Presentation Outline

- Importance of Brazilian Agriculture
- Recent Ag. Expansion

- Commodity Specific Production/Trade
- Limitations to Ag. Expansion

- U.S. vs. Brazil Competitiveness
The Foreign Agricultural Service of the U.S. Department of Agriculture

Two Mission Level Goals:

- Expand U.S. Agricultural Export Opportunities

- Help alleviate world hunger and food insecurity
## South America Profile

<table>
<thead>
<tr>
<th>Country</th>
<th>Area (000 Sq. M)</th>
<th>Pop. (millions)</th>
<th>GDP per Capita ($)</th>
<th>U.S. Ag Exports ($Million)</th>
<th>U.S. Ag Imports ($Million)</th>
<th>Surplus/Deficit Ag Trade ($Million)</th>
<th>Exports per Capita ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td><strong>8,512</strong></td>
<td>184</td>
<td>7,600</td>
<td>228</td>
<td><strong>3,612</strong></td>
<td>-3,090</td>
<td>1.55</td>
</tr>
<tr>
<td>Argentina</td>
<td>2,767</td>
<td>39</td>
<td>11,200</td>
<td>70</td>
<td>807</td>
<td>-737</td>
<td>1.79</td>
</tr>
<tr>
<td>Peru</td>
<td>1,285</td>
<td>28</td>
<td>5,200</td>
<td>309</td>
<td>452</td>
<td>-143</td>
<td>11.03</td>
</tr>
<tr>
<td>Colombia</td>
<td>1,139</td>
<td>42</td>
<td>6,300</td>
<td>597</td>
<td>1,212</td>
<td>-615</td>
<td>14.21</td>
</tr>
<tr>
<td>Bolivia</td>
<td>1,099</td>
<td>9</td>
<td>2,400</td>
<td>24</td>
<td>61</td>
<td>-37</td>
<td>2.66</td>
</tr>
<tr>
<td>Venezuela</td>
<td>912</td>
<td>25</td>
<td>4,800</td>
<td>386</td>
<td>199</td>
<td>187</td>
<td>15.44</td>
</tr>
<tr>
<td>Chile</td>
<td>757</td>
<td>16</td>
<td>9,900</td>
<td>124</td>
<td>2,925</td>
<td>-2,801</td>
<td>7.75</td>
</tr>
<tr>
<td>Paraguay</td>
<td>407</td>
<td>6</td>
<td>4,600</td>
<td>3</td>
<td>36</td>
<td>-33</td>
<td>0.50</td>
</tr>
<tr>
<td>Ecuador</td>
<td>284</td>
<td>13</td>
<td>3,300</td>
<td>140</td>
<td>1,088</td>
<td>-948</td>
<td>10.76</td>
</tr>
<tr>
<td>Uruguay</td>
<td>176</td>
<td>3</td>
<td><strong>12,600</strong></td>
<td>19</td>
<td>380</td>
<td>-361</td>
<td>6.33</td>
</tr>
</tbody>
</table>

Source: USDA BICO Incl Ag, Forest & Fishery Products CY2004
Importance of Agriculture in Brazil

- 13% of the GDP  (29% Agribusiness)
- 37% of the Labor Force
- Agriculture = 42% of Total Exports!
- 2005 Agricultural Trade Surplus of $38.2 Billion
TRADE BALANCE (US$ BILLION)

Source: MARA
## Balance of Agricultural Trade Between the United States and Brazil (FY2005)

<table>
<thead>
<tr>
<th>Brazil's Exports to the U.S.</th>
<th>U.S. Exports to Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commodity</strong></td>
<td><strong>$Million</strong></td>
</tr>
<tr>
<td>1  Forest Products</td>
<td>1,059</td>
</tr>
<tr>
<td>2  Raw Coffee</td>
<td>440</td>
</tr>
<tr>
<td>3  Proc. Fruits/Vegetables</td>
<td>205</td>
</tr>
<tr>
<td>4  Red Meats Prep./Preserved</td>
<td>185</td>
</tr>
<tr>
<td>5  Tobacco</td>
<td>181</td>
</tr>
<tr>
<td>6  Fruit/Vegetable Juices</td>
<td>164</td>
</tr>
<tr>
<td>7  Snack Foods</td>
<td>107</td>
</tr>
<tr>
<td>8  Cocoa</td>
<td>96</td>
</tr>
<tr>
<td>9  Lobster</td>
<td>77</td>
</tr>
<tr>
<td>10 Sugar</td>
<td>55</td>
</tr>
<tr>
<td>Other</td>
<td>1043</td>
</tr>
<tr>
<td>Total</td>
<td>3,612</td>
</tr>
</tbody>
</table>
## World Ranking of Agricultural Commodities Produced in Brazil

