Update on Ag Logistics Infrastructure in Brazil
APROSOJA – Mato Grosso State Soybean and Corn Growers Association

APROSOJA represents soybean and corn farmers from Mato Grosso-Brazil on domestic and international policy and regulatory issues.

Soybean farmer advocacy, with policy focus on farm programs, sustainability, biotechnology, transportation, biodiesel, land use, regulatory and research.

Communications and education with farmers and on behalf of farmers

5000+ farmer members, representing 30% of Brazilian soybean production

Headquartered in Cuiabá-MT, and affiliated to Aprosoja Brasil, located in Brasilia.
Agribusiness Sector in Brazil
Grain and Oilseed Production - Brazil

**PIB - em R$ bilhões / Agribusiness GDP in R$ Billions**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value (Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>642.6</td>
</tr>
<tr>
<td>2008</td>
<td>764.5</td>
</tr>
<tr>
<td>2009</td>
<td>738.6</td>
</tr>
<tr>
<td>2010</td>
<td>879.1</td>
</tr>
<tr>
<td>2011</td>
<td>917.6</td>
</tr>
<tr>
<td>2012*</td>
<td>917.6</td>
</tr>
</tbody>
</table>

**Participação no PIB / Agribusiness GDP % of Total**

- 2007: 24.1%
- 2008: 25.2%
- 2009: 22.8%
- 2010: 23.3%
- 2011: 22.1%
- 2012*: 20.8%

**Balança comercial - R$ bilhões / Agribusiness Foreign Trade**

<table>
<thead>
<tr>
<th>Year</th>
<th>Exportações</th>
<th>Importações</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>58.4</td>
<td>8.7</td>
</tr>
<tr>
<td>2008</td>
<td>71.8</td>
<td>11.8</td>
</tr>
<tr>
<td>2009</td>
<td>64.7</td>
<td>9.9</td>
</tr>
<tr>
<td>2010</td>
<td>76.4</td>
<td>13.4</td>
</tr>
<tr>
<td>2011</td>
<td>95.0</td>
<td>17.5</td>
</tr>
<tr>
<td>2012*</td>
<td>95.8</td>
<td>16.4</td>
</tr>
</tbody>
</table>

**Participação nas exportações totais do país / Ag Foreign Trade % of Total**

- 2007: 36.36%
- 2008: 36.28%
- 2009: 42.53%
- 2010: 37.86%
- 2011: 37.00%
- 2012*: 39.50%

*Source: MAPA*
Grain and Oilseed Production - Brazil

- **Production (Million MT)**
- **Area (Million hectares)**

Change %
Seasons 1990/91 to 2012/13

- Production: + 218%
- Area: + 40%
- Yield: + 127%

*Increases in yield allowed acreage “savings” of approximately 67 Million hectares.*

Meat Production – Brazil

Production in Million MT

Poultry (+ 458%)

Beef (+ 88%)

Swine (+ 238%)
Brazil Agribusiness Exports in US$ - 2012

By Product

2012
(US$ 95,8 bi)

Fontes: MDIC
Brazil Agribusiness Exports in US$ - 2012

By Destination

2012
(219 Countries)

- U.E 27 - 23,4% / EU
- China - 18,8%
- Ásia (-China, -Or. Médio) - 17,0%
- África (-Or. Médio) - 9,0%
- Oriente Médio - 8,8% / Middle East
- EUA - 7,3% / USA
- Aladi (-Mercosul) - 5,4% / Latin America
- Europa Oriental - 4,4% / Eastern Europe
- Mercosul - 2,4%
- Demais - 3,5% / Other

Fontes: MDIC
Brazil is a Major Player in Important Ag Commodities

<table>
<thead>
<tr>
<th>Product</th>
<th>Exports</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange Juice</td>
<td>1st</td>
<td>1st</td>
</tr>
<tr>
<td>Sugar</td>
<td>1st</td>
<td>1st</td>
</tr>
<tr>
<td>Poultry</td>
<td>1st</td>
<td>3rd</td>
</tr>
<tr>
<td>Coffee</td>
<td>1st</td>
<td>1st</td>
</tr>
<tr>
<td>Beef</td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>Soybeans</td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>Corn</td>
<td>3rd</td>
<td>3rd</td>
</tr>
<tr>
<td>Pork</td>
<td>4th</td>
<td>4th</td>
</tr>
</tbody>
</table>

