



Toward Improving Grain Transportation Infrastructure in Brazil



**The Second Seminar on Improving Grain Transportation
Infrastructure in Brazil
October 27th, 2016**

**Tatsuya Kajishima
Deputy Director-General for International Affairs
Ministry of Agriculture, Forestry and Fisheries
Japan**

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Outline of Presentation

- I. Background for the Need to Improve
Grain Transportation Infrastructure**
- II. Interests and Concerns of Japanese
Companies**

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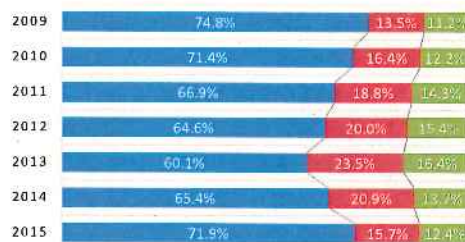


I. Background for the Need to Improve Grain Transportation Infrastructure

- Necessity for diversifying grain import sources in case of the world food crisis and other factors
- Brazil as the main supplier of soybean and corn for Japan

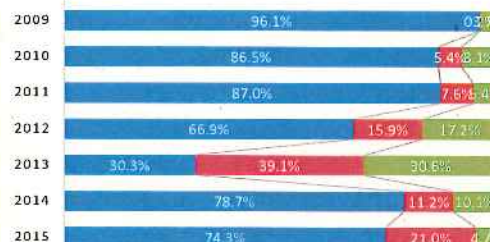
Japan's Soybean Imports

United States Brazil Others



Japan's Corn Imports for Feed Use

United States Brazil Others

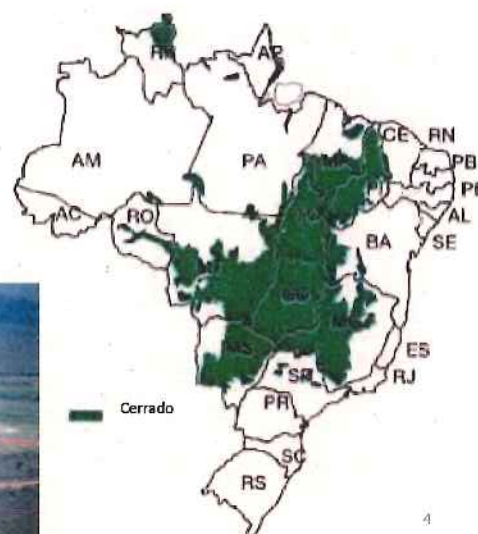


Source: Ministry of Finance of Japan, "Trade Statistics"

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PRODECER changed Cerrado into the world's leading grain-growing region



4



Factors to Influence Decision on Soybean and Corn Procurement

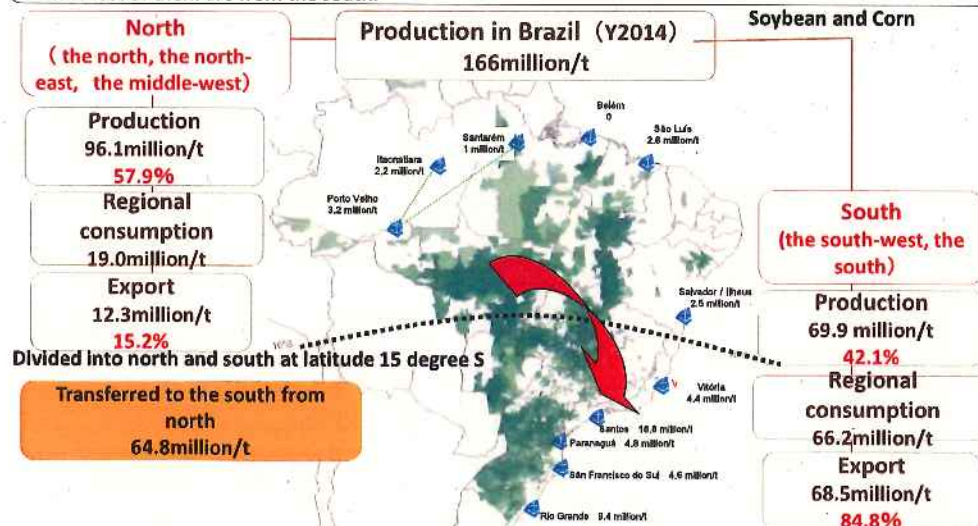
- Quality
- Price
 - price of commodity
 - transportation cost
 (The duties of soybean and corn are free!)
- Credibility of supplier

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Agricultural Production-Export Flow



Brazil is divided into north and south at latitude 15 degree south, and the production of Soybean and Corn are almost equal. However, the two thirds of products which are produced in the north are transferred to the south, because the consumption area, export terminal and distribution center are all concentrated in the south. Half of the products produced in Brazil are exported to the rest of the world and most of them are from the south.



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Dialogues between Japan and Brazil

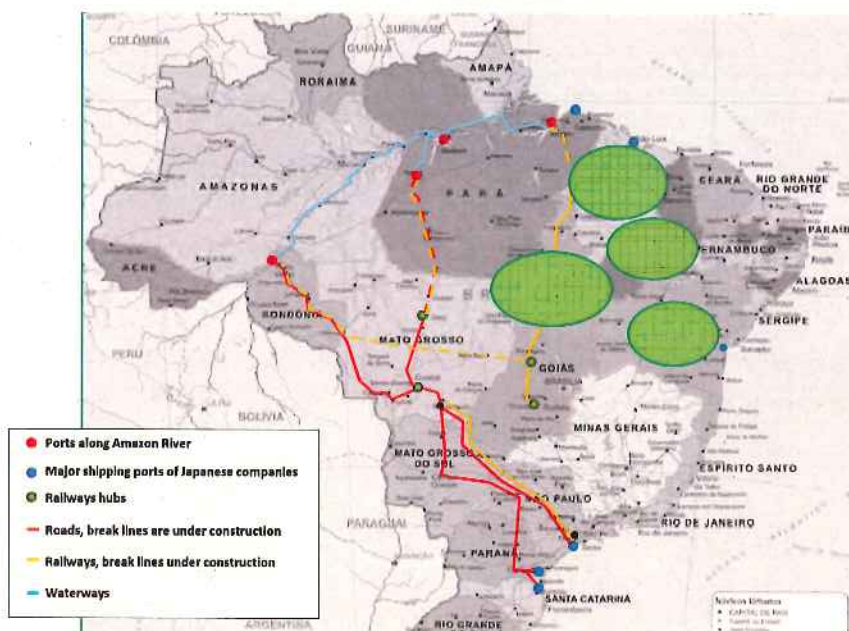


- June, July and November 2014: Japan-Brazil Joint Meeting on Grain Transportation
- August 2014: Joint Statement on the Establishment of the Strategic and Global Partnership between Japan and Brazil

"Upon acknowledging the strategic importance of the infrastructure networks for the transportation of grain and other agricultural products in Brazil, the two leaders decided to commence a dialogue on this matter among the relevant Ministries, agencies and other concerned organizations in both countries, including the private sector as needed."
- December 2014: 1st Japan-Brazil Dialogue on Food and Agriculture
- February-October 2015: JICA's survey on collection and verification of information about grain transportation network development in Northern Brazil
- October 2015: MAFF's seminar on improvement of grain transportation infrastructure
- February 2016: 2nd Japan-Brazil Dialogue on Food and Agriculture
- October 2016: 19th Session of Japan-Brazil Economic Committee

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Three Corridors





II. Concerns and Interests of Japanese Companies

**Outline of the Questionnaire Survey
by MAFF of Japan and Embassy of Japan in Brazil
to IDENTIFY interests and concerns**

- Survey date: August 26 to September 5, 2016
- Survey target: Infrastructure related companies
which are members of Câmara de
Comércio e Indústria Japonesa do
Brasil

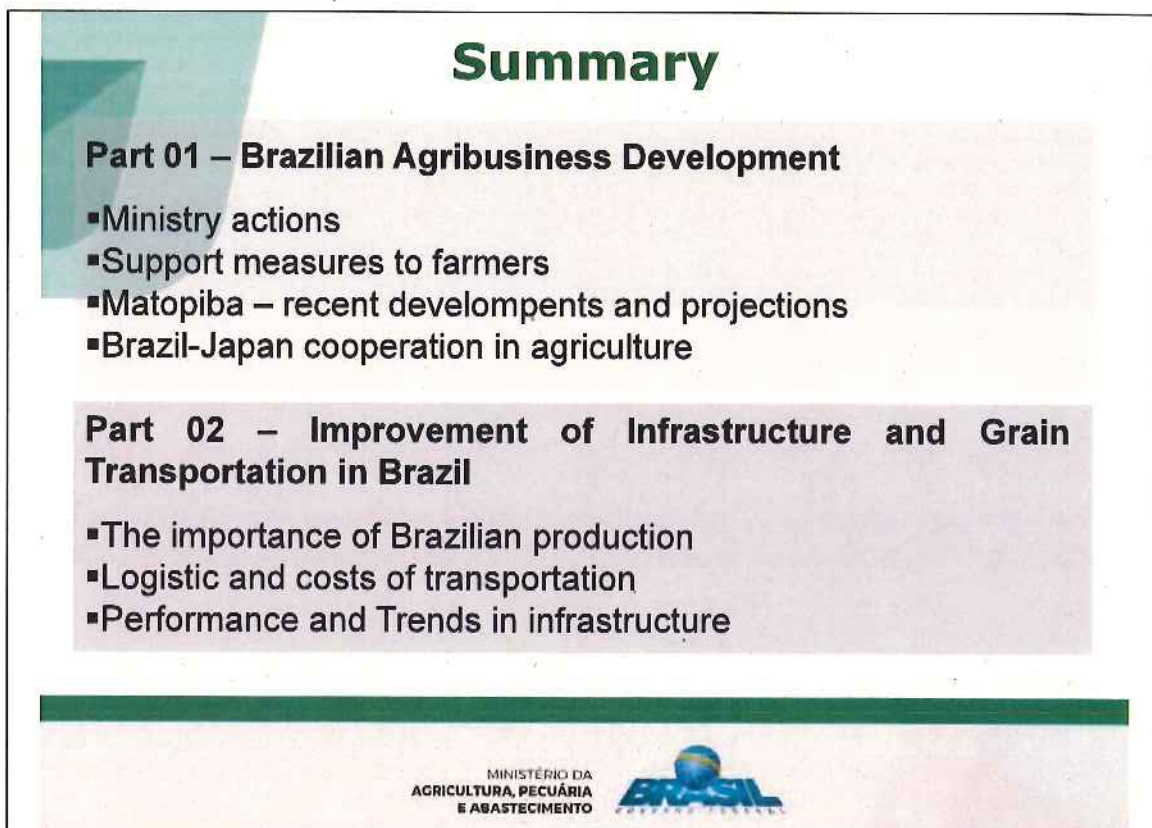
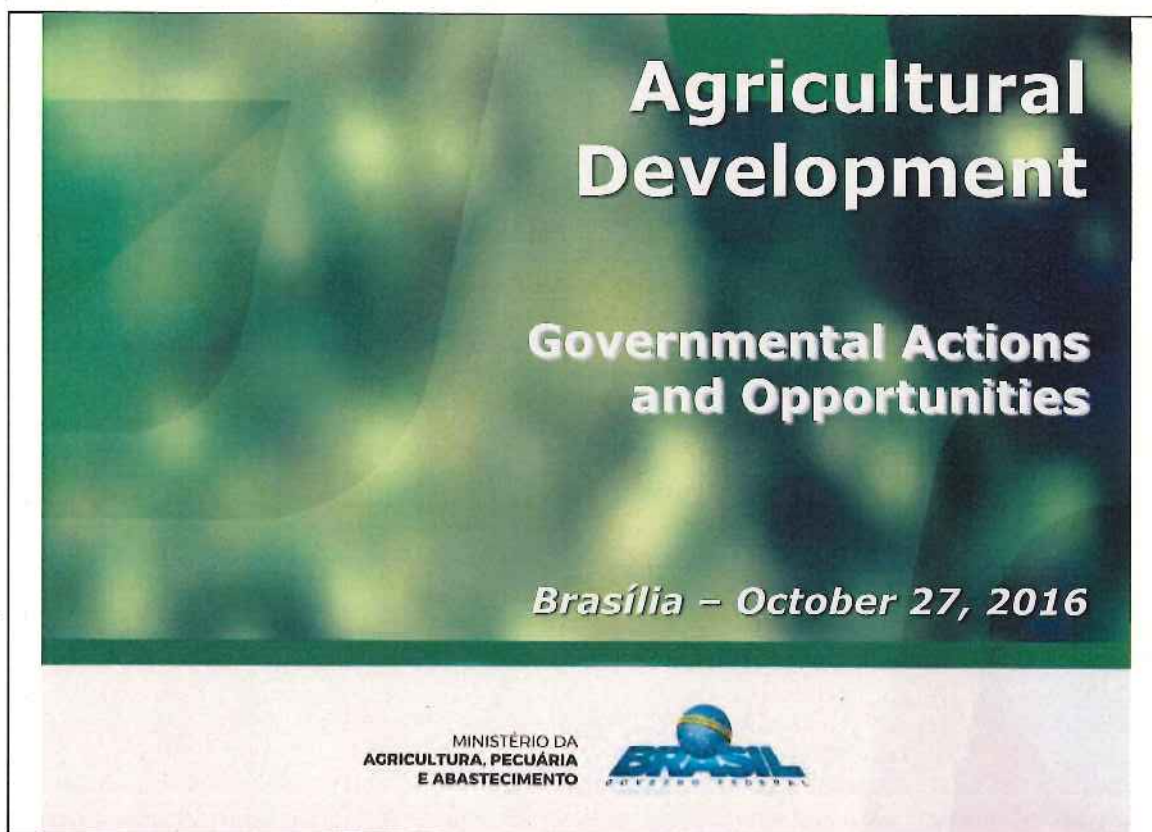
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**Thank you very much
for your attention!**

Obrigado!

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Part 01

Brazilian Agribusiness Development

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Agricultural policy



Making Brazilian agribusiness
more efficient,
more sustainable
and more competitive

- **Sustainability**
- **Food safety**
- **Efficiency**

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Agricultural policy

- Guarantee food safety
- Provide proper financing to farmers
- Access international markets
- Foster sustainable agriculture



Brazilian agricultural policy support farmers without restraining their market decisions

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Support Measures to Farmers

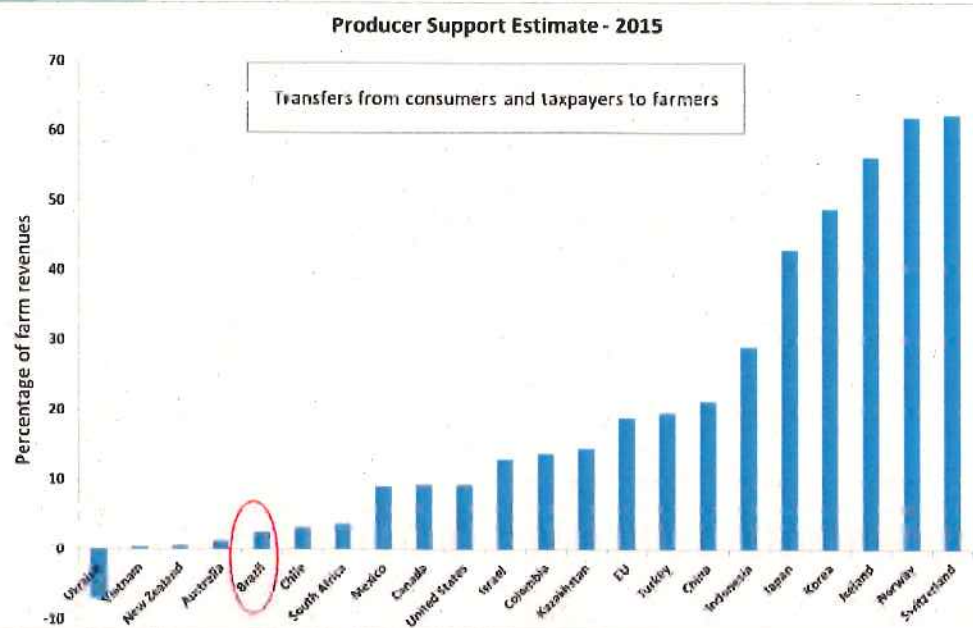
- Availability of rural credit
 - Working capital
 - Investment
 - Commercialization
- Agricultural zoning
- Crop insurance
- Minimum Price Guarantee Program (PGPM)



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Brazilian agriculture doesn't rely on subsidies

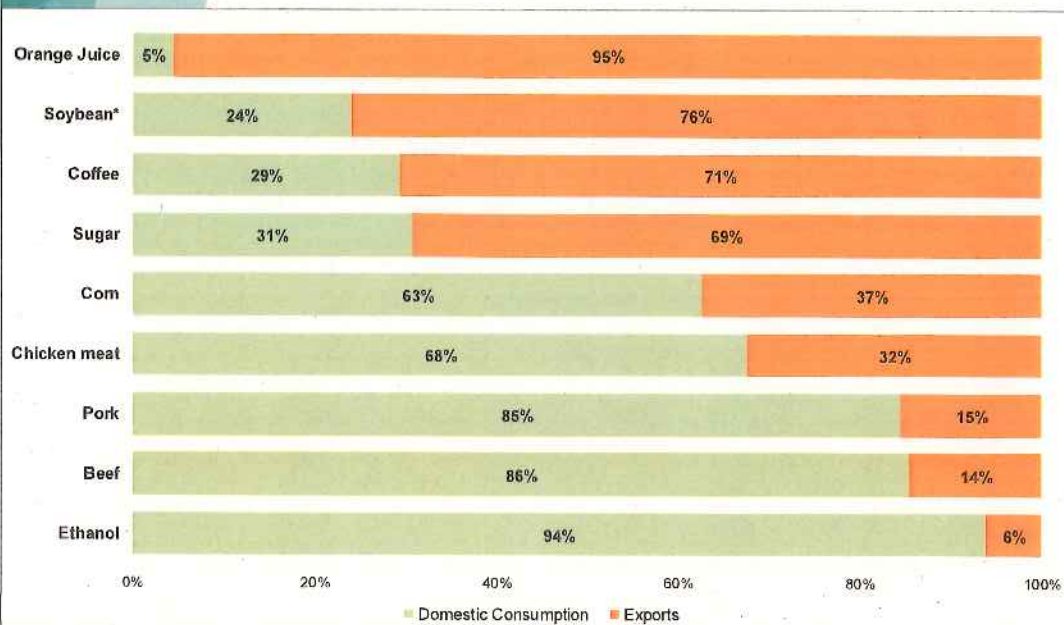


Source: OECD

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Brazil: domestic consumption and exports

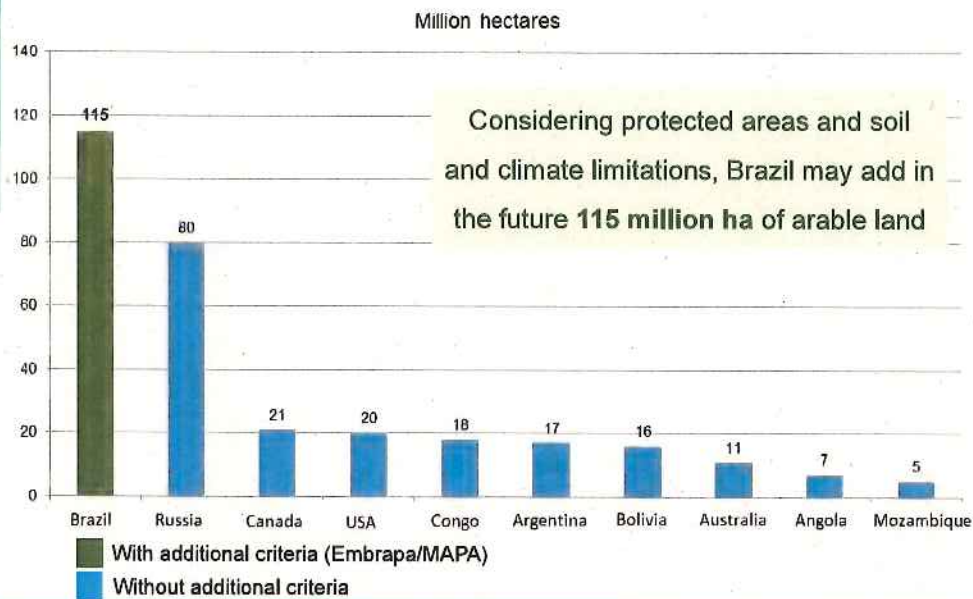


Source: USDA, 2015/16; AgroStat, 2015.
Made by: SRU/MAPA.
Data extracted in June, 2016.

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World: arable land, not yet cultivated



Source: FAOSTAT, GAEZ, SAGE/GATP, Embrapa

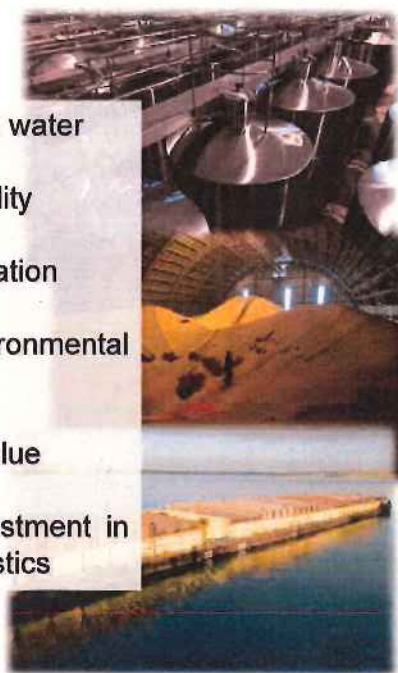
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Brazilian agriculture offers a wide range of opportunities



- Availability of land and water
- Sustainability and quality
- Technology and innovation
- High status of environmental protection
- Potential for adding value
- Opportunities for investment in infrastructure and logistics



MATOPIBA

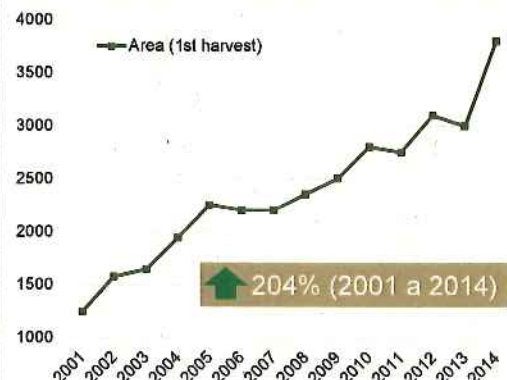
An important agricultural frontier



35 million hectares of arable land

6.52% of the national production
(crop year 2015/16)

Production area (thousand hectares)



Source: Conab

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MATOPIBA

Crop year 2015/16

- Productivity losses (heat and drought)
- Government authorized debt renegotiation

Crop year 2016/17

- Forecasts shows suitable climate
- There is an expectancy of increase in planted area

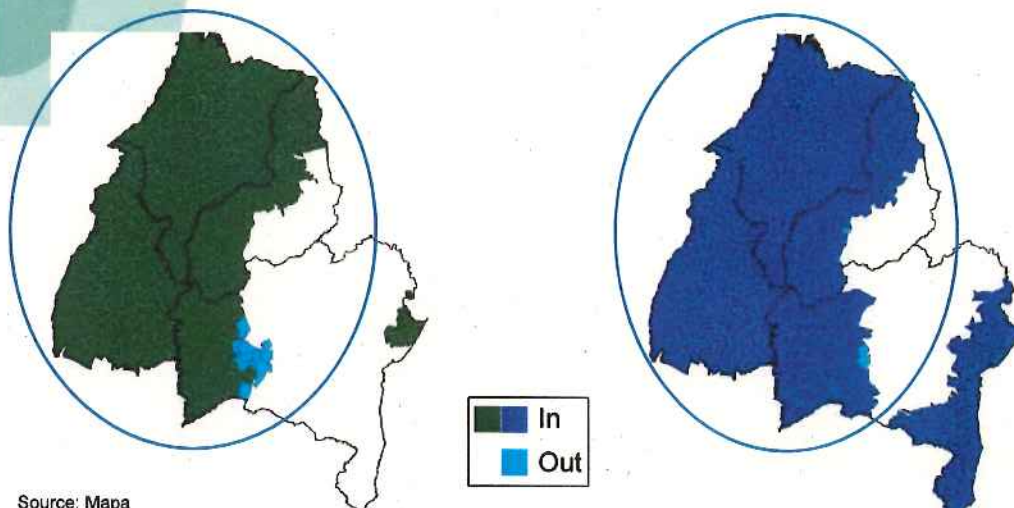
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MATOIIBA - Agricultural zoning

Soybean

Corn

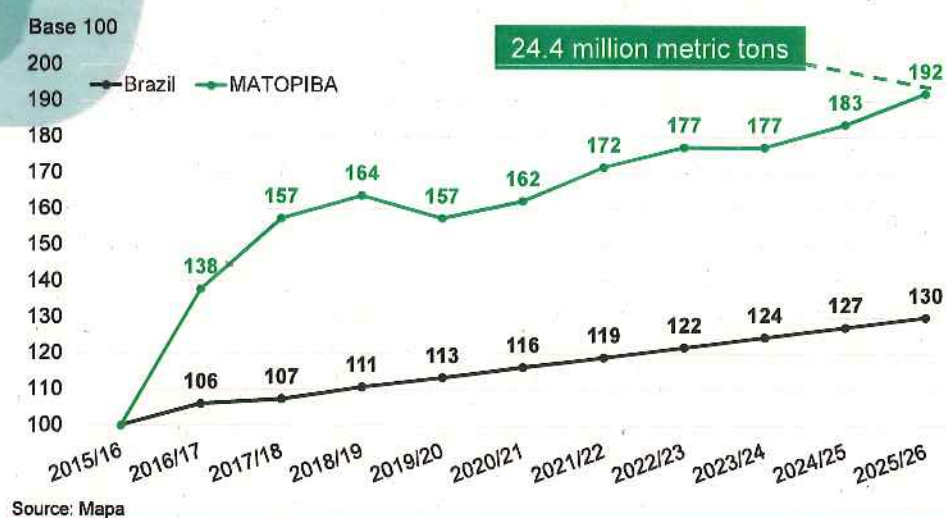


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MATOIIBA - Outlook for grains production

The region projects a growth rate higher than the national one



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Brazil-Japan cooperation in agriculture

Recent developments:

Development of meteorological service

■ Proposal of Technical Cooperation between MAPA and JMA

- Computational infrastructure expansion
- Implementation of meteorological radars
- Forecast of extreme events

Information exchange in logistics infrastructure

- Support to Japanese consultancy (CKC)
- Participation in seminar

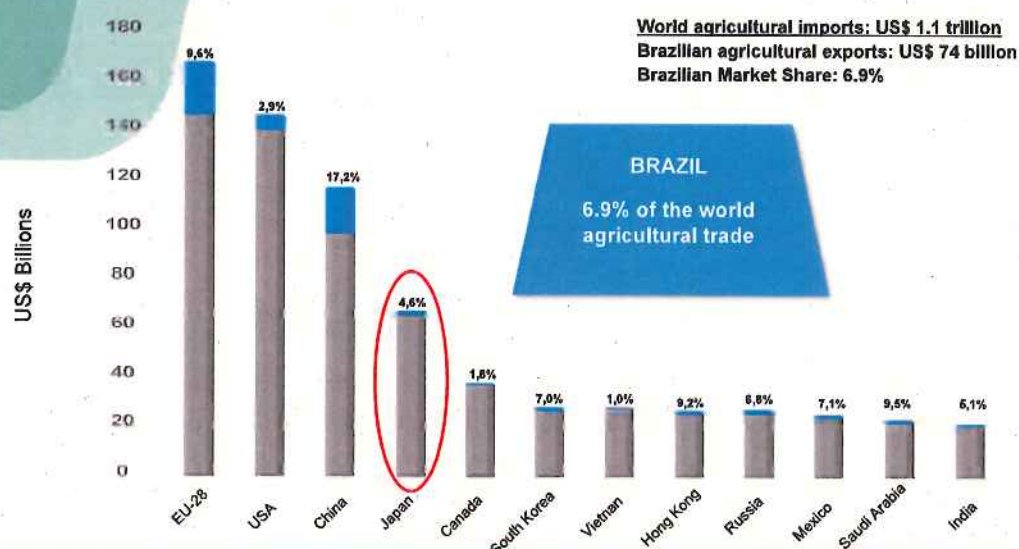
Other Topics

- We are always open to dialogue

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Brazilian share in the top 20 world agricultural markets - 2015



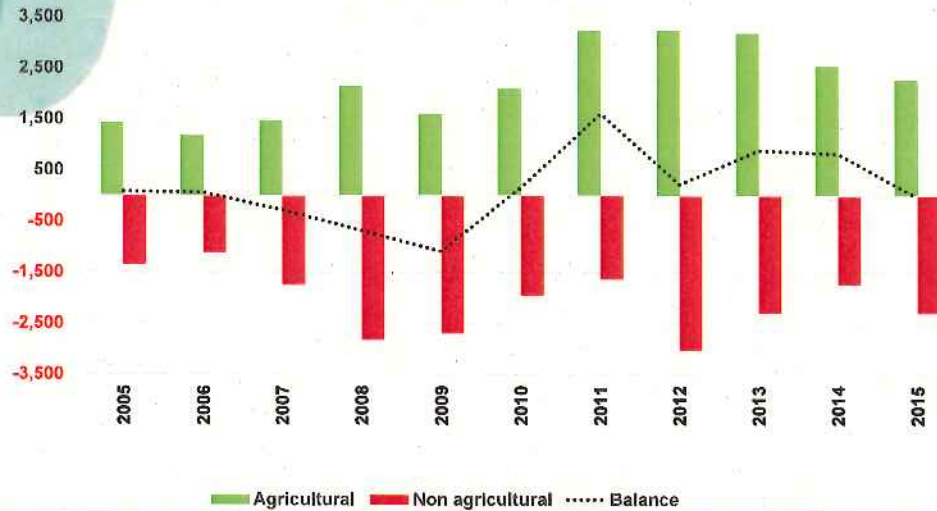
Fonte: Trademap/CCI, 2015. Elaboração: SRI/MAPA.
 (1) Exclui o intra-comércio da UE-28.
 (2) Dados extraídos em Junho/2016. Sujeitos a alteração.

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Bilateral trade Brazil-Japan

Brazilian trade balance from 2005 to 2015
US\$ million



Fonte: AgroStat Brasil a partir dos dados da SECEX/MDIC

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New possibilities to enhance agricultural trade

- **Beef exports: processed and in natura**
- **Pork exports: extension for other states beyond Santa Catarina**
- **Fruits: avocado, melon, other varieties of mango, citrus**
- **Japanese exports of Wagyu beef**

FREE TRADE AGREEMENT JAPAN - MERCOSUR

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Part 02

Improvement of Infrastructure and Grain Transportation in Brazil

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World Ranking: Brazil

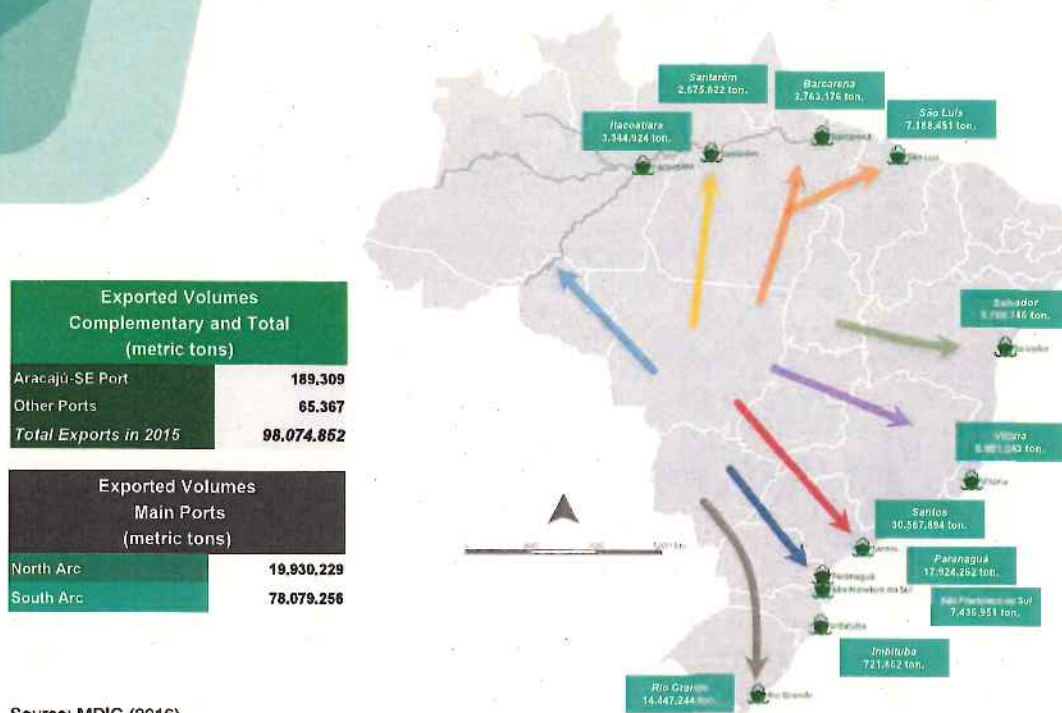
Main products	World Ranking		Market Share of International Trade
	Production	Exports	
Sugar	1 st	1 st	45%
Coffee	1 st	1 st	28%
Orange Juice	1 st	1 st	77%
Beef	2 nd	1 st	22%
Chicken meat	2 nd	1 st	35%
Soybeans	2 nd	2 nd	39%
Maize	3 rd	2 nd	17%
Soybean oil	4 th	2 nd	12%
Soybean meal	4 th	2 nd	22%
Pork	4 th	4 th	10%
Cotton	5 th	3 rd	10%

Source: USDA (years 2014 and 2015)

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Soybean and Corn Exports (2015)



Production and Export Volumes

Corn and Soybean

Production

Crop 2014/2015 ¹	Crop 2015/2016 ¹	Crop 2016/2017 ¹ (Forecast)
180.900.400 metric tons	162.128.600 metric tons	187.832.700 metric tons

Exports

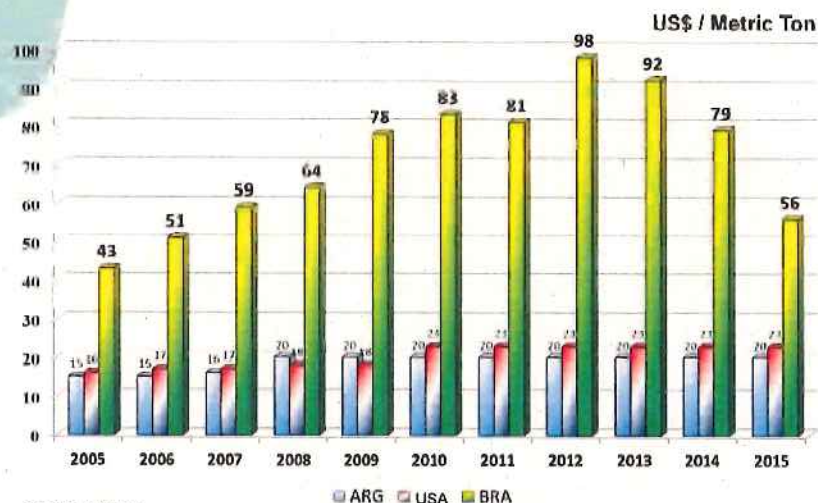
Crop 2014/2015 ²	Crop 2015/2016 (Forecast)	Crop 2016/2017 (Forecast)
98.074.852 metric tons	92.000.000 metric tons	102.000.000 metric tons

Source: ¹CONAB, ²MDIC (2016)

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Evolution of Transport Costs by Country



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Expected Port Performance *Corn and Soybean*

Exports Soybean/Corn	Realized 2015	Potential Projection 2017				[millions of metric tons]
	MDIC	ABIOVE	APROSOJA	CTLOG	ANEC	
1 Itacoatiara Manaus	3,34	3,3	5	5,0	2,5	
2 Santarém	2,67	2,92	5	5,0	3,11	
3 Santana	0	0	-	1,0	-	
4 Belém/Guará System	2,76	3,8	-	-	2,75	
Bunge			4	5,0		
HB			5	5,0		
ADM			6	6,0		
5 São Luís System	7,18		-	-	5,2	
Berço 105	-	4,03	4	5,0		
TEGRAM	-	3,77	6	7,0		
6 Salvador Cotegipe	3,76	3,8	4	5,0	2,92	
7 Vitória	6,98	6,2	7	8	5,01	
8 Santos	30,56	32,3	32	32	37,18	
9 Paranaguá	17,92	18,2	19	20	13,21	
10 São Francisco do Sul	7,43	6,32	8	8	5,58	
11 Imbituba	0,72	1,05	1	1	1,28	
12 Rio Grande	14,44	14,4	14	15	13,13	
13 Others	0,31	-	-	-	0,13	
Total	98,07	100,09	120	128	92,0	

Source: MAPA (2016)

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Mapa da Região Centro-Oeste do Brasil, mostrando a malha ferroviária, rodoviária e hidroviária. O mapa abrange os estados de Mato Grosso do Sul (MS), Mato Grosso (MT), Goiás (GO), Tocantins (TO), Piauí (PI), Maranhão (MA), Pará (PA), Amazonas (AM), Roraima (RR) e Acre (AC). Destaca-se a Ferrovia Norte-Sul (FNS) e a Ferrovia Centro-Oeste (FCO). A legenda indica a situação (Operando, Obra em Projeto, Projeto) para cada modalidade de transporte. O mapa também mostra a localização de Cuiabá, o maior terminal ferroviário do Brasil, e o Porto de São Francisco do Sul, o maior porto brasileiro.