<table>
<thead>
<tr>
<th>Products</th>
<th>2005* Ranking</th>
<th>Million Metric Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar</td>
<td>1st</td>
<td>28.2</td>
</tr>
<tr>
<td>Oranges</td>
<td>1st</td>
<td>16.6</td>
</tr>
<tr>
<td>Coffee</td>
<td>1st</td>
<td>2.2</td>
</tr>
<tr>
<td>Tobacco</td>
<td>2nd</td>
<td>0.8</td>
</tr>
<tr>
<td>Soybeans</td>
<td>2nd</td>
<td>51.0</td>
</tr>
<tr>
<td>Beef</td>
<td>2nd</td>
<td>8.4</td>
</tr>
<tr>
<td>Poultry</td>
<td>3rd</td>
<td>9.1</td>
</tr>
<tr>
<td>Corn</td>
<td>3rd</td>
<td>35.0</td>
</tr>
<tr>
<td>Cotton</td>
<td>5th</td>
<td>1.3</td>
</tr>
</tbody>
</table>

* *2004/05 Crop Year
Source: USDA/PS&D Online*
Brazilian Agricultural Exports

Percentage of Total World Trade (Rank)

- Orange Juice: 1
- Poultry: 2
- Soybeans: 1
- Sugar: 1
- Beef: 1
- Coffee: 1
- Tobacco: 1
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## BRAZIL: Land Utilization Statistics

<table>
<thead>
<tr>
<th>Description</th>
<th>Million Hectares</th>
<th>Percent of Total Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Total Forest Area</td>
<td>444.0</td>
<td>52</td>
</tr>
<tr>
<td>2) Total Remaining Cerrado Area</td>
<td>140.0</td>
<td>17</td>
</tr>
<tr>
<td>3) Total Pasture Area</td>
<td>177.0</td>
<td>21</td>
</tr>
<tr>
<td>4) Total Agricultural Area</td>
<td>44.0</td>
<td>5</td>
</tr>
<tr>
<td>5) Total Non-Arable &amp; Other Area</td>
<td>42.9</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Land Area</strong></td>
<td><strong>847.9</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source:
1. UNEP World Conservation Monitoring Program, Cambridge, UK
2. EMBRAPA Cerrados Research Center, Brasilia, Brazil 2002
3, 4- IBGE 1995-1996 Agricultural Census

Brazil = 44.0 Million Hectares (5%)
USA = 174.0 Million Hectares (19%)
BRAZIL POTENTIAL LAND

Cerrado........... million ha
Total area............... 204
Agriculture area ....... 127
Pasture................... (35)
Annual Culture.......... (10)
Permanent Cultures and Cultivated Forests ........... (2)
Available area .......... 90

Source: ABIOVE
Scope of Potential Agricultural Expansion

**Total Cropland Comparison**

- **USA**: Current Total Crop Acreage 174 Million Hectares
- **BRAZIL**: Potential Acreage 210 Million Hectares
- **Potential Acreage**: 44 Million Hectares

**BRAZIL: Ag Land Distribution**

- **Pasture**: 83%
- **Soy**: 10%
- **Summer Corn**: 4%
- **Rice**: 2%
- **Summer Beans**: 1%
- **Cotton**: 1%
- **Sugarcane**: 2%
- **Coffee**: 1%
- **Cocoa Beans**: 1%
- **Tree Nuts**: 1%
- **Pasture**: 1%

Source: USDA/FAS
Brazilian Productivity Gains Outpacing Crop Area Expansion
Average Productivity Growth (1990/91 and 2004/05)

Data Source: CONAB/MAPA
Government Credit Programs (2006)

• R$44.4 Billion in Credit Lines or US$19.3 billion
  – Production & Marketing Credit = R$33.2 billion - Up 15% From Last Year
  – Credit for Investment = R$11.2 Billion – Up 5%
  – Common Interest Rate for Programs is 8.75% but Some Programs Are Up to 12.7%

• Free Market Rate for Farmers is 16-20%
• Average for General Business is 35%
• Consumer Credit is 84%
Amazon Deforestation Also a Factor

