

Sustainable livestock opportunities and future food system realities

[the role of meat/animals in social/economic/culture especially global South]



International Meat Summit: The Societal Role of Meat – what science says

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Overview

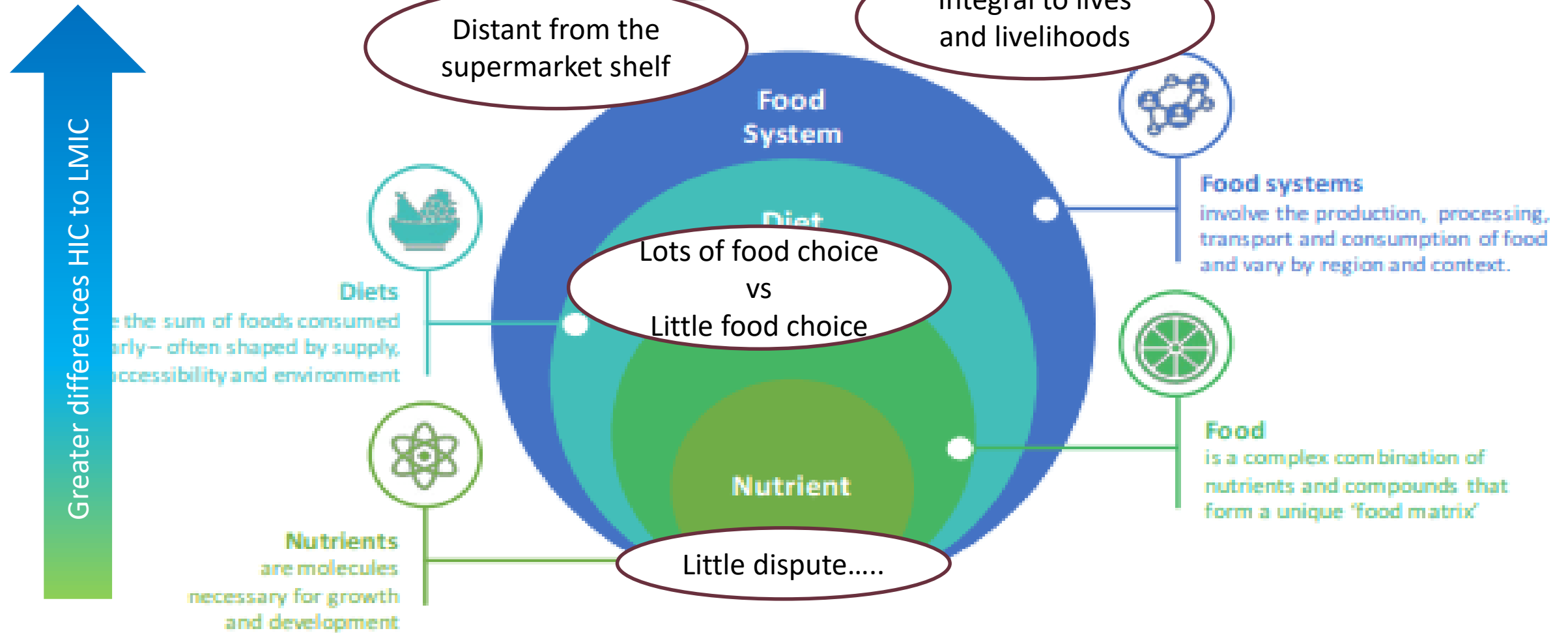
- Context matters
- Foods, Jobs, Incomes
- Assets, Insurance, Education
- Culture, Gender, Economies
- Connections, Trade-offs, Synergies
- In summary



Context matters

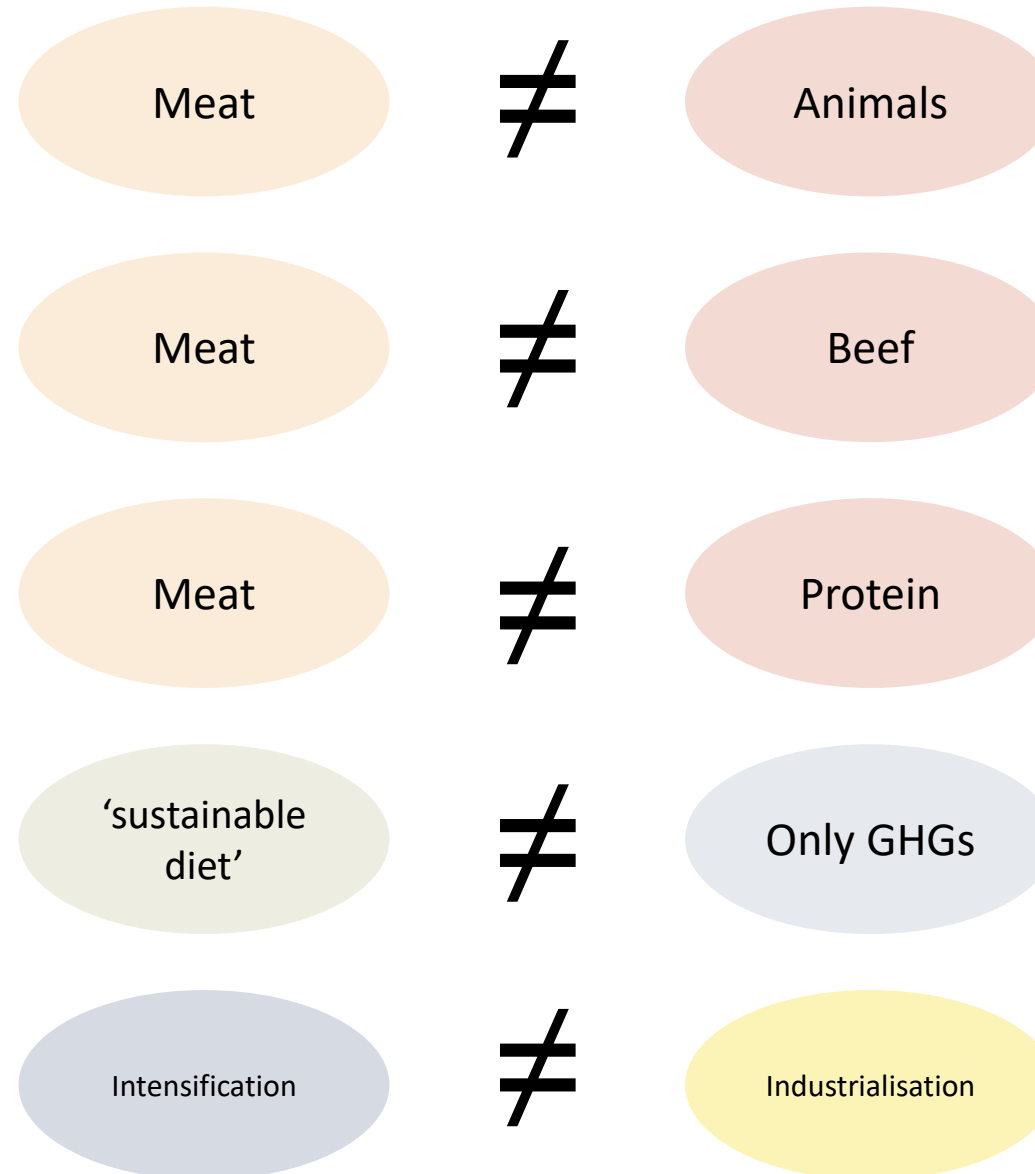
Figure 5.

