



23rd European Symposium
on Poultry Nutrition

ESPN
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RIMINI/ITALY JUNE 21 - 24

The role of nutrition in supporting sustainable poultry production

Professor Emily Burton

Structure

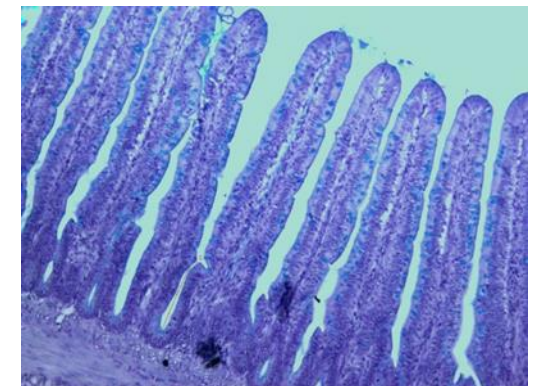
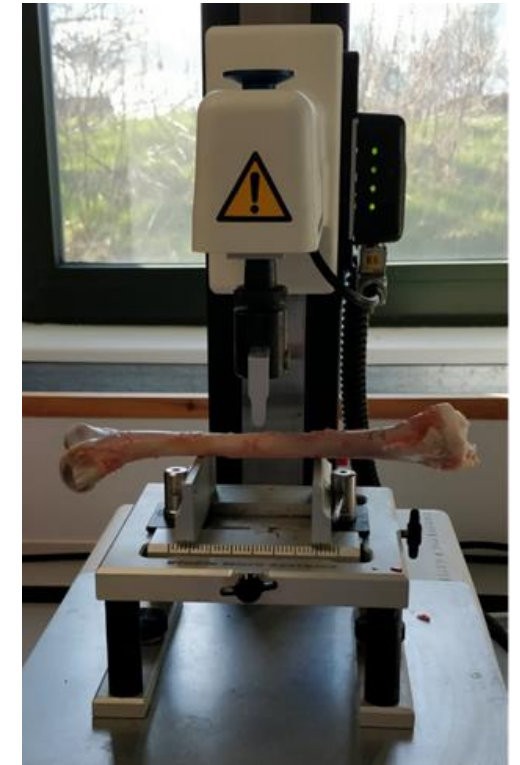
- 1 Nutrition as a tool
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- 3 Environmental Sustainability
- 4 Economic Sustainability
- 5 Societal Sustainability
- 6 Future role of nutritionists



Nutrition as a tool

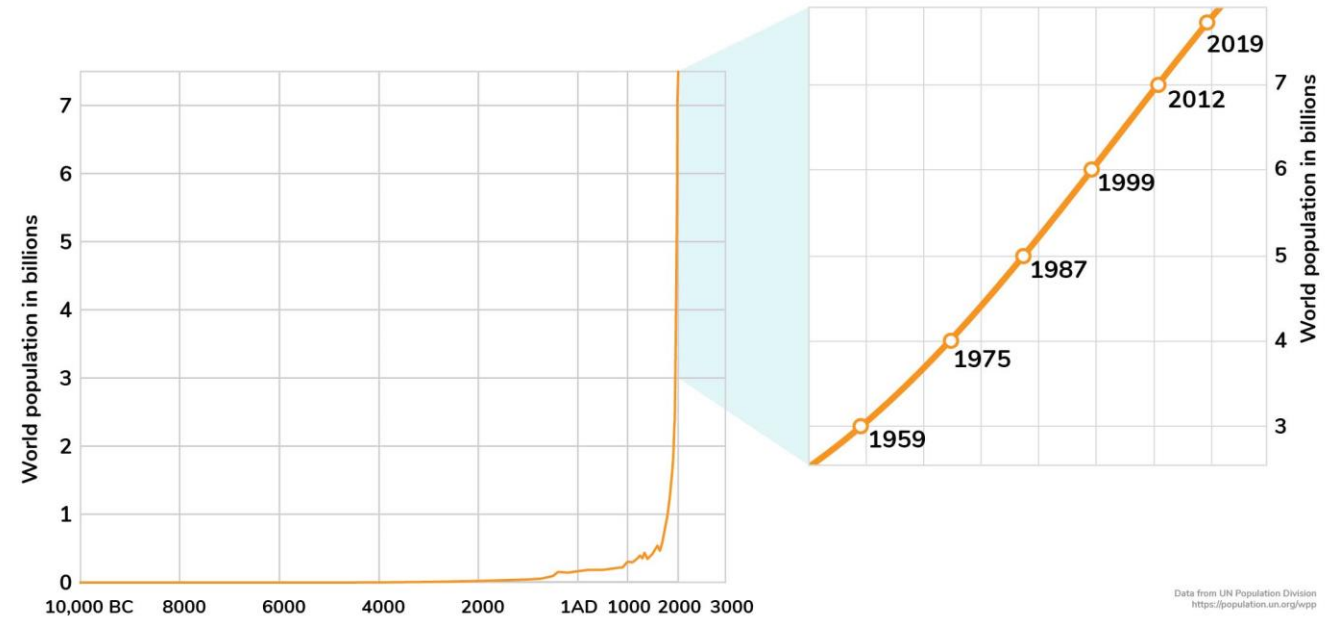
Nutrition as a tool

- Poultry meat and eggs are firmly established as the most efficiently produced animal protein sources
- Our understanding of the nutrient requirements of poultry is immensely detailed
- Beyond nutrient supply, nutrition is a route to meeting other needs:
 - Reducing production costs
 - Improving bird health
 - Addressing consumer preferences
 - **Meeting changing societal values**



Why change approach when we are sector leading?

