Demand Drivers of Food and Agribusiness to 2030

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The Shape of Seven Billion
Each country in this cartogram is sized according to its projected population in 2011. Black dots represent the country's population in 1960; light dots are population added since then. Each dot represents two million people. Colors indicate the amount of growth (detail below). Nations with populations under 1.5 million are not shown.

Key
- 1960 population (black dots)
- 2011 population (all dots)

Color shows amount of growth from 1960 to 2011:
- More than 300%
- 200% to 300%
- 132% to 199%
- World average: 133%
- 50% to 132%
- Less than 50%

There are more than twice as many people on the planet today as there were in 1960.

World population has never doubled this quickly before, but it is unlikely to double again. The era of explosive growth is expected to end by 2050, at more than 9 billion people, with an estimated range of 8 to 10.5 billion people.

Youthful momentum
Age-distribution pyramids (right) show why the overall寥寥 young populations of developing countries will produce almost all the future population increase. Even with falling birthrates, the world's population is still growing by about 80 million people a year.

Source: "Seven Billion". National Geographic, January 2011
With slower global growth rate, the absolute decadal increment is shrinking.

Annual increments to global population (10-year average), 1750-2050: Source: UNPD, 2000, 2011
CONSUMPTION

Wealthy nations use the most resources, but emerging economies are catching up fast.

Appetites of the Seven Billion

How much impact does each country have on Earth's resources? One way to approximate a nation's consumption is to look at its gross domestic product (GDP)—the total production of goods and services in a year by its residents, firms, and government. In this cartograph, countries are sized according to their GDP for 2009. Black dots show GDP in 1980, or latest year available, light dots show growth since then. Each dot represents $20 billion.* A country's color indicates its GDP per person (detailed in the key below).

The GDP of the U.S., the world's largest economy, grew 17% between 1980 and 2009.

Key

- 1980 GDP (black dots)
- 2009 GDP (all dots)

Color indicates gross domestic product (GDP) per person (2009):
- More than $40,000
- $25,000 to $40,000
- $16,000 to $24,999
- $5,000 to $9,513
- Less than $3,000

The world's gross domestic product* more than doubled from 1980 to 2009. Economic development in China and India accounts for much of the recent rise and will continue to drive it. Global economic growth, and the improved standard of living it offers, means that resources are being consumed at record levels.

Demand on natural resources will continue to increase. Earth's finite resources will be stressed both by rising prosperity and sheer numbers of people (graphs, right). The consumption of resources now enjoyed in the wealthiest nations will be difficult to sustain worldwide.

World GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>$72.5</td>
</tr>
<tr>
<td>1980</td>
<td>$20.9</td>
</tr>
</tbody>
</table>

Demand on natural resources will continue to increase.

World population, 1950–2030

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>8 billion</td>
</tr>
<tr>
<td>2030</td>
<td>9 billion</td>
</tr>
</tbody>
</table>

World energy consumption, 2007–2030

<table>
<thead>
<tr>
<th>Year</th>
<th>Quadrillion BTUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>27.25</td>
</tr>
<tr>
<td>2010</td>
<td>28.35</td>
</tr>
<tr>
<td>2020</td>
<td>30.50</td>
</tr>
<tr>
<td>2030</td>
<td>33.50</td>
</tr>
</tbody>
</table>

Source: "Seven Billion", National Geographic, January 2011
A. Economic growth in populous emerging economies puts leverage on food demand
On Average, food expenditures are less than 10% of income in the U.S. But is average a good indicator?
CAN AFFORD HIGHER COST FOOD CHOICES

2010
Consumer Preferences for Food...

• **Fifty-seven percent of mothers purchased more food with natural ingredients** in the past year than 10 years ago, according to a survey by Chr. Hansen and Qualtrics. Eighty percent of respondents noted they would be more likely to purchase an item if it has naturally derived ingredients.

• **Walmart made a commitment to a more sustainable food system.** Initiatives include improving the affordability of food, increasing access, make healthy eating easier and improve the safety and transparency of the food chain.

Source: The Food Institute’s Daily Brief
Food safety: No guarantees

205 people were sickened by E. coli and five died after eating fresh spinach last September. The victims included 2-year-old Kyle Allgood of Chubbuck, Idaho.

Spinach recall: 5 faces. 5 agonizing deaths. 1 year later.

USA TODAY

Photo by Richard Drew, The Californian

Food SAFETY MODERNIZATION ACT

10 FACTS

YOU SHOULD KNOW

USDA ORGANIC

Organic

APPROVED

Animal Welfare

Apples & oranges

Below are the latest price differentials between organic and conventional foods found at a local supermarket:

<table>
<thead>
<tr>
<th>Organic</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLES</td>
<td></td>
</tr>
<tr>
<td>1 POUND RED DELICIOUS</td>
<td>$2.49</td>
</tr>
<tr>
<td>ORANGES</td>
<td></td>
</tr>
<tr>
<td>BAG OF NAVE</td>
<td>$5.99</td>
</tr>
<tr>
<td>(8-9 IN A BAG)</td>
<td></td>
</tr>
<tr>
<td>MILK</td>
<td></td>
</tr>
<tr>
<td>HALF-GALLON 2 PERCENT</td>
<td>$4.99</td>
</tr>
<tr>
<td>EGGS</td>
<td></td>
</tr>
<tr>
<td>1 DOZEN</td>
<td>$3.99</td>
</tr>
<tr>
<td>BREAD</td>
<td></td>
</tr>
<tr>
<td>LOAF OF SEVEN-GRAN</td>
<td>$5.69</td>
</tr>
<tr>
<td>BROCCOLI</td>
<td></td>
</tr>
<tr>
<td>1 POUND CROWNS</td>
<td>$2.99</td>
</tr>
<tr>
<td>POTATOES</td>
<td></td>
</tr>
<tr>
<td>5-POUND BAG OF RUSSET</td>
<td>$5.99</td>
</tr>
</tbody>
</table>
Shift To Cage-Free Eggs Is Likely To Disappoint

Cage-free eggs: a PR battle or concern for animal welfare?

McDonald’s USA and Canada Commit to Cage-Free Eggs

13 MILLION
Number of cage-free eggs currently sourced per year in the U.S.

10 Years
Trends likely translate to cage-free eggs.

PROPOSED RULE: Organic Livestock & Poultry Practices

Proposed changes to the organic regulations would address organic livestock & poultry living conditions, health care, handling & transport.

Proposed Provisions include:

OUTSIDE TIME FOR ALL SPECIES

LIMITS ON Enlarged Animal Halt
Minimum indoor & outdoor space requirements

Organic feed & water required
for all species being transported for 12+ hours

Outdoor soil requirements
for all species

Phased-in implementation

60 DAYS for public comment

Agriculture Support Services
National Organic Program

Local and regional input provided; comments are needed.