An overview of agribusiness logistics in Brazil

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**ABSTRACT**

This study aims to present an overview of the current state of the Brazilian agribusiness from the logistics point of view. Brazil is an agricultural powerhouse, one of the world leaders in the production and export of various agricultural products. In economic terms, the sector should be responsible in 2015 for about 23% of Gross Domestic Product (GDP) and employ approximately 30% of the economically active population in the country. Today the Brazilian soy producer spends to transport their production from the farm to the port about 4 times more than the Argentine and American producers do. Therefore, we can say that the great challenge for agribusiness is the logistics infrastructure, since production has increased because of technological advances, but the country finds it difficult to flow it off. The methodology used was a descriptive study, based on documents reporting the issue. Several projects are in progress, however, in short terms, logistical advances will not yet be perceived regarding competitiveness gains for the sector, but in the medium and long term, with the implementation of the government’s plans, the completion of the BR-163 highway and the viability of the Arco Norte, the industry as a whole tends to benefit, making the Brazilian agribusiness increasingly strong in the international market.

**INTRODUCTION**

Brazil is expected to lose another position in the ranking of the largest economies in the world this year, 2015, according to the International Monetary Fund (IMF), falling to the 8th place. After being surpassed by the UK in 2011, the country should also be overcome by India, Globo (2015). Recently, according to Exame (2015), Brazil also left the list of the 20 largest exporters. The Brazilian economic growth depends on exports, since this activity brings foreign currency into the economy balancing public accounts.

The Brazilian economy had one of the worse performances among the most industrialized countries in 2014. The confirmation by the IBGE that the Brazilian Gross Domestic Product last year grew by only 0.1% has determined that, in a comparison with 19 other G20 countries, only Italy and Japan have had worse results than the Brazilian in the period, BBC (2015).

The difficulties encountered in economic growth are directly linked to internal constraints, which successive governments fail to solve. These include poor infrastructure, skilled labor deficit, complex tax system, low capacity of public and private investment and excessive bureaucracy, BBC (2012).

The current picture of the Brazilian cargo transportation structure has presented significant limitations to the expansion and economic growth of the country. This scenario is a reality recognized by the authorities, however, the Brazilian productive sector depends on this infrastructure. When it comes to agribusiness in Brazil, in terms of competitiveness, the Brazilian ability is high. Productivity rates are rising, however, in time to deliver the product, comes up the biggest bottleneck the industry has to overcome: the infrastructure conditions. This situation is not a current problem, for many years transporting loads Brazilian has shown symptoms related to severe deterioration, problems generated due to lack of investment, at least in the last two decades. Structural problems compromise the operational efficiency and become an obstacle to economic and social development of the country. The lack of communication between the different modes is a major competitive barrier. The railways need to communicate with the ports, with the waterways and highways, making efficient logistics corridors, increasing efficiency and competitiveness of the sector, Estadão (2014).

**Keywords:** Agribusiness; Infrastructure; Logistics; Export; Competitiveness; Intermodal
Improper use of modals generated a very high dependence on road transportation, which has been just filling gaps of other modes. The percentage of trucks circulating the country, which have over 20 years of use, reaches 32% of the total fleet, in addition, 17% are over 30 years of use. This reality brings negative results such as performance degradation, increased fuel consumption, the rise in emission of pollutants, in addition to the damage to people's quality of life, CNT (2012). The existing rail network, largely built in the early of last century, suffers fault traces from the recent privatization process, which prevents it from bigger jumps. The participation of waterways is virtually nonexistent.

The transportation system is essential to keep the economy of a country moving. Without this system the products do not arrive to their consumers, industries would not have access raw materials and neither would be able to dispose of its production. The current situation of the Brazilian cargo transportation matrix leads to loss of competitiveness for domestic enterprises, since the inefficient modals generates a high operational cost, becoming a limiting factor for regional and international development of Brazil. This cost, internally, Brazilian businesspersons call Brazil Cost, an issue that will be further explored below.