- Globalised economic growth and accelerating ecological degradation.
- For most of human history our population size was relatively stable.



ipcc
INTERGOVERNMENTAL PANEL ON
climate change

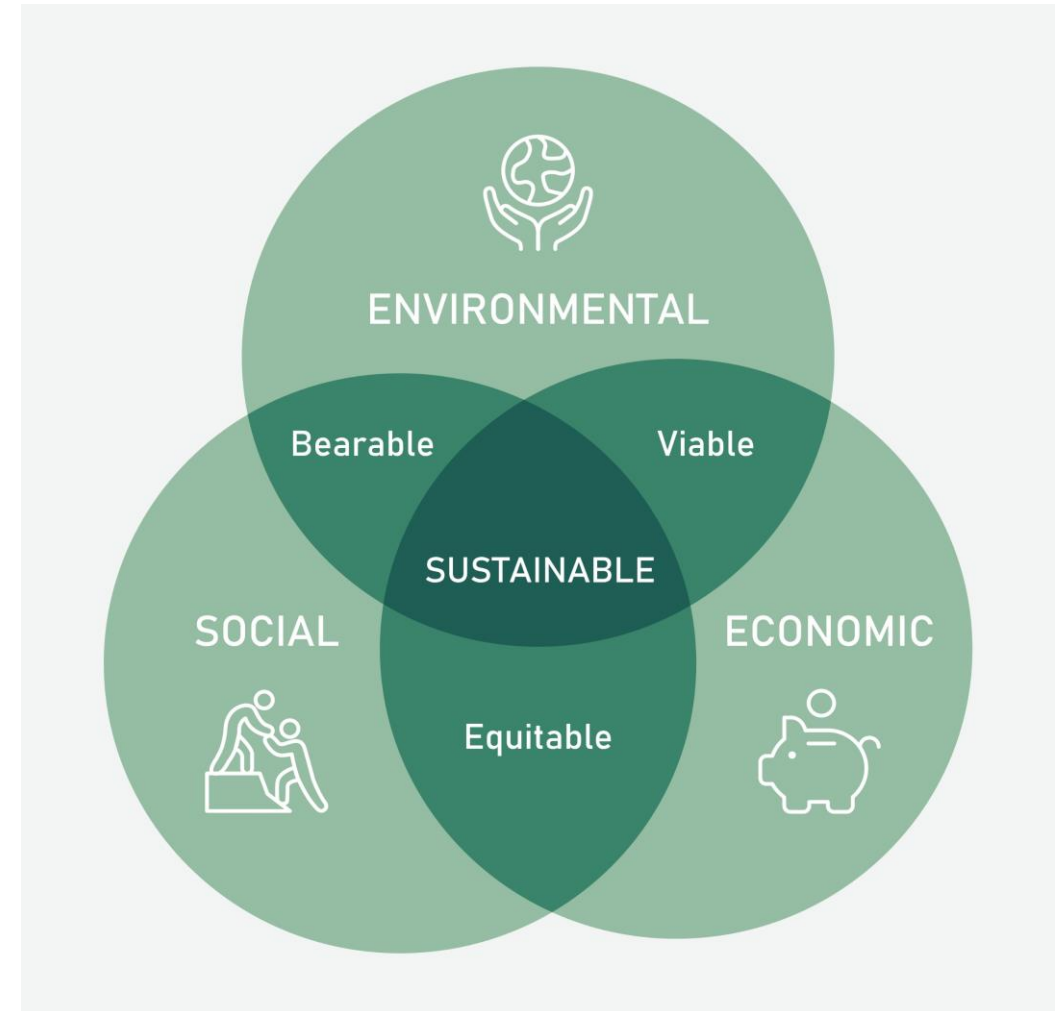
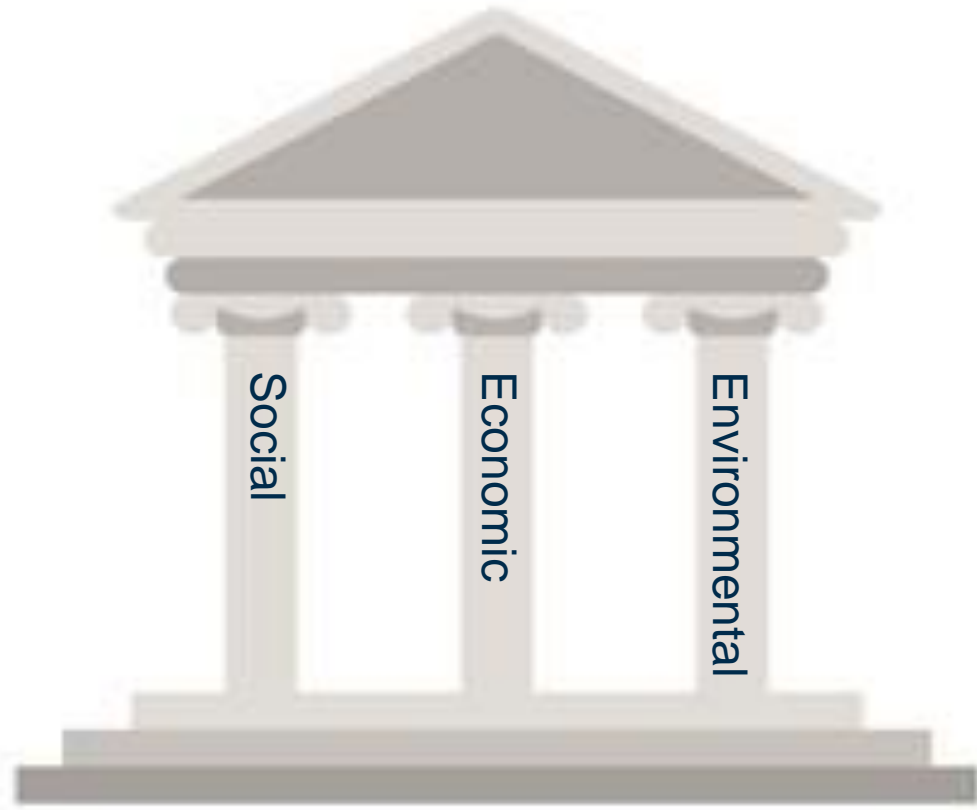


Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”
Brundtland Report, 1987

Defining sustainability

Brundtland Report (1987) Sustainable Development:

3 interdependent and mutually reinforcing pillars



Nutrition as a tool to support corporate responsibility

Measuring a triple bottom line for a 'Balanced Scorecard'



Outcome of the Brundtland Report:

- 2005: United Nations SDGs
- Operating framework for **Responsible Innovation**

SUSTAINABLE DEVELOPMENT GOALS

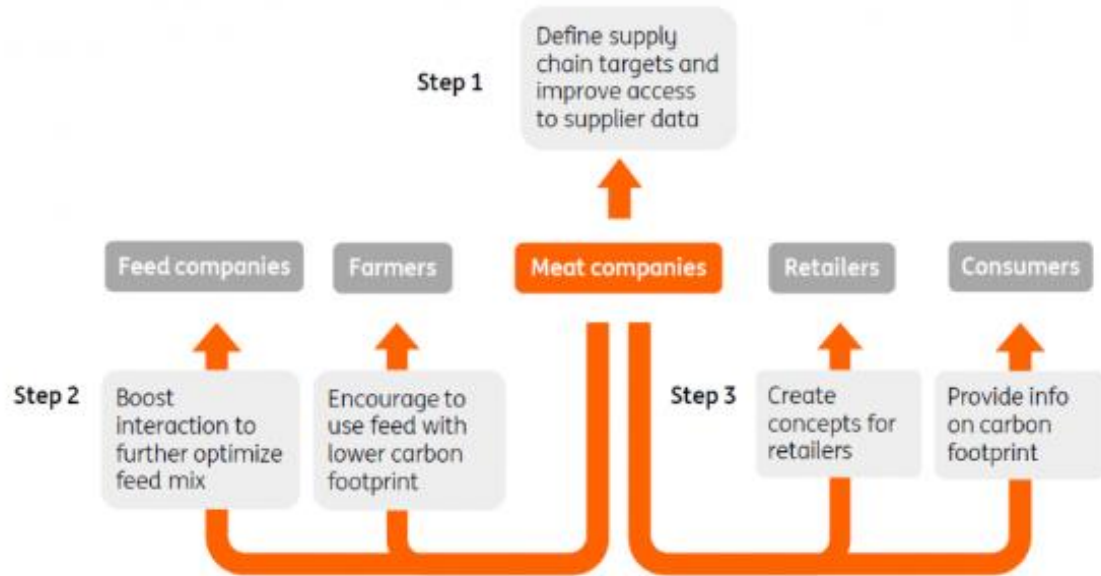


Environmental Sustainability

Environmental Sustainability

Familiar space for nutritionists with big societal expectations:

Meat companies can take a coordinating role to enable emission reduction



Source: Think ING.com Sept 2022

ING Research

Feed production is a major source of greenhouse gas emissions

In livestock sectors in Europe



FAO, European Commission, takes into account all emissions along the production chain

Environmental Sustainability

- **Partly** familiar space for nutritionists but

Pillar covers **holistic well-being of the environment** includes climate change, water supply, biodiversity;



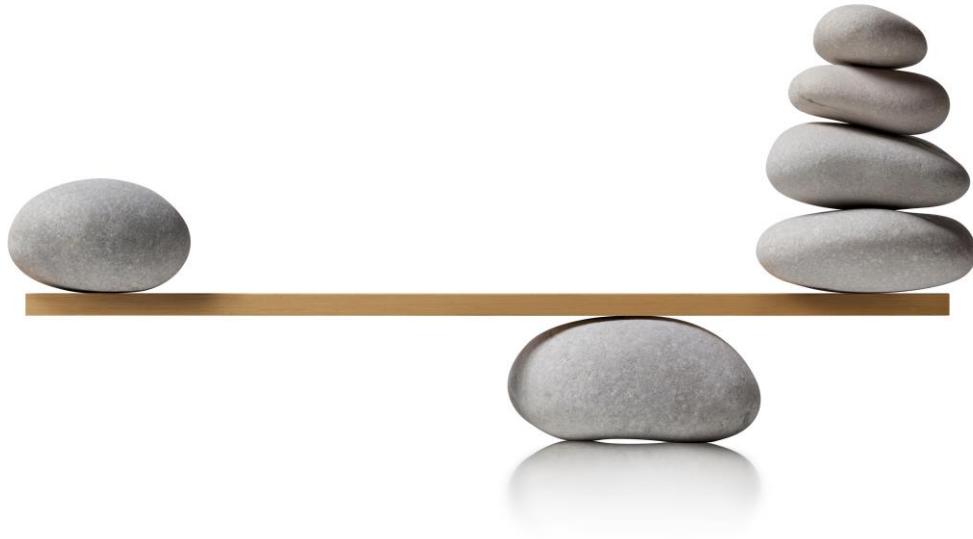
- WEF, 2022: “Half of the world’s GDP – around \$44 trillion – is highly or moderately dependent on nature.”



