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Systeme Economique
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Physical Infrastructure for Integration in Latin America and the Caribbean

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F O R E W O R D

The availability and quality of a country's physical infrastructure provide the basis for its economic and social development. It is not possible to achieve development or poverty eradication without building the appropriate infrastructure.

It is often pointed out that the considerable backwardness of physical infrastructure in Latin America and the Caribbean (LAC) poses limitations to international competitiveness, regional trade, investment, poverty reduction and development potentials. However, it should be acknowledged that as of 2000 the region has undertaken major subregional projects for infrastructure planning and development, particularly in Central and South America, and concrete results can be seen a decade later. In addition to these projects, mention must be made of the expansion of the Panama Canal¹ and a number of national initiatives. Thus, Latin America and the Caribbean is definitely improving conditions for developing physical infrastructure, which will have a positive impact on its medium and long-term development.

Bearing in mind that investment in infrastructure must be based on a long-term vision and requires huge economic support, it is imperative to define it after a very thorough process of planning, organization, development of regulations and funding. It is also necessary to establish mechanisms for consultation, cooperation and mutual convergence among participating countries.

¹ By 2014, the Panama Canal will have been expanded to cover the capacity required until mid-XXI Century. The expansion is complemented by a railway system that transports goods between the two oceans and a highway linking them in just 35 minutes.

EXECUTIVE SUMMARY

There is a positive relation among the development of physical infrastructure, economic growth and social well-being. Similarly, it can also be assumed that underdevelopment is directly associated with a poor and inadequate infrastructure.

Investments in infrastructure and related services have three different effects: i) they contribute to increasing the Gross Domestic Product (GDP) through transport services, telecommunications, drinking water and power supply and sanitation services; ii) they create externalities on production and investment, thus speeding up long-term growth, and iii) they influence on productivity of the rest of the economy in different production processes and at the business level

In the area of regional integration, coordinated investments for development of infrastructure works favours economic, social and political integration, including the establishment of common development areas through border integration. Likewise, such investments foster competition and a better global insertion of participating economies.

As part of investments in infrastructure, transport plays a key role. "Transport cost is the only common cost for any good or service... and nothing else... Moreover, not a single developed country in the world lacks a proper, streamlined, state-of-the-art and efficient transport infrastructure".² Therefore, in order to grow at fast pace, roads (highways), railways, ports and airports, among others, need to be built. Otherwise, remaining infrastructure as a whole cannot be built.

In calculating the Global Competitiveness Index (GCI), the World Economic Forum (WEF) takes into consideration the following variables: quality of global infrastructure; quality of roads; quality of railways; quality of port infrastructure; quality of air transport infrastructure; available air seats per kilometer; quality of electricity supply; fixed telephone lines and subscriptions to mobile phones.

Compared to the rest of the world, Latin America and the Caribbean need to significantly improve in order to cash in on their potentials. With scores ranging from 1 to 7, there is a wide gap between the LAC average (3.75) and the highest ranked country, that is, Hong Kong (6.77), or Korea (5.59), which ranks 18th. This proves the size of the challenge faced by LAC to take regional infrastructure up to the best world standards.

World Bank reports estimate that by improving regional infrastructure in LAC up to the level of Korea, annual growth rates of the GDP could increase by 1.4% - 1.8%, whereas inequity could decrease by 10% - 20%.

As stated in this report, it must be noted that in the last decade Latin America and the Caribbean have made great national and sub-regional endeavours towards development of physical infrastructure. However, as pointed out in several analyses, such progress is not enough compared to more dynamic developing countries elsewhere, and compared to their needs for economic growth, social requirements and trade and business opportunities offered by regional integration and the world markets.

Latin America and the Caribbean currently show a clear reduction of trade barriers within the region and with the rest of the world. On average, tariffs are below 10% and most LAC countries tend to virtually remove such tariffs in their regional trade and with their main extra-regional partners in the next coming years. Intra-regional trade is virtually liberalized

² Vargas Gallo, Pedro. *El axioma del transporte*. In *Revista Perspectiva*, Colombia. 17th Edition of 2008.

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for nearly 90% of tariffs. Hence, intra-regional trade has lately increased at higher rates than with the rest of the world.

Nevertheless, LAC still has a long way to go if the benefits of integration are to become a real driving force for economic growth, development and better insertion into the international economy. In this connection, numerous analyses have found that there is a structural problem affecting LAC: the severe deficiencies in physical transport infrastructure, which result in a broad range of “logistical costs”. Such costs are estimated to stand between 9% and 10% of the GDP in OECD countries, whereas in LAC countries they amount to 18%-40%.

Estimates also indicate that a 10% reduction in transport costs in LAC could increase the value of intra-regional exports by 21%, equivalent to US\$ 30 billion as of 2008. According to IDB estimates, a 10% reduction in transport costs could have an effect on Latin American exports fivefold a 10% tariff reduction. Moreover, the outstanding experiences of Europe and Asia in the area of integration were possible only upon development of an important physical connectivity among their countries.

The transport sector in Latin America and the Caribbean faces the following limitations:

- Roads coverage amounts to 156 Km. per 1,000 Km², very far away from the global average of 241 Km.
- Percentage of paved roads (16%) is well below the world average (57%).
- General road maintenance conditions are significantly poorer than the rest of the world.
- There is a glaring shortage of railways – only 0.2% of South America’s intra-regional trade is carried out by train, compared to 40% by land.
- Custom delays of goods increase transport costs by 4% - 12%.
- Geographical distance and road conditions surcharge transport by 8% - 19%.
- Border crossing faces administrative restrictions, particularly concerning issuance of documents; information exchange and management, and integrated monitoring mechanisms.
- Sea transport faces traffic troubles due to increasing global trade, inadequate investment and glitches in regulations on sea and port services. Road infrastructure should allow for easier connectivity and regional cabotage should be developed.
- Non-competitive air transport structures.
- Lack of regulations and need to promote multimodal transport.

There is a huge gap in the region between the supply of transport infrastructure and its demand, because in terms of GDP, total investment in transport has been halved over the past two decades, contrary to other regions such as Asia. However, emphasis must be made on the achievements in physical integration and trade facilitation currently underway in Central and South America, through the Mesoamerica Projects and the IIRSA Initiative (Initiative for the Integration of Regional Infrastructure in South America), respectively.

The Mesoamerica Integration and Development Project, better known as the Mesoamerica Project (MP) links efforts of cooperation, development and integration in a geographical area made up of ten countries: seven countries of the Central American isthmus (Belize, Costa Rica, Salvador, Guatemala, Honduras, Nicaragua and Panama), plus Colombia, Mexico and the Dominican Republic. Central America is a region with a very high degree of political, social, judicial, economic, commercial and now physical integration. The objectives of the PM are as follows:

- Overcome poverty by boosting economic development.
- Substantially increase productive investment in the region, particularly in basic infrastructure, with an emphasis on education, training, transport, logistics and telecommunications, the present core issues of corporate competitiveness.
- Create global synergies, similarly to linkage with Mexico and Colombia, the natural partners of Central American countries.

The Mesoamerica Project is organized in two strategic axes, which cover nine major activity groups, namely: 1. Economic axis for Infrastructure and Competitiveness: Transport, Energy, Telecommunications, Trade Facilitation and Competitiveness, and SMEs; 2. Social axis for Human Development and Environment: Health, Sustainable development, Natural Disasters, and Housing.

The balance of the Economic Axis attests to clear consolidation, since this is the area where most results are yielded. The economic axis envisages extensive, cutting-edge multimodal transport, including simpler and easier trade simplification and facilitation. Progress in the International Network of Mesoamerican Roads (RICAM) has been made at 50% of the construction and modernization works, that is, more than 6,600 km. Several border posts and crossings have been completed. Concomitantly, customs and border crossings have been streamlined, shortening up to 75% of the time in transit as part of the Mesoamerican Procedure of International Goods in Transit (TIM).

In the context of the RICAM, the Pacific Corridor is the main axis for modernization of land transport. Basic works of the Electrical Grid for Central American Countries (SIEPAC) have been built. The fibre optic cables of the Mesoamerican Information Highway (AMI), to start operations in 2011, have been laid. The AMI will foster extensive use of information technologies, reaching rural areas.

Likewise, foundations of the Social Axis have been laid for a better quality of life in the region, mostly composed of indigenous, sidelined and poor people.

The Initiative for the Integration of Regional Infrastructure in South America (IIRSA) has a multinational, multi-sector and multi-task scope. It covers twelve South American countries. These countries are the members of MERCOSUR (Argentina, Brazil, Paraguay and Uruguay), the Andean Community (Plurinational State of Bolivia, Colombia, Ecuador and Peru) and Chile, Guyana, Suriname and the Bolivarian Republic of Venezuela. It is aimed at developing regional infrastructure for transport, energy and communications within a framework of competitiveness, environmental sustainability, social quality and institutional quality.

Therefore, for IIRSA, physical integration is a must for sustainable development. Similarly, it is aimed at making headway with standardization and convergence of regulations. All of this is within the framework of sustainable development and job creation and incomes in the area of influence.

IIRSA promotes synergy of actions for regional physical integration with other areas in the regional integration process³, the most significant outcome of which will be reducing asymmetries among the countries in the region, within a "South American Strategic

³ Comprising trade liberalization, macroeconomic convergence, social and cultural integration, etc.

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Vision" in a 20-year term.⁴ As a result of territorial analyses made to find bottlenecks and sections lacking infrastructure, working groups were established and entrusted with project development. By the end of 2010, 47 working groups had already been organized with a project portfolio of 524 projects that require an investment estimated at US\$ 95.33 billion.

Out of the 524 projects as of June 2010, 44% was completed or in process; 30% was in the pre-commissioning stage and the remaining 26% was in the stage of design.

The order of importance per sector is as follows: transport covers 451 projects (86%) and investments for US\$ 54.61 billion (57%); energy, 64 projects (12%) for US\$ 40.68 billion (43%), and communications, 9 projects (2%) for US\$ 45 million, an insignificant proportion of less than 1%.

The initiative is premised on two action areas: Integration and Development Axes (EID) and Integration Sector Processes (PSI).

The EID contribute to regional integration in the sectors of transport (roads, railways, sea and air transport), logistics, energy (generation, transmission and distribution) and telecommunications. Projects can be bi-national or multinational, The 10 Integration and Development Axes (EID) are as follows:

1. Andean Axis (Bolivia, Colombia, Ecuador, Peru and Venezuela)
2. South Andean Axis (Chile, Argentina)
3. Amazon Axis (Colombia, Ecuador, Peru, Brazil)
4. Capricorn Axis (Chile, Argentina, Paraguay, Brazil)
5. Guyana Shield Axis (Venezuela-Brazil-Guyana-Suriname)
6. Axis of the Paraguay-Paraná Waterway(Paraguay, Argentina, Uruguay, Brazil, Bolivia)
7. Central Inter-oceanic Axis (Bolivia, Brazil, Chile, Paraguay and Peru)
8. MERCOSUR-Chile Axis (Chile, Argentina, Uruguay, Brazil)
9. Peru-Brazil-Bolivia Axis
10. Southern Axis (Argentina, Chile).

The IIRSA Strategic Goals for 2006-2010 ordered the Project Portfolio; updated the Business Vision of eight axes and completed the survey of the Business Vision of the Paraguay-Paraná Waterway. The South Andean Axis is pending.

By June 2010, progress had been made in 74% of the IIRSA portfolio of 524 projects (386 projects) and 26% was at the profile level (138 projects).

The Implementation Agenda based on Consensus (AIC) will show substantial strides ending 2010, as 27 projects are expected to be completed or significantly advanced (87%), 2 moderately advanced (6.5%) and 2 slightly advanced (6.5%).

Overall, the IIRSA Initiative has made substantial headway with planning and implementation of physical integration projects for South America. However, there is still a long way to go, in line with the objectives initially set to complete the infrastructure projects and particularly to attain the objectives of the Integration Sector Processes (PSI), given their importance as a mechanism for regional development and integration.

⁴ García, Enrique (2009).

In addition, the initiative faces the challenge of more direct involvement in the economic and political fields of existing integration processes in their geographical area, in order to get an institutional status and the financing, regulatory and operational mechanisms required to attain its objectives.

Based on the foregoing, it must be noted that, in order to take advantage of the opportunities currently offered regional integration in Latin America and the Caribbean, it is necessary to adopt a Joint Agenda, which should delve deeper into the following issues:

- Promote the development of physical infrastructure for transport, communications and electrical interconnection following a regional vision.
- Use international standards for accounting for logistics costs.
- Adopt automated instruments for trade facilitation.⁵
- Upgrade, standardization, simplification and linkage of trade agreements and regulations throughout the region to make them converge in a common framework.

One of the main challenges facing the region is the development of physical infrastructure to promote connectivity. In this regard, there is a long way to go, particularly if we bear in mind that a considerable increase in demand for infrastructure services is expected in the region in the next ten years. ECLAC, the World Bank and the IDB have suggested to set a regional or sub-regional goal about 5% of GDP as regards investments in infrastructure, taking into account the particularities of each sub region or country, and to create regional or sub-regional financial funds including resources from the public sector, financial institutions and regional development banks.

For this reason, a suggestion is made to design policies and mechanisms to encourage public and private investment, based on regional planning and joint action – which must envisage the search for new financial sources and instruments as well as new methodologies for calculating budgets and fiscal goals, while improving existing regulatory frameworks.⁶

The creation of an institutional framework for regional coordination and joint action should have the following objectives:

- Coordinate planning (national, sub-regional and regional).
- Coordinate interests and priorities.
- Deal with those differences in legal frameworks and institutional designs that could delay the execution of works.
- Develop financing facilities.
- Build infrastructure.
- Define the need to adopt common regulatory measures and standards.
- Reduce trade transaction costs.
- Develop scale economies.

⁵ See SELA document: Recent Developments in Trade Facilitation in Latin America and the Caribbean. SP/CL/XXXVI.O/Di N° 20-10.

⁶ ECLAC. *Crecimiento, Infraestructura y Desarrollo Sostenible*. Chapter 4 of document "Desarrollo Productivo en Economías Abiertas". Santiago, Chile, 11 June 2004. LC/G.2234 (SES.30/3).

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This institutional framework could be set up on the basis of coordination and convergence of existing structures in the Mesoamerica Project and the IIRSA Initiative, which count on the support of financial institutions such as IDB, CAF, CABEL and FONPLATA.

In addition to a regional vision of the planning process, it would be essential to identify modalities for financing, including public-private partnerships. To this end, it would be advisable to share experiences on best practices for funding.

A Regional Observatory on Development of Infrastructure could be a reference about the type of projects to be developed, areas where opportunities are identified and the type of participation and funding required. This Observatory could be based on the experiences gained in the PM and IIRSA.

In addition to the numerous national and subregional experiences, it is worthwhile considering other experiences, such as that of the European Union as regards regional planning processes in the area of physical infrastructure for integration, which includes three basic components: i) investment in physical infrastructure as such, ii) convergence and harmonization of instruments for transport and communications, and iii) facilitation and promotion of logistics.

