

The Railway Corridor Through Bolivia: A Lost Opportunity

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Abstract

The paper is focused on discussion of logistics and transport reality, comparing current conditions with what they could have been if the Central Bi-Oceanic Railway Corridor, also known as “The Panama Canal of the 21st Century” projected to join the Pacific and Atlantic Oceans in South America linking Brazil, Bolivia and Peru, had been built. The analysis will be carried out taking into consideration different aspects of paramount importance in the economic global context, focusing on operational costs, energy consumption, environment impact and a quantification of external costs.

KEY WORDS: *bi-oceanic; railway corridor; South America; travel time; cost reduction*

1. Introduction

The Central Bi-Oceanic Railway Corridor had been conceived to connect the Atlantic and Pacific Oceans, covering an approximate distance of 3,750 km, leaving from the Brazilian Port of Santos in the Atlantic Ocean, crossing Bolivia and arriving at the Port of Ilo on the Pacific Ocean coast in Peru.

The great enthusiasm that this project generated in its genesis, and the fact that I was personally involved directly, as a consultant, in the first study as well as in later phases, made me feel the joy of having fulfilled my duty and that a long life of dreams and hopes was beginning to bear fruits. Finally, the much-loved land where I was born was going to have the future it deserved and would occupy its rightful place in the present of our region!! Big mistake of naivety, this project, alas, will never be carried out or at least not in my lifetime.

Here we will discuss what happened with this Project and I will try to explain in the most objective and real way the reasons why Bolivia has been practically erased from the logistics and transportation map in the region and why the cancellation of this project represents a lost opportunity. Likewise, the current reality and the alternative Project that is rapidly advancing in its execution between the four neighbouring countries of southern Bolivia will be studied. It will seek to compare current conditions with what they could have been if the Central Bi-Oceanic Rail Corridor had been built. The analysis will be carried out taking into account different aspects of great importance in the global economic context, focusing on operating costs, energy consumption, environmental impact and the quantification of external costs.

2. Background of the Railway Central Corridor

Huge potential was projected in this corridor (Fig. 1), which would have made it possible to increase trade between the countries of the Region and improve the quality of trade relations with other continents. Early estimates indicated that transport time could have been reduced by 30%; and the cargo capacity would have increased to 10 million tons per year.

The greatest impact would have been in the Bolivian territory, where two main pillars of financial support for this project and the largest source of cargo were projected. On the one hand, on the eastern side, “El Mutúm” [1] an iron ore deposit near the border with Brazil with an area of around 75 square kilometers with estimated reserves of around 40.2 billion tons of iron ore 50% iron. And on the Western side, the “Uyuni salt flat”, a prehistoric lake that dried up by evaporation with a surface area of more than 10,500 square kilometers and which contains an estimated 7% of the world's lithium resources, some 9 million tons.

The “Mutúm”, for example, could have generated, during the first five years of operation of the corridor, an annual freight of 18,000,000 tons, almost 50,000 tons/day, which in current conditions would mean 10 daily trains, to be transported. approximately 2,000 kilometres in an East-West direction in 37 hours with an average speed of 54 km/h. In the other West-East direction, it was

expected to transport from Uyuni to Santos around 2,000,000 tons/year [2]. There are travel times are mentioned in the Table 1.

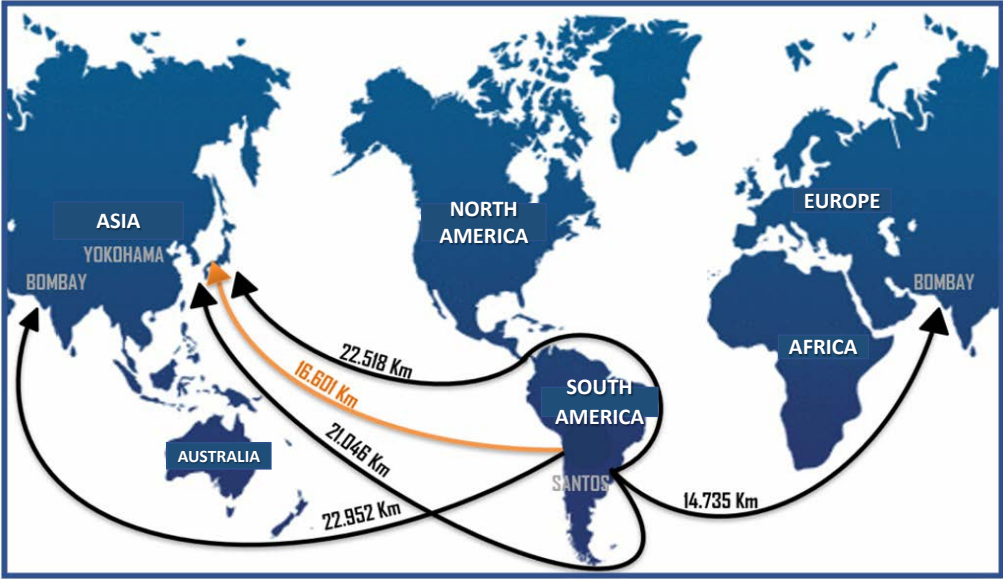


Fig. 1 Corridor Scheme. Source: Transport Vice Ministry Bolivia [2]

