EXPECTED IMPACT ON FOREIGN TRADE COLOMBIAN, OF THE MASTER PLAN OF INTERMODAL TRANSPORTATION

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Research paper submitted to qualify for the title of:

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Abstract

Intermodal transport is the adoption of two or more modes of transport for mobilize the cargo from a point of origin to a point of destination, with the safety and certainty that the cargo listed on the carrier vehicle will be the which will receive the recipient in the place planned. It is essentially the object on the

Which the Intermodal Master Transportation Master Plan has been built, a project that Government under the monitoring and supervision of the Vice-Presidency of the Republic.

In the Master Intermodal Transport Plan (PMTI), large Level of infrastructure in Colombian territory in terms of land improvement of ports and airports, optimization of river routes, which together, it seeks to implement optimal corridors for the mobility of cargo from the Interior and the interior of the country.

With the implementation of these corridors, the PMTI seeks to maximize economic sectors, generate comparative advantages, logistics and facilitate the movement of goods across Colombian territory.

Keywords:

1. Foreing Trade.
2. Connectivity.
3. Infraestructure.
4. Transport Logistics.
5. Master Plan.
6. Intermodal Transport.

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List of abbreviations

4G: Fourth generation.

ANALDEX: National Association of Foreign Trade.

ANIF. National Financial Instructions Agency.

ANI: National Infrastructure Agency.

APP: Public Private Partnerships.

APP-IP: Public-Private Partnerships of Private Initiative.

CCI: Colombian Chamber of Infrastructure.

CRIT: Commission for the Regulation of Transport Infrastructure.

DNP: National Planning Department.

EDI: Electronic data exchange.

FDN: National Development Finance.

ICOTERM: International Business Terms.

INVIAS: National Institute of Roads.

INCO: National Institute of Concessions.

GDP: Gross Domestic Product.

PMTI. Master Plan of Intermodal Transport.

SPIA: Sociedad Portuaria Industrial de Aguadulce SA

UPIT: Infrastructure and Transport Planning Unit.

UTI: Intermodal Transportation Units.

Introduction

Connectivity between regions, territories and populations in a country is a pillar in the sustainable development of the same as evolutionary processes at the level of investment, the adaptation of technology for a planned process.

In Colombia, the mountainous geography of the territory has always been a milestone, depressions and geological faults, being their nature, the sophistry of distraction for justify the quality of transport routes and por logistic operations. Many have been the ideas and projects of the State to modify and

Routes from and to the interior of the have also been disappointments and frustrations due to non-compliance, lack of planning or the incongruity between the projected and the final result of the works.

At present, new growth expectations are being generated both in investment and in infrastructure planning, the Colombian government is betting on the renewal of its transport nodes and is focusing its efforts on investing in and optimize logistics processes such as

Corridors of world caliber, performing mega constructions such as large bridges high engineering levels, high-precision tunnels and fluids to facilitate cargo mobilization.

In this context, the importance of our territory is directly related to the foreign trade through the mobilization of its merchandise, hence the connectivity that should arise between airports, sea and river ports, and our roads, accompanied by platforms for entry and exit of goods from and to our country.

This has a direct impact on intermodalism, one of the most relevant practices in logistics and that is expressed in the PMTI as a major commitment at the level national level in the face of new era of international trade and economic growth.

Formulation of the project

1.1 Brackground

The importance of freight transport in a logistic developed through the times specifications needed to increase agility, control and profitability on logistics processes in the same way as minimizing costs operating costs and reduce the impacts of fixed costs already established for operations productive sectors that require transportation to perfect their negotiations.

Man has always seen the importance of moving his cargo safely and the expansion and use of natural resources to optimize mobilization of loads have given rise to modes of transport and under inventive of man the means have been perfected day after day to become carriers of security, quality and trust, the current situation always comes with new guidelines for competitiveness and therefore in the middle of the search to implement actions that optimum levels of quality and satisfaction of the supply chain have been opted for the combined transport chains among which one of the most successful is intermodalism.

Intermodalism is the adoption of two or more modes of transport to mobilize load from a point of origin to a point of destination with the certainty and certainty that the the freight listed on the carrier vehicle shall be the same as that received by the planned place, this is implemented through the intermodal transport contract, which is to mobilize from the source country to the destination country (through an operator Intermodal transport certificate) the goods that will be kept until delivery. (eur- Lex, 1997)

The use of standardized loading units gives multimodal transport a characteristics of agility, confidence, transparency and effectiveness that, together with the different modes of transport used to mobilize the loads generate in this mode of transport an efficiency that in terms of logistics can easily be translated as profitability.

Logistic operators in an efficient and cost-effective manner should ensure that the service offered meets the needs of those who opt for this service, ensuring the competition between operators and taking full advantage of the different advantages of modes of transport is attractive and competitive for the producer sector.

According to Roda (2015) "Transport networks directly affect competitiveness and economic growth of a country ". From this statement it is inferred that there is a of the economy to the infrastructure, since the increase in the level of income

Facilitate the construction of more and better transport networks; And consequently when expand the capacity of transport networks, increase competitiveness and integration, which directly affects economic activity.

Poor transport infrastructure not only has an impact on competitiveness also a poorly connected country generates high transport costs between the main centers of activity, which generates a distribution of production autonomy between regions, making it difficult to achieve economies of scale. According to Roda, (2015).

"It has been shown that the social cost of congestion on inter-municipal roads is very higher than the amount of investments necessary to overcome them "cited in Roda, P. (2015).

In the supply chain, transportation is the initial factor when it comes to inputs for a production, taking into account the distances between supplier and buyer; for him conversely, if you talk about a finished product that a customer expects, it will be the final factor of the chain. (Saldarriaga, 2014) Colombia, despite its efforts to improve the road infrastructure, still presents delays and lack of capital to invest and at the same time to advance in this area. If we compare with other countries of South America, we will realize that the difference is abrupt; which does not benefit the transport of goods by road and this makes us one of the countries with less competitiveness:

The transportation of cargo requires the use of land routes. In railway terms, the active routes are limited and not accessible for the different productive sectors, some others because of their deterioration are impassable.

Although Colombia has large hydrographic resources, depth levels do not allow continuous and safe navigation. On the other hand, the air means does not count with airports in all cities limiting the direct access of goods to certain regions and the costs are therefore high.

1.1.1 State of Art

Caicedo, F. (2007:42). We are the privileged corner of South America Magazine Zone Logistics.

In Colombia, we are still focused on moving the loads through the most expensive. The Magdalena River is a fluvial artery not used for competitiveness
Colombian and railroads are absent.
The high logistical costs are due to the fact that intermodal transport is not a usual medium, the mistake in Colombia is that the different modes of transport are put to competition and not integrated to achieve an efficient articulation of the same and that can generate a benefit for the parties involved.

Clavijo (2014). Transport Costs Multimodalism and Competitiveness in Colombia.

We compare with other continents, where multimodal transport reaches more than 50% of the transport and currently Colombia does not reach 2%. Colombia suffers from a infrastructure, is 15 years behind, especially in connection to seaports. Clavijo, (2014). Book "Transport costs multimodalism and the competitiveness of Colombia " there is still a need to concentrate the start of rail connection project operations and which connect sea ports with the interior of the country, is the only way to reduce freight costs that are the highest at the Latin American.
Usually in the analyzes and studies carried out on intermodal transport to first view is interpreted as the main problem, the geographical part and the infrastructure of our country, but the implementation of this strategy is not contemplated due to lack of integral view of loading agents.

Villar (2012). Colombia is ravaged by road infrastructure. Daily Article El Espectador.

Latin America, Colombia is one of the countries that lags behind in the infrastructure and compared to the rest of the world, where other countries are better off in 87%. The level of the Colombian roads is below its level of quality and this given in percentage yields a deficit of 30% needs to be implemented and in the case of ports by 3%, which is not very positive. If it is expected to mitigate the delay for the year 2020, about $ 20 billion of annual pesos should be invested in freight transport that are equivalent to 3.1% of GDP. This investment translates into a 20% current problems and 80% to respond to movement and mobility of vehicles is a consequence of new trade agreements that Colombia has signed or have pending negotiations. In this way the country would have paved 44 thousand kilometers at the end of the decade. (Villar, 2012)

According to Villar (2012), there is a need to invest in intermodal infrastructure,

The author's own conclusion is important and important for our approach: "If we use the multimodal transport we can connect the whole country. " Some roads have even suffered looting of its components, the investment should be very high. By the water side Colombia is potentially rich but is not exempt from climate change generate shortage of water and therefore low in flows of rivers making them undeniable.

According to studies carried out by the ANI. Colombia presents several lags in road infrastructure. Article from the magazine SEMANA.

Colombia is one of the countries of the world with more delays in infrastructure according to data from the World Economic Forum, this mode of transport is used minimally. In Latin America, in the measurement that is made with eight nations that are can compare by similarity, Colombia is in the seventh place in railroads by number of inhabitants. Colombia has 3,400 kilometers of railway line, in operation around 1,000 kilometers and is compared to Chile that has more than 6,500 kilometers and Argentina, with a population similar to that of Colombia, more than 40,000 kilometers.

In Europe, most countries have modern rail systems that streamline and allow the movement of one nation to another. (SEMANA, 2012)

1.2 Problema

Colombia is in an unstable position regarding its level of road infrastructure.

Many of the shortcomings in transport have led the State to legislate mobility in the regulations and sanctions are given to the transporter to mitigate the problems of traffic and road traffic and the excess of motor vehicles in the city.

According to Paternina, (2015), the transport on the roads is slow and expensive, in multiple cases the theme of time in journeys is part of one of the requirements of schedules, one more factor for the supply chain.

Their execution. Internal roads are saturated with transportation and terrestrial routes such as rail and river are underutilized and in the worse cases are discontinued and lost between cities and changes of natural lands.

According to the Privatization, Infrastructure and Capital Markets report presented by the ANIF, if we compare the current ways in Colombia per million inhabitants, the delay in road infrastructure is evident. Colombia in 2009 had 3,733 kilometers built by a million

inhabitants below the average of America (5,434), taking into account that the construction and repairs of the roads are budgeted and budgeted in one or two governments prior to their execution the previous analysis tells us that the parameters of progress are not very encouraging for the mobility in the Colombian territory. This same report tells us that more than 3,400 kilometers that already exists, will only operate 39.2% (1,337 km) than divided into private, concessioned and operated tranches. Apparently the railways in Colombia are a dead body not raised, are unused heritage or are illusions of a past, little is what is used a fast, agile and economic means that could make a internal transportation at the profitable profitable country level. (ANIF and Correval, 2011) one of the major shortcomings of multimodalism in Colombia is not having its stronger tool and economic the transport of loads, transport river has not been fully developed; For 2009 this mode carried only the 1, 8% of the tons of cargo that were mobilized. According to companies consulted by the transport costs are equivalent to at least half of the total logistic costs of Colombian companies, that is why the Logistic Performance Index of the World Bank places Colombia in the 112 position among 155 countries in terms of ease of contracting shipments at profitable and competitive prices. Taken from report on Privatization, Infrastructure and Capital Markets presented by the ANIF. (ANIF and Correval, 2011)

According to Morrison, (2007), although Colombia has managed to obtain new

Export and import, the country has not made significant progress in its infrastructure the last decade the country has been investing an average of 3.2% of its GDP to modernize its infrastructure, with the aim of achieving GDP growth of 6 % On a sustained basis from the 4.5% currently observed for five years;

Twenty however some authors suggest that the investment should be increased to 6% of GDP to ensure a high impact impact on economic growth. (Morrison, 2007) of course, a new infrastructure envelope alone will not improve the competitiveness of the country, in fact they must be routed through the main roads in order to the burden of the country, and also be structured so that transport is more productive (ie less time and less cost per unit this form not only improves the current transport networks and articulates the different modes of transport. (Clavijo, Sergio, 2014) in that vein, the question of the problem is:

What is the expected impact on the Colombian foreign trade of the Master Plan of Intermodal Transport?

