

Do animals have a role in future food systems?

Leroy Lecture 2018

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Question

Should I reduce my consumption of animal-source food?



Raise your hand

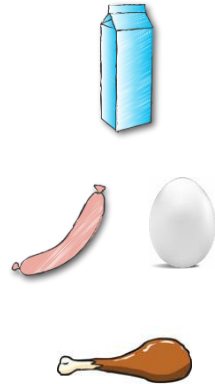
We demand more meat – August 1948



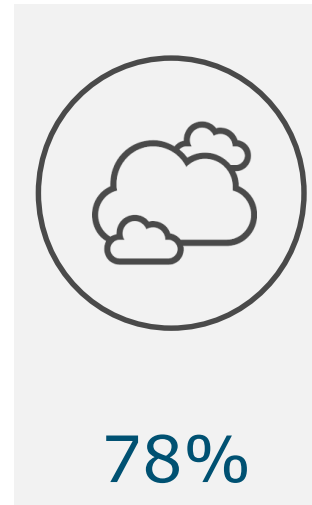
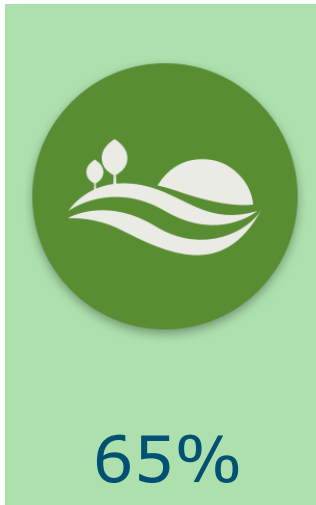
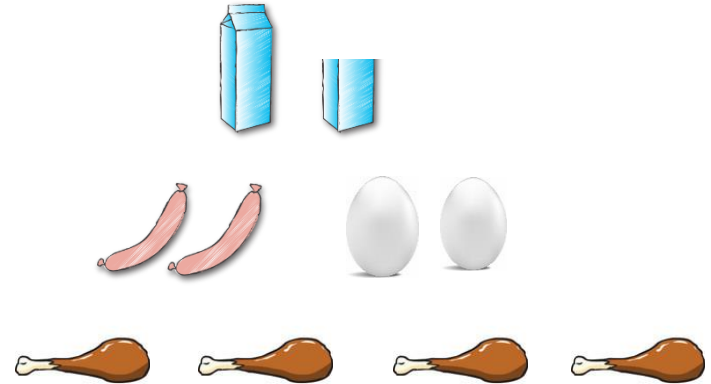
EU livestock



1961



1990



Healthy planet is essential



Eat with less impact



London, 2015

New York, 2014



Key question

How to reduce the impact of our food system?

What role do animals play?