From nutrients to food

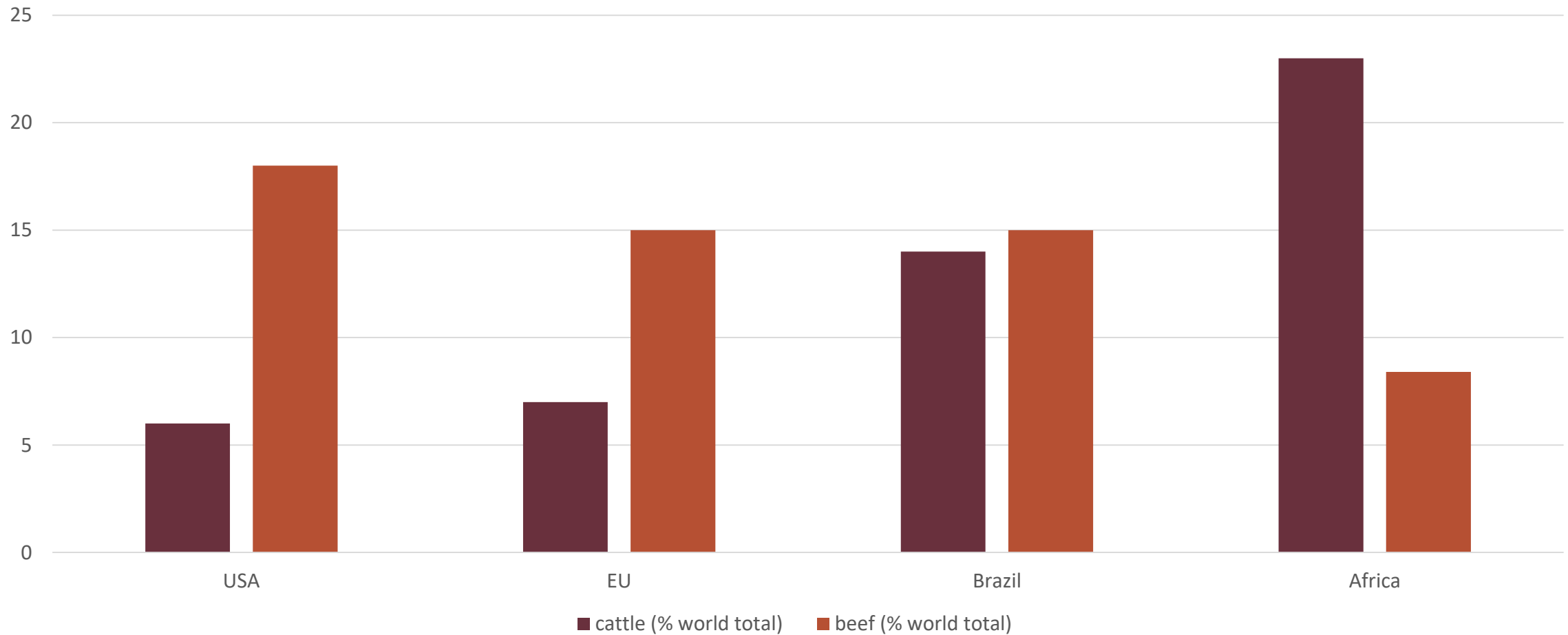


Source: Modified from Cartmill, Iannotti, 2020; republished in UN Nutrition Discussion Paper (2021) Livestock-derived foods and sustainable healthy diets.

Terms often used – but not equivalent



Where's the cattle? Where's the beef?



Just 20% of all meat produced in the world in 2020 was beef

Source: figures from FAOSTAT

One in six people on the planet derive a livelihood benefit from livestock



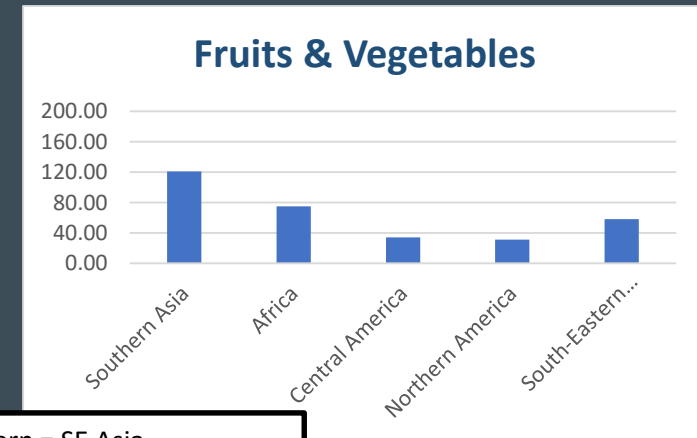
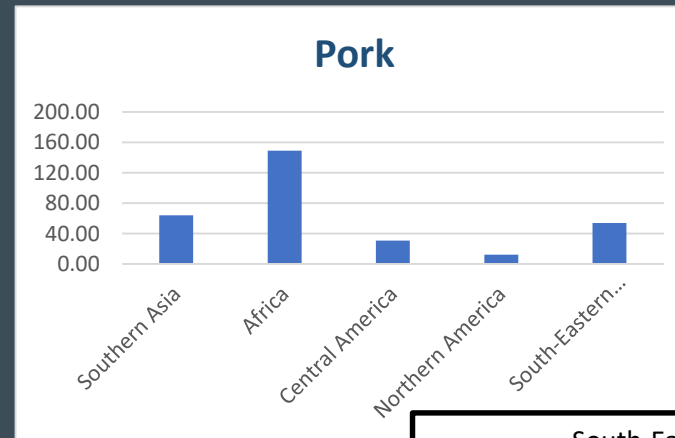
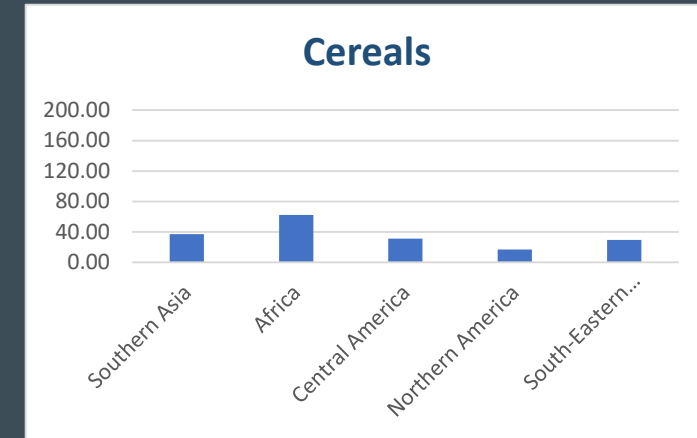
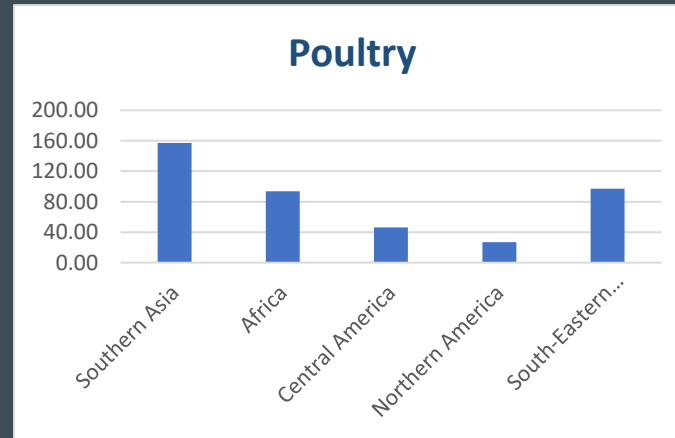
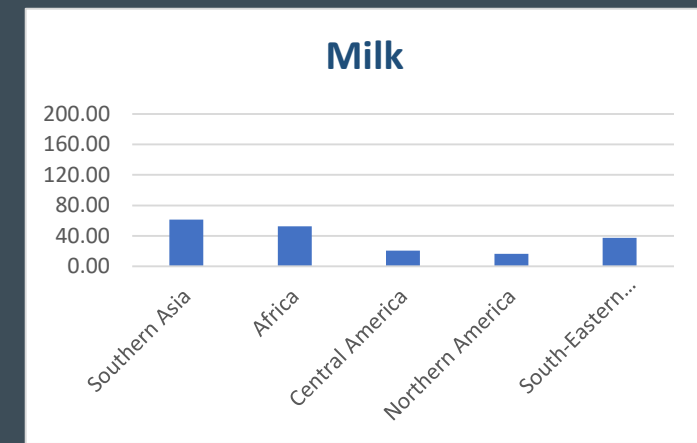
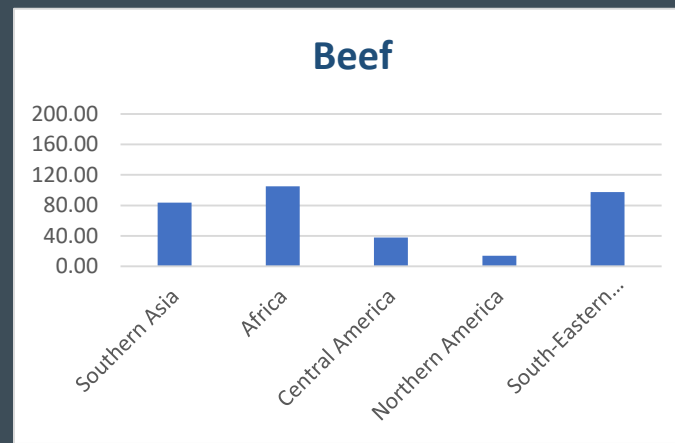
Foods, Jobs, Incomes

