Climate Change and Agribusiness

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CGB Enterprises, Inc.
About Us

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U.S. Domestic Production Trends

**CAGR**

<table>
<thead>
<tr>
<th>Commodity</th>
<th>1961 - 2014</th>
<th>2000 - 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans</td>
<td>3.48%</td>
<td>2.38%</td>
</tr>
<tr>
<td>Corn</td>
<td>2.58%</td>
<td>2.43%</td>
</tr>
<tr>
<td>Rice</td>
<td>2.65%</td>
<td>1.02%</td>
</tr>
<tr>
<td>Wheat</td>
<td>1.17%</td>
<td>-0.63%</td>
</tr>
<tr>
<td>Sorghum</td>
<td>-0.19%</td>
<td>-0.56%</td>
</tr>
<tr>
<td>Barley</td>
<td>-1.42%</td>
<td>-3.66%</td>
</tr>
<tr>
<td>Oats</td>
<td>-4.82%</td>
<td>-4.90%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1.83%</strong></td>
<td><strong>1.58%</strong></td>
</tr>
</tbody>
</table>

Source: USDA - NASS
2016 US Grain & Oilseed Production Share

Change relative to 2009

13 Main States = 85% of US
12 States (TX-VA) = 9% of US
25 Other States = 6% of US

Source: USDA - NASS
Domestic Use Opportunities

• Corn Ethanol (E-15?)
• Soybean Crush (biodiesel)
• Livestock Feed

Source: ProExporter Network
U.S. Grain Transportation

Modal Share of All US Grain

Source: USDA - AMS
• Longer trips are more typical in northern and western markets.
  • Implications from reduced Arkansas River barge transportation.

• Livestock production moving north and additional processing capacity will reduce average trip length.

• Increasing capacity per truckload offered efficiencies through 1990’s. Few efficiency gains have developed since.
Increased rail demand = 130 trains per month.
  • ~15% increase to 2013.

Carrying capacity opportunities:
  • Railcar design,
  • Train length, or
  • GWOR increases.
Barge Transportation

- Demand reduced by ~800 barges/month.
  - ~30% reduction from 2013.
- Mississippi River winter closure may shorten.
- Arkansas River most heavily impacted.

Source: Informa Economics
World Production Trends

<table>
<thead>
<tr>
<th>Commodity</th>
<th>1961 - 2014</th>
<th>2000 - 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapeseed</td>
<td>5.76%</td>
<td>4.25%</td>
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<tr>
<td>Soybeans</td>
<td>4.61%</td>
<td>4.37%</td>
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<tr>
<td>Maize</td>
<td>3.05%</td>
<td>3.81%</td>
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<tr>
<td>Rice</td>
<td>2.31%</td>
<td>1.43%</td>
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<tr>
<td>Wheat</td>
<td>2.22%</td>
<td>1.48%</td>
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<tr>
<td>Barley</td>
<td>1.29%</td>
<td>0.55%</td>
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<tr>
<td>Sorghum</td>
<td>0.97%</td>
<td>1.41%</td>
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<tr>
<td>Oats</td>
<td>-1.43%</td>
<td>-0.92%</td>
</tr>
<tr>
<td>Total</td>
<td>2.47%</td>
<td>2.39%</td>
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Source: Food and Agriculture Organization of the United Nations
Global Production & Export Changes

Change from 2000 to 2016

EU = 8\textsuperscript{th} largest growth
Brazilian export capacity investment continues.
Black Sea Region export investment occurring, but not to degree of Brazil.
Possibly the most opportune future export region.
US’ share of global exports will decline further, noting reduced barge commerce.
U.S. Agriculture Investment Opportunities

- Domestic grain consumption:
  - E-15,
  - Livestock.

- Grain storage capacity:
  - Increased 12 month consumption system,
  - Reduced seasonal impact of exports.
Thank you!