

Transport: the state of affairs in landlocked developing countries of Latin America, through June 2009

This edition of the FAL Bulletin examines the state of affairs of transport in the Plurinational State of Bolivia and Paraguay, along with their transit countries. The information herein is an update of Bulletin 262 of June 2008. The authors of this document are: Georgina Cipoletta Tomassian, Gabriel Pérez Salas and Ricardo J Sánchez of the Infrastructure Services Unit of ECLAC. For more information, please contact trans@cepal.org

The situations of Landlocked Developing Countries (LLDC) and the problems they face are of utmost importance to the United Nations system. Therefore, the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS), in close coordination with the Economic Commission for Latin America and the Caribbean (ECLAC), periodically analyses the state of affairs of Latin America's two LLDCs: the Plurinational State of Bolivia and Paraguay, in order to assess and assist in resolving problems they encounter and to coordinate actions with their transit countries: Argentina, Brazil, Chile, Peru and Uruguay.

This report, which was presented in July 2009 to the United Nations-accredited ambassadors of the Plurinational State of Bolivia and Paraguay, presents information about these countries that covers the first half of 2009 and proposes a number of follow-up activities that will lead to meeting the objectives of the Almaty Programme of Action (see FAL Bulletin 262 for more information about this plan). The event was held at United Nations Headquarters, in New York, and was organized by ECLAC, UN-OHRLLS and the office of the regional commissions at Headquarters. In addition to the countries already mentioned, delegations from two transit countries, Brazil and Chile, were in attendance, as well as representatives of Germany, Ecuador, Guatemala, Mexico, Thailand and numerous system staff members, a gathering that engendered a fruitful atmosphere of collaboration and sharing about proposals for the future.

One of the main outcomes of this meeting was the recognition that the Plurinational State of Bolivia and Paraguay face problems that are similar to those faced by other LLDCs around the world. These problems include:

- coordination challenges;
- unreliability of transport systems;
- distance from and difficulties in accessing sea ports;
- costly bureaucratic procedures, especially related to facilitation of transport and trade;
- excessive logistics and transport costs;
- weak infrastructure and an increasing number of bottlenecks;
- dependence on the infrastructure of transit countries; and
- lack of effective implementation of some regional agreements meant to improve transport and infrastructure conditions for LLDCs.

The atmosphere among the transit countries and the LLDCs in Latin America is noticeably positive and, in general terms, there is a willingness by both groups to move forwards in resolving the challenges of transit transport systems. However, some issues remain unresolved, such as: a) restrictions imposed by transit regulations; b) persistent problems at border crossings; c) restrictive transport policies, such as the double

taxation of cargo, excessive administrative requirements, detention of in-transit containers, cargo reservation policies and, especially, the difficulties with widening the Paraguay-Paraná waterway, including installation of necessary signalling and aids to navigation.

Development of transit countries and LLDCs is being hindered by another problem as well: the lack of an integrated framework for planning and implementing public policies in matters of infrastructure, transport, logistics and facilitation, which has impaired the efficiency of logistical chains within the countries. A shift in the focus of transport policy in Latin America is imperative, from one that is modal to one that is integrated and multimodal, in both LLDCs and the transit countries.

Background on ECLAC and LLDCs

The regional preparatory meeting for the midterm implementation review of the Almaty Programme of Action was held in Buenos Aires, Argentina, on 30 June 2008, pursuant to General Assembly resolution 61/212 of 12 March 2007. The meeting was attended by representatives of Argentina, the Plurinational State of Bolivia, Brazil, Chile, Paraguay, Peru and Uruguay. Also represented were the UN-OHRLLS, ECLAC, the Inter-American Development Bank (IDB), the Andean Development Corporation (CAF), and the Latin American College of Social Sciences (FLACSO) of Argentina. Technicians and experts were also in attendance (see Bulletin 262 for further information).

Later, on 2 and 3 October, ECLAC participated in a high-level meeting to analyse the needs of LLDCs and the midterm implementation review of the Almaty Programme of Action; a parallel session on "Regional Dimensions of Transit Transport Cooperation" was also held.