A product footprint approach

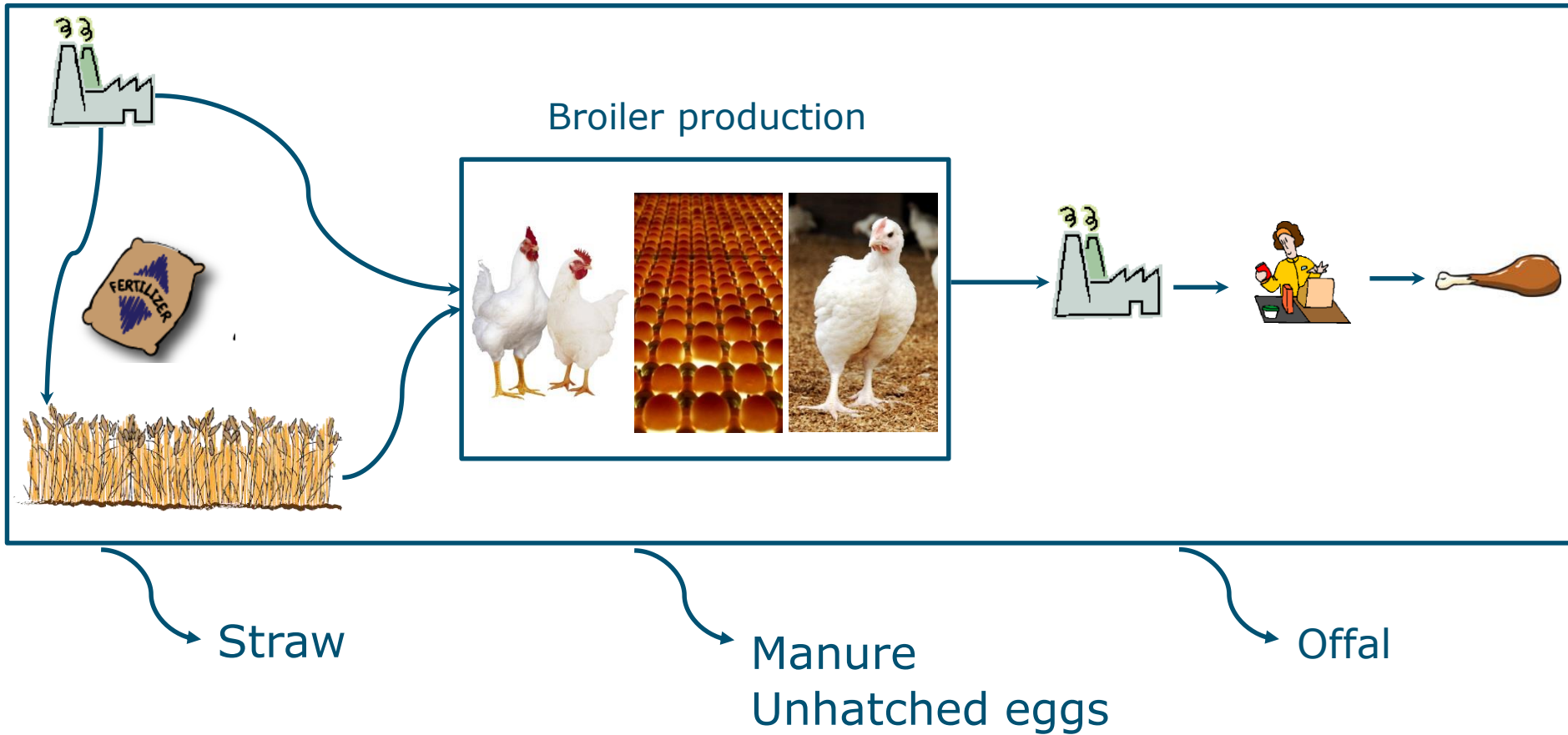


Produce
with less impact

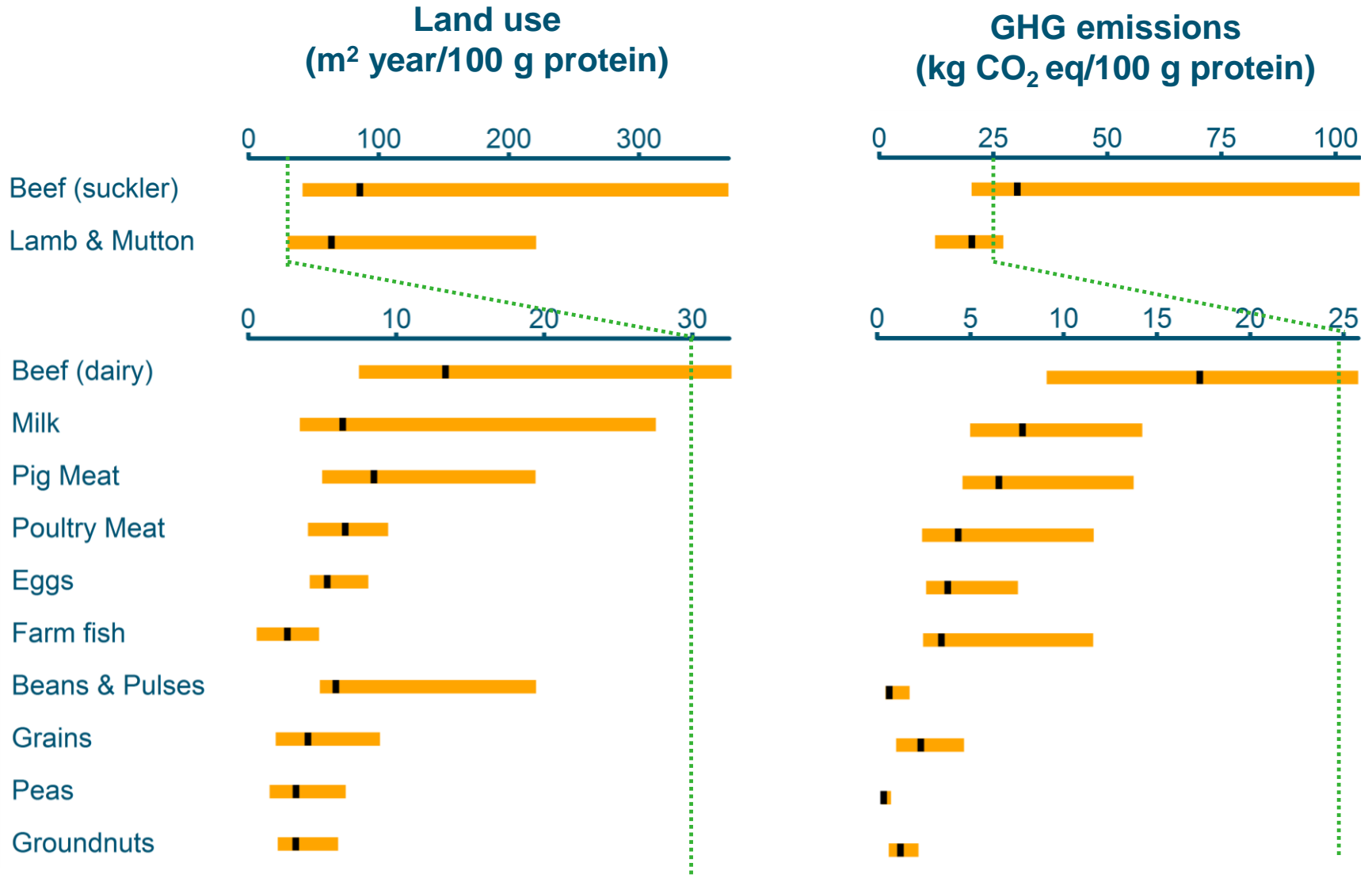


Eat
with less impact

A product footprint



Variability within & between products



Product footprint approach



Produce

with less impact