Demand for food will keep growing, especially in LMICs

- Demand for milk, meat, eggs is increasing fastest in LMICs, driven by rising populations, incomes and urbanization
- Most people in LMICs will still not over-consume these foods *but* increasing attention should be paid to the double burden of malnourishment and over-consumption
- 70% of livestock-derived foods consumed in LMICs are **sourced in informal markets**

Percentage changes in demand 2010 to 2030

Projections based on IMPACT model, Dolapo Enahoro (ILRI)



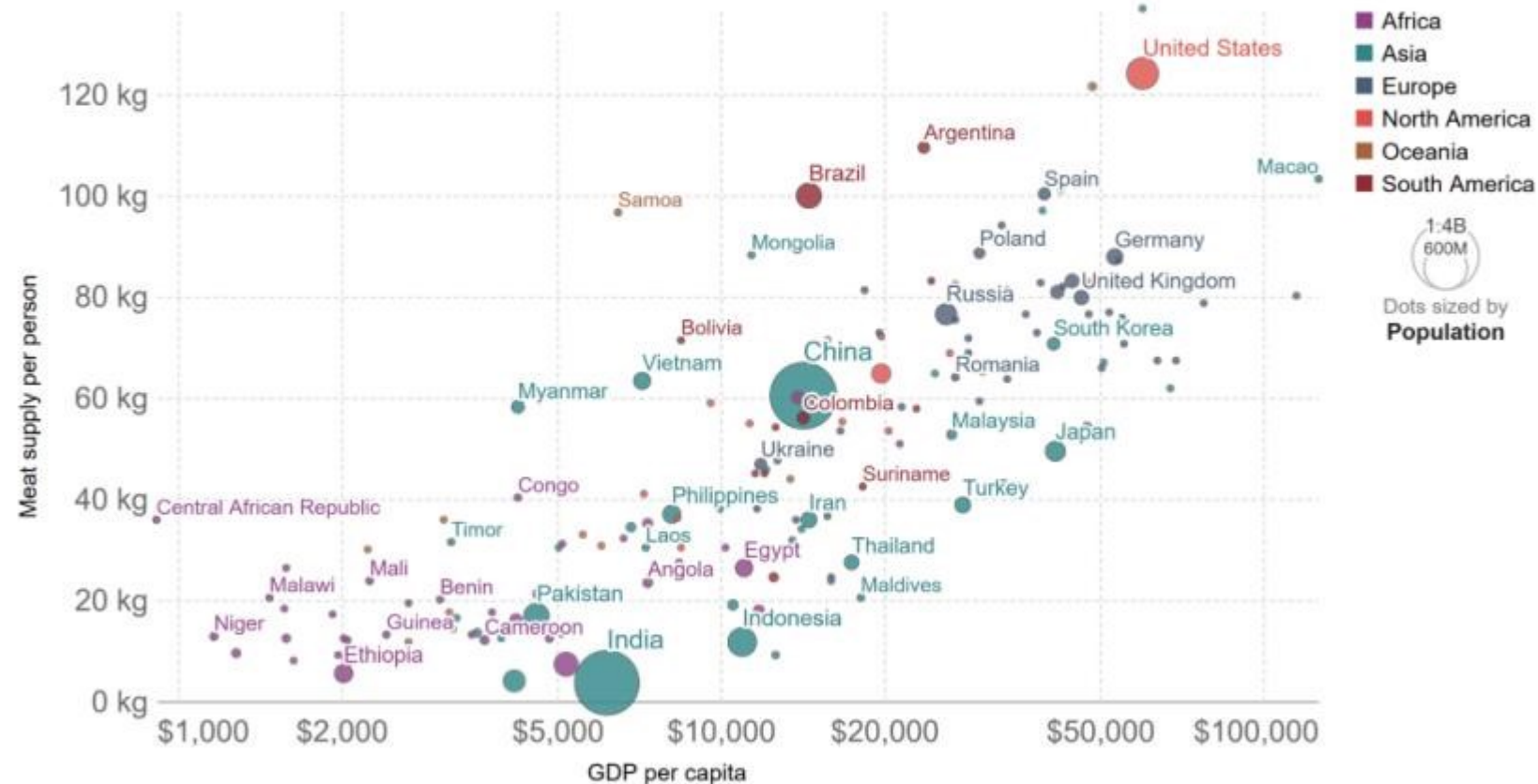
South-Eastern = SE Asia

As people get richer, they consume more meat

Meat consumption vs. GDP per capita, 2017

Average meat consumption per capita, measured in kilograms per year versus gross domestic product (GDP) per capita measured in constant international-\$. International-\$ corrects for price differences across countries. Figures do not include fish or seafood.