Vast majority converted into rangeland for commercial cattle production
Deforestation is continuing at a rate of over 2.0 million hectares per year
New rangeland provides opportunity for future field-crop cultivation

Nearly 30 million hectares of tropical forest have been cleared since 1988

- Deforestation Monitoring

Source: INPE/PRODES

The Legal Amazon:

Deforestation 2002/2003
Deforestation prior to 2002
Soybean area increased **14.5** million hectares or **170** percent since 1980

Expansion occurred in existing producing states as well as in “new” territories

Greatest growth occurred in the Center-West and Northeast, transforming them into the predominant soybean region in Brazil
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Brazilian and U.S. Soybean Production
(1,000 Tons)
Brazilian and U.S. Soybean Exports

- **Brazil**: 24%
- **U.S.**: 40%
- **Argentina**: 17%
- **China**: 8%
- **Others**: 10%

**Graphs**
- **Bar Graph** showing export volumes for years 1995/96 to 2005/06.
- **Line Graph** comparing Brazil and U.S. exports over the same period.
Corn Production and Use

![Graph showing corn production and use from 2001 to 2006. The graph indicates fluctuations in consumption and production across the years.]
Rice Production and Imports

[Bar chart showing rice production and imports from 1999/01 to 2005/06]
Wheat Production and Imports

Thousand Tons (Milled)

- Production
- Imports
Cotton Production Soars With Advances in Center-West
Brazilian Meat Production

- Beef
- Pork
- Poultry
Meat Export Market Shares

Beef, Pork, & Poultry Exports

1998
- US: 19%
- Brazil: 6%
- Others: 75%

2006
- US: 21%
- Brazil: 28%
- Others: 51%
2004/05 Brazilian FCOJ Production & Exports

World Production
- Brazil: 51%
- US: 40%
- Others: 9%

World Exports
- Brazil: 83%
- US: 7%
- Others: 10%
Brazilian Tobacco Production & Exports

![Diagram showing Brazilian Tobacco Production and Exports from 1999 to 2005. The x-axis represents the years 1999 to 2005, and the y-axis represents the production and export values. The diagram uses red bars to indicate production and green bars to indicate exports. The production values show a general trend of increasing from 1999 to 2005, with peaks in 2004 and 2005. The export values also show an increasing trend, with peaks in 2003 and 2005.](image-url)
Brazilian Sugar Production & Exports

- #1 sugar producer with 20% of world total
- #1 sugar exporter with 40% of world market
Sugar Production Cost Comparison

Data Source: Institute for Agricultural Trade Policy
Brazilian Ethanol Production

Billion Liters

00/01 01/02 02/03 03/04 04/05 05/06
Brazilian Ethanol Production

- 03/04 production 16.6 billion liters - #1 producer
- 100% ethanol from sugar cane, uses 52% of domestic crop
- Domestic "gasoline" is 25% ethanol
- 52% of new car sales in 05 were flex-fuel
- Exports estimated at 600 million in 2003, 2.4 billion in 2004, and 2.5 billion in 2005
Brazilian Ethanol Market

- Maximum capacity is for 55-60% of cane crop for ethanol
- Total cane area forecast to increase 20% in 4 years
- Limited processing capacity and environmental regs. Limit area expansion
- Long-Term: Consumption needs outpace production
Brazilian Ethanol Exports

- Only 15% of the ethanol Production is exported
- Top Markets are Japan, S. Korea, & Holland
- Lower stocks and strong demand should lead to higher prices this year.
- Increased exports not likely
Presentation Outline

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Variety of factors could theoretically act to slow the rate of agricultural expansion or limit its extent.

Examples of Limiting Factors:

- Faltering domestic economy
- Institution of new agricultural export taxes
- Lack of adequate transport infrastructure development
- Significant slump in international agricultural commodity prices
- Greater domestic prevalence of crop diseases or pests
- Generation of surplus crop production substantially exceeding global demand
- Foot and mouth disease-free status achieved, fueling increased meat exports
- New environmental laws increasing restrictions on land conversion
- Climate change substantially alters rainfall volume and distribution

- Currently Occurring
Average Returns for Row Crops

- Soybeans: 2004 Returns = 30%, 2005 Returns = 40%
- Sorghum: 2004 Returns = 40%, 2005 Returns = 50%
- Cotton: 2004 Returns = 20%, 2005 Returns = 30%
- Corn: 2004 Returns = 30%, 2005 Returns = 20%
- Rice: 2004 Returns = 10%, 2005 Returns = 0%
- Wheat: 2004 Returns = 20%, 2005 Returns = 30%
Transport of Soybeans