Geographic Production Change



Year	Grain Production			Exports of Soybean and Corn Complex		
	Brazil	Above +16S	Below +16S	Brazil	Above +16S	Below +16S
2009	108,0Mt	56,0Mt or 52,0%	52,0Mt or 48,0%	43,0Mt	7,0Mt or 16,0%	36,0Mt or 84,0%
2015	180,9Mt	104,7Mt or 57,9%	76,7Mt or 42,1%	99,1Mt	19,4Mt or 19,6%	79,7Mt or 80,4%
Variation	↑	↑	↑	↑	↑	↑

A3-18

Thank You

Eduardo Sampaio Marques

Director of Agribusiness International Promotion

eduardo.sampaio@agricultura.gov.br

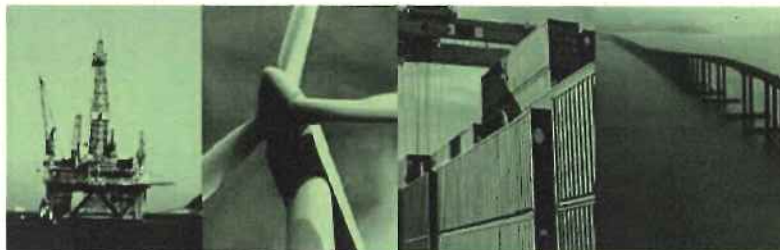
Carlos Alberto Nunes Batista

General-Coordinator of Infrastructure and Logistics

carlos.nunes@agricultura.gov.br

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FEDERAL GOVERNMENT OF BRAZIL

INVESTMENT PARTNERSHIPS PROGRAM (PPI)

Sep/Oct 2016

1

The PPI initiative

- The Investments Partnerships Program (“PPI”) was started by the Michel Temer Administration on May 12nd, 2016, aiming to coordinate the concessions and privatization efforts on federal infrastructure projects.
- The Program counts on the PPI Secretariat to lead the discussions on regulation, planning, pipeline of projects and governance for infrastructure investments.
- The first PPI Board Meeting, composed by the president and six ministers, took place on September 13th, proposing new rules, improving the governance and approving some projects as national priority.

2

New Governance for Concessions

- **Only Mature Projects will be Auctioned**
 - ✓ Focus on planning, modelling and licensing projects
 - ✓ Contracts will strengthen the service level required for the concession, instead of construction needs
- **More Competition in Auctions**
 - ✓ Terms between the Auction Notice and the Bidding Date will be 100 days (minimum)
 - ✓ Auction notice will be released in Portuguese and English
- **Clear Segregation of Roles**
 - ✓ Regulatory Agencies take care of monitoring and ensuring compliance of contracts, as well as rebalancing them if needed
 - ✓ Ministries propose, auction projects, and decide on policy making
 - ✓ PPI Board approves projects and auction conditions proposed by Ministries

3

New Governance for Concessions

- **More Rational Investments**
 - ✓ Investments triggered by demand level
 - ✓ Environmental feasibility as a pre condition to auctioning a project
 - ✓ IRR will depend on the profile of each project and will not be fixed in advance. Only bankable projects will move ahead
 - ✓ Clear distribution of risks in the contract
- **Transparency**
 - ✓ Bidding draft documentation submitted to public consultation and the Federal Court of Auditors before being officially released
 - ✓ Website portal (www.projeto.crescer.gov.br) will be a hub for investors to get information on projects and rules

4

New Governance for Concessions

- **Financing Conditions**
 - ✓ Reduced needs for bridge loans, as BNDES lines and issuance of debentures (project bonds) provide long term funding
 - ✓ Banks can support projects by issuing guarantees for the pre-completion risks on the debentures
 - ✓ Capital markets will play a larger role and will be reinforced
- **Existing Concessions**
 - ✓ The government is working on some alternatives to normalize concessions that are behind the schedule or with insufficient level of services
 - ✓ Among the alternatives are (a) approving new investments in existing concessions, (b) the agreed devolution of concessions and (c) declaring the termination of the concession
 - ✓ There will be technical studies supporting the chosen alternative with consultation to the public and the Federal Court of Auditors

5

Projects Approved for Concession

- ✓ Four Airports
- ✓ Two Highways
- ✓ Three Railroads
- ✓ Three port terminals
- ✓ Five Hydropower generation plants
- ✓ Four Oil & Gas areas (pre-salt)

Projects Approved for Privatization

- ✓ Seven Electricity Distribution companies
- ✓ One instant lottery business (LOTEX)

Sponsored Projects

- ✓ Three water and sewage state companies

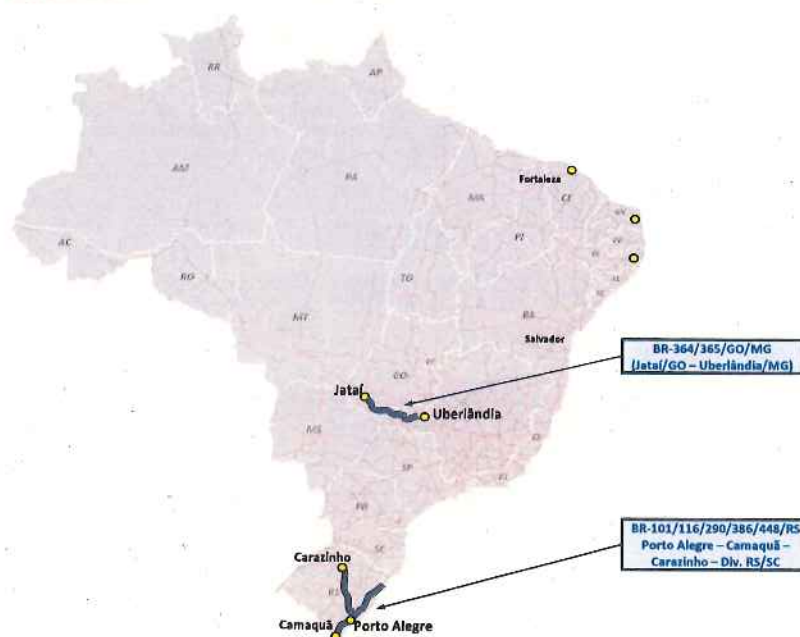
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Financial Support

- ✓ Projects will have to be bankable, selected by its merits.
- ✓ IRR will reflect the project cashflow and risks perceived by the market.
- ✓ Subsidized financing will be reduced and market participation increased
- ✓ Minimum equity participation will depend on the project details
- ✓ BNDES finances part of the projects (TJLP line), but no bridge loans
- ✓ Long term Debentures (project bonds) may be purchased by parastatal funds and others, with completion guarantee from solid commercial banks
- ✓ FI-FGTS (BRL 12 billion funds) and BNDES (BRL 18 billion funds) would buy up to 50% each of a debenture issuance
- ✓ After completion, the debentures could be offered in the secondary market, fostering capital markets
- ✓ Infrastructure debentures will get automatic approval for tax exemption if qualified in the PPI program

7

HIGHWAYS FOR CONCESSION



8

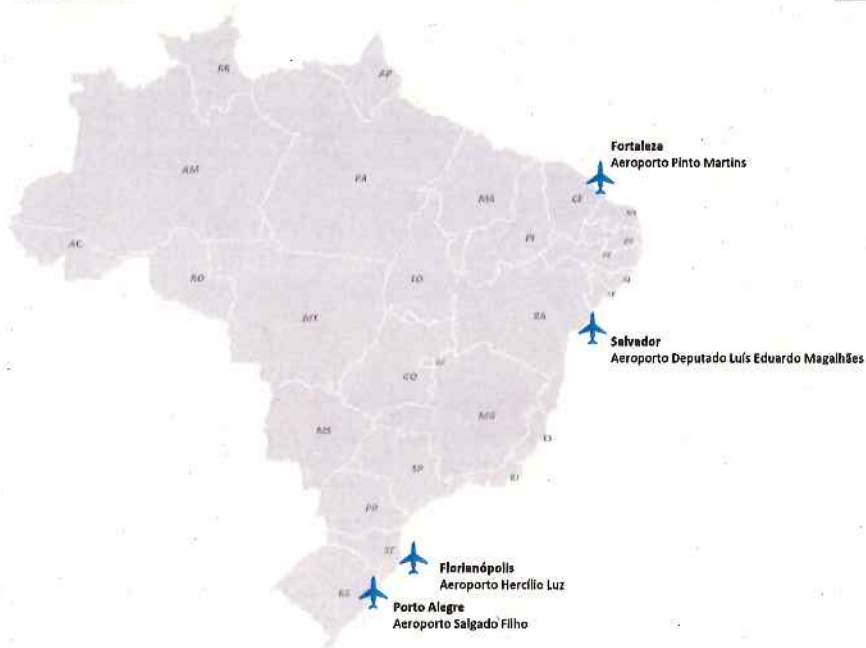
1 - BR-364/365 MG/GO

- Highway connecting the Center-West of Brazil with BR050 e BR153 (towards São Paulo and Port of Santos)
- Repair, maintenance and operation of the highway
- Studies consider maximum tariff at BRL13.46/100km, assuming investments of 30% lane duplication in 5 years, and the remaining by demand trigger
 - Extension: 437 km
 - Demand: 4 k vehicles/day
 - Investment: BRL 2.8 billion
 - Auction criteria: lowest tariff



2 - BR-101/116/290/386/RS

- Four highway segments in Rio Grande do Sul State
- BR 290 concession (segment Osorio-Guaiba) expires in July 2017
 - Extension: 688 km
 - Demand: 24 k vehicles/day
 - Investment: BRL 12 billion
 - Auction criteria: lowest tariff



3 – Porto Alegre Airport (POA)

- Enlargement, maintenance and operation for 25 years;
- Demand: 8.4 million pax/year
- Investments: BRL 1.9 Billion
- Auction criteria: highest grant
- Minimum grant: BRL 122 million, being 25% + premium paid in advance



4 – Salvador Airport (SSA)

- Enlargement, maintenance and operation for 30 years;
- Demand: 9 million pax/year
- Investments: BRL 2.3 Billion
- Auction criteria: highest grant
- Minimum grant: BRL 1.18 billion, being 25% + premium paid in advance



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5 – Florianopolis Airport (FLN)

- Enlargement, maintenance and operation for 30 years;
- Demand: 3.7 million pax/year
- Investments: BRL 960 million
- Auction criteria: highest grant
- Minimum grant: BRL 211 million, being 25% + premium paid in advance

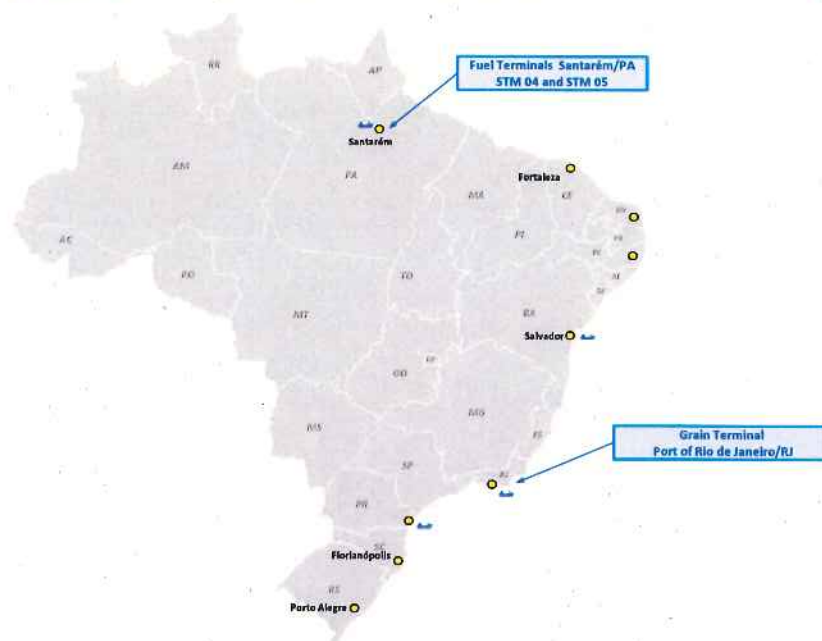


6 – Fortaleza Airport (FOR)

- Enlargement, maintenance and operation for 30 years;
- Demand: 6.3 million pax/year
- Investments: BRL 1.4 billion
- Auction criteria: highest grant
- Minimum grant: BRL 1.3 billion, being 25% + premium paid in advance



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7 – Grain Terminal in Rio de Janeiro/RJ

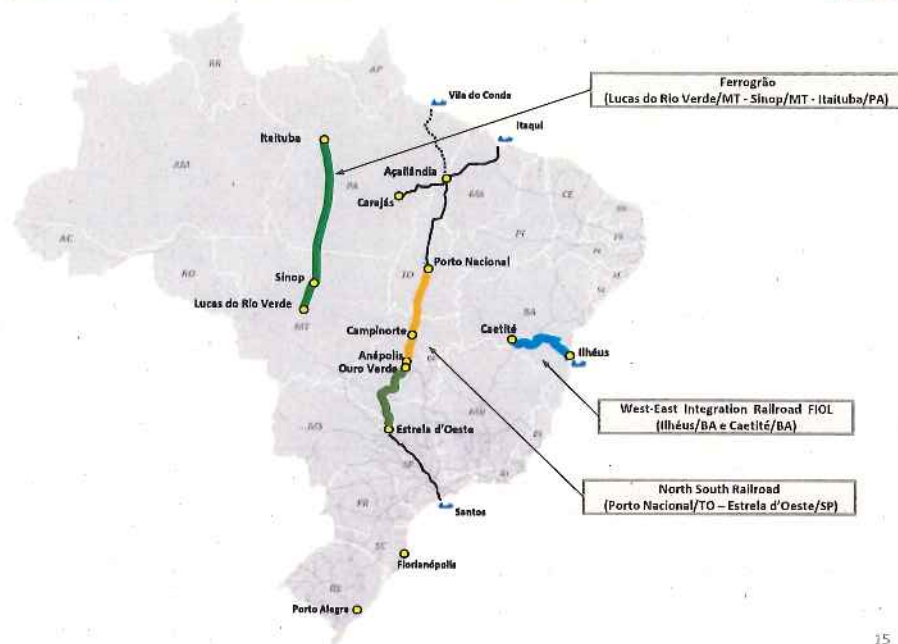
- Brownfield area inside the Organized Port of Rio de Janeiro
- Cargo type: Grains (wheat)
- Capacity: 1 million ton
- Investments: BRL 63 Million



8 – Fuel Terminals in Santarém/PA

- Brownfield area inside the Organized Port of Santarém
- Cargo type: Diesel, Gasoline, Kerosene, Ethanol
- Capacity:
 - 0,07 million ton in STM04
 - 0,3 million ton in STM05
- Investments:
 - BRL 19 million - STM04
 - BRL 11 million - STM05





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9 – EF-151 SP/MG/GO/TO

(segment from Porto Nacional/TO to Estrela D'Oeste/SP – North-South Railroad)

- Finish the construction works and begin the operation of North-South Railroad in this segment, stretching from Porto Nacional (Tocantins State) to Estrela d'Oeste (São Paulo State)
- Segment Porto Nacional – Anápolis:
 - Extension = 855 Km (already built)
- Segment Ouro Verde – Estrela d'Oeste:
 - Extension = 682 km (under construction by Valec)
- Subconcession Extension: 1,537 km
- Investments: BRL 727 million
- Concession term: 35 years
- Auction criteria: highest grant
- Current operator of segment Porto Nacional-Açailândia: Valec (excluded from this concession)



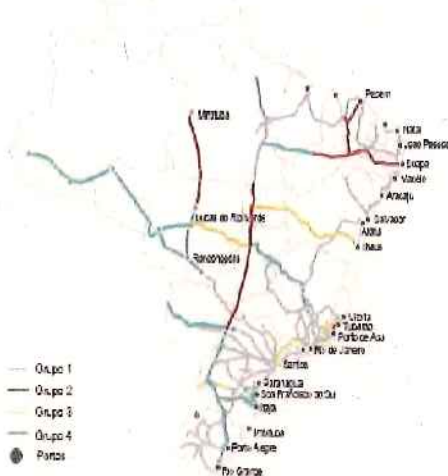
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10 – EF 170 MT/PA
(segment from Sinop/MT and Miritituba – Ferrogrão)

- Greenfield project in grain production area
- Demand: estimated at 13 M ton (2020) and at 42 M ton (2050)
- Concession term: 65 years
- Extension: 1.142 km
- Investments: BRL 12.6 Billion
- Auction criteria: highest grant
- Authorization for national park crossing under discussion



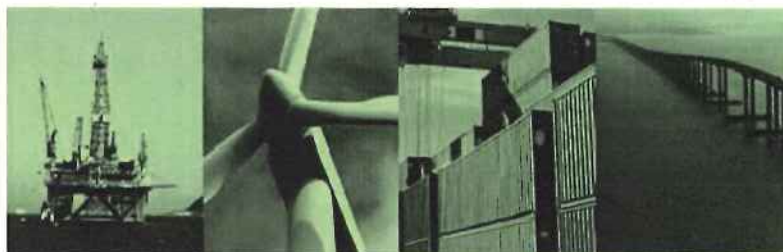
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- 1 Concessões atuais**
 - ~25 mil km de malha
 - Maior parte legado da RFFSA
 - Alguns contratos vencendo em 2026-27
 - Ex: ALL MP, FCA, EFC
- 2 Projetos de curto prazo**
 - Projetos que podem sair ou serem retomados em menos de 1 ano
 - ~4 mil km de malha
 - Ferrogrão, FNS (até Estrela D'Oeste), Transnordestina
- 3 Projetos compartilhados das concessionárias**
 - Investimentos que poderiam servir como contrapartida da renovação do grupo 1
 - ~3 mil km de malha
 - Exs: FIO, Ferroane, Rio-Vitória
- 4 Projetos parados/médio-longo prazo**
 - Projetos em diversos estágios de amadurecimento
 - ~3 - 6 mil km de malha
 - Exs: Biocênica, Ferrovia do Frango (SC), Ferrovia Litorânea (SC)

PPI PROGRAMA
DE PARCELIAS
DE INVESTIMENTOS

CRESCER
Investment Partnerships Project



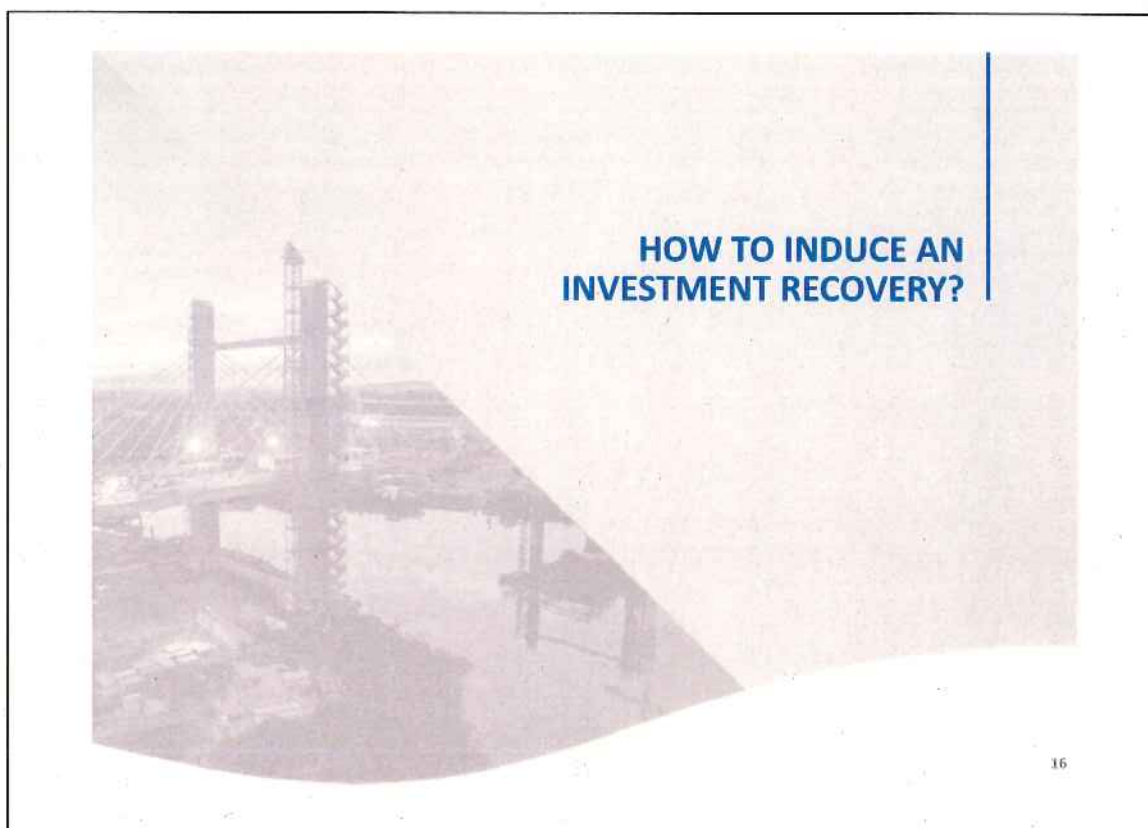
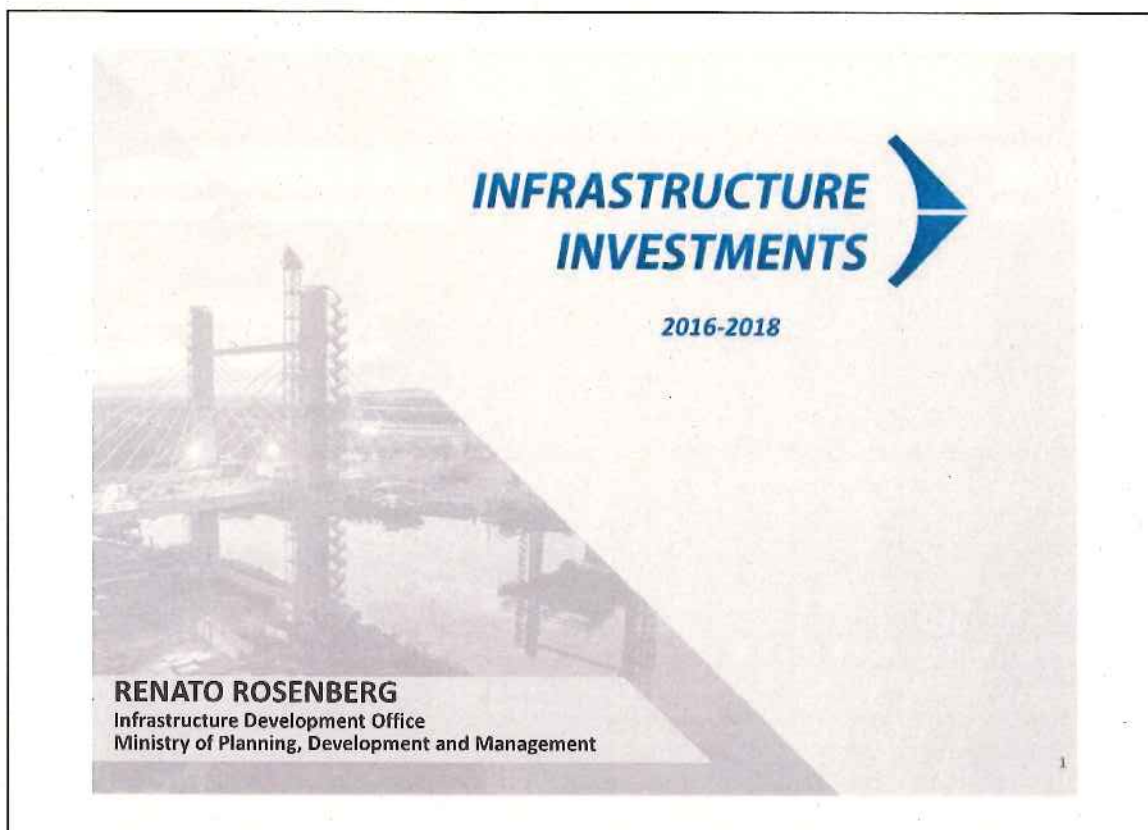
INVESTMENT PARTNERSHIPS PROGRAM

CRESCER
Investment Partnerships Project

For more information visit:
www.projetocrescer.gov.br

antoniogil@presidencia.gov.br

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MEASURES TO INDUCE INVESTMENT

INVESTIMENTOS EM
INFRAESTRUTURA

- 1 Recovery concessions and privatization programs
- 2 Financiability improvement of infrastructure projects:
 - Use IPCA instead of TJLP
 - Support projects through the issuance of debentures
 - Purchase debentures authorization by FI-FGTS
- 3 Operationalization of the Guarantee Infrastructure Fund – FGIE
- 4 Collateral Tariff: Segregation rate to reduce demand risk in project financing
- 5 Legal security for new investments in existing concessions – “NICE”

3

ASSUMPTIONS

Attract investments to build a Brazil full of opportunities

INVESTIMENTOS EM
INFRAESTRUTURA

- 1 The concessions will be conducted under the maximum technical rigor
- 2 The focus will be on improving service provision to citizens and to the productive sector
- 3 All contracts should have clear indicators in order to increase legal certainty
- 4 Give back to regulatory agencies a State organ status
- 5 The auction notice will be launched only after going through public debate and obtain approval of the Federal Court of Accounts
- 6 All notices will be published in Portuguese and English
- 7 The minimum notice term shall be extended to 100 days
- 8 For existing concessions, we will work to ensure the balance of projects

4

CONCESSIONS PRIORITY PROJECTS

INVESTIMENTOS EM INFRAESTRUTURA



PRIORITY PROJECTS

Ministry of Transport, Ports and Civil Aviation

INVESTIMENTOS EM INFRAESTRUTURA

Projects	Estimated notice	Estimated Auction
BR-364/365/GO/MG	First half/2017	Second half/2017
BR-101/116/290/386/RS	First half/2017	Second half/2017



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PRIORITY PROJECTS

Ministry of Transport, Ports and Civil Aviation

INVESTIMENTOS EM
INFRAESTRUTURA

Projects	Estimated notice	Estimated Auction
Porto Alegre Airport	Fourth quarter/2016	First quarter/2017
Salvador Airport	Fourth quarter/2016	First quarter/2017
Florianópolis Airport	Fourth quarter/2016	First quarter/2017
Fortaleza Airport	Fourth quarter/2016	First quarter/2017



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PRIORITY PROJECTS

Ministry of Transport, Ports and Civil Aviation

INVESTIMENTOS EM
INFRAESTRUTURA

Projects	Estimated notice	Estimated Auction
EF-151 SP/MG/GO/TO – North-South Railway	Second half/2017	Second half/2017
EF-170 MT/PA – Ferrogrão	Second half/2017	Second half/2017
EF-334/BA – FIOCR	Second half/2017	Second half/2017



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PRIORITY PROJECTS

Ministry of Transport, Ports and Civil Aviation

INVESTIMENTOS EM
INFRAESTRUTURA

Projects	Estimated notice	Estimated Auction
Santarém (PA) fuel terminal (STM 04 e 05)	Fourth quarter/2016	Second half/2017
Rio de Janeiro wheat terminal	Fourth quarter/2016	Second half/2017



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FINANCIAL MODEL

INVESTIMENTOS EM
INFRAESTRUTURA

Make the contraction of long-term funding faster, which removes the requirement of "bridge loan" that increases the risk and burdens the project.

Debentures must be the main long-term financing instrument issued on time. We want to enable emissions to attract long-term investors and stimulate the secondary market.

The credit risk in the pre completion phase will be assumed by banks, including private banks through bank guarantees.

The guarantees of the projects will be shared between creditors and debenture holders. Thus, the long-term funding risks will be reduced and it will create opportunity for the expert financial sector to make possible such funding sources.

In addition to BNDES and FI-FGTS, the new model will feature the participation of private banks and other funding sources, which requires well-qualified projects with appropriate rates of return creating feasible funding conditions.