Our World
in Data

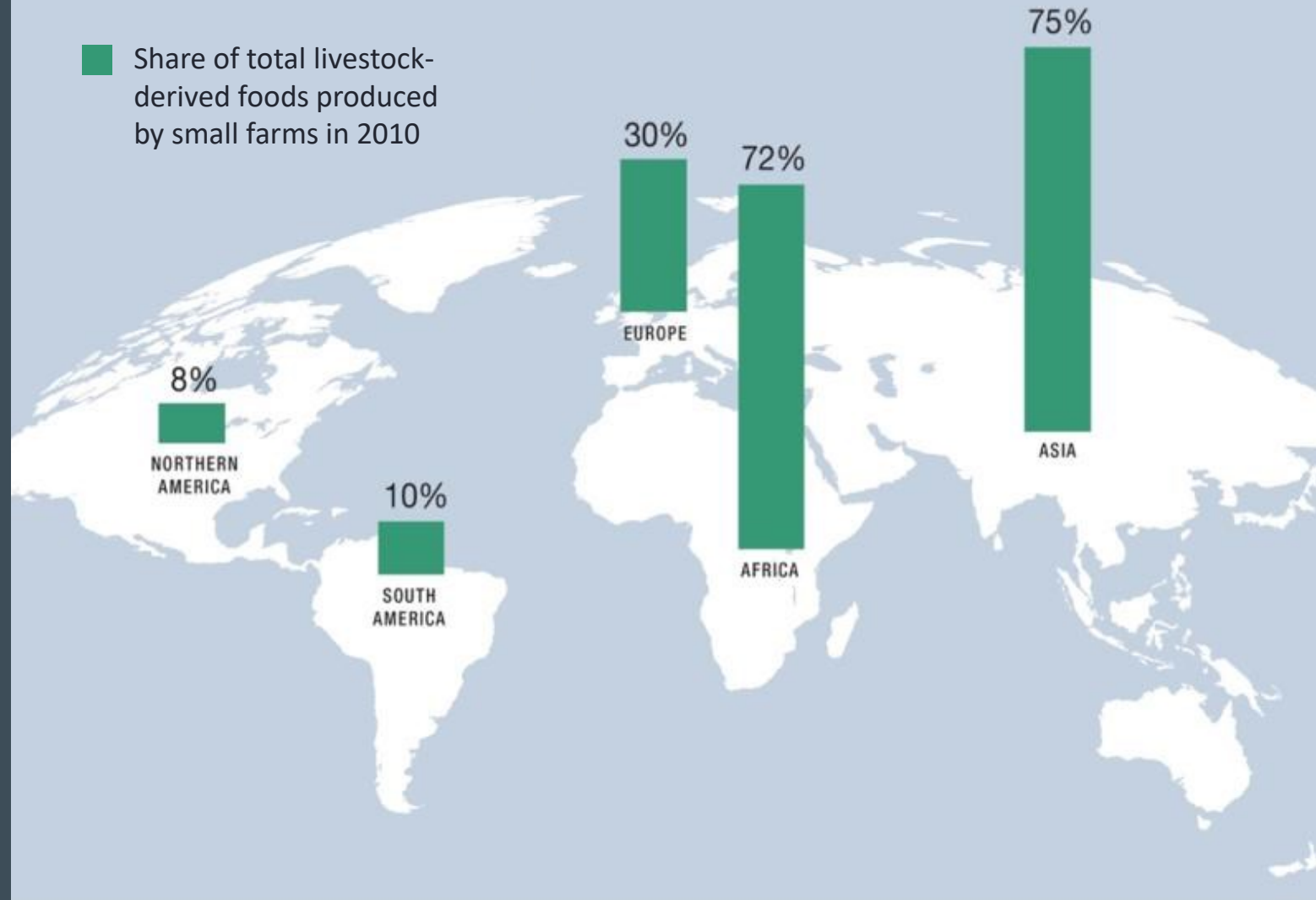


Source: Food and Agriculture Organization of the United Nations, Data compiled from multiple sources by World Bank
OurWorldInData.org/meat-production • CC BY

Smallholder farmers (<20ha) currently provide most of the meat, milk and eggs *AND* most of the staple cereals in LMICs

- **1.7 billion people** derive some livelihood from livestock; over half a billion *depend* on livestock livelihoods
- **Livestock are fundamental** to many economies, providing incomes & jobs as well as food & insurance against shocks
- Livestock make small **farming sustainable** and make growing food crops possible across the Global South.
- These 'mixed crop-livestock farms' are the **circular bioeconomy** in action!

Source: *Options for the Livestock Sector in Developing and Emerging Economies to 2030 and Beyond*. World Economic Forum White Paper January 2019



Farms of less than 20 hectares provide:

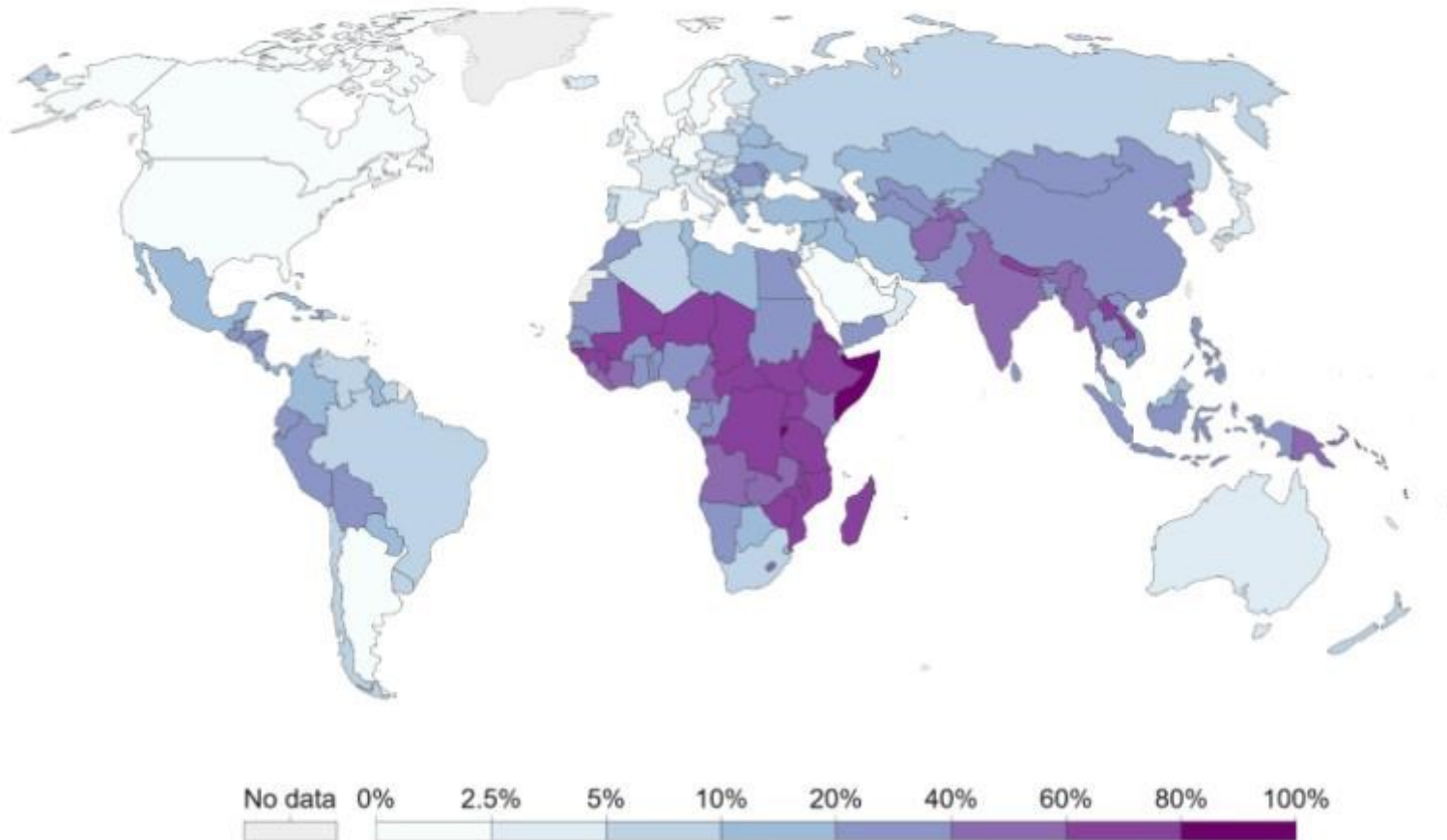
Nearly 50% of the world's livestock and cereals, and close to 70% of the livestock and cereals in emerging and developing economies