1. The Importance of The Agribusiness Sector For The Brazilian Economy:

<table>
<thead>
<tr>
<th>Product</th>
<th>Production</th>
<th>Export</th>
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<tbody>
<tr>
<td>Sugar</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Coffee</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Orange Juice</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Soy</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Beef</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Tobacco</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Ethanol</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Chicken Meat</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Corn</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Pig Meat</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture (2010)

According to the Ministry of Agriculture report, the Brazilian grain production should increase nearly 60 million tons by the end of the next 10 years (2024/2025), the most dynamic products of the Brazilian agribusiness should be soybeans, wheat, chicken meat, pork, sugar, cotton lint, sugarcane, apple, melon and paper. The domestic and international demand will be the main growth factors for most of these products, the Ministry of Agriculture (2015).

According to the study, the region of Matopiba - formed by parts of the states of Maranhão, Tocantins, Piauí and Bahia - must show a large increase in grain production and planted area. Projections indicate that this region is expected to produce 22.5 million tons of grain in 2024/2025, representing an increase of 16% compared to 2014/2015. The area planted shall be from 8.7000000 to 11.4000000 hectares at the end of the period of the projections, the Ministry of Agriculture (2015).

2. Impacts of The Lack of Infrastructure on The Competitiveness of Brazilian Agribusiness:

The development of the infrastructure sector is key to the integration of the country. With proper infrastructure, Brazilian production is strengthened, achieving lower costs, providing competitive prices of the products, generating greater economic development. According to CNA, Brazilian agribusiness does not grow for lack of port capacity to flow off the production, problem that complicates agricultural production in some regions of the country, Capital Letter (2015).
According to the SNA (2015), the Brazilian soybean producer spends today to take the farm of production to the port on average US $ 92 / ton, which is four times more than in Argentina and the United States, due to the deficiency of national logistics.

According to the Fundação Dom Cabral, Brazilian companies loses US $ 80 billion a year due to lack of public investment in ports, airports, roads and railways. This amount accounts for 4% of GDP, CNT (2012). The impacts of these shortcomings on the economy are overwhelming. These figures quantify the inefficiency of the country, which ultimately affects directly the loss of competitiveness of the national economy, affects the export capacity of the country, affects the health of our industries, threatens the flow of foreign investment and compromises the ability to grow in Brazil.

Having as main grain producer the state of Mato Grosso, Brazil's central region is considered the main border of soybeans and, as mentioned above through the Ministry of Agriculture study (2015), the states of Maranhão, Tocantins, Piauí and Bahia, shall present a large increase in grain production and acreage in the next 10 years. We can see from Figure 1 that agricultural areas have been moving away from South and Southeast ports, reinforcing the need to improve export logistics structure, so the production can be transported competitively.

Fig. 1: Map of the Brazilian Agricultural Production of Soy
Source: Ports Department (2014)

According to a survey done by FARSUL / SENAR system, there are aggravating factors making the producer lose in competitiveness and profit due to poor structuring of production logistics flow to the ports. Based on the 2012 harvest, the cost of grain transportation in Brazil is up to 39% more expensive than in the US, comparing the costs involved between the transportation from the farm until the placement of the product in the port in Shanghai, China. While in the US the producer spends US $ 99 to go through 2.000 kilometers with the flow of production, the Brazilian spends US $ 158 to do the same distance, Canal do Produtor (2013).

The question of logistics optimization of Brazilian soybeans is related to the need to increase the competitiveness of domestic production compared to foreign competition because, among the segments that infer the efficiency of various sectors of an economy is the most significant transport. In Brazil, road transportation accounts for 67% of the transportation matrix of soy production flow at distances from 900 to 1.000 km (worth mentioning
also that most of the roads are in poor condition) and modals waterway and rail, by 5% and 28%, in that order. In the United States, although they have average similar distances with those of Brazil, 61% of transportation is carried out by waterways, 23% by rail and only 16% for roads, Correa e Ramos (2010).

**Dependence of Modal Road:**

Brazil's transportation matrix shows an unbalance between different modes, which points to the need for readjustments that promote greater competitiveness and sustainable economic development.

According to Sandoval (2014), road cargo transport accounts for 65% of Brazil's transportation matrix in the year 2014. Still as told by author and as already mentioned, such modal has some characteristics that demand close attention from companies, it stands out among them the insecurity to move through the modal and the high age of the Brazilian fleet. Below we can see on Graph1 how it is divided the Brazilian transportation matrix.

