Changing Incentives for Agricultural Expansion in Brazil
What Will be the Key Factors Influencing Brazil’s Expanding Agriculture?

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By

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Overview

• Brazil’s position in the world of agriculture
• Land use in Brazil, potential for expansion
• Current state of crop production
• Incentives for agricultural expansion
• Obstacles to expansion
• Key factors
• Brazil’s future
Brazil’s Current Position

• Number one producer of: sugar, orange juice, coffee
• One of the top producers of: soybeans, corn, ethanol, tobacco, beef, pork, poultry, fruits, forestry products
• Agriculture responsible for 25% of GDP and one third of the jobs in Brazil
• Commodities account for 42% of Brazil’s exports in 2010
Size Comparison Brazil vs. United States
Mato Grosso – Leading Soybean Producing State
Size Comparison Mato Grosso - Midwest
Brazil Land Utilization

millions of acres

- Amazon Forest and Natural Forest Reserves: 550
- Pasture Land (cattle): 225
- Cerrado (savannah): 185
- Other (urban centers, lakes, etc): 105
- Cropland (soybeans etc): 12
- Permanent Crops (coffee, oranges, sugarcane etc): 37
- Reforestation (eucalyptus and pine): 1100
<table>
<thead>
<tr>
<th>Crop</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans</td>
<td>46%</td>
</tr>
<tr>
<td>Corn</td>
<td>29%</td>
</tr>
<tr>
<td>Edible Beans</td>
<td>9%</td>
</tr>
<tr>
<td>Rice</td>
<td>7%</td>
</tr>
<tr>
<td>Wheat</td>
<td>4%</td>
</tr>
<tr>
<td>Cotton</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
</tbody>
</table>
Cerrado Areas of Brazil
Native Cerrado Vegetation in Brazil
Native *Cerrado* Vegetation in Brazil
Clearing Land in Mato Grosso
New Soybean Production in Mato Grosso
Brazil Soybeans

* State-Level Production (as % of total)

<table>
<thead>
<tr>
<th>State</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mato Grosso</td>
<td>29</td>
</tr>
<tr>
<td>Parana</td>
<td>20</td>
</tr>
<tr>
<td>Goias</td>
<td>12</td>
</tr>
<tr>
<td>Rio Grande do Sul</td>
<td>12</td>
</tr>
<tr>
<td>Mato Grosso do Sul</td>
<td>8</td>
</tr>
<tr>
<td>Minas Gerais</td>
<td>5</td>
</tr>
<tr>
<td>Bahia</td>
<td>4</td>
</tr>
<tr>
<td>Sao Paulo</td>
<td>3</td>
</tr>
<tr>
<td>Tocantins</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>~5</td>
</tr>
</tbody>
</table>

* 2001/02 to 2005/06 Average

Source: IBGE Brazil

Soybean crop calendar for most of Center-South Brazil

FLORER
FILL
PLANT
HARVEST

Soybean Area

Minor \[ \rightarrow \] Planting Intensity \[ \rightarrow \] Major

*Source: IBGE*
Major Export Routes of Brazil
Maturing Soybeans in Mato Grosso
Maturing Soybeans in Mato Grosso
Soybean Production in Mato Grosso
Soybean Production in Mato Grosso
Soybean Production in Mato Grosso
Harvesting Soybeans in Mato Grosso
Safrinha Corn Following Soybeans
Planting *Safrinha* Corn in Mato Grosso
Planting *Safrinha* Corn in Mato Grosso
Safrinha Corn Production in Mato Grosso
Custom Combining In Brazil
Waiting to Transport Soybeans in Mato Grosso
ADM Facility in Mato Grosso
Cargill Crushing Plant in Mato Grosso
Picking Up Soybeans at Lucas do Rio Verde, Mato Grosso
BR-163 in Mato Grosso
Traffic on BR-163 in Mato Grosso
Traffic on BR-364 in Mato Grosso
Mato Grosso Plateau
Mato Grosso Road Sign in Kilometers

- MT-010: 62 km
- São José do Rio Claro: 79 km
- Nova Maringá: 154 km
- Diamantino via MT-010: 162 km
- Campo Novo dos Parecis: 235 km
- Saíze: 355 km
- Vilhena: 640 km
- Porto Velho: 1,340 km
Unimproved Road During Rainy Season
Unimproved Road During Rainy Season
First Rail Terminal in Mato Grosso
Ferronorte Rail Terminal in Mato Grosso
Ferronorte Rail Terminal in Mato Grosso
Ferronorte Rail Terminal in Mato Grosso
Constructing *Ferronorte* Railroad in Mato Grosso
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Crushing Plant Along Ferronorte Railroad
City of Sorriso in Central Mato Grosso
Parana River Between Sao Paulo and Mato Grosso do Sul
Brazilian River Export Routes

Source: USDA/AMS
Barging Operations on the Madeira River
Barging Operations on the Madeira River
Brazilian Cotton Production
Brazilian Sugarcane Production
SUGARCANE AREA IN THE CENTER-SOUTH

- Amazon Forest
- Pantanal Wetlands
- Atlantic Coast Forest
- Sugarcane
The state of Sao Paulo accounts for nearly 57% of Brazil’s sugarcane production.
Sugarcane Production Becoming More Mechanized
Brazilian Sugarcane Processing
Biodiesel Growth in Brazil

• B5 biodiesel nationwide January 1, 2010.
• B10 nationwide and B20 in urban areas by 2015?
• Reduce urban pollution.
• Soy oil 80% of feedstock for biodiesel.
• New sources of vegetable oils being developed.
Brazilian Biodiesel Made From Soy Oil
Palm Oil Production
Cattle Ranching in the Amazon Region
Cattle Ranching in the Amazon Region
Cattle Ranching in the Amazon Region
Cattle Ranching in the Amazon Region
Deforestation for Cattle Ranching
Brazil Working to Reduce Deforestation
Squatters and farmers battle for the same land
Prior Incentives For Ag Expansion

• Very cheap and abundant land
• Government incentives
• Low interest loans, sometimes below rate of inflation
• Mass migration north to expand operations
• Similar to “manifest destiny”
New Incentives for Ag Expansion

- Demand driven expansion
- Globalization of food supply and markets
- Foreign investments in agribusiness
- Interest in renewable energy
- Sourcing of raw materials by foreign governments - China, Middle East, Asia
Key Factors Favoring Expansion

• Strong sustained commodity prices
  – US$ 11.50 to 13.00 soybean prices encourages expansion
  – Corn, cotton, sugar, meats

• Government programs – minimum price guarantees, low interest loans

• International investments in agriculture, renewable energy
Key Factors Limiting Expansion

- Inadequate infrastructure – lack of investments
- High transportation costs
- Strong Brazilian currency
- Stricter environmental regulations
- Restrictions on foreign ownership of farmland
- Desire for sustainable development
- Social considerations – agrarian reform
Brazil’s Potential

• Brazil has: available land, climate, experience, research, knowhow, and production capability to become number one commodity exporter in the world.

• Potential to become number one food exporter as well
BR-163 Fifteen Years After Asphalt
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