Agriculture dominates employment in LMICs

Share of the labor force employed in agriculture, 2019

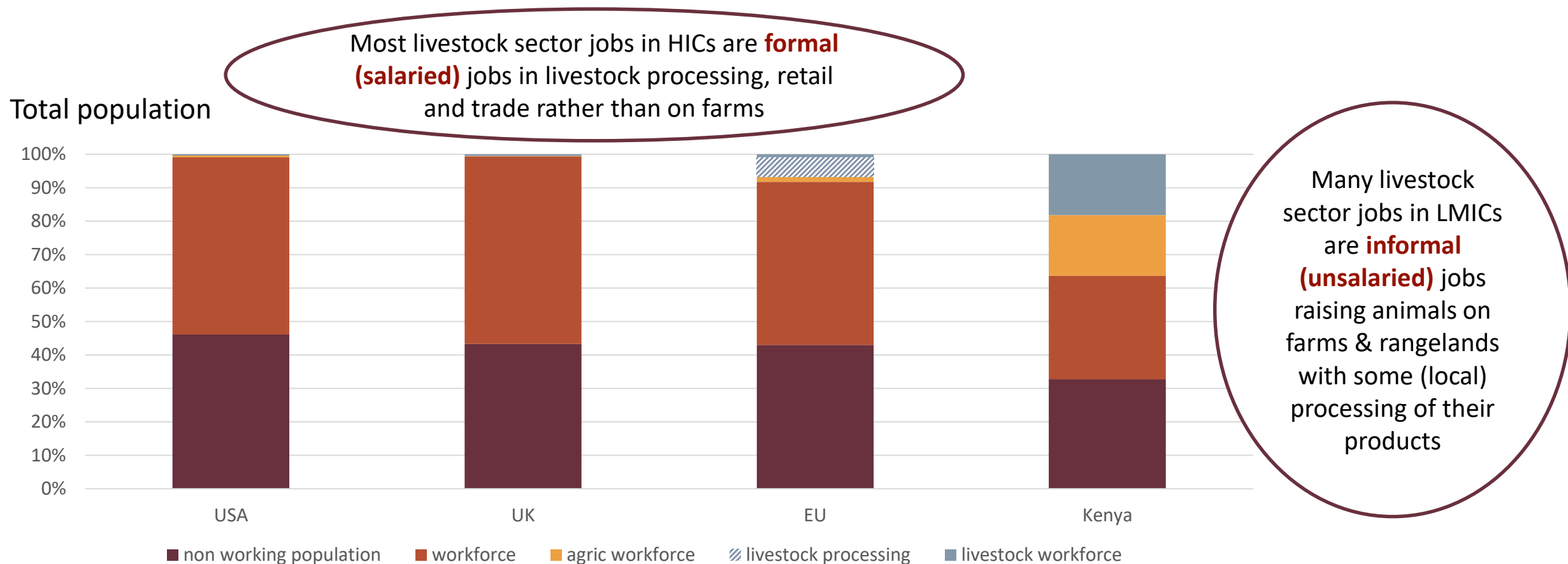
Share of people of working age who were engaged in any activity to produce goods or provide services for pay or profit in the agriculture sector (agriculture, hunting, forestry and fishing).

Our World
in Data



Source: Our World in Data based on International Labor Organization (via the World Bank) and historical sources
OurWorldInData.org/employment-in-agriculture • CC BY

Quantity and quality of employment in the livestock sector differs between higher and lower income countries



How livestock investments improve livelihoods in LMICs

A comprehensive quantitative assessment of livestock investments shows that

- **Livestock transfers** to poor people (e.g. 'passing on the gift' projects)
- Enhancing **livestock markets**
- Strengthening the **resilience** of livestock-keeping communities

generated lasting benefits in all four of these dimensions of livestock livelihoods

- **Incomes**
- **Assets and savings**
- **Insurance/risk reduction**
- **Gender equality**

Better mental
health

Better health



Livestock contribute significantly to smallholder incomes

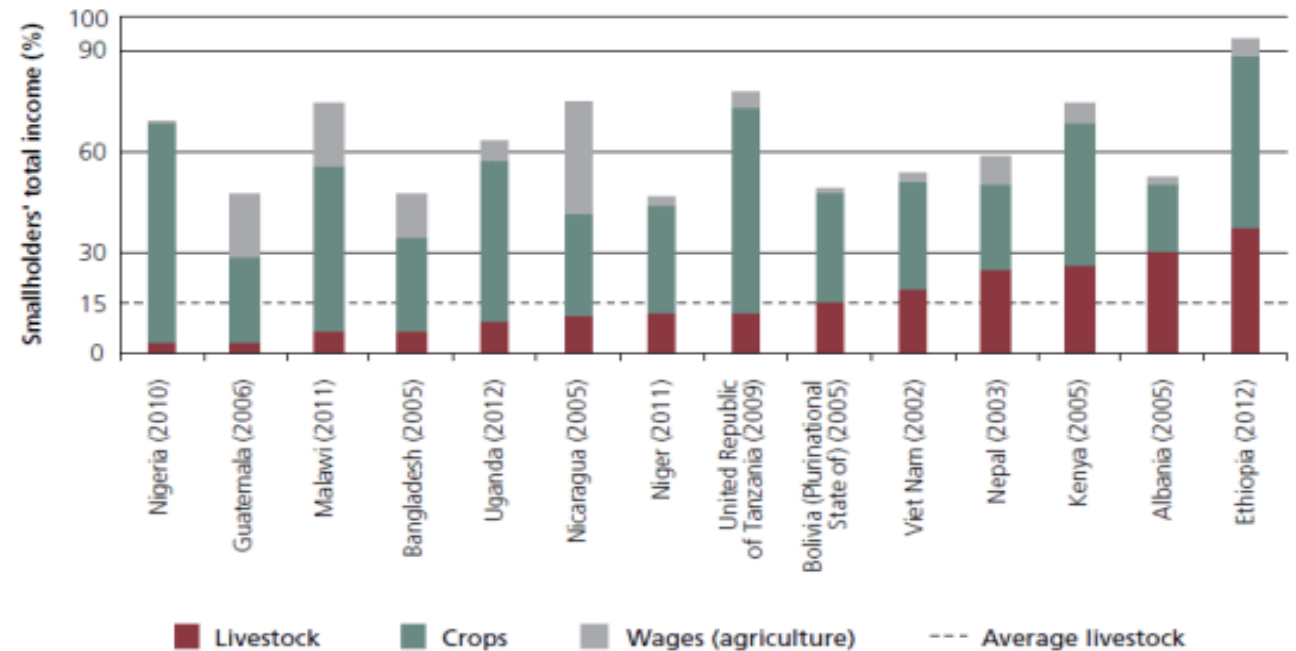
Across 12 LICs, livestock contributions to household incomes in 2011 were: **12%** on average (2–24% range)

Across 14 LMICs, livestock contributions to household incomes in 2018 were:

- **15%** on average
- With a range of highs in Ethiopia (37%), Albania (28%) and Kenya (25%) and lows in Guatemala (3%) and Nigeria (3%)

In pastoral systems, livestock income makes up at least **40%** of household incomes

2 SHARE OF INCOME-GENERATING ACTIVITIES IN SMALLHOLDERS' TOTAL INCOME



Source: Based on data from FAO Smallholder Farmers' Dataportrait, 2018.

