Food Security and Trade in the Asia-Pacific & LAC Region

Brazil's Role in Global Food Security and Trade

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A CHALLENGING SCENARIO

- World population to reach 9.3 billion people by 2050 and consumption to double due to increase in income per capita.
  - Middle class consumers to increase by 3 billion people by 2030.
- 177% increase in commodity prices since the turn of the century (adjusted for inflation).
- Minerals and oil scarcity – 100% increase in the average cost of bringing a new oil well online over the past decade.
- Agricultural sector to produce food and inputs for textiles, bioenergy and biochemicals in a sustainable way.

EVOLUTION OF THE WORLD POPULATION

Source: FAO.
SHARE OF URBAN POPULATION IN TOTAL POPULATION

Source: FAO.
PER CAPITA FOOD CONSUMPTION (kcal/person/day)

Over the next 40 years, we need to produce as much food as we did in the last 8,000 years!

Note: Latin America includes the Caribbean. Transition economies include Eastern Europe and the countries of the CIS. Source: FAO (2006).
21st CENTURY: BEGINNING OF A NEW ERA

We are here

ENERGY SOURCES NEED TO DIVERSIFY

Sources: Nakicenovic, Grubler and MacDonald, 1998
Note: Land – suitable non-cropped, non-protected (including pastures). Water – Total Renewable Water Sources.
Sources: Fischer and Shah (2010), cited in World Bank, 2010 (Rising Global Interest in Farmland: Can it Yield Sustainable and Equitable Benefits?), ICONE, FAO.
## IMPACT OF CHINESE INCREASING PER CAPITA CONSUMPTION ON DEMAND

### Scenario:
Increase in China’s demand was considered to be met fully by imports; for Brazil exports, highest share in world exports in the last three years was considered.

### Source:
USDA, FAO. Elaboration: ICONE.

### Notes:
exports in carcass weight equivalent.

<table>
<thead>
<tr>
<th>Product</th>
<th>Current Per Capita Consumption (kg)</th>
<th>Impact of a Chinese 1 kg per capita consumption increase on exports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>China</td>
<td>Brazil</td>
</tr>
<tr>
<td>Beef</td>
<td>3.2</td>
<td>26.4</td>
</tr>
<tr>
<td>Poultry Meat</td>
<td>11.0</td>
<td>42.0</td>
</tr>
<tr>
<td>Sugar</td>
<td>12.3</td>
<td>68.9</td>
</tr>
</tbody>
</table>
MAIN EXPORTERS OF AGRI-FOOD PRODUCTS (2010)

Source: WTO
Elaboration: ICONE
BRAZILIAN AGRI-FOOD EXPORTS DYNAMISM

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Soybean</th>
<th>Sugar/Ethanol</th>
<th>Chicken Meat</th>
<th>Coffee</th>
<th>Bovine Meat</th>
<th>Orange Juice</th>
<th>Tobacco</th>
<th>Pork Meat</th>
<th>Maize</th>
<th>Cocoa</th>
<th>Cotton</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd</td>
<td>35%</td>
<td>46%</td>
<td>36%</td>
<td>33%</td>
<td>17%</td>
<td>77%</td>
<td>27%</td>
<td>8%</td>
<td>9.5%</td>
<td>4%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Sources: AGROSTAT/Ministry of Agriculture, ITC, COMTRADE. Elaboration: ICONE
BRAZILIAN AGRICULTURE EXPORTS: THE IMPORTANCE OF DEVELOPING COUNTRIES

Developed Countries (CAGR 10%)

Developing countries (CAGR 21%)

Source: Agrostat/MAPA. Elaboration: ICONE.
BRAZILIAN AGRICULTURE EXPORTS BY DESTINATION

2000
- EU+USA: 59%
- Asia (Excluding China): 27%
- China: 3%
- Rest of the World: 11%

ASIA (incl. China) = 14%

2011
- EU+USA: 25%
- Asia (Excluding China): 28%
- China: 24%
- Rest of the World: 23%

