Perspectives to Green Corridors in Brazil
Brazil is a large country (8.5 million Km$^2$)

200 million inhabitants

Almost 90 % live near the east coast

Almost 60 % GDP concentrated in the southwest (São Paulo)

Brazilian GDP US$ 2.3 trillion

Growing demand
Major problems for transports

• POOR INFRASTRUCTURE
• LARGE CONCENTRATION ON ROAD MODAL
• BUREAUCRACY
• EXCESS OF TAXES
• LACK OF CLEAR RULES FOR INVESTMENTS
Transports matrix in Brazil

Source: Ministry of Transports (NPLT), 2011
The quality of the Brazilian infrastructure for transportation
Logistics costs - Brazil X USA

Percentage of GDP

(2012)
Poor infrastructure

- Unpaved roads
- Few railways available
- Expensive freights
- Long distances (~2000Km)
The traffic - Port of Santos

The lines increases the logistic cost.
Consequences

- Ship lines
- Inefficient port operations
Bureaucracy in the national transport system

Secretary of ports, (2015)
Short Sea Shipping in Brazil

- Brazil has continental size, with excellent coast-line.

- One potential green corridor using short sea shipping.

- Its navigable coastline is 7,400 km long.
Green Corridors to Brazil

• Could our main Intermodal Transport Systems (Short Sea Shipping + Highways) be a green Corridor?

• Cargo Movement by relatively long distances.

• Multimodal Corridors.

• Environmentally-friendly.

• Safe.

• Avoid traffic congestion.
National Plan of Transport Logistic

Effective change in the transport matrix

Prioritization of Waterways

29 %

<table>
<thead>
<tr>
<th>Year</th>
<th>Roads</th>
<th>Waterways</th>
<th>Pipes</th>
<th>Airways</th>
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<tbody>
<tr>
<td>2010</td>
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<td>2015</td>
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</table>
The Port of Santos is the largest in Brazil. It handles approximately 2.2 million TEUs annually, out of 5.9 million TEU that are handled in the country.
Port of Santos - Channel

- It should be made investments in terminals, strengthening the pier for docking of bigger vessels.
- Depth
- Dredging
- Slums
- Houses and Buildings.
Green Corridors to Brazil

- Large distances, and corroborates the sustainability issue for lower carbon dioxide emissions, when compared to road transport.
Green Corridors to Brazil

SSS

• To invest in a logistically sustainable system that minimize greenhouse gas emissions.
Integration of maritime shipping with other modals of transport is essential to a green transport system.
Multimodal Corridors

- Investments in information technology and reducing bureaucracy for port operations are essential.
- Having fast terminals to short sea operations are major challenges for a sustainable green corridor system.
Multimodal Corridors

Example: ICT - Inland Container Terminals
Multimodal Corridors

ICT - Inland Container Terminals / Jundiaí
Multimodal Corridors - Jundiaí

**Green Project**

- The trucks should only be used for short distances and door-to-door delivery.
Multimodal Corridors
Beltway Integration
Green Corridors to Brazil

**SSS**

- Sustainable Transport Solutions.
- Less Greenhouse Gas.
- Less CO$_2$, NO$_x$, SO$_2$, PM$_{10}$, 25.
“PROPOSAL FOR A MARITIME GREEN CORRIDOR FOR BRAZIL"

• Project funded by CNPq;

• Coordinator: Prof. Dr. Rui Carlos Botter
  • Professor of exclusive dedication of the Department of Naval Architecture and Ocean Engineering from the Polytechnic School of the University of São Paulo - POLI / USP.

• This project has the institutional support of CISB - Swedish-Brazilian Center for Research and Innovation and the partnership with Lindholmen Science Park and his team of experts located in the city of Gothenburg, Sweden.
“PROPOSAL FOR A MARITIME GREEN CORRIDOR FOR BRAZIL”

• Specific objectives are:

  • To identify sustainable technologies applied to the Maritime Transportation and Port Operation;
  • To identify the logistical bottlenecks of the corridor that, when eliminated, improve the sustainability indicators;
  • To establish indicators and benchmarking for green corridors;
  • To identify technology gaps and to recommend areas of research, development and innovation aiming the improvement of the corridor sustainability indexes;
  • To enable a Regulatory Evaluation and New Propositions: Currently, what prevents the implementation of the Green Corridor concept in Brazil and what do we need to change?
  • To disseminate results in workshops, seminars, conferences and articles.
• The project development will be as the following approach:
  • Definition of Performance Indicators for corridors in Brazil, with broad-based discussion on international indicators for this segment;
  • Evaluation of existing green corridors in Europe and their indicators;
  • Definition of technology and its details applied to ships, terminals, equipment, information systems, among other conditions necessary for the establishment of green corridors;
  • Policy, rules and conditions definitions that are necessary for the implementation of corridors in Brazil
  • Definition of Brazilian green corridor;
A non-profit Research and Innovation Association focused on implementing Research, Technology and Innovation partnerships by:

- Exchanging technology and innovation with Sweden and Europe;
- Stimulating innovation locally and all around Brazil;
- Fostering synergy between Sweden, Brazil and others countries.

Main office in São Bernardo do Campo, SP

Synergy between Sweden & Brazil
CISB Work Package

- Mapping stakeholders
- Project Dissemination
- Mapping funding opportunities
Mapping stakeholders

**Actions**

- Identification of stakeholders within the sector (Government, Academia and Industry)
- International missions articulation
- Analysis of connections
- Overview of aspects related to innovation
- Integration of key partners in the collaboration
Project Dissemination

CISB as a platform for project dissemination

• Newsletter (4 per year)
• Press releases
• Workshop SWE BR Collaboration Opportunities in Maritime Logistics
• International Workshop on Green Corridors
## Mapping of funding opportunities

<table>
<thead>
<tr>
<th>Actions</th>
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<tbody>
<tr>
<td>Identification of funding Institutions</td>
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<td>Mapping of call for projects and other types of funding possibilities</td>
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<tr>
<td>Dissemination of opportunities to project partners</td>
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<tr>
<td>Integration of key partners in the collaboration</td>
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