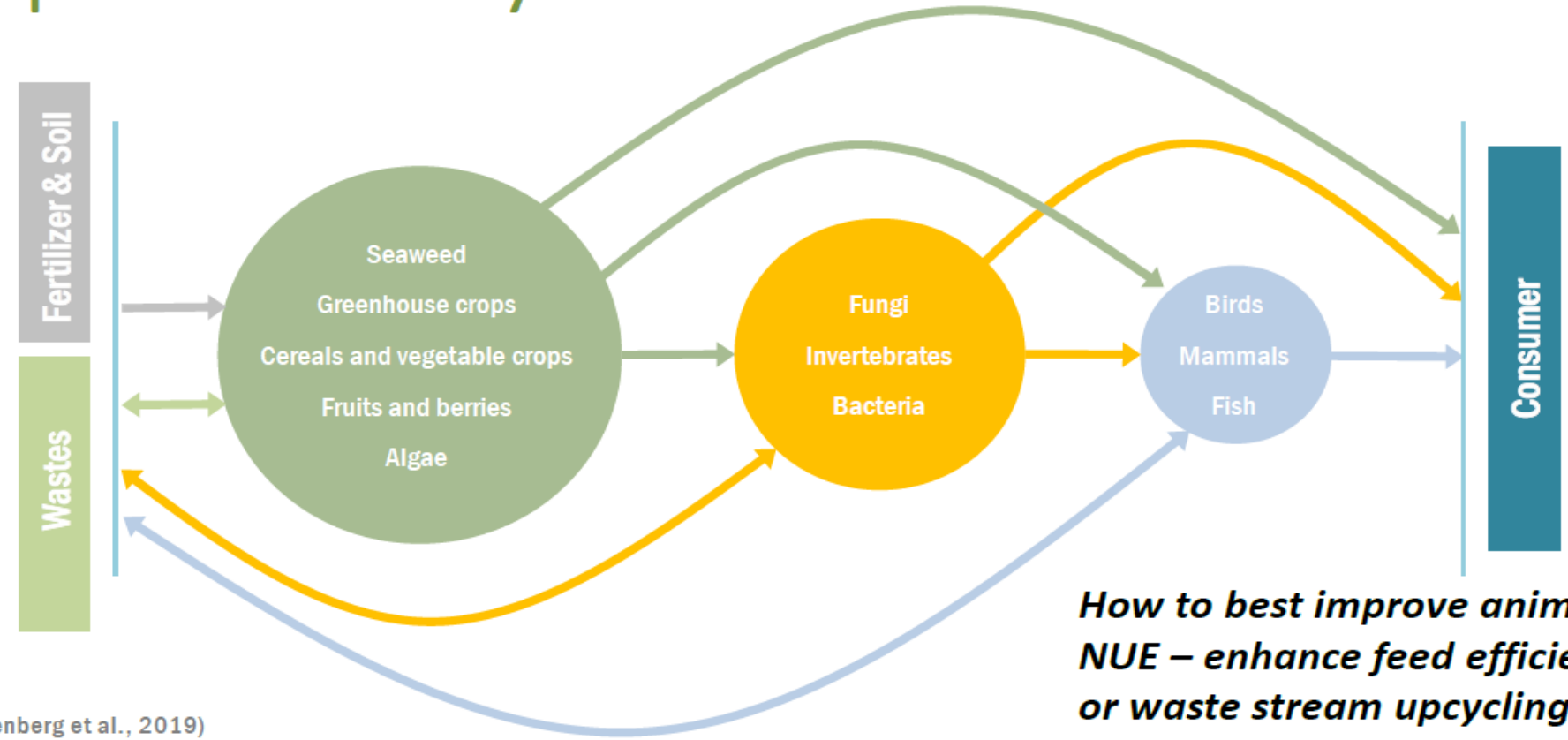
Future more circular food production systems



(Eilenberg et al., 2019)

How to best improve animal NUE – enhance feed efficiency or waste stream upcycling?

- Animal manure/byproducts recycling will affect overall NUE
- New food chains will appear (insects, algae, artificial meat) and change NUE
- Circular food systems complicate the attribution of NUE (waste or resource?)