**Graph 1:** Distribution of the Brazilian transportation matrix in 2014

Source: Tecnologística, 2014

In Brazil, the excessive usage of road transportation is related to the simplicity of operation, because it can transport different types of cargo and also offers door to door service. As released by the NTC&Logística (2015), only 12% of Brazil's roads are paved, indicating that the infrastructure of Brazil is worse than countries like China, Russia and India. The conditions of Brazilian roads cause an increase in delivery time and a reduction in the quality of services, which often is reflected in the performance of contracts, payments of late fees and even loss of business.

During a debate related to logistics costs in Brazil, Paulo Resende, coordinator of the CCR Infrastructure and Logistics at Fundação Dom Cabral stated, "Brazil does not invest enough to recover what loses", Amcham-Brasil (2013). And Resende complements, if Brazil invested, would see the gains immediately on business competitiveness, improving the movement of cargo and the fluidity of urban mobility. But that would mean having to apply 5.6% of GDP. Our current level of investment in logistics is in a maximum of 1.5%.

Another problem is the informality of road transport. There is a lack of training for drivers and security risks in transportation, and informality is reflected in accidents - which is costly to companies. According to the article published by the website Carga Pesada (2012), accidents kill around 8,000 drivers per year on the roads, not counting those who end up in hospitals and do not enter this account, number that is 14 times higher than the American rate.

In this scenario, companies strive to try to lower their cost of transportation. Outsource the fleet and logistics services to other operators is the most important action to reduce costs. The path is now how to add value to their transport. The vast majority of companies prioritize the deadline for fulfillment of deliveries, the price of the service and reliability in this type of work.

3. **Brazil Cost:**
One of the major reasons for the lack of competitiveness of Brazilian organizations in the world market is the high operational cost, the so-called “Brazil Cost”. This cost ranges from structural problems - infrastructure - to bureaucracies. According to Revista Exame (2015), the Brazilian tax burden is approximately 40% of GDP, one of the highest in the world. In a study by Salum (2007), it was identified that the same agricultural product that is produced in Brazil is priced at 35% more than if it were produced in Germany or the United States.

Despite the Brazilian entrepreneurs investing in technological advances, labor qualification and increasing productivity, the Brazilian competitiveness is still small because of that “Brazil Cost”. The expansion of globalization of the economy should be supported by well developed logistic systems, which allows the product marketing costs to be competitive in more distant regions markets. Fleury’s (2012) study shows that in 2011 the US spent about 7.7% of its GDP for the logistics expenditures, something like 1.12 trillion dollars, as in Brazil logistical expenses, calculated by ILOS and recently released, reached the US $ 237 billion, about 10.6% of the GDP. Logistics reflects a concern with the need to gain competitive advantage in markets that are subject to rapid change.

4. Government Programs:
Will be addressed below the two main programs that the Brazilian Federal Government have launched, encompassing a set of economic policies, which aims to accelerate the economic growth of Brazil, and the priority investments is focused on infrastructure and transportation.

4.1 Investment Program in Logistics – PIL:
As presented by the Ministry of Planning, Budget and Management (2015), the program was released on August 15, 2012. The Investment Program in Logistics aims to provide the country with an adequate transportation system to the size of Brazil. Based on a model of investment that focuses on partnership between the public and private sectors, the initiative provides for the adoption of concession contracts in the case of highways and railroads.

4.1.1 Public Concessions:
Concessionaries and partners will be selected through public bidding and will be responsible for the construction and expansion of excerpts, for its maintenance and the service users. In return, will have the rights to work through the collection of fees. The federal government will be responsible to conduct:
- Studies and Planning, in charge of the newly created Company Logistics Planning (EPL).

For highways, the EPL will study and planning for the future stages of the awards program. In addition, the state will promote the environmental studies for licensing of the works of PIL, both at this stage as the next.

The planning of actions in existing concessions are the responsibility of the concessionaires.
- Regulation and supervision of services, in charge of the National Land Transportation Agency (ANTT);
- Financial support in the long-term financing form the National Bank for Economic and Social Development (BNDES).

The main objectives of this program are:
- Raise the scale of investment in transport infrastructure, providing the country with a wide, modern and reasonable networks fees;
- Strengthen the state's planning capacity and promoting integration between roads, railways, waterways, ports and airports in conjunction with the productive chains;
- Create the foundation for sustainable growth in Brazil over the next 50 years, initiating an ongoing process of planning and development of its logistics infrastructure;
- Reduce costs and expand the country's transport capacity, resulting in the promotion of efficiency and increased competitiveness.