- Exports: Orange Juice 79%, Sugar 47%, Poultry 36%, Coffee 29%, Beef 20%, Soybeans 29%, Corn 10%, Pork 10%
- Production: Orange Juice 62%, Sugar 24%, Poultry 16%, Coffee 35%, Beef 16%, Soybeans 23%, Corn 7%, Pork 3%

» Etanol: 2nd Largest Producer

Fonte: USDA (jan/2012) Nota: 2011 (carnes) e safra 2010/11 (demais produtos), Elab por DEAGRO/FIESP
How we do This? Cutting Edge Technology and Scale

<table>
<thead>
<tr>
<th>No-Till</th>
<th>Crop-Livestock Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="No-Till Image" /></td>
<td><img src="image2" alt="Crop-Livestock Image" /></td>
</tr>
<tr>
<td>Large Scale and Corn 2\textsuperscript{nd} Crop</td>
<td>Precision Ag, Top Machinery and Inputs</td>
</tr>
<tr>
<td><img src="image3" alt="Large Scale and Corn 2\textsuperscript{nd} Crop Image" /></td>
<td><img src="image4" alt="Precision Ag, Top Machinery and Inputs Image" /></td>
</tr>
</tbody>
</table>
Brazil’s Agribusiness Success is a Reality Worldwide
Ag Logistics in Brazil
**Sorrizo - Santos**

1. Sorrizo – A. Araguaia, MT
   - 522 miles

2. Alto Araguaia - Santos, SP
   - 687 miles

**TOTAL: 1.209 miles**

Source: Aprosoja
Soybean and Corn Export Route – Example 2

**Querência - Vitória**

1. Querência, MT – Araguari, MG
   - 719 miles

2. Araguari, MG – Vitória, ES
   - 890 miles

**TOTAL: 1,609 miles**

Source: Aprosoja
Soybean and Corn Export Route – Case of Success

**Madeira River Waterway**

1. Sapezal – Porto Velho, RO
   - 600 miles

2. Porto Velho – Manaus, AM
   - 691 mi
   - Or
   - 2. Porto Velho – Santarém, PA
     - 1.002 mi

**TOTAL (Manaus): 1.291 mi**

**TOTAL (Santarém): 1.602 mi**

Source: Aprosoja
Soybean and Corn Export Route – Madeira River

- Itacoatiara – AM
  Est 1997

- Porto Velho – RO
  Est 1997

- Santarém – PA
  Est 2003
Logistics Infrastructure Benchmark

Railways

Ports System

Source: ANTF / COPPE
Soybean Logistics – Main Export Modals

Road: 72%

River Waterways: 47%

Fontes: ANTAQ, ANTT, ABIOVE, AvaCom – Grains & Oilseed e USDA/FAS. Obs.: dados dos EUA de 2010.
Logistics Costs Benchmark (2012)

- **Sorriso, Brasil**
  - Road: US$ 112/Ton
- **Santos, Brazil**
  - US$ 50 + 8$/Ton
- **Córdoba, Argentina**
  - Road: US$ 36/Ton
- **Rosário, Arg**
  - US$ 66/Ton
- **Illinois, USA**
  - Barge: US$ 23/Ton
- **New Orleans, USA**
  - US$ 47/Ton

*US$ 8.00/Ton equals to 20 days line up wait of a Panamax Vessel

Source: USDA, Aprosoja, BCR Rosário
Logistics Costs and Ports Export Share (Corn and Soybeans 2012)

Source: Aprosoja and MDIC

Total Corn + Soybeans Exports in 2012: 52 Million Tons
Regional Unbalance Between North and South (Corn and Soybeans 2012)