Environmental Sustainability

- Familiar space for nutritionists but

Zero carbon  Zero environmental impact



Economic Sustainability

Economic Sustainability

- Least-cost feed formulation

Least cost to meet:

Nutrient requirements?

Lowest carbon footprint?

Least food miles?

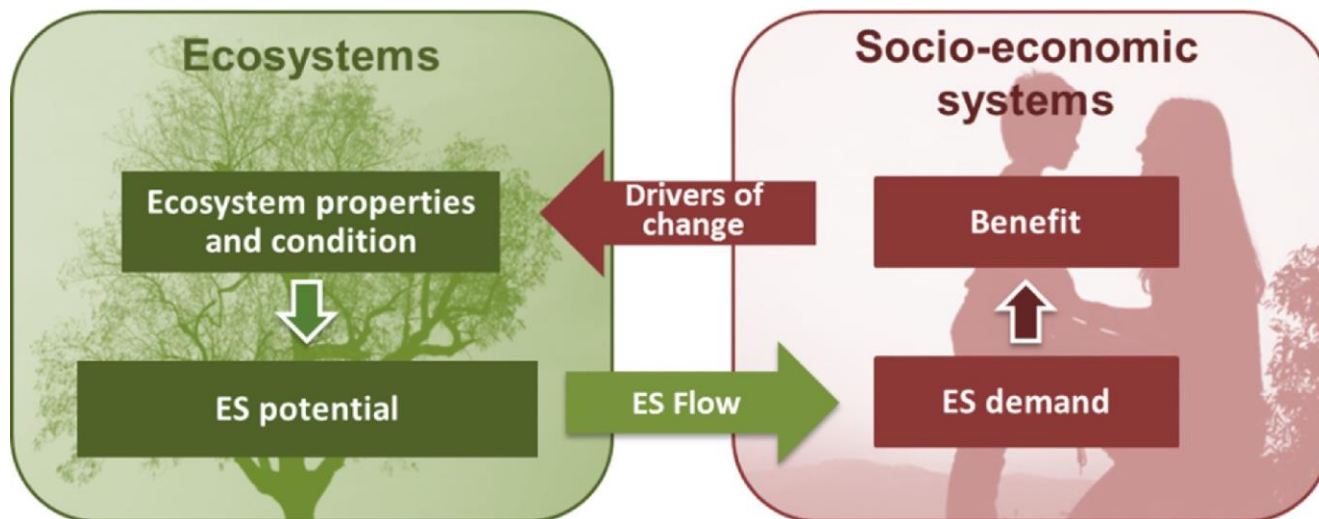
Most...?

Least....?



Aligning economic and environmental sustainability

- Carbon footprint unit: CO₂eq
- Methodologies for deriving carbon footprint are less established
- IMF promotes carbon taxation policies to support global economic stability: nutritional evaluations must also include this unit alongside traditional measures
- Feed formulation now needs multiple dimensions
- Increasing economic value of natural capital through ecosystem service flows is likely to increase prominence and complexity of multidimensional feed formulation



Source: Vallecillo et al., 2019:
<https://doi.org/10.1016/j.ecolmodel.2018.09.023>

Societal Sustainability



Social Sustainability: People

- How individuals, communities and societies live with each other and set out to achieve the objectives of development models which they have chosen for themselves
- Four dimensions of social sustainability:
 - **Quality of life:** affordable housing, physical & mental health support, education, employment, support, safety and security.
 - **Equality and Diversity:** reduce disadvantages and assess needs of different diversity types and educating everyone to have diverse viewpoints to leverage benefits of diversity
 - **Social Cohesion:** increasing participation and build links between different target groups
 - **Democracy & Governance:** ensuring budget and resources are adequate
- Nutrition is still about meeting needs
but goes beyond nutrient supply

Social Sustainability: Beyond the SGDs

- Animal welfare may or may not appear in future SDGs but is already central in the EU Green Deal
- Lack of metrics make this element difficult to reconcile for a balanced score card



The image shows the cover of a briefing document from the European Commission. At the top, there is the European Union flag and the text 'European Commission'. The main title is 'CAP SPECIFIC OBJECTIVES ...explained' in large, bold, white letters, with '...explained' in a smaller, italicized font. Below the title is '– Brief No 9'. The background is a green field with a circular inset showing a red tractor and a yellow tractor. Below the title, there is a blue circular icon containing a white silhouette of a cow and a pig. To the right of the icon is the text 'Health, Food & Antimicrobial Resistance' in bold blue letters. Below this, there is a green horizontal bar. Underneath the bar, there is a paragraph of text: 'This is part of a series of Briefs summarising the facts and addressing the policy relevance around the 9 proposed specific objectives of the future CAP.' Below this paragraph is a green horizontal bar, followed by the text 'KEY MESSAGES' in bold blue letters. Underneath, there is a checkmark icon followed by the text: 'Some of the key challenges facing EU agriculture include improving the response to society's demands on food and health, including safe, nutritious and sustainable food, reducing food waste, and improving animal health and welfare.'

“Key objective: improve the response of EU agriculture to **societal demands on food and health**, including high-quality, safe and nutritious food produced in a sustainable way, to reduce food waste, as well as to **improve animal welfare** and combat antimicrobial resistance.”