Kilde: Institut for Plante- og Miljøvidenskab, Københavns Universitet

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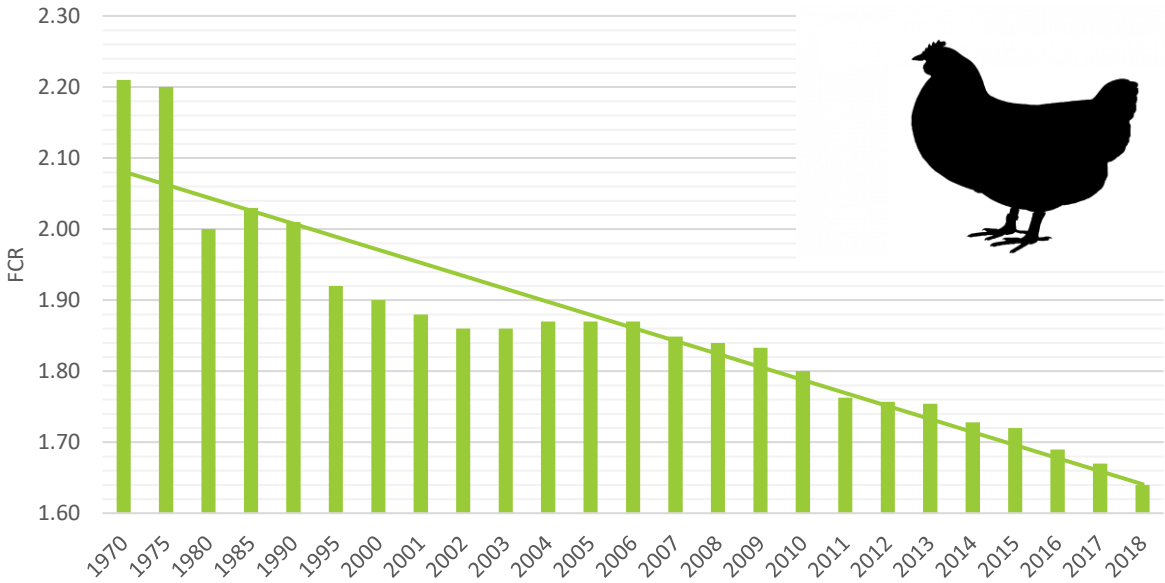
Optimisation of nutrient conversion into bioresources

- So far: selecting the best resources to obtain the best conversion factor
- In future: adequate feed conversion in circular context, with a finite amount of “circular feed”
- Technology is required:
  - NGTs,
  - detoxification technologies,
  - increased digestibility via processing,

Evolution of feed conversion rate for poultry



Source: ITAVI

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The proven record of plant breeding innovation

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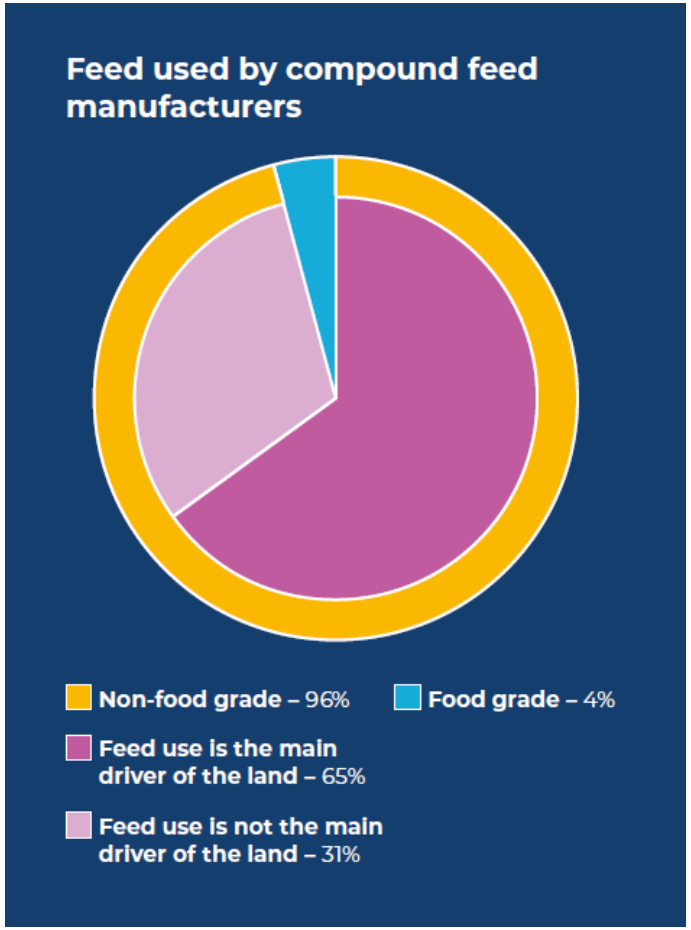
Preserving “co-product” status to minimise food waste

- 62 mio tonnes of co-products used by EU feed industry:
- Nearly all feed used in compound feed manufacturing is « non-food grade »
  - not suitable for human consumption as they do not meet the minimum quality and standards required for food production.