10

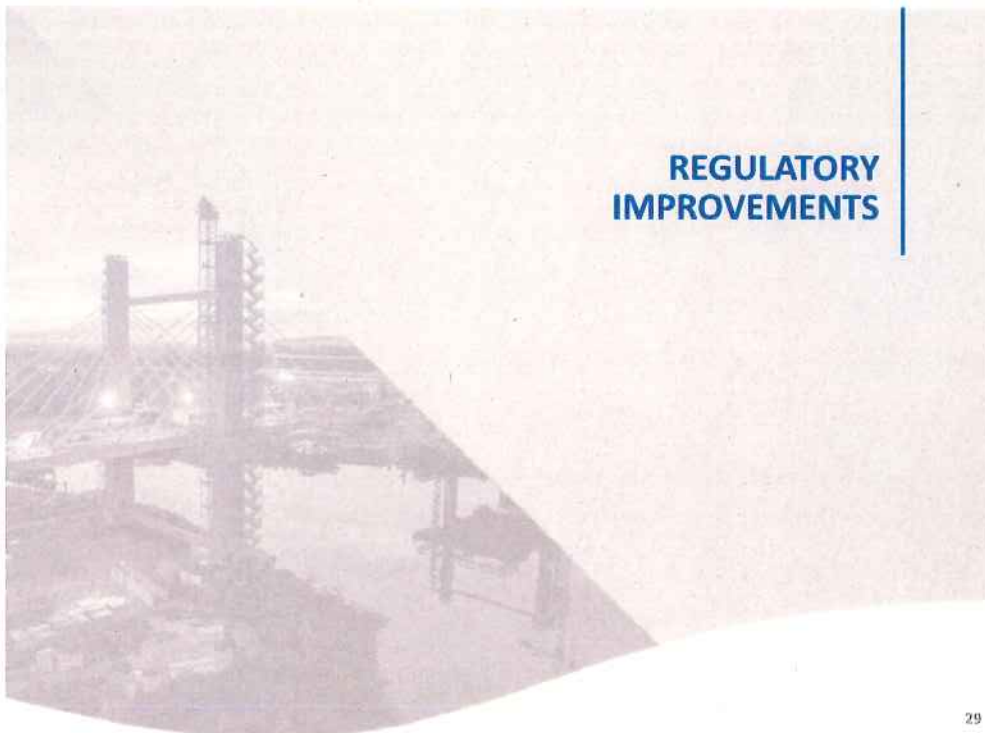
CURRENT FINANCIAL CONDITIONS

INVESTIMENTOS EM
INFRAESTRUTURA



11

REGULATORY IMPROVEMENTS



29

MEASURES

INVESTIMENTOS EM
INFRAESTRUTURA

- 1 New investments in existing concessions' Law
- 2 Regulatory environment for expropriations
- 3 Regulatory Agency's Law Projects
- 4 Guarantee Insurance for works
- 5 Auction's law reform
- 6 Royalties for indigenous' land

13

NEW INVESTMENTS IN EXISTING CONCESSIONS – “NICE”

INVESTIMENTOS EM
INFRAESTRUTURA

Assumptions:

Allow investments not originally planned when upgrading the level of service is required, as long as the concessionaire is fulfilling contract obligations

Ensure the economic and financial balance of the concession

Allow the contract expiration date postponement once, for a period not exceeding the original term

Adaptation and modernization of concession contracts in the light of best regulatory practices, quality standards and service levels

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"COORDINATED RETURN" OF CONCESSIONS

INVESTIMENTOS EM
INFRAESTRUTURA

Assumptions:

Allow the return of no more feasible concessions given the risks assumed by dealers

Create another dealer "leave" mechanism to avoid the contract caducity

Mitigate the risk of opportunistic behavior in nearby concessions

Adaptation and modernization of concession contracts in the light of best regulatory practices, quality standards and service levels

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<http://www.projetcrescer.gov.br/>
<http://www.pac.gov.br/>

INVESTIMENTOS EM
INFRAESTRUTURA

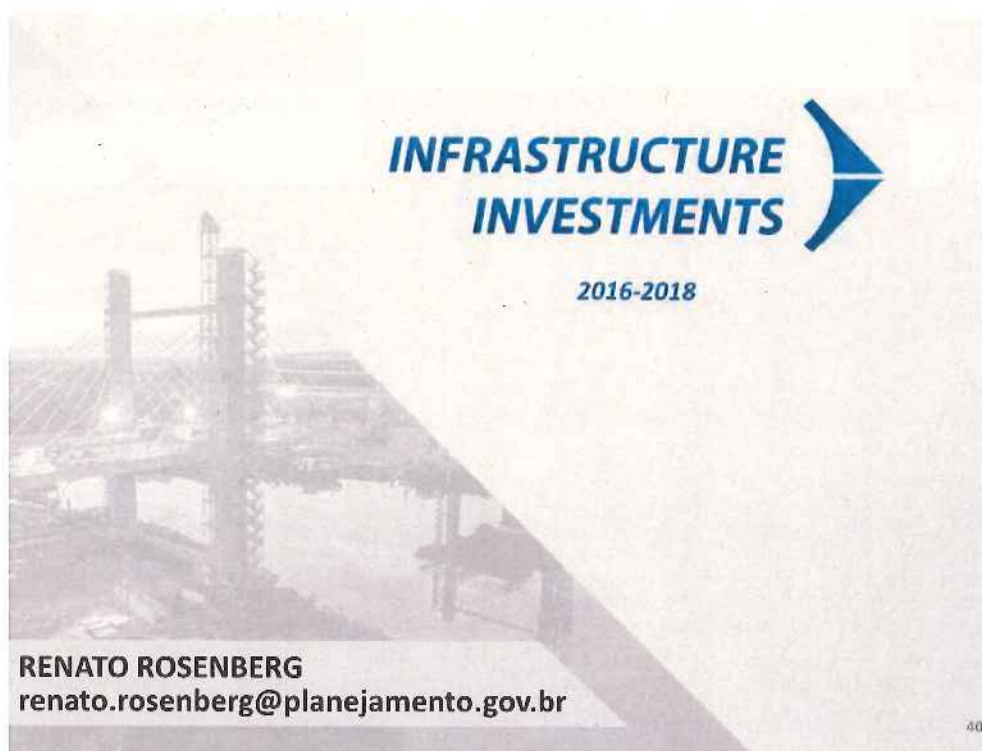


Projeto Crescer website

Smartphone app

PAC website

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Seminário para Melhoria da Infraestrutura de Transporte de Grãos



MINISTÉRIO DOS TRANSPORTES, PORTOS E AVIAÇÃO CIVIL
SECRETARIA DE GESTÃO DOS PROGRAMAS DE TRANSPORTES

Brasília, 27 de Outubro de 2016

1

Arco Norte e Região do MaToPiBa

INFRAESTRUTURA PRINCIPAL

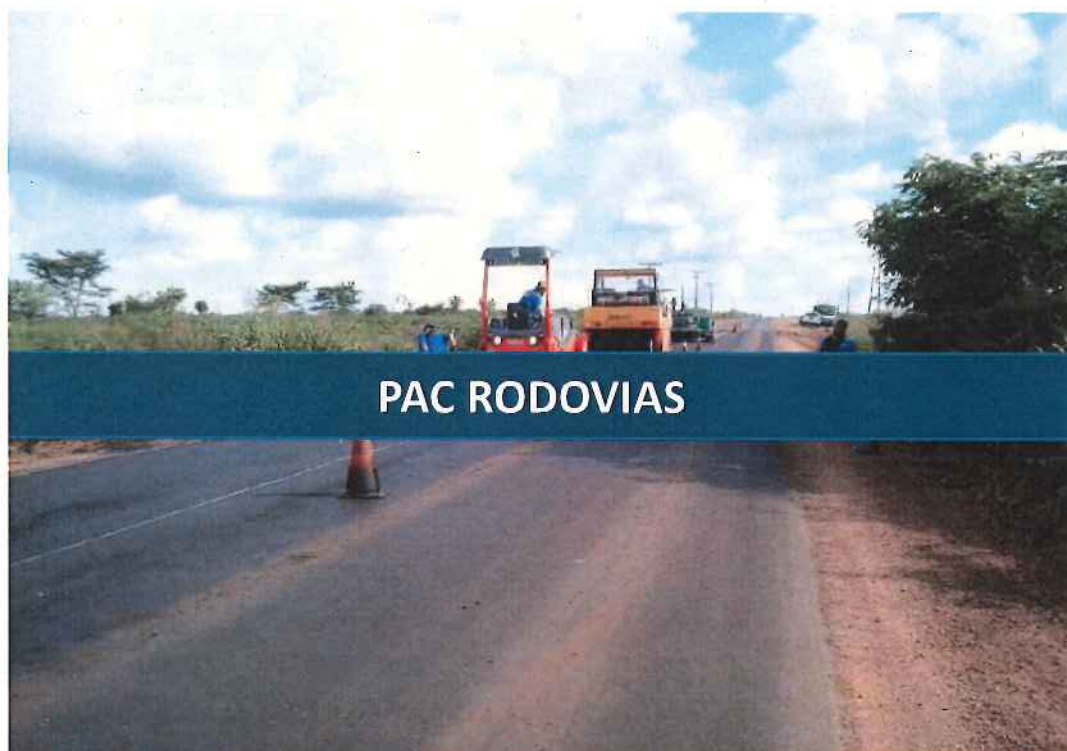
Malha Viária

- Hidrovia
- Rodovia
- Rodovia – trecho concedido
- Ferrovia – trecho concedido
- Ferrovia – trecho operado pela VALEC

Fonte:
Ministério dos Transportes
DNIT
ANTT
VALEC
CONAB/MAPE



2



Arco Norte e Região do MaToPiBa

PAC RODOVIAS



Legenda

- Rodovia Pavimentada
- Rodovia não Pavimentada
- Agência Rodoviária

Arco Norte e Região do MaToPiBa

RESUMO DAS PRINCIPAIS MEDIDAS PLANO SAFRA 2015-2016 PARA AS RODOVIAS DOS CORREDORES MADEIRA, TAPAJÓS E TOCANTINS ARAGUAIA

Melhorias na infraestrutura para utilização de corredores multimodais

- ✓ Melhorar a trafegabilidade na BR-163/MT/PA entre Sorriso/MT e Miritituba/PA
 - Trechos pavimentados – completar a contratação da manutenção em todo segmento
 - Trechos terrosos – com contratos ativos de construção e também de conservação
- ✓ Continuidade das obras de pavimentação da BR-163/PA e de duplicação da BR-163/364/MT
- ✓ Manutenção das demais rodovias BR-155/158/364/174/135
- ✓ Funcionamento de balança móvel em Garantã (MT)



Serviços de conservação na BR-163/PA
Fonte: DNIT/UL - Itaituba
Junho de 2016

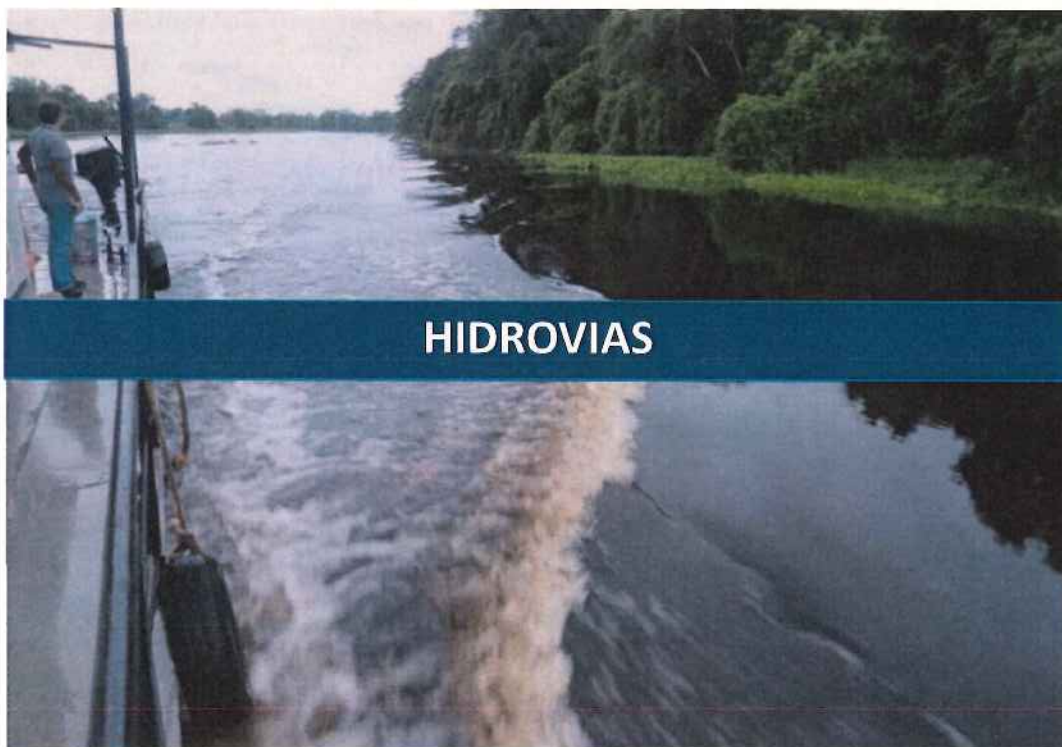


Reconstrução da ponte de madeira
sobre o Rio Itamarati BR-158/PA
Fonte: DNIT/UL – Marabá Junho de 2016



Funcionamento de balança móvel
Fonte: CGPERT/DNIT
Abril de 2016

7



HIDROVIAS

HIDROVIAS – ARCO NORTE



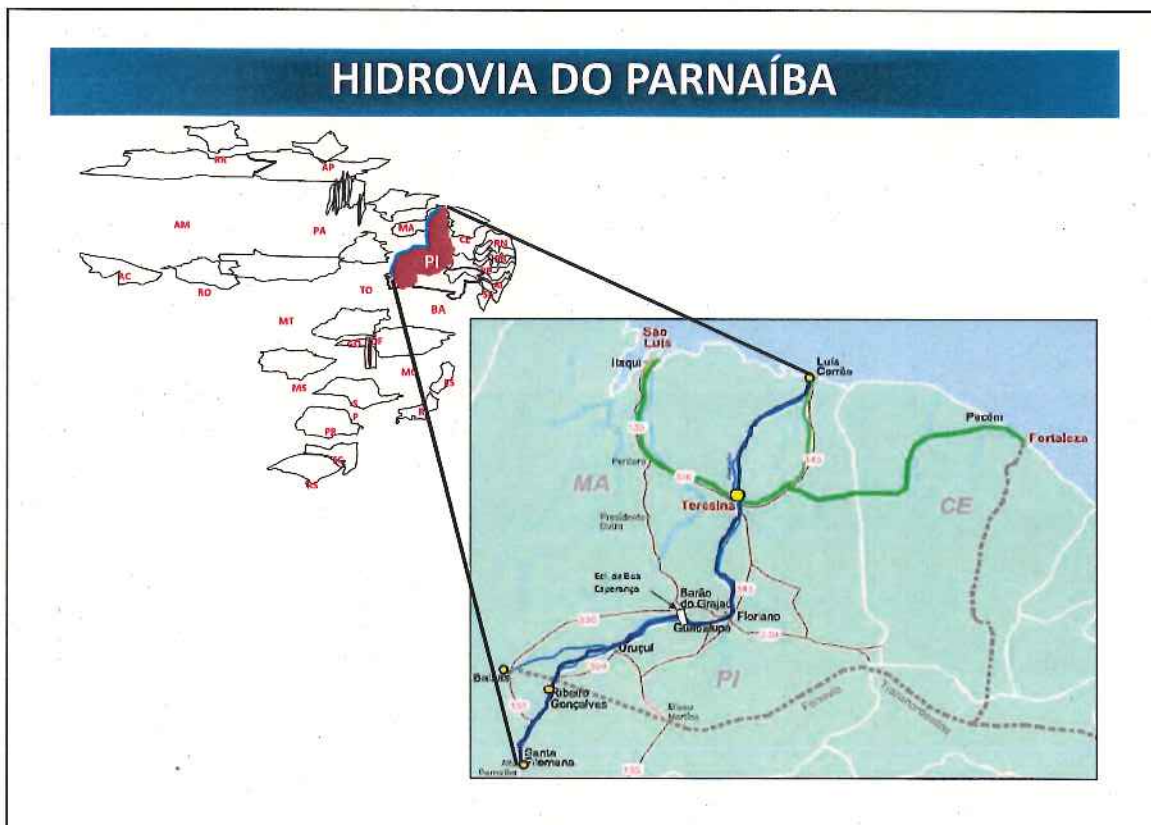
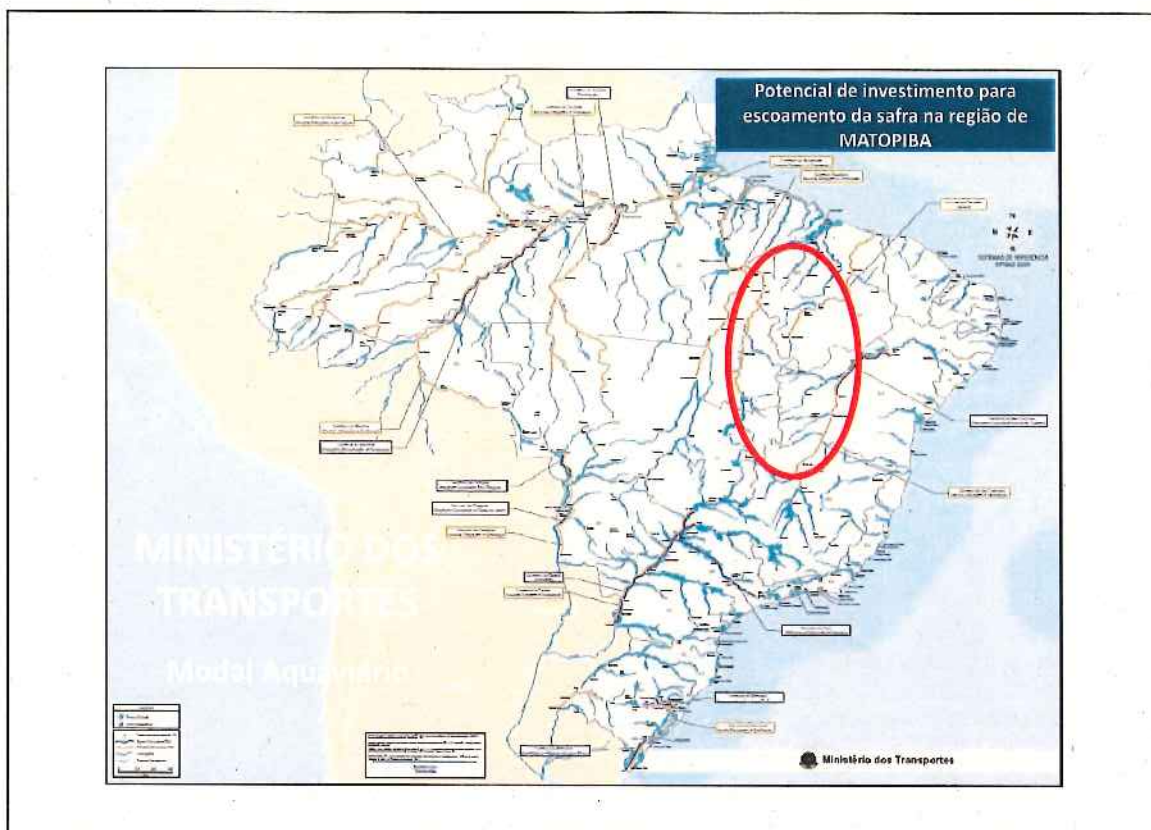
• Melhorias na infraestrutura para utilização de corredores multimodais em 6 estados (MT/RO/AM/PA/TO/MA):

- Hidrovia do Madeira;
- Hidrovia do Tapajós;
- Hidrovia do Amazonas; e
- Hidrovia do Tocantins.

EXTENSÃO DOS EVTEAs – ARCO NORTE



CORREDOR	EXTENSÃO (km)	RIOS
AMAZONAS / SOLIMÕES	14.497	Purus, Acre, Negro, Branco, Solimões, Amazonas, Juruá, Tarauacá, Envira, Içá, Japurá, Xingu, Jari, Trombetas, Paru e Uatumã.
MADEIRA	2.781	Madeira, Mamoré, Guaporé
TAPAJÓS / TELES PIRES	2.516	Tapajós, Teles Pires, Juruena e Arinos.
TOCANTINS	4.375	Tocantins, Itacaiúnas, Parauapebas, Araguaia, rio das Mortes, Javacés.
TOTAL	24.169	



HIDROVIA DO PARNAÍBA

CONTEXTO:

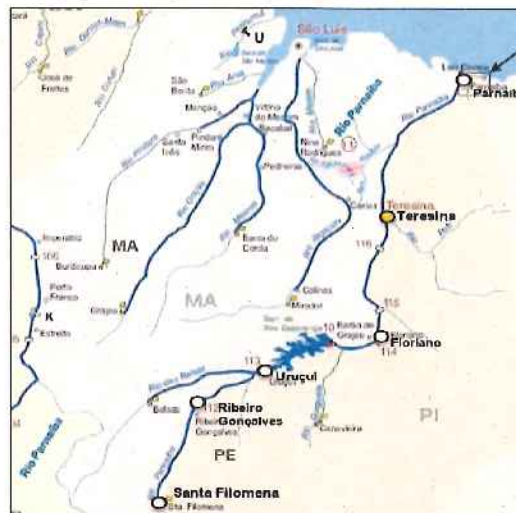
A hidrovia do Parnaíba poderia ser utilizada para o escoamento de parte da safra da região do MATOPIBA, mais especificamente no trecho entre Ribeiro Gonçalves/PI até Teresina/PI, e de lá seguir para os Portos de Itaqui, Pecém, Luís Corrêa ou até mesmo para Suape.

EXTENSÃO TOTAL:

Santa Filomena/PI até foz: 1.180 km

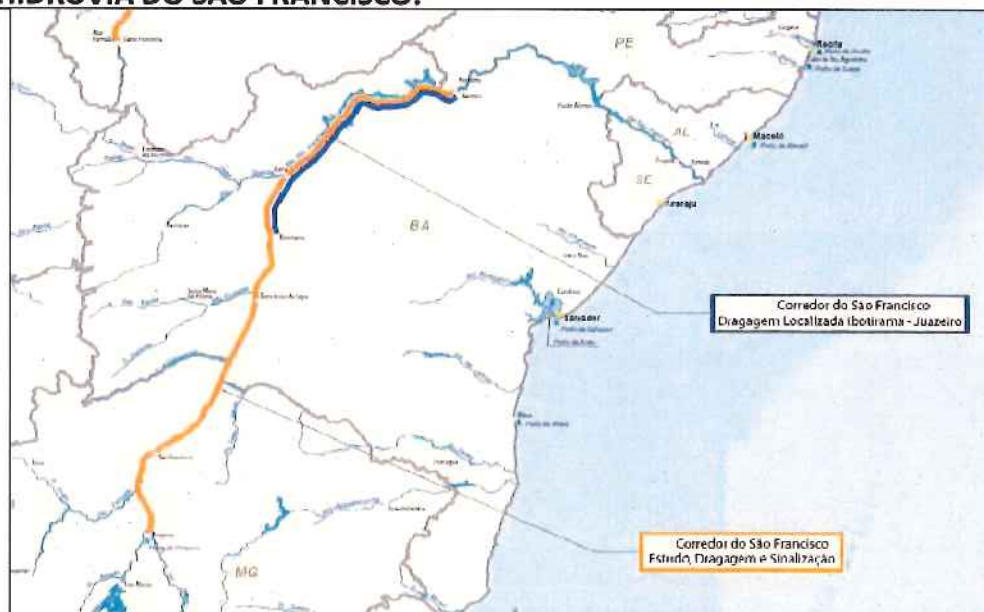
EXTENSÃO TRECHO:

Ribeiro Gonçalves/PI - Teresina/PI: 587 km



OUTROS INVESTIMENTOS

HIDROVIA DO SÃO FRANCISCO:



OUTROS INVESTIMENTOS

HIDROVIA DO SÃO FRANCISCO:

Atualmente, o rio São Francisco possui navegação comercial entre Juazeiro (BA)/Petrolina (PE) e Ibotirama (BA), com uma extensão de 560 km.

Nesse trecho do rio as maiores dificuldades estão relacionadas com a capacidade da eclusa de Sobradinho, onde é necessário desmembrar os comboios comerciais, formações rochosas no leito do rio (principalmente entre Juazeiro e a barragem de Sobradinho e em Pedral de Meleiro) e problemas de acúmulos de sedimentos.

Em 2011 foram transportadas 50.000 toneladas de sementes de algodão. Além de um crescimento modesto do transporte hidroviário de sementes de algodão (de 50.000 a 61.000 toneladas), é previsto um aumento do transporte de commodities agrícolas da região de MATOPIBA.

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OUTROS INVESTIMENTOS

HIDROVIA DO SÃO FRANCISCO:

SITUAÇÃO ATUAL

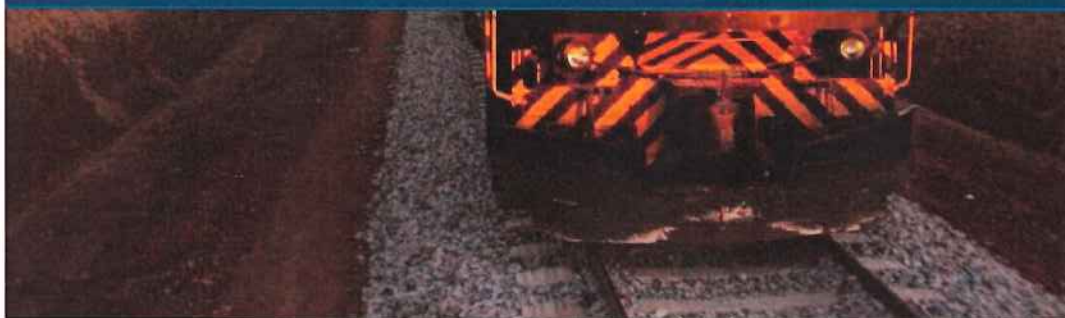
- ✓ Estudo de Viabilidade Técnico Econômico e Ambiental – EVTEA, em desenvolvimento com 92% executados e previsão de conclusão em junho/2017;
- ✓ Dragagem de manutenção trecho Ibotirama/BA – Juazeiro/BA:
 - Baixo calado impediu a continuidade da dragagem em 2015
 - Navegação comercial praticamente inexistente devido à forte estiagem na região

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MATOPIBA



MATOPIBA- FERROVIAS

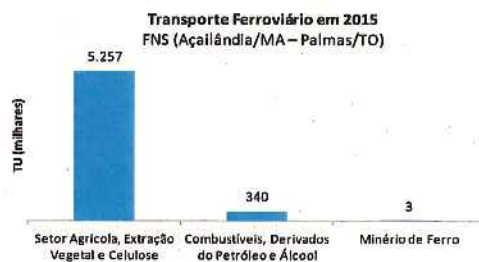


EF – 151 – Ferrovia Norte-Sul entre Porto Nacional/TO e Estrela d'Oeste/SP

FNS (Açailândia/MA – Porto Nacional/TO): 720 km

- Trecho concluído em 2010 e encontra-se em operação comercial pela concessionária Ferrovia Norte-Sul S.A., criada pela Mineradora Vale;

- A Ferrovia Norte Sul tem conexão com a EFC - Estrada de Ferro Carajás, em Açailândia/MA, permitindo acesso ao porto de Itaqui, em São Luís/MA;



- Os principais produtos transportados são a soja e farelo de soja, milho, celulose e derivados de petróleo.

EF – 151 – Ferrovia Norte-Sul entre Porto Nacional/TO e Estrela d'Oeste/SP

Descrição: subconcessão do trecho Porto Nacional/TO – Estrela D'Oeste/SP, com possibilidade de ligação dos trechos *greenfield* de Campinorte/GO–Água Boa/MT, Açailândia/MA–Barcarena/PA e Estrela D'Oeste/SP – Três Lagoas/MS (*em avaliação*).



A EF-151 (≈ 4800 km) foi projetada para promover a integração nacional.

Extensão da nova subconcessão:

1.537 km (Porto Nacional/TO – Estrela D'Oeste/SP)

Importância:

Amplia a conexão ferroviária da região central do Brasil à malha Paulista da ALL (Porto de Santos) e aos Portos do Norte/Nordeste (Itaquí e futuramente ao Porto de Vila do Conde)

Situação Atual dos Trechos :

- Porto Nacional/TO – Anápolis/GO (855 km): Obra concluída
- Ouro Verde/GO – Estrela D'oeste/SP (682 km): em execução pela VALEC (90% executado e conclusão prevista para fevereiro/2018).

Investimento restante estimado sem material rodante:

R\$ 727 milhões (sujeito a revisão).

Carga Prevista (2051): 68 milhões t, sujeito a revisão (grãos e carga geral).

Prazo de Concessão: 35 anos

Cronograma:

- Edital : 2º Semestre de 2017
- Leilão : 2º Semestre de 2017



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EF – 354 – Ferrovia Transcontinental

Extensão: 4400 km de Cruzeiro do Sul ao Litoral Norte do RJ: (Lei 11.772/2008)

Importância

Escoamento da produção agrícola do Centro Oeste, conectando-se com a FNS, hidrovia do Rio Madeira em Porto Velho e possível conexão ao Pacífico via Peru.

Lote 3 (fonte: VALEC)

Porto Velho - Vilhena: 770 km

Estudo de Pré Viabilidade (VALEC)

EVTEA e Projeto Básico a desenvolver

Investimento estimado (obras): R\$ 6.0 bilhões

Lote 02 (fonte: VALEC)

Vilhena - Lucas Rio Verde : 647 km

EVTEA e EIA-RIMA Concluídos (VALEC)

Licença Prévia Ambiental Vigente

Investimento estimado (obras): R\$ 4.7 bilhões

Lote 01 (fonte: VALEC)

Lucas Rio Verde – Campinorte: 901 km

Projeto Básico e EIA-RIMA Concluídos (VALEC)

Licença Prévia Ambiental Vigente

Investimento estimado (obras): R\$ 7.0 bilhões



Ferrovia também estudada no âmbito do Memorando de Entendimento Brasil – Peru – China, em nível de pré-viabilidade desde Campinorte até Bayovar (Peru). Relatório Final em elaboração pela China para submissão ao Brasil e Peru.

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EF – 170 entre Sinop/MT e Itaituba/PA (FERROGRÃO)

Descrição: concessão da Ferrovia Sinop/MT – Miritituba (no município de Itaituba/PA).
Novo corredor ferroviário *greenfield* de exportação pela região Norte do país.



Extensão da nova concessão:

965 km (933 km Sinop-Miritituba + Ramal Santarenzinho no Pará, 32 km)

Importância:

Melhorar o escoamento da produção agrícola do Centro Oeste, alcançando a hidrovia do Tapajós.

Situação Atual :

• Empreendimento *greenfield*. Governo analisando alterações nos limites do Parque Nacional do Jamaxim. Projeto em preparação para Audiência Pública.

Investimento previsto:

R\$ 12,6 bilhões.

Carga Prevista: (predominantemente grãos e fertilizantes)

13,0 milhões de t (em 2020) e de 42,0 milhões de t (em 2050).

Prazo de Concessão: 65 anos

Potenciais Interessados:

Tradings do setor agropecuário (Cargill, Amaggi, Bunge e Louis Dreyfus) que utilizam o corredor para exportação

Cronograma:

- Edital : 2º Semestre de 2017
- Leilão : 2º Semestre de 2017



Ministério dos Transportes,
Portos e Aviação Civil

21

EF – 334 – Ferrovia de Integração Oeste-Leste (FIOL) entre Ilhéus/BA e Caetité/BA

Descrição: subconcessão do trecho de Ilhéus/BA a Caetité/BA da FIOL, conectando a um porto *greenfield*.

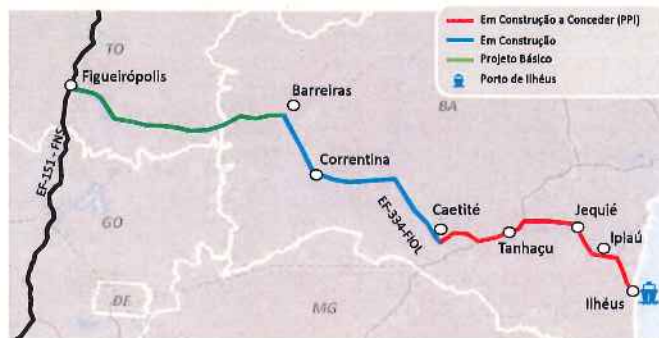
A EF-334 (FIOL) de Ilhéus/BA a Figueirópolis/TO possui 1.527 km

Extensão da nova subconcessão:

537 km

Importância:

Transporte de minério de ferro oriundo da região de Caetité rumo ao futuro Porto Sul em Ilhéus.



Situação Atual: construção da FIOL a cargo da VALEC

- Trecho Caetité-Ilhéus a subconceder 71% construído; trecho intermediário apenas 10% concluído.
- Estudo da subconcessão em desenvolvimento pelo Governo da Bahia será doado ao Governo Federal.
- Operacionalização da ferrovia depende da conclusão do Porto em Ilhéus, a cargo do Governo da Bahia.

Investimento previsto Ilhéus-Caetité: R\$ 1.0 bilhão (já investidos R\$ 2.4 bilhões)

Carga Prevista: principalmente minério de ferro (estudo em desenvolvimento).

Tempo de concessão: a definir (estudo em desenvolvimento).

Cronograma:

- Edital : 2º Semestre de 2017
- Leilão : 2º Semestre de 2017



Ministério dos Transportes,
Portos e Aviação Civil

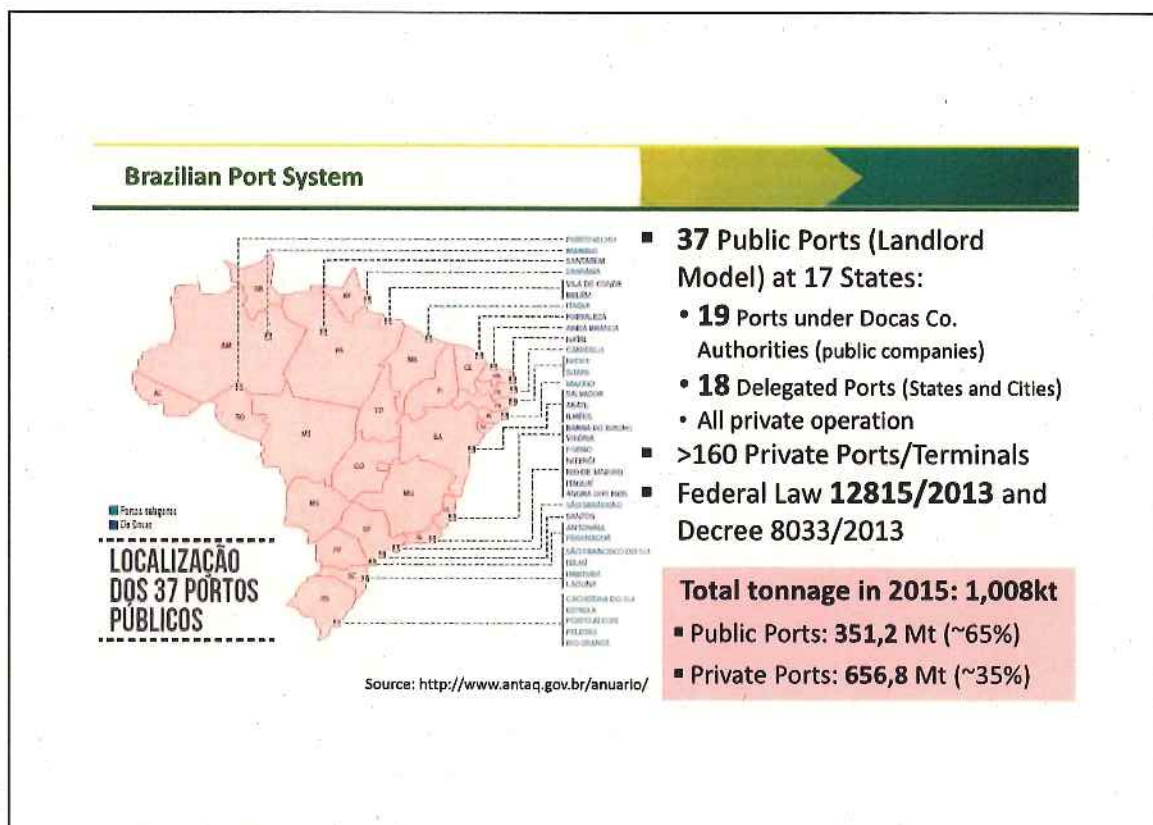
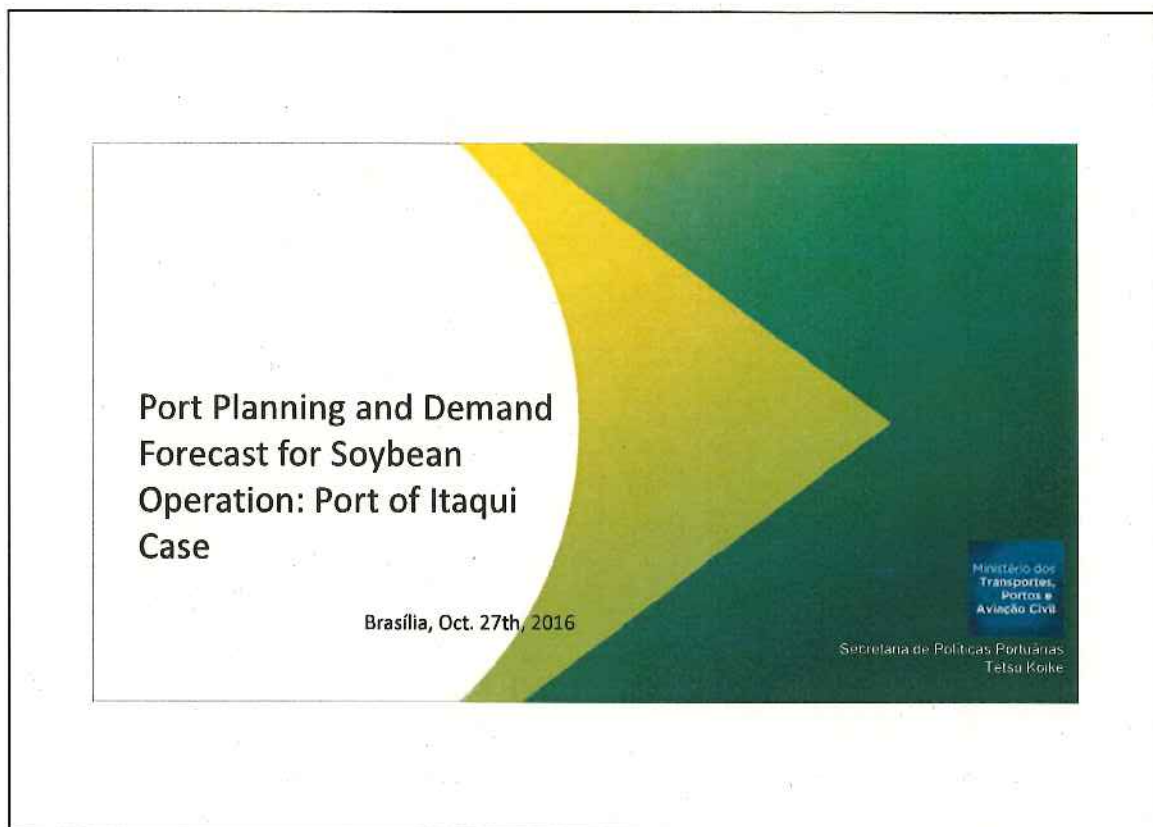
22