Herd productivity



Nutrient-dense feed



Feed-food competition

Eat

with less impact

Eat chicken
and no beef



Go vegan

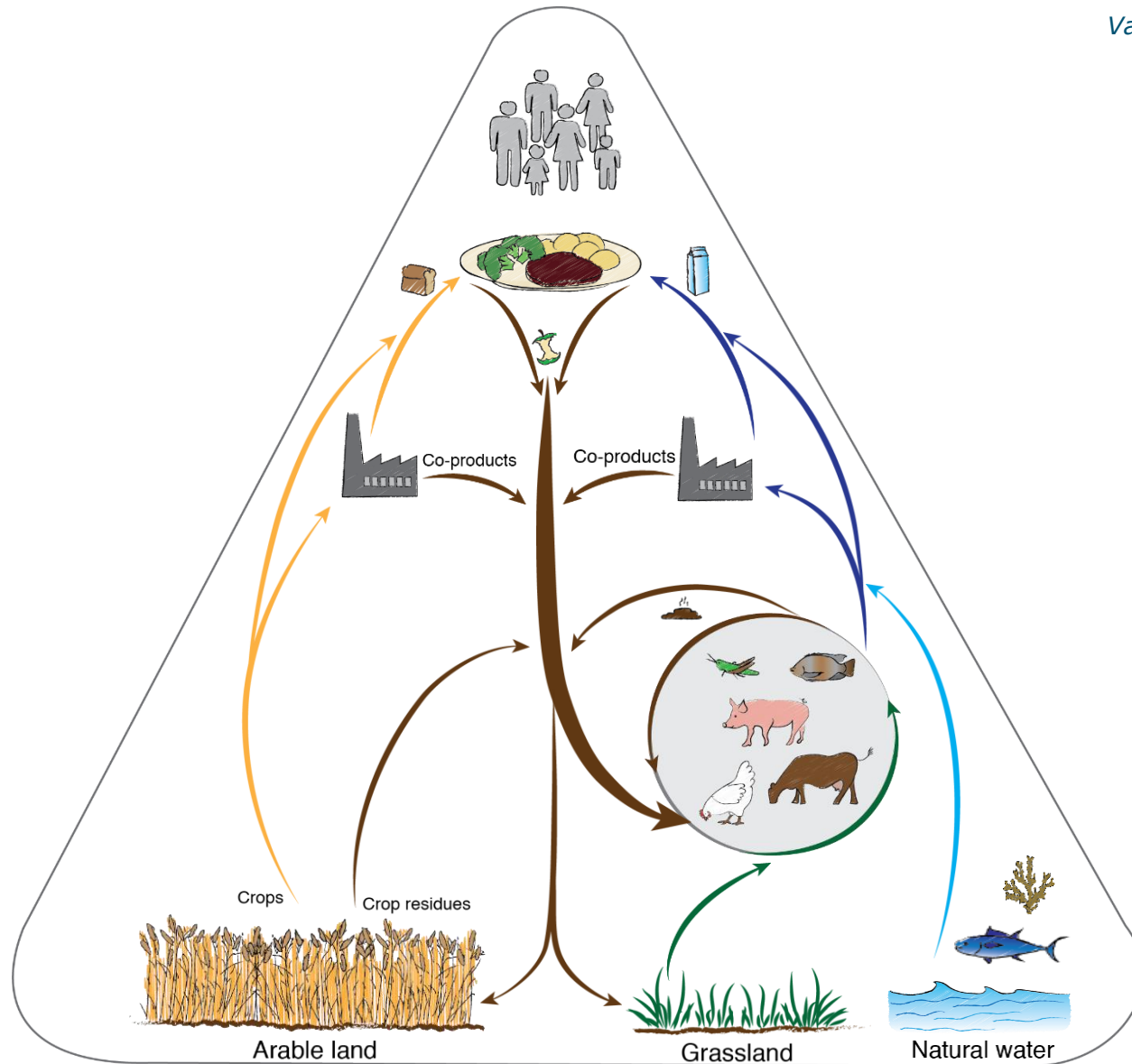


Co-products
&
Grass?

A footprint approach does NOT address feed-food competition or interlinkages in the food system