Additionally, ECLAC has been and will continue to perform a number of tasks, such as the following:

- Promote “integrated policies” in matters of infrastructure, transport and logistics, pursuant to the proposal that arose from a special workshop on logistics and facilitation organized by the Government of Paraguay and IDB, in Asunción, Paraguay, in June 2009;
- Establish a regional panel of experts on infrastructure, transport, logistics and facilitation, made up of 60 professionals from both LLDCs and the transit countries, so as to foster a climate of mutual understanding by establishing a facilitation network and public-private working groups from both extremities of the Asunción-Montevideo corridor, pursuant to the United Nations Development Account project M4, which was conducted jointly by UNCTAD and ECLAC.
- Published the document, “The Challenges of Transport Systems in Landlocked Developing Countries in South America”, in Spanish and English, as part of the series of documents produced by the Natural Resources and Infrastructure Division. It is free and available through the website.

In the future, ECLAC will be performing some new tasks, including the following:

- A study of logistics costs in LLDCs in South America and the impact those costs have on economic development. The main objective is to conduct research on the cost of logistics, which are of particular importance to the Plurinational State of Bolivia and Paraguay, seeking to assess the impact these costs have on the development of both countries. Please see Annex 2 for preliminary findings;
- Follow-up on the roll-on/roll-off (RoRo) proposal for services, which originated in the M4 project (UNCTAD/CEPAL), to improve transport conditions among the Plurinational State of Bolivia, Paraguay and Uruguay;
- Technical cooperation for LLDCs in South America;
- Enhance cooperation between ECLAC and UN-OHRLS.

Evolution of IIRSA and its relationship with LLDCs

The Initiative for the Integration of Regional Infrastructure in South America (IIRSA) was created in 2000 to integrate the 12 countries of South America¹ through coordinated efforts on large-scale transport, energy and telecommunications infrastructure projects. IIRSA's plan of action is built around a system of integration and development hubs, where infrastructure services and sector integration processes can be set up and fine-tuned, with a view towards promoting regional development that is both sustainable and competitive.

Within the framework of IIRSA, the South American Governments have assembled a portfolio of 514 infrastructure projects, for which an estimated investment of more than US\$ 69 billion would be required. According to information from IDB, most of these are transport-sector projects (84%). Highways are the top priority and account for two-thirds of the transport-sector projects, followed by railway projects and, lastly, port and airport projects. The energy sector accounts for 14.5% of the total investment, with allocations going primarily to interconnecting power systems, hydroelectric power generation and the oil and natural gas sector, while 1.5% of the total investment will be allocated to telecommunications projects.

The purpose of IIRSA is to identify and overcome institutional and regulatory problems that hinder development of the region's economic infrastructure. This involves working on the processes of seven different sectors: border crossings, financing, information and communications technologies (ICTs), energy integration, multimodal transport operating systems, air transport and maritime transport. In late 2004, the countries defined a consensus-based implementation agenda (AIC, in Spanish), which prioritizes 31 select projects (bridges, border crossings, highways, railways, gas pipelines and telecommunications), valued at US\$ 10 billion, to be completed by 2010.

¹ 17 million square kilometres, 380 million people, GDP of more than US\$ 1.9 billion.

At this time, 17 of these AIC projects, valued at US\$ 6.5 billion, are under-way, and two have been completed.

The Plurinational State of Bolivia is involved in 11 of the AIC projects, valued at about US\$ 1.66 billion. Two of these are telecommunications projects and involve all 12 countries. Eight of these projects are under-way, valued at US\$ 1.65 billion. Two are in preparatory stages, and one, a joint project between the Plurinational State of Bolivia and Paraguay, is currently in the procurement phase. Table 1 contains a list of the projects mentioned above.