1.3 Justification

1.3.1 Theoretical Justification

Through this research will be possible to show the possible impacts that the Colombian foreign trade, with the implementation of each of the projects proposed in the PMTI that will run the government with a deadline until the year 2035. This research is important because it can bring foreign trade operations and those that do not yet, to visualize opportunities in other countries, as new investments in to reduce costs and increase the volumes associated with the mobilization of goods and will speed up the waiting times per trip.

1.3.2 Social Justification

This report will help companies identify the impacts of implementation of the PMTI, so that they are prepared to attend the new ones and participate in the activities, which are expected to increase once they are completed.

All works proposed, which is why it is considered important to carry out this work. Research, since it will allow many more companies to find out about the plan and foreign trade activities, which will directly influence the country's trade balance. Country and its economy.

1.3.3 Justification Staff

The subject is of great interest to researchers as it addresses in essence two thematic ones of its profession: the Foreign Trade and the logistics. Additionally, has an interest for new professionals because it is a work based on projects of future and not on past events, is a look at possible new realities and growth alternatives in the country. Finally, the work investigated is justified, because with the approval of the same it is possible to culminate a successful cycle of study and obtain the title of International Negotiator.

1.4 Objetives

1.4.1 Objetivo general

Determine the expected impact on Colombian foreign trade, the Master Plan of Intermodal transport.

1.4.2 Specific objective

1.4.2.1 Describe the Master el *Plan Colombia Intermodal Transportation.*

1.4.2.2 *Set ranges and costs Intermodal Transport Master Plan for Colombia.*

1.4.2.3 *Describe infraestructure programs for Colombia Trade tura para Colombia Trade-Related Exterior Colombian and that are part of the PMTI.*

1.5 Methodological Framework

1.5.1 Method

The basis of this research is inclined to the description and analysis of a not only a structural and infrastructure development question, but more importantly, a expansion and resource optimization based on reports such as "Global Reporting competitiveness "of the World Economic Forum. The study highlights the importance and transcendence of promoting intermodalism and it is based on the premise that the process can be measured can be controllable.

When we talk about intermodal culture, we try to represent the transport of loads unified in a single unit by means of several means of transport that interact between yes.

The Competitiveness referenced in this analysis is structured to the improvement of the transport logistics processes. Not only is it trying to interpret as it is today the transport process but the most imperative of the research will be to show how is an entire industry or a country using transport as a differential value to make grow your potential and minimizing internal costs, coinciding with ideologies shown logistics in the book "supply chain management" .Ballou, (2004).

The analytical method to validate the current state of transportation in Colombia (river, rail, air, land) and the powers that the commercial sector it has to perform and contribute to the logistics chain supplies.

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1.5.2 Methodology

The methodology of this work will be based on careful analysis of data structured by private and public entities who measure large investment mode in the country.

The methodology used for this process is a high percentage taking data statistics, projections and plans published online by the government pages handlers for legality and compliance issues and update reports standardized to report the progress of the PMTCT. In addition local authorities they are required to provide reports of the standard timetables agreed in concession.

1.6 Scopes

The scope of this project are defined by the study of an ambitious planning

20 years in investment and infrastructure adaptation good condition and optimal quality in terms of logistics operation, as is Master Plan Intermodal Transportation (PMTCT).

The analysis of the project, its foundation and rationale of each of the initiatives expansive of PMTCT, provide clear concepts to identify the impact of planned logistics operations structure implemented constructions Nacional level.).

DEVELOPMENT WORK

CAPÍTULO I.

PLAN MAESTRO DE TRANSPORTE INTERMODAL

Intermodal transport

Intermodal transport is defined as the articulation of at least two different modes of transport, where a single measure of cargo (containers used at general). Its goal is to transport goods more quickly and efficiently.

Intermodal Transport uses at least two different modes of transport, under a single contract of intermodal transport, where a transport operator intermodal is committed by contract to transport a good from a place A to place B, usually located in a different country, using different transportation such as air, land, rail and sea or river, for ensure that the cargo reaches its destination more quickly and efficiently, minimizing travel costs.

The advantages of Intermodal Transport have been revealed with the globalization of economies providing the following benefits, among others: a reduction in transport time is evident, because in each case it uses a combined transport that allows this process quickly to the place destination where you must deliver the goods.

An important advantage over costs, is reducing them and combining the transport benefits for a specific operation is cheaper but in turn keep the quality.

At the time of loading and unloading presents a decrease in that process, reducing up to 70% the time it is intended and implements used.

Intermodal transport in a single carrier is used, which generates a large tranquility. Prices in operations door to door delivery, are informed and agreed with advance thus have important information about taxes and costs operation.

Products that are not so common for countries trade body have new opportunities provided by the service quality and access to remote locations or difficult access and all this at competitive prices that allow for expansion.

It is known that in transport for marketing looting, theft of present load and load damage with the use of intermodal transport is expected this scourge and possible facts it anticipates occur, ensuring more cargo prices economic and making the business more competitive to take great responsibility or confidence.

Inspections that are made containers still exists but with a significant decrease since the containers have the sealing system which makes it more reliable and secure.

Unification of the documentation required for the transport process regardless

various means of transport are used.

You can take control and cargo tracking through the electronic exchange of (EDI), which makes possible to control loads. (Articulos Comercio Exterior, SF)

1.7 Chronology of intermodal transport.

Transport as an activity, is not recent, dating back to ancient times of history of humanity, when prevailed for transporting goods through mountains, trails and emerging ways, the strength of man or animal. If it was rivers or streams, boats or canoes, were formed in the first means facing the hostility water for the passage of the cargo from one place to another.

1.7.1 The wheel

The wheel is one of the discoveries that had greater meaning in the world.

Initially it facilitated transportation of goods from one place to another and therefore originates emigration residents from villages to cities.

The invention of the wheel data between the years 3100 - 3350 a. C. According to archaeologists you do not have an exact date because the wheels were made of wood so no they could trace. The driving wheel was in increasing transfer goods in a single vehicle road.

1.7.2 Trucks

Initially the truck was driven by steam, then by electricity, more later with the discovery of internal combustion engine or Otto engine (in homage to its discoverer). Born the first trucks with gasoline engines, early the twentieth century with the design and engineering of the house and FIAT trucks Citroen half-track. In 1920 the house dumper Hansa-Lloyd arrives with a Truck engine with electric drive. Thus began making different truck models for various functions such as truck botelleroo capitoné (Comunicación Moldtrans, 2015)

1.7.3 The train

When we talk about the history of the railroad, referring to the Egyptian civilization it is made and Greco-Roman times. Then in the sixteenth century in Germany miners in need of underground transport, use wagons relied on two sets of Woods it is flat and the origin of the train is defined. Time goes by and is in the century XVIII when wood is replaced by long pig iron, while that introduced the wheel rim or metal frame.

The first steam locomotive Richard Trevithick in 1771 in England, had intended to carry passengers and this would be the first time in the world, its speed it would be superior to the passage of man.

In February 1804 and five cars crawl through a steam locomotive during a tour of 15.5 km and a speed of 8 Km / h. In September 1825 George Stephenson in England and builds a locomotive steam could drag six cars loaded with iron ore and coal and 20 floats occupied and this is where first a company defines and establishes rates commercial, timetables and a conventional way. (INTRODUCCION HISTORICA, SF)

1.7.4 The Airplane

The first aircraft design which is information data of a drawing in the Leonardo XV century, but not known to this prototype has raised flight.

Despite the limitations and countless attempts in the eighteenth century aviation modern takes his first steps after the design-driven hot air balloons they managed to rise hot air.

The early nineteenth century the first airships capable of being driven is built standards and similar to those of a ship even to management level language elements. Also experiment with gliders resembling the structure of a bird.

The first machines of this type, built by man date from years 1900, for the first time in history, sustained flight with a plane managed powered and controlled through design and construction of the first aircraft more heavy and that successfully flew four times the 17

December 1903 at Kitty Hawk, in the State of North Carolina (USA). It was built by the brothers Wilbur and Orville

Wright called the " Flyer". At the height of the inventive Belle Epoque era in Europe, advances technology and transportation were the stars of all exhibitions performed on the old continent, you could attach great distances in a short time. In this time appears the first seaplane concept designed by American Glen

Curtiss in 1911, "Le Grand" prototype designed by Russian Igor Sikorsky in 1912 and first four-engine in 1913. (Gutierrez, 2012)

1.7.5 Ships

The exact time when the first ships or boats appear is unknown, but it is likely that primitive cultures employed trunks or animal skins inflated to cross rivers and lakes. In Ancient Egypt had no trees, by their first boats were made of papyrus reeds tied or in its entirety. In America and Oceania, indigenous manufactured boats made of wood in a piece or several pieces joined with fibers but longer and narrower to which they called pirogues. The first Eastern civilizations, some 3000 years. C, and they employed wooden boats, which were propelled oars and sail as auxiliary.
The Phoenicians developed shipbuilding, between the third and first millennium. C, this how they could perform commercial and maritime exploration activities by the Mediterranean. In Greco-Roman times it appeared the warship, which were light and propelled by oars.

The Chinese junk appears in the year 600 AD is the oldest traditional sailboat that known and used for war or commerce. At the end of the Roman Empire, Byzantium, he built the drómona, a mixed vessel to rowing and sailing, and other merchant vessels two or three masts and square sails. To same time appeared triangular or lateen and ship hulls were less

heavy and fast. In Europe, the Vikings sailed in wooden boats with oars and a sail square, called the longship and snekar.

The naval evolution takes hold at the time of the Crusades, with the construction of the apparatus Military ships and galleys and galleons and hulks for trade. (Nautica y Pesca, SF)

1.8 The Container

The international transport is a sector of great importance today. The has experienced many advances since its inception in the means of transport, the vital role which the so-called cargo container is added. The containers were first used during World War II for the safe transport of war materials. The inventor was the carrier Malcom McLean , tired of making great distances, devised a revolutionary invention, a metal boxes designed to transport godos. The first container dimensions were 35 feet long, 8 meters high and 8 long. The success allowed the creation of the shipping company Sea Land, which in 1965 transported 60 containers for the first time in history from the port of Newark to Houston. His great welcome makes you start using these containers in transport maritime regularly.

The organization ISO then normalizes equipment and containers, establishing requirements like identification and regulation or adaptation to established dimensions and shape. Currently these containers have been a real revolution reduced dimensions of yesteryear have given way to a ship can carry about 200 000 containers per year and each of these can withstand 300 tonnes. Its widespread is that they can carry the load safely, as they are watertight, waterproof and very resistant. Containers are exploited after its useful life for other things, like houses and portable hospitals in emergencies, shopping centers or nightclubs. (Comunicación Moldtrans, 2015)

Intermodal Transportation Maste Plan

1.9 PMTI concept.

Master Intermodal Transportation Plan is a project of the Colombian State seeks to efficiently raise growth and strategic levels in the country, this it aims through a network infrastructure that achieves connect cities, regions, borders and ports, giving priority to projects that may impact the national economy. Relevant information on infrastructure is consolidated in Colombia and in the region, each need for connectivity and development of the 32 analyzed departments and analyze the Colombian market and demand models.
The Presidency and Vice Presidency the Ministry of Transport are responsible for the whole process of analysis and management were entrusted target long-term efforts and transport infrastructure sector.

What you are looking for PMTCT is to increase the country's capacity to meet the challenges of foreign trade, integrating the territory to create better opportunities for inhabitants of the most remote regions and, as a platform to leave behind Colombia decades of backwardness and grow in an orderly and consistent with the needs of the world current. With the PMTCT Colombia seeks to mitigate the disadvantages in infrastructure and be competitive in international trade.
The sustainability of PMTCT involves effort and public sector restructuring related infrastructure, mobility and Logistics Department National Planning proposed a reorganization proposal of a photograph of the current situation, that evidence overlaps, contradictions and gaps. (PMTCT, Vice Presidency of Colombia, 2015)
As shown, basically the initial objectives of Intermodal Master Plan are:
- Regarding foreign trade, it seeks to increase the country's capacity to meet the challenges currently present and those who come.
- Better opportunities for the territories, seeking integration with regions away.