Livestock investments improve livelihoods in LMICs

Livestock transfers ('passing on the gift' projects)

- Increased household incomes in Zambia by **20%** over 18 months and by **59%** over 42 months
- Increased incomes in 6 LMICs by **5%**, and livestock revenue by **13%**
- Increased household dairy income in Rwanda (via a 'One cow per poor family' initiative) by **3–6 times**
- Reduced the number of households living below the poverty line (all studies)

Market-based interventions

- **Doubled** household incomes in Ethiopia via cattle fattening and in Nepal via goat value chains
- Increased returns from milk in Kenya via improved dairy hubs by **45%** and household incomes by **17%**

Strengthened resilience

- Livestock-insured pastoral households in Kenya and Ethiopia proved more resilient to drought than non-insured families
- Household welfare in Kenya and Pakistan was improved
- Households in Tajikistan increased their incomes (about USD300/year) via pasture/fodder interventions
- Households in Bangladesh, even the poorest, increased their income via poultry interventions by an average of **49%**

Assets, Insurance, Education

Livestock investments increase assets & savings in LMICs

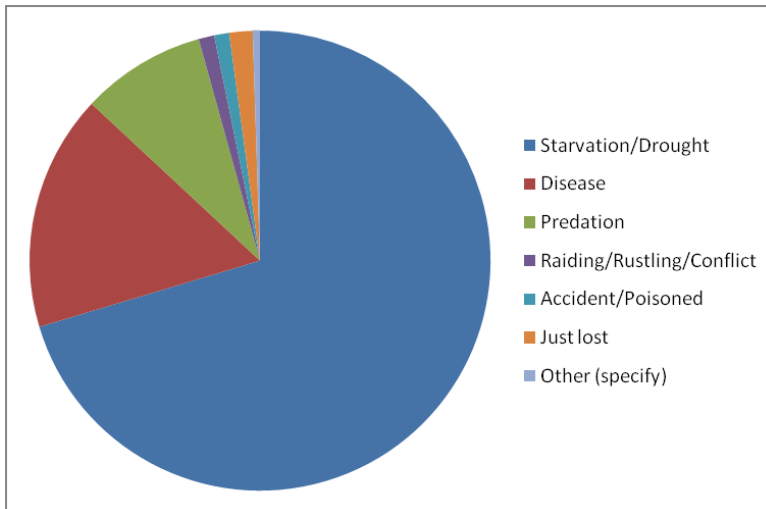
- Increased asset accumulation (by **125%** in Zambia)
- Fewer households falling into **poverty** (Bolivia and Zambia)
- **9%** increased assets, **14%** increased savings (across 6 LICs)
- **14%** more assets and **8%** more types of assets (Rwanda's 'One cow per poor family' initiative)
- Greater **savings** (in Bangladesh poultry project)

Animal assets are used to:

- Prevent families from descending into poverty
- Enable families to 'step out' of poverty

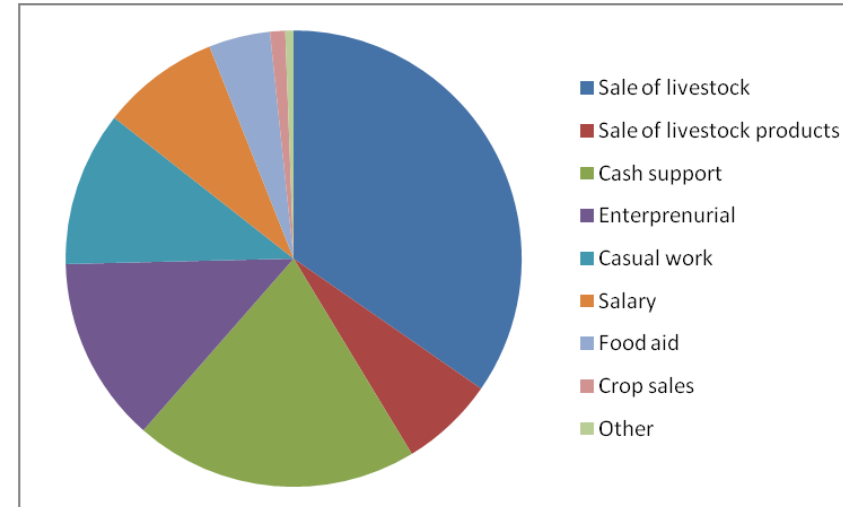
Impacts of Kenya drought on pastoralist livestock assets

Cause of Livestock Mortality



- Drought is by far the leading cause of livestock deaths
- Disease and predation are likely directly related to drought

Component Shares of Income



- Sales of livestock and livestock products constitute 40% of household income
- External support (food and cash) makes up nearly 25% of household income

Livestock make up a large share (median 100%, mean 49%) of the productive assets of herders

Livestock help insure pastoralist households against shocks

In Niger, most households (**60%**)n rely on sales of animals to cope with food shortages or unexpected medical expenditures

In Kenya, pastoralist households covered by index-based livestock insurance (IBLI):

- were less likely (by **36%**) to be forced into distress sales of stock
- were less likely (by **25%**) to have to reduce the size of their meals
- were less dependent (**33%**) on food aid

Livestock help families to nourish and educate their children

Directly

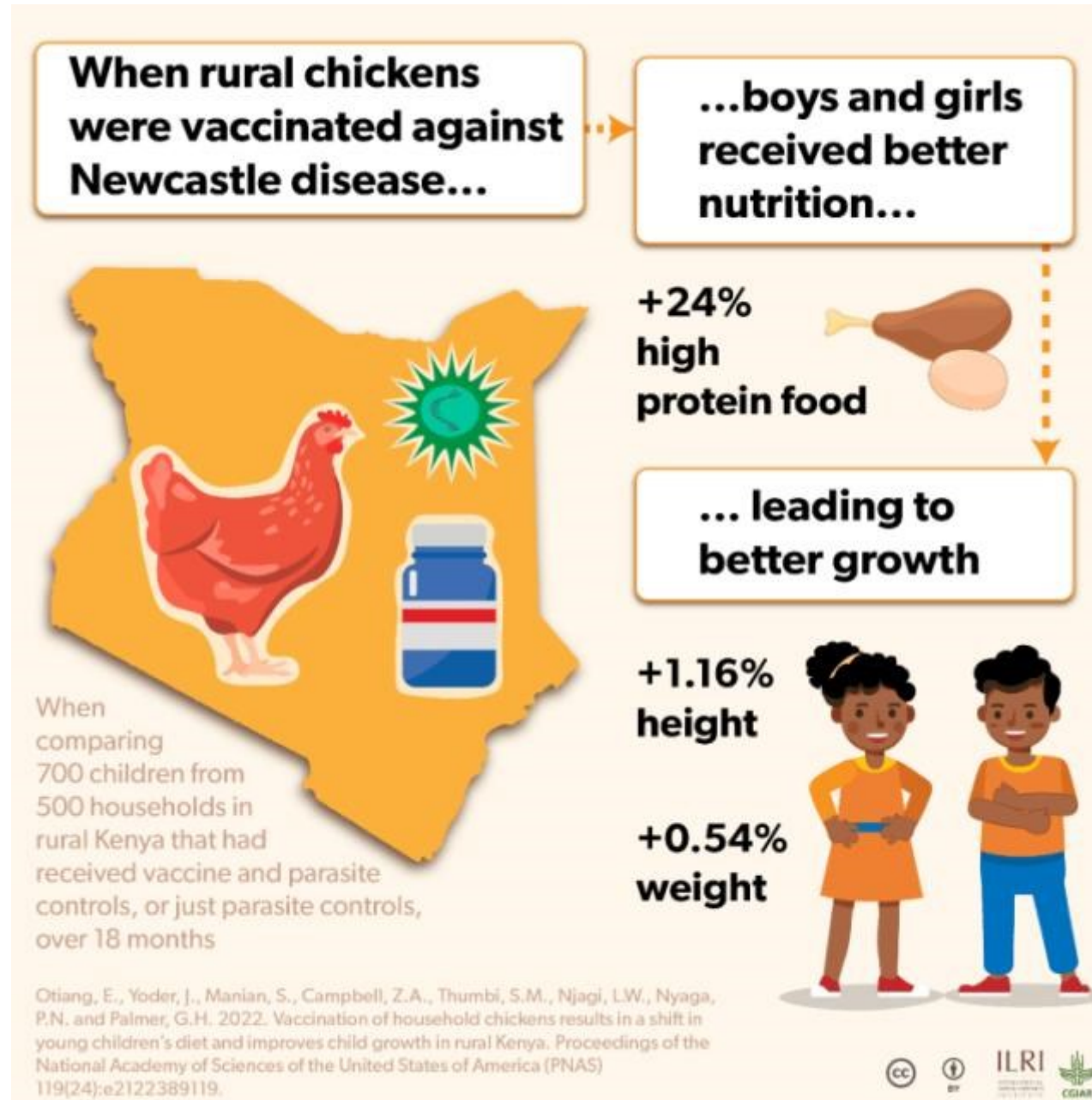
- Livestock-derived milk, meat and eggs are essential for the physical and cognitive development of infants and children—improving their ability both to grow and to learn
- Livestock investments can increase the diversity of low-quality diets in poor households, providing essential nutrients and balanced nutrition for all, particularly for vulnerable mothers and children