Table 1. The Plurinational State of Bolivia's AIC projects, 2005-2010

Nº	Project	Status	Hub	Countries	US\$, in millions
7	Northeast Gas Pipeline	In execution	MERCOSUR-Chile	AR (BO)	1 000,0
8	Salvador Mazza-Yacuiba Bridge	Preparatory stage	Capricorn	AR (BO)	10,0
10	Pailón-San José-Puerto Suárez Highway	In execution	Central Inter-oceanic	BO (BR-CH-PE)	444.8
12	Infante Rivarola-Cañada Oruro Border Crossing	In procurement	Central Inter-oceanic	BO (PY)	2.0
13	Cañada Oruro-Villamontes-Tarija-Estación Abaroa Highway (first stage)	In execution	Central Inter-oceanic	BO (PY)	60.0
14	Toledo-Pisiga Highway	In execution	Central Inter-oceanic	BO (CH)	93.0
15	Rehabilitation of the Iquique-Colchane Highway	In execution	Central Inter-oceanic	CH (BO)	42.0
16	Rehabilitation of the El Sillar Leg	In execution	Central Inter-oceanic	BO (CH-PE)	2.6
17	Desaguadero Border Center	In execution	Andean	BO (PE)	7.5
30	Exports through Postal Services	In execution	ICTs	All	2.5
31	Implementation of a roaming agreement in South America	Preparatory stage	ICTs	All	0.4
Total					1,664.8

Source: the authors, on the basis of IIRSA information

Paraguay is involved in five AIC projects, valued at about US\$ 120 million, two of which are telecommunications projects. Two projects (US\$ 62.5 million) are under-way, and two others (valued at US\$ 55.4 million) are in preparatory stages, as can be seen in Table 2.

Table 2. Paraguay's AIC projects, 2005-2010

Nº	Project	Status	Hub	Countries	US\$, in millions
9	Presidente Franco-Porto Meira New Bridge and Border Crossing	Preparatory stage	Capricorn	PY (BR)	55.0
12	Infante Rivarola-Cañada Oruro Border Crossing	In procurement	Central Inter-oceanic	BO (PY)	2.0
13	Cañada Oruro-Villamontes-Tarija-Estación Abaroa Highway (first stage)	In execution	Central Inter-oceanic	BO (PY)	60.0
30	Exports through Postal Services	In execution	ICTs	All	2.5
31	Implementation of a roaming agreement in South America	Preparatory stage	ICTs	All	0.4
Total					119.9

Source: the authors, on the basis of IIRSA information

By December 2008, concrete progress had been made on 68% of the 514 IIRSA

- 10% (51 projects) have been concluded, for an estimated combined investment of US\$ 7.5 billion
- 38% (196 projects) are in the execution stage, for an estimated combined investment of US\$ 30.7 billion.
- 20% (103 projects) are in the preparatory stage, for an estimated combined investment of US\$ 17.4 billion

The tables below show the status of IIRSA-portfolio projects, by hub and execution stage:

Table 3. IIRSA PORTFOLIO 2008 – Number of projects by stage of progress

Integration and Development Hub	N° Projects	Profile	Pre-feasibility	Feasibility	Engineering	Execution	Completed
Andean	65	15	1	1	4	33	11
Capricorn	69	11	10	18	4	21	5
Paraguay-Paraná Waterway	98	45	4	9	5	35	0
Amazon region	57	23	3	4	2	20	5
Guianese Shield	25	8	0	0	1	6	10
Southern	26	10	0	5	1	6	4
Central Inter-oceanic	49	11	2	5	6	21	4
MERCOSUR-Chile	102	34	3	9	3	43	10
Peru-Brazil-Plurinational State of Bolivia	23	8	0	2	2	9	2
SIP (Sector Integration Processes)	2	0	0	0	0	2	0
Total	514	164	23	52	28	196	51

Source: the authors, on the basis of IIRSA information

The Central Inter-oceanic and Capricorn hubs are the major hubs that benefit the Plurinational State of Bolivia and Paraguay. By late 2008, five of the 69 projects of the Capricorn hub had been completed, with 21 in the execution stage, 21 in preliminary stages (profile and pre-feasibility phases) and 22 in the preparatory stage.