- Boosting competitiveness and serve as a platform for Colombia leave behind decades of backwardness and grow in an orderly and consistent with the needs of today's world relationship road connectivity and ports and airports. (PMTI, Vicepresidencia de Colombia, 2015)

1.10 Challenges of Foreing Trade.

Today the world is in a process of globalization, which is taking place accelerated manner, as each day is easier to be in contact with people from other countries, and therefore do international business is something simpler, so each day thousands of tons of goods are moved by different means of transport because these businesses. To meet the needs of negotiators importers and exporters) each country should provide good infrastructure for meet the logistical challenges generated by transporting goods from one point (A) to a point (B).

Colombia today in terms of logistics has very big challenges, since the country does not has adequate infrastructure to move goods in their interior, According to the "Connecting to Compete 2016" World Bank report, in which buy the logistics performance of countries in logistics, Colombia occupied the 94th is the LPI, which included 160 countries, also in Compared with the countries of the Pacific Alliance, Colombia ranks last, this report shows that there are major challenges to overcome, since according to figures Analdex, the logistics costs assumed by SMEs today to sell abroad is too high, This means it is estimated that almost 15% of the cost of an export transaction. (DINERO, 2016)

1.11 Overruns in logistics operations in Colombia.

mountains of Colombia, with respect to competitiveness are the cause of a problema due to extra costs as petrol costs, tolls, and transit times between other factors that reduce the competitiveness presenting our products Exterior.

Colombia is not ready for the increased flow of trade, ports and airports still they have capacity problems for passengers and cargo. Media maritime and air transport are underused. Railways, according to analysts and entrepreneurs can not say that in Colombia There railways, although transport is the cheapest compared with others.

Everybody developed countries have Ferrous transport systems and therefore not Colombia it is level and international standards. Railways with which Colombia has are very short and also are not connected, they are used only for movement raw material in short lengths, if costs are minimized they unify in transport of goods within the country.

On the issue of roads, the country is just ahead of major infrastructure to expedite the transit of goods inside, because the roads Current vast majority are not in suitable conditions to allow higher volumes of vehicles and reduce transport times. In addition, the south not It has enough roads to facilitate the entry and exit of goods from this part of country.

Colombia's ports have been modernized in order to receive greater volumen load. Investment is not enough to be at the forefront achieve receive ships great draft and keep up with the biggest ports in the world volumes of merchandise.

On the other hand it is important to increase the navigability of rivers into the country to help with the movement of goods and help with logistical challenges.

In order to overcome these great challenges that the country faces in terms of logistics, to be more competitive with other economies has developed the master plan intermodal transport where are reflected all the strategies to be implemented to overcome these challenges successfully. (Redacción de El País, 2011)

1.11.1 Connectivity.

Multimodal transport is the tool to traverse the country in a flexible and allow progress in infrastructure. Reduce the backlog of infrastructure transport requires efforts from all parties involved such as the Entes audiences who more investment is required and encouragement from institutions should encourage private investment.

The delay in infrastructure and connectivity of Colombia, if we give a figure years, we can say that is more than 15 years. The projects that have been developed in recent history, reaching periods of delay in the execution of the same for more than three years, transportation and harming connectivity and the development of each region. 2014 according to the World Bank ranking Colombia ranks 97 of 160 countries. Factors affecting performance and rating (making it less competitive) are delivery times, quality of roads, and poor connectivity the two most important, Buenaventura and Cartagena ports. The comparison is made with other Latin American countries, but are not best infrastructure Colombia is one of the most backward. Modes of transport in Colombia are not articulated as they should and this because of the gaps in roads, ports, airports as well as the means of transport also they require technology and investment. Transportation in Colombia also require updating and implementation technology to be efficient and safe freight transport.

1.11.2 Integration of the national territory (descentralization).

When it comes to spatial decentralization, it is said that resources are being transferred regions and instruments to promote economic and industrial activity, distribute and promote everyone equally and not concentrated in a few urban centers usually they are larger. In this field the state needs or be transferred responsibility for providing services to individuals.

Colombia stands out and distinguished by its topographical and climate, its diversity Farm products. In temperate zones, the coffee is the main product grown that agricultural export. Variety is harvested in temperate regions fruit and vegetables. In warm climates cotton, bananas, rice, sugar cane is produced sugar, palm oil, cocoa, snuff and variety of tropical fruits. Cold weather grows wheat, potatoes, vegetables, fruits and flowers. All these products are part of the production supply and are prized level world for its variety and quality. It also highlights livestock, production milk and fish resources.

The mining sector stands out as one of the highest export levels. It can highlight the coal reserves and oil fields. Colombia stands out in the World production of emeralds and production of platinum, gold and silver is competitive in quality and quantity. Textile industries, leather, steel, chemical, petrochemical, plastics, stand food and drinks. (National Planning Department, SF) Government interests seeking equity and participation in the welfare of the whole territory and measured compliance with coverage in basic and average in the sector educational current increases and try to get the whole community in all and departments are clear; health progress was made on the goal of full coverage affiliation to the subsidized health regime, coverage reaches more than 80%. Monitoring and administrative control to the efforts of local authorities that must meet coverage goals, quality and continuity of services, mainly in education, health and drinking water. (Copello, 2011)

1.12 Structure of PMTI for implementation.

Implementation PMTI be in two modules:

Module 1

Plan comprises a core network infrastructure and means of national integration.
It was designed to boost the actual productivity of the country and its foreign trade. Connect at 18 major city-regions, which originates 85% of GDP, with borders and ports in the Caribbean and the Pacific. (PMTI, Vicepresidencia de Colombia, 2015)

Module 2

It is a roadmap that includes public policy at:
Industry regulation, urban mobility, logistics management national brokers. Establishment of a system of asset management in regional networks and financing alternative forms to road mode. (PMTCT, Vice President of Colombia, 2015) Basic network: that seeks to connect with each other 18 major city-regions, where causes 85% of GDP, with borders and ports in the Caribbean and the Pacific. Network integration: The goal of this network is to support regional development and integration territorial. Here regional corridors that can become part of the meet primary road network and projects that provide access to remote areas and public order problems or poverty. (PMTI, Vicepresidencia de Colombia, 2015)

1.13 Challenges of PMTI.

5 challenges for institutions to ensure success or Master Plan Intermodal Transport:

• Divide the roles and responsibilities of each sector in each institution.

• Having defined policies and comprehensive transportation planning that articulates services, infrastructure, logistics and intermodal.

• Resolve gaps, duplication and regulatory standards by mode.

• Ask a view Y strategy from long term financing sector.

The PMTCT goes hand in hand with other territorial plan that contemplates situations concerning the population where the location of actions of the National Development Plan in different territories of the Colombian state results in the combination of four diagnostic and analytical structures directly associated prioritization:

• A methodology for identifying transport infrastructure, housing, wáter drinking, education, health and territorial institutional capacity, based on the types of municipalities and sub-regions that make up the departments and regions.

• The regional characterization of the dynamics and impact of armed conflict and violence in the country.

• Articulating System Configuration cities and rural-urban corridors.

• Identification of environmentally strategic areas representing wealth native country, whose proper use will depend on the sustainability of development. Taken of (PND 2014-2018, 2014)

1.14 Objetives of the challenges of PMTI.

• Eradicate extreme poverty by 2024 and reduce moderate poverty.

• Reduce the population gaps in income.

• Reduce the population and territorial gaps in the provision of quality services health, education, public services, infrastructure and connectivity.

• To promote inclusive economic development of the country and its regions.

These objectives support the investment is based on statewide issues infrastructure and mobility. (PND 2014-2018, 2014)

Part of the funding will come from the people. In the PMTCT is established that investment to keep up infrastructure and requires commitment throughout the country and parties confirm this. To finance taxes are seen as source financing, including tolls.

The strategy unveiled Vargas Lleras can validate the Ministry of participation Transportation, the National Planning Department, the Financial Development National, send forth, ANI, the Aerocivil and Cormagdalena. Management, methodology and conceptualization will be in charge of FEDESARROLLO and have the support of the Colombian Chamber of Infrastructure (CCI).

"The PMTCT is a commitment to long-term government. The objectives are realistic and appropriate for the dynamism and speed required in today's world. The PMTCT is consolidates and a flexible tool in the time it shall provide the national and regional administrations assessment and project development framing them in a long-term vision with clearly defined objectives and a framework for those public, private, domestic investors or international who wish to contribute in building a competitive, sustainable country, equitable and peaceful. (Aya, 2015)

Within the team of this government initiative the company participated Logyca, besides providing logistics services, specializing in research and analytical consulting.

This company suggested a group of related activities with logistics management national corridors, from recognizing the importance of giving logistical framework support that includes incentives for the installation of platforms and dry ports; he monitoring quality and performance runners; work in coordination with the land use plans, load generators and operators; perform the regulatory and bet on technology and promote intermodal tracking.

This firm measures proposed are designed to:

• Increase the level of service and capacity of generation and load management.

• To promote productive diversification, regional development and productivity, and achieve sustainability of cities.

The following "soft" measures were examined in conjunction with the DNP and Presidential Council on Competitiveness and have been classified as low-cost, high impact. According to the authors of PMTCT, for implementation will be necessary an intelligent reorganization of available resources rather than allocations new budget. Its nature "The PMTCT is not a transport sector plan for the transport sector. Transportation planning must serve economic and social development in an open economy that will rely less and less of raw materials".

Facing FEDESARROLLO institutional needs "From the DNP are confident of there must be a clear division of roles and greater specialization in each one of the entities to avoid conflicts of interest today are generated between them. For example, the Civil Aviation should focus mainly on issues infrastructure and aeronautical services, air navigation and traffic management and airspace, but leave other entities related tasks execution, operation and maintenance of airport infrastructure ". Simon Gaviria, director DNP. (Ledezma, 2015)

PMTI features are designed or a post-conflict country that seeks support the economy and be a contribution to peace that Colombia is the third in the región infrastructural after Mexico and Brazil. Currently he is according to the Bank World, Colombia only surpasses in Latin America to Honduras, Cuba, Bolivia and Haiti. (Cristancho, 2015)

Colombia should accelerate the pace in providing infrastructure and logistics to reduce transportation costs and be more competitive, lower excess load concentration and Passengers in road mode, counter the disruption to river ways and Ferrous, and minimize the lack of shortcuts in major production centers national. In order to reduce the high costs

of road transport (“excesivos tiempos muertos” y altos costos en insumos). (caicedo, 2015)

Imagen tomada del PMTI, INVIAS

15/10/16

CAPÍTULO II.

COST RANGE TRANSPORTATION PLAN MASTER NTERMODAL.