Balancing tensions between the 3 pillars

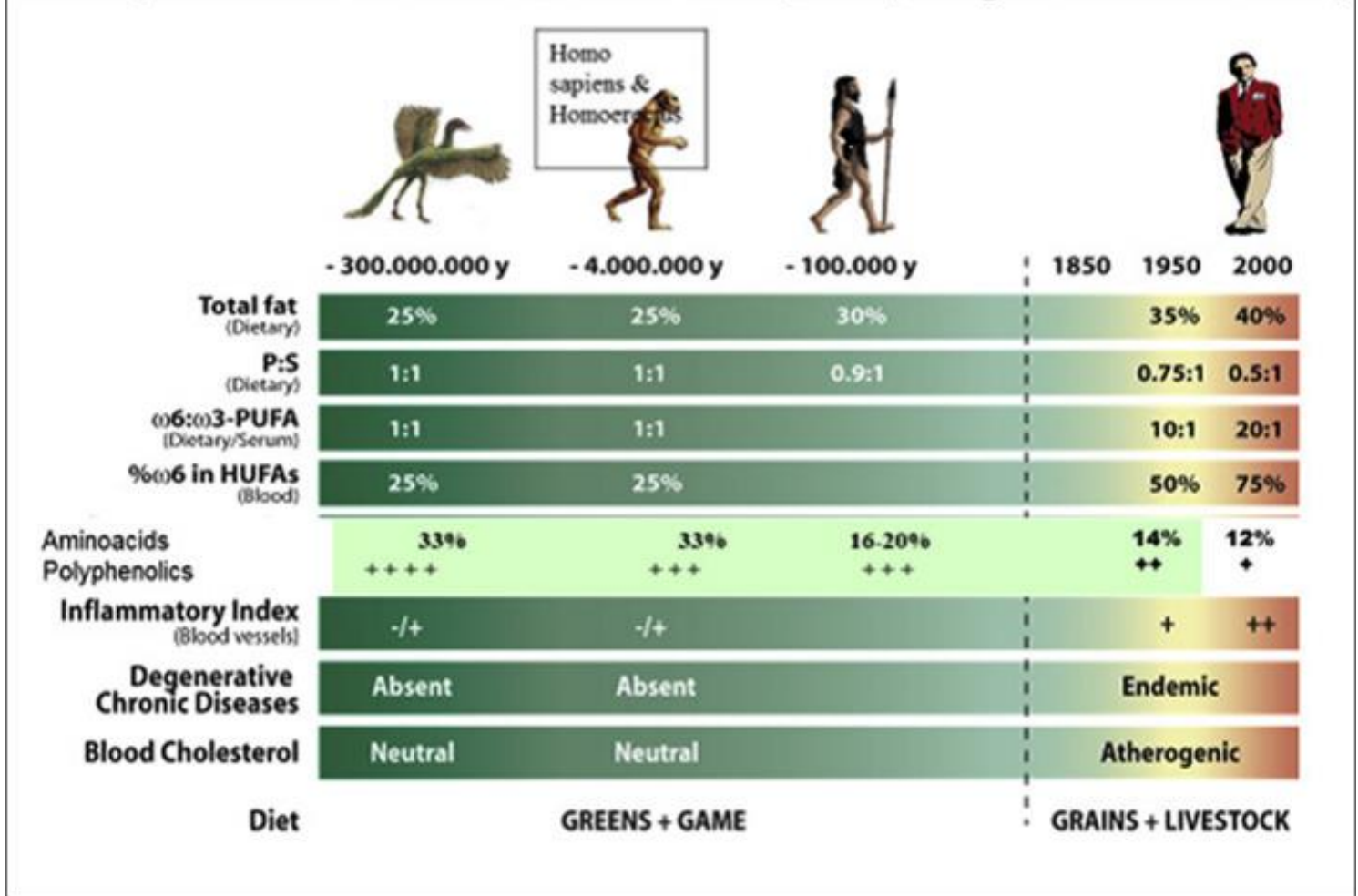
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Increased animal protein is no longer an evolutionary advantage

Planetary health and human health both need boundaries



Changes in the Evolutionary Diet from Homo erectus to modern man. (Modified from Eaton et al 1985,1988, Singh Chauhan 2015)



Global health need for poultry and eggs varies by region

The LANCET EAT Commission: “dietary changes from current diets toward healthy diets are likely to result in major health benefits - preventing approximately 11 million deaths per year”