In this context, it is foreseen R$ 198.4 billion in investments, of which R$ 69.2 billion between 2015-2018 and R $ 129.2 from 2019. Investments are divided as follows:
- Highways (R$ 66.1 billion)
- Railways (R$ 86.4 billion)
- Ports (R$ 37.4 billion)
- Airports (R$ 8.5 billion)

4.2 Growth Acceleration Program – PAC:
Created in 2007 the Growth Acceleration Program (PAC) promoted the resumption of the planning and execution of great works of social infrastructure, urban, logistics and energy of the country, contributing to its accelerated and sustainable development.

As In 2011, the PAC has entered its second phase, with the same strategic thinking, enhanced by years of experience of the previous phase, more features and more partnerships with states and municipalities for the implementation of structural works that can improve the quality of life in Brazilian cities. As officially released by the Brazilian government, Brasil (2015), it has concluded R$ 66.9 billion in projects across the country. There were 5,100 km of highways, 1,100 km of railways, 30 new developments in ports and airports in 37 projects, which allowed the expansion of service capacity to 70 million passengers per year.

4.2.1 PAC Road:
Expansion of the Brazilian highway system, maintenance, road safety, studies and projects. The expansion of the system provides for works in
duplication, paving, access to ports, contours and urban crossings to eliminate bottlenecks in strategic areas, and the development of new regions, expansion of the national physical integration to neighboring countries and reduce the cost transport. Improving the quality and traffic on the roads to reduce the accident rate, the project portfolio of security for investments in integration with predictive sector to other modes (rail and waterways) and concession of highways with high traffic volume are also goals that the transport sector shaft.

4.2.2 PAC Rail:

Expansion of the rail network to enable connection to areas of agricultural and mineral production to ports, industries and consumer market. For this, the government wants a review of the regulatory framework, to create a more competitive environment in cargo transportation, encourage capacity utilization of railway infrastructure and stimulate new investment. Also wants to ensure project portfolio to expand and improve the use of the network by integrating it to other modes of transport (roads and waterways). Another important guideline is investment in high-speed trains -Rio-São Paulo-Campinas, São Paulo-Curitiba, Campinas-Mineiro Triangle and Campinas, Belo Horizonte.

**The Transport Infrastructure Planning Directed To Brazilian Agribusiness:**

Early in 2015 it was denounced by the Ministry of Agriculture, Transport and Harbours Department strategic actions to facilitate the flow of agricultural harvest 2014/2015, regarded as a new record for the country. Brazil should produce at least 200.7 million tons of grain harvest in 2014/2015, according to the survey released by the National Supply Company (Conab, 2015). The number represents an increase of 7.06 million tons (3.6%) compared to the previous harvest, when there were produced 193.6 million tons of grain, Agência Brasil (2015). By Figure 2 we can see the spatial distribution of Brazilian production.

**Fig. 2:** Spatial distribution of the Brazilian production  
Source: Ministry of Transportation (2015)

According to the Ministry of Transport (2015), the plan aims to improve the infrastructure of multimodal corridors of six states (Mato Grosso, Roraima, Amazonas, Pará, Tocantins and Maranhão), with works on the highway BR 163 between Sorriso (MT) and Miritituba (PA), stretch of duplication between roads BR 163 and BR 364 in Mato Grosso, dredging Rio Madeira and financing 426 waterways vessels for operation waterways of the Madeira and Tapajos rivers. The intention is to give continuity to the actions taken to prevent vehicle congestion in the access corridor to the Port of Santos, as well as
improvements in the infrastructure of multimodal corridors of Arco Norte in the states of Mato Grosso, Rondonia, Amazonas, Tocantins and Maranhão.

Through the map shown below in Figure 3 we can see the main flow routes of Brazilian agricultural production and observe the logistics infrastructure available in the regions.