EF – 334 – Ferrovia de Integração Oeste-Leste (FIOL) entre Ilhéus/BA e Caetité/BA

Obras: Ilhéus/BA – Barreiras/BA



Fonte: VALEC



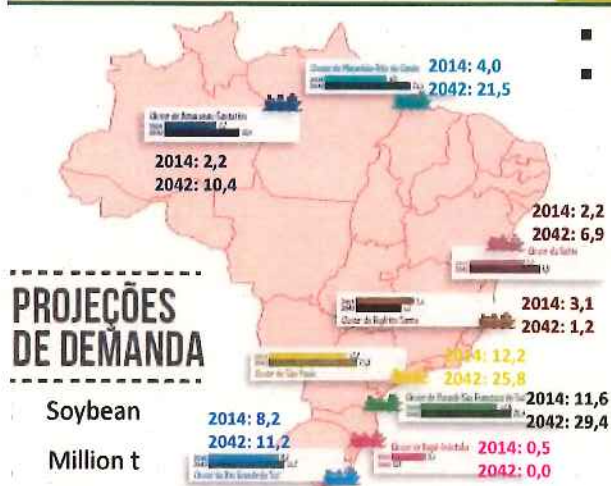
Strategic Planning



Port System Improvement
PPI – Investment Partnership Program (Federal Law 13334/2016)

<http://www.portosdobrasil.gov.br/assuntos-1/pnpl/plano-nacional-de-logistica-portuaria>

Port Demand Forecasting: Soybean

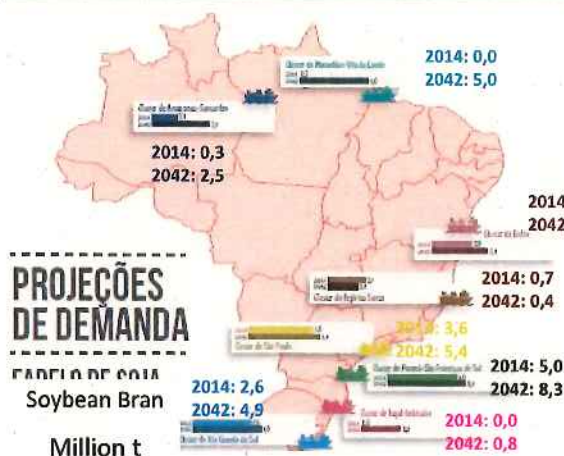


- **Period: 2014 (ref.) – 2042**
- **8 Port Clusters** (20 public ports):
 - ✓ Maranhão – Vila do Conde
 - ✓ Amazonas – Santarém
 - ✓ Bahia
 - ✓ Espírito Santo
 - ✓ São Paulo
 - ✓ Paraná – São Francisco do Sul
 - ✓ Itajaí – Imbituba
 - ✓ Rio Grande do Sul
 - ✓ Incl. Private Ports/Terminals

Main destination: China (71%)

Source: PNL 2015

Port Demand Forecasting: Soybean Bran



■ **Period: 2014 (ref.) – 2042**

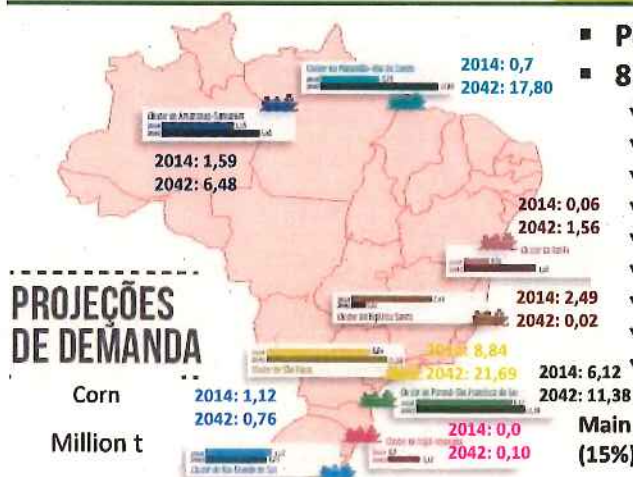
■ **8 Port Clusters** (20 public ports):

- ✓ Maranhão – Vila do Conde
- ✓ Amazonas – Santarém
- ✓ Bahia
- ✓ Espírito Santo
- ✓ São Paulo
- ✓ Paraná – São Francisco do Sul
- ✓ Itajaí – Imbituba
- ✓ Rio Grande do Sul
- ✓ Incl. Private Ports/Terminals

Main destinations: Netherlands (25%); France (15%)

Source: PNLP 2015

Port Demand Forecasting: Corn



■ **Period: 2014 (ref.) – 2042**

■ **8 Port Clusters** (20 public ports):

- ✓ Maranhão – Vila do Conde
- ✓ Amazonas – Santarém
- ✓ Bahia
- ✓ Espírito Santo
- ✓ São Paulo
- ✓ Paraná – São Francisco do Sul
- ✓ Itajaí – Imbituba
- ✓ Rio Grande do Sul
- ✓ Incl. Private Ports/Terminals

Main destinations: Iran (24%); Vietnam (15%)

Source: PNLP 2015

Soybean: Impact Of North Region Ports on Port Of Santos – Scenario 2042

Port Clusters	2014 (ref.) Mt	2042 Mt	Var. %
Maranhão-Vila do Conde	4,0	21,5	438%
Amazonas - Santarém	2,2	10,4	205%
São Paulo	11,6	29,4	445%



- Despite the increasing importance of **Maranhão-Vila do Conde Cluster**, in our planning studies, Porto Of Santos will remain the main soybean bulk cargo public port

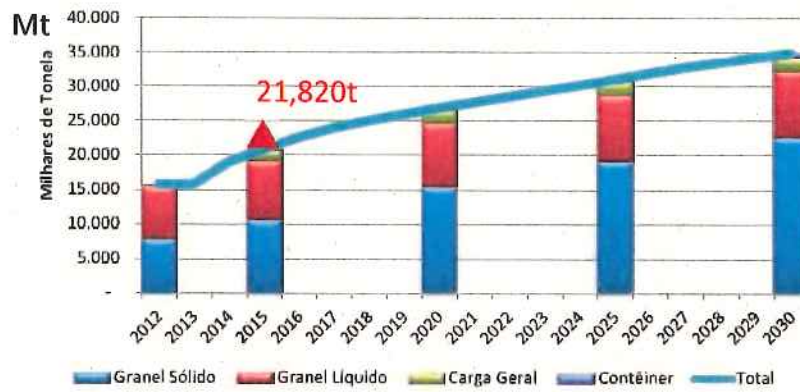
Source: PNLP 2015

Port Of Itaqui/MA in Maranhão-Vila do Conde Cluster

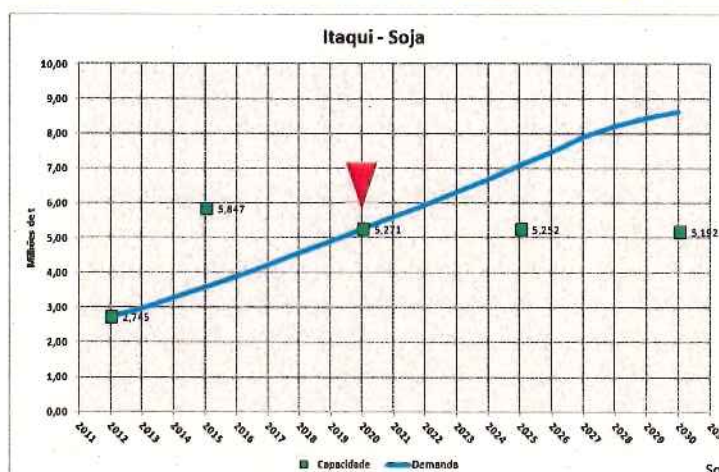


- Cargo: oil/fuel/alcohol; crop bulks; container; general
- 2015 total tonnage: 21,82Mt**
- Area under Customs Control: ~ 174k m2
- Wharf: 1,940m
- Berths [draft]: B100[10], B101[9], B102[10], B103[12], B104[13], B105[18], B106[19]
- New Berth: B108 Oil/Liquid Bulk (PAC Investment)**
- Project proposal: B99 (??)**
- Roadways: BR-135 / BR-222
- Railroads: TLSA/EFC
- Terminal de Grãos do Maranhão – TEGRAM**
- 2015 tonnage: 3,7Mt (2,1Mt soybean; 1,4Mt corn; 0,185Mt bran)**
- 2016 tonnage: 5Mt**
- 2018: 10Mt**
- 4 silos → B103**
- New conveyor+shiploader → B100**

Port Of Itaqui/MA: Demand Forecast



Port Of Itaqui/MA: Soybean Demand Forecast x Current Capacity



Port Of Itaquí/MA: Investment Plan 2030

CRONOGRAMA DE INVESTIMENTOS E MELHORIAS - PORTO DO OCEANO																			
Item	Cenário	Descrição da Ação	Operacional					Estratégico											
			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Melhorias operacionais																			
1	Ampliar	Implementação do sistema de controle de tráfego de embarcações - VTS/VTS																	
2	Ampliar	Implementação do projeto Cadeia Logística Portuária Inteligente																	
3	Ampliar	Reforço e/ou substituição de equipamentos inutilizados ou de baixa produtividade																	
4	Ampliar	Reordenar a faixa primária de modo a otimizar a armazenagem de equipamentos, ferragens e similares																	
5	Ampliar	Estimular a utilização do sistema de MPA para fertilizantes e químicos																	
6	Ampliar	Maximizar a utilização de casis no bico entre os barcos 150 e 103																	
7	Cenário 2	Duplicação do número de shiploaders na TIGRAM (vide seção 3.2.2)																	
Investimentos portuários																			
8	Ampliar	Finalização da Construção do EDGAR																	
9	Ampliar	Construção do Terminal de Fertilizantes																	
10	Ampliar	Construção do Terminal de Cereais																	
11	Ampliar	Finalização da Construção do Berço 104																	
12	Cenário 2	Construção do Berço 99 (vide seção 3.2.2)																	
13	Cenário 1	Construção do Berço 99 (vide seção 3.2.1)																	
Construção portuária																			
14	Ampliar	Reestruturação do balança comercial e dos centros de custo do porto																	
15	Ampliar	Atualização da tarifa portuária																	
16	Ampliar	Projeto de monitoramento de indicadores de produtividade																	
17	Ampliar	Programa de treinamento de pessoal																	
18	Ampliar	Regularizar a situação com a Petrobras a respeito da ocupação do APP																	
Atuação do Porto																			
19	Ampliar	Implementação de área de apoio logístico																	
20	Ampliar	Duplicação da linha da Estrada de Ferro Carajás (EFC)																	
21	Ampliar	Duplicação da BR-116 entre o Porto de Itaqui e o acesso ao Terminal Ponta do Mosquito																	
Legenda																			
		+ exemplo																	
		+ exemplo																	

Source: Master Plan 20

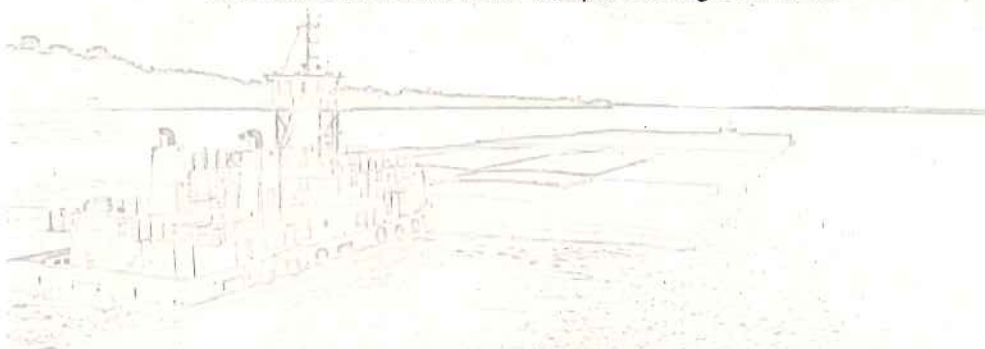
Source: Master Plan 2015

Obrigado!

tetsu.koike@portosdobrasil.gov.br

Informações Básicas - Logística de Escoamento de Grãos do Brasil

Basic Informations about Grains Transport and Logistic in Brazil



Arthur Yamamoto

Superintendente de Desempenho, Desenvolvimento e Sustentabilidade



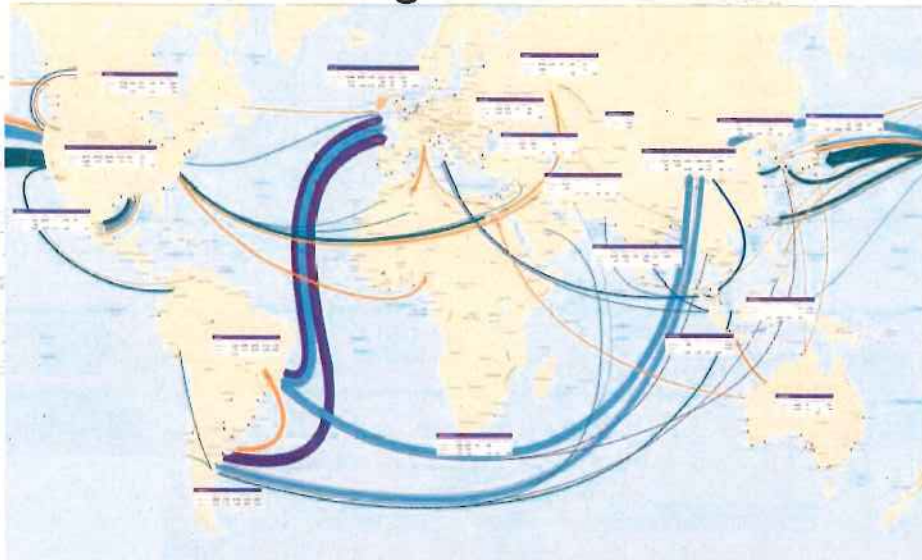
Brasília, outubro de 2016

Informações Básicas - Logística de Escoamento de Grãos do Brasil

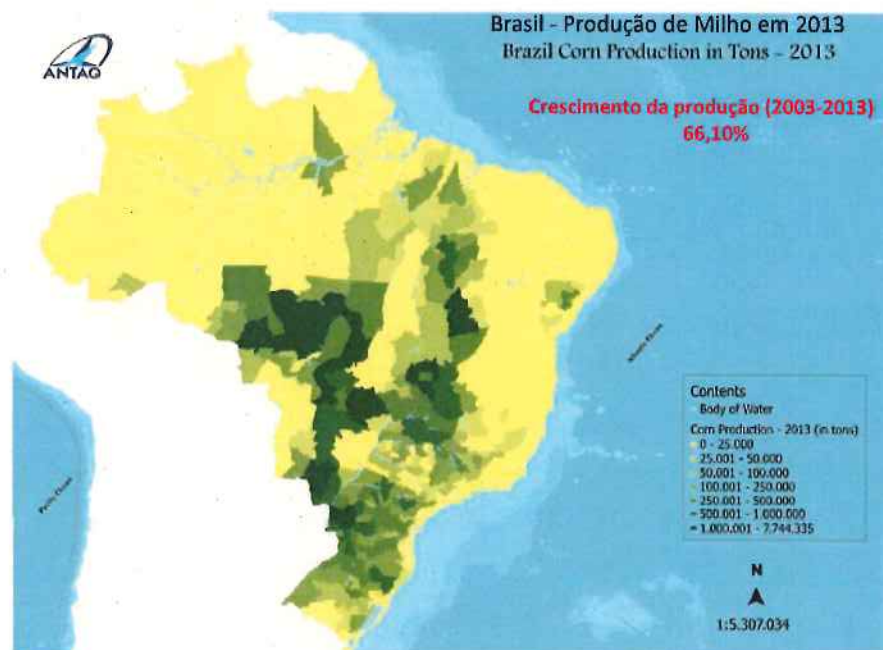
Sumário

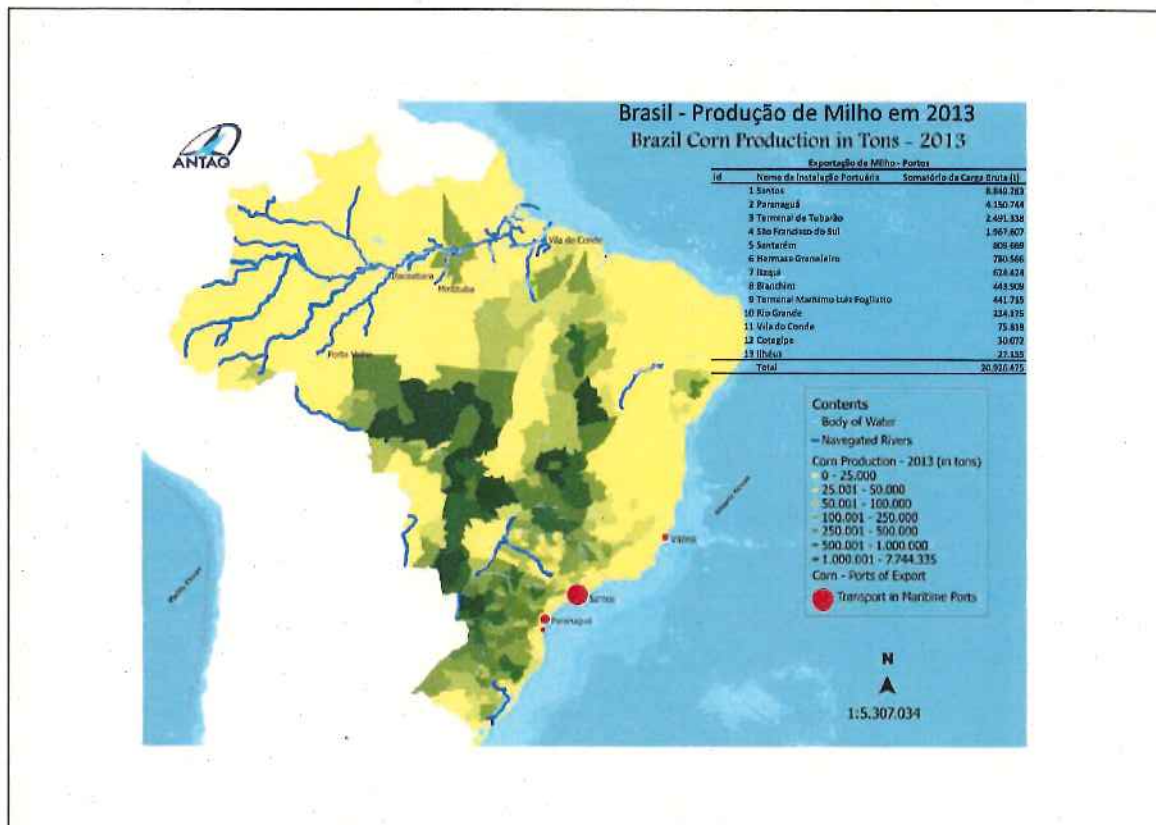
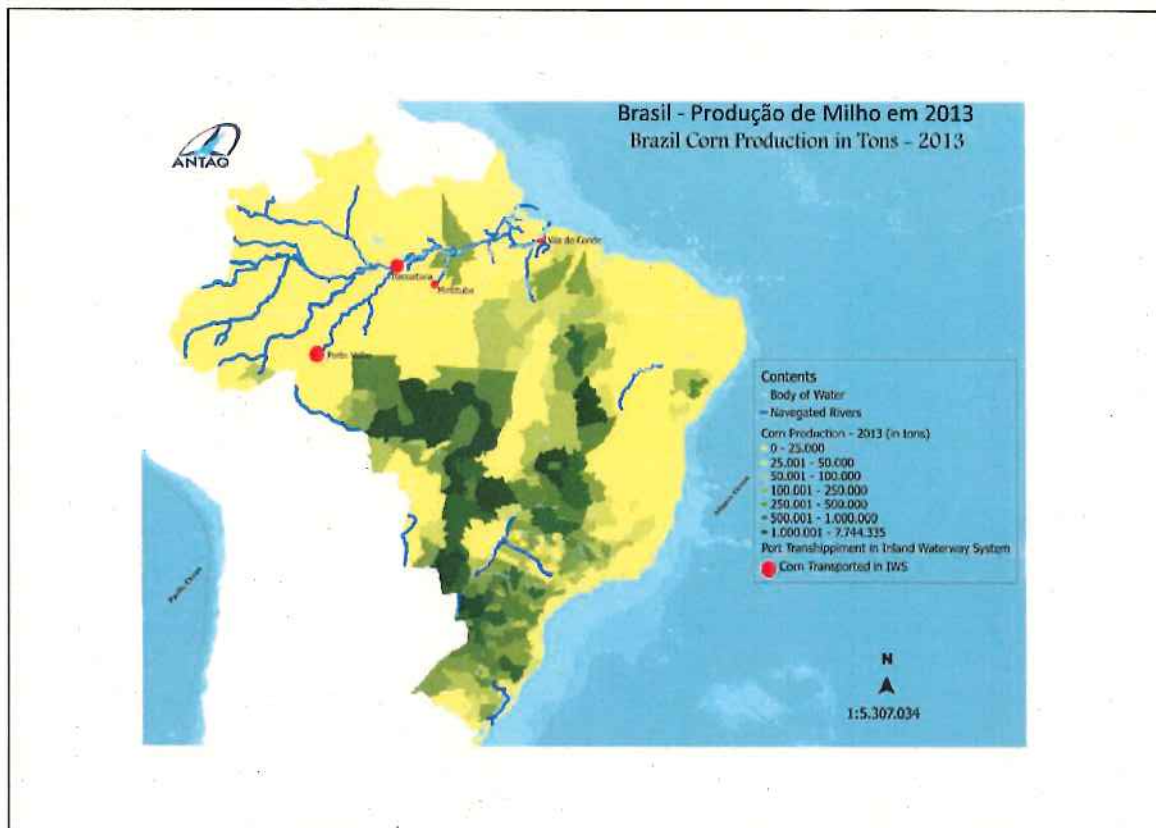
1. O papel do Brasil no abastecimento de grãos;
2. Produção Brasileira de Grãos (Soja e Milho);
3. Os Transportes Aquaviários do Brasil e o seu potencial – Vias Navegadas X Vias Planejadas;
4. Portos/Terminais no Arco Norte; e
5. Estudos em Hidrovias e Projeções de Investimentos.

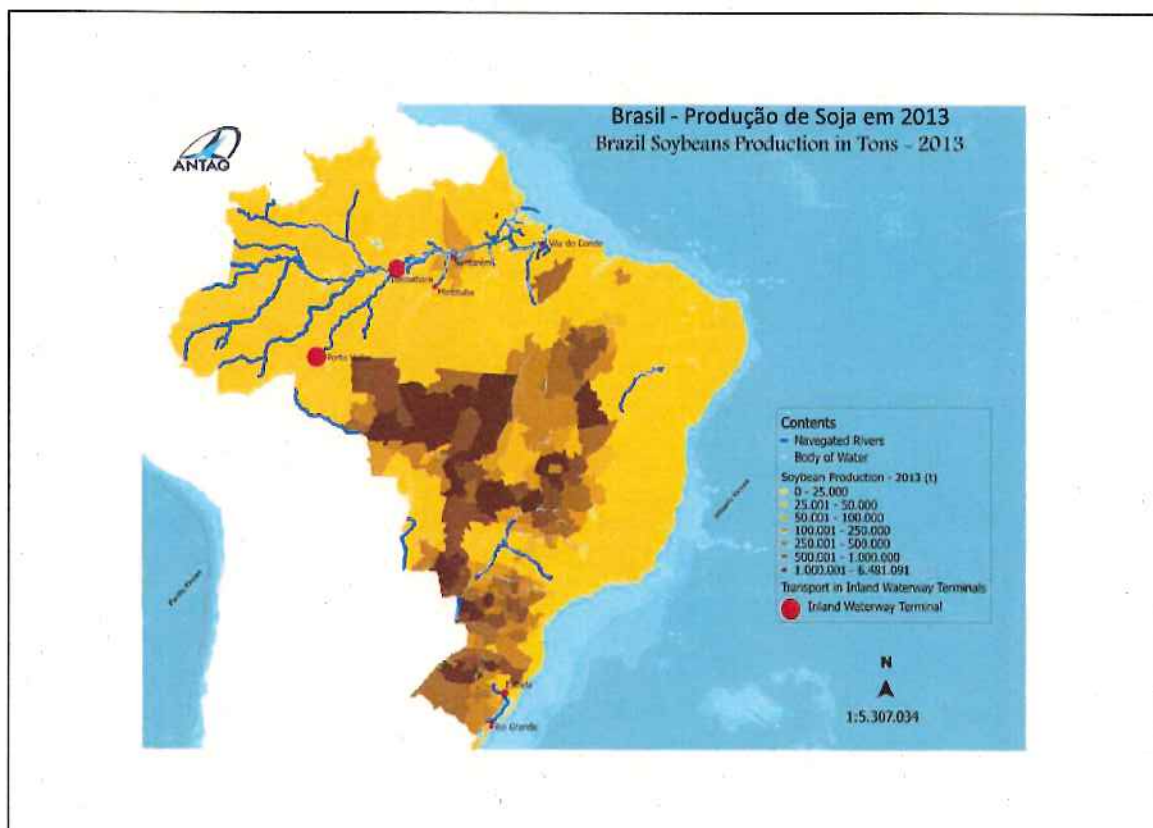
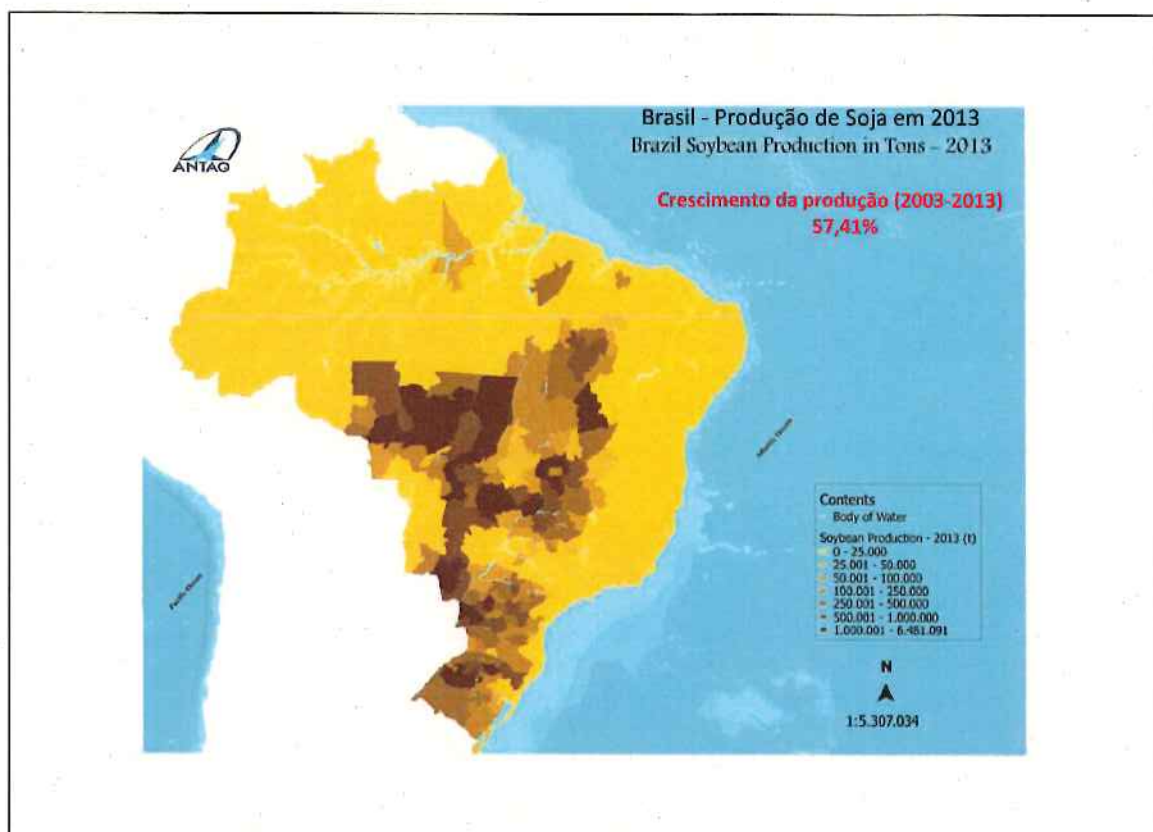
Participação brasileiro no fluxo de grãos mundial

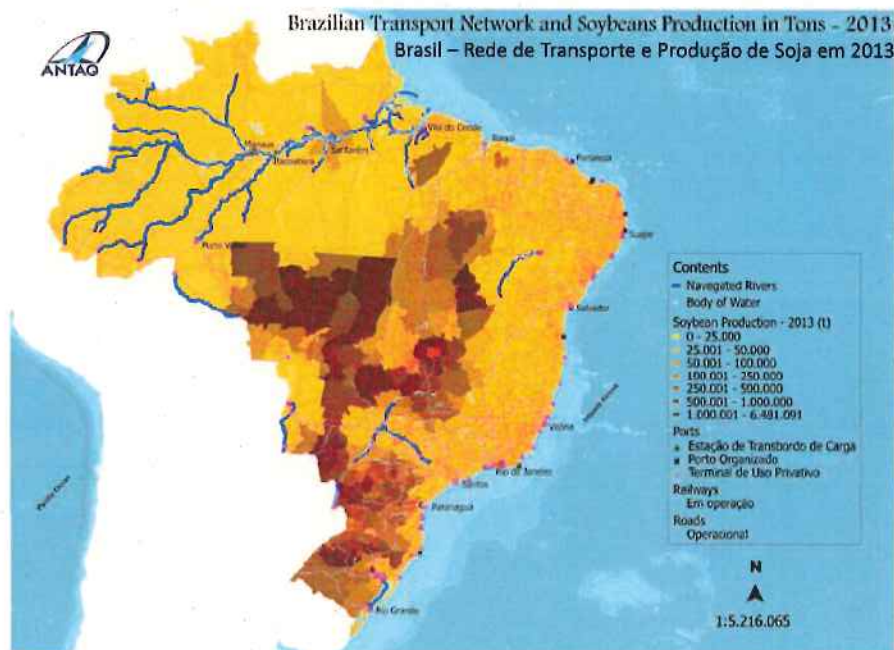


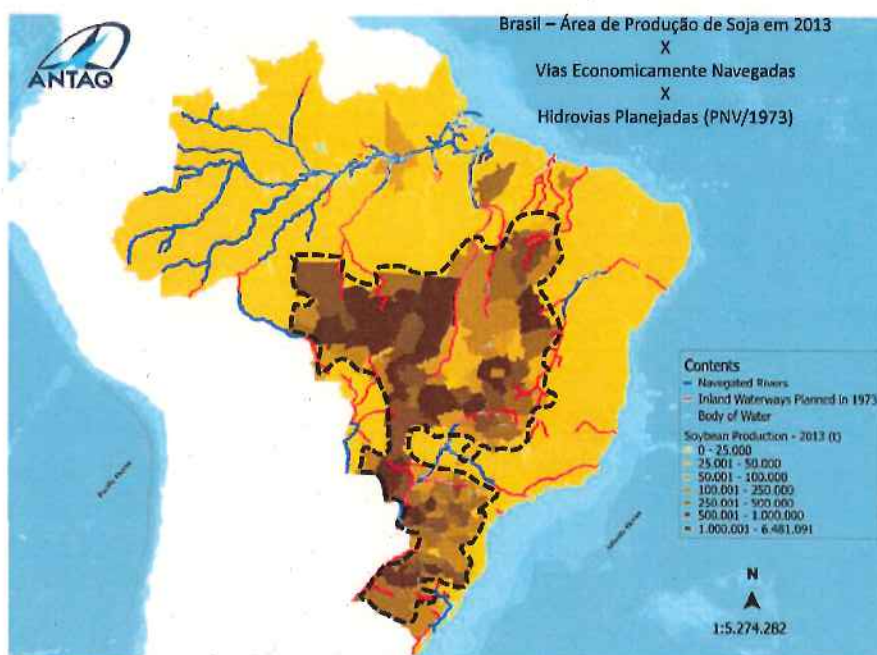
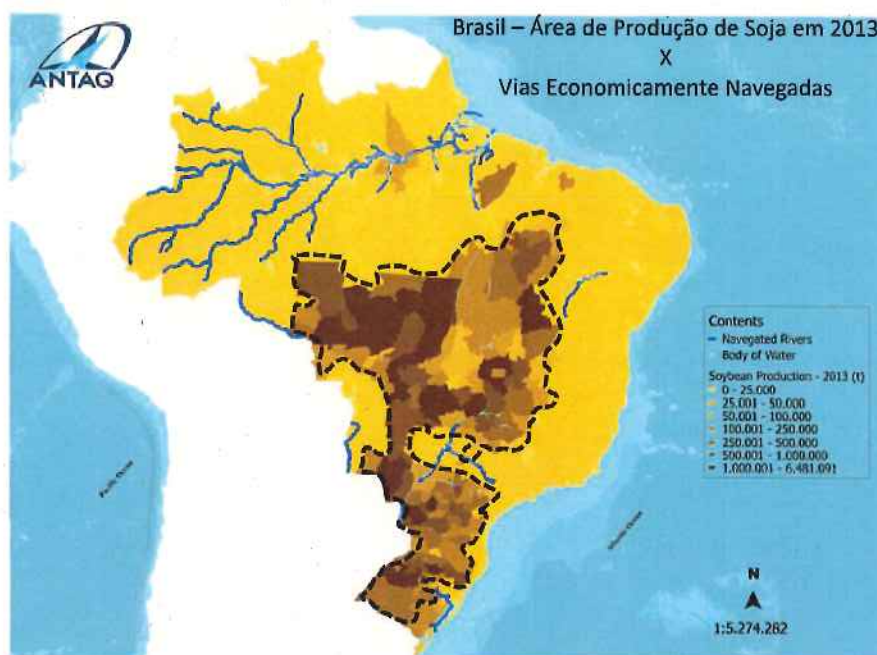
Source: <http://www.quora.com/How-does-the-world-map-of-grain-trade-look-like>