1. Projected cost of PMTI.

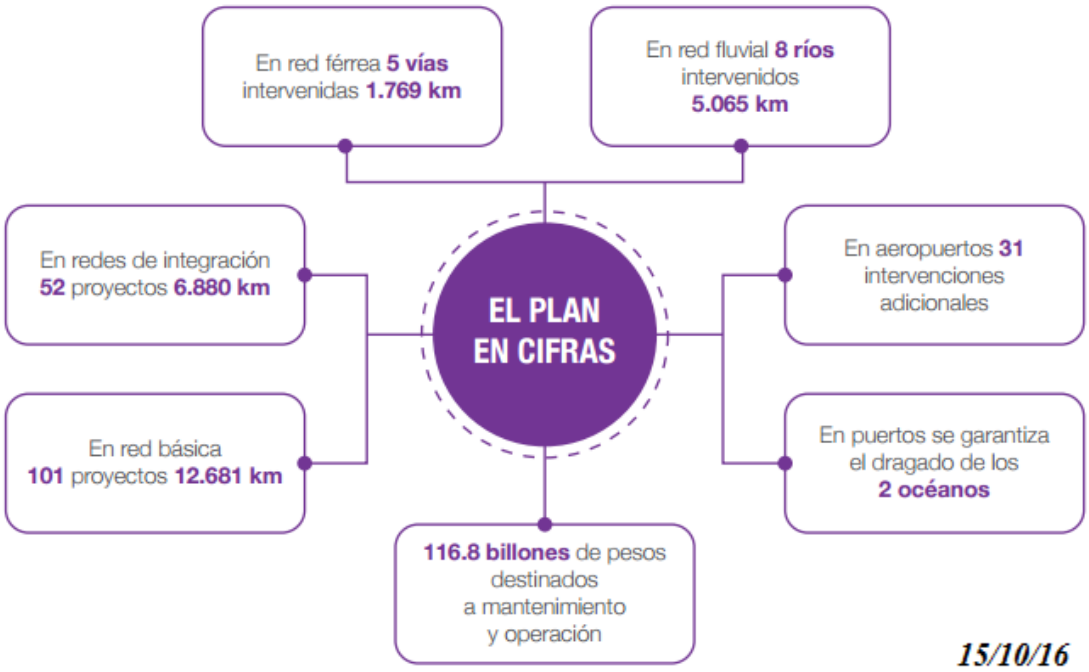
According to the vice-presidency of the republic and the ministry of transport, PMTI It has an approximate cost of $ 10.4 billion implementation of annual, equivalent to 1.30% of 2015 GDP.

With the PMTCT is to obtain a balanced development in different modes transport and interconnection infrastructure, the transport minister said Abello that "the hand of national and international engineering, with the support of the unions, with the leverage of national and foreign banks, we will put Colombia up towards a transformation into a more connected country "According to Germán Vargas Lleras, Vice President of the Republic, "the lack of strategic planning and the dismantling of all players in the chain, from public and private, were the main cause of the accumulation of lost years. Despite having been always a clear theme and a state concern, the modernization of our intermodal infrastructure is prioritized and that had never intended the PMTCT. "(Abello, 2016)

On the other hand the minister of transport, during the presentation of PMTCT said he left a map of projects to be executed in all modes of transport, in which contemplate the road, river, railway and airport media. Likewise, the Minister indicated that aim to improve the logistical rates in the country to be more competitive, and to achieve its execution, it split into two modules.

According to information presented by the vice-presidency of the republic, on its website, the first module is an infrastructure plan for the Basic Network and Routes National

integration achieved boost the country's productivity and trade international, because they will connect 18 major cities-region, where it generates 85% of GDP, with the border areas and ports in the Caribbean and the Pacific. He second module is a roadmap that includes public policies for regulation sectoral, urban mobility, logistics management national corridors, forming a system of asset management and financing of regional networks of alternative forms the road mode, the main motivations for this plan are aimed primarily at promote foreign trade, achieving lower costs and transport times, not but in the same measure in enhancing regional development, improving the quality of networks for purposes of accessibility and not least in Integrating the territory, increasing state presence. (Vice-President of Colombia, 2015)



(VIcepresidencia de la Republica de Colombia, 2015)

2. Financing of PMTI.

The Master Plan Intermodal financial among others through the Development Finance National, which should consolidate its role in promoting and providing sources financing and investment for infrastructure projects, logistics and intermodal which they are prioritized by the PMTCT. The Ministry of Finance and Public Credit must support the UPIT in defining the pre investment projects that are prioritized in the Plan and endorse the concept to be issued on the scheme financing for use. (Vice-President of Colombia, 2015)

For the year 2035, the government of Juan Manuel Santos is betting on change strategies growth of Colombia, to be more efficient and achieve compete on par with more developed economies, with the aim of obtaining greater economic growth. For these to be achieved intermodal transport master plan was designed, in which they expressed the necessary work to make Colombia achieve this objective, to achieve completion of these works according to plan should look for different sources funding to achieve complete and deliver projects in the agreed time and not generate cost overruns due to delays or loss of resources. With these works will achieve a integration of different modes of transport, which will improve mobility goods within the country and going to the outside.

The Master Plan is estimated Intermodal Transportation costs approximately 10.4 USD billion annually, equivalent to 1.30% of GDP in 2015. Investment infrastructure has been increasing through the years coming in 2014 invested in transport infrastructure 2.96% of GDP, which is a figure of stay would enable the implementation of the plan, then the graph shows, it is showing how it has evolved investment in transport infrastructure Colombia relative to GDP. (VIcepresidencia de la Republica de Colombia, 2015)

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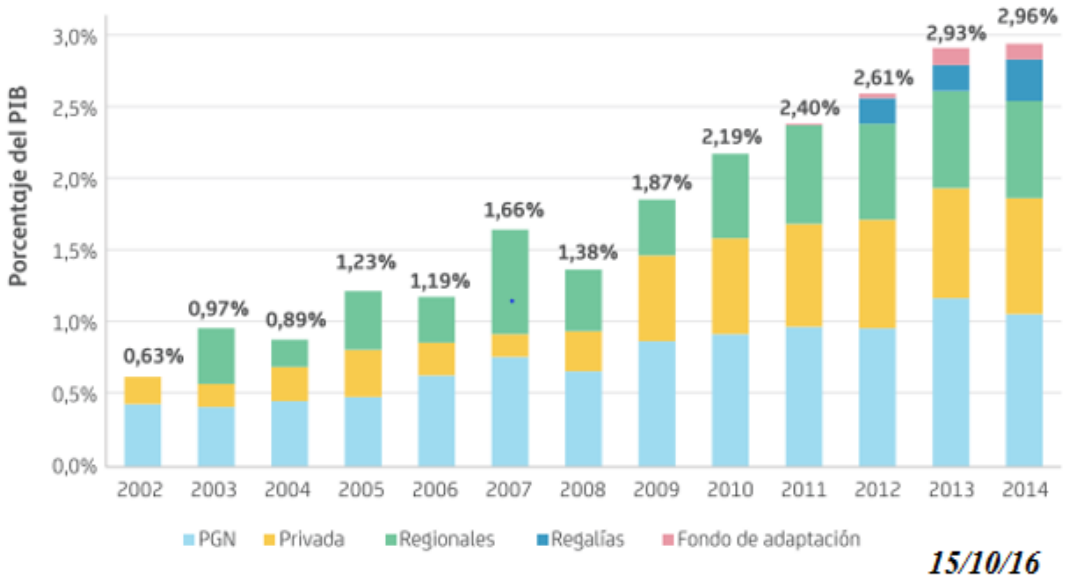

Fuente: tomada de la página del departamento nacional de planeación 2015 (DNP)

In the words of Mr. Luis Fernando Andrade, president of the National Agency Infrastructure (ANI) "The financial needs require significant investments what is the basic network. An interesting issue is that last year reached a level 2.7% of GDP. What we have to do is keep up, no need to increase investments beyond what we have now, there is to hold it for a period of 10 to 20 and thus will have an infrastructure that we envy throughout Latin America".

It should be noted that the Colombian State in financing and structuring projects intelligent and connected infrastructure, it has acquired experience with the Fourth Generation concessions program (4G), to meet the challenges of intermodal transport master plan. Yet the huge investments required the plan, generate a huge challenge in financing, so it is important to an effort in two aspects:

- Generate: should generate higher from the payment sources, which means resources the national budget and user fees, charges users is a source of very important payments and these may be more and more expensive tolls, taxes fuel, vehicle taxes as bearing, among others.
- Develop: should develop funding mechanisms for the development of partnerships public-private (PPP), to make viable the APP is indispensable instruments and adequate financial products It is important to note that to achieve that comply with the plan, should be allocated resources obtained for the investment needs of each sector so that the collectors government or authorities must ensure transparent management..

3. Sectors

3.1. Groud transportation

The program 4G routes are the initial work plan to be complemented with investments in ports, rivers and airports, to integrate all these are achieved. He 4G program is already under development and have made important progress. To facilitate the recruitment of the road plan, this was divided into three groups of projects to which they called "waves", the first wave is made up of 10 contracts totaling 12 US trillion, the second wave is made up of nine contracts totaling another 12 US billion, total construction of the 3 waves will have an estimated capital cost of 34 US billion, not taking into account the interests of the debt, which in total added would be a US figure of 55 billion, the first wave already been awarded, and has hired boot order work, the second wave and awarded Thu, contracted,

and are advanced in stage reconstruction, the third wave is in the process of awarding projects.

This indicates that work is already underway to build 30 of the 55 projects highways fourth generation (4G) projected, which will interconnect main corners of the country, which will shorten travel times, improve road safety and even improve traffic in some urban areas are very congested. In approximately 36.5 billion Colombian pesos will be invested in the 30 road projects implemented, as well as words of the vice president, Germán Vargas, "to date, by public initiative, means, with money from the state, includes implementation of 21 road projects, which cost 26.5 billion pesos, in addition to this we add 9 highways to be held by partnerships public- Private private initiative (APP-IP), who will make an investment of approximately 10 billion pesos."

Minister of Transport, Natalia Abello, said in an interview with El Tiempo, that "18 projects of public initiative are funded with a mix of resources from national and international banking, infrastructure funds and National Development Finance (FDN) but lacked money, so it required the 6.49 billion pesos from the sale of 57.6 percent ISAGEN for projects 4G missing". (El Tiempo, 2016)

According to Mr. Luis Fernando Andrade, President of the ANI, investments including the master plan seeking an internal connection with Colombia and Colombia the world, joining four north-south road corridors, and eight other east-west, which coupled to a rail and river ports and airports development of networks and the connectivity with the peoples and regions through secondary and tertiary roads, make a true intermodal network. For the first decade of the Master Plan raised to important avenues for integration, such as the paving of at least 10 kilometers between Cuatro Vientos and the Bank; intervention multimodal corridor the forest that connects the Guaviare and Vaupes and paving the corridor Award National de la Paz, 10 km, between Curassow and La Montanita, information is appreciated more specifically in the box below.

15/10/16

Algunos de los proyectos

Red básica - fluviales (primera década)

Proyectos	Km	Costo (Billones de pesos)
Canal de Dique	117	$1,20
Río Meta	851 + 14Km carretera	$1,93
Río Atrato	450	$0,45

Red básica - Aereopuertos (primera década)

Aereopuertos en la Costa	Costo (Bill COP)
Barranquillla	$0,08
Cartagena	$0,39
Santa Marta	$0,03
Monteria	$0,1
Riohacha	$0,1
Valledupar	$0,01
San Andres	$0,44

Red básica - puertos (primera década)

Intervención	Costo (Bill COP)
Mantenimiendo de canales (zonas portuarias de La Guajira,Santa Marta, Barranquilla, Cartagena, Morrosquillo, Urabá, San Andrés, Buenaventura y Tumaco)	$0,10
Nuevos Canales (Buenaventura y Cartagena)	$0,54

Red de integración (primera década)

Proyecto en la Costa	Intervención	Km Intervenidos	Costo (Bill COP)
Cuatro Vientos - El Banco	Pavimentación	10	$0,03
Conexión Cauca Nariño: Bolívar - San Pablo	Pavimentación	60	$0,23
PVC Troncal de la Productividad: Majagual - Magnagué - Calamar	Nueva vía	150	$0,91
PVC Anillo Turístico de La Guajira	Nueva vía	400	$2,56
Transversal Sur de Bolívar: Achí - Tiquisio - La Mata	Nueva vía	100	$0,41

Red básica - Férreos (primera década)

Proyecto	Km	Costo (Bill COP)
Tren del Pacífico	410	$2,70
Tren Bogotá - Belencito (con variantes)	257	$0,70
Tren La Dorada - Chiriguaná (con variantes)	522	$0,70

EL HERALDO

3.2. Shipping and internal seaworthiness.

On the river side, financing of investments, rehabilitation and maintenance the river infrastructure is developed largely by the national government of Colombia, in the table shown below which has been observed Budget public investment the river transport sector. This graph makes evident that investments of public resources in the river área are low, especially when compared to road transport. Much of the resources for the works come directly from the national budget. (Vice Presidency CR)

The river investment has been focused on recovering the navigability of the Magdalena River, whose project was awarded to a Colombian firm composed of consortium and Brazilian, who won the project of 2.5 billion pesos equivalent to 850 US millions. Currently the project is stopped because the Brazilian firm is interested ceding its stake to 75%. After these announcements, Cormagdalena, who is the government agency responsible for overseeing the project, He said it received a letter of intent of the investment bank Goldman US Sachs expressing interest in executing the project financing.