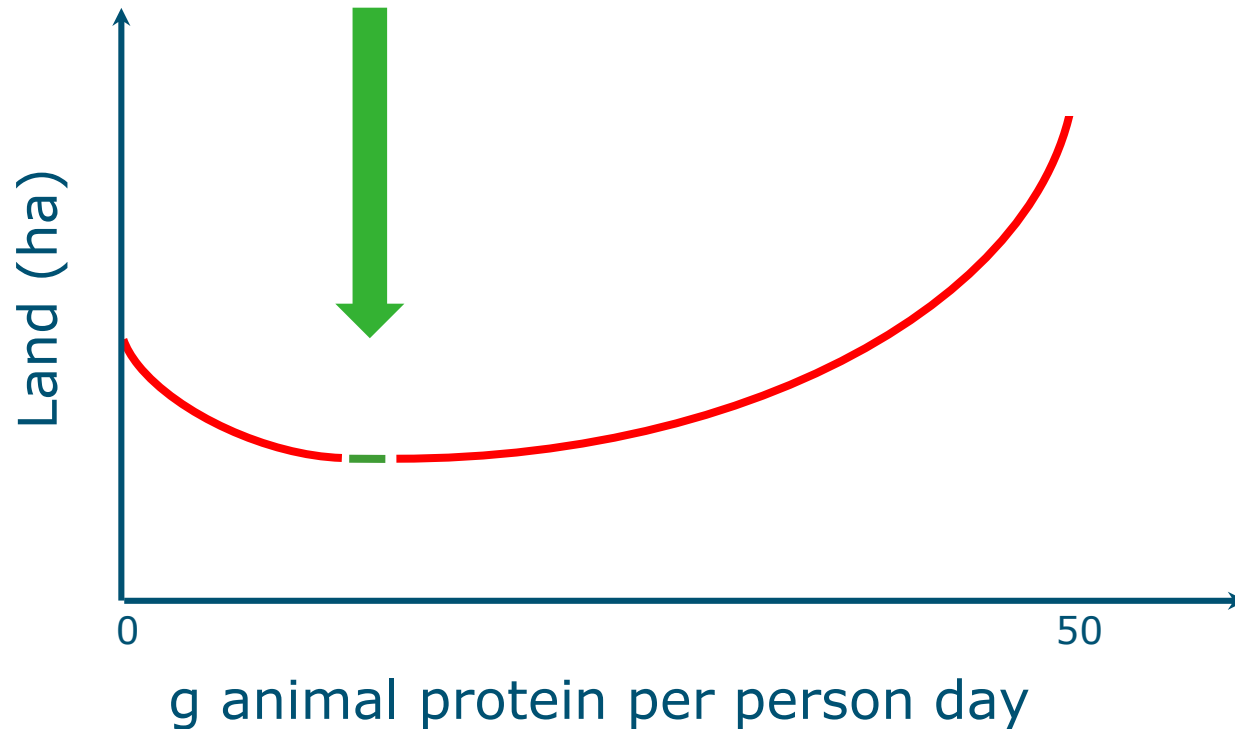
A food systems approach

Van Zanten et al. (2018b)
Global Food Security

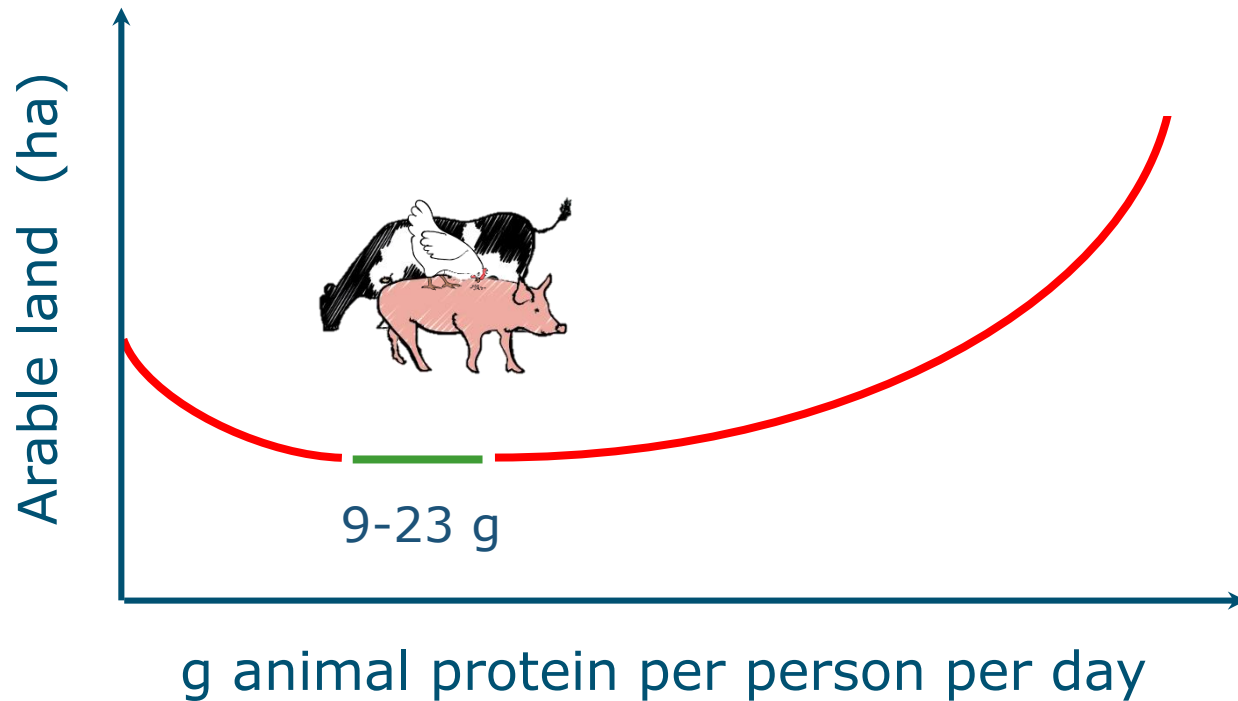


Animals are vital

Unlock inedible or unwanted biomass



First review of global studies



Amount of food waste used as feed

Type of plants

Type of animals

Food waste as feed



Reduce food losses & waste
Recycle as feed

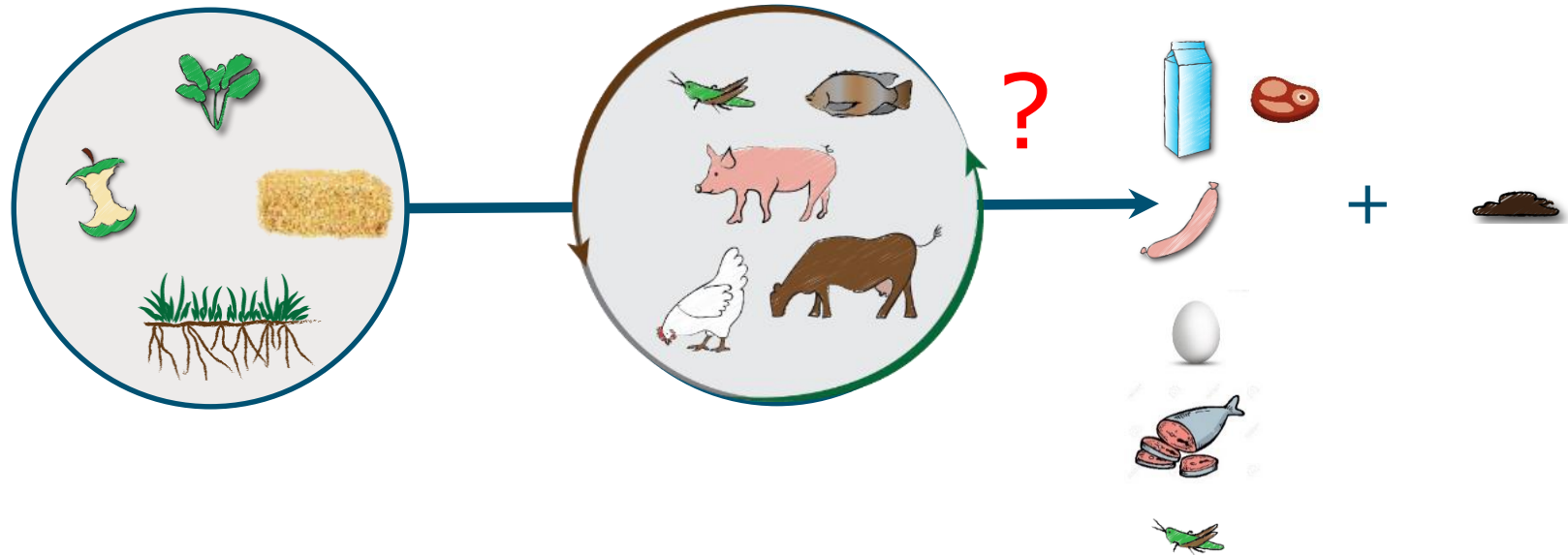
Type of plants



Feed value of soybean meal is much higher

Design smart cropping systems
- dual purpose crops -

Type of animals

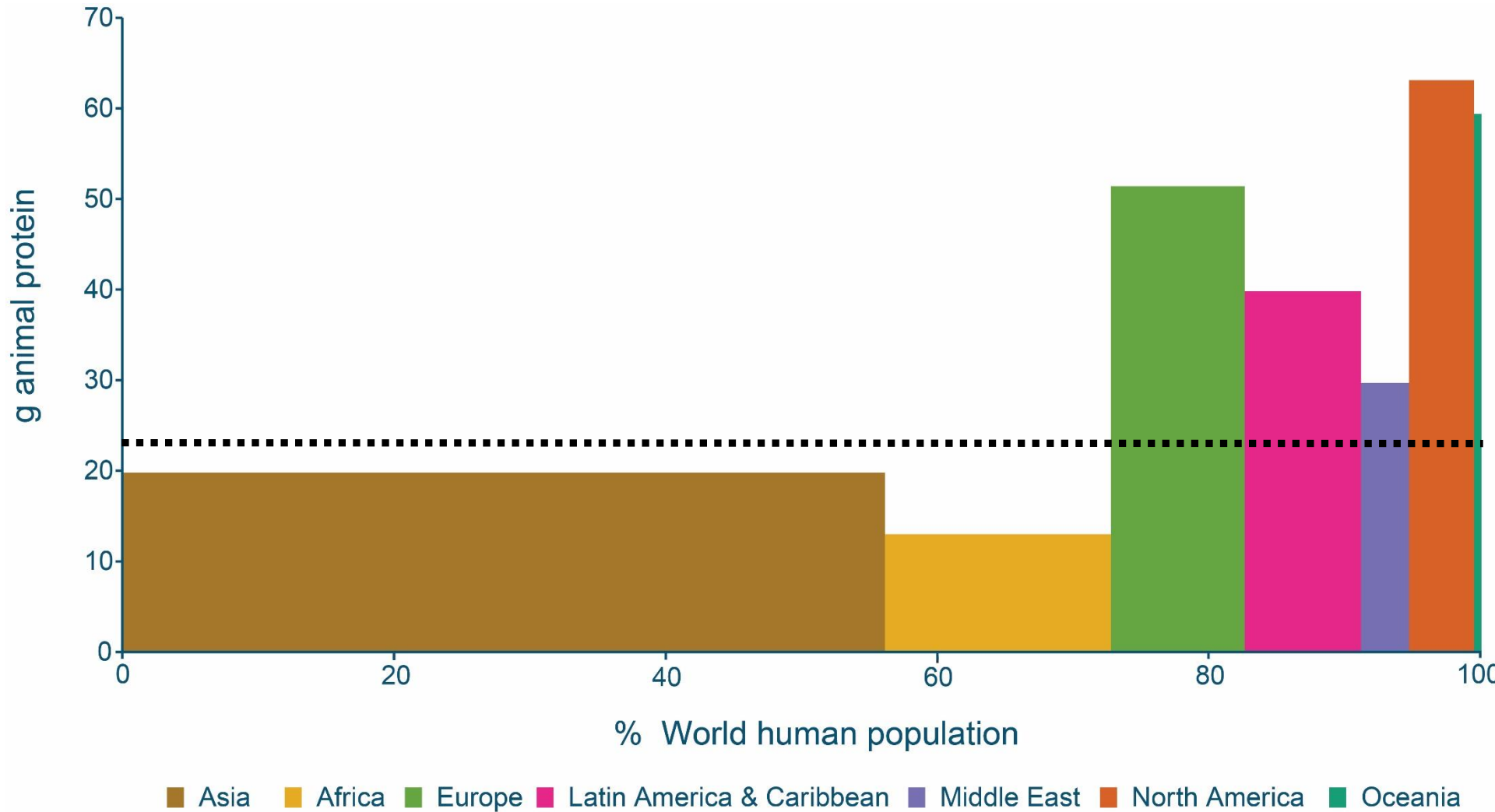


Which animals can optimally value what leftovers and grass resources?

Amount of ASF in diet

- Availability and nutritional quality of leftovers & grass resources
- Efficiency with which animals utilize these resources

Protein available for consumption



Other sustainability issues

- Depletion of phosphate rock (mineral P)
- Nitrogen and phosphorus losses
- Climate change

- Biodiversity
- Animal health and welfare

Use animals for what they are good at



- nutrient-dense food
- fertilizer
- other ecosystem services

Back to the past?

- Combine ecological principles with smart technology



- Scale and complexity of interactions has increased

Conclusions

Yes, animals do have a role in future food systems

They should convert low-opportunity biomass in valuable food, manure & other services