Electricity interconnection in the region is a goal that should be kept on top of the regional agenda for physical infrastructure.

It is urgent to adopt a joint treatment for development of the transport sector in order to foster multimodal transport, standardize regulations on the operation and requirements for access to the transport market, share regulations on weight, size and insurance of land transport, build railroads, develop port facilities and cabotage, increase the size, efficiency and competitiveness of air transport, and simplify and automate regulations and operations of border crossings.

Furthermore, physical infrastructure fundamentally involves developing telecommunications as the basis for enhancing the development of the productive sector in the region. Strategies such as ECLAC's eLAC, CARICOM's Information Society (CARIB-IS), the Mesoamerican Information Highway (AMI), and IIRSA's Sectoral Integration Process in the area of ICTs, promote access and use of ICTs. To that end, it would be highly valuable for the productive sector of the region and, in general, to promote integration so that such mechanisms could exchange experiences as regards the development of communications infrastructure and regulations. Thus, they could identify areas of convergence and cooperation towards the creation of a regional agenda for the development of communications infrastructure.

I. INTRODUCTION

The concept of physical infrastructure covers a wide range of sectors such as roads, ports, airports, railways, communications, energy, water, health, education and housing. However, this study refers, specifically, to those sectors that are closely related to physical infrastructure for competitiveness, integration and international economic integration of Latin America and the Caribbean (LAC), i.e. roads, telecommunications and electricity.

Infrastructure is a sector that requires permanent, unrestricted investment from the very moment a project is conceived. Its social, economic and environmental impacts can be seen throughout the process of planning, design, construction and operation start-up, as the use of new infrastructure generates a number of economic and social activities, both in the areas where it is constructed and those that are interconnected.

Infrastructure increases land value and its potential use for human development, by making it suitable for production and urbanization, facilitating access to social services, promoting activities such as tourism – which is of great importance for the economies of Latin American and Caribbean countries – and reducing rural-urban migration and lack of security.

This document starts with an analysis of the importance of physical integration for Latin America and the Caribbean, its expected effects, and the future challenges that might be faced in view of the evolution and changes of national economies and the region as a whole foreseen for the next ten years. The study makes emphasis on the progress of the IIRSA and Mesoamerica Projects, as well as the most outstanding ongoing subregional initiatives – which should fit a new vision of Latin American and Caribbean integration and development, as agreed to at the Unity Summit in February 2010 in Cancun, Mexico, by the Presidents and Heads of Government of the 33 countries of the region.

It should be borne in mind that it is important for Latin America to act as a united region in terms of its physical integration. As a matter of fact, the region has made substantial progress as regards trade regulations and political integration, but the countries are still significantly distanced from one another due to the inadequacy of their physical infrastructure. Therefore, overcoming such difficulty is an urgent task. To this end, national and subregional experiences can be very valuable.

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II. INFRASTRUCTURE AND DEVELOPMENT**II.1 Importance of infrastructure for development**

Development in a society can be appreciated through its infrastructure. Infrastructure is a key factor in setting a strategy for economic and social development. Infrastructure is a determining factor to pursue a strategy for economic and social development. There is a positive relationship among the development of physical infrastructure, economic growth and social wellbeing. By the same token, underdevelopment is directly related to a poor, insufficient infrastructure.

Transport, energy and communications infrastructures, as well as the networks of water supply and clean-up favour economic development policies and inclusion in the global economy. Infrastructures related to social development include hospitals, schools and water supply and clean-up. Infrastructure for environmental protection is composed of parks and natural reserves, ecotourism circuits and protected territory in general. For their part, radio and TV networks, repetition stations and Internet suppliers provide access to information and knowledge.⁷

Investments in infrastructure and related services have three different effects: i) they contribute to increasing the Gross Domestic Product (GDP) through transport services, telecommunications, drinking water and power supply and sanitation services; ii) they create externalities on production and investment, thus speeding up long-term growth, and iii) they influence on productivity of the rest of the economy in different production processes and at the business level.⁸

TABLE 1
CHILEAN EXAMPLE

"The availability of adequate infrastructure and efficient provision of related services help countries or even a whole to develop competitive advantages and achieve a greater degree of specialization in production. For instance, the integrated development of road networks, port infrastructure and cargo services, together with the modernization and expansion of power systems, telecommunications and water supply and sanitation in regions suitable for wine and fruit production can help a country such as Chile to develop comparative advantages in those two industries and steadily increase its global market share in both areas."

Source: Patricio Rozas and Ricardo Sánchez (2004).

The provision of infrastructure services is also a vehicle for territorial, economic and social cohesion. It allows for people's connection with the environment and gives them external access. It also makes available the services needed for production and better living conditions and quality of life, particularly for the people located in faraway, underprivileged areas.⁹

⁷ Rozas, Patricio and Ricardo Sánchez. *Desarrollo de infraestructura y crecimiento económico: revisión conceptual*. ECLAC, Santiago, Chile, October 2004.

⁸ Rozas and Sánchez (2004).

⁹ Cipoletta Tomassian, Georgina, Gabriel Pérez Salas and Ricardo Sánchez. *Políticas integradas de infraestructura, transporte y logística: experiencias internacionales y propuestas iniciales*. ECLAC. Santiago, Chile, May 2010.

Access to goods and input or better provision of services enhances productivity of land, labour and physical capital. On the business side, lower costs of input supply, inventory management and distribution benefit competitiveness and help increase scale economies and find a niche in new markets.

In the area of regional integration, coordinated investments for development of infrastructure works favours economic, social and political integration, including the establishment of common development areas through border integration. Similarly, such investments foster competition and a better global insertion of participating economies.

As part of investments in infrastructure, transport plays a key role. "Transport cost is the only common cost for any good or service... and nothing else... Moreover, not a single developed country in the world lacks a proper, streamlined, state-of-the-art and efficient transport infrastructure".¹⁰ Therefore, in order to grow at a fast pace, roads (highways), railways, ports and airports, among others, need to be built. Otherwise, remaining infrastructure as a whole cannot be built.

A properly available transport infrastructure gives rise to important external economies, such as:

- Economic development: possibility of counting on other infrastructure works, growing competitiveness, investments, increasing trade, sector development (for instance, tourism), job creation, lower cost of living.
- Enhanced security: higher turnover of personnel and equipment.
- Better access and efficiency of social services: less need to build health and education facilities for better movement of people and equipment.

II.2 Latin America and the Caribbean in the Global Competitiveness Report¹¹

The World Economic Forum (WEF) captures a comprehensive, weighted range of factors which influence competitiveness. Such factors are grouped in three indexes, organized into 12 pillars made up of a number of indicators. All these indicators encompass the main micro- and macroeconomic foundations of competitiveness.

In order to calculate the Global Competitiveness Index (GCI), indicators or sub-indexes have a relative weighting in each country, based on the level of domestic development or technology development of the economy. In this way, countries are ranked according to three development stages or levels: (i) led by production factors; (ii) led by efficiency, and (iii) led by innovation.

The second out of the 12 pillars taken into account by the WEF to prepare the GCI¹² refers to infrastructure. The report notes that extensive, efficient infrastructure is of the essence to secure the effective operation of economy; it is a key factor to locate an economic activity. A well developed infrastructure reduces the effect of distance between regions; integrates national development, and connect at low cost the local and foreign markets.

¹⁰ Vargas Gallo, Pedro. *El axioma del transporte*. In Revista Perspectiva, Colombia. 17th Edition of 2008.

¹¹ Notes taken from the World Economic Forum. The Global Competitiveness Report 2010 – 2011. Geneva, Switzerland 2010.

¹² 1. Institutions 2. Infrastructure 3. Macroeconomic stability 4. Health and primary education 5. Higher education and training 6. Goods market efficiency 7. Labor market efficiency 8. Financial market sophistication 9. Technological readiness 10. Market size 11. Business sophistication 12. Innovation.

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Therefore, quality and length of infrastructure networks have a significant impact on economic growth and counteract in multiple ways income inequity and poverty.

Well developed transport and communications infrastructure networks are a prerequisite for the access of less developed communities to main economic activities and services. Good quality roads, railroads, ports and air transport give businesses reliable and timely access to markets and allow for easy transport of workers to their workplace. Economy also depends on sufficient, smooth electric power supply so that the production sector can efficiently carry out its activities. Finally, a sound, extensive telecommunications network allows for free and fast information flow, thus increasing economic efficiency and securing business development.

The Global Competitiveness Index (GCI) takes into account the following variables related to infrastructure: quality of global infrastructure; quality of roads; quality of railroads; quality of port infrastructure; quality of air transport infrastructure; available air seat kilometres per week; quality of electricity supply; fixed telephone lines and subscription to mobile phones.

Generally speaking, compared to the rest of the world, Latin America and the Caribbean need to significantly improve in order to cash in on their potentiality. Out of the 136 surveyed economies, only Chile (30) and Barbados (43) are within the main 50 economies in the world. The group of the first half is joined by Panama (53), Costa Rica (56), Brazil (58), Uruguay (64), Mexico (66), Colombia (68) and Peru (73). Countries with lower indexes include Ecuador (105), Bolivia (108), Nicaragua (112), Paraguay (120) and Venezuela (122).

Public investment in infrastructure in LAC was the main casualty of tax stabilization programmes implemented in the nineties in many countries. Public spending could be easily cut in other items, such as wages and pension funds, among others. According to the World Bank, public investment in infrastructure fell from 35% of the GDP in 1988 down to 1% in 1998. The idea underlying this policy was that the private sector could fill this gap; this was not fully materialized. While LAC was the recipient of half of US\$ 786 billion in investment in infrastructure in developing countries through Public-Private Partnerships (PPP) in 1990-2003, such private funds fail to fully offset less public investment. Additionally, the investment focused on a few countries (Argentina, Brazil, Chile, Colombia, Mexico and Peru) in the sectors of telecommunications, energy and transport. As a result, infrastructure development lagged behind the East Asian Tigers and even China in the course of two decades, with severe implications as to economic growth and reduction of poverty.

Reports of the World Bank estimate that by improving LAC infrastructure up to the level of Korea, annual growth rates of the GDP could increase by 1.4% - 1.8%, whereas inequity could decrease by 10% - 20%.

Table 2 shows the positions and scores of LAC economies in the GCI infrastructure pillar, together with comparative numbers of other economies, such as the BRIC countries¹³ as a whole. Note in the 1-7 score a wide gap between the LAC average (3.75) and the highest ranked country, that is, Hong Kong (6.77), or Korea (5.59) which occupies position 18. This proves the size of the challenge faced by LAC to take regional infrastructure up to the best world standards.

¹³ BRIC countries: Brazil, Russia, India and China.

TABLE 2
INFRASTRUCTURE 2010-2011: LATIN AMERICA AND THE CARIBBEAN
AND SELECTED COMPARATORS

Country/Economy	Infrastructure 2010–2011		A. Transport		B. Electricity and telephony	
	Rank	Score	Rank	Score	Rank	Score
Hong Kong SAR	1	6.77	1	6.69	1	6.85
Korea, Rep.	18	5.59	12	5.73	30	5.44
Barbados	23	5.37	29	4.82	15	5.93
Chile	40	4.69	37	4.56	48	4.83
Panama	44	4.53	46	4.15	44	4.92
Trinidad and Tobago	45	4.53	58	3.94	38	5.12
China	50	4.44	31	4.73	69	4.14
Uruguay	53	4.29	75	3.54	42	5.03
El Salvador	59	4.13	66	3.78	56	4.49
BRIC average	n/a	4.10	n/a	4.27	n/a	3.93
Brazil	62	4.02	67	3.76	65	4.28
Jamaica	65	3.91	51	4.05	86	3.76
Guatemala	66	3.9	76	3.48	64	4.31
Latin America & Caribbean average	n/a	3.75	n/a	3.48	n/a	4.01
Mexico	75	3.74	57	3.96	92	3.51
Argentina	77	3.63	89	3.17	73	4.08
Costa Rica	78	3.62	111	2.78	59	4.45
Colombia	79	3.59	101	2.94	68	4.24
Honduras	85	3.51	82	3.30	88	3.73
India	86	3.49	39	4.50	115	2.49
Peru	88	3.47	94	3.08	84	3.86
Ecuador	96	3.18	99	2.96	95	3.39
Bolivia	100	3.04	122	2.59	94	3.49
Guyana	103	2.92	100	2.95	102	2.90
Dominican Republic	107	2.83	79	3.38	121	2.28
Venezuela	108	2.82	123	2.58	98	3.06
Nicaragua	111	2.73	102	2.90	112	2.55
Paraguay	125	2.46	138	2.10	104	2.82

Source: World Economic Forum.

Note that, as stated in this report, in the last decade Latin America and the Caribbean have made great national and sub-regional endeavours towards development of physical infrastructure. However, as noted in several analyses, such progress is not enough compared to more dynamic developing countries elsewhere, and compared to their needs for economic growth, social requirements and trade and business chances given by regional integration and the world market.

III. NEW AGENDA OF INTEGRATION IN LATIN AMERICA AND THE CARIBBEAN

III.1 Trade and physical integration

Latin America and the Caribbean currently show a clear reduction of trade barriers within the region and with the rest of the world. This was possible after protracted trade discussions over the past five decades, adjusted, of course, to the own characteristic features and possibilities of each country and sub-region. For instance, in the eighties, tariffs averaged 40%; in the decade of 2000, the mean value had fell down to 10%. Most LAC countries tend to virtually remove such tariffs in the regional trade and with main extra-regional partners. This is expected to occur as nowadays intra-regional trade is virtually liberalized, near 90% of tariffs, particularly in sub-regions, CAN, CARICOM, MERCOSUR and SICA, as well as in many regional trade agreements. Hence, intra-regional trade has lately increased to the highest rates compared with the rest of the world.

Nevertheless, LAC still has a long way to cover if the benefits of integration are to become a real driving force of economic growth and development. Indeed while the quota of intra-regional exports in total LAC exports amounted to 20% in 2008 (Table 3), according

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to the IADB and ECLAC, it was as high as 54% in Asia, 44% in NAFTA and 67% in the EU. Still, without Mexico's data, it would stand at 28% only. Sure enough, at the sub-regional and even domestic level, differences are noteworthy due to lesser participation in regional trade of larger countries compared to Nicaragua, Guatemala, Bolivia, Salvador and Paraguay, where more than 40% of exports go to their neighbours.

Multiple surveys, such as those conducted by the World Bank, the IADB, ECLAC and CAF, have found that a very limited transport infrastructure is the main hindrance to LAC integration, resulting in a wide range of "logistical costs" for regional trade.¹⁴ Such costs stand at 9% - 10% of the GDP in OECD countries versus 18% - 40% in LAC.¹⁵

Based on the estimates, a 10% shrinking in transport costs in LAC could increase by 21% the value of intra-regional exports, equivalent to US\$ 30 billion as of 2008. Even full regional integration, for instance, of Central America, could double mutual trade and substantially increase their chances of access to extra-regional markets.

¹⁴ Logistic costs mean the costs resulting from distribution of goods and services from the production site to consumers.