Table 1

Travel times [3]

Routes	Transport Times [Days]
Brazil – Panama - China	67
Brazil – Bolivia – Peru - China	42

3. Reasons for Cancellation

Surely there are many reasons that are unknown to public opinion, however I would dare to say that the most important reason is the permanently conflictive situation that reigns in Bolivian society. In which very often transport services are the target of attacks by so-called social movements, paralyzing the country by blocking transportation routes regardless of what damage or side effect they may cause. I firmly believe that neighbouring countries such as Brazil, Paraguay, Argentina, Peru and Chile take these aspects into account before starting any project with Bolivia.

Under these complex conditions we can say that the railway corridor has been another victim of all this framework outside the law, what makes Bolivia a blocking country in the region. In these circumstances, I can assure you that the railways future in Bolivia is bleak. It is also worth mentioning that Brazil is also studying a railway corridor that connects the Atlantic and Pacific oceans, directly with Peru without going through Bolivia.

I can assume without fear of being wrong that due to this painful situation in which Bolivia finds itself, Brazil has chosen to partner with Paraguay, Argentina and Chile to develop an alternative multimodal corridor (Fig. 2) that, however, in its first phases will function as a road corridor [4]. This ambitious project was conceived with the objective of uniting the productive heart of South America with highways, railways, airports and ports that connect from the coast of Brazil, crossing the territories of Paraguay and Argentina to reach four ports in the north of Chile. And it is not only about infrastructure, it is intended to create an environment for expediting customs procedures, facilitating cross-border transit, achieving high logistical efficiency, greater economic competitiveness and more effective regional integration.



Fig. 2 Corridor [Brazil, Paraguay, Argentina, Chile] Scheme. Source: <https://corredorbioceanico.org> [4]

4. Missed Economic Opportunities

The cancellation of the "Central Bi-Oceanic Railway Corridor" Project represents a great missed opportunity in terms of development and economic growth. The construction and operation of the corridor had the potential to generate various economic benefits and stimulate regional prosperity.

The most important impact concerns:

- Employment opportunities
- Economic growth
- Infrastructure Development
- Regional integration
- Auxiliary Services and Support Industries

In short, the cancellation of the Central Bi-Oceanic Railway Corridor represents a lost economic opportunity on several fronts. The immense potential opportunities for employment, economic growth, infrastructure development, regional integration, and accessory services that could have been generated by the corridor. But it is also very important to consider the scale of the impact. The decision to cancel this project will have long-term implications for the economic development and connectivity of the regions involved, and above all very noticeably for Bolivia.

5. Impact on Regional Connectivity

The cancellation of the Central Rail Corridor has a very large impact on regional connectivity, which maintains the current situation with its deficient movement of people and cargo between the Atlantic and Pacific coasts. The corridor was conceived precisely to improve connectivity and expedite transportation, benefiting the participating countries and the region in general in various ways such as: trade facilitation providing a direct and efficient transportation way connecting the Atlantic and Pacific coasts and at the same time, the corridor could have reduced transit times and transportation costs for exporters and importers, and It hinders potential business volume growth, efficiency, and continuous improvement from a quality standpoint.

As far as Bolivia is concerned, the impact is devastating for a landlocked country, where extreme poverty is commonplace, as is unemployment, delaying the country's economic development and the future of its citizens.

Ultimately, the cancellation of the Central Bi-Oceanic Rail Corridor will have a significant impact on regional connectivity, impeding the continuous flow of goods, hampering regional supply chains, limiting connectivity with ports, depriving rural areas of economic opportunities, and reducing tourism potential and cultural exchange. The absence of the corridor creates barriers to efficient regional connectivity and integration, making it difficult to realize the consequent benefits.

6. Comparative Analysis of Transport Corridors Options

The Central Bi-Oceanic Railway Corridor represented an ambitious infrastructure project that aimed to connect the Brazilian port of Santos on the Atlantic coast with the port of Ilo on the Pacific coast of Peru, through Bolivia. With this railway corridor, it was expected to improve regional integration and connectivity between the Atlantic and Pacific coasts of South America. On the other hand, the corridor that connects Brazil, Paraguay, Argentina and Chile is a transportation network that has been structured based on existing highways in the different countries participating in the Project. Improvements are made and the missing junction sections are built and serves as a crucial trade route within the region.

