Amsterdam Declaration Group Meeting
Sharing Responsibility for Deforestation-free sustainable Soya

The challenges of the Brazil soy value chain

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20th November, 2011
Brazilian Association of Vegetable Oil Industries: Members
Summary

- Soybean value chain in Brazil
- Soybean production expansion: planted area and yield increase
- Social indicators
- The Brazilian territory
- Soybean expansion patterns in Brazil: Amazon and Cerrado
- Soy Moratorium and Cerrado Working Group
- Procurement Policies and Traceability Platforms
Soybean Value Chain: Supply and Demand. Demand is Uneven, China is too Big

2018
Million tons

Production 119,5
Crushing 43,6
Meal 32,8
Oil 8,65
Exports 77

Exports 16,75
Domestic Use 15,5
Exports 1,4
Domestic Use 7,6
Biodiesel 3,6

China: 80%
UE: 7%
Asia (other): 5%
Other: 8%

UE: 50%
Asia: 43%
Middle East: 5%
Other: 3%

Source: ABIOVE
Soybean Production Expansion: Yields are Growing Strongly but Area Expansion is necessary to Meet Demand Growth

Agricultural Sector: Total Factor Productivity Growth (2000 to 2015)

<table>
<thead>
<tr>
<th>Country</th>
<th>2000-2015 Growth</th>
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<tbody>
<tr>
<td>China</td>
<td>3.5%</td>
</tr>
<tr>
<td>Brazil</td>
<td>3.0%</td>
</tr>
<tr>
<td>France</td>
<td>2.6%</td>
</tr>
<tr>
<td>Argentina</td>
<td>1.6%</td>
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<tr>
<td>Chile</td>
<td>2.2%</td>
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<tr>
<td>Germany</td>
<td>1.9%</td>
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<tr>
<td>India</td>
<td>2.1%</td>
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<tr>
<td>United States</td>
<td>1.8%</td>
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<tr>
<td>Canada</td>
<td>1.6%</td>
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<tr>
<td>New Zealand</td>
<td>0.8%</td>
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<tr>
<td>Australia</td>
<td>1.0%</td>
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Soybean: Demand and Supply Growth (from 1990 to 2018)

<table>
<thead>
<tr>
<th>Region</th>
<th>Demand CAGR</th>
<th>Supply CAGR</th>
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<tbody>
<tr>
<td>World</td>
<td>4%</td>
<td>2%</td>
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<tr>
<td>Brazil</td>
<td>3%</td>
<td>5%</td>
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<tr>
<td>Argentina</td>
<td>1%</td>
<td>6%</td>
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<tr>
<td>US</td>
<td>1%</td>
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Soybean: Main Producers

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<thead>
<tr>
<th>Country</th>
<th>Area Harvested</th>
<th>Yield</th>
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<tbody>
<tr>
<td>Brazil</td>
<td>42,613</td>
<td>119,800</td>
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<td>Argentina</td>
<td>120,039</td>
<td>55,000</td>
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<td>US</td>
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Source: USDA
Soybeans bring significant economic and social benefits according to the Municipal Human Development Index - MHDI

Source: IBGE, 2010
Social Indicators

Activities that paid the highest salaries
Average monthly income of the main job in 2017 (US $)

Agribusiness activities that most generate occupations
Average of population occupied in 2017 (x1000)

- Soybean cultivation: $2,610
- Wheat cultivation: $2,334
- Grape cultivation: $1,867
- Livestock (non-specified): $1,866
- Swine production: $1,816
- Aquaculture: $1,726
- Breeding of cattle: $1,724
- Tobacco cultivation: $1,557
- $1,495

Source: FGV, 2018
About the Brazilian territory

Some facts...

- 4,8 Mha of soybean
- 14.1% of the Brazilian soybean planted area
- 1.14% of the Amazon biome
- 98.6% of soybean expansion occurred in already cleared areas (from 2008 until now)

Source: Agrosatélite, 2017
Some facts...

- 17 Mha of soybean
- 50% of the Brazilian soybean planted area
- 8% of the Cerrado biome
- 93% of soybean expansion occurred in already cleared areas (from 2014 until now)

Source: Agrosatélite, 2017
Historical evolution of soybean area on deforestation

**Cerrado**

Accumulated Area from 2001/02: 2,900 thousand hectares in 16 years

Annual increase of soybean area on deforestation (1,000 ha)

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**Legal Amazon**

Accumulated Area from 2008/09: 47.4 thousand hectares in 9 years

Annual increase of the soybean area on deforestation (1,000 ha)

<table>
<thead>
<tr>
<th>Year</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
<th>2016/17</th>
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<tbody>
<tr>
<td>2013/14</td>
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<td>2014/15</td>
<td>8.30</td>
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<td>2015/16</td>
<td>8.39</td>
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<tr>
<td>2016/17</td>
<td>10.21</td>
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</tbody>
</table>

Source: Agrosatélite, 2018.
How soybean expansion is occurring on Cerrado, 2001 - 2017

Cerrado
2001/02- 2006/07

1.0 ha soybean

27% native vegetation

Cerrado
2006/07- 2013/14

18%

Cerrado
2013/14- 2016/17

7%

Soybean
2001/02

0.79 Mha/yr (net)

0.81 Mha/yr (new areas)

Soybean
2006/07

0.43 Mha/yr (net)

10.1

Soybean
2013/14

0.47 Mha/yr (net)

15.6

Soybean
2016/17

17.1

Source: Adapted from Agrosatélite, 2018
How soybean expansion is occurring on Amazon, 2008 - 2017

Source: Adapted from Agrosatélite, 2018
How much soy was planted in newly converted areas

Cerrado (2014 and 2015)

- Soybean area
- Other uses

Amazon (2008-2017)

- Soybean area
- Other uses

Source: Agrosatelítie, 2018
1. Amazon Moratorium – 12 years

2. Soya Plus – 7 years

3. Pará State Grain Protocol – 4 years

4. Used oil reversal logistics – 5 years

5. Package reversal logistics – 5 years

6. Cerrado Working Group – GTC – 1 year
Procurement Policies and Traceability

- Decision-making process for the purchase / financing of soy by companies:

**Soybean**
- Farm data
- Owner data

**Sourcing**
- i
- ✔
- ❌

**Sustainability**
- i
- ✔
- ❌

**Legal**
- i

**Controller**
- i

**Risk assessment analysis**
- i
- ✔
- ❌

**GIS**
- i

**Today**
- Soy moratorium List
- Embargoed area List
- Slave Labour List
- Invoice
- Protected areas and indigenous land

**Future/under implementation**
- Rural Environmental Registry (CAR)
- Deforestation permits
Final Remarks

- Land use change: deforestation associated to soybean expansion is small and decreasing rapidly.
- Brazilian environmental and labor regulations are very strong, delivering high sustainability patterns in the soybean and soy meal.
- Traceability platforms, integrated to official systems (CAR, etc.), guarantee information along the supply chain.
- Market, however, continues to buy soybean and soy meal as a commodity, not rewarding the sustainability patterns in the production.
- The combination between high sustainability patterns and traceability systems allow Brazil to offer several kinds of soybean.