High-income countries should reduce their consumption of animal-source food

Exact role requires more food systems research

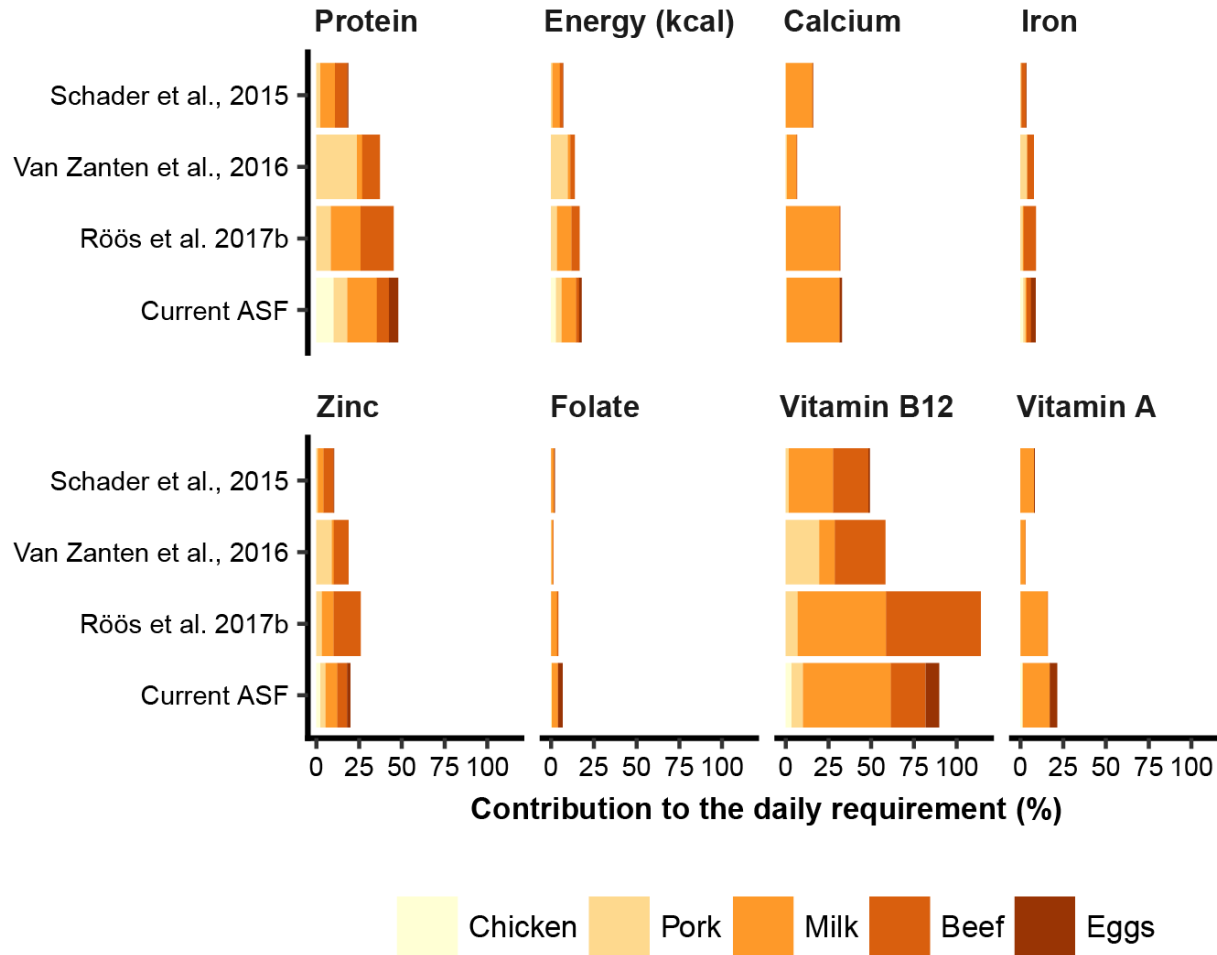
Thanks!!!



“Everything should be made as simple as possible, but not simpler”

Albert Einstein

Its not only about proteins

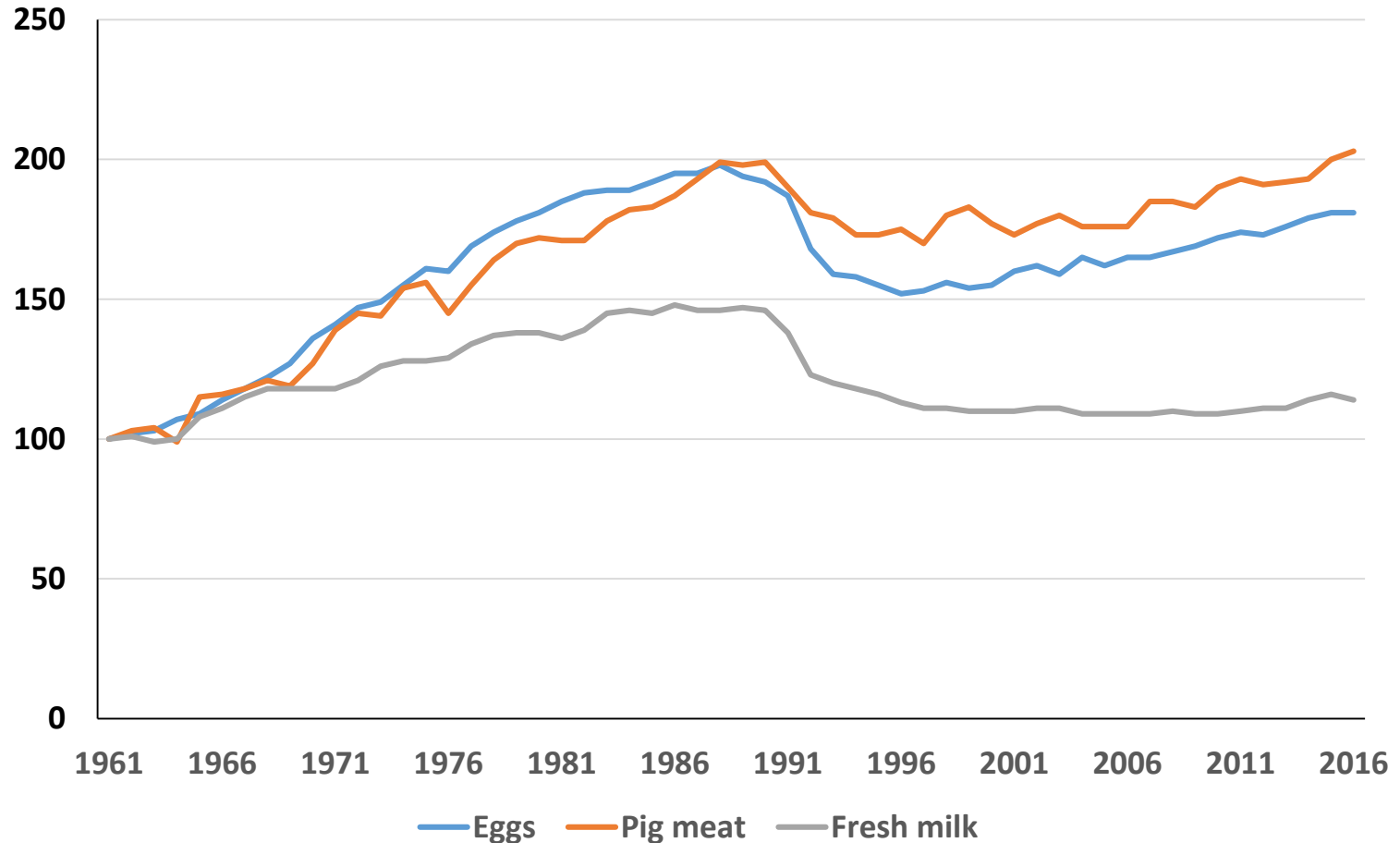


Transition

- Built a common future about the role of animals
- Metrics at interlinked scales
- Stimulate show-cases
- Create incentives & overcome barriers