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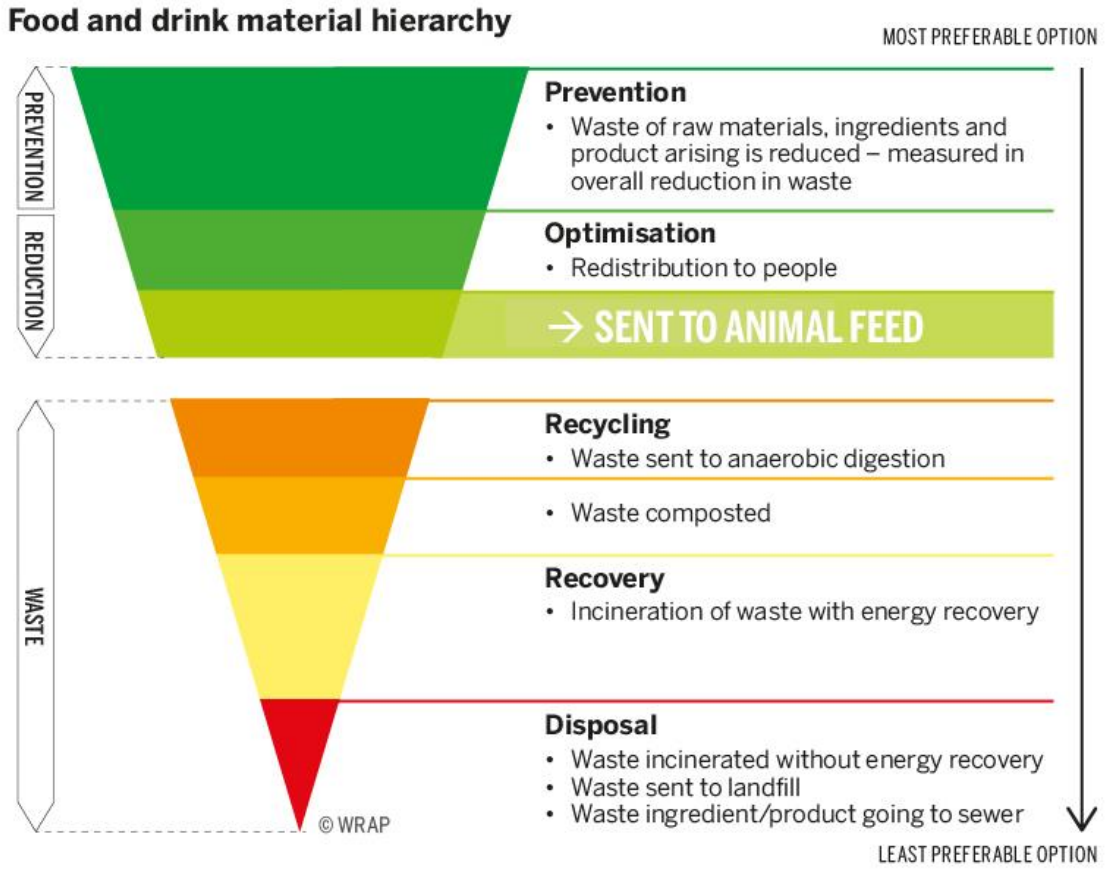
Recovering nutrients from waste streams

- Recovery of nutrients from:
  - Catering waste?
  - Waste water?
- BUT safety concerns!
- Conditions for granting end-of-waste status are key?