Indirectly

- Livestock sales and incomes enable up to 40% of LMIC households to pay for the education of their children (school fees, books, uniforms)
- Negative: when children are involved in labour for livestock

[opportunities for youth?]

Rural livestock services can directly improve the nutrition of both girls and boys



Culture, Gender, Economies

Livestock serve multiple socio-cultural roles in every society.....imagine the world without livestock

- Without livestock dowries, many women (in Asia) and men (in Africa) cannot marry—or even think about marrying
- Without livestock manure and traction, many farmers cannot grow food or transport it to market
- Without milk, meat and eggs, many are unable to nourish their children, to celebrate feast days or to mourn with their communities the passing of a loved one
- Without turkey....no Christmas or Thanksgiving feast
- Without livestock, no rodeos in US; no *Nadam* in Mongolia.....

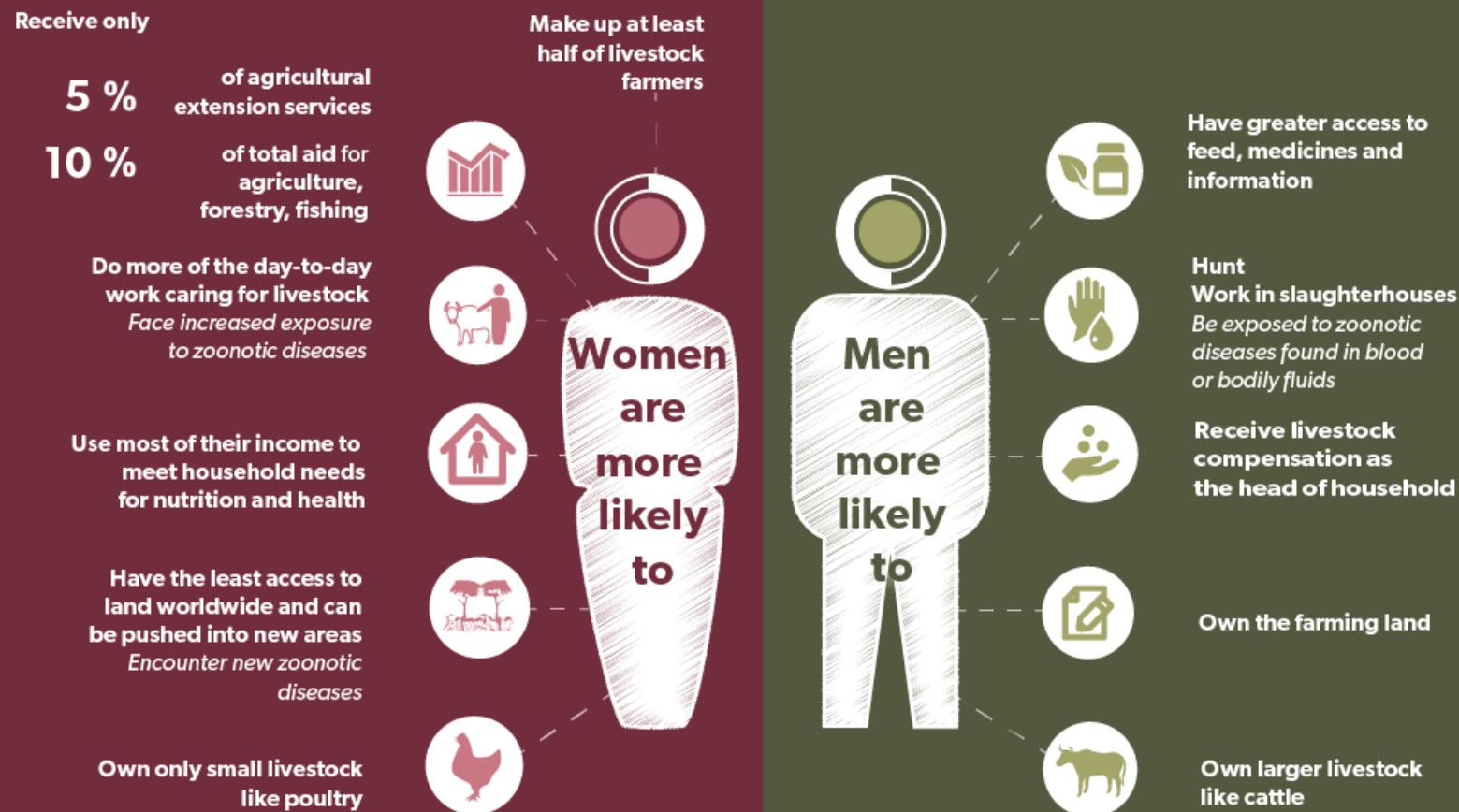
Women impact livestock food systems : livestock impact women

- Most livestock in LMICs are raised by women, especially in rural areas, where two-thirds of livestock keepers are women
- Animals are often the only productive asset that women are allowed to own and manage
- Farm animals are instrumental to women's fundamental roles in household affairs, not only in nutrition and livelihoods but also in managing household risks and the family's medical care, in educating the children and in tending the sick and elderly

In LMICs...

For most women in HICs,
engagement in livestock
enterprises is an option

For most women in LMICs,
engagement in livestock
enterprises is a necessity



Women's empowerment leads to healthier people, animals and environment. Livestock Pathways to 2030: One Health Brief 7. ILRI, 2021.