We are also making significant investments in the adaptation channel dike, in total are 2,000 meters are planned within the project, which requires an investment of 27,000 million pesos. The initial design had works of 300 meters equivalent to an investment of 4,500 million pesos, but officials Fund Adaptation and the community of Santa Lucia, announced that the work would be extended to 2000 meters (Portfolio, 2016)

On the side of the ports, the port of Buenaventura was the biggest investment made in the 2015, as resources were executed in adjustments of US $ 280 million, these funds were used in the implementation of the second phase of the Container Terminal Buenaventura; the construction of the facilities of the Port Industrial Society Aguadulce SA (SPIA) and the Regional Port Society of Buenaventura. The Aguadulce port opening is scheduled for March, this project US investment demand 322 million and you can move 600,000 containers per year.

On the other hand, the port area of Cartagena ranked third in investments reaching 158 US million in civil works, dredging, equipment purchase, acquisition technology and construction of access roads. According to the superintendent Jaramillo, in 2015 investments in port Colombia amounted to 754.3 US million which went to adjustments locativas, new infrastructure, equipment, security systems and technology. This digit it represents an investment of 2% compared to 2014. (Writing of El País, 2016).

Three other new projects of great importance for improving the integration of different modes of transport are the Antioquia port, located on the Gulf of Uraba, with an estimated investment approximately 400 US million, another project is Gulf bulks in Cordoba, with an estimated 23 billion US investment, and Puerto Only in Buenaventura, with a budget estimated US exceeds 80 million. According to calculations by the ANI, between 2010 and 2015 were invested in the sector Port about 2,200 US million. (Negocios, Dinero, 2016)

3.3. Airports.

In recent years the major airports in the country are in a process of transforming their infrastructure, in order to have a greater capacity operation, more and better tracks, and more modern rooms and provide better service to users. Some of the major airports that are in remodeling are: Dorado in Bogota, in black Rio Jose Maria Cordova, in Cali's Alfonso Bonilla Aragon in Barranquilla Ernesto Cortissoz, in Santa Marta Simon Bolivar, in Bucaramanga Palo black and Cucuta Camilo Daza.

At about the renewal of the 16 major airports that are concessioned by the National Infrastructure Agency (ANI), were invented near 2.3 billion pesos, including airports are: Rionegro, Quibdo, San Andrés, El Dorado, Bucaramanga, Cucuta, Riohacha, Santa Marta, Cali, Barranquilla, among others, and 600.000 million will be invested in renovation in the 47 in charge of the Civil aviation, these renovations with a view to these airports can mobilize a greater number of passengers is expected will increase from 34.1 million recorded in the 2015 possibly more than 54 million in 2025.

"Investments in runways and terminals, as well as operation and maintenance costs of concessioned airports are also covered for the next 25 years " said the vice president of contracting the ANI, Andrés Figueredo and added that " airports in Bogota, Rionegro and Barranquilla, working on master plans that they will trace the path for its development over the next 20 years. "

The National Infrastructure Agency (ANI) evaluates a proposal made by a assignee to advance the modernization of the airport El Dorado, whose investment would be 311,000 million pesos, currently working on expanding the docks national and international, which will cost 425,000 million pesos. (El Tiempo, 2016)

According to the vice-presidency of the republic, the government invests in airports the country more than 3.1 billion pesos, the works extend to 58 air terminals in 26 departments of Colombia. According to President Juan Manuel Santos terminal Palonegro passenger airport in the capital of Santander require an investment by more than 23,000 million pesos, which the city will have an aerial infrastructure international class.

Examples of investments made in the country's airports modernizations are more than 900.00 million pesos in Bogota for more than 355,000 million pesos in Antioquia, 280,000 million pesos in Santa Marta and Cali and 180,000 million pesos in Quibdo. (Presidency of the Republic of Colombia, 2016)

The most important projects are: 1) the product executions of Works complementary in El Dorado (taxiway and extension of the north runway), requiring about $ 1 billion over the next five years; 2) derived from investments recent award Ernesto Cortissoz Airport in Barranquilla ($ 300,000 million); 3) new concessions of airports in Neiva, Armenia and Popayan (requiring other investments $ 300,000 million); and 4) the construction of the new terminal International Airport in Cali ($ 174,000 million, including Works complementary), as stipulated in the 3796 Conpes December 2013 (Anif, 2014)

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3.4. Railways.

The Santos government has the intention to revive the train leaning Colombia mainly in Public Private Partnerships (PPPs), which work hand in hand National Infrastructure Agency (ANI), the goal is to recover the railways most important in the country because this is the most economical and efficient transport in other countries to transport goods. Colombia currently has just 0.2 kilometers of railway lines in operation per 100 kilometers outsquare of territory, compared with an average of 0.5 kilometers of railway lines Latin America and 0.9 kilometers of railway lines in middle-income.

This is because the Colombian government has forgotten this means of transport, and not makes appropriate investments to adapt and put into operation movement freight and passenger trains through, if a comparison between investments made in other transport modes evidenced by the rail transport fails. For 4G ways it has investment resources of about 25 trillion weights, which private initiatives by 16.7 billion pesos are added, while for new projects, railway materials, investment totaled 4.5 trillion. According to figures from the National Infrastructure Agency (ANI), of these 4.5 billion pesos, 2.8 billion pesos correspond to resources for so-called light rail the savannah of Bogotá (Facatativá and Soacha), known as Regiotram. In addition to part of this initiative rail projects in Colombia are reduced to journeys Bogota Belencito (Boyacá), running back La Dorada (Caldas) -Chirigua na (Cesar), which is the Central railroad, and the extension of the railway line from the West, to take it to Coffee Axis.

Regarding the draft recovery Bogota Belencito (Boyacá) line in the cundiboyacense, and La Dorada-Chiriguaná highlands, runs an investment ANI Estimated 120,000 million pesos for each corridor to let them in operation. For the project Bogota Belencito investment is expected to 180 million dollars, including improvements in infrastructure

and rolling stock is contemplated, the idea is mobilize cement and iron produced in Boyaca and used in Bogota construction. (RED, 2015)

On the other hand, the railway from La Caro-Belencito needs rehabilitation, to enter into future operation, is we will see, because even though the project has already passed the stage pre feasibility with an investment of $ 351,349 million, the Railway Society Center Andino, Smothers, had several drawbacks in 2014. If the schedule remains on the Smothers raised, will develop the first stage of operation between 2017-2024 and second from 2025 to 2034 with between 6 and 12 trains in service after the ANI ask one extension until April to deliver the pre-tender final studies.

"The Ministry shall issue the guidelines that shape the technical regulation and Economic development. • It is essential to operate the Regulatory Commission Transport Infrastructure (CRIT) and position it as the entity specialized in definition of industry regulation. As currently conceived, the CRIT they will have assigned functions of economic regulation for all modes except air (Aerocivil maintain its responsibility for regulating mode). Without however, it is necessary gradually including within functions CRIT, responsible for defining the technical regulation and articulate with economic for all modes. (VIcepresidencia de la Republica de Colombia, 2015)

CAPÍTULO III

CURRENT PROJECTS IN ROAD INFRASTRUCTURE, RAILWAY, PORTS AND AIR.

1. Projects first decade.

According to the PMTCT (Vice-President of Colombia, 2015), in Basic Network brokers, projects in each mode must meet one of the following functions as eligibility requirement:

According to the PMTCT, primary road network. Complete road journeys, will optimize level service, increase system connection cities. River. Minimized freight rates existing charge, they incite and create the need for new burdens, facilitate optimal multimodality. Ironclad. Reduce existing cargo freight to induce and generate new loads facilitate multimodality. Seaports. Expand the volumetric capacity and the level of logistics operations, improve and increase the level of service.

Airports. Increase the volume of cargo operations and international passenger and airports of the city system, improve and optimize the level of service. (PMTCT, Vice Presidency of Colombia, 2015). By 2025 a total of 199 projects will be implemented in the different modes of transport. significantly improving the interconnectivity of the main agglomerations population with the main ports and borders. Also project implementation starts on Integration Network, which will begin build connectivity traditionally disjointed regions of the country.

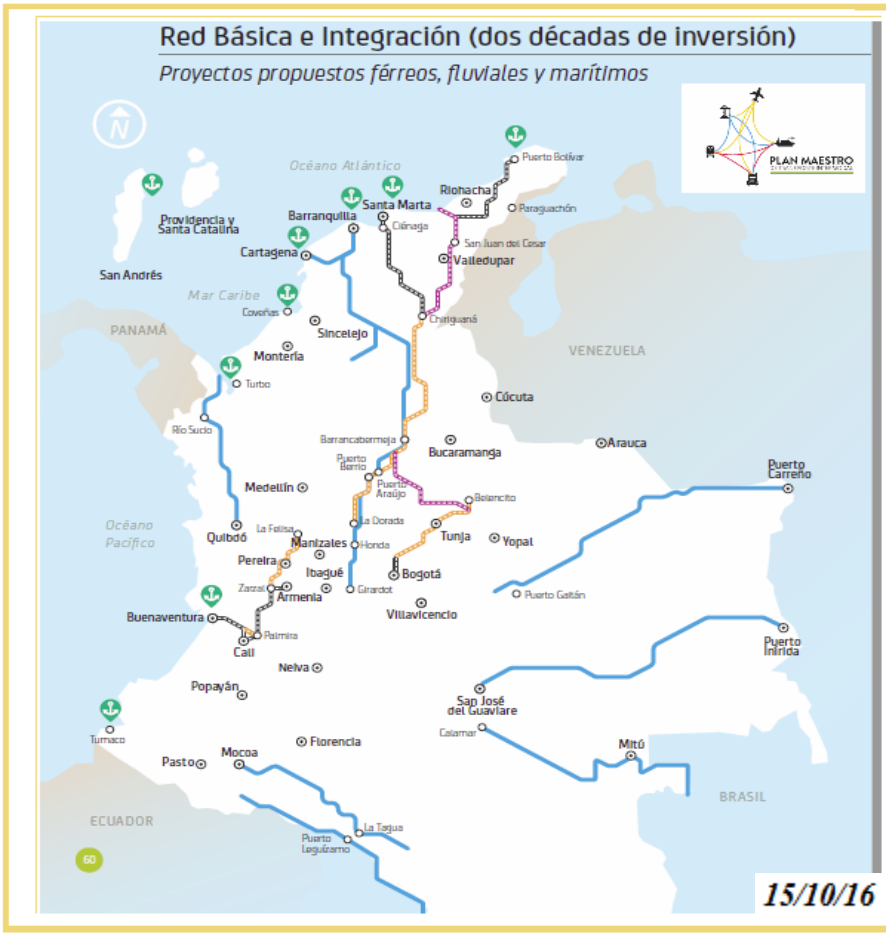

Imagen del PTMI, INVIAS

1.1.Proyectos road

Roads land

1.1.1. Roads fourth generatios.

Motorways fourth generation (4G) projected unite and will connect via Earth ends of the country, will minimize journeys and therefore travel times, increase road safety and even traffic in some areas of the cities today are congested alternate routes will oxygenate vehicular traffic.