ASIA (incl. China) = 52%

Source: AGROSTAT/Ministry of Agriculture
PROFILE OF BRAZILIAN AGRICULTURAL EXPORTS TO ASIA

US$ Millions

- Sugarcane complex
- Meats
- Forest products
- Fibers and textile products
- Leathers and derived products
- Cereals, flours and preparations
- Tobacco and products
- Juices
- Others

Source: Agrostat. Elaboration: ICONE
CHANGES IN THE FOOD COMMODITY COMPOSITION IN SOUTH ASIA

Sources: FAO, World Agriculture: Towards 2030/2050
AGRICULTURAL PRODUCTIVITY (TFP) GROWTH
(2000 to 2008, average annual % over period)

Source: Alston, J.M., B.A, Babcock, and P.G, Pardey eds (2010), The Shifting Patterns of Agricultural Productivity Worldwide, CARD-MATRIC Electronic Book, Center for Agricultural and Rural Development, The Midwest Agribusiness Trade Research and Information Center, Iowa State University, Ames, Iowa, Available at: www.matric.iastate.edu/shifting_patterns

TFP (Total Factors Productivity): represents resource efficiency on labor, capital and land.
In 2050, Brazil will account for 2.4% of the world population, Asia will account for more than 50%.

Native vegetation: 554 Mn ha (66% of total area)
Pastures: 198 Mha (23%)
Annual crops
Perennial crops
Crops: 60 Mha (7%)

Urbanization and other uses: 38 Mha (4%)

THE RECENT SUCCESS OF BRAZILIAN AGRIBUSINESS: TECHNOLOGICAL INNOVATIONS AND MORE

Natural Resources:
- Land: cheap and available land, large scale farms
- Water availability
- Suitable climate

Technology:
- Continuous adoption of new tropical technologies, including biotech
- No-till agriculture – 25 million ha (combined with crop rotation)
- Double cropping (2 crops in the same year)
- Crop-livestock integration

Professional and Innovative Management:
- 150,000 students in agrarian sciences
- Average farmer age 42 (USA: 60 and EU: 70)
- Enhancement of managerial capabilities
- Modern marketing capabilities (ex.: future and derivative markets)

Others:
- Consolidated practices for mitigation of GHG emissions (ex: biofuels, bioelectricity, elimination of biomass burnings, etc.)
CHALLENGES FOR BRAZILIAN AGRIBUSINESS

**Logistics**
- Lack of good transport system (16% of roads are paved)
- High transportation costs and dependence on road transportation (74%)
- Inefficiency of ports, especially older ones (the largest ports are saturated)
- Poor infrastructure

**Regulatory Risks**
- Weak institutions
- Legal uncertainty due to unstable legislation over time
- Lack of clear rules on land use (acquisition by foreign capital), property rights, the environment (reform of the Forest Code), and labor regulations (RN 31)
- Rising trade and investment protectionism impacting supply chains

**Other challenges**
- Exchange rate: overvaluation and high volatility
- Agricultural protectionism around the world: tariffs, subsidies
- Lack of suitable financing and insurance mechanisms
- New technological breakthroughs
- Improved organizational structures to combine agricultural expansion and environmental conservation
CONCLUDING REMARKS

- Deep structural changes are coming due to strong population growth, higher per capita income and intense urbanization process in developing countries, and especially in SE Asia.
- Abundant natural resources and good technology performances are necessary conditions but not sufficient to ensure the future food security of the most dynamic regions. The equation is much more complex.
- It is fundamental to create international/regional integrated and efficient value chains. Identifying opportunities and removing potential bottlenecks require a special attention on:
  - How countries are inserted into the global agribusiness value chains
  - Trade policies that reduce agri-food protectionism
  - Who are the main players involved in each of the supply chains
  - Efficiency of land and maritime logistics (domestic and international)
  - Availability of modern trade and project finance instruments
  - Potential technology improvement and technology transfer
  - How (natural) resources can be used sustainably
THANK YOU!

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