The Pathway to a Sustainable, Low-Carbon Brazilian Beef Sector

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China imports: Is Brazilian beef the next Brazilian soy?

Challenges in Brazil
  • Sanitation, foot-and-mouth disease
  • Environmental impacts: the Amazon, the Cerrado
  • Environmental impacts: GHG emissions

Potential for a Brazil-China “low-carbon” beef partnership
  • A safe, low-carbon, sustainable beef supply?
New World Bank Publications:

“Beef in the Brazilian Amazon”, João Shimada and Daniel Nepstad

“Soybeans in the Brazilian Amazon”, Daniel Nepstad

“Palm oil in Indonesia”, John Watts, Silvia Irawan

Anticipated Release: June 2018
PRODUCTION
Brazil has the second largest cattle herd after India
State beef production and trade flows of Bovine meat between Brazilian ports and countries in 2008 (Million tons)

Total Brazil bovine meat production 2008 = 6.62 M tons
Total Brazil bovine meat exports 2008 = 1.14 M tons
Brazilian bovine meat exports, 2016: ~1/4th to China

State beef production and trade flows of Bovine meat between Brazilian ports and countries in 2016 (Million tons)

Total Brazil bovine meat production 2016 = 7.36 M tons
Total Brazil bovine meat exports 2016 = 1.36 M tons
**EXPORT**

Brazil is largest exporter of beef

Most exports go to Asia

80% of Brazil’s production destined for domestic market

<table>
<thead>
<tr>
<th>Destination of Frozen Bovine Meat from Brazil (2016)</th>
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<tr>
<td><strong>Hong Kong</strong></td>
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<td>19.3%</td>
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Based on state production

KG: 938 M kg
EXPORT
Brazil recently became China’s largest supplier of imported beef
Brazil, Argentina, Uruguay provide 62% of imports
Potential for Growth in Yields is High

A larger herd

Brazilian herd 2.5 times larger than US herd
Brazilian beef production is 28% less than US

with lower production

mostly grass-fed
Main pathways for increasing yield gains:

- Improved forage management
- Integrated crop-livestock production systems
- Semi-confined production
Forage grass (*Brachiaria brizantha*) planted in corn; corn planted after soybean harvest
Experimentos de integração lavoura-pecuária-floresta realizados na Embrapa Agrossilvipastoril, em Sinop (MT)

Fonte: EMBRAPA
Key barrier for achieving yield gains in fattening operations: finance

Greater Investment, Greater Yield (@=16kg)

The Profitability of Beef Intensification Is High

Most Brazilian Cattle Pastures With Low Productivity

Greater Profits
(earnings before interest & tax)
Sanitation: Brazil should be declared “free with vaccination” for foot-and-mouth disease by OIE in May

The 2005 FMD outbreak provoked a national contraction of the beef industry
1,100 Federal Police Officers

309 Court Orders
- 38 Arrests
- 77 Coercive Conduct
- 194 Search and Arrest

3 Meat Processing Plants
- Mineiros (GO) BRF
  - Produce: Poultry, Chester and Perdigão Turkey
- Curitiba (PR) Jaraguá do Sul (SC) PECCIN AGRO INDUSTRIAL
  - Produce: Sausage and Bologna Sausage

33 Officials of Agriculture Ministry Investigated

7 States
20 Arrested
Monthly Beef Exports 2016/2017: Short-lived Impact of “Weak Meat”

“Weak Meat” operation leads to market closures (2017)

Fonte: ABIEC
Doubling of Brazil’s cattle herd since 1974 to 216 million head; 80% of this expansion in Amazon and Cerrado

#1 Sustainability challenge: Amazon & Cerrado deforestation
Amazon deforestation

Cattle pasture on 70% of cleared land
Brazil has succeeded in lowering annual Amazon deforestation 70%
This success has avoided 6.5 billion tons of CO2 emissions

National REDD program complete

Average annual deforestation 1996-2005, 19,500 km²/yr

Avoided Emissions = 6.5 GtCO2eq
Creates potential for a “low-carbon beef” partnership
China-Brazil

Average annual deforestation 1996-2005,
19,500 km²/yr

Avoided Emissions = 6.5 GtCO₂eq
How did Brazil do it?

1. Law enforcement
2. Voluntary market agreements: Brazilian Soy Moratorium, Brazilian Cattle Agreement
3. Beef yield improvements (lower demand for new land)
4. 68% expansion of protected area system

Source: Nepstad et al. 2014 Science
Brazilian Cattle Agreement

- Initiated by Greenpeace & FOE campaign
- Four meat processors (Bertin, JBS, Marfrig, Minerva) pledged to exclude cattle purchase from producers who (a) deforested after 2009, (b) invaded parks, (c) forced labor
- Self-monitoring of compliance
- Reinforced by governmental legal action against processors in Pará state

Source: Shimada & Nepstad 2018, World Bank
Brazilian Cattle Agreement: latest developments

• 2017: “Carne Fria” (Illegal Beef) government operation found JBS illegally sourcing cattle

• Greenpeace withdrew from BCA

Other challenges:

• Self-monitoring lacked transparency

• BCA did not apply to breeders who supply finishing ranches with calves

Source: Shimada & Nepstad 2018, World Bank
New “jurisdictional” approach to sustainability

• Progress in reducing deforestation, increasing legal compliance, solving labor issues is measured at the entire state or province, not farm-by-farm
• Goals for the region are defined through multi-stakeholder dialogues, led by regional government
• Permits harmonization between supply chain strategies (like the Brazilian Cattle Agreement) and public policies and programs
Brazil’s Leading Jurisdictional Experiment:  
*Mato Grosso’s “Produce, Conserve, Include” Strategy*

- Mato Grosso is Brazil’s largest beef and soy producer  
- 60% of its forest still standing  
- State-wide goals for increasing production, slowing deforestation, increasing reforestation, including smallholders
Main goals of Mato Grosso PCI

Produce dashboard

Increase yearly grain production to 92 million tons by 2030

Increase livestock productivity to 95 kg/ha/year by 2030

The Mato Grosso PCI strategy

The PCI Strategy is based on a wide set of targets that aim to conciliate a sustainable low carbon economy with environmental conservation and social productive inclusion, contributing to climate change mitigation and adaptation.

What is this website about?
How far are we?
Who is helping?
Main goals of Mato Grosso PCI

Conserve dashboard

Maintain 60% of native vegetation in the state

Reduce deforestation in the Amazon biome in 90%, reaching a yearly deforestation rate of 571 km² by 2030

Reduce clearing of Cerrado woodland 95% below its historical levels by 2030

Reach 0% of illegal deforestation by 2020
Main goals of Mato Grosso PCI

Livestock productivity

Cattle heads (2001-2016)

Pasturelands 2015: 23.79 Millions ha

Stocking rate 2015: 1.23 heads/ha

Weight of slaughtered cattle 2015: 1,171 Millions kg

Source: IMFA
Brazilian beef is mostly grass-fed, without hormones (illegal), no antibiotics (only if animal is ill)
Status of Amazon Cattle Today

• Huge potential for increasing production & export through yield improvement
• Most cattle ranches registered under the “Rural Environmental Registry” (CAR)
• High potential to achieve a low-carbon, legal cattle industry—partnership on climate change mitigation with China?
• Farmer/rancher fatigue with “demonization” by NGOs
• Need for more “carrots”, not sticks
Conclusion:

• Brazil poised to help China address its domestic beef deficit

• Excellent potential for developing a collaborative, mutually beneficial sourcing agreement

• Excellent potential for China to be formally connected to Brazil’s historic achievements in conserving the Amazon and reducing GHG emissions

• Possible links to infra-structure development