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Further optimising the nutrient flow along the nutritional chain via bioresources

Gnanasekaran Dineshbabua, Gargi Goswamia, Ratan Kumara, Ankan Sinhaa, Debasish Das
https://www.sciencedirect.com/science/article/abs/pii/S1756464619304694

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Possibility to optimalize animal products though animal diet

- Saturated fat content – parma ham

ELSEVIER

Meat Science

Volume 65, Issue 1, September 2003, Pages 571-580

Influence of dietary fat, on fatty acid composition and sensory properties of dry-cured Parma ham

G. Pastorelli [a], S. Magni [a], R. Rossi [a], E. Pagliarini [b], P. Baldini [c], P. Dirinck [d], F. Van Opstaele [e], C. Corino [a]

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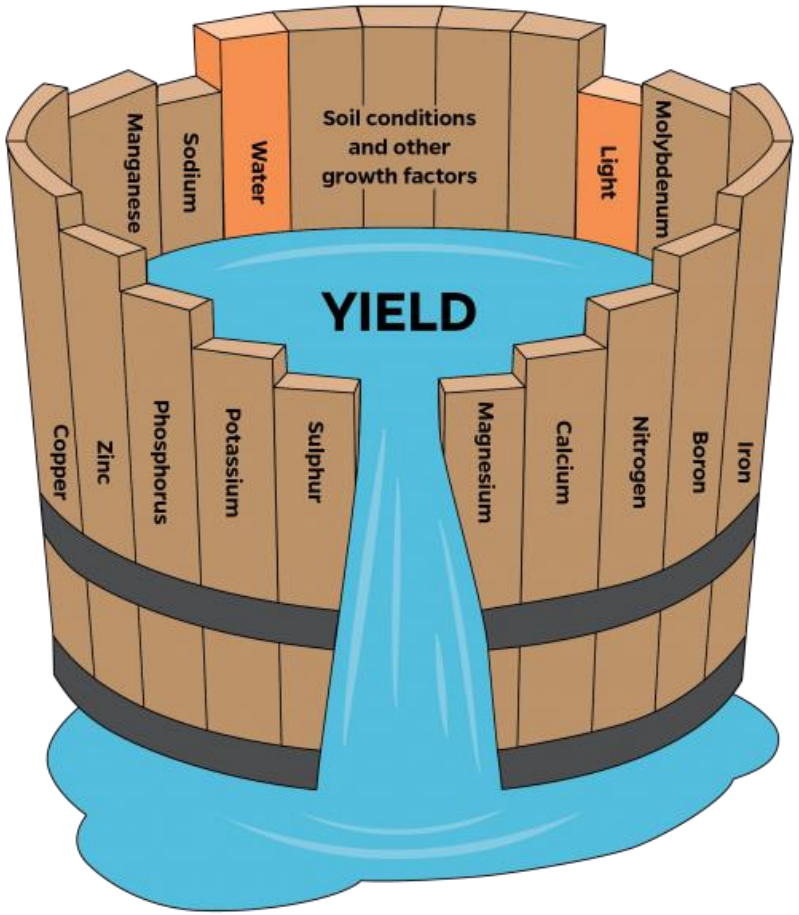
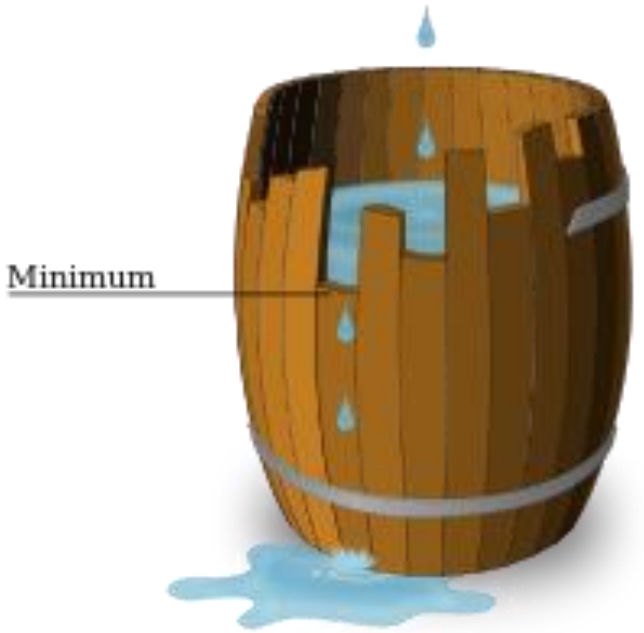
One nutrition concept as the law of minimum





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We need scientists from human nutrition, animal nutrition and plant nutrition to develop the „One Nutrition“ concept to provide us science base for defining sustainable nutrition along the food chain

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Thank you for your attention

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