¹⁵ The WORLD BANK, IADB, ECLAC. Bridging the integration gap. Note of discussion of policies. Lima, Peru. 28 May 2010.

TABLE 3						
INTRA-REGIONAL TRADE AND TOTAL TRADE						
OF LATIN AMERICA AND THE CARIBBEAN, 2008-2009						
US\$ Million - Percentages						
COUNTRY	EXPORTS 2008			EXPORTS 2009		
	LAC	TOTAL	%	LAC	TOTAL	%
<i>St. Kitts & Nevis</i>	2	325	1			
<i>Jamaica</i>	57	8397	1			
<i>Montserrat</i>		38	1			
<i>Grenada</i>	11	377	3			
<i>Bahamas</i>	41	993	4			
<i>Saint Lucia</i>	30	658	5			
<i>St. Vincent & the Grenadines</i>	25	373	7			
<i>Mexico</i>	20 293	291 343	7		229621	
<i>Belize</i>	77	837	9			
<i>Barbados</i>	180	1747	10			
<i>Dominica</i>	23	232	10			
<i>Guyana</i>	163	1345	12			
<i>Panama</i>	201	1 144	16	178	821	22
<i>Chile</i>	13 414	69 088	19		49921	
<i>Peru</i>	6 400	30 426	21		25905	
<i>Brazil</i>	46 446	197 942	23		152995	
<i>Costa Rica</i>	2 635	9 313	28	2296	8534	27
<i>Trinidad and Tobago</i>	3307	9589	34			
<i>Ecuador</i>	7 218	20 296	36		13724	
<i>Colombia</i>	13 466	37 626	36		32850	
<i>Honduras</i>	1 165	3 106	38	662	2628	25
<i>Argentina</i>	27 553	70 021	39		54940	
<i>Uruguay</i>	2 396	5 949	40		5386	
<i>Nicaragua</i>	649	1 487	44	667	1393	48
<i>Guatemala</i>	2 975	5 376	55	2621	4999	52
<i>Bolivia (Plurinational State)</i>	4 521	6 953	65		5417	
<i>El Salvador</i>	1 724	2 621	66	1545	2310	67
<i>Paraguay</i>	3 024	4463	68		3191	
INTRA CARICOM	2205	24779	9			
INTRA MERCOSUR	43127	278375	15	32278	216512	15
INTRA CAN	7804	95301	8	6538	77896	8
INTRA CACM	6461	21 904	29	5274	19864	27
INTRA ALADI	140157	832907	17	101183	634424	16
INTRA-Regional	157997	781905	20			
INTRA-Regional excluding Mexico	137704	490562	28			

Sources: ALADI, CARICOM, ECLAC, SICA.

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Based on said report and multiple ECLAC papers, LAC transport infrastructure has significant limitations, namely:

- Roads coverage amounts to 156 Km. per 1,000 Km², very far away from the global average of 241 Km.
- Percentage of paved roads (16%) is well below the world average (57%).
- General road maintenance conditions are significantly poorer than the rest of the world.
- There is a glaring shortage of railways – only 0.2% of South America’s intra-regional trade is carried out by train, compared to 40% by land (2009).
- Custom delays of goods increase transport costs between 4% and 12%.
- Geographical distance and road conditions surcharge transport by 8% - 19%.
- Border crossing faces administrative restrictions, particularly concerning issuance of documents; information exchange and management, and integrated monitoring mechanisms.
- Sea transport faces traffic troubles due to increasing global trade, inadequate investment and glitches in regulations on sea and port services. Road infrastructure should allow for easier connectivity and regional cabotage should be developed.
- Non-competitive air transport structures.
- Lack of regulations and furtherance of multimodal transport.

Based on the foregoing, LAC regional integration needs the adoption of a “New Agenda” of trade integration, made up of the following elements:¹⁶

- Upgrade, standardization, simplification and linkage of trade agreements and regulations throughout the region.
- Reduction of logistical costs according to international figures and standards, by means of a wide coverage and high quality of physical infrastructure and the adoption of automated instruments for trade facilitation.¹⁷
- Standardization of regulations in order to overcome institutional obstacles.

III.2 Regional integration agenda

As noted above, the studies conducted by the World Bank, ECLAC and other organizations have found serious restrictions in LAC as to the provision of infrastructure services. This conditions its trade competitiveness and development; restricts its possibility of economic expansion and prevents it from taking the benefits of scale economies and expertise. The LAC region shows a wide gap between supply and demand of transport infrastructure. In GDP terms, total investment in transport has halved over the past two decades, as opposed to other regions, such as Asia.¹⁸ Notwithstanding, the headway in the field of physical integration and easier trade in Central and South America are noteworthy through the Mesoamerica Project and IIRSA (Initiative for the Integration of Regional Infrastructure in South America), respectively.

¹⁶ Termed by the IDB as the “third-generation integration process.”

¹⁷ See SELA document: Recent developments in trade facilitation in Latin America and the Caribbean. *SP/CL/XXXVI.O/Di N° 20-10*.

¹⁸ FAL Bulletin, *Facilitación del Comercio y el Transporte en América Latina y el Caribe*. Edition No. 276 of August 2009.

In its FAL Bulletin 280 of December 2009, ECLAC stated that looking at the initiatives at physical integration taken in the decade of 2000 in Central America, South America and CARICOM, most of the works in process continue even in times of crisis. However, there is the problem of unavailable or reduced supply of infrastructure services. Add to this, lack of market organization and shortage of regulations for easier transport. All of this results in losing competitiveness and productivity and serious obstacles to regional growth and development. Therefore, an integrated regional infrastructure in transport, energy and communications is of the essence to enhance growth, attain higher development levels and materialize the old dream of a broad LAC space.

Gaps in LAC regional integration and appropriate actions are called the “Hardware – Software Continuum”.¹⁹ In other words, as appears from Chart 1, making up a unified regional market requires upgrade of existing trade agreements; execution of pending agreements (for instance, between Mexico and Brazil) and consistent regional trade agreements. This would be the software. But also said agreements will materialize through intertwined transport, communications and energy infrastructure, that is, the hardware. For the good working order of hardware, terms and “logistic” costs and requirements should be curtailed by means of policies for easier trade and people movement, in addition to opening to investments for further production integration.

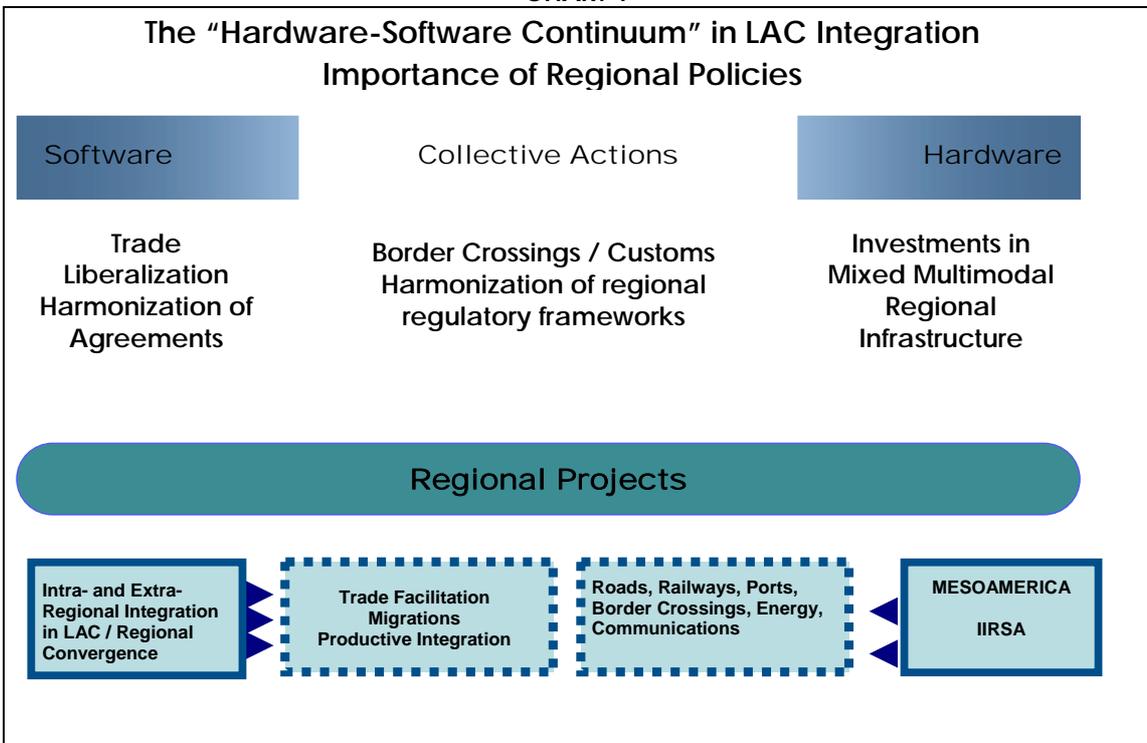
Therefore, from the Latin American and Caribbean viewpoint, joint treatment for development of the transport sector is requisite and necessary in order to foster multimodal transport; standardize regulations on operation and requirements for access to the transport market; share regulations on weight, size and insurance of land transport; build railroads; develop port facilities and cabotage; increase the size, efficiency and competitiveness of air transport and simplify and automate regulations and operation of border crossings.

For all these reasons, for the purpose of LAC regional integration, a multidimensional process should be developed where trade negotiation forums play a key role to deepen and expand free trade and ensure its convergence. Recent initiatives could be added to the wide range of intra-regional agreements, namely: the proposals on the Pacific Arc; Mexico’s talks to make its agreements consistent with those of Central American countries, and Mexico-Peru-Brazil discussions.

Similarly, within the framework of trade agreements and sub-regional organizations, commitments have been made; disciplines have been adopted and expert forums have been held for easier trade. These instruments should be adjusted to the progress made and the chances given by trade agreements and trends, regional investments and multilateral organizations standards. Also, they should be simplified and automated by means of information and communications technologies. Finally, they should be regionally standardized.

¹⁹ THE WORLD BANK, IDB, ECLAC. Reducing integration gaps. Policy discussion note. Lima, Peru, 28 May 2010.

CHART 1



Source: WORLD BANK, IDB, ECLAC. Reducing integration gaps. Policy discussion note. Lima, Peru, 28 May 2010.

Development of physical infrastructure is the third item, the most representative programmes of which are the Mesoamerica Project and IIRSA.

III.3 Sub-regional Projects on Physical Integration

Institutionalization of cross-border infrastructure projects is notable in LAC integration in the 21st Century, with glaring advantages in the field of technical, legal, administrative and financial coordination, due to their inclusion in national development plans and in the new agendas of economic relations among the countries in the region. Such coordination and cooperation cover issues such as cost and benefit distribution; financing framework; rules on project operation; potential participation of private capital; regulatory issues, and lesser environmental impact, among many others.²⁰

The following is a brief presentation of regional strides in the field of building of physical infrastructure as part of the Mesoamerica Project and IIRSA; the two most important initiatives at the present time towards LAC regional integration. Their progress and consolidation, as well as convergence and intertwining between them and with the Caribbean will allow for LAC physical interconnection as a unified regional space. As a matter of fact, the Pan-American Highway between Central and South America is interrupted by the Darién Plug on the Colombia-Panama border; the South American territory is physically fragmented by its range of mountains, rivers and jungles; air

²⁰ Garcia, Enrique. *Infraestructura e Integración en América Latina*. ICE Economic Bulletin No. 2974. 1- 15 October 2009.

communications with CARICOM countries are regularly made through the United States; sea transport between the sub-region and Latin American countries is poor.

Based on the IADB estimates a 10% reduction of transport cost could have an effect on Latin American exports fivefold a 10% tariff reduction.²¹ And the salient European and Asian experience in integration was possible only upon development of an important physical connectivity among their countries.

IV. MESOAMERICA PROJECT²²

The Mesoamerica Integration and Development Project, better known as the Mesoamerica Project (MP) links efforts at cooperation, development and integration in a geographical area made up of ten countries: seven countries of the Central American isthmus (Belize, Costa Rica, Salvador, Guatemala, Honduras, Nicaragua and Panama), plus Colombia, Mexico and the Dominican Republic. The MP is aimed at improving quality of life under projects set to yield concrete benefits in the fields of social development, infrastructure and connectivity.

The MP has a privileged geographical location – in the middle of the Americas and between the Atlantic and Pacific Oceans; its covers 212 million inhabitants, 3.62 million kms²; the regional GDP in 2010 amounted to US\$ 1.40 billion.

As a result of the Tenth Summit of the Tuxtla Mechanism for Dialogue and Agreement, held in Villahermosa, Tabasco, Mexico, on 27 and 28 June 2008, the presidents of Central America, Colombia and Mexico agreed to rename Plan Puebla-Panama as “Mesoamerica Integration and Development Project,” or Mesoamerica Project (MP). The objectives of the MP are as follows:

- Overcome poverty by boosting economic development.
- Substantially increase productive investment in the region, particularly in basic infrastructure, with an emphasis on education, training, transport, logistics and telecommunications, the present core issues of corporate competitiveness.
- Create global synergy, similarly to linkage with Mexico and Colombia, the natural partners of Central American countries.

Decision making in Mesoamerica Project is as follows:

- Presidents' Summit. It is the top organ of the Project; meets regularly in the context of, but independent from, the Tuxtla Mechanism.
- Meeting of Foreign Ministers and Presidential Delegates. It meets prior to the Summit for better coordination and support of projects at the highest level.
- Executive Committee. It coordinates the MP works to follow up projects and programs, promotion strategies, funding, liaison with international organizations and efforts at dissemination and social participation.
- Chief Executive Office. It is the MP technical body. Works on three strategic Axes: productive integration and trade exchange and competitiveness; human development and environment development; communication and dissemination.

²¹ Quoted in García, Enrique (2009).

²² www.proyectomesoamerica.org and the presentation “Building Infrastructure for Mesoamerican Integration,” by Executive Director Elayne Whyte Gómez in the workshop: “Regional meeting and cooperation points in Latin America.” ECLAC, Santiago, Chile, 8 July 2010.

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- Technical Inter-institution Group. It is composed of the Inter-American Development Bank (IADB); the Central American Bank for Economic Integration (CABEL); the Andean Development Corporation (CAF); the Economic Commission for Latin America and the Caribbean (ECLAC); the United Nations Development Program (UNDP); the Central American Integration System (SICA) and the Secretariat for Central American Economic Integration (SIECA).

The Mesoamerica Project is organized in two strategic Axes, which cover nine major activity groups, namely:

Economic axis (Infrastructure and Competitiveness)

Transport: Boosting a Mesoamerican Multimodal Transport System (MMTS) – roads, maritime transport, inter-oceanic logistic corridors, and railways – to enhance connectivity in the region.

Energy: Interconnecting electrically the region of Mexico, Central America and Colombia. Programs on renewable energy sources are also being produced.

Telecommunications: Developing a network of broadband telecommunications (fibre optic) to enlarge access to information technologies.

Trade Facilitation and Competitiveness: Implementing automated, simple and safe ways and procedures on border checkpoints for easier, faster intraregional trade flow.