**Fig. 3:** Main flow routes of Brazilian agricultural production

The grain transportation logistics in Brazil undergo a major transformation in the coming years with the entry into Arco Norte operation of exports, which will link Mato Grosso to Pará. This route should focus at least one third of the production of soybeans and corn country through the ports of Itaqui (Maranhão), Santarém (Pará), Porto Velho (Rondônia) and Itacoatiara (Amazonas). The BR-163 will also allow the expansion of Santarem and Vila do Conde ports, both in Pará, where expansion work will provide increased export flows. The BR-163 is considered one of the most important roads in the central region, responsible for disposing of more than 30% of domestic soybeans, Veja (2014). Below in Figure 4 we can see the road map BR 163, which is a longitudinal highway, across the country from north to south.
According to the study FAEP System (2014), the expectation in the industry is that there will be an average reduction of 34% in the cost of transportation of the crop 2015/16, compared to today's prices, since much of the crop will be taken by the BR-163 or the Tapajos River to the ports of Santarem and Vila do Conde, in Pará. More than that, as shown in Figure 5 below, getting out through the north, Brazilian corn and soybeans may be brought to Asia through the Panama Canal, rather than go through Africa, which would decrease in four days the path of a round-trip to China and by 20% the cost of shipping, adding value and competitiveness to Brazilian agribusiness.

The round trip to China would be reduced from 40 to 36 days compared to today's route traveled by vessels leaving Santos and Paranagua ports, Portal da Navegação (2014). It is important to remember that China is the largest importer of agricultural products from Brazil, especially in the case of soybeans. In 2014 the Chinese imported from Brazil the equivalent to US $ 22.07 billion in agricultural products, and the soy complex accounted for about US $ 17.01 billion, SNA (2015).
Inside the Brazilian territory, the new route flow by Para represent less kilometers traveled, factor that counts in freight prices composition. Taking as it’s starting point the municipality of Sorriso, important center of agricultural production of Mato Grosso, this means an economy 700 to 1,000 kilometers of road compared to the distance to the Santos and Paranaguá ports.

5. Intermodality In The Flow of Brazilian Agricultural Production:

The transportation system in Brazil remained several years without receiving significant investments, is now going through a time of transition in regard to the possibilities of using more than one modal in cargo handling. The focus of government initiatives is to invest more in railways and waterways to balance the transportation matrix in Brazil, these works should allow producers to reduce the share of the cost of freight and also gain speed to transport the harvest to the main ports of country. Noting that the imbalance of the Brazilian transport matrix is one of the main sources of inefficiency of the logistics system and Brazilian transport.

As stated earlier, the road transportation currently accumulates 65% of Brazil’s freight transportation, despite being the most expensive means of transport after air travel. Given the size of Brazil and the predominance of bulky and heavy loads, such as agricultural commodities, the use of road transportation in the detriment of the rail and water modals becomes even more apparent the inadequacy of the current matrix of Brazilian transport. As we can see below on Table 2, the road transportation is less than 30% of the American transportation matrix, while the railways is a little over 40%.

Table 2: Comparison between the Brazilian and American transportation matrix

<table>
<thead>
<tr>
<th></th>
<th>Road</th>
<th>Rail</th>
<th>Waterway</th>
<th>Pipe</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td></td>
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<td>USA</td>
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Source: ANTF (2010)

Taking the US as an example, we can ascertain that the growth of intermodal is key to better utilization of infrastructure in Brazil. Combining diversity and characteristics of each modal (road, rail, waterway, air), it can improve the efficiency and productivity of the national economy by reducing the so-called "Brazil Cost" in this segment.

6. Example Of The Sugar Sector In São Paulo:

The Southeast region although it has not a significant participation in grain production, it has the most diversified production agenda of the country. The region is strong in coffee, sugar, orange juice, milk and meat. São Paulo is the most diverse state in the Southeast, producing all agricultural crops and still has a strong presence in the production of sugar, accounting for 60% of the Brazilian production, (BNDES 2007).

São Paulo stands out because of higher concentration of mills. Domestic production of the crop 2014/2015 was 35.55 million tons of sugar, while production in the state was 21.94 million tons, result of the work of 98 production units (UNICA, 2015).

Also according to the reports of UNICA (2015), about 75% of the sugar produced in the state of São Paulo is destined for export through the Port of Santos / SP and Paranaguá / PR, with the participation of transport using road transportation, rail and road-rail combination.