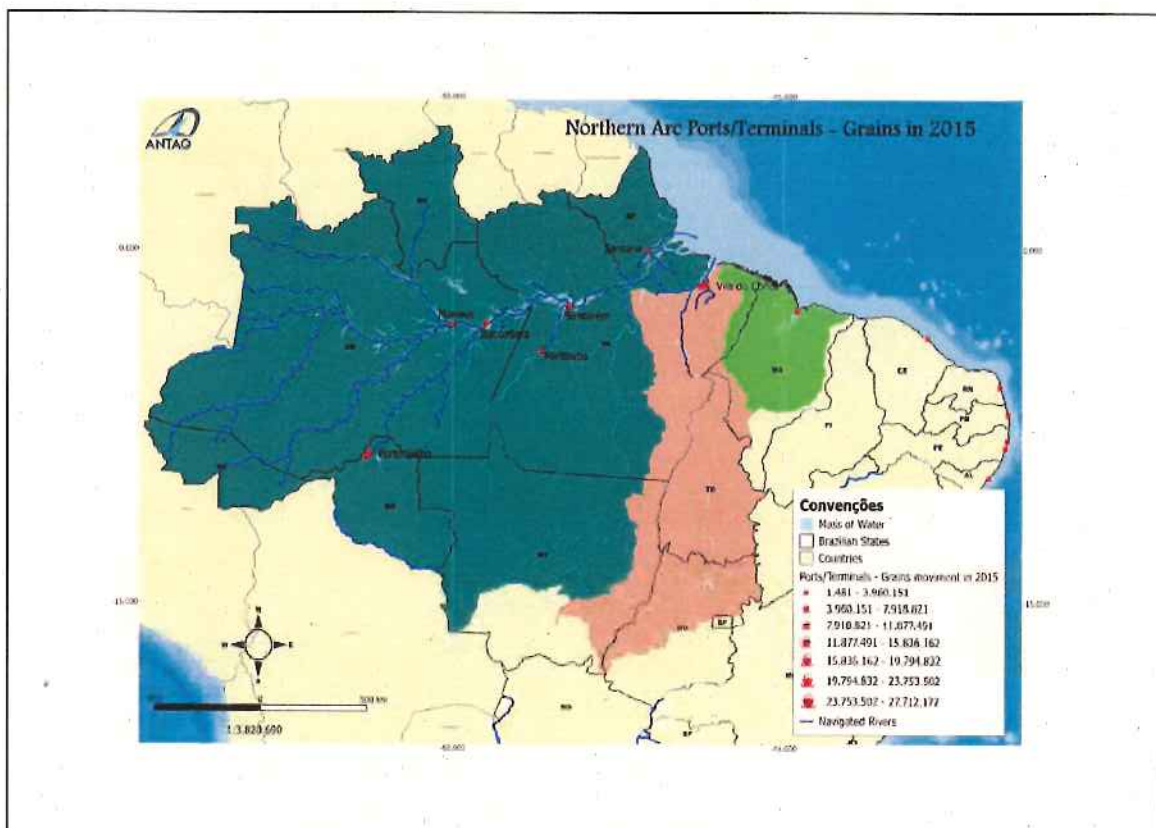


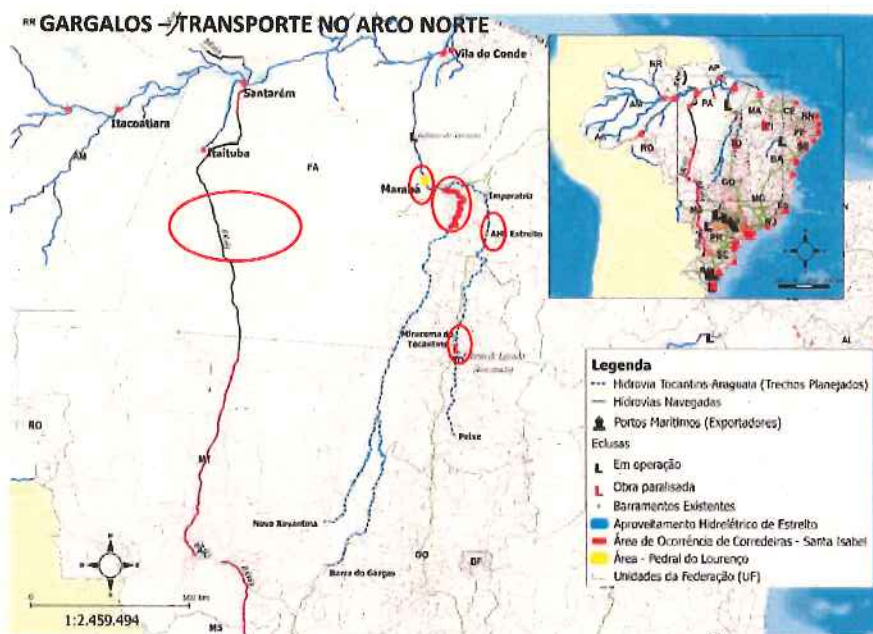










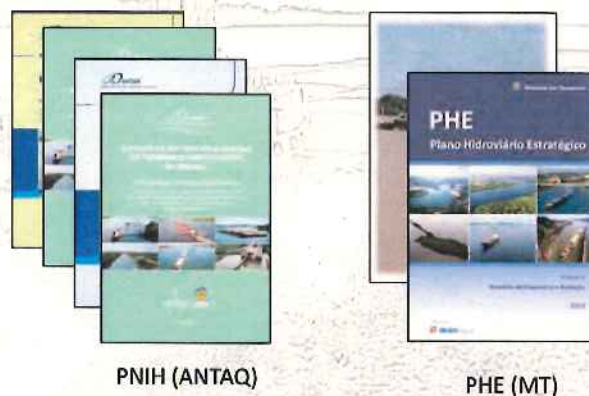


Informações Básicas - Logística de escoamento de Grãos do Brasil

Perspectivas para projetos em Hidrovias Estudos

- Pela necessidade de avanço na infraestrutura de transporte do país, na década passada ocorreu uma retomada em estudos e planejamento em transportes no país, a nível governamental;
- Neste sentido, o **Plano Nacional de Logística e Transportes (PNLT)** pode ser considerado como um marco desta retomada;
- Contudo, o país ainda carecia de estudos específicos em transportes aquaviários; e
- No contexto hidroviário, surgiram o **PNIH** e o **PHE**.

Informações Básicas - Logística de Escoamento de Grãos do Brasil



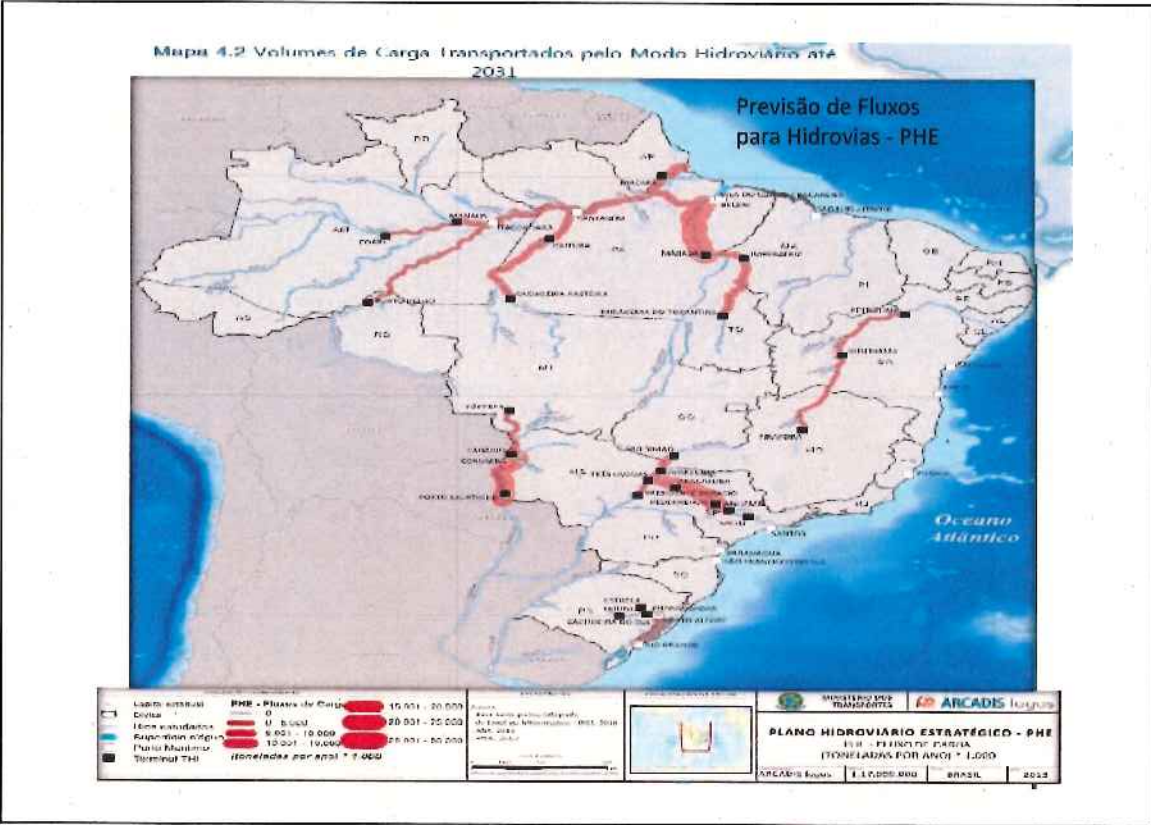
Informações Básicas Referente a Logística de Escoamento de Grãos do Brasil

- O PNIH, além de indicar **localizações para implantação de terminais**, simulou a utilização de **trechos hidroviários**, delineando a potencialidade de trechos ainda não utilizados economicamente e o incremento de trechos economicamente navegados.

Informações Básicas - Logística de Escoamento de Grãos do Brasil

- Já o PHE visou criar um portfólio de investimentos prioritários para o Estado até o ano de 2031.
- O estudo partiu de uma análise multicritério, considerando fatores como:
 - Sistema Físico dos Rios;
 - Aspectos Socioambientais;
 - Arranjo Institucional; e
 - Sistema de Transportes e Aspectos Econômicos para delimitação de trechos hidroviários.

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Informações Básicas - Logística de escoamento de Grãos do Brasil

INVESTIMENTOS PREVISTOS - PHE

Transporte de Cargas, Projeções do PHE, Investimentos Previstos e Extensão dos Principais Complexos Hidroviários do Brasil

Complexo	Total Transportado (2013)*	PHE (2015)***	PHE (2023)***	PHE (2031)***	Investimentos Previstos (R\$)	Extensão (km)
Hidrovia do Madeira****	5.355.707	7.619.000	9.907.000	11.954.000	2.000.000.000	0
Hidrovia do Tapajós	0	6.063.000	7.666.000	9.122.000	3.421.000.000	680
Hidrovia Solimões-Amazonas**	10.989.044	13.170.000	14.584.000	5.993.000	300.000.000	0
Hidrovia do Tocantins	3.622.806	16.626.000	32.261.000	50.521.000	3.780.000.000	780
Hidrovia do Sul	4.301.428	5.250.000	7.026.000	9.367.000	1.260.000.000	170
Hidrovia do Paraguai	5.940.903	7.702.000	10.871.000	14.883.000	2.298.000.000	640
Hidrovia Paraná-Tietê	6.281.630	7.482.000	15.338.000	17.954.000	3.480.000.000	0
Hidrovia do Parnaíba	0	2.711.000	5.526.000	9.139.000	S/I	S/I
Hidrovia do São Francisco	49.549	53.000	58.000	61.000	263.000.000	740
TOTAL*****		47.902.800	80.145.000	110.673.000	16.802.000.000	3.010

Informações Básicas - Logística de escoamento de Grãos do Brasil

- Mesmo com finalidades distintas, os estudos realizados pela ANTAQ e Ministério dos Transportes mostraram, claramente, o grande potencial de crescimento das hidrovias do país.

Informações Básicas - Logística de Escoamento de Grãos do Brasil

Outras Ações:

- Visando maior detalhamento sobre as intervenções necessárias para os trechos hidroviários, o Departamento Nacional de Infraestrutura de Transportes – **DNIT**, está elaborando Estudos de Viabilidade Técnica, Econômica e Ambiental – EVTEA, para doze complexos hidroviários.
- Os resultados permitirão a criação de estratégias específicas para cada complexo hidroviário.

Informações Básicas - Logística de Escoamento de Grãos do Brasil

Considerações Finais

- Uma maior utilização das hidrovias no Brasil depende de um conjunto de fatores, como:
 - Investimentos periódicos em infraestrutura;
 - Rearranjo Institucional;
 - Ampliação da frota e novos estaleiros;
 - Maior disponibilidade de terminais hidroviários;
 - Planejamento integrado periódico (Revisão constante dos projetos); e
 - Criação de uma atmosfera de confiabilidade em torno do modal hidroviário.

Obrigado



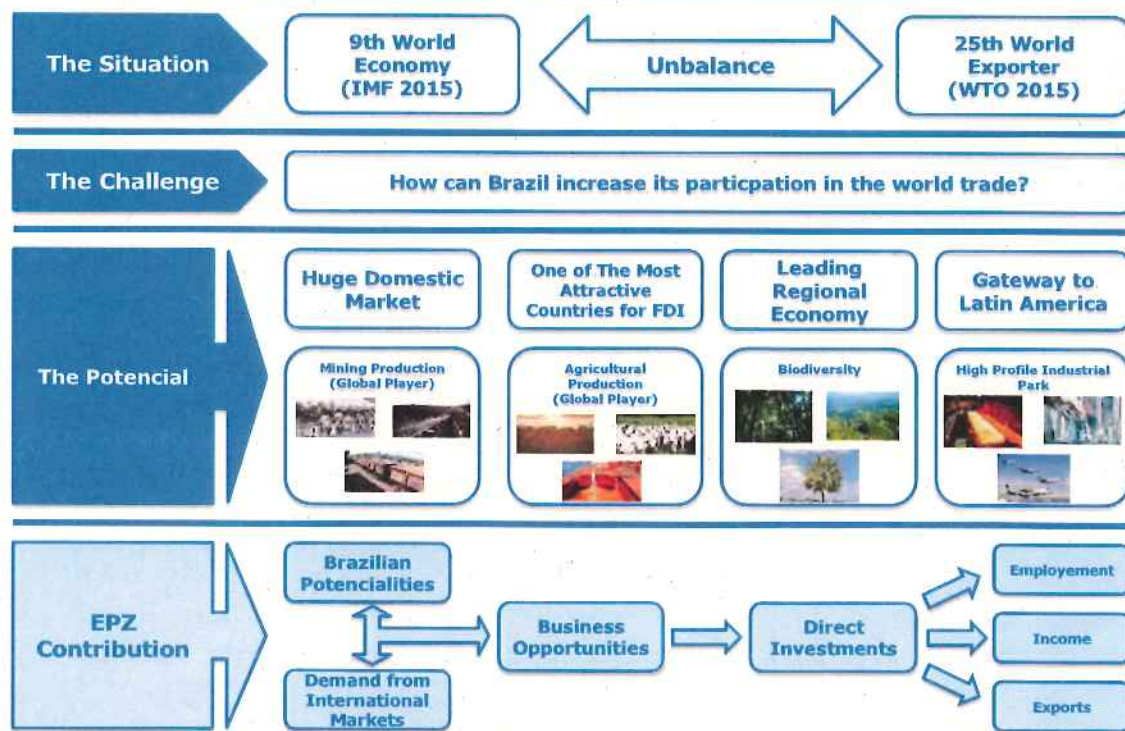


GOVERNMENT OF BRAZIL
MINISTRY OF INDUSTRY, FOREIGN TRADE AND SERVICES – MDIC
NATIONAL COUNCIL OF THE EXPORT PROCESSING ZONES – CZPE
EXECUTIVE SECRETARIAT – SE

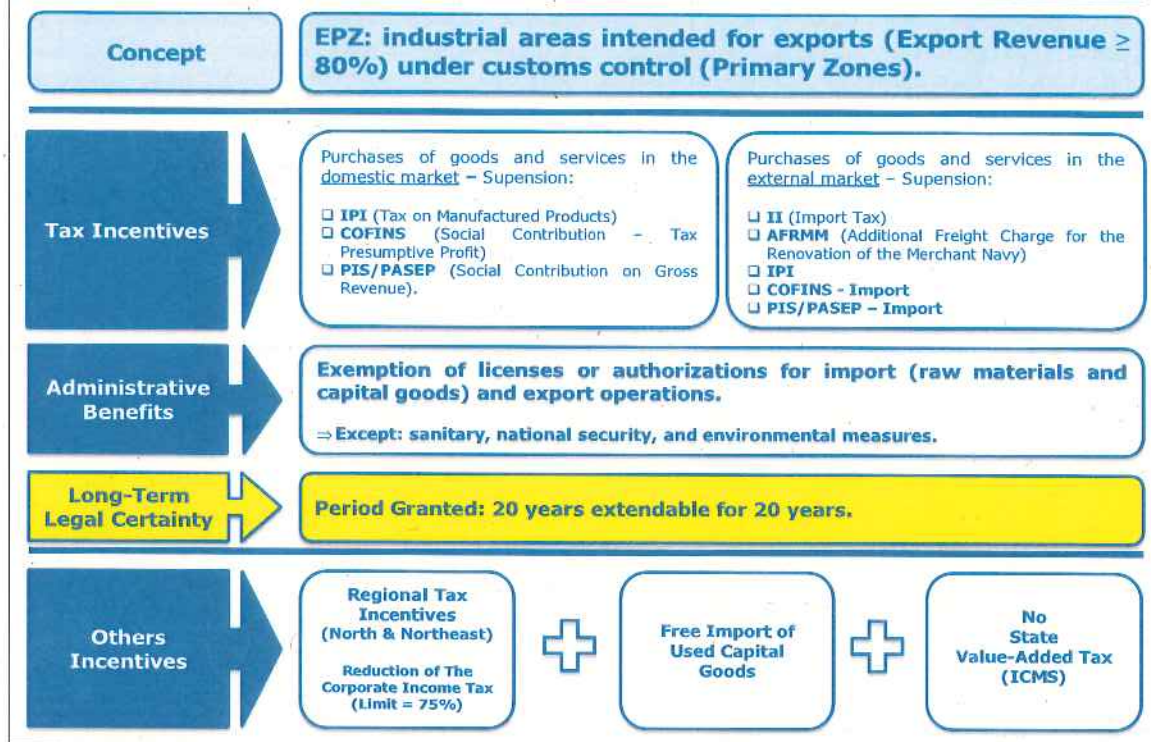
The Brazilian Regime of Export Processing Zones - EPZ

Seminário para Melhoria da Infraestrutura de Transporte de Grãos
Brasília/DF – October 27th, 2016

BRAZILIAN EPZ – CHALLENGES & BUSINESS OPPORTUNITIES



BRAZILIAN EPZ - CONCEPT & INCENTIVES



BRAZILIAN EPZ - LIMITS & REQUIREMENTS



The continuation of company in an EPZ depends on the minimum export of 80% of its total gross sales revenue.

Note: Products sold to the domestic market will be subject to the payment of all taxes and contributions normally granted by the EPZ regime.



The tax suspension provided for the EPZ Regime applies only to the acquisition of capital goods, raw materials, intermediate products, and packaging materials.

Examples:



The companies authorized to operate in EPZs are subjected to the same legal and regulatory provisions applicable to all national companies.

Brazilian EPZ – The Most Developed Projects



ZPE NO BRASIL

19 EPZs in effective deployment (18 STATES)

EPZs are in different stages.

Acre (AC), Parnaíba (PI) and Pecém (CE): the most advanced EPZs

EPZs of Acre (AC) and Pecém (CE): bonded by Customs Authority.

Acre/AC EPZ





The use of raw materials available in the region.



Transoceanic Road



Access to Ports in the Pacific Ocean

Parnaíba/PI EPZ





Food Production



New Brazilian Agricultural Area MATOPIBA



Pharmaceutical Raw Materials

Pecém/CE EPZ





Pecém Port Infrastructure



Multinational Companies



Global Production Chains

THE MOST ADVANCED BRAZILIAN EPZS IN DEVELOPMENT



ZPE DO PECÉM (SÃO GONÇALO DO AMARANTE CITY/CEARÁ STATE)

Pecém Steel Company(CSP)

- Investment: US\$ 5,4 billion
- Annual Production (1st phase): 3 million tons of steel plate
- Direct employees (1st phase of plant operations): 2.800
- Joint venture: Vale (50%), Dongkuk (30%) e Posco (20%)
- Impacts on regional development (potential increase)
 - GDP of the state of Ceará: 12%
 - Ceará's industrial GDP: 48%



THE MOST ADVANCED BRAZILIAN EPZS IN DEVELOPMENT



ZPE DO PECÉM (SÃO GONÇALO DO AMARANTE CITY/CEARÁ STATE)

- Awarded by fDi Magazine (Financial Times): Global Free Zones of the Year 2016.

➤ Categories:

- Winner
 - Large tenants – Latin America and Caribbean
- Bespoke awards:
 - Supporting education and training
 - Infrastructure upgrades
 - Expansions



THE MOST ADVANCED BRAZILIAN EPZ IN DEVELOPMENT



PARNAÍBA EPZ (PARNAÍBA CITY/PIAUI STATE)

- Size: 348.80 ha
- Potentialities:
 - Grains (soyabean)
 - Food processing (fruits, honey)
 - Pharmaceuticals
 - Waxes and fibers
 - Fish
- Industrial Projects Approved :
 - DK Frutas: food processing
 - KTAFarma: salts of pilocarpine
 - Agrocerá: wax (carnaúba)
 - Ecopellets: pellets (carnaúba)

Grains & Food Processing (Fruits)



New Agricultural Frontier MATOPIBA



Regional companies with regional export operations.



THE MOST ADVANCED BRAZILIAN EPZ IN DEVELOPMENT



PARNAÍBA EPZ (PARNAÍBA CITY/PIAÚÍ STATE)



MATOPIBA – THE EPZ POTENTIAL

MATOPIBA – THE MAIN AGRICULTURAL PRODUCTS



Cotton



Maize



Soyabean



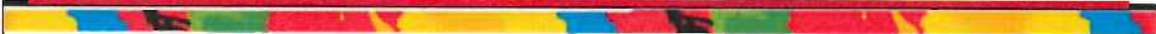
SE/CZPE - Contact Informations

National Council of the Exporting Processing Zones – CZPE Executive Secretariat – SE

- **Adress:**
Esplanada dos Ministérios, Bloco "J", Sala 100-A
CEP: 70053-900, Brasília-DF - Brasil
- **Telephone:** (+55 61) 2027-7067
- **E-mail:** seczpe@mdic.gov.br
- **Homepage:** <http://www.mdic.gov.br/czpe>



**Seminário para Melhoria da
Infraestrutura de Transporte de Grãos**



Infraestrutura de Transporte de Grãos



Estado do Maranhão



Infraestrutura de Transporte de Grãos



É uma das 27 unidades
federativas do Brasil

Localiza-se no extremo
oeste da Região Nordeste.

Possui 217 municípios

Com uma população de
6.904.241 habitantes

PIB de R\$ 67, 6 Bilhões

Infraestrutura de Transporte de Grãos

SEPT
SECRETARIA EXTRAORDINÁRIA
DE PROGRAMAS ESPECIAIS



PROJETOS

- Anel da Soja (Em execução);
- Reconstrução da MA-006;
- Reconstrução da BR 324;
- Ramal Balsas/ Estreito;
- Ampliação do Porto do Itaqui.

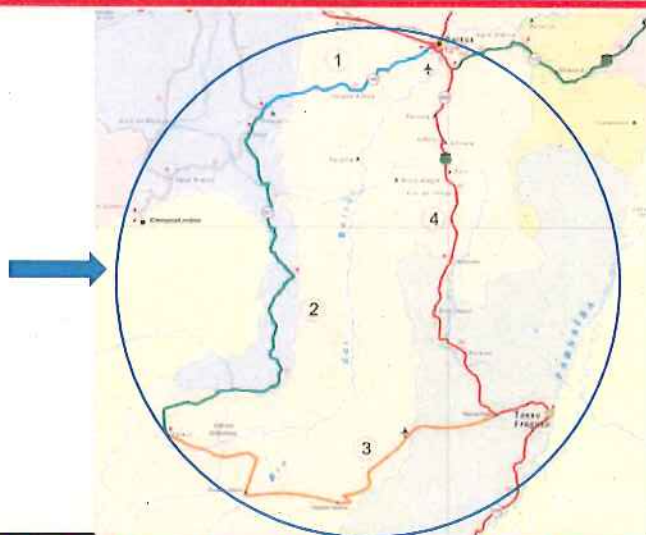


Infraestrutura de Transporte de Grãos



ANEL DA SOJA

Infraestrutura de Transporte de Grãos (ANEL DA SOJA)



1- MA 140 – Trecho: Balsas/Ouro
Extensão: 67 Km;

. Ação / Objeto: Melhoramentos e Pavimentação em execução.

2- MA 007 – Trecho: Ouro / Batavo
Extensão: 135 Km;

. Ação / Objeto: Melhoramentos e Pavimentação em execução

3- Interligação – Trecho: Batavo / MA 006 (Pisa no Freio); Extensão: 155 Km;
. Ação / Objeto: Implantação e Pavimentação.

4- MA 006 – Trecho: Balsas / Pisa no Freio; Extensão: 124 Km;

. Ação / Objeto: Restauração e Melhorias de Capacidade e Segurança.

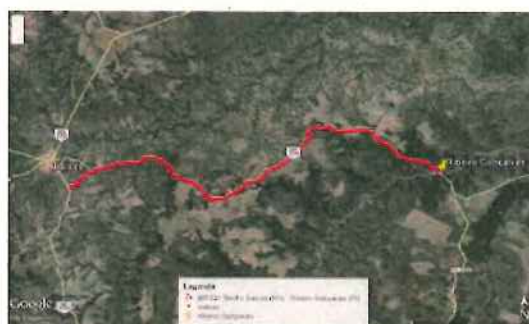
RECONSTRUÇÃO DA MA-006



- ✓ O Corredor de Transporte e Integração Sul-Norte do Maranhão, reconstrução do trecho de 649 km da rodovia estadual MA-006 entre o município maranhense de Alto Parnaíba e o Entroncamento com a BR- 222.

RODOVIA BR-324
Trecho Ribeiro Gonçalves (PI) a Balsas (MA)

- ☐ Construção de trecho de 108 Km da rodovia BR-324, ligando os municípios de Ribeiro Gonçalves (PI) a Balsas (MA).



FERROVIA RAMAL BALSAS

Trecho Balsas (MA) à Ferrovia Norte – Sul (Estreito - MA)



Ferrovias

- CFN - Companhia Ferroviária do Nordeste
- Carajás
- Transnordestina
- Norte-Sul

- ✓ Trecho de 175km
- ✓ EVTEA
- ✓ Projeto executivo elaborado



**GOVERNO DO
MARANHÃO**
GOVERNO DE TODOS NÓS



SEPE
SECRETARIA EXTRAORDINÁRIA
DE PROGRAMAS ESPECIAIS

GOVERNO DO
MARANHÃO

GOVERNO DO
MARANHÃO

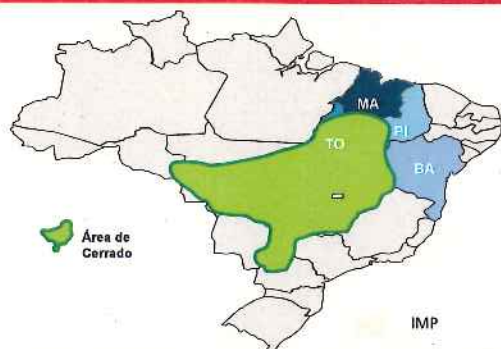


CORREDOR CENTRO-NORTE E REGIÃO MATOPIBA*

*POPULAÇÃO CERCA DE 50 MILHÕES

Agronegócio no Porto do Itaqui

SEPE
SECRETARIA EXTRAORDINÁRIA
DE PROGRAMAS ESPECIAIS



29,8% do total de cargas
movimentadas em 2014.
5,3 milhões de toneladas

40,3% do total de cargas
movimentadas em 2015.
8,8 milhões de toneladas

AGRONEGÓCIOS - RELEVÂNCIA	2011	2012	2013	2014	2015
Fertilizantes	928.284	1.232.742	1.384.420	1.497.442	1.449.289
Soja	2.503.901	2.744.687	2.974.624	3.017.834	4.955.299
Farelo de Soja	-	-	-	36.250	185.476
Milho	36.824	526.471	204.446	624.424	2.112.038
Trigo	94.249	87.142	93.541	105.110	77.134
Arroz	144.332	164.505	148.803	100.199	23.043
Malte	3.000	-	-	-	-
TOTAL	3.710.589	4.755.546	4.805.835	5.381.259	8.802.279

Infraestrutura para grãos

SEPE
SECRETARIA EXTRAORDINÁRIA
DE PROGRAMAS ESPECIAIS



COR	INFRAESTRUTURA	BERÇO	CAPACIDADE NOMINAL (BASE SOJA)
Orange	2014	105	3,5 milhões de tons (será limitada a 2,4 milhões após inauguração da conexão ferroviária do TEGRAM)
Black	Março 2015	103	+ 5 milhões tons
Purple	Futura 2019 (Tendência: antecipação para 2018)	100	+ 5 milhões tons



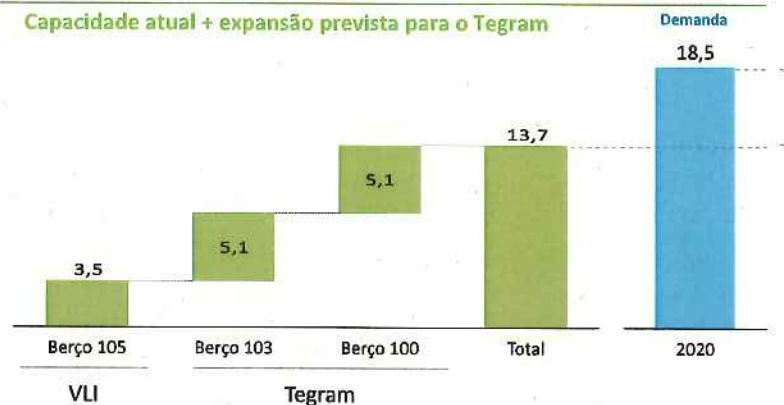
Necessidade de expansão portuária

GEPE
SECRETARIA EXTRAORDINÁRIA
DE PROGRAMAS ESPECIAIS



Necessidade de Capacidade Adicional no Porto em 2020

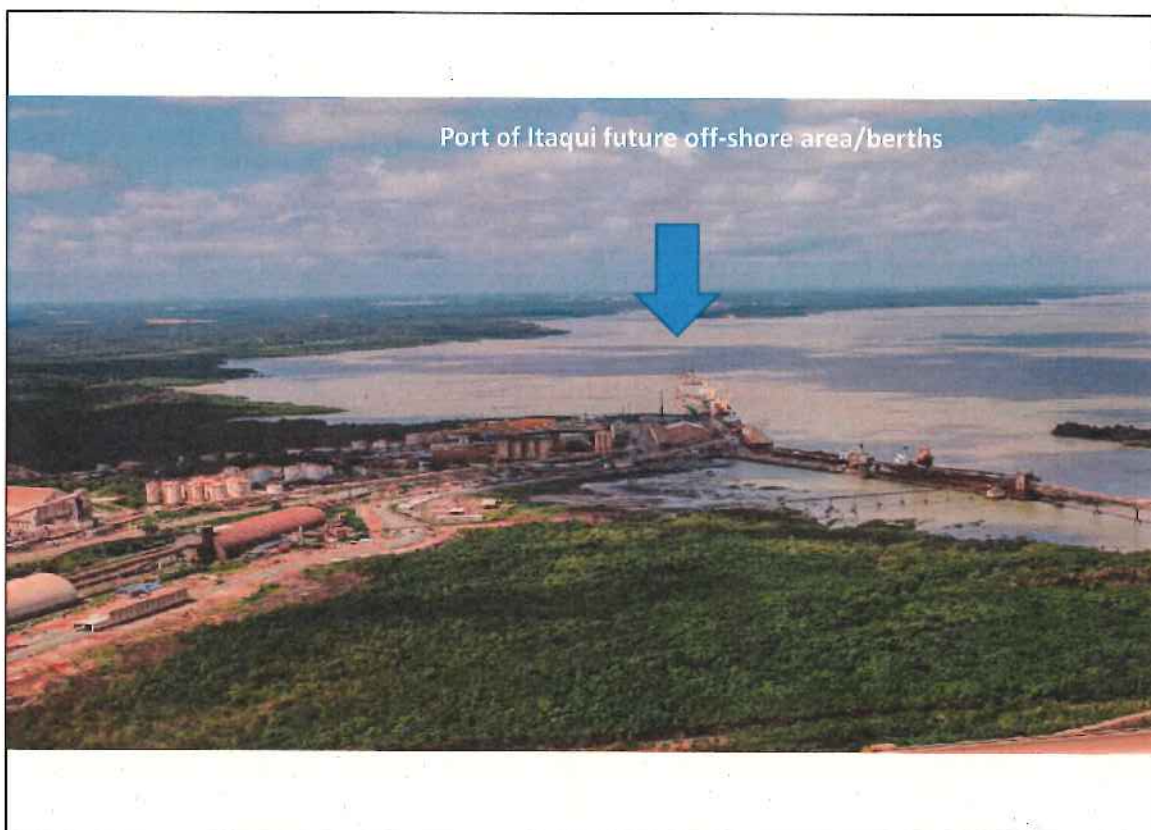
Capacidade atual + expansão prevista para o Tegram



4,8
Milhões
de toneladas

Equivale a um novo
berço para exportação
de grãos

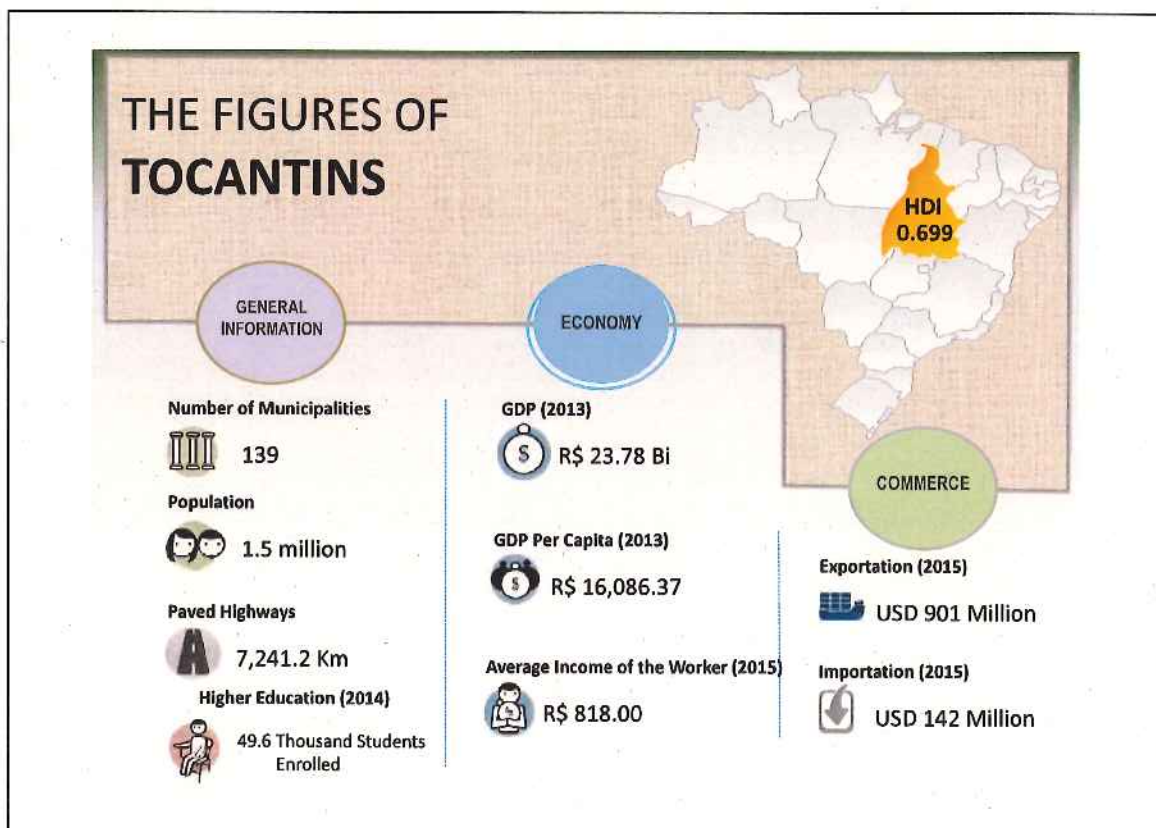
Fonte: VLI



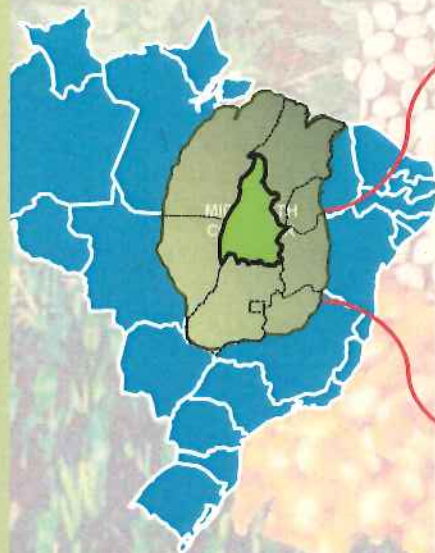
Berths 99 and 98

SEPE
SECRETARIA EXTRAORDINÁRIA
DE PROGRAMAS ESPECIAIS





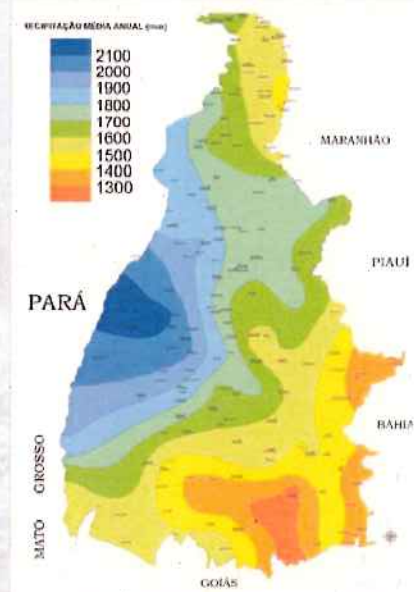
TOCANTINS



Last viable
agricultural frontier
of the world still
expanding!