The Government, under the custody of the Vice Presidency of the Republic, search fundamentally transform and modernize an infrastructure of national roads which has four and even more decades of lagging feasibility issues. These are the Colombia tries to climb rungs to improve competitiveness. (El Tiempo, 2016)

. Autopistas Al Rio Magdalena 2

Magdalena River Highway is drawn by the departments of Antioquia and Santander in the northwestern region of Colombia and is projected to become one of the most important road journeys of the country, taking into account the connectivity between the departments most producers and departments with access to links international expantion.

Autopista Norte connection: Remedios-Zaragoza-Caucasia

The foundation of this grant is to interconnect the southwest and west center country directly with the Port of Cartagena and the north and northeast of It antioquia with Ruta del Sol concession through Puerto Berrio, is displayed this project will become one of the most important road routes in the country and will be a very busy corridor for the purpose of the entry and exit of goods in the country.

Pacific Highway Connection 2

This great work covering the route Bolombó- La Pintada Spring, is 44 kilometer tunnel and 33 bridges. It will be of great importance in the overall connection Pacific and interior.

Highway Pacific port 3

This work will connect the route between La Pintada (Antioquia) and Manizales (Caldas) and will include the construction of 26 bridges, 6 tunnels and 146 kilometers of intervention road, its importance is in great optimization of routes plying the various differences of mountain soils sector.

Pacific Highway Connection 1

Achieving this award it is focused on seeking to consolidate the national road network, connecting the centers of production and consumption with major national ports Colombia, just try to join the Coffee Axis with the hinterland and the main existing ports, through the department of Antioquia, and creating the opportunity to encourage trade area with the country and abroad, This expansion is not only vital for sustaining the region but provides the decentralization of the country and increase domestic competitiveness.

Highway Mulaló-Loboguerrero

This project is focused on optimizing search for transport infrastructure Valle del Cauca, start with great force then start two road projects will allow cutting the travel time to the port of Buenaventura, both inside the country and in the department, the same way that progress in expansion and modernization of Alfonso Bonilla Aragon airport.

Perimetral de Oriente Cundinamarca

The East Avenue Perimetral is a project that the ANI built by a concession, in order to avoid or minimize vehicular traffic in and out from Bogota and other cities like Villavicencio east of the country saturates the Boyaca Avenue or Caracas, seeking to clean up a little vehicular traffic of the capital.

Cartagena-Barranquilla highway and Circunvalar of Prosperity

Concession Coast makes its construction with advanced technology through prefabricated elements and specialized assembly equipment, considering that the purpose of this vial

solution is not only improve connectivity between Cartagena and Barranquilla, cities with major urban and tourist development, optimize the levels Service in the sectors with higher volume of traffic and provide road safety the corridor, but to preserve the mangrove area and minimize the occupation in the area of the swamp during construction.

Rio De Oro cross-Aguaclara-Gamarra

This is a work that aims to interconnect the Norte de Santander with southern Cesar, and the same way with the Magdalena River, through 82 kilometers of track: 62 km and 20 km building rehabilitation and optimization to give greater fluency vehicular traffic in this sector.

Girardot highway-Honda-Puerto Salgar

The aim of the project Girardot - Honda - Puerto Salgar will develop a primary route high specification and features to ensure and optimize the southern connection - North Central Core, through a parallel track to the right bank of the river Magdalena, interconnecting the departments of the center-south of the country, starting in the municipality of Flanders, with the north, culminating in the municipality of Puerto Salgar, connecting this trip with Ruta del Sol concession of Sector 2.

1.1.2. Roads third generation

Processes CONCESION DE TERCERA GENERACION, are focused on implementation of major road routes that must interconnect the major centers productive, found in the center of the country with existing ports in the time, so that the path integrates the main centers of marketing and sales with manufacturing centers and these in turn with inlet and outlet ports from the country. Risk allocation does not differ substantially from the second generation; however, the ideology of gradualism that has run contemplated investment in

transport infrastructure to the rate or level determined by the influx of projected traffic corridors.

Girardot - Ibagué - Cajamarca

This project is a strategic plan to improve and optimize the road path center of the country to the port of Buenaventura and increase trade in the country. Among the important works are to build on this new project highlights 7 tunnels, the longest of 1,200 meters. In addition 57 bridges and viaducts, these works are focused on the ability of this sector to market and great producer boom.

Metropolitan Area of Cúcuta and Norte de Santander

These works are intended to improve and optimize road corridors North Santander and the municipalities in its metropolitan area, from the special boundary condition, the valuation assumes greater dimension and importance in the planning the future of the binational region, these projects aim to improve border competitiveness and increase ease of vehicular traffic in the city.

Zipaquirá - Bucaramanga (Palenque)

This concession will become a vital way that will benefit the northeast of the country and will bring enormous competitive advantages for agricultural, livestock and tourism sectors Cundinamarca, Boyaca and Santander, increasing marketing and potencializando by ease of moving quickly and effectively.

Buga - Loboguerrero

The concession project is carried out in the Loboguerrero way - Buga (Route 40-01) in the department of Valle del Cauca. It has an area of 55.42 km that depart from the PR 63 + 000 in Loboguerrero and ends at the PR 118 + 418 in Buga. At Force Majeure project sector are municipalities and / or populations: Dagua, Loboguerrero, Zabaletas, Restrepo, Calima (Darien), Bridge Earth, Yotoco, Mediacanoa and Buga, which will be in which its inhabitants will be the biggest benefit from this road project.

Córdoba - Sucre

This is a project that involves the construction of 120 kilometers of dual carriageway and rehabilitation of 259 kilometers, is this essential for the development project and the increased competitiveness, not only of the Colombian Atlantic Coast but the country overall considering that one of the ways that supply one of the main outputs country.

Route Caribbean

This project consists of a total length of 293 km. of the main flows of trade between the Atlantic and Bolivar departments and inside the country. Specifications and features layout and the geographical location of this path allows the transit of about 6.6 million vehicles a year, and great part of these mobilize a high percentage of the goods entering and leaving the country.

Bucaramanga Metropolitan Area

This award is in charge of the works of the road network access to capital Santander and some roads in the city.

Ruta Del Sol - Sector 3

This project is being planned to optimize a speed of 100 km / h, in the San Roque entire journey - Ye de Ciénaga and partly Corridor Valledupar – The Carmen de Bolivar. The objective of this project is expected to impact a reduction substantial transfer times by road in this sector and therefore increase competitiveness in this factor to any logistics operation.

Ruta Del Sol - Sector 1

The Ruta del Sol Sector 1, in the stretches between Guaduas and Puerto Salgar, in

Korán sector is strategic because it optimizes road infrastructure in the country, increases the competitiveness and economic growth and facilitates connectivity between major production centers within the country, with the ports of the Atlantic Coast.

Ruta Del Sol Sector - 2

The Ruta del Sol Sector 2, between the Koran and San Roque.

Transversal De Las Americas - 1

This Transversal Road Project of the Americas Sector 1 is set in an area of 706 kilometers, built between the departments of Córdoba, Sucre, Magdalena, Uraba Antioquia, southern Bolivar and Cesar, this work of great influence on the development and growth.

Pereira La Victoria

This project consists of a length of 54.49 kilometers of dual carriageway, located between the departments of Risaralda and Valle del Cauca, on the road that connects path Pereira and La Victoria, past the towns of Cartago and Obando, optimizes and maximizes the competitiveness of this sector of the coffee.

Briceno - Tunja - Sogamoso

This grant is part of a mega project that will link the industrial zone of Boyaca with Bogotá and its primary objective is to substantially minimize the time relocation and displacement optimizing any logistics operation using this section vial in the future.

Bosa - Granada - Girardot

Granada - - Bosa project is part of the Road Girardot path charted between Bogota - Buenaventura, one of the most significant pillars of the country road that interconnects the central, western and southern Colombia, encouraging growth and economic development. It is one of the routes with heavy traffic in the country, mainly because of the concentration mobilization or transfer cargo to and from Bogota, taking into that being area attraction for capital district. This project is located in the departments of Cundinamarca and Tolima.

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1.1.3. Carreteras de segunda generación

The second generation was conceived ROAD CONCESSIONS since 1997 as a continuation of a traffic optimization plan that initially was giving pleasing results, which sought to solve the problems described, mitigating mistakes that were visualized on the first generation concessions from then with the ideology of minimizing the resources contributed by the Nation, through a redistribution of risks and greater demand in the levels of detail of studies and plans required to contemplate and implement projects concession, since that the dealer was assigned full responsibility for complementary designs within a distribution scheme clearer and sustained risks. At the time that revenues generated are equivalent to the income expected by the entity consencionada the concession period culminates and infrastructure reverts to the state.

If the traffic level is lower than planned, the dealer will take longer receive the scheduled income. The dealer takes the commercial risk of the projecttherefore the return on investment is variable and depends on the time it delay in receiving their "expected income". The construction risk and commercial risk they were allocated almost entirely to the dealer, and the deadline was subject to point where the dealer got the income level planned in the process tender to replace the fixed term.

Malla Vial Del Valle Del Cauca and Cauca

This project is considered as one of the concessioned road trips more important in the country, taking into account the number of kilometers under concession (650 Kms), and optimizes integration between the departments of Valle del Cauca and Cauca, delivering innovation and safety to users who travel these roads, ensuring thus increasing its integrity and airs of development and growth in the productive sector.

1.1.4. First generation roads

First generation concessions, which were 11 projects awarded between 1994 and 1997, were in charge of INVIAS until 2003, when the Institute was established National Concessions - INCO, who received these improvement projects and optimization for logistics management and structuring of new projects, simultaneously, it not had environmental permits to start the project, so, that compliance with environmental requirements defined after the signing of the contracts, originated in some cases by the final designs prepared by the dealer, involved the application of new environmental laws and additional costs in managing environmental requirements and delays in the Projects. In first-generation projects they were mainly performed recovery efforts and optimization of roadways, except via the Bogotá- Villavicencio he considered major works, roads looked isolated they had no continuity within the road network.

Road Development Armenia - Pereira - Manizales

The project integrates Quindio, Risaralda and Caldas with excellent track characteristics and currently working with the city, located in the Region central Colombia, reaching position it as a great business epicenter, logistics, thought and tourism.

Bogotá - Villavicencio

This project is the Llano Highway is a road that connects the capital Colombia, Bogotá with Villavicencio, capital of Meta department, which is recognized as the gateway to the eastern plains of Colombia, this connectivity will agility freight between these two sectors.

Bogota (Fontibon) - Facatativá - Los Alpes

The route decongest traffic, speed up access to these populations and reduce the travel time in about 20 minutes.

Road Development North Bogota - Devinorte

This project impregnation is dual carriageway to intercommunicate the capital of the country, Bogotá, with the north and northeast coast of Colombia, is one of the paths more important for the promotion of economic growth and development not only of the country

but municipalities directly benefited, Chia, Cajicá, Zipaquira, Sopo and Tocancipá, the advantages of this project are not but state municipal territorial character in the As the vehicular traffic is very chaotic capital.

Cartagena Barranquilla

The concessioned highway Cartagena - Barranquilla Route 90 A, which connects the capital the departments of Bolivar and Atlantic and passing exactly through the municipalities of Cartagena, Santa Catalina, Tubará, Juan de Acosta, Piojo, Puerto Colombia and Barranquilla, It is very important to mitigate the vehicular influx of this sector because of freight to port.

Santa Marta - Riohacha - Paraguachón

This award is structured to unite the populations of Turbo (Antioquia), adjacent the border with Panama, and Paraguachón (La Guajira), on the border with Venezuela, with possibility of connection to the road network in the country, it becomes of great importance for its border level importance in transit and freight mobility.

Girardot Espinal Neiva

With the planning and execution of this work, the road path 800 is completed kilometers between Bogota and the border with Ecuador in the San Miguel Bridge, thus becoming a model of road building to the south, this project It is a clear optimization of Colombia in search of mitigating the different routes and out of the country.

Road Development of Eastern Medellin (Devimed)

This concession includes the creation 120 kilometers between the towns of Puerto Triunfo and El Santuario and achieve the Autopista Bogota - Medellin is double carriageway completely.