Source: Aprosoja, CONAB and MDIC
Storage Capacity is not Enough

Goal: 195

Source: CONAB, Elab: Agroconsult
Projetos bilionários do PAC têm atraso de até 54 meses

É o caso da Ferrovia Norte-Sul e do Eixo Leste da Transposição do Rio São Francisco

BRASÍLIA - Cinco anos após a criação do Programa de Aceleração do Crescimento (PAC), as maiores obras de infraestrutura do país têm atraso de até 54 meses em relação ao cronograma original. É o caso da Ferrovia Norte-Sul e do Eixo Leste da Transposição do Rio São Francisco.
Transportation Costs – Sorriso – Santos (US$/Ton)

Source: iMEA
“Caos em Santos não é culpa da supersafra”, diz Cargill

Demora para escoar soja eleva em 50% valor do frete e afeta companhia

Além da soja, demanda por milho e açúcar tende a agravar problema e reduzir lucro das empresas

Logistics Caos - 2013

Caos logístico pode atrasar vendas da próxima safra

Com atraso para escoar a safra, frete sobe até 50%

Além dos problemas com a soja, demanda por milho e açúcar tende a agir

Caos logístico diminui ritmo das vendas de soja e reduz preços

Comercializadoras fecham menos negócios para evitar quebra de contratos de exportação

Imagine o Brasil sem esse caos logístico

O desempenho econômico está de volta. Mas não vamos ver mais isso.

Porque se esquecemos de infraestrutura, a produção e o comércio ficam presos. Afinal, é a infraestrutura que movimenta o país.

O Globo
What Went Wrong?
Timeline of Brazil Logistics

Grain+ Oilseeds Production (Million MT)

- **Ports Modernization Law (93)**
- **First Madeira Waterway Soybean Shipment**
- **Cardoso leaves Govt. Lula is President (03)**
- **Grain Storage Plan (R$ 25 bi)**
- **New Ports Law / New Truck Drivers Law**
- **Privatization of Railway System (92)**
- **Begin Privatization of Highway System (95)**
- **New Currency – Real (R$) (94)**
- **PAC – Growth Acceleration Program (07)**
- **Railway Reaches Mato Grosso**
- **PAC 2 Launched (2010)**
- **Santarem Port Starts to Operate**
- **PIL launched (12)**

Source: Aprosoja
What Went Wrong

Poor PAC Administration

From 2007 to 2012 only 60% of the total budget allocated for the PAC Program (1 and 2) was spent (R$ 126 Billion Reais)

Excessive Bureaucracy

From 2007 to 2012 only 60% of the total budget allocated for the PAC Program (1 and 2) was spent (R$ 126 Billion Reais)

Lack of Planning

The PAC Programs are a collection of projects, therefore it is not based on an integrated long term logistics plan

PIL and Storage Plan were late

PIL, the PAC 3, ou Concessions PAC is centered on PPPS (Public Private Partnerships) and has the potential to overcome some of the bureaucracy problems of the country

Recent Success Story

Most of dynamics in the logistics sector, including privatizations, concessions and new developments, only started to happen in Brazil after 1990, and was followed by huge production growth

Source: Aprosoja
Rail Investments
PIL (Plano de Investimento em Logistica) in Summary

**Railways**

- **91** R$ Billion
- **10,000 km**
- **56 R$ billions** in the first 5 years
- **35 R$ billions** over 20 years

Source: EPL
Railroad Projects – PAC and PIL (Concession Program)

Railroads - PIL

1. Ferroanel SP – Tramo norte
2. Ferroanel SP – Tramo Sul
3. Acesso ao Porto de Santos
4. Lucas do Rio Verde - Uruaçu
5. Uruaçu – Corinto - Campos
6. Rio de Janeiro - Campos - Vitória
7. Belo Horizonte – Salvador
8. Salvador - Recife
9. Estrela d’Oeste – Panorama - Maracaju
10. Maracaju – Mafra
12. Açailândia – Vila do Conde

- Railroads in Study
- PAC – in Excution
- Current Railroads

Source: EPL
Railroad Projects – PAC and PIL (Concession Program)