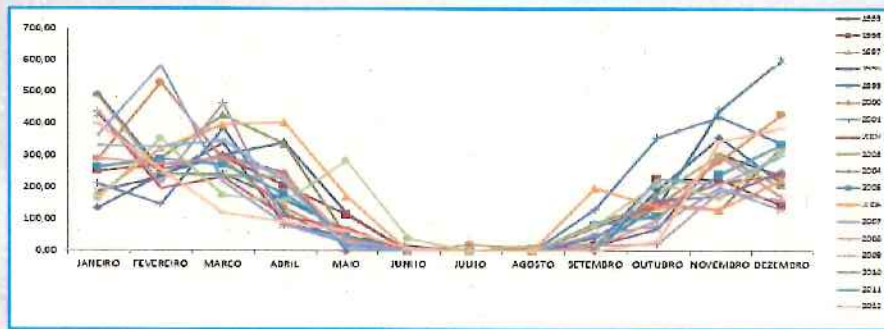
Tocantins in the
center of the new
Brazilian
Agriculture

Rainfall



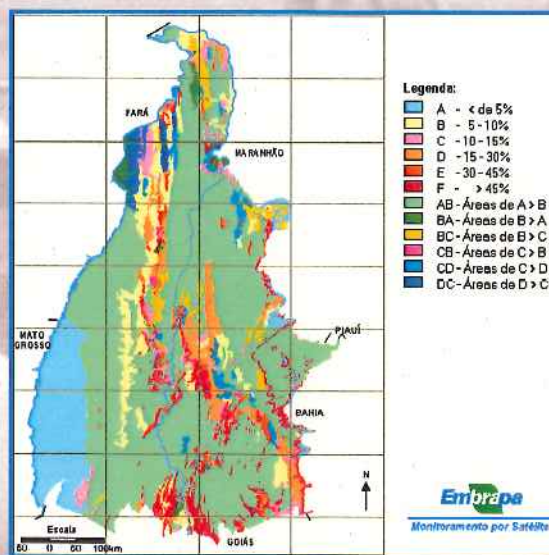
Rainfall

Rainfall



Topography

Declivity



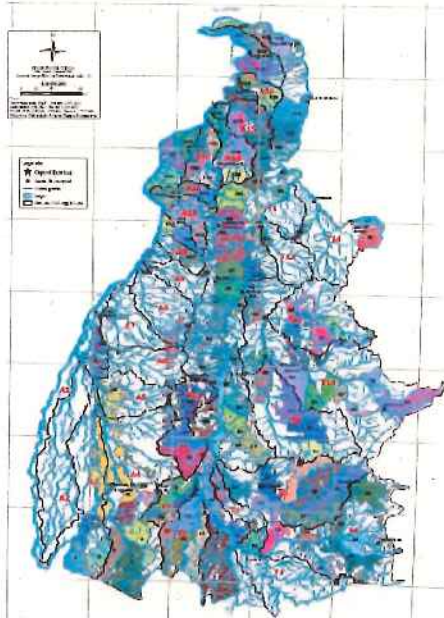
Irrigation

POTENTIAL FOR IRRIGATION

4,800,000 hectares

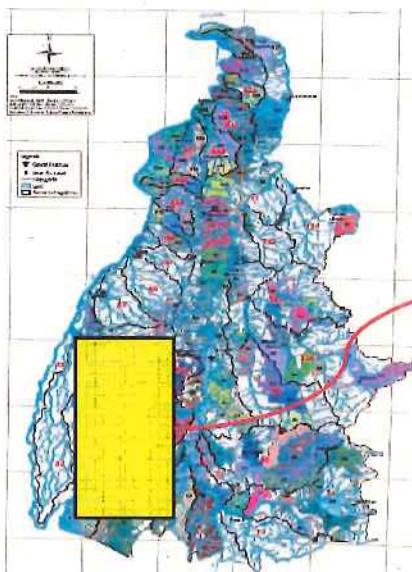
Tropical Dales (2.5 harvests/year)

1,000,000 hectares

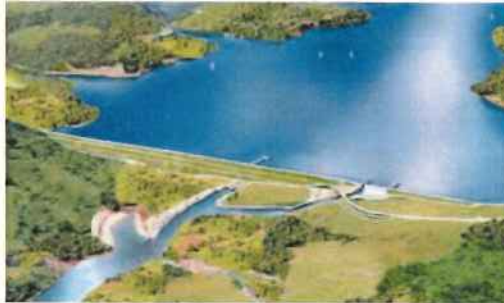


PRODOESTE

(Program of Tocantins' Southwest Region Development)



PRODOESTE

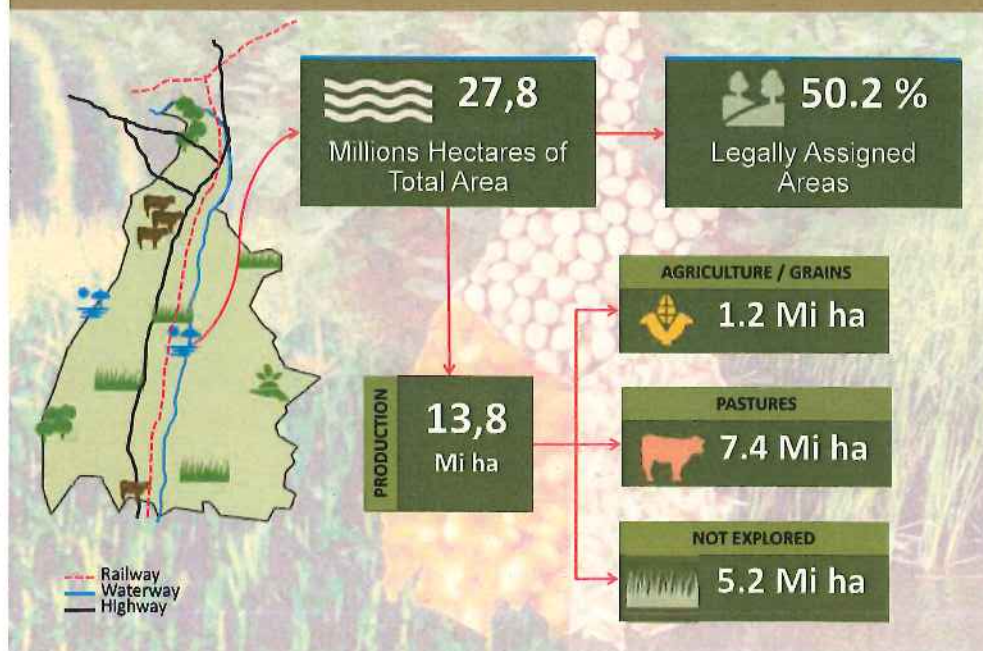


- **Objective:** promote water security in the region;
- **Covered area:** 300,000 ha;
- **Production capacity:** 2.5 harvests/year;
- Every **technology** to be used is already **diffused and tested** by local producers;

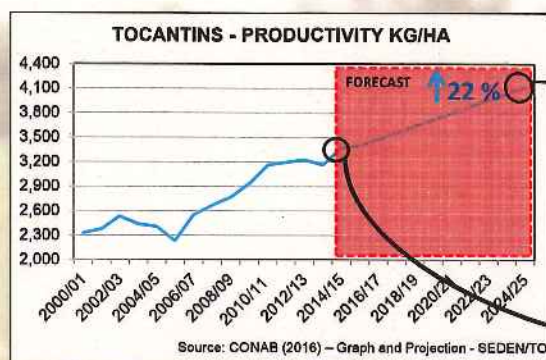
Using the released for such innovation in the world of agriculture.

Possibilities of Concessions and/or PPPs (Public Private Partnerships)

AGRICULTURAL PRODUCTION



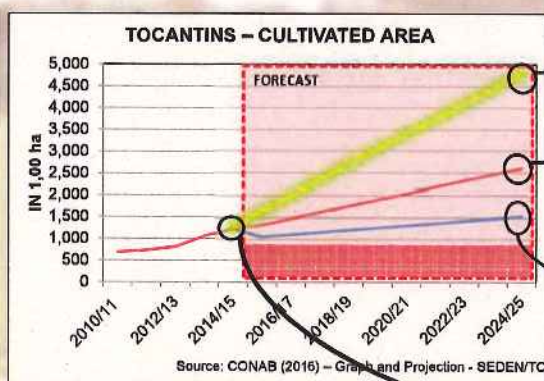
10-YEAR SCENARIO - Productivity



2024/2025
4,120
Kg/Ha

2014/2015
3,378
Kg/Ha

10-YEAR SCENARIO – Cultivated Area



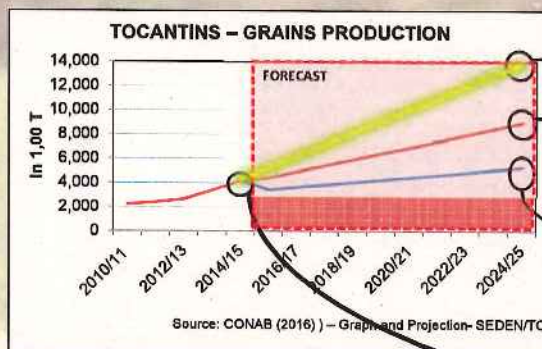
STIMULATED
2024/2025
3.5
Million Hectares

2024/2025
2.6
Million Hectares

2024/2025
1.5
Million Hectares

2014/2015
1.2
Million Hectares

10-YEAR SCENARIO - Production



STIMULATED

2024/2025
14.4
Million
Tons

2024/2025
8.9
Million
Tons

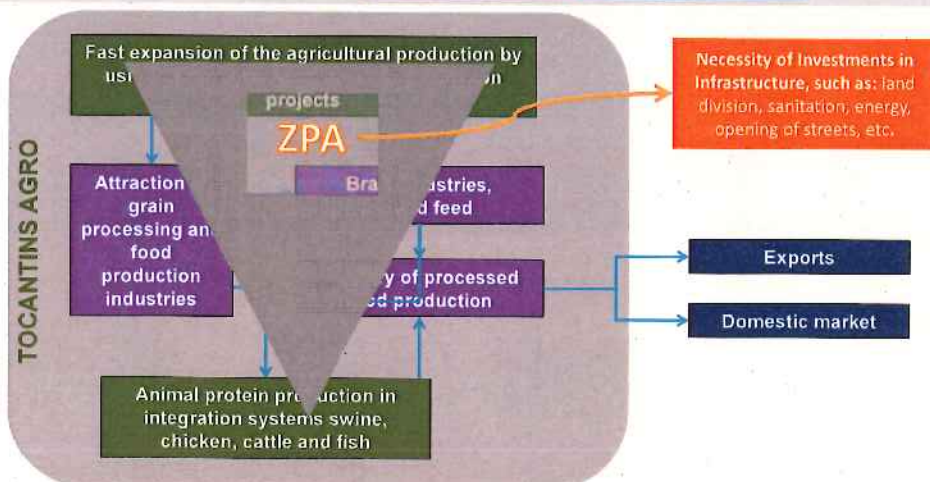
2024/2025
5.3
Million
Tons

2014/2015
4.2
Million
Tons

TOCANTINS AGRO

Plan of structuring and verticalization of productive chains of grains, their byproducts, and integration of the animal protein production, located in the area of the ZPA – Food Processing Zone of the Palmas/Porto Nacional multimodal yard of North-South Railway

Cycle of Production Industrialization a Commercialization



TOCANTINS AGRO



TOCANTINS AGRO

1. Exploration of crop and grazing areas:

- Grains (Soy/Maize/Rice/etc.);
- Sugarcane;
- Eucalypt (Degraded areas);
- Fruits.



2. Construction of the industrial and logistic pole comprised by:

- Grain crushers;
- Plants of ethanol/Generation of renewable energy (Biogas and solar);
- Integrators of chicken/swine/fish;
- Cold storage of meat: chicken/swine/fish and cattle;
- Food processing;
- Suppliers of agricultural inputs and equipment (fertilizers, chemicals, machinery, and seeds);
- Strengthening of Technical assistance, logistics, and research;
- Qualification of human resources.

TOCANTINS AGRO

3. Short term goals:

- Attraction of food-related industries;
- Viability of the Dry Port;
- Viability of investments from productive chain related private companies;
- Creation of the Development Agency;
- Creation of a credit line to ensure the production of grains;
- Institutional Strengthening:
 - Structuring of sanitary vegetal and animal inspection mechanisms;
 - Structuring of research and technical assistance mechanisms;
 - Training and qualification of producers;
 - Improvement of product channeling infrastructure;
 - Construction of Porto Nacional Bridge;
 - Construction of basic infrastructure in the ZEN areas;

TOCANTINS AGRO

Processo de Desenvolvimento

Stages	Possible Participants
1) Development	(with Agricultural Supplies) ■ Dealers of machinery and equipment ■ Dealers of agricultural inputs ■ Producers ■ Cooperatives ■ Agricultural support organizations ■ Institutions of support to production technologies (Embrapa, etc.) ■ Banks financing the agricultural production
2) Exportation of grains with the logistic infrastructure	(with Commercialization sector) ■ Companies of silos and warehouses ■ Companies of Transports ■ Seed industries ■ Traders ■ Support institutions ■ Logistic facilities ■ Banks and financiers
3) Entrance of crushers for oil and bran production	(with Agroindustry Sector) ■ Agroindustries ■ Institutions of support to agro-processing technologies ■ Power suppliers ■ Agroindustry infrastructure financiers
4) Integrators	(Meat production sector) ■ Feed Industries ■ Integrators ■ Cold storage facilities ■ Financers
5) Entrance of several types of food processing	(Wholesale and retail sectors) ■ Wholesalers ■ Food processors ■ Retailers



Pig Farming (養豚)



Cattle Breeding (牛)

DEVELOPMENT OF THE INDUSTRIAL CHAIN OF ANIMAL PROTEINS



Fish Farming (養魚)



Poultry Farming (鳥類の飼育)



Tofu (豆腐)



Soy Milk (豆乳)



Juices (大豆ジュース)

OPPORTUNITY TO IMPLEMENT PREPARED FOOD INDUSTRIES TO SUPPLY MAJOR MARKETS OF NORTH AMERICA, EUROPE AND ASIA



Shōyu (醤油)



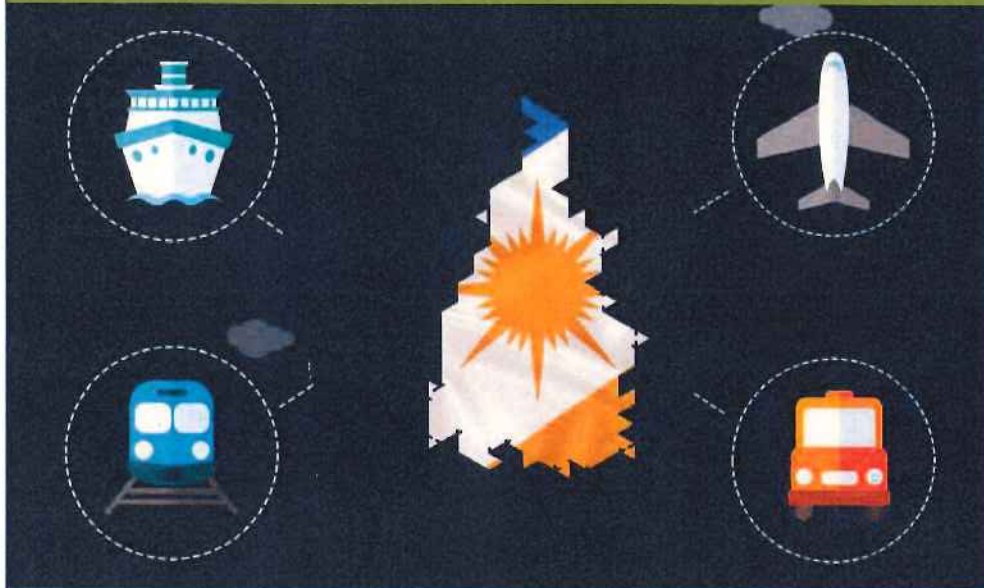
Foods (食品)



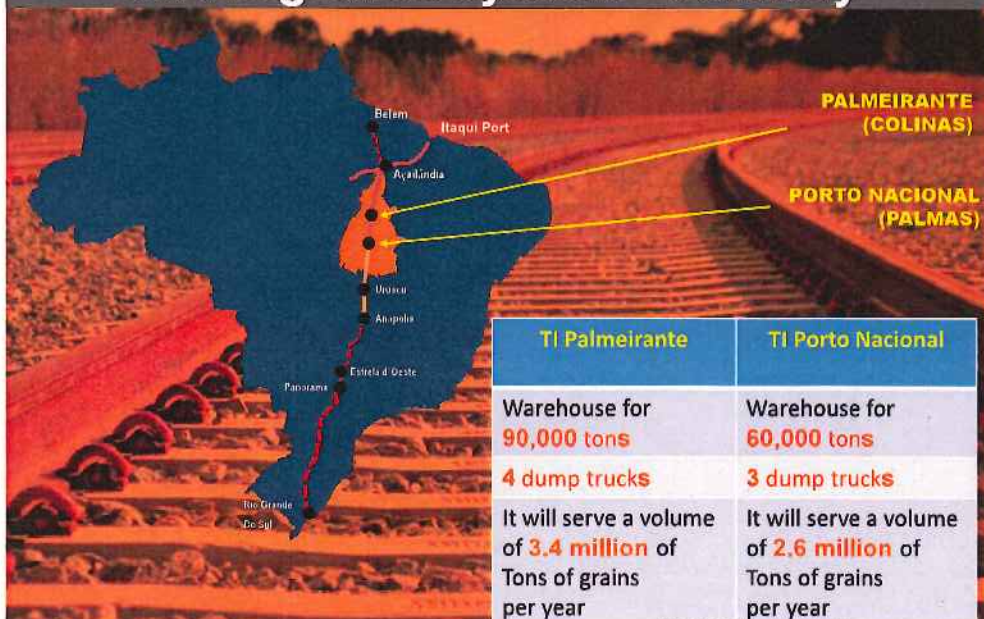
Processed Meat (加工肉)

PELT-TO

Tocantins State Plan of Cargo Transportation Logistics

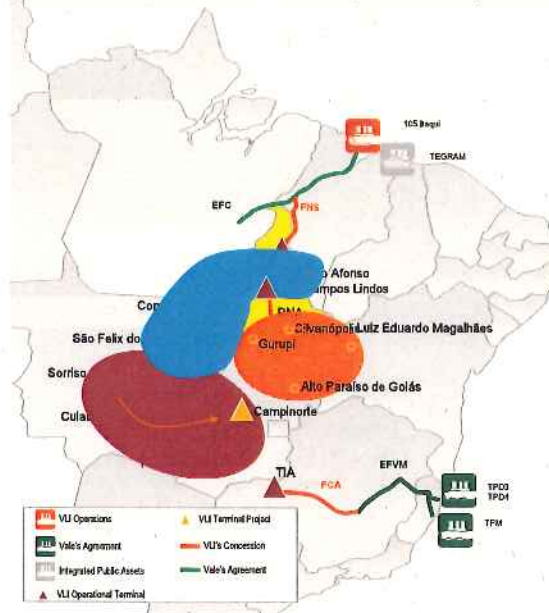


Overview of the state transportation and logistics system - Railway



INTEGRATING RAILWAY TERMINALS Mid-North Corridor

The northern terminals are strategically located to capture cargoes in the mid-north corridor influence area



Palmeirante	
Querência – 28%	1152 KM
Confresa – 26%	915 KM
Pedro Afonso – 20%	140 KM
Campos Lindos – 15%	357 KM
São Félix do Araguaia – 11%	631 KM
Average	713 KM

Porto Nacional	
L. Eduardo Magalhães – 34%	434 KM
Silvanópolis – 25%	60 KM
Gurupi – 24%	180 KM
Alto Paraíso de Goiás – 17%	558 KM
Média	299 KM

Campinorte	
Sorriso – 29%	998 KM
Cuiabá – 22%	1010 KM
Jatui – 20%	619 KM
Querência – 14%	589 KM
Rio Verde – 14%	328 KM
Average	708 KM

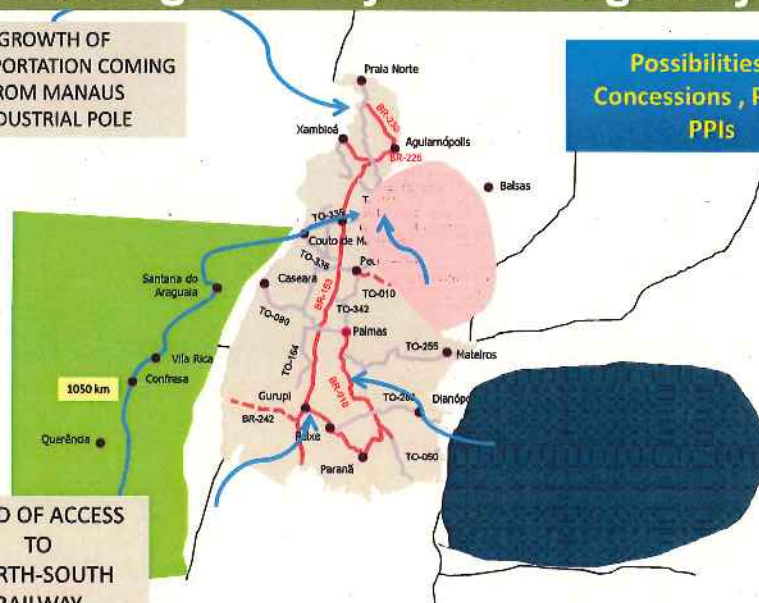
Source: VLI

Overview of the state transportation and logistics system - Highway

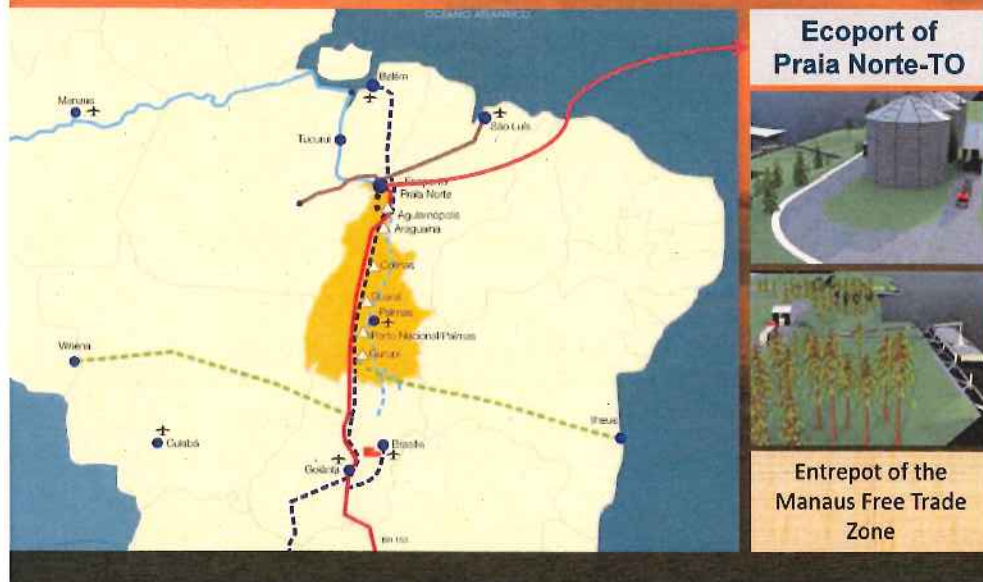
GROWTH OF TRANSPORTATION COMING FROM MANAUS INDUSTRIAL POLE

Possibilities of Concessions, PPPs / PPIs

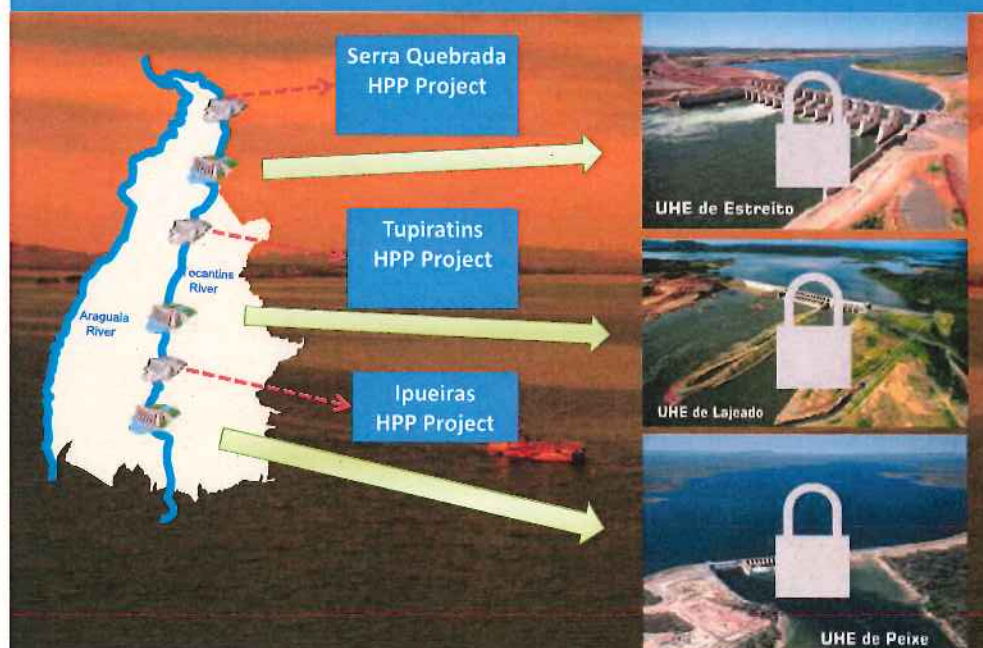
ROAD OF ACCESS TO NORTH-SOUTH RAILWAY



Overview of the state transportation and logistics system - Waterway

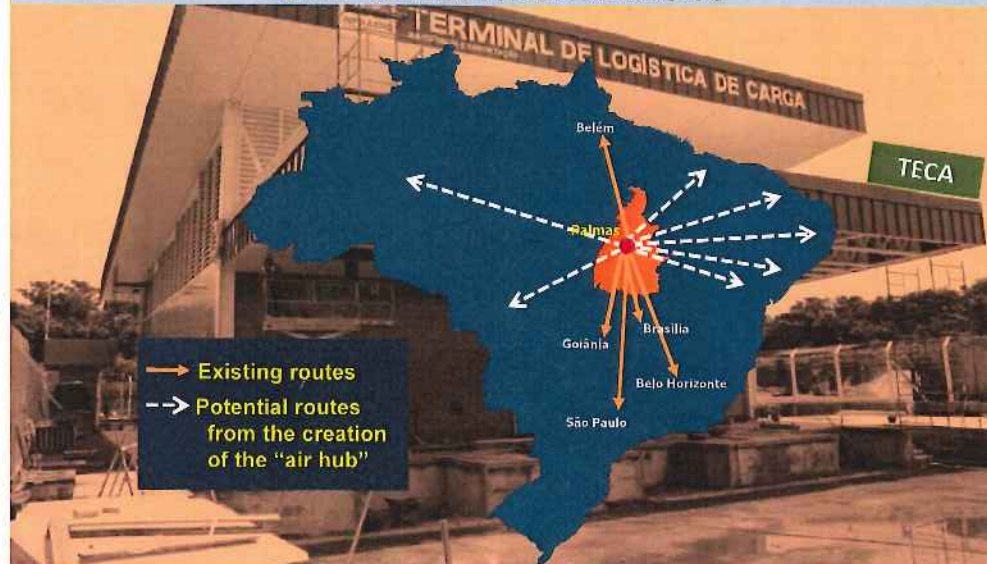


SCENARIO OF WATERWAY MODAL



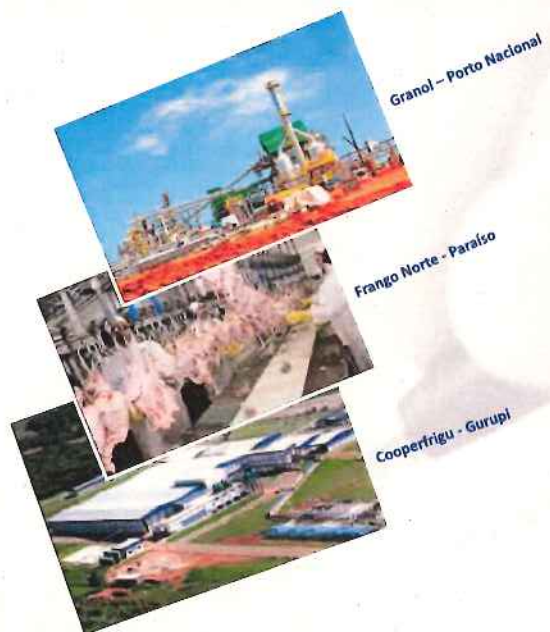
Overview of the state transportation and logistics system - Air

MAIN ROUTES FROM PALMAS-TO



State Tax Incentives

PROINDUSTRY
AGROINDUSTRY
FRUIT AND FISH
CATTLE MEAT
PROLOGISTICS
E-COMMERCE
WHOLESALE BUSINESS
MEDICINES
CAR INDUSTRY
ZPE – (under implementation)
ZFM TAX ENTREPOT (formalized)



State Tax Incentives

PROINDUSTRY

➤ ICMS Exemption

- a) In **internal operations**, for **raw material and inputs** intended to the industrial establishments beneficiary of such Law, the ICMS credit is maintained for the remitter;
- b) Regarding the different rate **for the acquisition of goods intended to the fixed asset** (vehicles, machinery, equipment);
- c) About **electric energy**;
- d) In **internal sales intended to public authorities**;
- e) In **importations** of machinery and equipment **intended to the fixed asset**;

State Tax Incentives

PROINDUSTRY

➤ ICMS Exemption (to be continued...)