Bogotá - Siberia - La Punta - Wine - Villeta

The project is located on Highway Bogota - Medellin between PR64 (Cross-Guaduas Villeta) and PR145 (Bogota River) on National Route 50, Section 08 (Honda, Villeta, La

Vega, Bogota) with an approximate length of 82 Kilometers. The route falls within the jurisdiction of the municipalities of Cota, Funza, Tenjo, Madrid, Subachoque, El Rosal, Facatativá, San Francisco, La Vega and Villeta Nocaima..

1.2. River projects

The general objectives for the year 2025 related PMTI river transport are to facilitate the momentum of foreign trade, increase regional development and integrate territory, including, for river mode, two large navigable waterways. The operating model is the transport system 'from one end to the other', which means that cargo flows, mainly coal and oil, are often unidirectional (downstream). In addition, logistics infrastructure (logistics platforms) in the rivers of Colombia it is very limited or nonexistent Boosting the transport and mobility of charge in waterways rivers Colombia, providing connectivity to seaports more efficiently and become a mechanism for increasing cross-border trade. With these rivers efficiently used will be larger settlements on the banks of communities bringing a most regions and Colombia dynamics. To have an efficient river transport the presence of multimodal terminals inside the country and along rivers is a basic requirement: Promote the movement of people in the rivers of Colombia, providing a connection between the systems more efficient cities with a river infrastructure (docks and boats) most appropriate for comfort, safety and economy of people.
Use some rivers and coves as tourist attractions to boost the sector and developing regions.

Magdalena River Basin: Magdalena, Canal del Dique, Bajo Cauca.
In the waterway sector Magdalena River between Puerto Salgar and Barranquilla, do not exist Bottlenecks in the waterway or at ports meriting special treatment Fluvial study in the Master Plan. The main products would be moved by this route would hydrocarbons, coal, containers, dry bulk, general cargo.

Atrato River Basin: Atrato, Leon.

The Atrato river no restrictions on the waterway, with the exception of sedimentation in their mouths that merits periodic maintenance dredging. Difficulties operational due to public order problems. Should study the feasibility of New Port project Quibdo, particularly in terms of technical aspects, economic and social. The main products would be moved by this route would Coal, wood and agricultural products and bananas.

Orinoco River Basin: Meta.

The main tributary of the Orinoco is the Meta River, the largest river after Magdalena to be granted in concession and connect its navigable stretch from one end to other. Existing ports, as Cabuyaro and the bench must have connections land suitable for those ports that are used and the river would compete with road parallel to the same river Meta. The main products would be moved by this route would Agricultural products and general cargo, oil.

Amazon River Basin: Putumayo, Amazonas.

Putumayo River Waterway warrants the execution of dredging and destronques to improve reliability (especially in the area between Puerto Asis and Piñuña Black). Further, it must be marked. Waterway access to the dock of Leticia, on the Amazon River, It requires constant maintenance by channeling works. The rest of the hidrovía needs no intervention the main products would be moved by this route would Hydrocarbons and grain.

Pacific Basin.

The recommendations of the study's Project Acuapista Pacific between Buenaventura and Tumaco are a solid foundation for optimizing river infrastructure inthis basin. The waterway the San Juan River is the most important of this basin and shouldaddressed maintained and port improvements are required in the city of Istmina.

1.3. Railway projects

In order to strengthen intermodal transport in Colombia and minimize costs in the operation of transport services is expected to develop sustainable projects Ferrous economically, to lower environmental impact and to help reduce costs logistics, major projects seeking execution are determined by the following sectors.

Ferrous Buenaventura corridor - La Tebaida (Red Train Pacific Railway).

Recovery, maintenance, operation and exploitation of infrastructure rail transport Pacific Network includes the stretch passing through Bonaventure La Felisa and the branch Zarzal - La Tebaida - Prominex. The transfer of the right of way of a section of the line of the city of Cali. The construction, operation and maintenance of a charge transfer Terminal in Felisa. This project is of great importance as it can be part of the last link in a productive and commercial process.

Atlantic Corridor - Santa Marta - Chiriguaná (Red Férrea the Atlantic).

This project is granted in concession for the construction, recovery - reconstruction, maintenance, operation and exploitation, rail transportation infrastructure network Atlantic, for the provision of rail freight, infrastructure consists of the following sections: Chiriguaná (PK 724) - Cienaga (PK 934) - Santa Marta (PK969), including real estate, personal property and rolling stock entered in the Annexes to the specifications, this journey It aims to increase the capacity of cargo moved by rail in the Atlantic sector.

Corredor Bogota - Belencito.

The project focuses on the recovery and analysis of critical points that presents the route iron in Bogota (KP 5) sections - Belencito (PK 262); The Caro (PK 32 + 628) - Zipaquirá (PK 53); and Bogota (Pk 5) - Facatativá (PK 35 + 871), and its administration logistics, maintenance, improvement, custody and control traffic between other activities for the lifetime of this contract, with the aim of reactivating rail operation that has been interrupted by faults in some road sections consequence of the devastating waves winter 2010, 2011 respectively.

Atlantic Corridor - Santa Marta - Chiriguaná (Red Férrea the Atlantic).

This project grants concession for execution, recovery - reconstruction, maintenance, operation and exploitation, rail transport infrastructure Network Atlantic, for the provision of rail freight, infrastructure which it consists of the following sections: Chiriguaná (PK 724) - Cienaga (PK 934) - St. Marta (PK969), including real estate, personal property and rolling stock entered in official documents.

1.4. Port projects.

An of the innovative processes PMTCT is modernization and expansion of operating port terminals to increase the capacity of receipt and dispatch cargo from authorized sectors to serve port filter, the country will be 18 gantry cranes to have 44 in that year, gaining efficiency capacity of 1,540 containers an hour, compared with 1,085 currently to be found, this percentage clearly it demonstrates the intention of promoting the development and growth of the country through planning and structuring new infrastructure.

Imagen tomada de http://barranca-bermeja.blogspot.com.co/2008/06/puertos-fluviales-y-maritimos-de.html

The report of PMTI 8 sectors where action is named potencializaran different types of cargo and mobility.

• In the Guajira, the main focus of these ports is coal mining, loading and unloading of goods and mobility of bulk cargo.

• Santa Marta and Cienaga, to exploit coal, fuels and derivatives oil, liquid bulk vegetable oils, base oils, hydrocarbons and derivatives oil, biofuel, liquid chemicals, bulk cargo, containers, general cargo and carbon.

• Cartagena, load types and will optimize processes will, general cargo and containers, liquid hydrocarbons -Granel, Chemicals and liquid bulk, Shrimp refrigerators, timber cargo and supplies to Bulk Load, unload and storage liquid cargo in bulk, liquid fuels derived from petroleum, crude oil and / or mixtures thereof, general cargo and containers, liquid bulk, Hydrocarbons export, bulk and general cargo, fuels, base oils and additives.

• Morrosquillo, load types and processes that will optimize be, bulk liquids,

Hydrocarbons export, general cargo, containers and bulk solids, Fuels, download product and supply fishing vessels fishing, bulk liquids, hydrocarbons export

• Urabá, load types and will optimize processes will, Liquid fuels

• Buenaventura, load types and will optimize processes will, Cereals and bulks solid, general cargo, containers, vehicles and solid bulk, general cargo, bulk cargo clean coal, general cargo, liquid bulk, dry bulk, container, coal, general cargo, bulk cargo, containers, general cargo, bulk liquids, bulk solid and containers, general cargo, containers, solid bulks, liquid bulks

• Tumaco, load types and will optimize processes will, Fishing, general cargo, palm oil, timber, and petroleum hydrocarbons,

• San Andrés, load types and will optimize processes will, Liquid fuels coasting.

Imagen tomada de PMTI, INVIAS

1.5. Proyectos aeroportuarios.

- Increased foreign investment in the country and the consolidation of new trade policies have made necessary and obvious increase in investment in several of aerodromes in the country, especially international court, some are in the modernization process, both those under the administration of Aeronautics Civil, as municipalities or dealers, some of those found in these Process according PMTI are:

- Aeropuerto Antonio Roldán Betancourt, Carepa, Apartado
- Aeropuerto El Caraño, Quibdó, Choco
- Aeropuerto José María Córdova,
- Aeropuerto Las Brujas , Corozal Sucre
- Aeropuerto Los Garzones, Montería
- Aeropuerto Olaya Herrera De Medellín
- Aeropuertos Camilo Daza De Cúcuta
- Aeropuerto Palonegro De Bucaramanga
- Aeropuerto Yariguies De Barrancabermeja
- Aeropuerto Alfonso López Pumarejo de Valledupar
- Aeropuerto Simón Bolívar De Santa Marta

Tomado de http://espanol.mapsofworld.com/

- Aeropuerto Almirante Padilla de Riohacha.
- Aeropuerto El Dorado de la ciudad de Bogotá D.C.
- Aeropuerto Rafael Núñez, ubicado en el Distrito Especial de Cartagena de Indias
- Aeropuerto Alfonso Bonilla Aragón de Palmira, de Valle del Cauca.
- Aeropuerto Internacional Ernesto Cortíssoz que sirve a la ciudad de Barranquilla.

CAPÍTULO IV

IMPACT ON OPERATING COSTS LOGISTICS FOR THE IMPLEMENTATION OF THE PTMI.

1. The impact on logistics PMTI

The logistics operation is a summation of alternatives and variables of a financial nature which are reflected in particular activities of a competitive nature, planning, execution and projection of high competition processes are quantified by many indicators including indicators opportunity could name, improvement times, performance, profitability and customer satisfaction in the different markets in which the development of a strategic plan to minimize costs incurred, starting from the least to the most transporting raw materials to the distribution of finished products.

The previous three chapters give great importance to the implementation of a master plan intermodal transport, but in each separate features they are named, it is, then as is done and it is financed, and are made to run in this chapter, we will take the purpose, as this plan and strategic support potentiates a more efficient and effective operation logistically, as efforts of a government can promote sustainable development by investing in infrastructure and as a country can maintain a high competitive level with good road communication strategies and maximize their geographical conditions.

If more than 20 years ago it has been seen as failures of the topography Colombia, the mountains are a problem for connectivity between regions but the solution lies in building measurement and analytical high performance road good infrastructure and a group of entities and persons responsible for running the most of their knowledge for the collective have called to prosperity; the rivers little or no mobility have framed cargo nationwide become part of a plot of favorable conditions for trade projections and their adaptation to the various geographical depressions of our territory; railways and aircraft are held in

Mobility has to expand into and from the inside giving greater importance to the construction of railways and the improvement and creation of large and competent airports with capacity to mobilize not only passengers but to channel mobility cargo in its specialized platforms such case, this is an ambitious plan that does not only seeks to improve internal mobility expedite loads but reaches new and improved shipping ports with easy access and fast execution of processes

Export to give greater importance to potentiate operating processes our resources and support sectors of the interior to be more competent in the international level.

The multimodal transport master plan offers the Colombians best projections at the structural level to maximize commercial properties where a web of opportunities and possibilities is created to undertake more agile business and profitable, constructions and its derivatives are focused on increasing coverage on the most inclusive processes in logistics operations in the territory

Colombian, transport, to this day transportation is part of one of the criteria more little measured and worked the logistics operation in their optimization is concerned, there are methods and tools to cushion transport costs as consolidation loads unification of charges, pay compensation to obtaining travel plans return country level, optimum displacements and what affects the economy Trucker sector reduction of freight by freight, but only PMTI gives us a clear idea of the future our freight, systemic investment in our ways and means of transport, investment in roads, railways investment, investment in waterways, the potentiate allocation of resources to our resources.