‘Healthy’ might be more or less poultry meat or eggs

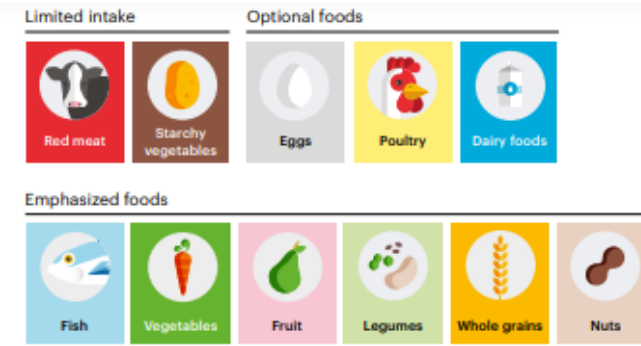
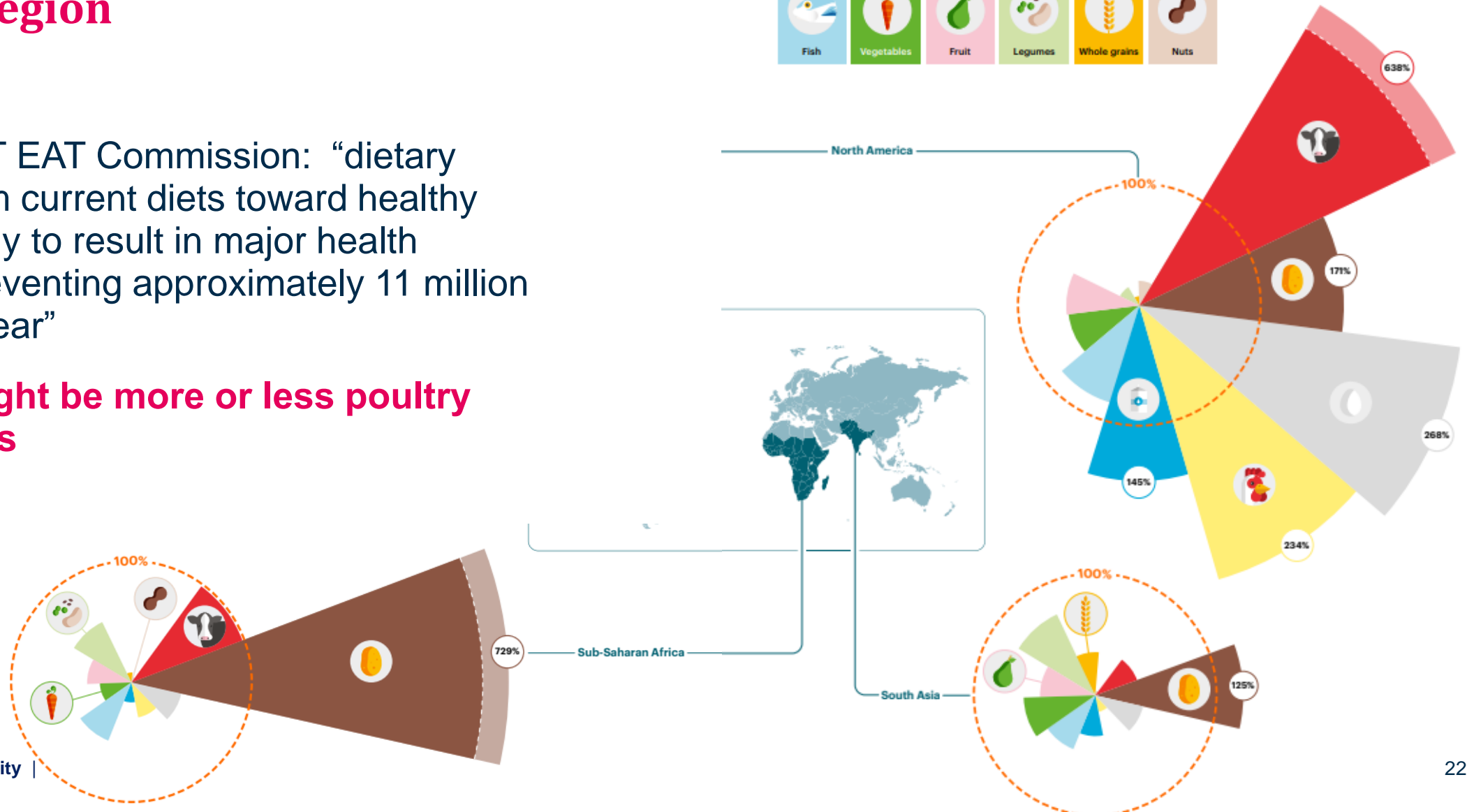


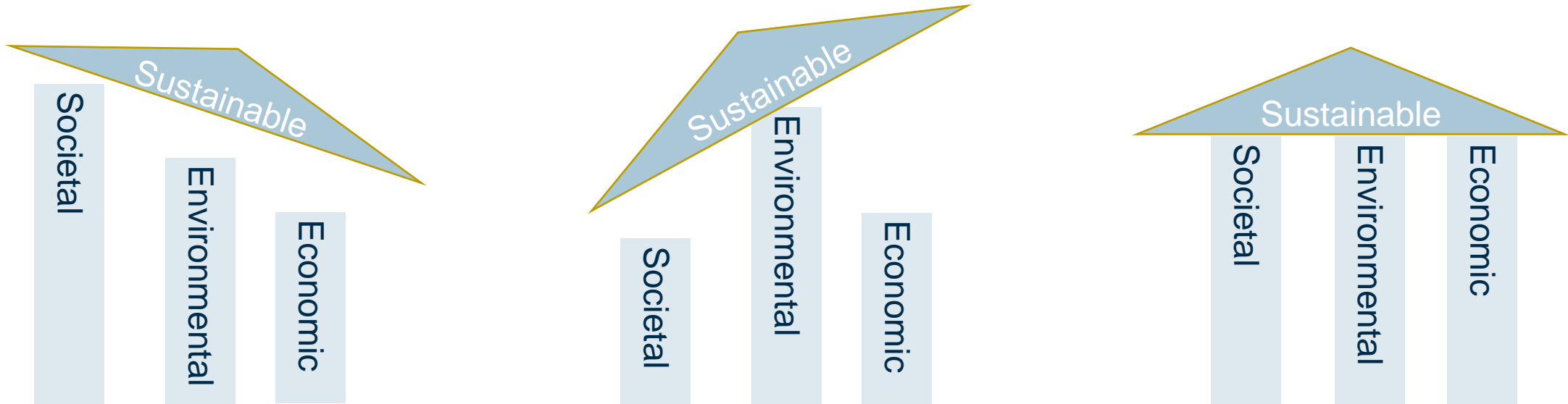
Figure 4
The “diet gap” between current dietary patterns and intakes of food in the planetary health diet.