To carry out a comprehensive analysis, multiple dimensions of the corridors will be examined, considering in particular factors such as efficiency, energy consumption, safety and accident rates, costs, and environmental impact. The objective is to demonstrate the comparative advantages that could have been lost by cancelling the railway project.

It is clear, that both corridors play an important role in facilitating trade and connectivity within South America, but they differ in their approach to infrastructure and modal preferences, and above all in how they address environmental aspects.

The Central Bi-Oceanic Rail Corridor, exclusively rail, offers potential advantages in terms of efficiency and economies of scale. Rail transport allows the movement of large volumes of goods in a single trip, which generates cost savings and reduces congestion on the highways. It also presents an opportunity to reduce energy consumption and greenhouse gas emissions, particularly if electric traction is used. In addition, by minimizing reliance on road transport, which is generally limited to a complementary function and for cargo distribution purposes, the corridor could help reduce environmental impacts.

In turn, the corridor that connects Brazil, Paraguay, Argentina and Chile, which is, in the first instance, a road corridor, intends to also incorporate rail transport sections, seeking to achieve a more flexible and accessible transport network. Rail transport within the corridor will offer cost efficiencies and lower environmental impacts, while road transport fills the gaps in areas not served directly by rail infrastructure and allows for last-mile deliveries. Striking a balance between the two modes and optimizing logistics processes can help mitigate environmental impacts and improve profitability. It can be noted as disadvantage, that this solution needs to coordinate transport services of different transport modes. This can be reason of possible operational time-instability in the case of delay [5].

Both corridors have significant potential to enhance trade, economic growth, and regional development. However, in this document we analyse the problem from the point of view of Brazil as the largest generator of cargo and the advantages that the Bolivian territory can offer. A very simple arithmetic consideration gives us an idea of the efficiency of both corridors. For a given amount of cargo the "Road Corridor" would require approximately 50 trucks and would take around 2,500 accumulated hours to transport it from one ocean to the other (each truck 50 hours), while the rail corridor through Bolivia only requires one train and would take around 31 hours to complete transport. And if we also take other impacts such as external costs into account, we would clearly demonstrate the advantages of the Central Bi-Oceanic Rail Corridor.

7. The Corridors from Bolivian Perspective

In order to place the reader in a precise context, I think it is necessary to present some indicators and characteristics of the Bolivian reality (Table 2) [6]. The great advantage that Bolivia has in this situation is its geographical position as it is in the very heart of South America.

Table 2
Bolivian indicators. Source: Compagnie Française d'Assurance pour le Commerce Extérieur

Major Macro Economic Indicators				
	2020	2021	2022	2023 (prognosis)
GDP Growth [%]	-8.7	6.1	3.8	3.2
Inflation [Yearly Average, %]	0.9	0.7	3.2	3.6
Budget Balance [% GDP]	-12.7	-9.3	-8.5	-7.9
Current Account Balance [% GDP]	-0.7	2	-1.4	-1.6
Public Debt [% GDP]	78.0	80.5	82.6	85.1
STRENGTHS		WEAKNESSES		
<ul style="list-style-type: none"> - Substantial mineral (gas, oil, zinc, silver, gold, lithium, tin, manganese) and agricultural (soya, quinoa) resources - 15th largest exporter of natural gas in the world - Member of the Andean Community and Associate member of Mercosur - Tourism potential - Currency pegged to the U.S dollar 		<ul style="list-style-type: none"> - Poorly-diversified economy, dependent on hydrocarbons and ores, - Low private sector development and high dependence on the public sector - Landlocked country - Substantial informal sector (3/4 of all business and 60% of households) - Poor business environment - Insecurity, drug trafficking, corruption - Risks of social unrest, highly polarized country - Limited access to external financing - Human rights abuses - Potential risk of balance payment and/or debt crisis if currency peg abandoned and delays in adjustment 		

As previously mentioned, the country that loses the most with the cancellation of the Central Bi-Oceanic Railway Corridor project is Bolivia, in the first instance because its situation is even more isolated than before. It is outside the road corridor and without any hope or interest to join it, given its geographical situation it would not make any sense to join this corridor either. On the other hand, Bolivia loses the opportunity to transform its poor reality and become a country with an encouraging future full of development and improvement of the quality of life of its citizens. A catastrophe, without a doubt a great missed opportunity!

