Global Meat Demand and Supply

“Where is the meat?”

September 18, 2008
OECD – FAO Outlook: Main assumptions

- Robust growth in emerging economies.
- Population growth slowing
- Low Inflation sustained
  - US dollar strengthens against most other currencies
- Trade policies remain as agreed in the URRAA
- Domestic policies continue as legislated
  - bioenergy mandates, policy
- Normal crop yields - grow at trend rates
- World oil prices remain high
Income growth prospects may be the best in decades...

- Oceania Developed
- Asia and Pacific Developing
- Western Europe
- North America
- Latin America & Caribbean
- Africa
- World

P.a. average growth rate
- 2008 - 2017
- 1998 - 2007
World consumption growth slows:
income sensitive products grow most

Average annual growth

Rice, Wheat, Coarse Grains, SMP, Bovine meat, Pigmeat, Poultry, WMP, Vegetable oils

Relationship between Income and Per Capita Meat Consumption

[Graph showing the relationship between Per Capita Income (log scale) and Per capita Meat Consumption (log scale). The graph includes a trend line indicating a positive correlation.]
General slow down in population growth

- Oceania Developed
- Asia and Pacific Developing
- Western Europe
- North America
- Latin America & Caribbean
- Africa
- World

P.a. average growth rate
- 2008 - 2017
- 1998 - 2007
But World Urbanization continues
Developing Urban and Rural Population (1950-2050)
China Urban and Rural Population (1950-2050)
Exchange rates

Wide swings in USD

Indices = 1 in 2000

EU
China
India
Philippines
S Africa
Brazil
Impact on commodity prices of a 1% USD depreciation against all currencies

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Impact (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>0.8%</td>
</tr>
<tr>
<td>Poultry</td>
<td>0.3%</td>
</tr>
<tr>
<td>Cheese</td>
<td>0.2%</td>
</tr>
<tr>
<td>SMP</td>
<td>0.1%</td>
</tr>
<tr>
<td>WMP</td>
<td>0.0%</td>
</tr>
<tr>
<td>Butter</td>
<td>1.0%</td>
</tr>
<tr>
<td>Veg. oil</td>
<td>0.9%</td>
</tr>
<tr>
<td>Wheat</td>
<td>0.7%</td>
</tr>
<tr>
<td>Pork</td>
<td>0.6%</td>
</tr>
<tr>
<td>Rice Oilmeal</td>
<td>0.5%</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>0.4%</td>
</tr>
<tr>
<td>Maize</td>
<td>0.3%</td>
</tr>
<tr>
<td>Oilmeal</td>
<td>0.2%</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

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Biofuel production and feedstock use increase by 75% and 60% respectively in US.
Biofuel production and feedstock use increase in EU is also dramatic.
Biofuel production and feedstock use is projected to double in Brazil.
...while ethanol production pushes coarse grain demand up
Policy issues relevant to livestock sector development

- Protectionism/Liberalization: Multinational and Regional Trade Agreement
- Changing Sanitary and Quality Standards
- Animal Welfare Rules
- Market Access: to local and international markets
- Environmental regulations
- Animal identification/traceability
- Policies on bio-fuels
- Policy measures for animal disease controls
Pacific beef market indicative price to remain high until 2017...
Pacific pork market prices to continue its cyclical path
Poultry market prices continue to increase driven by demand and high feed costs...
Despite high feed costs, world production continues to grow.
World Beef Production
(million tonnes c.w.)

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World Pork Production
(million tonnes c.w.)

1998

2017

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World Poultry Production
(million tonnes r.t.c.)

1998
2017
World Sheep meat Production
(million tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>1998</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>0.3</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>8</td>
<td></td>
</tr>
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<td>5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6</td>
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Meat sector development in developing countries

- Low Income
- Middle Income
- Developed

Sector:
- Sector 1 & 2 (Commercial)
- Sector 3 (informal commercial)
- Sector 4 (backyard)

Income Levels:
- Low Income
- Middle Income
- Developed
Developing countries share of world meat production increase but...

<table>
<thead>
<tr>
<th>Year</th>
<th>1998</th>
<th>2007</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>50%</td>
<td>52%</td>
<td>58%</td>
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<tr>
<td></td>
<td>52%</td>
<td>56%</td>
<td>64%</td>
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<tr>
<td></td>
<td>56%</td>
<td>60%</td>
<td>64%</td>
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<td>54%</td>
<td>58%</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td>52%</td>
<td>56%</td>
<td>60%</td>
</tr>
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... their share of world meat imports also increases
Outlook projections:

Meat consumption

Share in global meat consumption %

Million tonnes

World meat consumption

Avg.2000-2002
Avg.2005-2007
Avg.2010-2012
Avg.2015-2017

Developed
Developing
Driven by economic growth, meat consumption grows especially in developing countries...

- **Developing countries**
  - 2017: +34% for Beef, +28% for Pork, +34% for Poultry, +27% for Sheep
  - 2005-07: +6% for Beef, +9% for Pork, +17% for Poultry, +2% for Sheep

- **Developed countries**
  - 2017: +31% for Beef, +11% for Pork, +34% for Poultry, +28% for Sheep
  - 2005-07: +11% for Beef, +31% for Pork, +34% for Poultry, +27% for Sheep
World Meat Consumption
(million tonnes c.w.)

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>2017</th>
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<tbody>
<tr>
<td>Africa</td>
<td>28</td>
<td>47</td>
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<tr>
<td>Asia</td>
<td>11</td>
<td>16</td>
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<tr>
<td>Europe</td>
<td>36</td>
<td>44</td>
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<tr>
<td>Americas</td>
<td>42</td>
<td>47</td>
</tr>
<tr>
<td>Australia</td>
<td>84</td>
<td>143</td>
</tr>
</tbody>
</table>
World Meat Net Trade
(million tonnes c.w.)

..total trade up 24% over 2007, 84% over 1998
Increased imports will mostly be to Asia and Pacific region (2008-2017)
World Beef Net Trade
(million tonnes c.w.)

1998  2017

..total trade up 27% over 2007, 67% over 1998
World Pork Net Trade
(million tonnes c.w.)

..total trade up 33% over 2007, 134% over 1998

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World Poultry Net Trade (million tonnes c.w.)

Total trade up 25% over 2007, 87% over 1998
Global trade in proportion to production grows

- Poultry
- Beef
- Pork
Per capita meat consumption gaps between developed and developing countries

Kg per person r.t.w.

- BEEF
- PORK
- POULTRY
- SHEEP

Developed

Developing

1998 2007 2017
Per capita meat consumption gaps between developing regions

Africa | Asia | Latin-America

1998 | 2007 | 2017

Kg per person r.t.w.

beef | pork | poultry | sheepmeat

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Where is the meat?

- **Meat consumption will continue as one of the fastest growing food commodities. Potential in developing countries is high.**

- **Changing production structures in developing countries will affect market competition and penetration.**

- **Environment, animal welfare and food safety concerns will affect growth in all countries.**

- **Meat trade will grow in proportion of production. Trade environment has high potential but uncertainty abounds.**

- **Animal disease and health will highly condition international market development.**