Average Cost (US$) to Transport Soybeans 1000 km

- Waterway: $13
- Railroad: $25
- Road: $40
U.S. and Brazilian Soybean Transportation to Port by Mode

U.S.
- Road: 12%
- Waterway: 66%
- Railroad: 22%

Brazil
- Road: 67%
- Waterway: 5%
- Railroad: 28%
BRAZILIAN ROADS

BR – 163 BETWEEN NOVA MUTUM AND LUCAS DO RIO VERDE-MT

Source: BUNGE
ROAD BETWEEN CAMPO NOVO DO PARECIS E SAPEZAL-MT
GOVERNMENT’S INVESTS

ROAD TRANSPORT INVESTMENTS / GDP (%)

Source: MT
BRAZILIAN RAILROADS

RAILROAD DENSITY  KM/1000KM²

BRAZIL         3,4                                        USA      29,8

Source: BUNGE
Infrastructure Challenges at AgroReservas
BRAZILIAN PRODUCERS INVESTED IN LAND EXPANSION AND THE USE OF TECHNOLOGY.

Source: BUNGE
Infrastructure Expansion & Improvements Trail Production Gains

- **Total** rail track has not grown in the past 80 years.
- Over the past several years grain storage capacity has increased only 10 percent that of grain production.
- Transport cost to port for a ton of soybeans is 50 percent greater than the United States.
- The grain storage deficit is about 35 percent.
- Current government investment in roads is only 0.1% of GDP compared to 1.8% in the 1970s.
Additional Challenges in Brazil

- High tax burden – greater than Germany
- Complicated bureaucracy
- Inconsistent judicial system
- Corruption
- Crime – homicide rate triple the U.S. rate
- Property rights are not secure - MST
- High Interest Rates
Crop Yield Comparison
U.S. vs. Brazil
2002/03 to 2004/05 Average Yields

<table>
<thead>
<tr>
<th>Crop</th>
<th>Brazil</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Wheat</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Soybeans</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Rice</td>
<td>4.0</td>
<td>9.1</td>
</tr>
<tr>
<td>Corn</td>
<td>5.0</td>
<td>6.0</td>
</tr>
</tbody>
</table>
Low Corn Yields in Brazil

Corn Yield of Major Global Producers

<table>
<thead>
<tr>
<th>Country</th>
<th>Tons per Hectare (2001 to 2003 Average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>3.5</td>
</tr>
<tr>
<td>China</td>
<td>5.2</td>
</tr>
<tr>
<td>Argentina</td>
<td>6.9</td>
</tr>
<tr>
<td>EU</td>
<td>8.4</td>
</tr>
<tr>
<td>U.S.</td>
<td>9.2</td>
</tr>
</tbody>
</table>
Cost of Production for Row Crops

- U.S. Input Costs Generally Lower but Higher Land Rents
- FOB Prices are Similar Due to High Brazilian Transport Costs
- U.S. Corn Costs Higher but Yield is More than Double
Crop Land Price Comparison
United States vs. Brazil (2003)

Data Source: USDA and FGV-FGVDados
Average Farm Size
United States vs. Brazil
(2003 Post Estimate)

Data Source: USDA/NASS, Deral, and Post Estimate

1,200 Hectares
Ag. Land Prices Soar in Brazil but Drop Last Year Due to Low Commodity Prices

- % Change in R$/Hectare

- Santa Caterina
- Mato Grosso
- Rio Grande D.S.
- Mato Grosso D.S.
- Goias
- Parana

- 36-Month Change
- 12-Month Change

Source: Instituto FNP
Transportation Cost Comparison for Soybeans

Average Cost (US$) to Transport Soybeans to Port

- Brazil: $23.5
- Argentina: $16.0
- United States: $15.5
FAS Contacts in Brasilia

Office of the Agricultural Counselor
American Embassy
SES-Av. das Nações - Quadra 801
70403-900 Brasília, D.F., Brazil
Tel: 55-61-312-7101 - Fax: 55-61-312-7659
E-mail: AgBrasilia@fas.usda.gov
www.fas.usda.gov

U.S. Mailing Address:
Unit 3500
APO AA 34030-3500