The expectations on the Bolivian side were very high, the railway corridor would transform the country and its economy. Bolivia being a landlocked country, has a great dependence on neighbouring countries for international trade. The cancellation of this project means that Bolivia will continue to face high transportation costs and logistical challenges, potentially affecting its economic growth and development. A clear example of this was the impact that was expected in relation to employment [2], for a country avid for work, any new job is a blessing from heaven (Table 3). The situation is summarized in the Fig. 3 next to it.

Table 3
Manpower Requirements [quantity]

Construction Phase		Operation Phase				
Type		Field	Transport Performance [mio. tonnes/year]			
<i>Permanent</i>			2.5	5	12	60
Qualified	1,400	Operations	70	140	335	1,677
Unskilled	8,600	Control	4	9	21	107
<i>Non-Permanent</i>		Rolling Stocks	22	45	107	535
Qualified	500	Infrastructure	30	59	143	714
Unskilled	2,000	Management	22	45	107	535
Total	12,500	Total	148	298	713	3,568

As far as the Brazil is concerned, it can be affirmed without the slightest doubt, from a technical point of view at least, that it has chosen the worst option as shown in Fig. 3 b [7]. In which some aspects considered crucial are considered, however there are many more such as operating costs, the reliability and quality of operations, since road transport services are generally very informal in this region.

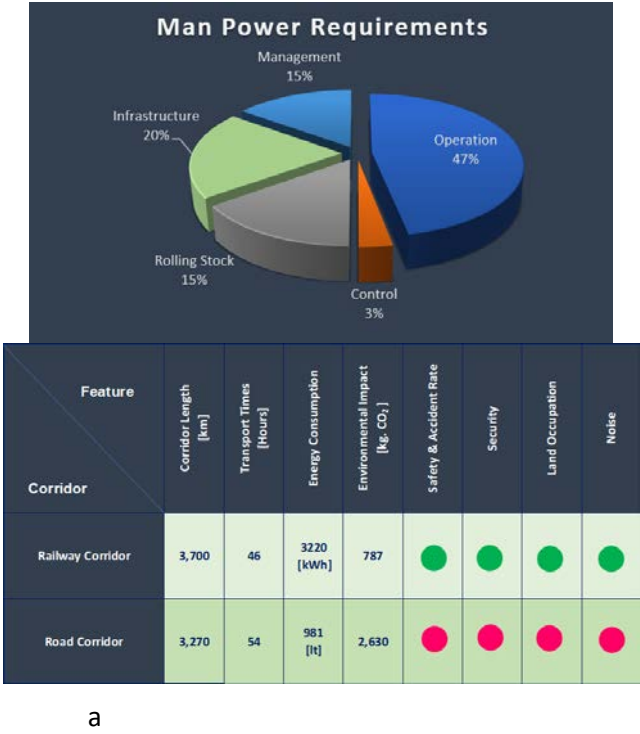


Fig. 3 Summary: a – Manpower Requirements distribution by departments.; b – Comparison of Corridors [7]

And finally, Peru loses the opportunity to develop the Port of Ilo, and to become an important logistics center. Ultimately, in a win-win relationship that was this project, its cancellation leads us to a lose-lose situation.

8. Discussion and Conclusions

The cancellation of the Central Bi-Oceanic Rail Corridor Project represents a lost opportunity for the participating countries and the region in general. The corridor had the potential to generate numerous economic, social and environmental benefits, but its cancellation undoubtedly means a postponement of the Development of the nations involved and of the future of their inhabitants.

From the economic point of view, the corridor would have facilitated trade, improved regional supply chains and boosted economic growth. By providing, particularly to Brazil, a direct and efficient transport route, significantly reducing transit times and costs, improving the competitiveness of companies and promoting regional integration.

In terms of regional connectivity, the Central Rail Corridor would have improved the movement of goods, people, and resources between the Atlantic and Pacific coasts. By connecting key ports and providing better access to rural areas, it would have strengthened regional supply chains and promoted tourism and cultural exchange. The cancellation of the project destroys the anticipated seamless connectivity that was foreseen and impedes the integration and development of the region.

From an environmental point of view, a significant contribution to sustainable transport and a considerable reduction in carbon emissions had been anticipated. By promoting rail transportation and reducing dependence on road transportation, many of the external costs (air pollution, accidents, traffic congestion, etc.) would have been significantly reduced. The cancellation of the project keeps

the current situation unchanged, especially for Bolivia, and rules out the adoption of a more ecological transport alternative.

In general, the cancellation of the Central Bi-Oceanic Rail Corridor is a missed opportunity. But who loses? lose, Brazil; lose the Region; the Planet loses by having opted for the less efficient alternative and less friendly to the environment, but above all Bolivia loses. It represents a setback in terms of economic growth, regional connectivity and environmental sustainability.

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