Better Chicken Commitment

Driven by a societal need in some High Income Countries

Role of nutrition is to mitigate increased resource use and explore opportunities for leveraging value



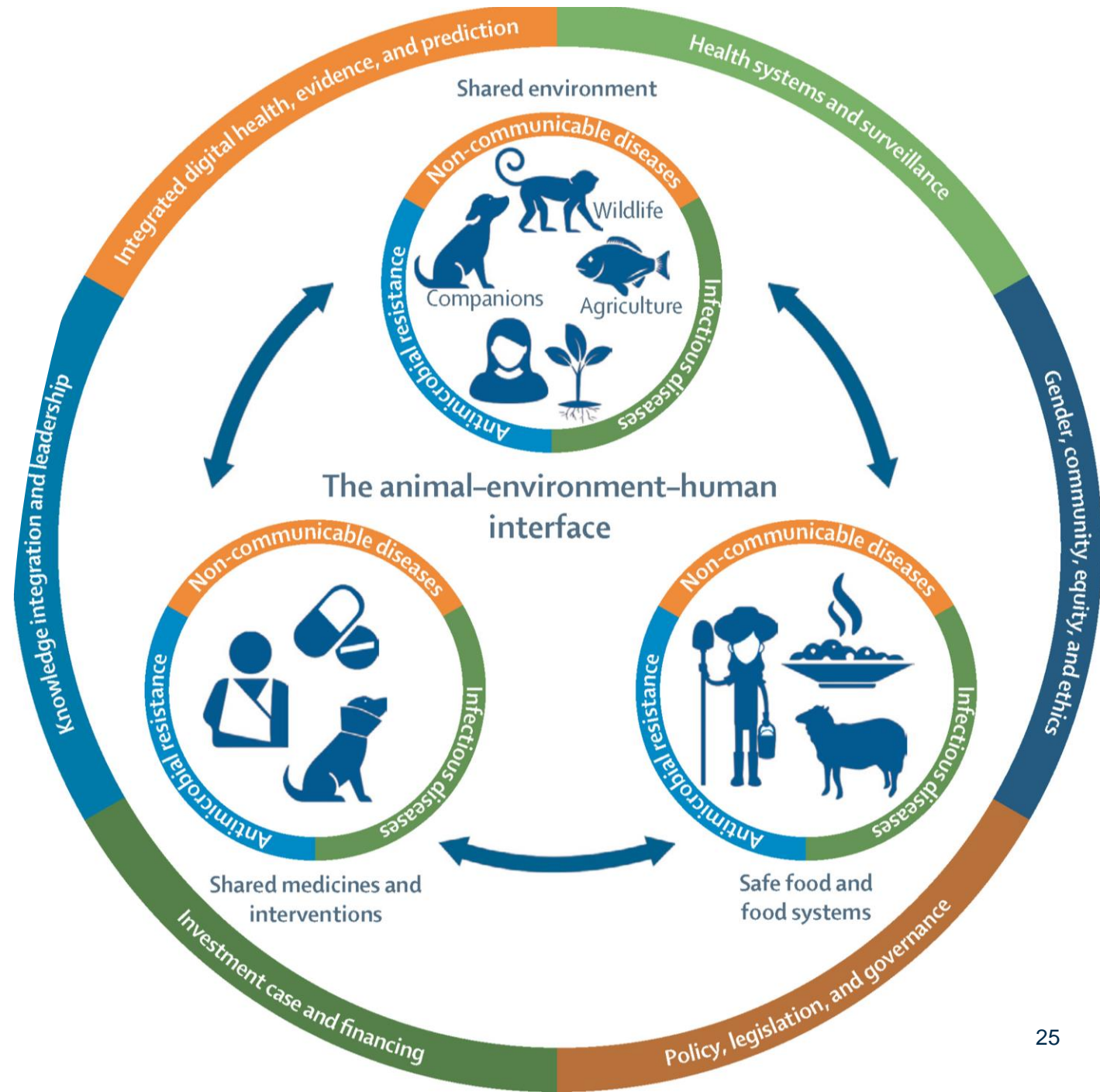
Future role of nutritionists

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Role of nutritionists

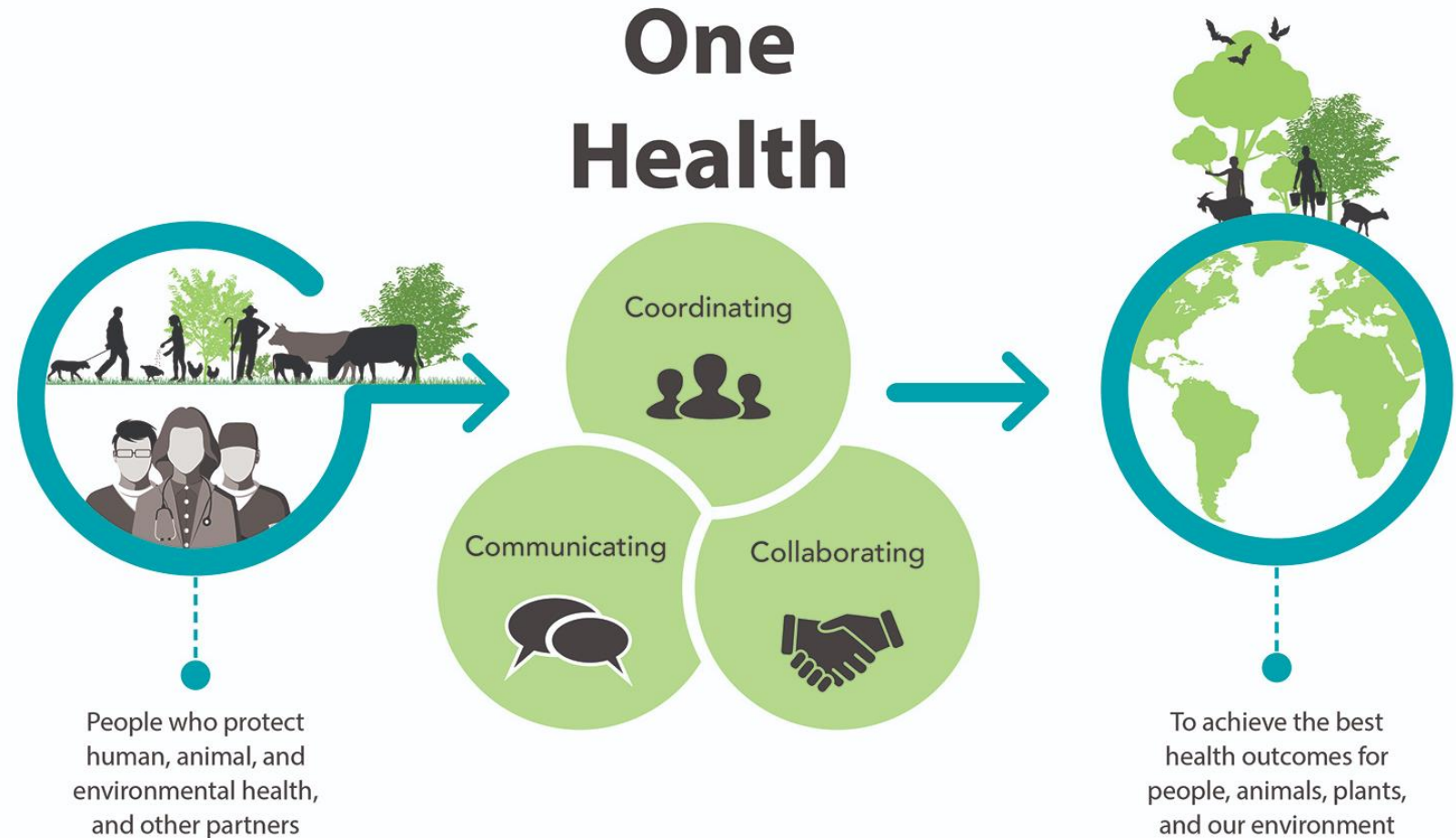
Deeply understanding the wider landscape

- Food security occurs when all people are able to access enough safe and nutritious food to meet their requirements for a healthy life, in ways the planet can sustain into the future
- Part of 'ONE Health' concept:



Role of nutritionists

- Adopting a ONE Health approach
- Derived from AMR concerns but universally applicable
- Learning new communication languages
- Nutrition already contributes to the 3 pillars of sustainability: our role is to clearly communicate the contribution.