Livestock contributes significantly to agricultural GDP—*everywhere*

Livestock contributions to agricultural GDP:

- **Global** average: **40%**
- **HIC** average: **50%**
- **LMIC** average: from **15–80%**—and this is growing

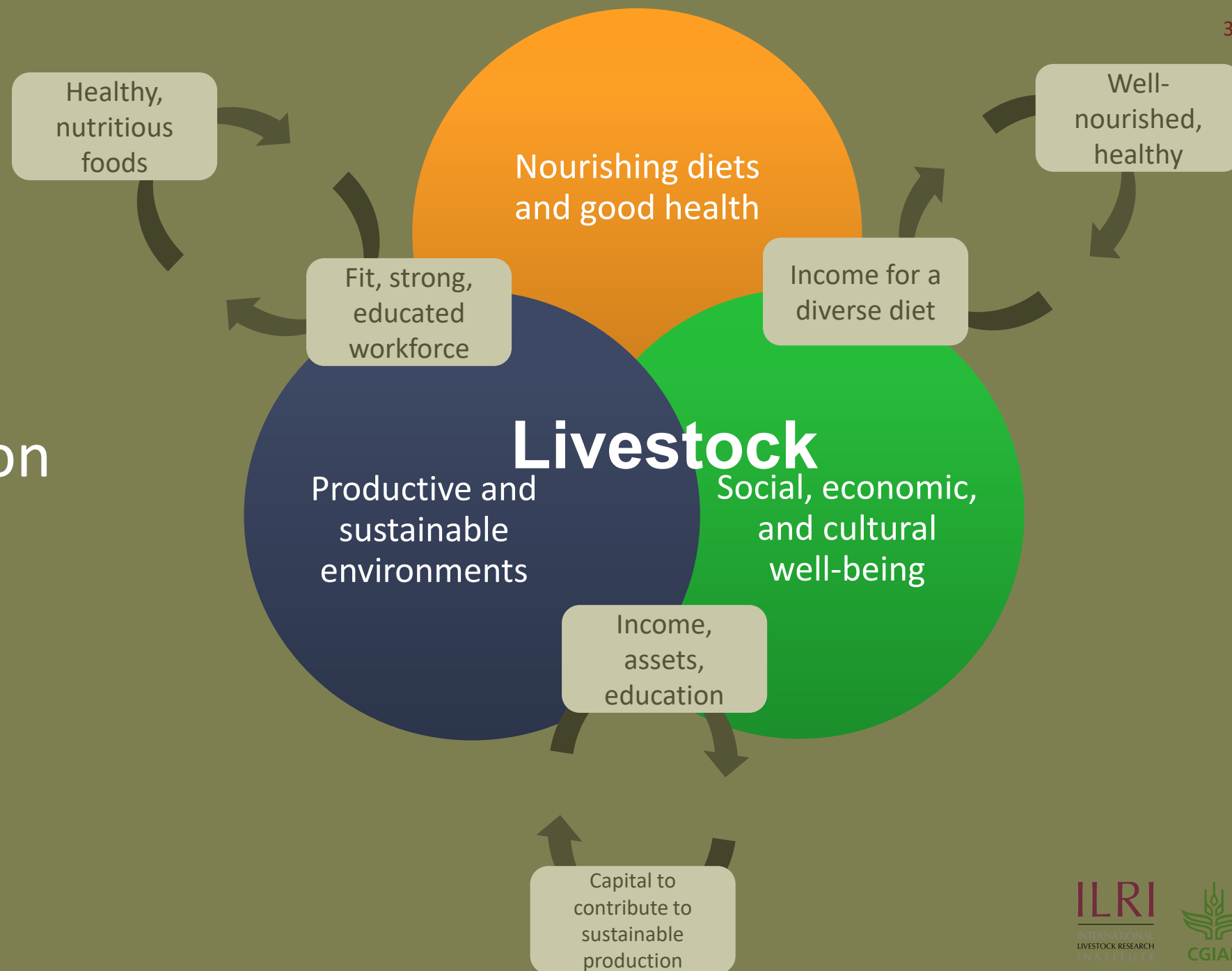
As economies grow, the proportion of:

- **agriculture's** contribution to total GDP **shrinks**
- **livestock's** contribution to agGDP **rises**

And this is notwithstanding that GDP measures **exclude** many '**hard-to-measure**' livestock functions (e.g. manure fertilizer, ecosystem services)

Connections, Trade-offs, Synergies

Livestock livelihoods - social, economic and cultural well-being impact on and are impacted by other dimensions of sustainability



Livestock livelihood connections are often hidden from view

Livestock matters are often bundled within 'agriculture'

Livestock's manifold connections to livelihoods, cultures and societies are hard to measure, meaning there is little quantitative evidence



Livestock livelihood connections need greater exploration

Livestock are just as intimately connected with people's livelihoods, cultures and societies as they are with the better-studied (easier to measure?) health, food, nutrition, environment and economic sectors

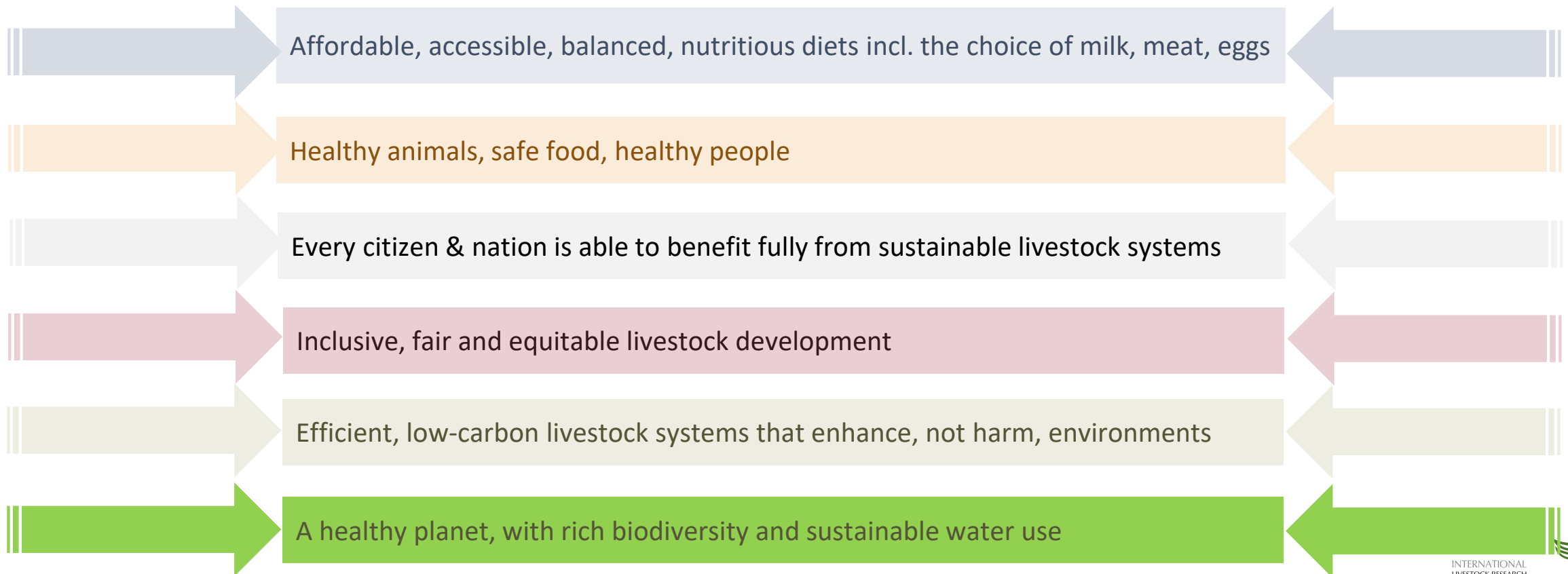
Important that potential trade-offs as well as synergies are analysed and addressed—

- to jump on emerging opportunities and
- to avoid unintended consequences

In summary

Multiple pathways will take us to sustainable and equitable livestock futures

Where and how we step onto those pathways will differ according to our different contexts





Thank you!

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