SMEs: Backing the exports of Mesoamerican small and medium enterprises, particularly through business rounds.

Social axis (Human Development and Environment)

Health: Boosting intra-regional coordination to face common challenges in the field of health through the Mesoamerican Public Health System (MPHS).

Sustainable development: Fostering cooperation for sustainable development in biodiversity and forests, climate change and sustainable competitiveness through the Mesoamerican Strategy on Environmental Sustainability (MSES).

Natural Disasters: Taking joint action to prevent and mitigate the damages caused by natural disasters which hit the region. In this connection, countries are fostering the Mesoamerican Territorial Information System (MTIS).

Housing: Furthering in the Central American region a sustainable, long-term housing financing market to bridge the housing gap and meet future housing needs.

An overview of the thematic scope of Mesoamerica Project is shown in Table 4.

For the purposes of this report on **Physical Infrastructure for Latin American and Caribbean Integration**, Mesoamerican programs on transport, trade facilitation, electrical interconnection and telecommunications have been taken as reference only.

**TABLE 4
MESOAMERICA PROJECT**

TOPIC	OBJECTIVES	PROJECTS	ACTIVITIES
TRANSPORT	Developing an efficient multimodal transport system	<ul style="list-style-type: none"> International Network of Mesoamerican Roads (RICAM) Short-haul Maritime Transport (Cabotage) 	13,132 Km of roads. Two main trunk lines on the Pacific and Atlantic oceans; a tourist corridor; an inter-oceanic, logistic corridor and a number of branches and supplementary connections.
ENERGY	Meeting the regional electricity demand and cementing a Regional Electrical Market (MER)	<ul style="list-style-type: none"> Electrical Grid for Central American Countries (SIEPAC) Mexico-Guatemala Electrical Grid Panama-Colombia Electrical Grid Regional Electricity Market (MER) Mesoamerican Biofuel Program 	1,800 Km of transmission lines and 15 substations of the SIEPAC network; 103 Km of interconnections of the Mexico-Guatemala System and 614 Km of the Panama-Colombia connection. Mesoamerican wind and solar energy mapping. Biofuel stations in Honduras, Salvador and Guatemala. Biodiesel manufacturing plant in the state of Chiapas, Mexico.
TELECOMMUNICATIONS	Universal service; lower rates; regional interconnection and development of added value services.	<ul style="list-style-type: none"> Mesoamerican Information Highway (AMI) Regional regulating policy Social use of information and communications technologies (ICT) Regional integration of telecommunications services (Roaming and intraregional long distance) 	Fiber optic cables are laid along with electrical wires. Operations are scheduled for the first half of 2011. As to the SIEPAC, an OPGW cable with 36 fibre optic is to be laid, for a basic platform (DWDM) where several information signals will converge.
TRADE FACILITATION AND COMPETITIVENESS	Easier steps and electronic data transmission to reduce the commodity crossing time on border crossings.	<ul style="list-style-type: none"> Mesoamerican Procedure for International Goods in Transit (TIM) Mesoamerican Competitiveness Indicators 	Streamlining of customs and border crossings linked to the Single Transit Document (DUC). Two projects in Mexico with Salvador and Guatemala; two projects in Salvador with Guatemala and Honduras, and one project between Costa Rica and Panama.
HEALTH	Bridging the gap of health coverage in the region; implementing highly cost-effective health management and reinforcing the public health regional capacity.	<ul style="list-style-type: none"> Public Health Mesoamerican System through the Public Health Mesoamerican Institute (IMSP). 	Design of campaigns and management in four priority areas: maternal and infant health; vaccination; nutrition and fight against malaria and dengue. Epidemiological surveillance and assessment. Establishment of the IMSP.
SUSTAINABLE DEVELOPMENT	Expanding and reinforcing environmental cooperation capacity in the region.	<ul style="list-style-type: none"> Environmental Sustainability Mesoamerican Strategy (EMSA) 	Biodiversity and forests: Reinforcing the Mesoamerican Biological Corridor (CBM) and promoting a comprehensive regional system of protected natural areas. Climate change: Less vulnerability; adjustment

TOPIC	OBJECTIVES	PROJECTS	ACTIVITIES
			measures; building of low-carbon economic systems and swap of debt for reduced greenhouse gas emissions. Sustainable competitiveness: cleaner production; assessment of strategic environmental impact for infrastructure projects, mining and other economic activities.
NATURAL DISASTERS	Less vulnerability and risks in the face of natural disasters in Mesoamerican countries.	<ul style="list-style-type: none"> Mesoamerican System for Territorial Information (SMIT) 	Regional diagnosis of supply and demand of territorial information. Handbook of standards and procedures on use of territorial information in the region. Set-up of a territorial information system to reduce the risk of natural disasters.
HOUSING	Development of financing facilities to fill the housing gap and meet future housing needs.	<ul style="list-style-type: none"> Program for Development of Social Housing in Central America 	50,000 dwellings for low-income people through 40,000 loans for maintenance, improvement and widening of houses in form of micro-credits and 10,000 credits for purchase of houses by means of building financial bonds and credit insurance.
REGIONAL PUBLIC PROPERTY	Enhancement of regional production chains.	<ul style="list-style-type: none"> Fruit Growing Mesoamerican Project (PROMEFRUT) 	Framing and implementation of a regional cooperation framework to bolster fruit growing competitiveness in Central America (the Regional Public Property), turning the government sector into a strategic partner of fruit growers. At least three countries will take part in each project.

Based on data provided at: www.provectomesoamerica.org.

VI.1 Mesoamerican Multimodal Transport System (MMTS)²³

The transport agenda of Mesoamerica Project is aimed at establishing an effective Mesoamerican Multimodal Transport System (STMM) through development and improvement of road infrastructure, border crossings and ports; development of alternative, supplementary roads and standardization of regulations on transport, with a view to strategically linking the region to the world.

This project also includes an information system to back up decision making intended to remove existing bottlenecks in logistical performance, thus facilitating and bettering transport services by identifying the need for specialized logistical infrastructure, such as stores, distribution sites, service centres for trucks, multimodal infrastructure, logistical platforms, forward ports and dry ports, and through comprehensive management of urban distribution of commodities. This is a key factor in the value chain, its development and management, of the essence for a better logistical performance in the region.

²³ Source: M.A. Elayne Whyte Gómez, Executive Director, Mesoamerica Project. Presentation on "Building Infrastructure for Mesoamerican Integration," in the workshop "Regional meeting and cooperation points in Latin America." ECLAC, Santiago, Chile, 8 July 2010.

The Mesoamerica Project has taken a new approach to ascertain performance of transport services in the regions from a multimodal viewpoint. To that end, comprehensive studies covering railways, sea transport and roads are envisaged.

In March 2010, the multimodal transport agenda was reinforced by two additional non-reimbursable technical aids from the IDB in order to develop the Mesoamerican transport logistical chain – both international and national and regional – and also implement a sustainable concept of transport in the region.

- **Freight logistics in the Mesoamerican region (CTRG - T1660) (US\$ 1.5 billion).** The study will yield systematized information on freight flows and volume and trade variability as a tool for decision making.

- **Sustainable transport and climate change (CTRG- T1901) (US\$1 million).** The objective is developing a Mesoamerican Program on Sustainable Transport and Climate Change; making plans for sustainable transport in the region, and furthering vehicle mitigation measures to fight climate change through carbon bonds and green corridors (Green Logistics).

IV.1.1 Mesoamerican Network of International Roads (RICAM)

RICAM is made up of five highway corridors which total 13,149 Km of roads across the Central American region, from Panama to Mexico. These roads link major settlements, productive areas and distribution and shipment sites (Chart 2). The five highway corridors are:

Pacific Corridor: The objective is building, revamping and upgrading the integration highway corridor from the city of Puebla in Mexico to Panama City, along the Pacific coastline. Its implementation is sought through a selected project, the “Project to Speed Up the Pacific Corridor.” The corridor is 3,244 Km in length.

Atlantic Corridor: The objective is intertwining roads among Mexico, Belize, Guatemala, Honduras and Salvador, crossing areas in the tourist and archaeological interest in the land of Mayas. The corridor is 2,906 Km in length.

Branch lines and complementary connections: In addition to the Pacific and Atlantic corridors there are strategic roads to link said corridors with logistical sites (capital cities or major cities) and alternative routes. These sections total 4,073 kilometres.

Caribbean tourist corridor: Plans on building, recovery and improvement of a route that covers main Caribbean tourist sites, linking Cancun in Mexico with Trujillo in Honduras. It encompasses very important tourist development areas in Mexico, Guatemala and Honduras. A branch links the state of Tabasco in Mexico with the El Petén department in Guatemala and with Belize. This corridor is of an archaeological and historical nature, as it joins major Mayan cities, namely: Palenque, Tikal, Yaxha and Xunantunich, among others.

Inter-oceanic logistic corridors: Includes land corridors between the Atlantic and Pacific Oceans; connects ports with a logistic approach and taking into account the potential of becoming new inter-ocean, international routes for transport and trade. These corridors are:

1. La Unión Port (Salvador) – Cortés Port (Honduras).
2. La Libertad Port (Salvador) – Cortés Port (Honduras).

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3. Alajuela Port (Salvador), and the ports of Barrios and Santo Tomas de Castillo (Guatemala). (See details in the section related to this corridor).
4. Quetzal Port and the ports of Barrios and Santo Tomás de Castilla (Guatemala).
5. Limón Port / Moín with Caldera Port in Costa Rica.
6. Panama City and Colón in Panama.

CHART 2
MESOAMERICAN NETWORK OF INTERNATIONAL ROADS (RICAM)



SOURCE: Mesoamerica Project, August 2010.

In mid-2009, the MP Secretariat reported that 64.3% of roads were completed or in process and that 35.7% was near completion. At that time, US\$ 7.19 billion had been financed (70% public funds; 30% private funds), and US\$ 2.10 billion remained to be financed. In 2009-2010, Mesoamerican countries made headway with 682.95 km of paved roads. In May 2010, Ministers of Transport agreed to amend the INMR Memorandum of Association to include the roads requested by Colombia: Cross Street of the Americas and Highways of the Mountain.²⁴

In July 2009, the Pacific Corridor was defined as a priority project for the INMR. This corridor is a road of 3,244 km, 1,537 km out of which are in good conditions. The Pacific Corridor goes from Panama to Mexico; crosses seven countries and six borders, and it is the main logistic corridor. Through it 95% of the regional goods are carried and it is the shortest route. Table 5 shows the main characteristic features of this corridor. It should be completed by 2015 and become a “five-star” highway.²⁵

The current status of the Pacific Corridor is uneven, with poor sections. Border crossings are its main bottlenecks. Average speed of 60 km/tour is intended (presently, the speed averages 17-30 km/tour) so that a trip between Puebla and Panama can take 54 hours

²⁴ Mesoamerica Project. Executive Report 2009 – 2010. Cartagena de Indias, Colombia, 25 and 26 October 2010.

²⁵ Score by the “Road Protection Score” for roads which meet global standards on road security and infrastructure design.

(2.25 days), significantly reducing freightage as a result of fewer vehicle operating costs. Such infrastructure and less delay in border crossings are intended to substantially improve competitiveness in the region, increase trade, lower consumer prices and consolidate regional production chains.

The plan envisages paving, enlargement, revamping or duplication of roads and changes in the route of about 1,500 km; shorter distances and slopes; building of bridges; tunnels refit; standardization of weights and sizes of vehicles and reinforced road and individual safety. Total investment is estimated at US\$ 1.07 billion, including US\$ 10 million in IADB non-refundable investment for studies.

In December 2009, the IADB approved three technical aids which marked the beginning of the following works related to the Pacific Corridor:

- **Refurbishment, maintenance and operation of road sections of the INMR Pacific Corridor (RG-T1744):** Prepares all the studies on planning of investments, regulations, pre-investment and drafting of bids to ensure overhaul, extraordinary preservation, maintenance and operation of the whole Pacific Corridor for 20 years.
- **Definition of the operation and optimization of border crossings at the INMR Pacific Corridor (RG-T1662):** Helps enhance the Pacific Corridor border crossings by setting the most appropriate control procedure and making proposals on design and implementation of road access and necessary infrastructure on border sites, according to the controls to be implemented in order to reduce costs and time across the border.
- **Support to facilitation of customs and border crossings as part of the Mesoamerica Project (RG-T1645):** Implements a new system for international goods in transit (IGT) at the customs of the Mesoamerica Project countries.

TABLE 5
RICAM'S PACIFIC CORRIDOR (2009-2015)

Shortest route from Mexico to Panama: 3,244 km. It crosses six borders and seven countries, and serves to transport 95% of goods traded in the region.

GOAL: To turn the Pacific Corridor into a "five-star road" and the main logistic corridor for transport and trade integration in Mesoamerica. This programme includes:

REMODELING, MAINTENANCE AND OPERATION OF ROAD SECTIONS

- Investments at present and for the next 20 years
- Harmonization of Policies on Weights and Dimensions
- Road and Personal Security
- Security for transportation of goods.

MODERNIZATION OF INFRASTRUCTURE AND EQUIPMENT AT BORDER CROSSINGS

- Efficient operation at border crossings
- Installation of necessary infrastructure

IMPROVEMENT OF BORDER CONTROL PROCEDURES FOR CARGO AND PASSENGERS

- Implementation of the Mesoamerican Procedure for International Transit of Goods (TIM) at all border crossings of the Mesoamerican Project
- Use of the "Single Document" for transporting goods in the Pacific Corridor
- Integration of the information required by controlling authorities (customs, quarantine, migration)
- Automated management and monitoring of the transit process
- Cargo control based on risk analyses.

Taken from www.proyectomesoamerica.org.

The streamlining of border crossings and trade facilitation form an important part of the INMR. Therefore, it is intended to fit border crossings in world traffic standards.

IV.1.2 Short Haul Maritime Transport (TMCD)

Presently almost all the freight between Mesoamerican countries is carried by motor vehicles. Their passage across borders is frequently affected by slow movement, insecurity, the after-effects of natural disasters, the political state of affairs and multiple surcharges. For all these reasons, it is important to have an alternative to land transport which favours growth of the intra-regional trade. In this regard, given the privileged geographical location of the Mesoamerican isthmus, the establishment of Short Haul Maritime Transport (TMCD) as an alternative has been prompted.

This project, in the process of design, seeks to: 1. Ponder the feasibility of having the same maritime regulations in the region and update navigational charts; 2. Reach an agreement to standardize rates, and 3. Make a plan to set the investment needed in port infrastructure and potential routes.

For such purpose, the coordinator, the Panama Maritime Authority, submitted to the Inter-American Development Bank (IDB) the outline of a non-refundable technical cooperation project, called "**Action Plan for Development of Short Haul Maritime Transport.**" It is based on four major areas: customs procedures, port facilities, legislation and maritime rules and regulations. In this connection, with financial resources of the Fund for Initiatives for Regional Infrastructure Integration (FIRII), the IDB approved US\$ 1 million to finance a survey that will set a strategy on a regional port policy (from Mexico through Colombia) and improve short-distance maritime transport in the region. Investment will total US\$ 1.25 billion. The remainder will be financed with local offset funds, mostly in kind.