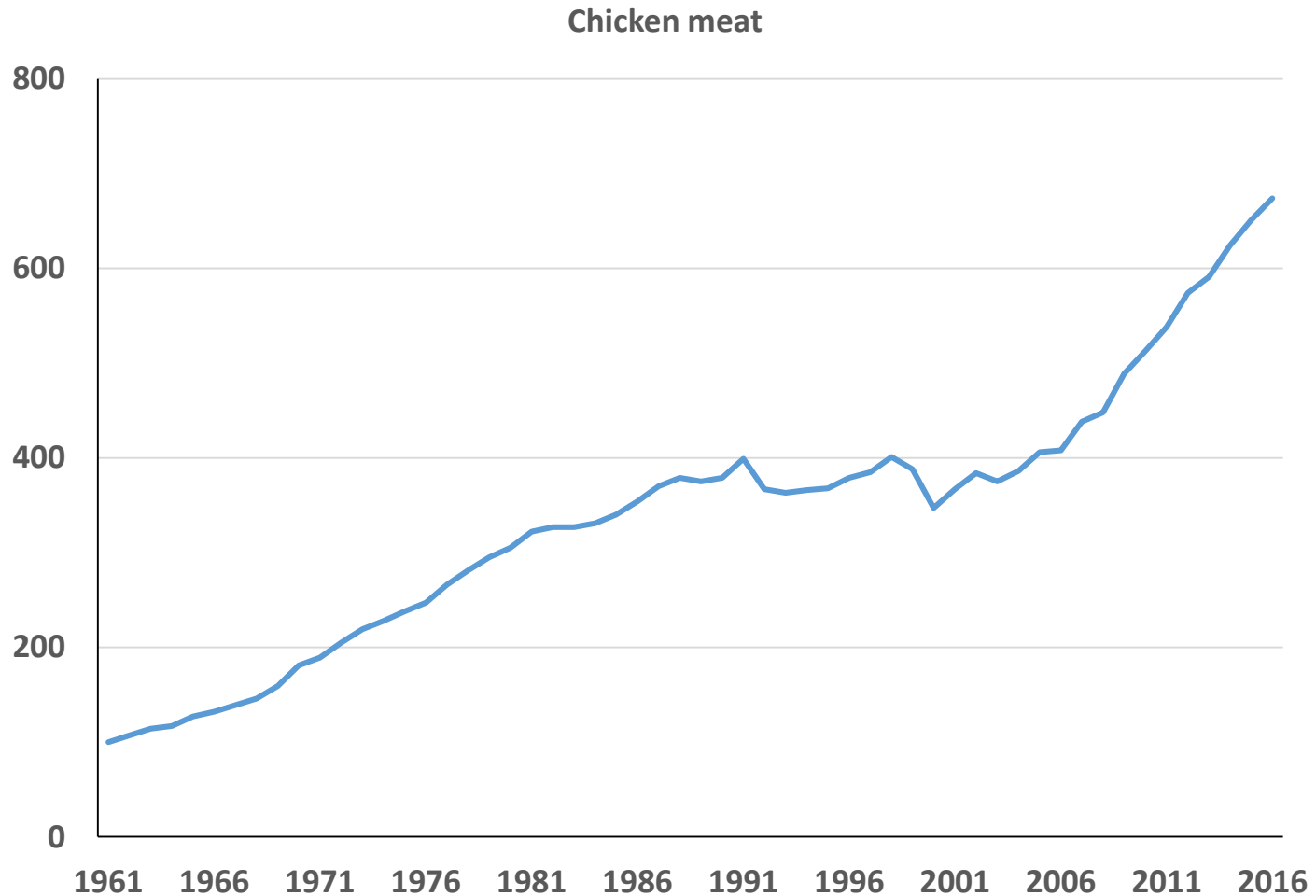
Animal Production 2.0: enough for all

Trends in EU production volume

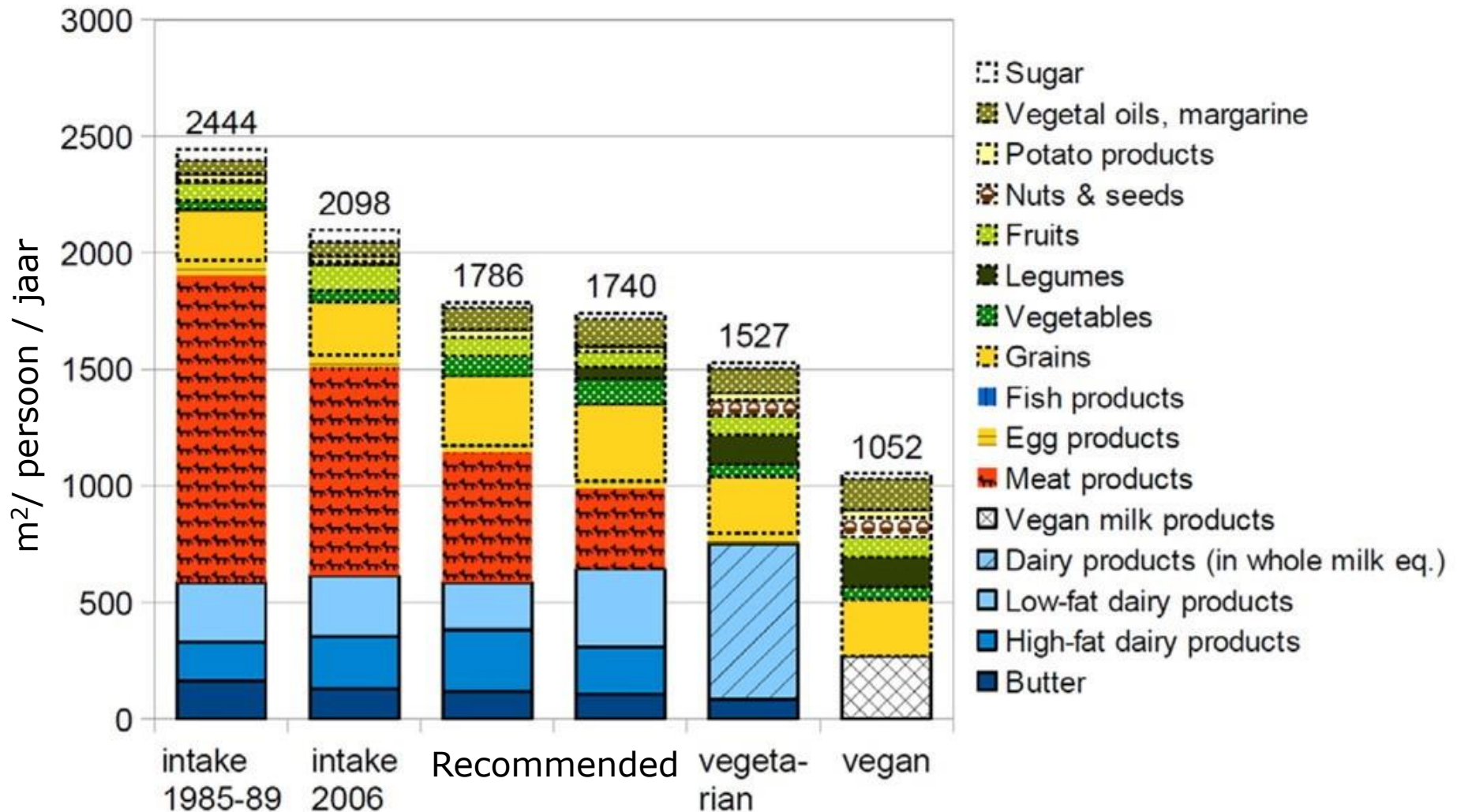


Animal Production 2.0: enough for all