Railroads – PAC

2.576 km de obras em andamento – Destaques

- Ferrovia Norte-Sul – Trecho Sul
  - Palmas/TO-Uruaçu/GO – 89% realizados
  - Uruaçu/GO-Anápolis/GO – 87% realizados
  - Anápolis/GO-Estrela d’Oeste/SP – 33% realizados

- Ferrovia Nova Transnordestina – 40% realizados

- Ferrovia de Integração Oeste Leste – Trecho Ilhéus-Caetité/BA – 16% realizados

- Ferrororte – Itiquira/MT-Rondonópolis/MT – 99% realizados

Source: 7 Balanco PAC – JAN/ABRIL 2013
New Regulatory Framework for New Rail Concessions

Construction
Government will hire contractors to build the railways

Demand Risk
Federal Government will buy the entire supply of freight services for the railroad and resell to logistics carriers

Railroad Operator (Concessionaire)
Under this new framework, the company that has the concession does not operate trains or wagons, only manage the system

Rail Operators
Independent rail operators (carriers) will be able to operate in the new rail concessions, which should generate competition

Unbundling
Rail operators will have access to the entire rail network, and the cost will be controlled by the Federal Government
The Public Tender for the Concession is already Late

Source: EPL
Roads
PIL (Plano de Investimento em Logistica) in Summary

**Roads**

- Total: 42 R$ Billion
- First 5 years: 23.5 R$ billions
- 20 years: 18.5 R$ billions
- 7,500 km

Source: EPL
Road Projects – PAC and PIL (Concession Program)

Source: EPL
Most Important Road Project in PAC for Ag – BR 163
(1011 km)

Source: Aprosoja
The Public Tender for the Concession is on time
Investments in Ports
PIL (Plano de Investimento em Logistica) in Summary

Ports

54.2 R$ Billion

31 R$ billions
Until 2015

23.2 R$ billions
Until 2016/17

Source: EPL
## New Regulatory Framework for Port Concessions

### Bidding Criteria
- Cargo volume capacity, lower tariff per unit and agility, instead of highest premium paid

### Workers
- New legislation did not change this aspect, but kept the right of independent export terminal operators to hire any labor, independently from labor union.

### Own/Third Party Cargo
- Now companies who operate mainly third party cargo will be able to apply for independent export terminals (TUPs)

### Old Contracts
- Will be respected. As these contracts are renewed, they are adjusted to the new legislation

### 24 hrs
- Now all government services in ports will have to be 24/7, including customs, Ministry of Agriculture, etc

Source: FIESP
### Investment in Ports According to PIL (Concession PAC)

<table>
<thead>
<tr>
<th>UF</th>
<th>Portos</th>
<th>2014/15</th>
<th>2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES</td>
<td>Vitória</td>
<td>6.512</td>
<td>6.875</td>
</tr>
<tr>
<td>RJ</td>
<td>Itaguaí/Rio de Janeiro</td>
<td>7.053</td>
<td>4.466</td>
</tr>
<tr>
<td>SP</td>
<td>Santos/São Sebastião</td>
<td>2.944</td>
<td>805</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>16.509</td>
<td>12.146</td>
</tr>
</tbody>
</table>

Source: EPL
## Investment in Ports According to PIL (Concession PAC)

<table>
<thead>
<tr>
<th>UF</th>
<th>Portos</th>
<th>2014/15</th>
<th>2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>Itaqui</td>
<td>2.722</td>
<td>1.872</td>
</tr>
<tr>
<td>BA</td>
<td>Aratu / Salvador / Porto Sul / Ilhéus</td>
<td>1.295</td>
<td>2.760</td>
</tr>
<tr>
<td>PE</td>
<td>Recife/Suape</td>
<td>1.414</td>
<td>527</td>
</tr>
<tr>
<td>CE</td>
<td>Pecém</td>
<td>1.224</td>
<td>—</td>
</tr>
<tr>
<td>PA</td>
<td>Cabedelo</td>
<td>107</td>
<td>—</td>
</tr>
<tr>
<td>AL</td>
<td>Maceió</td>
<td>12</td>
<td>—</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>6.775</strong></td>
<td><strong>5.159</strong></td>
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Source: EPL
## Investment in Ports According to PIL (Concession PAC)