This market is characterized by the relationship between sugar mills and trading companies with carriers. According to Carvalho and Caixeta-Filho (2007), different packaging models used for transporting sugar intended for export are
fundamental factors at the time of formation of the product value of the freight, as described below:

• Bag 50 kg: concerns the loose sacks which is packaged according to the vehicle capacity, requiring good number of laborers during handling and has a pattern of packaging associated with cheaper freight;

• Big Bag: packaging that holds 1,200 kilograms of sugar. It is used only in cases of very specific demands mainly industrial;

• Bulk: currently, due to their higher efficiency at the time of loading and unloading the product is the standard most commonly used in the market. Due to the higher level of requirements that this model requires, it is characterized as a slightly more expensive freight, compared to other packaging standards.

Carvalho and Caixeta-Filho (2007) point out that in the case of sugar, the biggest volume exported its bulk, but it is important to consider the cost of packaging in the case of loads that need packaging to be transported.

For sugar movement, Silva (2005) comments that there are three situations that represent the main alternatives to transport: road door-to-door, road-rail with restricted sugar shipment capacity and a long-term scenario, rail transportation without restriction of sugar shipment capacity.

Advocated by many authors such as Benatto (2009) and Caixeta-Filho and Gameiro (2001), the road-rail intermodal in sugar transport the bulk from mills of São Paulo to the Port of Santos, can provide significant advantages in relation to cost, transit time and safety goods.

To this end, this modality of transport requires a combination of road transport, responsible for handling the sugar from the mill to the transshipment terminal and railways, responsible for the longest path, from the terminal to the Port of Santos (Silva, 2005).

A practical example of multimodal transport carried out between a production mill and the Port of Santos, takes place in the operations coordinated by the company Rumo Logística, which is a company incorporated by the Cosan Group, which provides a multimodal logistics system for the export of sugar and other dry bulk as shown in Figure 6 (Cosan, 2015).

Fig. 6: Rumo Logística’s transshipment terminals
Source: Cosan (2015)

The company transfers the load from the production centers to its port facilities installed in the area of the Port of Santos. The company Rumo Logística offers integrated multimodal transportation, storage and shipment of products acting as Multimodal Transport Operator - OTM. (Cosan, 2015).

Conclusion:
Structural problems of logistics infrastructure have been widely discussed, but the solution is still
far from contributing to the increased competitiveness of Brazilian agricultural production. The distances are long, the water transport is poor and road and rail freight are high in Brazil, because the demand for services is greater than supply.

The great challenge for Brazilian agribusiness is the logistics infrastructure, production has increased because of technological advances, but the country has difficulty in flowing their production. Increased production of the Midwest and the development of regions such as the north and northeast cause positive impacts for the sector, however, prove the transport bottlenecks, whether in clear dependence on road transportation, or in its poor rail network.

The regions of the Midwest, Northeast and North have become important producers, but lack of port infrastructure for exportin that way, exports are made from the ports in the south and southeast.

With the growth of Brazilian agricultural production and the need for competitiveness in the international market, an old problem has become increasingly relevant in this scenario: the transport infrastructure. With decades of little investment in the transportation sector, the highway network is in disrepair, grew very little and is responsible for major losses, delays and increase the final cost of the goods. In addition, the rail network, insufficient, has also deteriorated and is not widely used. To complete the picture, only now the Brazilian ports begin to become more agile, but it is still necessary to change a lot for them to adapt themselves to the standards of quality and productivity of the major exporting centers in the world.

The entire logistics process involved in agribusiness is vital for industry growth and thus is being treated with all due importance, both the government and the entrepreneurs of the Brazilian agribusiness. For this reason, the Federal Government, through the Ministry of transport and the Agriculture launched programs aimed at the expansion of road and rail grids and its integration with ports, waterways and airports.

There are some alternatives to improve the flow of production which, in most cases, need to be transported from areas located inside the country to the ports. Rail transport requires high investment, but the cost of transported tonne are lower than the road cost. Another alternative, useful in some cases, is the maritime cabotage services, ie the transportation of production from ships, from one point to another along the Brazilian coast, to meet the domestic market, or even to bring production to the big ports to be shipped in large ships bound for overseas.

The Brazil due to this lack of adequate infrastructure, end up having a higher cost than its competitors, but even so, still manages to be competitive in the international market. This good moment Brazilian agribusiness the country must become more competitive, the government and the private sector need to carry out works of infrastructure, to take definitive measures and making significant investments to end or minimize the problems of logistics, making Brazilian agribusiness increasingly strong in the international market.

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