- Listen to society with confidence and respect, revelling in our ability to adapt to changing needs



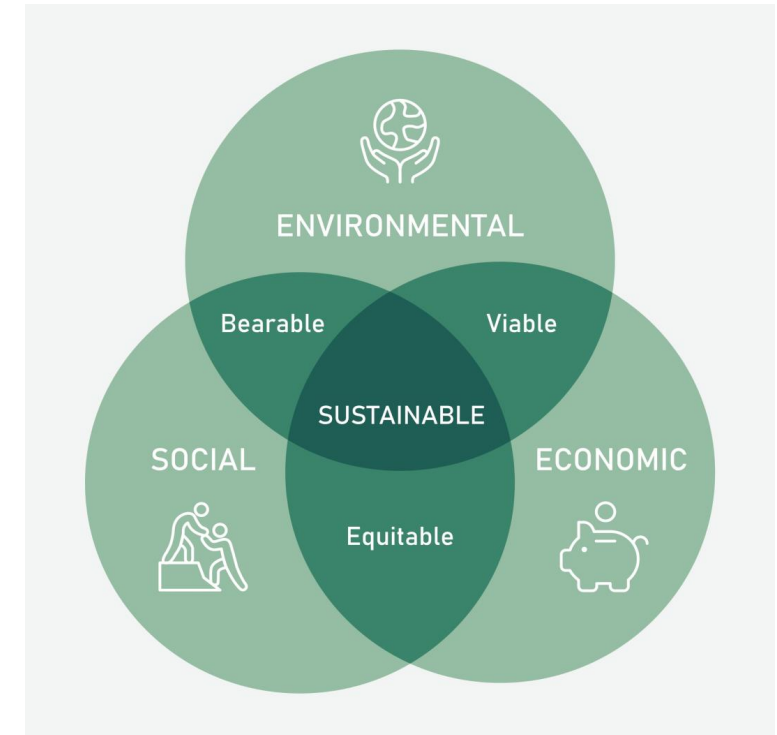
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Centers for Disease
Control and Prevention
National Center for Emerging and
Zoonotic Infectious Diseases

Summary

- 3 Pillars of sustainability highlight need for balance
- UN SDGs offer an operational framework for responsible innovation
- Nutrition research must produce data in future-ready units
- Maximum value from nutrition includes information on contribution to sustainable development
- Engaging with evolving societal language and values allows our stakeholders to better understand the contribution of poultry to sustainable development



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