Wealth, health and culture: Complementarity and competition in livestock pathways to meeting demand for Animal Source Foods

Shirley Tarawali
Assistant Director General
International Livestock Research Institute, Kenya

Livestock Markets, Animal Source Foods and Human Nutrition: Considering Tensions, Maximizing Impact and Avoiding Harm
17 October 2016
Animal source foods: 5 of 6 highest value global commodities (total value of these 5=US Int $715 billion)

Cow milk has overtaken rice
Huge increases over 2005/7 amounts of cereals, dairy and meat will be needed by 2050

From 2bn–3bn tonnes cereals each year
From 664m–1bn tonnes dairy each year
From 258m–460m tonnes meat each year
Animal agriculture and the environment

14.5% anthropogenic greenhouse gas emissions

70% of total freshwater use is for agriculture, of which 31% is for livestock

30% global terrestrial biomes – livestock raising
33% all croplands – livestock feed
Animal agriculture: food safety, AMR and diet

Global antimicrobial consumption will rise by 67% by 2030.

Animal sources foods cause food borne diseases
- Animal source food
- Produce
- Other
Global messages mask important facts

- 1 billion rely on livestock for livelihoods
  - Income, risk management, nutrition, food security
  - Particular role for women (youth?)
- Over 50% of livestock (and cereal!) products in developing countries from smallholders
- 70% sold in domestic informal markets, not supermarkets
- Animal source foods: crucial role in nutrition
- Significant opportunities to improve:
  - Environmental footprint
  - Food safety
Demand and value: important drivers

Demand:
• Not going away
• Will be met

Value:
• Valuable market
• Private sector interest and investment
Demand for livestock commodities in developing economies will be met

Scenario #1
Meeting livestock demand by
*importing livestock products*

Scenario #2
Meeting livestock demand by
*importing livestock industrial production know-how*

Scenario #3
Meeting livestock demand by
*transforming smallholder livestock systems*
Demand for milk imports – growing fastest in SSA

USD million

- S.Asia
- SE. Asia
- SSA
- S.America
- High income
Employment – for all - matters

Regional projections to 2050, of total and youth (15 to 24) populations in millions

<table>
<thead>
<tr>
<th>Region</th>
<th>Total Population</th>
<th>Youth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>1,044</td>
<td>208</td>
</tr>
<tr>
<td>North America</td>
<td>344</td>
<td>48</td>
</tr>
<tr>
<td>Europe</td>
<td>735</td>
<td>94</td>
</tr>
<tr>
<td>2050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>2,478</td>
<td>452</td>
</tr>
<tr>
<td>North America</td>
<td>433</td>
<td>52</td>
</tr>
<tr>
<td>Europe</td>
<td>707</td>
<td>72</td>
</tr>
</tbody>
</table>

Total Population
Youth
Global ramifications

**Africa: refugees, 2014**
Internally displaced people = 9.9 million
Refugees originating from Africa = 4.6 million
Sub-Saharan Africa hosts more than 26 per cent of the world's refugee population

**Africa: unemployment, 2013**
Total for the six highest = 11.8 million
(Nigeria, South Africa, Uganda, Morocco, Algeria, Ghana)
<table>
<thead>
<tr>
<th>Trajectory</th>
<th>Sector</th>
<th>Opportunities for research to address development challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Fragile growth’ Where remoteness,</td>
<td>Some smallholder and pastoral systems; little part in the production</td>
<td>Enhance the essential roles of livestock in the resilience of people and communities to variability in weather, markets or</td>
</tr>
<tr>
<td>marginal land resources or agro</td>
<td>response.</td>
<td>resource demands.</td>
</tr>
<tr>
<td>climatic vulnerability restrict</td>
<td></td>
<td>Protection of assets (eg insurance) and conservation of natural resources.</td>
</tr>
<tr>
<td>intensification</td>
<td></td>
<td>Opportunities such as payment for ecosystem services could become increasingly important</td>
</tr>
<tr>
<td>‘Strong growth’ Intensifying and</td>
<td>Ruminant meat and milk, esp. in SSA, India – Pork in some regions.</td>
<td>Sustainable food systems that deliver key animal-source nutrients</td>
</tr>
<tr>
<td>increasingly market oriented often</td>
<td></td>
<td>Facilitating a structural transition to fewer households raising more productive animals in more efficient, intensive</td>
</tr>
<tr>
<td>transforming smallholder systems</td>
<td></td>
<td>and market-linked systems.</td>
</tr>
<tr>
<td>‘High growth with externalities’</td>
<td>Mostly monogastric – China for all commodities.</td>
<td>Incentives, technologies, strategies and product and organizational innovations that mitigate the environmental and public</td>
</tr>
<tr>
<td>Intensified livestock systems with</td>
<td></td>
<td>health risks and facilitate participation of the poor in livestock markets and other business opportunities.</td>
</tr>
<tr>
<td>challenges including the environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and public health</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Complementarity or competition?

- Increase market participation (increase productivity)
- More jobs opportunities for women and youth
- Greater, more reliable income: Ability to purchase more nutritious diet
- Better nutrition: animal source foods for producers and consumers
- Create inequities (even among smallholders)
- Exacerbate food safety and zoonoses
- Damage the environment
- By-pass today’s producers
- Over feed the middle class, urban

Better nutrition: animal source foods for producers and consumers
<table>
<thead>
<tr>
<th>Trajectory</th>
<th>Market</th>
<th>Nutrition and health</th>
<th>Environmental sustainability</th>
</tr>
</thead>
</table>
| ‘Strong growth’ Intensifying and increasingly market oriented often transforming smallholder systems | Institutional: inclusive participation; transform VCs  
Input access  
Information, training  
New ICT  
Incentives/models for SMEs  
Opportunities for women; youth | Safe food in informal markets  
Balance home consumption and sales of ASFs  
Promote fair access, affordability for all consumers | Increasing productivity – double win for market participation and environment  
Incentives  
Fewer animals?  
New technological? |
| ‘High growth with externalities’ Intensified livestock systems with challenges including the environment and public health | Policies to balance multinational interests  
Hazard versus risk incentives and management  
Promote access to inputs | Facilitate veterinary, public environmental health synergies: a one health approach  
Balanced messages about ASFs and nutrition | Policies and incentives; payment for externalities of production [carbon credits] |
Food for thought?

- Are there ‘double’ or ‘triple’ wins?
- How to ensure inclusivity – no one left behind?
- Connecting all:
  - Beyond agriculture
  - Smallholders; medium enterprises; multi-nationals
  - Development – research – private sector
better lives through livestock

ilri.org

ILRI thanks all donors and organizations who globally supported its work through their contributions to the CGIAR system