Such technical cooperation will make available at the end of 2010 a survey of trade in the service area, institutional design and management models for potential TMCD lines, as well as an analysis of port facilities, in order to have elements for a regional port policy from Mexico to Colombia and improve short-distance maritime transport in the region.

IV.1.3 Mesoamerican Railway System

The IDB worked on a Proposal on Terms of Reference which suggests a survey of the potential of railways in Central American countries and their linkage with Mexico. The survey will be split into two portions: Analysis of potentiality: General diagnosis and analysis of potential corridors, and Feasibility Study of Overhaul and Integration of the Railway System of the Countries of the Northern Triangle.

IV.2 Trade Facilitation²⁶

In the Mesoamerica Project, works on integration of transport infrastructure are completed with a project called Mesoamerican Procedure for International Goods in Transit (TIM). It is the operation of information technology systems and standardized procedures in border ports to enhance migration, customs and quarantine-related steps, included in a Transit Single Document (DUC).

An effective logistic transport chain is sought by joint efforts at analyzing freight logistics, transport services, measures on trade facilitation and customs, internal distribution costs and bottlenecks, for a better performance. Also, key performance indicators are sought to be defined with the support of focus groups in each country, by using a common methodology. The aim is identifying the size of freight transport, main flows, challenges faced by freight logistics and any issues related to trade facilitation.

The **Mesoamerican Procedure for International Goods in Transit (TIM)** seeks to improve the steps on border check with a view to reducing crossing time and facilitating haulage of load and passengers through a standard procedure including in one single paper all the information requested by customs, migration and photo-sanitary and zoo-sanitary authorities. The IGT project has three basic Axes: process redesign, information technology system and infrastructure betterment.

In this way, steps will be easier; costs associated with goods in transit will be curtailed because of simpler procedures, and the time of goods in transit across borders will be shorter. By decreasing costs and time associated with transport, competitiveness in the region will significantly increase.

TIM pilot tests on the Salvador-Honduras border (El Amatillo) and the Guatemala-Salvador border (Pedro de Alvarado-La Hachadura) started in July and August 2008, respectively, shortened the average time of goods in transit from more than one hour to less than eight minutes.

In a first stage, TIM has been implemented on border crossings from Mexico-Guatemala to Honduras-Nicaragua across the INMR Pacific Corridor (PC). More than 10,500 passages were completed in August 2010. A second stage, to be developed in the second half of 2010, seeks to implement the TIM on border crossings of Nicaragua, Costa Rica and Panama, as also on the Inter-ocean Logistic Corridor between Salvador and Guatemala.

²⁶ Source: Mesoamerica Project Web site.

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Customs and quarantine-related authorities in the region are working to fully implement the TIM in the Pacific Corridor (PC) by the first quarter of 2011 with the IDB support.

In July 2010, tests started on the border port of Hidalgo City, Mexico-Tecún Umán, Guatemala, Puente Ingeniero Luis Cabrera (Suchiate II). Ending this month, 960 TIM operations will be completed. About 70% of Mexican exports went to Salvador; the remainder went to Honduras and Nicaragua.

In 2010 works started to establish a Road Safety Mesoamerican System with non-refundable funds provided by the IADB. Ending 2010, a company will have been chosen and the terms of reference on the work to be developed will be completed.

IV.3 Energy Integration

Projects on energy integration are aimed at substantially improving a energy reliability and competitiveness in the Mesoamerican region based on a stronger electricity and energy sector in order to meet the regional electricity demand, further energy generation with renewable sources and consolidate a unique, world-class Regional Electricity Market (MER). The MER vision is establishing a market for exchange and marketing of electric power among Mexico, Central American countries, Panama and Colombia, thus reducing energy costs. Such projects are:

- 1) Infrastructure development
 - Electrical Grid for Central American Countries (SIEPAC)
 - Guatemala-Mexico Electrical Grid
 - Panama-Colombia Electrical Grid
- 2) Design of the institutional legal framework for the MER operation

The **Electrical Grid for Central American Countries (SIEPAC)** is a regional electrical transmission line of 1,788 km in length, distributed as follows: Guatemala, 282; Salvador, 287; Honduras, 270; Nicaragua, 309; Costa Rica, 489 and Panama, 151. In addition, 15, 300 MW substations will be built to establish a Regional Electricity Market (MER). Its regional agencies will be CRIE (regulating body) and EOR (the operating agency). It will start operations in 2011, in sections.

This infrastructure will reinforce the current electrical grid, resulting in a competitive regional electricity market as six different electricity grids will be joined.

Regulations on the MER are prepared by an Executive Unit of the Latin American Electrification Council (CEAC). Investments are estimated at US\$ 494 million, financed by the IDB. The MER started partial operations in 2010 and will be fully effective in 2011.

As to the electrical grid from Mexico to Colombia, building of the infrastructure between Mexico and Guatemala has been completed (US\$ 55.8 million). Additionally, 614 km of lines will be laid between Panama and Colombia.

The SIEPAC is in its final stage and will start operations at the end of 2011. This is an incentive for major projects on regional electric power generation. Now, they can be materialized. As of September 2010, the Company Owner of the Network (EPR) reported on the following strides:

- Design, studies and engineering: done.
- Authorizations and licenses: granted.
- EIA and environmental licenses: granted.
- Line and substations agreements: awarded.
- Right of way: 98%
- Forest and municipal authorizations: 96%
- Laying of foundations for electricity pylons: 91%
- Installation of electricity pylons: 87%
- Construction of access bays: 75%
- Wiring: 47%

CHART 3
ELECTRICAL INTER-CONNECTION SYSTEM FOR CENTRAL AMERICAN COUNTRIES (SIEPAC)



IV.4 Telecommunications Agenda

The Telecommunications Agenda has two components: 1) Mesoamerican Information Highway (MIH) and 2) Projects within the framework of the Forum of Telecommunications Senior Authorities.

IV.4.1 Mesoamerican Information Highway (AMI)

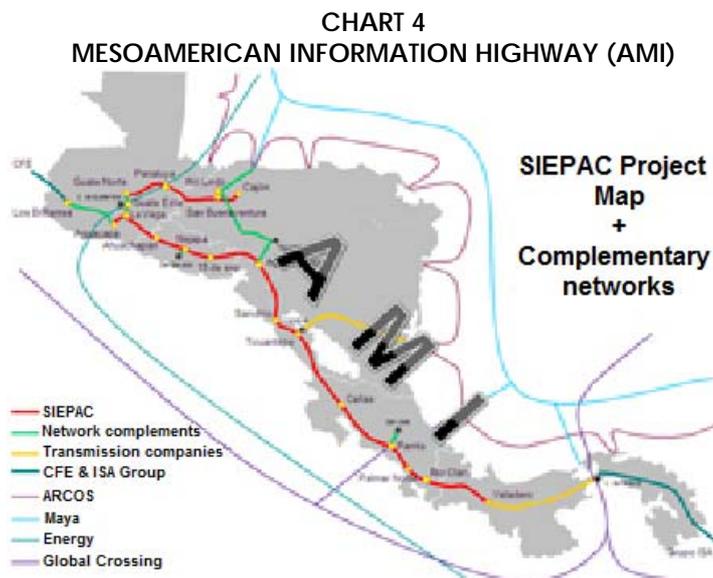
The Mesoamerican Information Highway (AMI) envisages broadband telecommunications infrastructure (fibre optic) to interconnect the countries of the Mesoamerica Project (Figure 4). Wiring is across the SIEPAC line and will carry an OPGW cable with 36 fibre optic. It will allow for a basic platform (DWDM) for convergence of different information signals. The telecommunications infrastructure is set to expand people's access to these services. The project also envisages the development of fibre optic national networks to connect the fibre optic trunk line with major capital cities,

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where consumption is recorded. Connection points are planned to be installed there to interconnect main operators in each country.

The AMI is aimed at meeting the needs of voice, data and image transmission and fostering extensive use of information technologies. This will help expand the access and bridge the digital gap. For such purpose, the infrastructure of the SIEPAC electric transmission line is used.

The fibre optic infrastructure which runs from Guatemala to Panama will be 95% completed at the end of 2010; it is expected to start operations in the second quarter of 2011.



The company Red Centroamericana de Fibras Ópticas, S.A. (REDCA) is a subsidiary of the Network Owner Company (EPR), responsible for operating fibre optic like a “carrier of carriers.” Pre-investment of the AMI was backed by the IDB, CABEL and COMTELCA.

A regional standardization regulatory project to operate the MIH is being carried out with IDB financial resources. The ECLAC is conducting a survey to recommend a model on operation and administration of the use capacity that will be available to Mesoamerican governments on the AMI fibre optic network. The survey will also help analyze probable uses; estimate the actual and potential demand of band width; recommend technology solutions and propose management and administration schemes for said capability.

IV.4.2 Projects within the context of the Forum of High-Level Authorities of the Mesoamerica Project in the area of Telecommunications

IV.4.2.1 Review of regulatory frameworks

With non-reimbursable financial resources provided by the IDB and the Telecommunications Regional Technical Committee (COMTELCA), a consultancy is carried out to draft the AMI legal framework. The expected outcome is a proposed political-regulatory strategy in the field of telecommunications, as well as development of

legal instruments for the effective operation of the AMI fibre optic network as a “carrier of carriers.”

IV.4.2.2 Regional integration of telecommunications services and strengthening of national networks

With regard to the first component, a diagnosis financed by the IDB is to be made in order to set mechanisms intended to reduce long distance and roaming rates among regional operators to the benefit of users.

As to the strengthening of national research and education networks, the intensive use of AMI infrastructure is sought as a tool of regional integration and socio-economic development. Stronger networks will result in better management and coordination, for two purposes:

- Utilizing National Research and Education Networks (RNIE) in the field of research among university centres inside countries and between them and the rest of the world through their linkage with the CLARA network.
- Attaining financial sustainability to ensure viability of the services supplied by networks.

IV.5 Assessment of the Economic Axis in the area of Physical Infrastructure for Integration of the Mesoamerica Project Balance

Central America is a region with a high degree of political, social, judicial, economic, trade and, now, physical integration.

The balance of the Economic Axis in the Project for Integration and Development of Mesoamerica attests to clear consolidation. This is the area where most results are yielded. Likewise, foundations of the Social Axis have been laid for a better quality of life in the region, mostly composed of indigenous, sidelined and poor people.

The economic axis for physical integration envisages extensive, cutting-edge multimodal transport, including simpler and easier trade.

Progress in the International Network of Mesoamerican Roads (RICAM) has been made at 50% of the construction and modernization works, that is, more than 6,600 km. Several border posts and crossings have been completed. Concomitantly, customs and border crossings have been streamlined, shortening up to 75% of the time in transit as part of the Mesoamerican Procedure of International Goods in Transit (TIM). In the context of the RICAM, the Pacific Corridor is the main axis for modernization of land transport.

Basic works of the Electrical Grid for Central American Countries (SIEPAC) have been built. The fibre optic cables of the Mesoamerican Information Highway (AMI), to start operations in 2011, have been laid. The TIM will foster extensive use of information technologies, reaching rural areas.

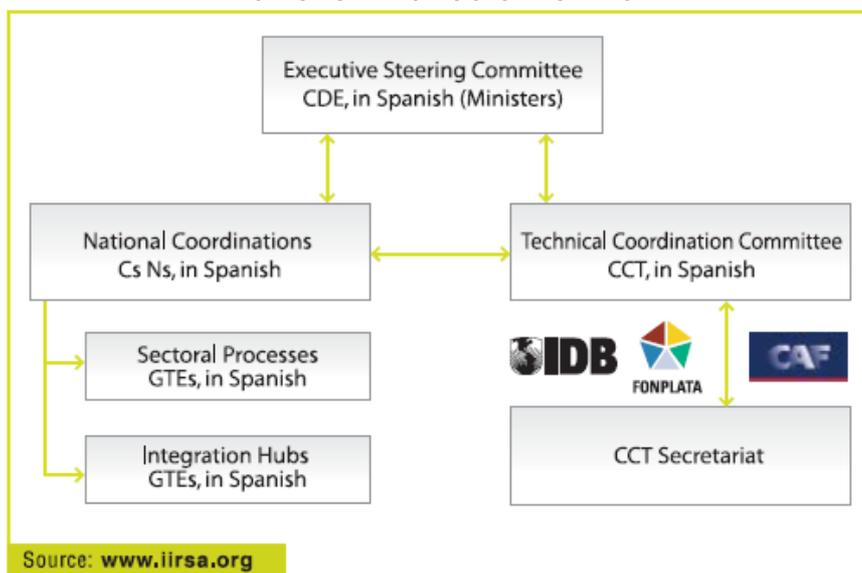
V. INITIATIVE FOR THE INTEGRATION OF REGIONAL INFRASTRUCTURE IN SOUTH AMERICA (IIRSA) ²⁷

The Initiative for the Integration of Regional Infrastructure in South America (IIRSA) is an initiative of the twelve South American countries. These countries are the members of MERCOSUR (Argentina, Brazil, Paraguay and Uruguay), the Andean Community (Plurinational State of Bolivia, Colombia, Ecuador and Peru) and Chile, Guyana, Suriname and the Bolivarian Republic of Venezuela. The IIRSA has a multinational, multi-sector and multi-task scope. It is aimed at developing regional transport, energy and communications infrastructure within a framework of competitiveness, environmental sustainability, social quality and institutional quality. Therefore, for the IIRSA, physical integration is a must for sustainable development.

The Initiative is aimed at improving regional infrastructure in South America as an all-encompassing geo-economic ambit; getting markets closer to support trade opening and investments, and fostering competitiveness. Further, it is aimed at making headway with standardization and convergence of regulations. All of this is within the framework of sustainable development and job creation and incomes in the area of influence.

The IIRSA is organized in four decision levels (Table 6): The Executive Steering Committee (CDE), National Coordination Offices (CN), Executive Technical Groups (GTE) and the Technical Coordination Committee (CCT).

**TABLE 6
INSTITUTIONAL STRUCTURE OF IIRSA**



The Executive Steering Committee, composed of high-ranking representatives, suggests policies in the field of coordination of plans and investments within the Action Plan; legal, regulatory and institutional frameworks and financing. Likewise, it ponders the technical proposals of the Executive Technical Groups (GTE) and the Technical Coordination Committee (CCT).

²⁷ IIRSA. Evolution of the IIRSA Initiative. Section I: General aspects. 2009.

The National Coordination Offices are responsible for the local implementation of the Action Plan, by means of activities with several national government sectors and other major sectors in society. CNs join efforts with the Technical Coordination Committee.

The Technical Executive Groups (GTE) are appointed by governments and established for each Integration and Development Axis and each approved integration sector process. They are of a technical nature, multi-sector and multi-task. They stop operations upon completion of the entrusted work.

The Technical Coordination Committee (CCT) is composed of the IDB, CAF and FONPLATA; it provides technical and financial support. The CCT has a Permanent Secretariat seated at the Institute for Latin American and Caribbean Integration (IDB-INTAL) in Buenos Aires.