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2. Logistics Costs impacted by PMTI

Transportation costs are the most obvious and the most momentous representing between 50% and 60% of logistics costs of an operation and are reflected in the different ways. The private transport sector seeks its finding its greatest effectiveness through more efficient and accessible routes, more economical vehicles and structured, better load consolidation and optimization, among others. The public sector seeks to improve and optimize the infrastructure of roads, ports and airports and also facilitate the integration of the various modal transport, taking into account this factor and adding the issue only with the planning and execution of the high road generation transport times are being reduced substantially increasing mobility, very long journeys where one could move at 40 kilometers per time due to the complexity of its routes, the unevenness of the road and other factors affected agility in traffic today is contemplated that road could be traveling between 80 and 90 kilometers per hour, which by mere disposal would lower costs transport by 50% and increase efficiency and effectiveness in the productive sectors.

According to times and logistics costs for logistics operation, corporation educational ESUMER (Book), the main components of a cost system

Logistics are:

• Costs level of customer service, this factor affected the infrastructure vial in the sense that due to bad weather, rebuilding roads and little agility transportation can lose the good name of the company to incur the breach of quotations and delivery times.

• Transportation costs, this factor is definitely the most alarming in an operation logistics, dare to give a percentage share of transport between 30% and 50% contemplating a logistical operation, the load time by mobilizing Colombian territory, vehicle wear, loss or damage of goods cubicaje excesses or bad practices in cargo handling, which itself can be this is the cost factor in this vial is critical and the lack of diversity so They make unfeasible its improvement in the participation of logistics as such cost. Whether takes into account the cost in fuel consumption of corrugated or mountainous terrain

Colombian territory with the cost of consumption on flat land as is the objective the new planned routes, it is possible to conclude and say that, on average, transit undulations increases fuel costs by 38% while the Case mountainous terrain the cost is increased by 100% according to (Pérez, 2005) this factor does or does demonstrate the importance of PMTCT in terms of investment in fourth generation pathways that optimize strokes and transfers to country level by creating dual carriageway highways allowing greater speed and lower ripple in the transit and creating bridges and tunnels to help minimize level changes travel routes inside the country.

• storage management costs, long distances and prolonged movements to mobilize loads make it necessary for producers keep an indolent inventory to not allow losses on sales and this generates high storage costs by a rotating bit dynamic inventory and planning.

• Costs of processing customer orders, the cost is increased in the as the supply chain intermediaries to implement new processes order management, while the chain is simpler greater agility and customer loyalty.

• Costs associated with the size of a production batch, this type of cost is minimized by companies that optimize their production handling products conducting scale allowing you to cushion fixed costs and get better returns for a lot productive.

• Capital costs for inventory, this cost is not relevant since it is part of a net investment of each project or productive business and the cost factor would be affected in as the investment in raw material is increased by the same mobility loads.

• Costs associated with provisioning for production, this factor is identical to above only access to raw materials would be relevant influence on a project or productive business.

• Costs of information, this factor is completely transparent to the mobility of charges, the use of advertising, making financial information and sending it between customers and suppliers to be made online has no relevance in this increases type of costs.

3. The PMTI and its impact on connectivity

In international law some of the overruns are never referred to ICOTERMs exemplary case that they have largely standards cost international negotiation and depending on the type of location where You perform the delivery, from there back costs are transparent, not covered nor mode or means of transport, and less the state in which they are the road infrastructure to meet the freight mobility, recruitment

They tend to define international responsibilities and obligations in terms of location of loads and their mobilizations, but not factors contemplated as distance and state land defined as each actor will be more feasible delivery goods taking into account possible scenarios of management and handling, typology product, the fragility of the same and specifications of each They generate selectable characteristics that make a type of ICOTERM determined.

For a producer of highly sensitive products can be of great importance share responsibilities with their clients so that exempt themselves from possible merchandise loss scenarios can be discarded from own trading, also it is preferable for the producer to ensure a controlled way for increase customer satisfaction certainty.

According to (Pérez, 2005) Based on information from the Ministry of Transport and

World Bank in Colombia transport and cargo handling develops predominantly by road (land routes), with a share of around 80% factor that makes a large portion of the PMTCT objective, followed by the railroad in a 15% with a relative importance considering some disused railway lines and waterways (6%), the above analysis shows why the importance of rehabilitate, improve and expand the road Maya Colombian territory, 80% is a figure more alarming is puzzling given the poor infrastructure High competition that has in the country and shows clearly how little used the intermodalismo internally mobilization loads, further considering the characteristics of each of the transport modes would see why you take the freight transportation in Colombia as the most expensive factor of a logistics operation according to the following tables.

CONCLUSIONES

A continuación se presentan cuadros de comportamiento de cuatro modos de transporte y sus principales características en el actual contenido fundamentadas

Modo de transporte	Medio de transporte	Especificaciones	Actualidad en Colombia	Ventajas
Terrestre	Vehículos de tracción terrestre	Es muy versátil. Por su velocidad frente a la capacidad para prestar servicio puerta a puerta, este modo es el más asequible para cualquier tipo de empresa.	la antigüedad de los vehículos y su poca capacidad de carga hace que los costos de transporte se mantengan altos además de la poca infraestructura idónea y planificada para el territorio geográfico de Colombia	Es el más flexible en cuanto a tiempo de entrega y cantidad de productos a transportar. Posee fácil acceso a centros de distribución o puntos de carga y descarga. Presenta un mayor grado de inseguridad

Modo de transporte	Medio de transporte	Especificaciones	Actualidad en Colombia	Ventajas
Marítimo y fluvial (acuático)	Embarcaciones	Tiene ventajas diferenciales sobre los otros modos, porque puede cargar embarques muy grandes. Son de aguas profundas como el marítimo y los pequeños para ríos y canales.	Bajo desarrollo de este tipo de transporte en los países Latinoamericanos, sumado a los altos cambios climáticos del país lo hacen poco explotado en Colombia	Su costo es bajo. Permite el transporte de productos pesados. Necesita mayor tiempo para llevar los productos, es decir es un transporte lento.

Modo de transporte	Medio de transporte	Especificaciones	Actualidad en Colombia	Ventajas
Aéreo	Aeronaves	Los costos fijos son relativamente económicos con respecto al férreo y el acuático, pues generalmente los aeropuertos son desarrollados y conservados por el Estado. La rapidez y seguridad determina su capacidad de respuesta. Son bajas las tasas de seguros.	Esta poco utilizado por el alto costo y por la baja capacidad de los medios, pero se cuenta con buena tecnología y plataformas y equipos especializados para potencializar su uso tanto nacional como internacional	El tamaño de los lotes de productos a enviar deben ser pequeños. Se utiliza para el transporte de productos que posee un corto ciclo de vida, Se utiliza para pedidos urgentes. Su costo es elevado

Modo de transporte	Medio de transporte	Especificaciones	Actualidad en Colombia	Ventajas
Férreo o ferroviario	Trenes y ferro carriles	Son equipos especializados con vagones sellados, con sillas, vagones planos con contenedores. Generalmente cargan mercancías a granel como carbón, granos, también los hay como planchones Para cargar contenedores.	Las vías ferroviarias han desaparecido en muchos lugares, sin embargo en algunas regiones del país se constituyen en un importante modo de transporte, es parte fundamental para el transporte de un producto (carbón) a nivel nacional	Plazos de entrega más largos. Es flexible en cuanto a tonelaje Requiere de una infraestructura especial. Su costo es mediado según las distancias y el valor de las cargas, es relativamente bajo

Then behavior charts four modes are presented and its main features in the current informed content It is important to consider that in international trade, dominated displacement and moving cargo through seaports by ships containers with a share of 95% makes this mode of transport icon in a matter of mobilizing international cargo between producer and market in the other international logistics freight is followed by air 4% and

only 1% to be implemented or executed by land borders with neighboring countries of Venezuela and Ecuador. This factor is understandable if the great importance of transport maritime taking into account the comparative advantage of the exceptional location that Colombia has in America with access to the Pacific Ocean and the Atlantic Ocean is which gives you quick exit to other countries on other continents without having to spend by requiring land charge for moving cargo through their territories.

The great importance of maritime transport in exports given the importance to the

Continuous handling of ports, creating new and improving the continental shelves in addition to the creation and improvement of regulations that impede fraud and smuggling in and from the Colombian territory.

As the comparative data on what has to do with passenger transport internationally, 92% of people do it by land through bus inter-departmental, and the other 8% is transported by air. This postulate gives us first hand two conditional very clear that we can see, first the great use Passenger land transport is due to an economic factor, although today there are means for economic and air transport competent values of this land it is limited and of poor quality, not only does not reach all sectors

Colombian territory but has little recognition and reputation in the mind of the inhabitants of Colombian territory, the other factor mentioned above as falencias is the lack of its routes, air transport is very inclusive and there are transfers or internal mobilization in the country which are not covered by airlines.

Intermodal transport provides the advantages offered by the different modes transportation, thus achieving minimizing costs and greater effectiveness of this logistics activity, reduces transportation costs of products, optimizing fixed and variable costs of production, increases efficiency in the use of media transportation, contemplating use features that will enhance a strong gear and minimum tours, provides greater security, because by using containers for mobilization of these loads are locked and hermetically sealed to avoid theft and inclement weather, the use of containers facilitates faster and agility in the exchange of material, easier to store and stacking containers, This allows to create even internal routes meriting dry ports for loading and unloading of containers

without moving loads or cause detrimental effects and products produced slightly more advanced terminals containers can be equipped with cooling systems.

The PMTI from its foundation and each of his works is focused infrastructure in the potentiation of internal competencies, favoring agricultural sectors, producers and manufacturers expanding fields of action and minimizing costs supply chain domestic models, both with the ease of outputs finished the interior to the ports as income commodity products from outside to inside, the use of natural resources and exploitation sustainable of them is the basis of this plan when taking it as a factor differentiator in logistical issues, the wealth of our territory and the displacement the same should not go in opposite directions, the Colombian government will bet Intermodal Transport Master Plan to the proliferation of a development that multiply divide profits and expenses.

Modo de Transporte	Capacidad de carga por medio	Referencia por potencia	Rendimiento en trayectos de desplazamiento	Detalles importantes
Carretera	30 Toneladas	150 Kgs/HP	Punto de partida para evaluar los otros dos modos de transporte	Es flexible y pos la variedad de vehículos es fácil de optimizar los traslados
Férreo	2500 Toneladas	500 Kgs/HP	Es de 3 a 4 veces más económico que el transporte terrestre por carretera	Requiere de carga suficiente para optimizar los costos de traslado
Fluvial	5000 Toneladas	1000 Kgs/HP	Es 6 veces más económico que el transporte terrestre por carretera	La gran desventaja es la lentitud de sus traslados

International trade has increased in recent decades in a very considerable, because in some places items are produced in others it is not possible, or perhaps the same items but at a lower price, which has generated opportunity for individuals and companies doing business with other countries, which means sell the products produced internally in one country to a company or person in another country to obtain benefits. For the price of the product being It importing and exporting is not increased and is accessible to the end consumer, must be have a good supply chain to not affect the costs charged to the product, and so that there is good logistics countries must have infrastructure appropriate that enables the handling of goods in a coordinated and efficient manner, through the various modes of transport.

Colombia is a country which does not have adequate internal infrastructure allow the different modes of transport loads with higher volumes mobilize more efficiently and

therefore many additional costs, which increase the value of the products. These shortcomings in infrastructure and generate higher costs, do not allow the economy to have higher growth of GDP, as cargo volumes are reached to mobilize within the country they are lower than Cargo volumes of most neighboring countries with more infrastructure advanced.

Countries that have better infrastructure to mobilize domestic goods, They are usually countries with good economic growth rates, and to achieve this growth, what they do is invest greater percentage of their GDP to improve, expand and keep transit means by which the different modes of transport. He Colombia government has decided to launch an action plan called "plan intermodal transport master ", which aims to improve infrastructure inside the country, so this is more internationally competitive and achieve greater economic growth. Thus the importance of knowing the plan of action arises taken by the government to analyze potential impacts that may have trade Colombian foreign and economy if all strategies and projects are developed proposed by the government in the “Plan Maestro de Transporte Intermodal”.

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