<table>
<thead>
<tr>
<th>UF</th>
<th>Portos</th>
<th>2014/15</th>
<th>2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR</td>
<td>Paranaguá - Antonina</td>
<td>1.038</td>
<td>3.329</td>
</tr>
<tr>
<td>SC</td>
<td>Imbituba/Itajaí/ São Francisco do Sul</td>
<td>1.343</td>
<td>781</td>
</tr>
<tr>
<td>RS</td>
<td>Porto Alegre/ Rio Grande</td>
<td>982</td>
<td>140</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>3.363</td>
<td>4.250</td>
</tr>
</tbody>
</table>

Source: EPL
## Investment in Ports According to PIL (Concession PAC)

### Norte

<table>
<thead>
<tr>
<th>UF</th>
<th>Portos</th>
<th>2014/15</th>
<th>2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>Belém/Miramar/Outeiro/Santarém/Vila do Conde</td>
<td>3.137</td>
<td>1.505</td>
</tr>
<tr>
<td>AM</td>
<td>Itacoatiara/Manaus</td>
<td>985</td>
<td>92</td>
</tr>
<tr>
<td>AP</td>
<td>Macapá</td>
<td>135</td>
<td>–</td>
</tr>
<tr>
<td>RO</td>
<td>Porto Velho</td>
<td>115</td>
<td>–</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>4.372</strong></td>
<td><strong>1.597</strong></td>
</tr>
</tbody>
</table>

Source: EPL
Primeiro leilão de portos sob nova lei será em outubro, diz Gleisi

No total, serão 52 terminais licitados nos portos de Santos (SP) e Pará. Ministra disse que governo pretende licitar mais três blocos até fim do ano.

A ministra da Casa Civil, Gleisi Hoffmann, afirmou nesta quarta-feira (5) que o governo pretende lançar em outubro deste ano a primeira rodada de licitações de arrendamentos de terminais portuários cujos contratos estão vencidos.

No total, serão 52 terminais licitados nos portos de Santos (SP) e Pará. As licitações serão
Investments in Waterways
Potential Waterways in Brazil

- 44,000 km of Potential Waterways
- Only 13,000 km of effective Waterways
- Clearly not a focus of our Government despite of all the benefits

Fonte: ANTAQ.
Waterways with Enormous Potential for Grain Transport

Source: Aprosoja

Tucurui Locks - R$ 1 Billion Finished: July/10

Study Phase
- 5 locks
- 5 MM Tons/yr capacity

Tucurui Locks - OK
Now Investments required in rocks removal

Paraguai Waterway – Environmental Licensing

Source: Aprosoja
Future Perspectives
What Magazine Cover Do We Really Deserve?

Nov 2009

The Economist

Brazil takes off

A 14-PAGE SPECIAL REPORT ON LATIN AMERICA’S BIG SUCCESS STORY

July 2013

The Economist

The great deceleration

Detroit and America’s pension time-bomb
SuperAbe’s new powers
Investors, beware the Ides of August
Vivat lingua latina.com
The life of Asia’s heroin king
Feasible Projects for the Next 5 Years

- **Ferrovia Norte-Sul** as far as Estrela d’Oeste
- **BR-163 Road** from Northern Mato Grosso to Santarém/PA
- **BR-080 Road**, connecting Mato Grosso to Luis Alves (Goias)
- **BR-158 Road** and BR 242, both in Mato Grosso state
- River Elevator of **Marabá/PA** and Export Terminal of **Vila do Conde/PA**
- River Elevators in **Miritituba/PA** and Export Terminal of **Santana/AP**

**Legenda:**
- Road
- Railroad
- Waterway
- Cidade
- Porto

Fontes: DNIT, PAC, VALE, ALL, Ministério dos Transportes/Elaboration: Agroconsult