The IIRSA promotes synergy of actions for regional physical integration with other areas in the regional integration process²⁸, the most significant outcome of which will be reducing asymmetries among the countries in the region, within a "South American Strategic Vision" in a 20-year term.²⁹ As a result of territorial analyses made to find bottlenecks and sections lacking infrastructure, working groups were established and entrusted with project development. Thus, while in 2004, 40 working groups covering 335 projects for an investment estimated at US\$ 37.42 billion had been established, in 2007, 41 groups covered 349 projects for an investment estimated at US\$ 60.52 billion.

By mid 2009 there were already 47 working groups encompassing 510 projects for an expected investment of US\$ 74.54 billion.³⁰ By 2010, the project portfolio of these 27 groups had been extended to 524 groups, with an investment estimated at US\$ 95.33 billion (Table 7).

²⁸ Comprising free trade, macroeconomic convergence, social and cultural integration, etc.

²⁹ García, Enrique (2009).

³⁰ IIRSA. 2009 Project Portfolio.

TABLE 7
SUMMARIZED PROJECT PORTFOLIO OF IIRSA BY INTEGRATION AND DEVELOPMENT AXIS – June 2010

I&D AXIS	N° Groups	N° Projects *	Estimated investment (US\$ millions) **
Andean Axis	10	64	8,416.1
Axis of Capricorn	5	72	9,421.4
Paraguay-Parana Waterway	5	95	6,677.3
Amazon Axis	7	58	5,400.7
Guyana Shield Axis	4	25	1,214.9
Southern Axis	2	27	2,713.0
Central Inter-oceanic Axis	5	55	5,525.1
MERCOSUR-Chile Axis	6	107	35,536.1
Peru-Brazil-Bolivia Axis	3	23	21,402.3
TOTAL	47	524	95,338.6

* The total number of projects and the total investment do not correspond to the total amount by Axis due to the existence of two hinge projects that are included in two different axes: the project "Construction of the Cascavel-Foz do Iguacu Railway" (CAP20 and HPP102) – in both the Capricorn and the Paraguay-Paraná Waterway Axes – and the project "Pircas Negras Border Crossing" (CAP77 and MCC108) – included in the Capricorn and the MERCOSUR-Chile Axes.

** This estimate does not take into account the investments made in the following ongoing projects, whose investments were mostly made before the start of IIRSA: AND01 "Santa Marta-Paraguachón-Maracaibo-Barquisimeto-Acarigua Corridor (existing)", corresponding to the Andean Axis; GUY01 "Caracas-Manaus" (existing road which requires refurbishment), corresponding to the Guyana Shield Axis; and MCC61 "Itaipu System (existing)", corresponding to the Mercosur-Chile Axis.

About 83% of the projects accounting for 76% of investments are nationwide; the remaining 17% includes projects shared by two or more countries, for 24% of the investments (Table 8).

Projects owned by each of the 12 countries which are part of the IIRSA Initiative are, in descending order, namely: Argentina 160, Brazil 84, Peru 67, Paraguay 63, Bolivia 48, Chile 48, Ecuador 45, Uruguay 44, Colombia 34, Venezuela 21, Suriname 10 and Guyana 9. All of this totals 524 projects, because the same project, if transnational, is replicated elsewhere.

TABLE 8
SCOPE OF THE IIRSA PORTFOLIO – June 2010

<i>SCOPE</i>	<i>PROJECTS (No.)</i>	<i>ESTIMATED PORTFOLIO (US\$ millions)</i>
National	433	72,182.16
Bi-national	79	19,801.63
Tri-national	9	2,974.35
Multi-national	3	380.50
TOTAL	524	95,338.64

SOURCE: IIRSA Web page.

However, a comparison of the economic endeavour of such projects for each country, or when comparing the value of the investment tied to the GDP (2009), as shown in Table 9, indicates that tied investments are around 81% of the GDP for Paraguay; 50-60% for Bolivia and Guyana; a fourth of the GDP in Suriname and Guyana, and 10% in Argentina; some 5% in Chile, Ecuador and Peru, and at 2%, 1% and almost 0%, in that order, in Brazil, Colombia and Venezuela.

TABLE 9
WEIGHT OF THE IIRSA PROJECT PORTFOLIO ON NATIONAL GDP
June 2010

COUNTRY	INVESTMENT (US\$ millions)	GDP 2009 (US\$ millions)	INVESTMENT/GDP (%)
ARGENTINA	31,760	308,740	10
BOLIVIA (P.S.)	10,168	17,340	59
BRAZIL	35,467	1,574,034	2
CHILE	8,834	163,305	5
COLOMBIA	3,053	232,910	1
ECUADOR	2,490	52,022	5
GUYANA	1,060	2,026	52
PARAGUAY	11,519	14,240	81
PERU	8,308	130,355	6
SURINAME	590	2,192	27
URUGUAY	7,419	31,511	24
VENEZUELA (B.R.)	1,943	325,399	0

Source: IIRSA and ECLAC.

Out of the 524 projects as of June 2010, 44% was completed or in process; 30% was in the pre-commissioning stage, and the remaining 26% was in the stage of design.

The order of importance per sector is transport, electricity and communications. As a matter of fact, transport covers 451 projects (86%) and investments for US\$ 54.61 billion (57%); energy, 64 projects (12%) for US\$ 40.68 billion (43%), and communications, 9 projects (2%) for US\$ 45 million, an insignificant proportion of less than 1%.

The initiative is premised on two action areas³¹: Integration and Development Axes (EID) and Integration Sector Processes (PSI).

³¹ Source: CAF Web site.

V.1 Integration and Development Axes (EID)

Integration and Development Axes are the geo-economic benchmark for land layout and planning. In the event of being a baseline for world trade, they would be transport corridors only. The aim is furthering development around them. Hence, they involve transport, energy and communications as development processes: furtherance of production systems; environmental programs; training; institutional and technology capacity building, etc. For such purpose, the land layout and planning of the South American territory was organized in multinational bands containing settlements, production, and actual and potential trade flows called Integration and Development Axes (EID).

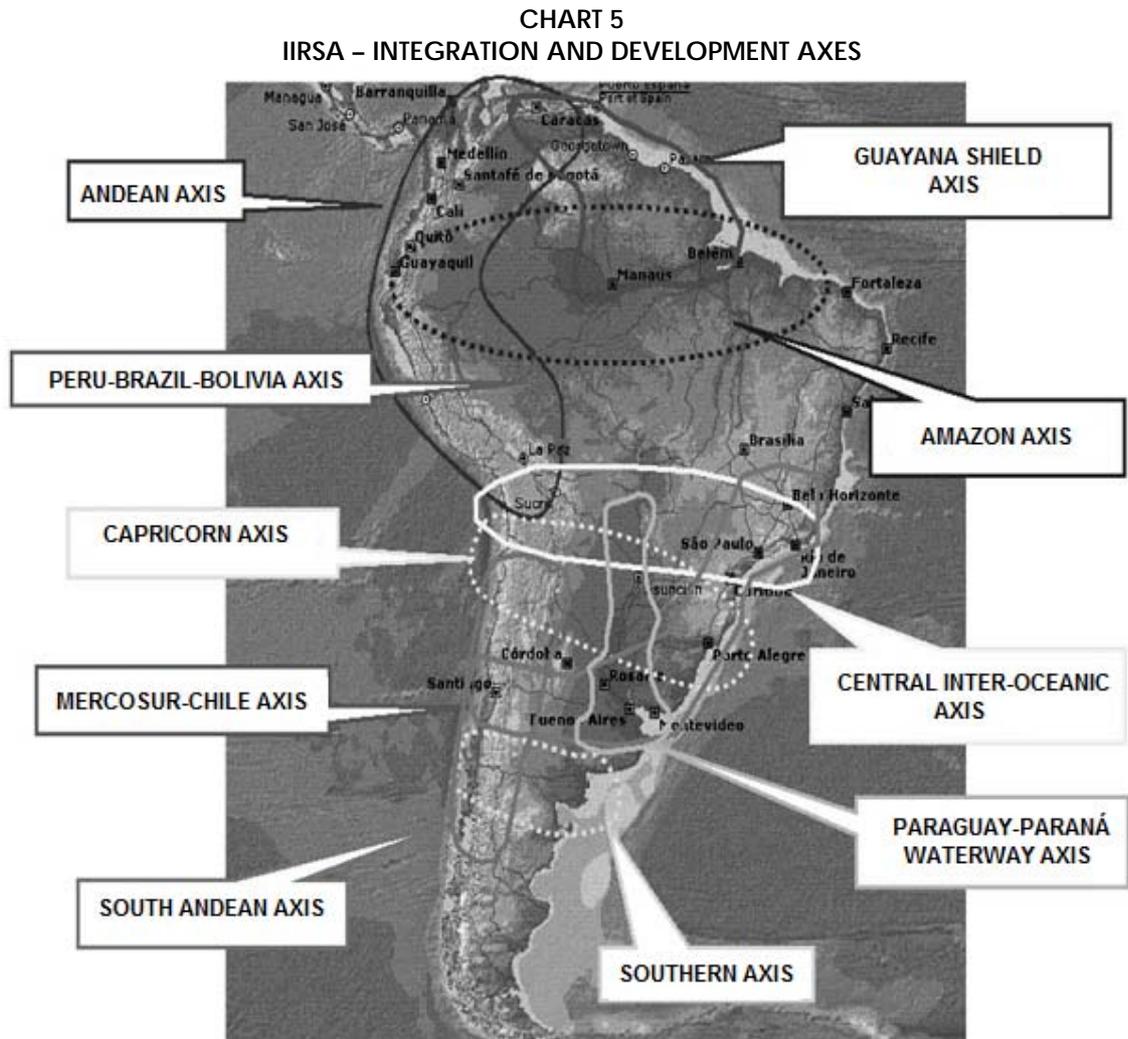
The EID are set to gradually converge towards a common standard of quality of infrastructure transport, energy and telecommunications services in order to back the relevant production activities and chains. The IDH are major South American sites which create or will likely create important investment and trade flows, with scale economies, either for consumption or export (Figure 5).

In defining and locating the 10 Axes, socio-political guidelines and technical criteria were used, namely: geographical coverage; intra-regional trade flows; potential flows, and environmental and social sustainability. The latter issue is related to the treatment of mega-diversity; acknowledgment of special ecological features, including protected areas, forest reserves and very fragile ecological areas, as well as advocacy of the rights of indigenous peoples.

The EID contribute to regional integration in the sectors of transport (roads, railways, sea and air transport), logistics, energy (generation, transmission and distribution) and telecommunications. Projects can be bi-national or multinational, according to how they distribute their benefits. They include two special types of projects: the Anchor Projects and the Hinge Projects. Table 10 lists briefly the EID.

The 10 Integration and Development Axes are as follows:

1. Andean Axis (Bolivia, Colombia, Ecuador, Peru and Venezuela)
2. South Andean Axis (Chile, Argentina)
3. Amazon Axis (Colombia, Ecuador, Peru, Brazil)
4. Capricorn Axis (Chile, Argentina, Paraguay, Brazil)
5. Guyana Shield Axis (Venezuela-Brazil-Guyana-Suriname)
6. Paraguay-Paraná Waterway Axis (Paraguay, Argentina, Uruguay, Brazil, Bolivia)
7. Central Inter-Oceanic Axis (Bolivia, Brazil, Chile, Paraguay and Peru)
8. MERCOSUR-Chile Axis (Chile, Argentina, Uruguay, Brazil)
9. Peru-Brazil-Bolivia Axis
10. Southern Axis (Argentina, Chile)



Source: García, Enrique. Infrastructure and Integration in Latin America. ICE Economic Bulletin No. 2974. 1 to 15 October 2009.

The IIRSA Strategic Goals for 2006-2010 ordered the Project Portfolio, updated the Business Vision of eight axes and completed the survey of the Business Vision of the Paraguay-Paraná Waterway. The South Andean Axis is pending.

V.1.1 Anchor Projects

An Anchor Project is the *raison d'être* of the Group, but not necessarily the major reason. However, it is the bottleneck or the missing link in the infrastructure network which hinders optimal use of the Group's joint efforts. An Anchor Project may be an existing project.

TABLE 10
IIRSA – INTEGRATION AND DEVELOPMENT AXES (EID)

IDH	AREA OF INFLUENCE	No. PROJECTS INVESTMENT US\$ Million	AIC PROJECTS FOR 2005-2010 No./US\$ Million
1. ANDEAN Large human settlements, clear standards on regional trade and physical integration; institutions available for integration.	Bolivia, Colombia, Ecuador, Peru, Venezuela	Transport/49 Energy/13 Communications/2 TOTAL/64 INVESTMENT: 8.416.1	3/117.5 In process: 2/115.5
2. SOUTH ANDEAN Bi-national border of 5000 Km; limited paved roads.	Chile, Argentina		
3. CAPRICORN Linkage of port facilities on the Atlantic and Pacific Oceans.	Antofagasta/Chile, Jujuy/Argentina, Asunción/Paraguay, Porto Alegre/Brazil	Transport/68 Energy/4 Communications/0 TOTAL/72 INVESTMENT: 9,421.4	2/70 In process: 0/0
4. PARAGUAY-PARANA WATERWAY Road linkage in axes 3, 8 y 9	Argentina, Bolivia, Brazil, Chile, Paraguay	Transport/85 Energy/7 Communications/3 TOTAL/95 INVESTMENT: 6,677.3	
5. AMAZON Intermodal networks including the Amazonian waterway network.	Colombia, Ecuador, Peru, Brazil	Transport/51 Energy/6 Communications/1 TOTAL/58 INVESTMENT: 5,400.7	4/1.527 In process: 3/1,212.8
6. GUAYANA SHIELD Linkage of the Brazilian Amazon with Caribbean markets.	Brazil, Guyana, Suriname, Venezuela	Transport/18 Energy/6 Communications/1 TOTAL/25 INVESTMENT: 1,214.9	4/119.1 In process: 1/3.3
7. SOUTHERN Linkage of the Atlantic and Pacific Oceans	Talcahuano- Concepción/Chile, Neuquén-Bahia Blanca/Argentina	Transport/24 Energy/3 Communications/0 TOTAL/27 INVESTMENT: 2,713	
8. CENTRAL INTER-OCEANIC Linkage towards the Pacific and Atlantic Oceans.	Bolivia, Brazil, Chile, Paraguay, Peru	Transport/51 Energy/2 Communications/2 TOTAL/55 INVESTMENT: 5,525.1	7/1,143.7 In process: 5/742
9. MERCOSUR – CHILE Large settlements, clear standards of regional trade and physical integration; institutions for the integration process.	Argentina, Brazil, Chile, Paraguay, Uruguay	Transport/90 Energy/17 Communications/0 TOTAL/107 INVESTMENT: 35,536.1	7/6,331.5 In process: 5/3,296.5
10. PERU-BRAZIL-BOLIVIA Exit to the Pacific Ocean.	Peru, Brazil, Bolivia	Transport/17 Energy/6 Communications/0 TOTAL/23 INVESTMENT: 21,402.3	2/1,065 In process: 1/1,053
MAILING AND ROAMING	All		2/2.9 In process: 2/2.9
TOTAL PROJECTS / VALUE		Transport/451 Energy/64 Communications/9 TOTAL/524 INVESTMENT: 95,338.6	31/10,376.7 In process: 19/6,426

SOURCE: IIRSA Web site. Project Portfolio as of June 2010; CAF Web site; García, Enrique. Infrastructure and Integration in Latin America. ICE Economic Bulletin No. 2974. 1-15 October 2009.