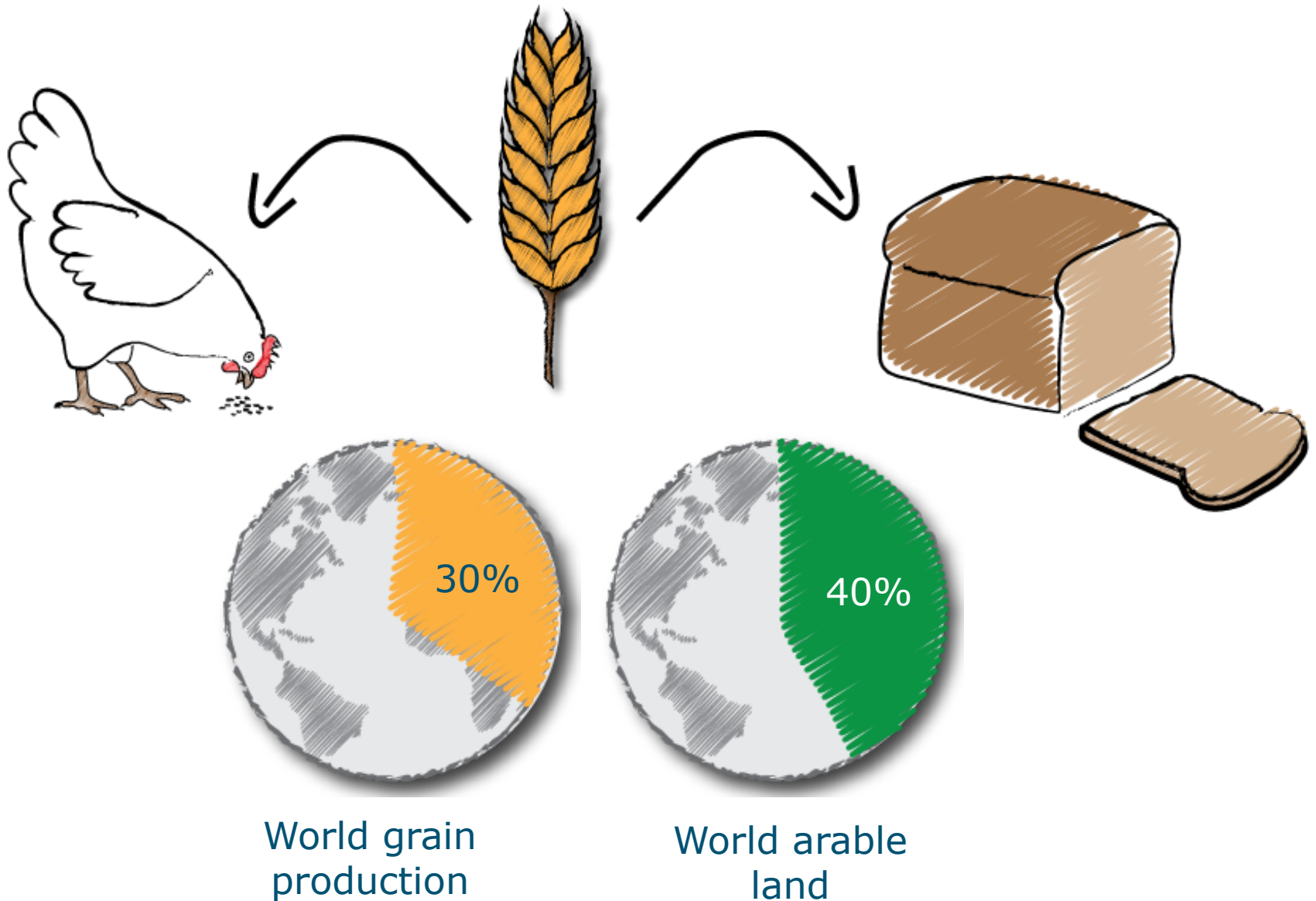
Trends in EU production volume - broiler meat



Eat with less impact



Direct competition



Indirect competition