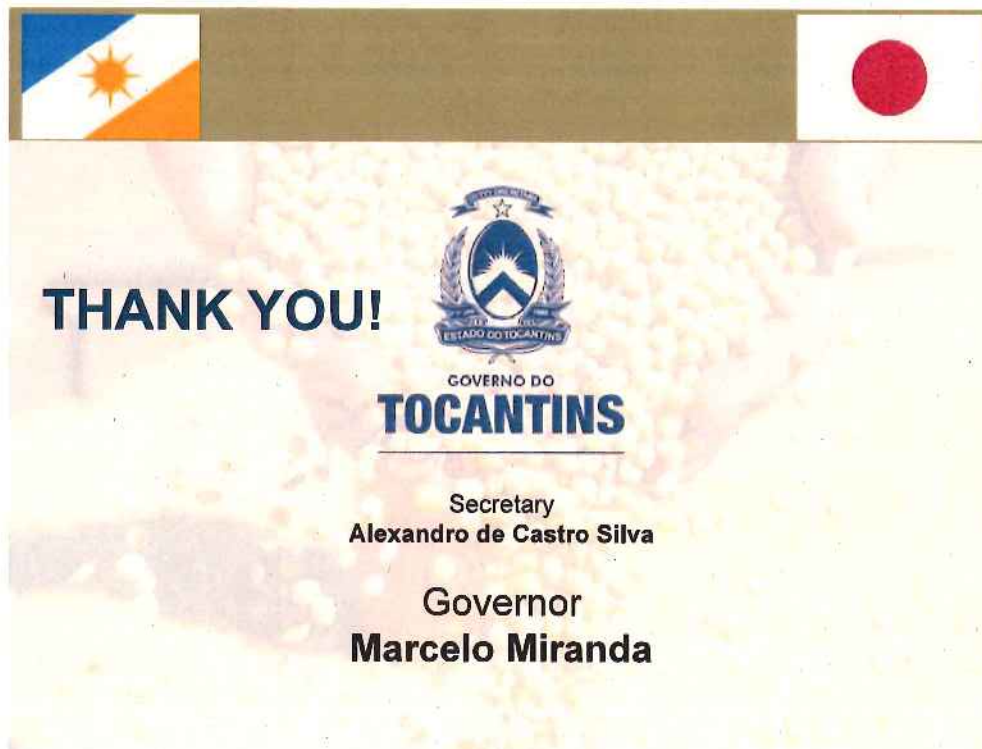
- f) In **importations** of products used in the industrialization processes, comprising:
 - I. Raw materials and inputs, semi-elaborated or finished.
 - II. Goods intended to packing, conditioning or presentation of final product

➤ PRESUMED TAX CREDIT OF:

- a) 75% on the ICMS amount calculated in specific tax bookkeeping;
- b) 100% on the ICMS amount in the provisions of interstate transportation services of industrialized products;

Financing and Benefits Exclusive to the Northern Region

- **FNO** – Constitutional North Financing Fund (Bank of Amazon);
- **FDA** – Amazon Development Fund;
- **Tax Benefit with SUDAM**
 - IRPJ (Legal Entity Income Tax) reduction;







PIAUÍ – TERRA DE OPORTUNIDADES

- **Strategic location in MATOPIBA**
Localização estratégica no MATOPIBA
 - **Productive Potential**
Potencial produtivo crescente
 - **Abundance in arable land**
Abundância em terras cultiváveis

TRAN NORDESTINA

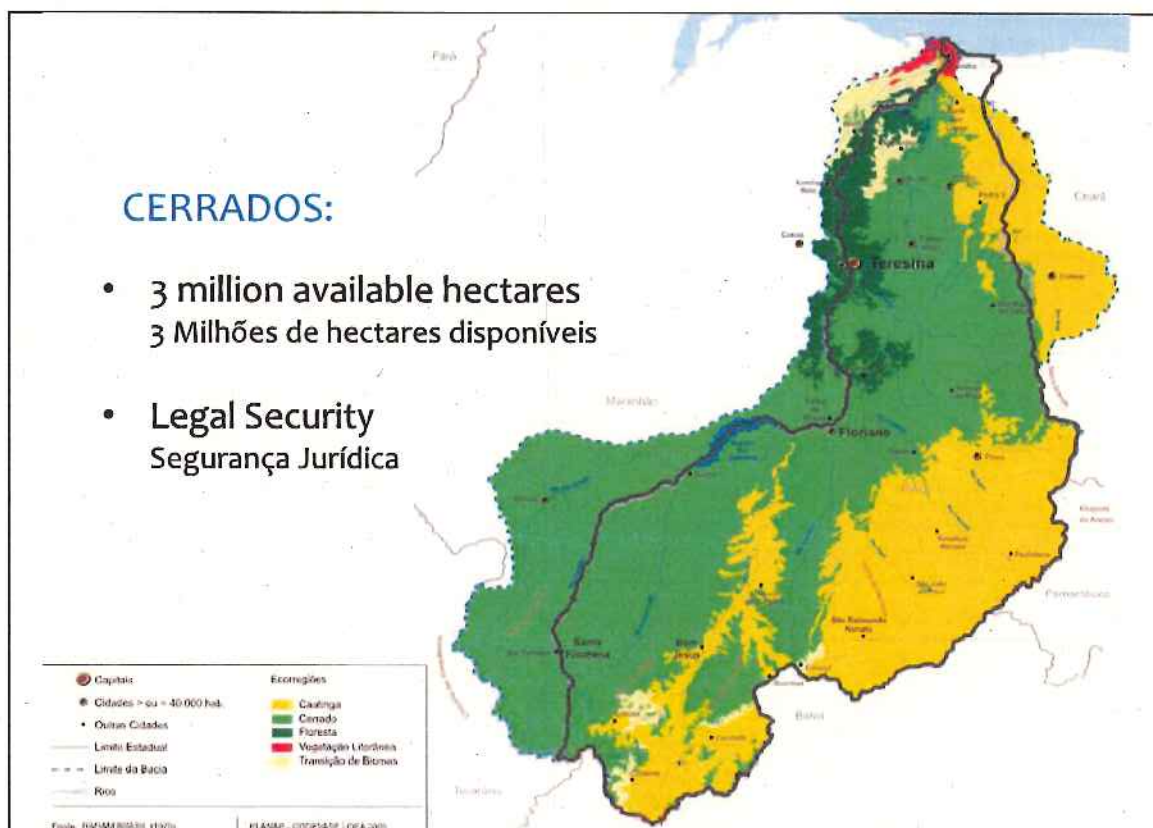


CERRADOS

- Ability to adapt to different crops
Capacidade de adaptação a diversas culturas e cultivos
- Highlight for grain and cotton
Destaque para grãos e algodão









STORAGE: OPEN DOOR FOR BUSINESS

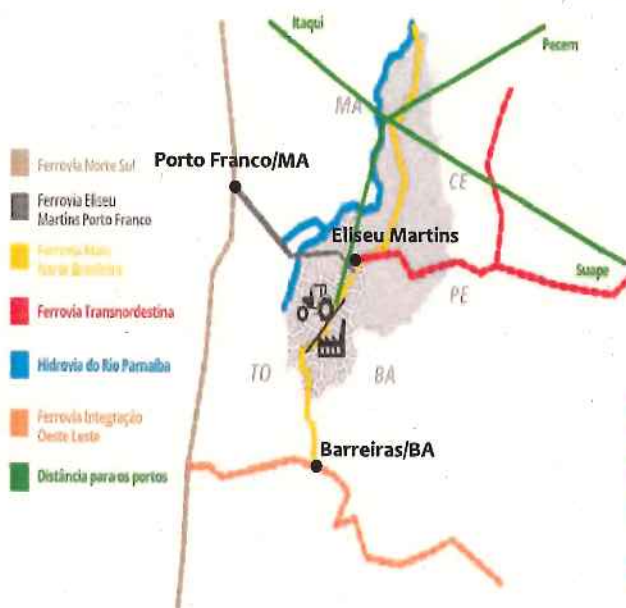
ARMAZENAMENTO: PORTA ABERTA PARA NEGÓCIOS

- Safra in continuous expansion
Safra em contínua ampliação
- Storage infrastructure demand
Demanda de infraestrutura de armazenagem



Railway Infrastructure - Challenges

Infraestrutura Ferroviária – Desafios



Ferrovia Meio Norte
Trecho Altos, Parnaíba e Luís Correia
Investimento: 2,4 bilhões

Ferrovia Meio Norte
Trecho Altos, Ferrovia
Transnordestina
Investimento: 4,32 Bilhões

Ferrovia Meio Norte
Trecho Eliseu Martins, Barreiras
Investimento: 6,03 Bilhões

Ferrovia Meio Norte
Trecho E. Martins, Ferrovia
Norte Sul/Porto Franco-MA
Investimento: 2,48 Bilhões

Investimento Total : 15,23 Bilhões

Porto de Luís Correia
Investimento: 2,09 Bilhões

HIGHWAY AND WATERWAY

INFRASTRUCTURE INFRAESTRUTURA RODOVIÁRIA E HIDROVIÁRIA

**1. Conclusion of transcerrados
HIGHWAY**
Conclusão RODOVIA transcerrados

**2. Conclusion of transnordestina
RAILWAY**
Conclusão da FERROVIA
transnordestina

**3. Implementation of Rio Parnaíba
Waterway – Santa Filomena to Teresina**
Implantação da HIDROVIA de SANTA
FILOMENA a TERESINA



HIGHWAY AND WATERWAY INFRASTRUCTURE INFRAESTRUTURA RODOVIÁRIA E HIDROVIÁRIA

4. Implementation and Asphalt Paving of the BR-235 / PI

Implantação e Pavimentação Asfáltica da
BR-235/PI - Trecho – Divisa Bahia / Piauí
(Caracol) – Entroncamento Rodovia
BR- 135 (Bom Jesus)

5. Implementation and Paving of the BR- 235 / PI

Implantação e Pavimentação da BR-235/PI

6. Highway Implementation – PI – BA - TO

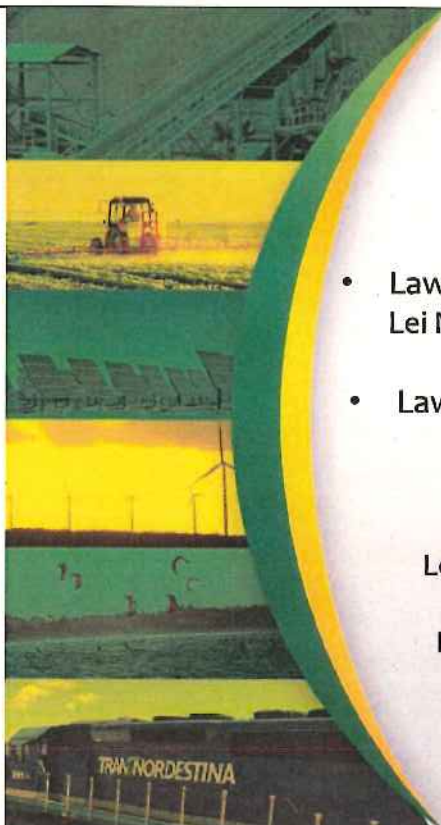
Implantação de Rodovia PI – BA - TO
(Chapada das Mangabeiras)

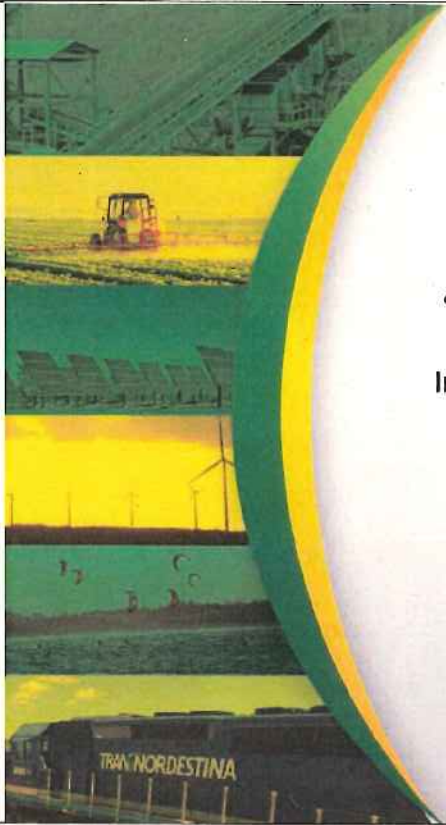


LEGAL MECHANISMS TO NEW INVESTMENTS MECANISMOS LEGAIS PARA NOVOS INVESTIMENTOS

- Law No. 6709/2015 – Land Regularization Law
Lei Nº 6709/2015 – Lei da Regularização Fundiária
- Law No. 6222/2012 and regulatory decrees with
creation of the State Council and the Piauí
Industrial and Agroindustrial Development
Fund and incentive policies
Lei Nº 6222/2012 e decretos regulamentares com
criação do Conselho Estadual e do Fundo de
Desenvolvimento Industrial e Agroindustrial do
Piauí e políticas de incentivos

Leis e Decretos Regulamentação das
Parcerias Públicas e Privadas – PPP's





LEGAL MECHANISMS TO NEW INVESTMENTS

MECANISMOS LEGAIS PARA
NOVOS INVESTIMENTOS

- Implementation of new emission system
processes of environmental licenses
Implantação de nova sistemática nos processos
de emissão de licenças ambientais
- Modernization of state legislature of
agricultural defense
Modernização da legislação estadual de
defesa agropecuária

CONTACT CONTATOS

Secretaria de Desenvolvimento Rural do Piauí

Contato: (86) 3216-2160

E-mail: sdr@sdr.pi.gov.br

Endereço: Rua João Cabral, 2319, Bairro Pirajá

CEP – 64002-150 - Teresina – PI

**DESENVOLVIMENTO
RURAL**
Secretaria de Estado do
Desenvolvimento Rural / SDR



UM ESTADO QUE CRESCE
JUNTO COM SUA GENTE

Bahia Investments Opportunities



INFRASTRUCTURE

Logistic and transports



BAHIA | OVERVIEW

1st in the Northeast and 6st in Brazil (2015)

6th economy in Brazil (2015) |

World Trade (2015) - Exports + Imports = US\$ 18.7 billion - 48% of Northeast and 4% of Brazil

Population: 14 million

GDP (2015): US\$ 93 billion

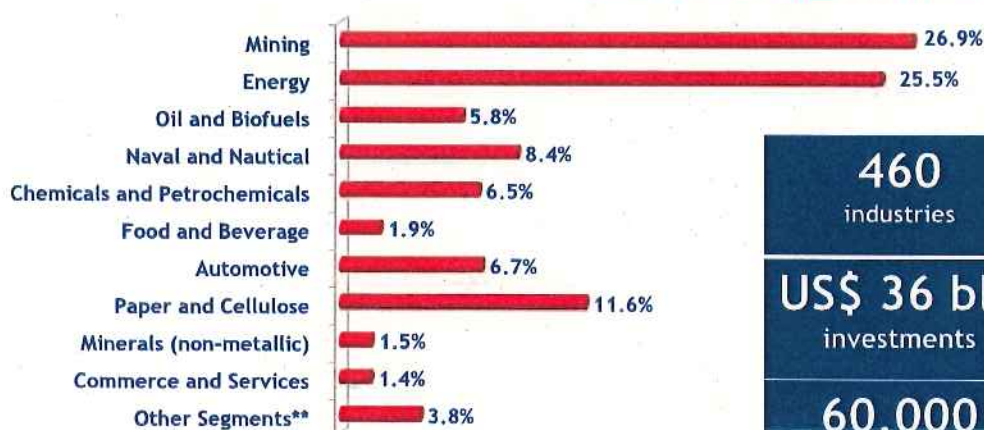



Investment Opportunities in Bahia Economic Outlook



BAHIA | AN OVERVIEW

PRIVATE INDUSTRIAL INVESTMENTS | 2016 - 2017



460
industries

US\$ 36 bln
investments

60,000
jobs

** Metal products, Wood products, Metallurgy, Machinery, Electrical Appliances, Shoes and Leather, Textiles etc.

Source: SDE/SICM

Investments | 2007-2011 | US\$ 7 billion

Total Investments | 2012-2016 | US\$ 43 billion

MAJOR INDUSTRIAL SECTORS

Agribusiness



Renewable Energy



Automotive



Oil/Gas/Mining



Project location



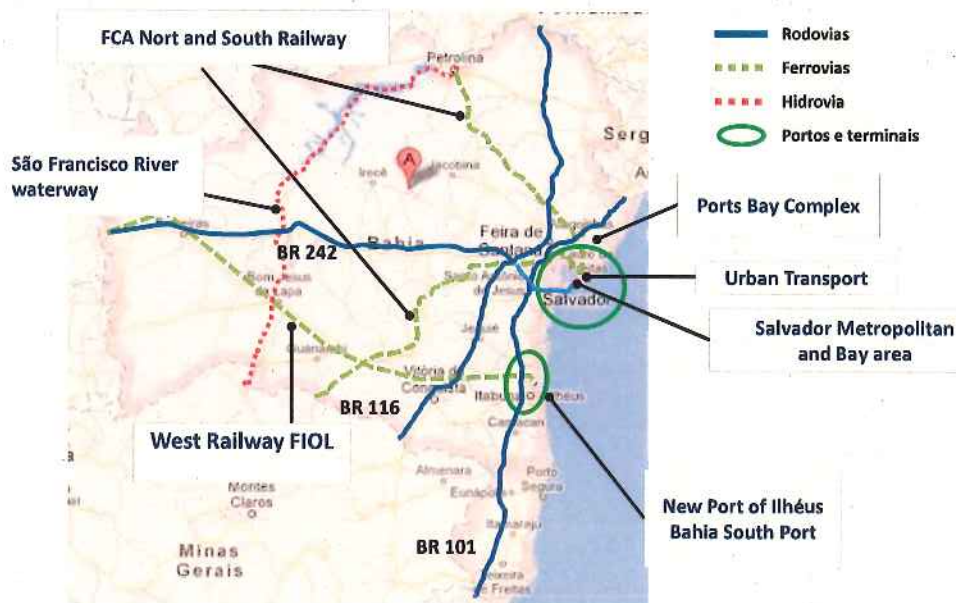
New urban expansion vector Regional Development Plan



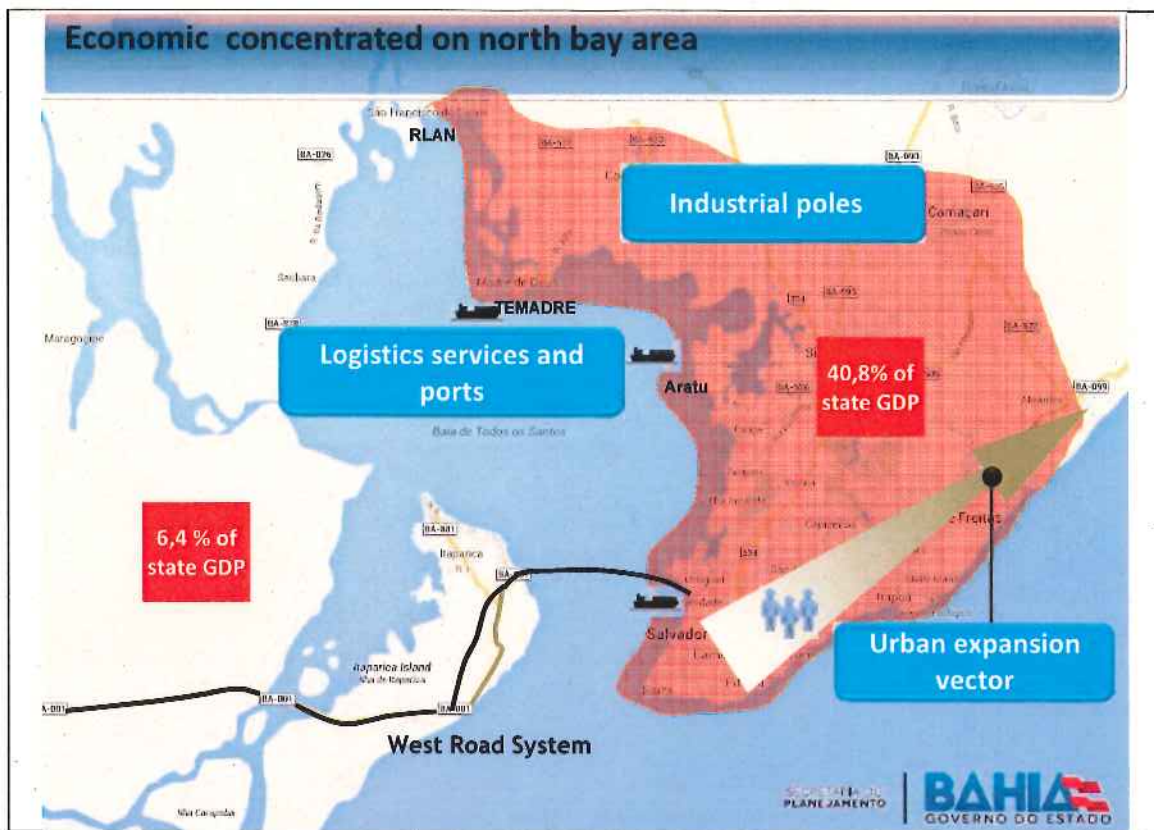
Infrastructure Projects

HIGHWAYS AND RAILWAYS

Multimodal Transport Matrix



West Logistic Transport Matrix



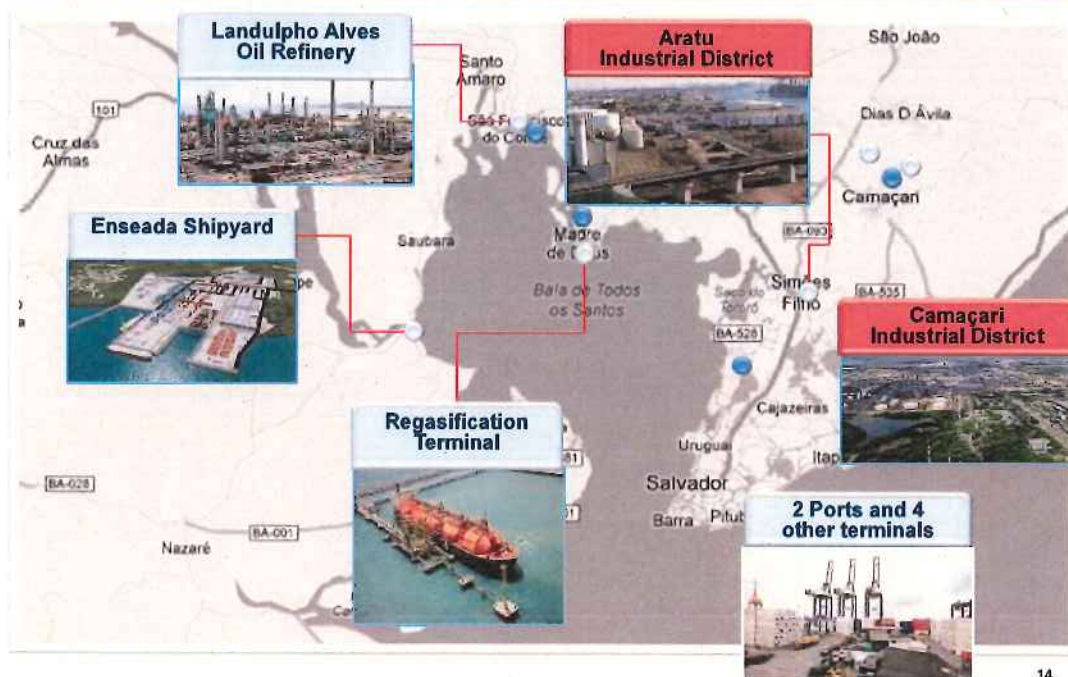
Dynamic sectors in Bahia



Fifth GDP among Brazilian States.

Major investment alternative in Brazil.

Metropolitan and bay area Infrastructure Projects



14

OIL / GAS / PETROCHEMICALS

- **Enseada do Paraguaçu Shipyard**
 - *Private Consortium: Odebrecht / OAS / UTC / Kawasaki*
 - *Area of 120 ha*
 - *US\$ 1.25 billion investment*
 - *FPSO and drilling rigs*
 - *Large cargo and container ships*
- **New Legal Framework to explore presalt oil will attract new partners to building modules for oil rigs at its existing facilities**



Bahia Ports Salvador



Porto de Aratu

Metropolitan bay area



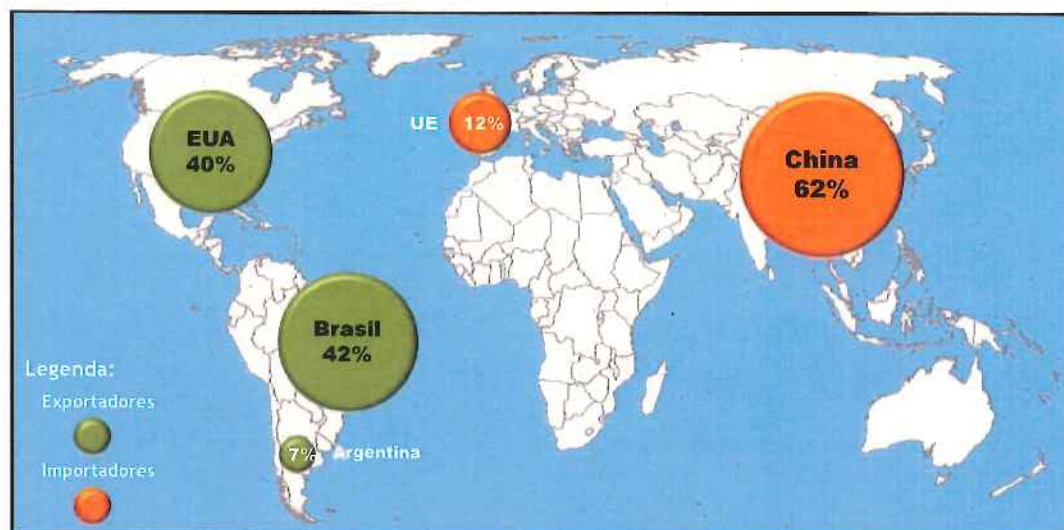
New Investment Framework

Predictability, good regulation and respect for contracts



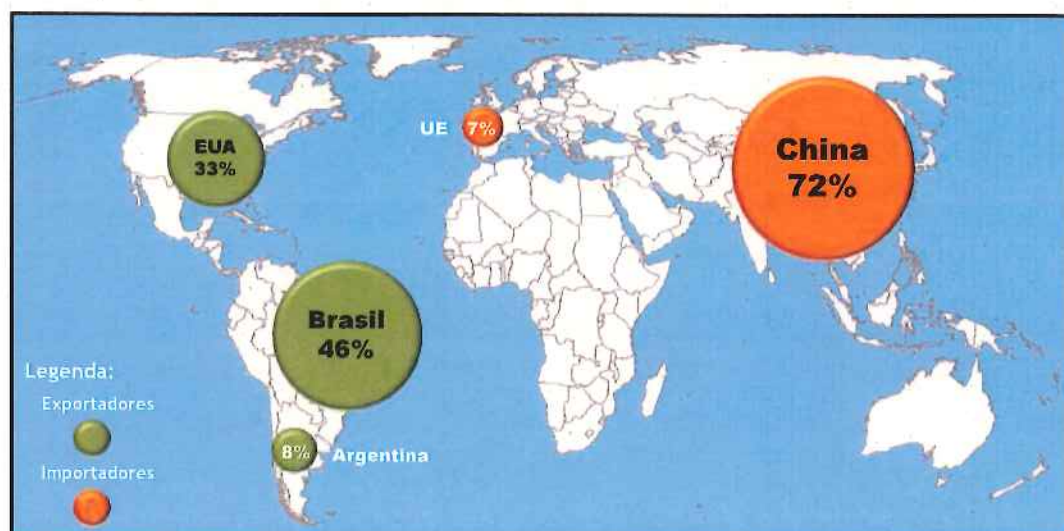
COMÉRCIO MUNDIAL DA SOJA

2015



COMÉRCIO MUNDIAL DA SOJA

2025





Ferrovias FIOL - FICO

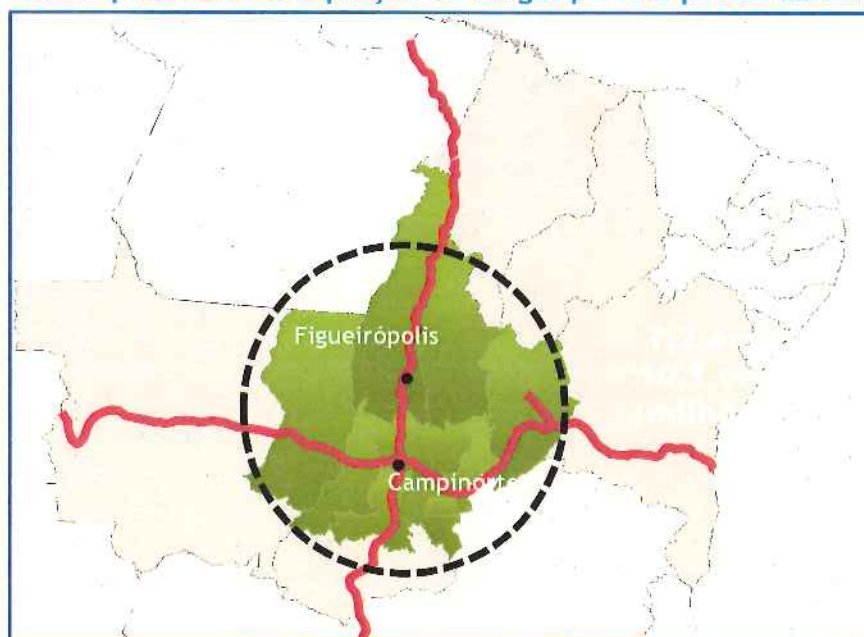
Conexão FIOL (Correntina) com FICO (Campinorte)

Extensão: 744 Km - Investimento : R\$ 3,7 bilhões



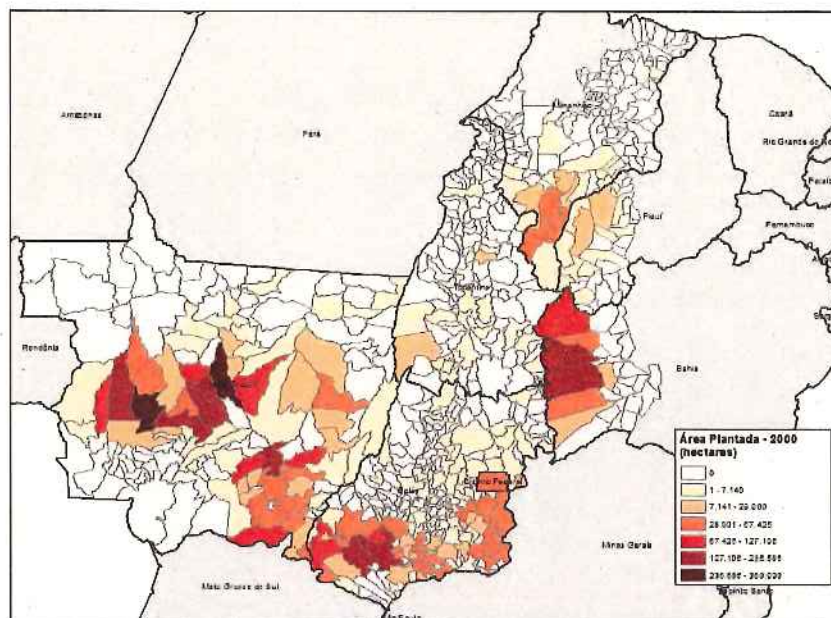
Carga Potencial – Melhor Alternativa

Traçado da FIOL entroncado com a FICO em Campinorte é o maior potencial de captação de cargas para os portos da Bahia



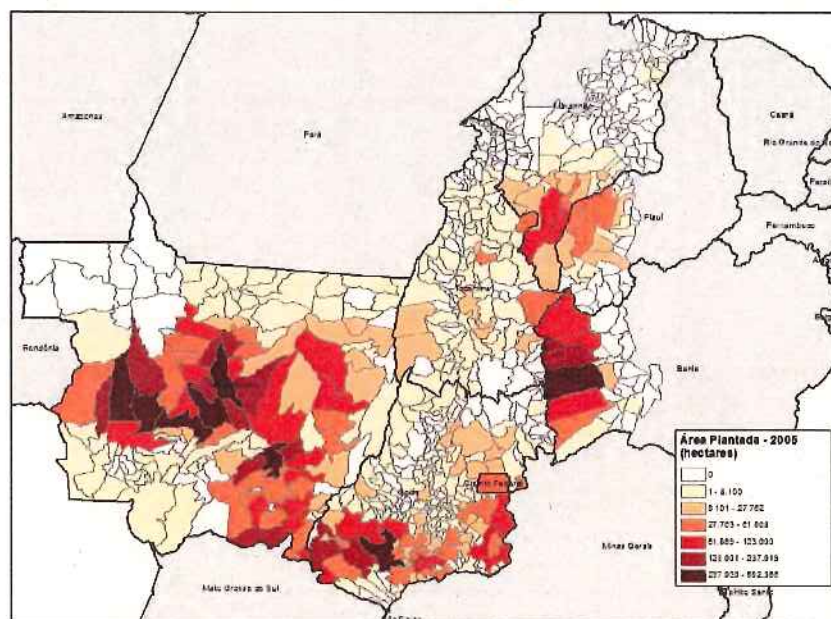
EVOLUÇÃO DA SOJA NA MATOPIBA

Área Plantada de Soja - 2000



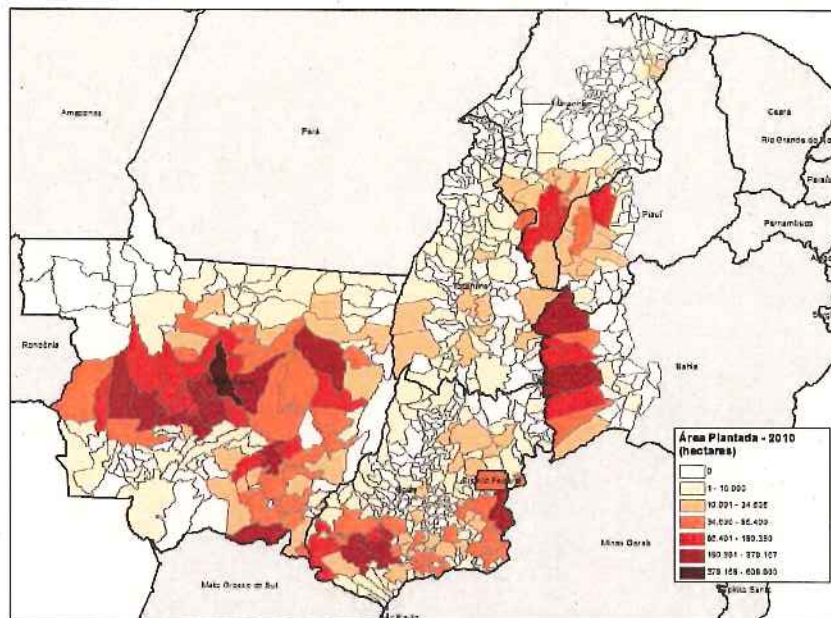
EVOLUÇÃO DA SOJA NA MATOPIBA

Plantada de Soja - 2005



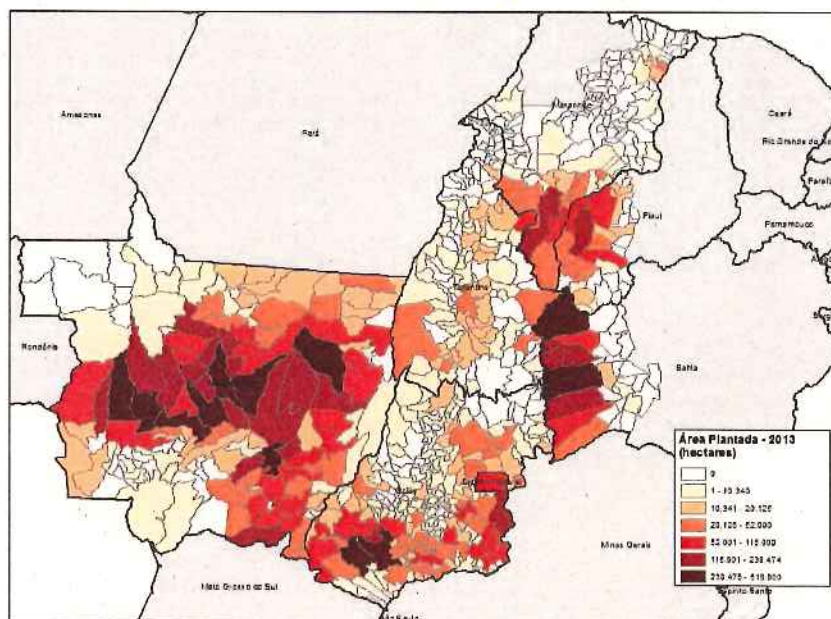
EVOLUÇÃO DA SOJA NA MATOPIBA

Plantada de Soja - 2010



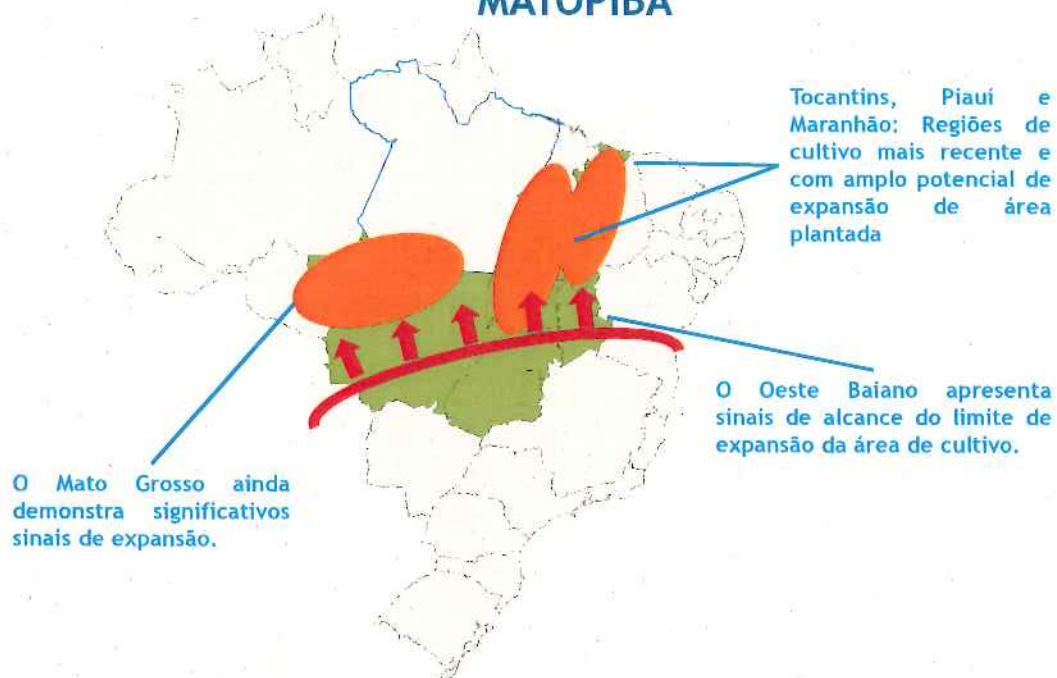
EVOLUÇÃO DA SOJA NA MATOPIBA

Plantada de Soja - 2013



Expansão Territorial da Soja

MATOPIBA



RENEWABLE ENERGY | WIND

Potential at 70m - 15,000 MW

- 10% of Brazil and 19,3% of Northeast

Projects being implemented

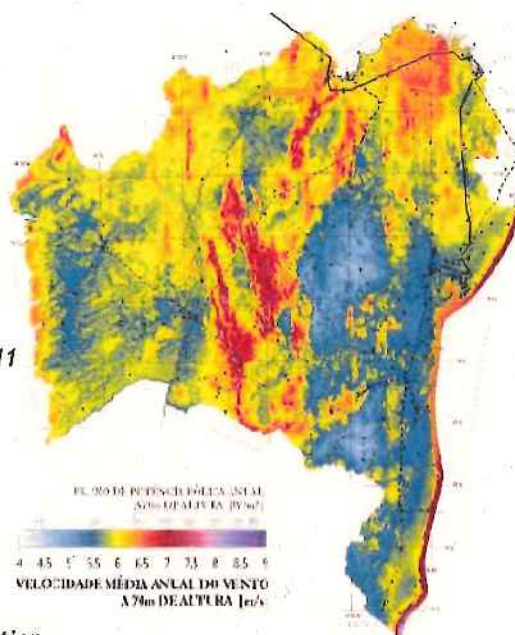
- 2009 - 390 MW;
- 2010 - 587 MW;
- 2011 - 414 MW (1st auction)
- Investments of US\$ 3.4 billion