V.1.2 Hinge Projects

Hinge Projects link two or more EID or operate in more than one axis. There are two hinge projects:

1. Pircas Negras border crossing, belonging to the Capricorn and MERCOSUR-Chile Axes; and
2. Building of Cascavel-Foz de Iguazú and Cascavel-Guaira-Maracajú railways, belonging to the Capricorn and the Paraguay-Paraná Waterway Axes.

V.1.3 Implementation Agenda based on Consensus (2005 – 2010)

The “Implementation Agenda based on Consensus 2005-2010” (AIC) comprises 31 projects agreed upon by countries from the outcome of land layout and planning of the IIRSA Project Portfolio, with a high impact on the South American physical integration process. Such an Agenda, with its 31 strategic projects, was approved by the IIRSA Executive Steering Committee in November 2004 and submitted to South American Presidents at the Cusco Summit in December 2004.

With the “Implementation Agenda based on Consensus 2005-2010”, the attention and effort of all the 12 South American countries and multilateral agencies will focus on search for visible results in the context of the IIRSA, capitalizing on synergies and chances for coordination and agreement within the initiative. In this way, setting of priorities is easier in a context where, in some cases, there are tax constraints, limited capacity for public indebtedness and the need to reinforce the private sector involvement in infrastructure development. As of August 2009, progress made in the 31 AIC projects was as follows:

2 completed projects for US\$ 22 million:

- Bridge on Acre River (Peru-Brazil-Bolivia)
- Bridge on Takutu River (Guyana Shield)

19 ongoing projects for US\$ 6.42 billion:

- Duplication of Route 14 between Paso de los Libres and Gualeguaychú (MERCOSUR-Chile)
- Refit of Corridor Río Branco-Montevideo-Colonia-Nueva Palmira (MERCOSUR-Chile)
- Duplication of the section Palhoca-Osorio (Rodovia MERCOSUR), (MERCOSUR-Chile)
- 60 CH International Route (Valparaíso-Los Andes sector), (MERCOSUR-Chile)
- Gas pipeline of the Argentinean Northeast (MERCOSUR-Chile)
- Building of the Pailón-San José-Puerto Suárez Road (Central Inter-Oceanic)
- Toledo-Pisiga Road (Central Inter-Oceanic)
- Refurbishment of the Iquique-Colchane Road (Central Inter-Oceanic)
- Overhaul of the El Sillar section (Central Inter-Oceanic)
- Bi-national Safeguard Centre on the Desaguadero Border (Andean)
- Seaworthiness recovery across River Meta (Andean)
- Pasto-Mocoa Road (Amazonas)
- Paita-Tarapoto-Yurimaguas Road, ports and logistic sites (Amazon)
- Lima-Tingo María-Pucallpa Road, ports and logistic sites (Amazon)
- Pavement of Iñapari -Puerto Maldonado-Inambari, Inambari-Juliaca/Inambari-Cuzco (Peru-Brazil-Bolivia)
- Surveys of Boa Vista-Bombin-Lethem-Georgetown Road (Guyana Shield)

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- Export through mailing for SMEs (All)
- Enforcement of the agreement on roaming in South America (All)

10 ongoing projects for US\$ 3.92 billion:

- Building of the Jaguarao-Rio Branco international bridge (MERCOSUR-Chile)
- Los Andes-Mendoza railway project (MERCOSUR-Chile)
- Building of the Salvador Mazza-Yacuiba bi-national bridge (Capricorn)
- New Presidente Franco-Porto Meira bridge and border post (Capricorn)
- Sao Paulo railway ring (North and South) (Central Inter-Oceanic)
- Infante Rivarola-Cañada Oruro border crossing (Central Inter-Oceanic)
- Cúcuta- San Antonio del Táchira border crossing (Andean)
- Francisco de Orellana port (Amazon)
- Venezuela Road (Ciudad Guyana)-Guyana (Georgetown)-Suriname (Paramaribo) (Guyana Shield)
- Improvements on the Nieuw-Nickerie-Paramaribo-Albina road and international crossing on River Marowijne (Guyana Shield)

V.2 Sectoral Integration Processes (PSI)

Sectoral Integration Processes (PSI) pursue convergence of standards and institutional mechanisms to help remove barriers and regulatory, legal, operational and institutional constraints which prevent the effective use of infrastructure. This will allow for free trade of goods and services inside the region.

IIRSA has been working on seven PSI:

- Financing facilities for regional physical integration projects
- Energy integration
- Easier border crossings
- Information and Communications Technologies (ICTs)
- Air transport operational systems
- Sea transport operational systems
- Multimodal transport operational systems

The project on “**Exports through mailing for micro, small and medium-size enterprises (MSMEs)**” fosters the inclusion of said enterprises in the world market through the implementation of a simplified export system using the mail logistic platform. The purpose of this project is implementing in the 12 IIRSA Member States: (i) a **simplified export system** to help reinforce South American MISMEs, giving them ready access to the world market through simpler export arrangements, and (ii) a **logistic solution** based on the use of mail infrastructure of public operators.

The project is presently backed by the IDB/MIF through non-reimbursable technical cooperation that has helped implement the service in Peru, Uruguay and Colombia. Works are being carried out for its design and implementation in Ecuador. FONPLATA sponsored a pre-diagnosis visit for the implementation of the project in Argentina and Uruguay. Additionally, in the case of Peru, there are other stockholders, such as the World Bank, which backs the project through the “Project for better productive supply and easier foreign trade.” It has been developed in Peru since 2003. Furthermore, the IDB has recently supported the pre-diagnosis in Chile and Bolivia. Together with CAF, it is supporting the diagnostic stage in Argentina.

CHART 6

IIRSA - IMPLEMENTATION AGENDA BASED ON CONSENSUS 2005-2010

V.3 Current State of Affairs³²

According to the IIRSA Secretariat database, by December 2009, 74% of the 510 projects showed significant strides, with an investment of US\$ 68.14 billion. Thus, 10% had been completed (US\$ 6.17 billion); 36% (US\$ 37.37 billion) was in process, and the remaining 28% (US\$ 24.59 billion) was in the stage of preparation. The balance, 26%, was at the profile level.

Ending 2010,³³ out of 512 projects of the IIRSA portfolio, 74.6% (382 projects) showed specific results: 52 projects had been completed (10.2%), 184 were in process (35.9%) and 146 were in final preparation (28.5%). In terms of investments, completed projects accounted for US\$ 6.20 billion (8.3%); ongoing projects totalled US\$ 37.66 billion (50.2%) and the projects final preparation amounted to US\$ 24.99 billion. To sum up, out of the investments estimated at US\$ 75.08 billion for the 512 projects, progress had been made in 382 projects, accounting for US\$ 68.86 billion in investments, or 92%.

³² IIRSA. Report; sections I and II, 2009.

³³ Figures presented in Cipoletta, Georgina, Patricio Rozas, Ricardo J. Sánchez and Varinia Tromben. *Políticas de Infraestructura y Transporte en América Latina: Restricciones al Desarrollo y a la Integración*. Mundo Nuevo Review. Simón Bolívar University of Venezuela. Caracas, year II, No. 4, July – December 2010.

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According to Table 11, as of June 2010 with additional 14 projects, progress had been made in 74% (386 projects) and 26% was at the profile level (138 projects).

TABLE 11
Summary of the IIRSA project portfolio by stage of execution
(June 2010)

EID	Total number of projects	Projects at profile level	Projects in pre-execution stage	Projects in execution stage	Completed projects
Andean	64	16	9	29	10
Capricorn	72	13	35	18	6
Paraguay-Paraná Waterway	95	36	35	19	5
Amazon	58	20	14	22	2
Guyana Shield	25	10	1	7	7
Southern	27	6	9	9	3
Central Inter-Oceanic	55	8	16	25	6
MERCOSUR-Chile	107	24	30	40	13
Peru-Brazil-Bolivia	23	6	10	6	1
TOTAL	524	138	158	175	53

Source: IIRSA.

The Implementation Agenda based on Consensus (AIC) will show substantial strides ending 2010, as 27 projects are expected to be completed or significantly advanced (87%), 2 moderately advanced (6.5%) and 2 slightly advanced (6.5%).

In 2009, development of the GeoSUR Program continued. This tool includes a Geo-portal, a Map Service Network, Geospatial Catalogues, maps derived from elevation and base maps of South America. Likewise, an automatic link between the Map Regional Service (MRS) of GeoSUR, the IIRSA Web site and the Projects Data Base was implemented.

As a result, according to the quoted source, the IIRSA has made headway with planning and implementation of physical integration projects for South America. However, there is still a long way to go, in line with the objectives initially set to complete the infrastructure projects and particularly to attain the objectives of the Integration Sector Processes (ISP), given their importance as a mechanism for regional development and integration.

Also, the initiative faces the challenge of more direct involvement in the economic and political fields of existing integration processes in their geographical area, in order to get an institutional status and the financing, regulatory and operational mechanisms needed to attain its objectives.

VI. FINANCIAL COOPERATION

In shaping infrastructure projects, perhaps the most important challenge to face after decision making is financing. Nevertheless, many analysts agree on saying that infrastructure-related "expenses" are among the first items sought by governments in the face of a tax adjustment policy. Therefore, short-term tax strategies influence long-term development policies, including selected actions to develop strategic projects.

In the Mesoamerica Project, financing of the regional action comes from the funds used by Member States to implement the initiatives and from the important technical and financial support of the Inter-institutional Technical Group (ITG): the Inter-American Development Bank (IDB), Central American Bank for Economic Integration (CABEI) and the Andean Development Corporation (CAF). For instance, investment in the SIEPAC project of the Mesoamerica Project totals US\$ 494 million, covered by the six participating Central American countries and three extra-regional partners (ENDESA of Spain, ISA of Colombia and CFE of Mexico) through financing of the IDB, CABEI, BANCOMEXT and CAF. The Mexico-Guatemala electrical grid opened in October 2009 with a US\$ 3.1 million investment.

The source of funds is distributed as follows: contribution for capital stock US\$ 58,500; Inter-American Development Bank (IADB) US\$ 253,500; Central American Bank for Economic Integration (CABEI) US\$ 109,000; Andean Development Corporation (CAF) US\$ 15,000; shareholders' loans US\$ 13,500; and BANCOMEXT loans US\$ 44,500. Also, additional three technical aids for US\$ 9.1 billion provided by the IDB were requested, approved and used for the preparatory technical work. The Panama-Colombia electrical grid project is being conducted with three non-reimbursable technical aids from the IDB for US\$ 3.1 billion.

IIRSA counts on the financial and technical support of the Inter-American Development Bank (IDB), the Andean Development Corporation (CAF), the Caribbean Development Bank (CDB), the National Bank of Brazil for Economic and Social Development (BNDES), FONPLATA, domestic budgets and many related agencies from the private sector.

As checked by the CAF, the World Bank (WB), the Inter-American Development Bank (IDB) and the Andean Development Bank (CAF) are the main multilateral sources of financing in Latin America and the Caribbean. In 2000-2008, these three agencies approved credits for infrastructure for US\$ 41.92 billion, as follows: CAF, US\$ 16.65 billion (40%); IDB, US\$ 13.68 billion (33%) and the WB, US\$ 11.58 billion (27%).

VI.1 Inter-American Development Bank (IDB)

The IDB has allotted near US\$ 1.5 billion to the MP programs. Among multilateral agencies, the IDB is the major sponsor of the MP. It provides most of the technical aid and funding for regional activities. Ending 2009 technical aids totalled 84 for US\$ 57 million. They act as stand-alone support and pre-investment for a portfolio of 38 loans totalling US\$ 1.72 billion. The IDB also plays a leading role in the political agenda concerning the MP and coordination of its multiple sector forums. In the area of infrastructure, the support to pre-investment provided by the IDB to these projects mainly comes from the Fund for the Financing of Technical Cooperation for Initiatives for Regional Infrastructure Integration (FIRII).

The IDB is involved in IIRSA at different levels. In addition to technical aid and funding for the projects of the initiative, the IDB is also responsible for the dissemination of updated information on IIRSA and the progress made. The IDB has staff engaged in coordination of the parties to the initiative; an IDB official presently heads the Secretariat of the Technical Coordination Committee, located in Buenos Aires, Argentina.

Through June 2009, the IDB had approved a total amount of US\$ 10,897,595 to carry out studies for the IIRSA Initiative.

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On 20 July 2010, the IDB President reported that the agency would allocate US\$ 1.8 billion annually over the next ten years to back integration projects in Central America, South America and the Caribbean.

The following table lists non-reimbursable technical aid in transport, granted to the MP national governments by the IDB. The work plan envisages the completion of pre-feasibility studies in 2012 and infrastructure refit and streamlining in 2015 (Table 12).

TABLE 12

IDB – Non-reimbursable Technical Cooperation for Transport in the Mesoamerica Project			
Axis	Ongoing	Short term	Medium term
IMPROVEMENT OF BORDER CONTROL PROCEDURES FOR CARGO AND PASSENGERS	Technical Cooperation Pre-Investment: US\$ 900,000 (IDB)	Shorten time at border crossings Reduce management costs for administrations and logistics operators Improve fiscal controls Protect the interests of the region	
MODERNIZATION OF INFRASTRUCTURE AND EQUIPMENT AT BORDER CROSSINGS	Technical Cooperation Pre-Investment: US\$ 1 million (IDB)	Investment projects ready for bidding process	Border crossings in accordance with high-level international standards
REFURBISHMENT, MAINTENANCE AND OPERATION OF ROAD SECTIONS	Technical Cooperation Pre-Investment: US\$ 6 million (IDB)	Investment projects ready for bidding process	Roads in accordance with high-level international standards

Source: IDB Web page.

VI.2 Andean Development Corporation (CAF)

Five out of the 18 CAF Member States take part in the Mesoamerica Project: Colombia, Costa Rica, Mexico, Panama and the Dominican Republic. For their part, 10 out of the 12 Member States of the IIRSA Initiative are stakeholders in the CAF: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela.

In mid 2009, the Andean Development Corporation (CAF) had spent US\$ 2,619,047 in technical, environmental and social feasibility studies, as well as engineering of the road corridors of the IIRSA Initiative.

Within the CAF loan portfolio, 30% has been used in transport and communications and 27% in electricity, gas and water.

According to its 2009 report, the CAF has extended loans to the Mesoamerica Project for US\$ 655.5 million and to the IIRSA Initiative for US\$ 5,655.4 million.