Proposed projects

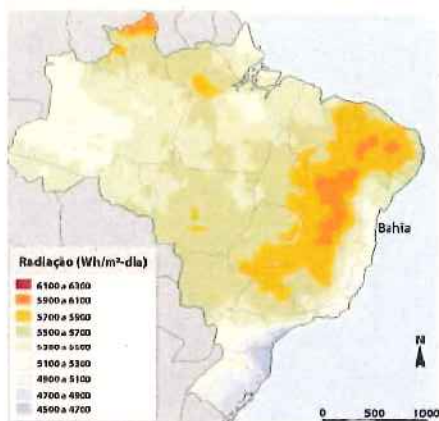
- 1,500 MW awaiting 2nd auction in 2011
- 20,000 MW under development

Wind power industry

- Manufacturers in Bahia:
 - ALSTOM
 - GAMESA
 - GENERAL ELECTRIC
- Other 3 world players under negotiation



RENEWABLE ENERGY | SOLAR



Greatest potential in Brazil

25,000 photovoltaic systems installed

Incentives to solar energy

- Residential consumer (up to 50 kWp) will be allowed to sell energy to the concessionary
- Roof of the football stadium covered photovoltaic panels. Excess energy being sold to the energy concessionary.

EDUCATION AND TECHNOLOGY

▪ 9 Universities and Colleges (MSc and DSc)

▪ 51 courses in engineering and technology

▪ Federal University system in Bahia:

- Bahia West Federal University (UFOBA)
- Bahia South University (UFSBA).
- Bahia Federal University (UFBA)
- Federal University to Feira de Santana

▪ 9 Federal Technology Colleges (IFET) being setup in cities around the state

▪ CETIND e CIMATEC - State of the art technology centers for development of RD&I projects as well as technical, undergraduate and graduate formation





SECRETARIA DO
PLANEJAMENTO

BAHIA
GOVERNO DO ESTADO



• www.pontesalvadorilhadeitaparica.ba.gov.br

SECRETARIA DO
PLANEJAMENTO



Romeu Temporal

Coordenação Projetos Especiais

Secretário do Planejamento da Bahia



Arigatou !

Av. Luis Viana Filho, 2ª avenida nº250 - CEP 41.745-003 | Salvador | Bahia

ASSESSING AGROLOGISTIC RISKS AND COSTS IN BRAZIL



SERIE Agriculture Risk Management in Brazil

MOTIVATION

During the rapid and integrated review of agricultural risk management in Brazil, it was found that negative and unpredictable risks associated with infrastructure and logistics in the agricultural sector in Brazil can cause major systemic impacts on the economy and at the same time has a low public policy level of service compared to the other discussed risks.

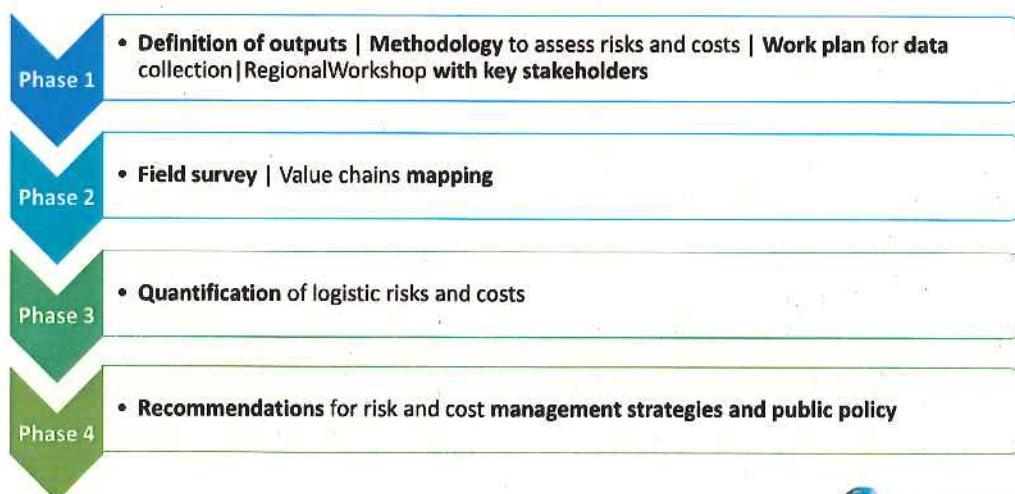


OBJETIVES

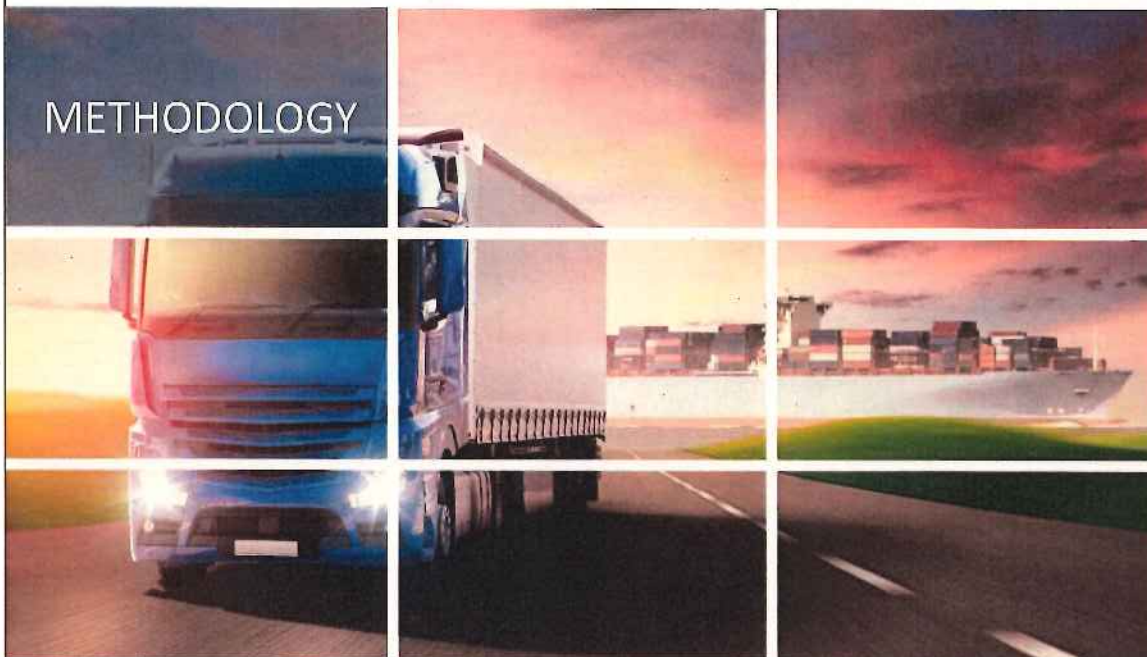
- **Develop a methodology to assess agrologistic risks and costs.** This methodology was tested and validated in 3 product chains in 2 states.
- **Once the related logistic risks and costs were identified and, priority interventions (public and private) will be listed in order to manage such risks.**



SCOPE



METHODOLOGY

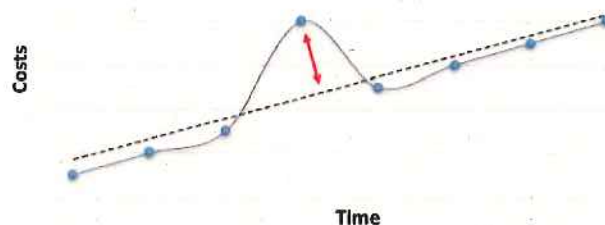


DEFINITION OF RISK, LIMITATIONS, AND COSTS CONCEPTS



RISKS:

Extraordinary and systemic events that affect the performance of agrologistics chain, generating additional costs causing fluctuations in logistics costs above an average standard deviation or historical trend in the regional spatial boundaries.



WORLD BANK GROUP

DEFINITION OF RISK, LIMITATIONS, AND COSTS CONCEPTS



LIMITATIONS:

Events present in agrologistics chain that generate inefficiency and incur avoidable costs. In this context, limitations are associated with infrastructure deficits incurring avoidable economic loss in the value chains involving, for example, poor condition of roads, lack of port capacity, among others.



WORLD BANK GROUP

DEFINITION OF RISK, LIMITATIONS, AND COSTS CONCEPTS



Cost: Monetary value of risk and limitation (avoidable cost) in the selected agrologistics products and regions.



Total cost: Sum of the monetary value of the risks and limitations (avoidable costs) in the selected agrologistics chains and regions.

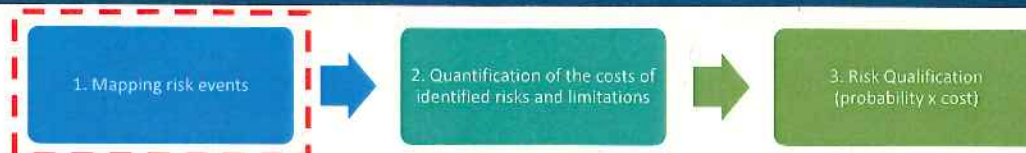


Excepted risk cost: is the sum of each cost of risk weighted by their probability of occurrence.



WORLD BANK GROUP

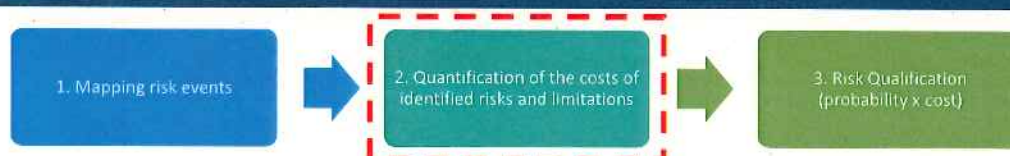
RISK AND COST ANALYSIS



- Field trips in specific areas of interest for interviews and data collection.
Mission Rice - Tocantins (19 interviews)
Mission Maize - Bahia and Tocantins (16 interviews)
Mission Milk - Bahia (28 interviews)
- Interviews with industry players through the SIFRECA network collaborators (Freight Information System) of ESALQ-LOG Group.
- Mission objectives:
 - Identify and characterize risks and limitations in the agrologistics chain of the selected products (types of impact and scope);
 - Assign event occurrence probabilities of risk events;
 - Identify direct economic impacts of risks and limitations;
 - Identify Impacts on productivity indicators in agrologistics (transportation, handling and storage) affected by the risks and limitations;
 - Identify logistics costs for each value chain links which is transferred to farmers.



RISK AND COST ANALYSIS

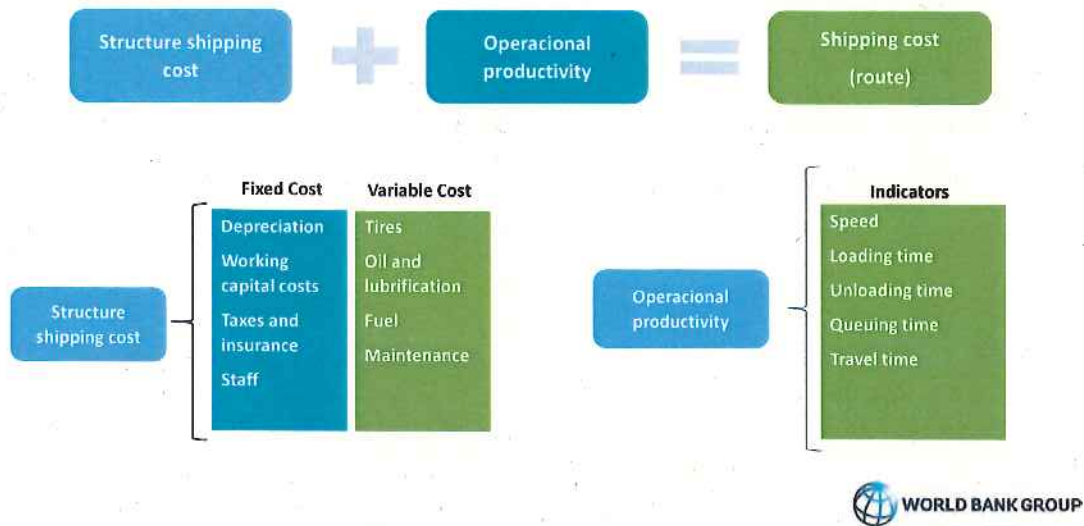


Quantifying the costs of risks and limitations mapped in the previous stage using two complementary methods:

- i. **Analysis of logistics costs declared by respondents.**
- ii. **Analysis of indicators obtained from primary and secondary research sources:**
 - road transport costing methodology with parameters obtained for the products and areas of study (ESALQ-LOG)
 - cost methodology and storage costs with parameters obtained for the products and regions of the study prepared by the Group for Research and Extension in Agroindustrial Logistics (ESALQ-LOG)



RISK AND COST ANALYSIS



RISK AND COST ANALYSIS



Probability matrix of event and severity of impact according to methodology of Jaffee, Siegel & Andrews (2008)

		Potential severity of impact				
		Negligible	Moderate	Considerable	Critical	Catastrophic
Event probability	Highly probable				Priority 1	
	Probable					
	Occasional				Priority 2	
	Remote					
	Improbable					
		Priority 3				

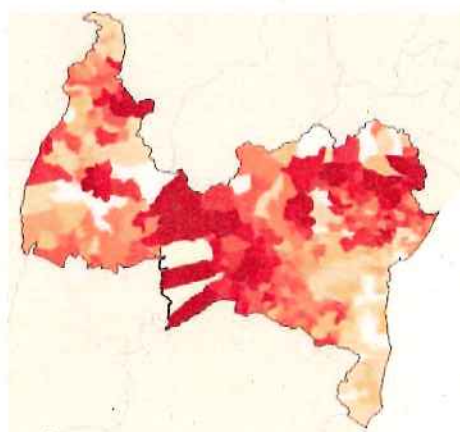
MAIZE BAHIA AND TOCANTINS



PRODUCTION

Total maize production (1st and 2nd harvest)

Ranking	STATE	2014/15	%
1	MT	20,763.4	24.5%
2	PR	15,862.9	18.7%
3	MS	9,282.9	11.0%
4	GO	8,993.9	10.6%
5	MG	6,864.5	8.1%
6	RS	6,173.0	7.3%
7	SP	4,166.2	4.9%
8	SC	3,189.1	3.8%
9	BA	2,773.4	3.3%
10	MA	1,469.2	1.7%
11	PI	1,064.3	1.3%
12	TO	1,050.2	1.2%
13	PA	706.8	0.8%
14	SE	668.5	0.8%
15	RO	651.3	0.8%
16	DF	541.9	0.6%
17	CE	151.4	0.2%
18	AC	96.3	0.1%
19	PE	58.2	0.1%
	Others	145.0	0.2%



LOGISTIC CHAIN - TOCANTINS



Growing exports

- 70% of 2015 production
- Main destination: **São Luís Port**

Importance of rail transport

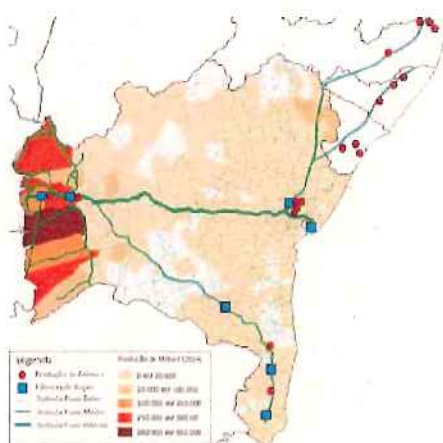
- **Transshipment terminals:** Porto Nacional (TO), Palmeirante (TO) and Porto Franco (MA)

Average road distance: 450 km

- Modern transportation (**logística multimodal**)



LOGISTIC CHAIN - BAHIA



Highlight for domestic consumption

- **Agroindustries** (human and animal consumption)

Predominance of road transport

- Unavailability of rail infrastructure

Average road distance: 750 km

- Direct road transportation



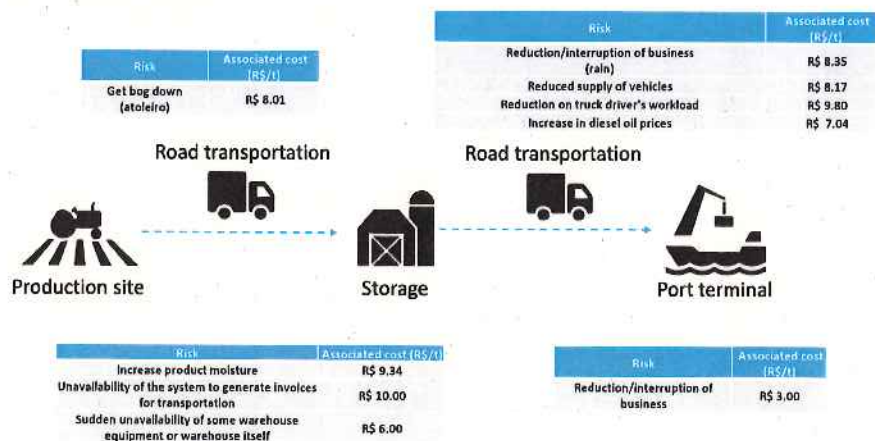
IDENTIFIED RISKS



Events	Consequences	Impacted indicators	TO	BA
Unexpected climate changes	Reduction/interruption of business	Transport productivity	X	X
	Get bog down (atoleiro)	Transport productivity	X	X
	Need of vicinal road rehabilitation by producers	Extraordinary financial expenses	X	
	Increase product moisture	Drying cost	X	X
Port staff strike	Reduced supply of vehicles	Logistic cost	X	X
	Reduction/interruption of business	Transport productivity	X	X
Bridge interruption	Bridge rehabilitation by producers	Extraordinary financial expenses	X	
	Original path deviation	Increase the distance and travel time	X	
Lack of rail cars	Unexpected shift on transportation mode	Logistic cost	X	
Queues in the railway terminal	Increase in waiting time	Transport productivity	X	
Unexpected changes on road transport regulations	Reduction on truck driver's workload	Transport productivity	X	X
Infrastructure problems	Unavailability of the system to generate invoices for transportation, increasing waiting time	Transport productivity	X	X
	Increase in waiting time	Transport productivity	X	
Queues at the port terminal	Sudden unavailability of some warehouse equipment or warehouse itself	Transport productivity	X	X
Sudden unavailability of storage (warehouse break)	Increase in diesel oil prices	Logistic cost	X	X
Changes in fuel prices				

COSTS BY RISKS - BAHIA

Bahia – Domestic and external markets



COSTS BY RISKS - BAHIA

Bahia – External market

Logistic activity	Average cost (R\$/t)	Risk cost (R\$/t)	Risk impact on product price (%)
Road transportation from farm to storage	43.86	8.01	1.65%
Storage	55.96	25.34	5.23%
Road transportation from storage to port	143.06	33.36	6.88%
Port	33.70	36.00	7.43%
Total	276.58	102.71	21.19%

Bahia – Domestic market

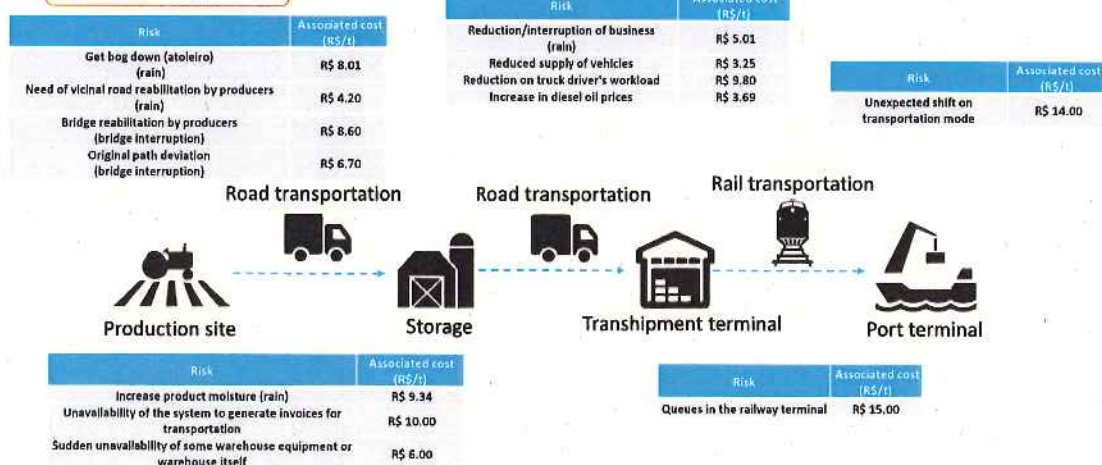
Logistic activity	Average cost (R\$/t)	Risk cost (R\$/t)	Risk impact on product price (%)
Road transportation from farm to storage	43.86	8.01	1.65%
Storage	55.96	25.34	5.23%
Road transportation from storage to final destination	108.34	33.36	6.88%
Total	208.16	66.71	13.76%



COSTS BY RISKS- TOCANTINS

Tocantins – External market

Multimodal transportation



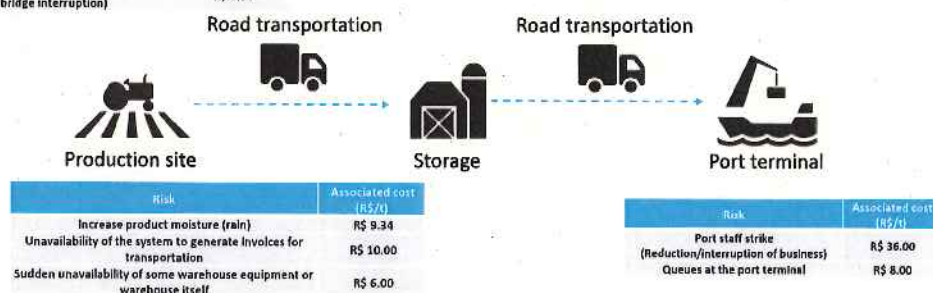
COSTS BY RISKS- TOCANTINS

Tocantins – Domestic and external markets

Road transportation

Risk	Associated cost (R\$/t)
Get bog down (atoleiro) (rain)	R\$ 8.01
Need of vicinal road rehabilitation by producers (rain)	R\$ 4.20
Bridge rehabilitation by producers (bridge interruption)	R\$ 8.60
Original path deviation (bridge interruption)	R\$ 6.70

Risk	Associated cost (R\$/t)
Reduction/interruption of business (rain)	R\$ 5.01
Reduced supply of vehicles	R\$ 3.25
Reduction on truck driver's workload	R\$ 9.80
Increase in diesel oil prices	R\$ 3.69



COSTS BY RISKS- TOCANTINS

Tocantins – External market (multimodal transportation)

Logistic activity	Average cost (R\$/t)	Risk cost (R\$/t)	Risk impact on product price (%)
Road transportation from farm to storage	21.68	27.51	5.68%
Storage	55.96	25.34	5.23%
Road transportation from storage to terminal	44.90	21.75	4.49%
Rail transshipment fee	7.50	15.00	3.09%
Rail transportation	107.60	14.00	2.89%
Port	33.70	-	-
Total	271.34	103.60	21.39%

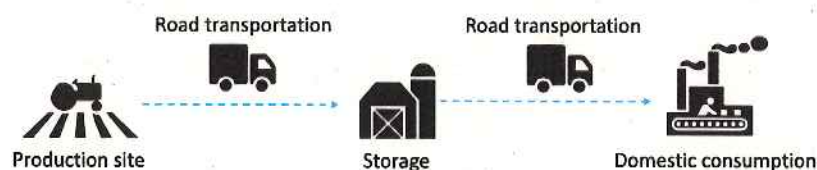
Tocantins – External market (road transportation)

Logistic activity	Average cost (R\$/t)	Risk cost (R\$/t)	Risk impact on product price (%)
Road transportation from farm to storage	21.68	27.51	5.68%
Storage	55.96	25.34	5.23%
Road transportation from storage to port	182.00	21.75	4.49%
Port	33.70	44.00	9.08%
Total	293.34	118.60	24.48%

COSTS BY RISKS- TOCANTINS

Tocantins – Domestic market

Logistic activity	Average cost (R\$/t)	Risk cost (R\$/t)	Risk impact on product price (%)
Road transportation from farm to storage	21.68	27.51	5.68%
Storage	55.96	25.34	5.23%
Road transportation from storage to final destination	65.26	21.75	4.49%
Total	142.90	74.60	15.40%



PROBABILITY AND SEVERITY MATRIX - BAHIA

		Severity of Impact				
		Negligible ($< \text{R\$ } 3.49/\text{t}$)	Moderate ($\text{R\$ } 3.50/\text{t}$ to $\text{R\$ } 6.49/\text{t}$)	Considerable ($\text{R\$ } 6.50/\text{t}$ to $\text{R\$ } 9.49/\text{t}$)	Critical ($\text{R\$ } 9.50/\text{t}$ to $\text{R\$ } 12.49/\text{t}$)	Catastrophic ($> \text{R\$ } 12.50/\text{t}$)
Event probability	Highly probable (85% to 100%)			- Reduction/interruption of business (rain) - Changes in fuel prices		
	Probable (60% to 84%)			- Get bog down (atoleiro) (rain) - Reduced supply of vehicles (rain)		
	Occasional (40% to 59%)			- Increase product moisture (rain)	- Infrastructure problems: unavailability of system	
	Remote (10% to 39%)		- Sudden unavailability of some warehouse equipment or warehouse itself		- Unexpected changes on road transport regulations	- Port staff strike
	Improbable (Below 10%)					

PROBABILITY AND SEVERITY MATRIX - TOCANTINS

		Severity of Impact				
		Negligible ($\leq$ R\$ 3.49/t)	Moderate (R\$ 3.50/t a R\$ 6.49/t)	Considerable (R\$ 6.50 /t a R\$ 9.49/t)	Critical (R\$ 9.50 /t a R\$ 12.49/t)	Catastrophic ($\geq$ R\$ 12.50 /t)
Event probability	Highly probable (85% to 100%)		- Reduction/interruption of business (rain) - Changes in fuel prices	- Queues at the port terminal		- Unexpected shift on transportation mode (reduction in rail car)
	Probable (60% to 84%)	- Reduced supply of vehicles (rain)		- Get bog down (atoleiro) (rain)		- Queues in the railway terminal
	Occasional (40% to 59%)		- Need of vicinal road rehabilitation by producers (rain)	- Increase product moisture (rain)	- Infrastructure problems: unavailability of system	
	Remote (10% to 39%)		- Sudden unavailability of some warehouse equipment or warehouse itself	- Bridge rehabilitation by producers (bridge interruption) - Original path deviation (bridge interruption)	- Unexpected changes on road transport regulations	- Port staff strike
	Improbable (Below 10%)					

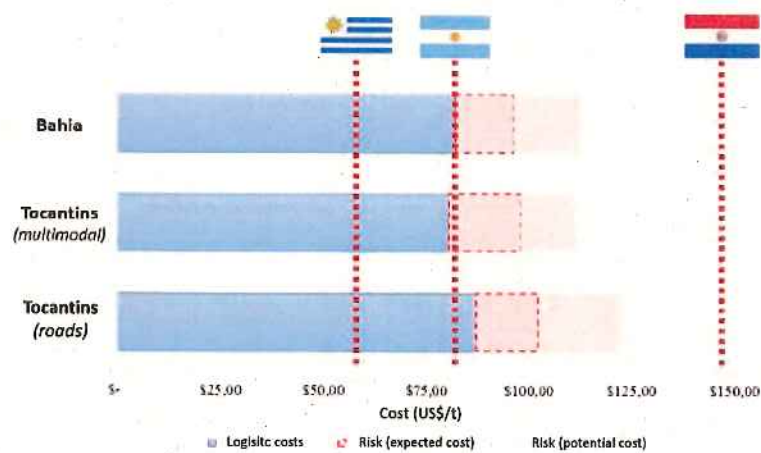


EXPECTED COSTS

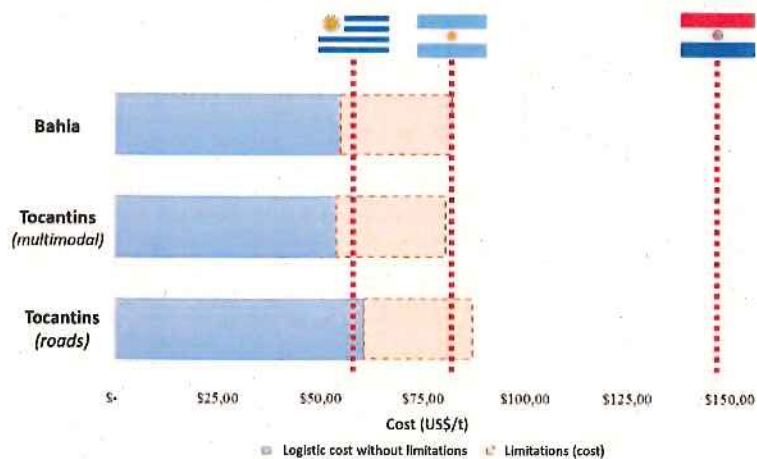
Bahia		Tocantins		
R\$ 48,15 per ton as expected cost in export flows	R\$ 39,33 per ton as expected cost in domestic market flows	R\$ 59,17 per ton is the expected cost in export flows via multimodal transportation	R\$ 51,65 per ton is the expected cost in export flows via direct road transportation	R\$ 35,43 per ton as expected cost in domestic market flows



BENCHMARKING - RISKS



BENCHMARKING - LIMITATIONS



FINAL CONSIDERATIONS

FINAL CONSIDERATIONS

1

Methodology for agrologistic risks assessment:

- Identification and characterization of risk events
- Risk costs
- Probabilities
- Expected costs of risks

2

Comparative analysis of methodology: more applicable for chains with greater presence of risks:

- Large production volumes transported in concentrated routes
- High distances for the distribution of the product, and
- Possibility of using multimodality.

3

Agrologistic chains for rice (TO) and milk (BA) present a greater severity of limitation rather than risks

FINAL CONSIDERATIONS

4

Recommendations to mitigate risks and limitations on maize agrologistic chain:

- Investments in infrastructure improvements in road transport (quality and quantity);
- Investments in electricity and communications infrastructure access;
- Improve PPP investments and incentives for multimodal infrastructure;
- Improve policies and incentives to increase storage capacity infrastructure;
- Preparation of preparedness and response plan for climate change events;
- Qualification / training of labor force of service providers (increase delivery and product quality);
- Foster business environment that facilitate small and medium-sized farmers to have access to railway infrastructure;
- Implementation of efficient system for loading/unloading schedules for rail and port terminals (reduction of queues);
- Encourage investments to expand rail assets (wagons and locomotives): avoid pent-up demand and unexpected lack of wagons;
- Development of an information system to reduce information asymmetries for better decision making (queue monitoring, rainfall forecasting, loading interruptions due to rain, logistics costs, etc.)



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THANK YOU

BARBARA FARINELLI
Agriculture Economist
World Bank
bfarinelli@worldbank.org