VI.3 Central American Bank for Economic Integration (CABEI)

From 1960 to 2009, the CABEI lent about US\$ 14.9 billion, 24% of which went to infrastructure; 18% to electricity and water, and 9% to transport and communications. In 2000-2010 (first quarter), 36% of the loan portfolio went to productive infrastructure and 17% to energy. Within the 2010 Operational Plan, the CABEI plans to disburse US\$ 1038.8

billion, 39% of which will be spent in infrastructure and productive equipments and 29% in energy.

VI.4 Development Bank of Brazil (BNDES)

It is the largest development bank in Brazil. It finances long-term investments in industry and infrastructure. With regard to investments in infrastructure, in 2010-2013, the BNDES plans to fund projects for about US\$ 214 billion reales, namely: electric power 92; telecommunications 67; clean-up 39; railways 29; roads 33 and ports 14. This is a 37.3% increase compared with 2005-2008.

VI.5 Financial Fund for Development of the Plata Basin (FONPLATA)

The FONPLATA established the Fund for Development of Regional Integration Projects of its Member States. Through 2009, the funds provided by FONPLATA to back IIRSA projects totalled US\$ 3,326,891. FONPLATA Member States are Argentina, Brazil, Chile, Uruguay and Paraguay. The organization takes part in the following regional integration efforts:

- Inter-government Coordinating Committee of the Countries of the Plata Basin (CIC).
- Inter-government Committee of the Paraguay-Paraná Waterway (CIH).
- Initiative for Regional Integration of the South American Infrastructure (IIRSA)

FONPLATA takes active part in the activities of the IIRSA Initiative, as a member of the Technical Coordination Committee (TCC). It provides technical and financial resources to implement the Action Plan outlined by the 12 Member States and backs several stages in the fields of Integration Axes and Sector Processes.

Specifically, FONPLATA has financed development of the Business Visions of the three Integration and Development Axes, of the essence for the countries of the Southern Cone.

- MERCOSUR-Chile Axis
- Capricorn Axis
- Parana-Paraguay Waterway Axis (in process)

VI.6 Complementary Financial Mechanisms

In the second decade of the 21st Century, the demand for infrastructure services in the region is expected to increase significantly despite recent advances, deemed as very important but not enough. Therefore, policies and mechanisms are suggested to spur public and private investments in this area³⁴, from regional joint planning and action. Search of new sources and financial instruments, and new methods to estimate budgets and tax goals are suggested from enhanced current regulations.

According to the World Bank, and ratified by the World Economic Forum, LAC should invest between 2.5% and 6% of its GDP to develop, enlarge and revamp its physical infrastructure in order to catch up with world standards or more developed regions, such as South Asia. Such a challenge is limited by the allocation of state funds and the potential of increasing public indebtedness.

³⁴ ECLAC. *Crecimiento, Infraestructura y Desarrollo Sostenible*. Chapter 4 of paper "Desarrollo Productivo en Economías Abiertas". Santiago de Chile, 11 June 2004. LC/G.2234 (SES.30/3).

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In order to complete state funds for long-term investments in building, maintenance and replacement of physical infrastructure, multiple studies have proposed several alternatives, namely:

- Public-private partnerships
- Incentives to private investment
- Access to private capital markets
- Institutional savings, particularly pension funds and insurance companies
- Novel credit operations
- Fuel consumption tax, based on the experience of the U.S. program *user's fee*³⁵

VII. COORDINATED PLANNING FOR INFRASTRUCTURE DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN

Development of physical infrastructure is a multi-disciplinary, multi-institutional and multi-territorial process where various authorities are involved and different economic and social local, regional and even transnational communities are affected.

Steps towards convergence require LAC to find a formula to work as an integrated entity. In this regard, the objectives, principles and policies for planning in the Mesoamerica Project, the IIRSA Initiative and, of course, national planning authorities of the LAC countries should be taken into consideration. However, as stated by ECLAC experts,³⁶ "increasing investment on its own is not enough, but there is also a need for better investment."

To that effect, before improving funding and investment in infrastructure, the way of State planning, assessment, monitoring and surveillance of the works should be revised to make sure that such investment is to have the expected social impact. Coordination and inspection mechanisms should also improve, and consultation and coordination bodies along with the private sector and, particularly, with final users of infrastructure and transport services, should be established.

According to the same source, transport and related policies are usually analyzed and implemented in a multimodal manner, where infrastructure is planned in a ministry and implemented by another, and services are regulated by a third party which was not involved in the design. At the end of the day, logistics is put aside, even though its key role in increasing competitiveness has been acknowledged.

Therefore, in LAC there is the need to improve the way of planning and decision making concerning investments in infrastructure, and to improve the way of regulating the operation of transport services to effectively solve the complex troubles that affect them.

³⁵ Guillermo Laura in: *Red de Autopistas de Suramérica*, Perspectiva Review, 17th edition of 2008), estimates that a surcharge of US\$ 10 per liter for 30 years would pay about US\$ 200 billion for the building of some 60,000 kilometers of highways in South America.

³⁶ Cipoletta, Georgina, Patricio Rozas, Ricardo Sánchez and Varinia Tromben. *Políticas de Infraestructura y Transporte en América Latina: Restricciones al Desarrollo y a la Integración*. In: Mundo Nuevo Magazine. Simón Bolívar University. Caracas, year II, No. 4 (July-December) 2010.

VII.1 Methodology proposed by the Mesoamerica Project for Regional Action

In the opinion of the Executive Director of the Mesoamerica Project,³⁷ addressing the provision of infrastructure from a regional approach requires a clear objective to complete national and sub-regional actions through joint analysis in order to:

- Coordinate planning (national, sub-regional and regional)
- Coordinate interests and priorities
- Deal with differences in legal frameworks and institutional designs which could delay the execution of works
- Develop financing facilities
- Build infrastructure
- Define the need to adopt common regulatory measures
- Reduce trade costs
- Develop scale economies

Successful regional projects go through different stages. Therefore, in order to estimate the costs of joint action or regional integration and improve their efficiency and effectiveness, allocated funds in each stage should be identified. In this regard, three basic stages should be considered:

Stage I: Making of the regional agenda

At this stage, countries agree on the matters intended to work on jointly, the type of involvement, objectives, expected results and implementation and follow-up mechanisms. At this stage, important transnational communication input is required, such as meetings, workshops, video-conferences, and otherwise to discuss the topics, prepare agendas and make proposals with a strong negotiation component.

Stage II: Taking regional action

Diagnosis of the regional situation based on the assessment of legal, institutional, technical, financial, and infrastructure capabilities in the countries, in order to set a common standard and the involvement needed to attain it. The more "regional character" sought in a proposal, the more preparatory work to build a regional platform. Usually, this could result in a new layer of structures and legal, institutional and technical capabilities. This significantly heightens investments and extends the time needed before the stage of development, implementation and follow-up.

Stage III: Development or implementation of projects

Projects are aimed at:

- Fostering infrastructure development.
- Establishing and/or reinforcing legal, institutional and technical capabilities.

³⁷ Whyte Gómez, Elayne. Executive Director, Mesoamerica Project. *El capital humano y la infraestructura productiva en Centroamérica: Evaluación de la situación actual y desafíos pendientes*. Central American Bank for Economic Integration. Tegucigalpa, Honduras, 24 September 2010.

VII.2 Case of regional planning in LAC: IIRSA³⁸

IIRSA has developed several planning, priority and project management tools on territorial dimension and regional vision of infrastructure, and towards the integration of other sectors in addition to transport, energy and communications, bearing in mind the most relevant social, economic, environmental and competitiveness issues.

Development of the following tools has been the breeding ground for the implementation of projects within the IIRSA Initiative and has reinforced the planning technical capabilities of Member States:

Environmental and social assessment with a strategic approach (EASE): Land layout and planning that allows for identifying with a preventive approach the actions to enhance, from the socio-environmental view, the positive effects of the projects in the IIRSA portfolio and minimize negative impacts.

Analysis of the potential of productive integration and development of added-value logistic services (IPrLg): Land layout and planning to identify the chances of productive development and removal of bottlenecks from the logistic flows that are being developed in the areas of influence of the IIRSA project clusters.

Information system for strategic management (SIGE): Management tool developed to administer priority projects in the Implementation Agenda based on Consensus (AIC). This tool yields monitoring and information management mechanisms, thus facilitating decision making for more efficient implementation of infrastructure projects.

Projects data base: Information technology system aimed at consolidating information regarding the projects of the IIRSA portfolio. The data base allows sharing general information on each project and information related to the project cycle. It helps to make queries and classify data according to several criteria, thus providing users with appropriate information to prepare reports and make analyses.

Assessment of infrastructure transnational projects: This methodology helps apportion costs and benefits of multinational projects among participating countries for easier funding.

Geo-referenced Information System – GeoSUR Program: Tool that backs planning through a geo-referenced information system and a specialized geo-portal to query into geo-spatial data of Latin American institutions.

VII.3 Case of extra-regional planning: European Community

Learning from other regional experiences might be helpful for Latin America and the Caribbean. For instance, the European Community Freight Transport Logistics Action Plan was agreed in 2007, following consultations between public and private parties in order to make a community policy aimed at striking a balance in the need for efficient, sustainable and safe transport.³⁹ Such regional Action Plan takes note of the basic triad to develop transport infrastructure: infrastructure, transport and logistics.

³⁸ Web site: www.iirsa.org.

³⁹ See: Cipoletta, Georgina, Gabriel Pérez and Ricardo Sánchez. *Políticas Integradas de Infraestructura, Transporte y Logística*. ECLAC. Santiago, Chile, May 2010.

In its preparation, the growing importance of logistics for regional competitiveness was borne in mind, based on events such as globalization, increasing haulage across the regional infrastructure, geographical growth of the European Community, joint-management issues in different means of transport, environmental pollution, accidents, and impact of fuel prices on transport, among others. Furthermore, freight is expected to increase 50% by 2020, thus worsening the situation.

The Action Plan rests on the following pillars:

- Co-modality: efficiency in all means of transport and a smart system able to overcome obstacles for multimodal operation
- Innovation: use of ICTs in logistics and transport
- Simplification: use of single windows and other mechanisms for trade facilitation
- Quality and efficiency: dealing with bottlenecks in infrastructure and services; professional capacity building; cooperation among the parties involved; prompt solution for investment policies
- Sustainability: development of safe "green corridors"
- Update of legal frameworks: standardization of rules and definition of regional standards, such as weight and size

The Plan main policies include:

- Infrastructure: identifying and removing bottlenecks
- ICTs: use of community networks (rulemaking; automated procedures at ports and airports; single window for multimodal networks in Europe)
- Research, development and reinforcement of capabilities
- Certification of the logistic profession, logistic quality indicators and transport mark of quality
- Standards: world regulations on multimodality and standardization of European rules on freight

VIII. RECOMMENDATIONS

In order to take advantage of the opportunities offered by regional integration in Latin America and the Caribbean, it is necessary to adopt a Joint Agenda focused on the following aspects:

- Development of a wide coverage of physical infrastructure for transport, as well as communications and electrical interconnection
- Reduction of logistical costs according to international figures and standards
- Adoption of automated instruments for trade facilitation⁴⁰
- Upgrade, standardization, simplification and linkage of trade agreements and regulations throughout the region.

Without a doubt, one of the main challenges hindering progress towards true integration of the region is poor development of physical infrastructure to enable connectivity. ECLAC, the World Bank and the IDB agree to suggest a regional or sub-regional goal of investing about 5% of GDP in infrastructure – taking into account the specific features of

⁴⁰ See SELA document: Recent developments in trade facilitation in Latin America and the Caribbean. *SP/CL/XXXVI.O/Di N° 20-10*.

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each sub-region or country – and to create regional or sub-regional financial funds with resources from the public sector, financial institutions and regional development banks.

The agendas of integration mechanisms have already included this issue, but there is still a long way to go, especially if we bear in mind that a considerable increase in demand for infrastructure services is expected in the region during the next decade. For this reason, a suggestion is made to design policies and mechanisms to encourage public and private investments in this area, based on a process of regional planning and joint action, which includes a search for new financial sources and instruments, as well as new methodologies to calculate budgets and fiscal goals, so as to improve existing regulatory frameworks.⁴¹

Therefore, a regional action involves the creation of an institutional framework for coordination and joint action in order to:

- Coordinate planning (national, sub-regional and regional)
- Coordinate interests and priorities
- Deal with differences in legal frameworks and institutional designs which could delay the execution of works
- Develop financing facilities
- Build infrastructure
- Define the need to adopt common regulatory measures
- Reduce trade costs
- Develop scale economies

Such institutional framework could be set up on the basis of existing structures in the Mesoamerica Project and IIRSA, which count on the institutional support and resources of financial institutions with continental scope such as the IDB and regional organizations such as CAF, CABI and FONPLATA. Both MP and IIRSA have focused their activities on the developing projects that combine transport infrastructure, energy and telecommunications, coupled with a boost to social development.

In addition to a regional vision of the planning process, it would be crucial to identify financing modalities, including public-private partnerships for infrastructure development in the region. To this end, it would be advisable to know experiences as regards best practices to secure funding.

Knowledge about the regulations in force for development of physical infrastructure must be taken into consideration in order to boost convergence of efforts to promote regional integration. It would be advisable to think of a Regional Observatory for Infrastructure Development to determine the type of projects to be developed, the areas for opportunities, the ways to participate and the funding required. Such Observatory could be based on the experiences gained by the Mesoamerican Project and IIRSA.

In addition to the numerous national and subregional experiences, it is worthwhile considering other experiences, such as that of the European Union as regards regional planning processes in the area of physical infrastructure for integration, which includes three basic components: i) investment in physical infrastructure as such, ii) convergence and harmonization of instruments for transport and communications, and iii) facilitation and promotion of logistics.

⁴¹ ECLAC. *Crecimiento, Infraestructura y Desarrollo Sostenible*. Chapter 4 of the document “*Desarrollo Productivo en Economías Abiertas*”. Santiago, Chile, 11 June 2004. LC/G.2234(SES.30/3).

Electricity interconnection in the region is also a goal that should be kept on top of the regional agenda for physical infrastructure in Latin America and the Caribbean.

It is urgent to adopt a joint treatment for development of the transport sector in order to foster multimodal transport, standardize regulations on the operation and requirements for access to the transport market, share regulations on weight, size and insurance of land transport, build railroads, develop port facilities and cabotage, increase the size, efficiency and competitiveness of air transport, and simplify and automate regulations and operations of border crossings.

Furthermore, physical infrastructure fundamentally involves developing telecommunications as the basis for enhancing development of the productive sector in the region. Strategies such as ECLAC's eLAC, CARICOM's Information Society (CARIB-IS), the Mesoamerican Information Highway (AMI), and IIRSA's Sectoral Integration Process in the area of ICTs, promote access and use of ICTs. To that end, it would be highly valuable for the productive sector of the region and, in general, to promote integration so that such mechanisms could exchange experiences as regards the development of communications infrastructure and regulations. Thus, they could identify areas of convergence and cooperation towards the creation of a regional agenda for the development of communications infrastructure.