In the Central Inter-oceanic hub, four of the 49 projects had been completed, 21 were in execution, 13 in the preliminary stages and 11 in the more advanced phases of the preparatory stage.

**Table 4. IIRSA PORTFOLIO 2008 – Estimated amount invested per stage of execution
(Millions of United States dollars)**

Integration and Development Hub	Estimated investment	Profile	Pre-feasibility	Feasibility	Engineering	Execution	Completed
Andean	6 926.4	1 526.7	7.0	117.0	1 047.8	2 743.9	1 484.0
Capricorn	7 759.9	1 006.5	816.5	1 650.9	794.0	3 130.0	362.0
Paraguay-Paraná Waterway	3 972.9	1 603.0	190.0	334.0	302.6	1 543.3	0.0
Amazon region	4 760.0	563.9	134.3	293.7	54.5	3 107.6	606.0
Guianese Shield	1 019.3	50.0	0.0	0.0	19.0	745.8	204.5
Southern	2 497.0	1 307.5	0.0	234.0	25.0	833.0	97.5
Central Inter-oceanic	4 213.8	461.0	191.0	914.8	591.0	1 974.3	81.2
MERCOSUR-Chile	25 022.6	6 039.8	1 400.0	7 621.5	335.0	6 167.3	3 459.0
Peru-Brazil-Plurinational State of Bolivia	13 102.2	1 101.0	0.0	80.2	229.0	10 480.0	1 212.0
SIP (Sector Integration Processes)	2.9	0.0	0.0	0.0	0.0	2.9	0.0
Total	69 247.0	13 629.4	2 738.8	11 246.1	3 398.4	30 728.1	7 506.2

Source: the authors, on the basis of IIRSA information

Regarding investments, the Capricorn hub's completed projects amount to US\$ 362 million, with another US\$ 3.1 billion in projects in execution and US\$ 3.3 billion in projects in preparatory stages. The Central Inter-oceanic hub had US\$ 81.2 million in completed projects, US\$ 1.9 billion in projects in execution and US\$ 1.7 billion in projects in preparatory stages.

Cost-benefit analysis of transnational infrastructure projects

Under the mutual cooperation agreement between ECLAC and the Andean Development Corporation (CAF), the Natural Resources and Infrastructure Division of ECLAC prepared a study of the methodologies used in evaluating transnational projects, in support of IIRSA. This study produced a document titled, "A breakdown of costs and benefits in evaluating transnational infrastructure projects". The methodology provides a tool for breaking down the socioeconomic costs and benefits of bi-national and multinational infrastructure projects, which are of particular interest to LLDCs. In

this case, social cost-benefit analyses were conducted for the two LLDC countries involved in IIRSA. The case study was the Concepción–San Matías Highway project, a segment of the Cuiabá–Santa Cruz connector that links Brazil and Bolivia; this project falls under project group 4 of the Central Inter-oceanic hub of IIRSA.

Modal distribution and transport costs in LLDCs: A preliminary study

The Natural Resources and Infrastructure Division is conducting a study on the impact of transport and logistics costs on development of LLDCs in Latin America. The study is based on statistical information from the ECLAC international transport database (BTI, in Spanish), which works with transport cost data, by mode and product, drawn from the customs agencies of 10 Latin American countries. The preliminary results are in line with the recommendations of the document, “Landlocked Countries in South America: Transport System Challenges”, published in March 2009, which underscore the importance of taking urgent measures to facilitate transport and trade in these countries in order to offset the excessive costs incurred by LLDCs.

ECLAC began studying the modal distribution of imports coming into the Plurinational State of Bolivia and Paraguay, as well as imports coming into transit countries in 2007. The first column in the table quantifies the importance of air transport. The Plurinational State of Bolivia depends heavily on air transport, which is the mode of transport for 1.3% of all of its imports, four times the average of the group of countries. The second column quantifies the importance of maritime transport to transit countries, with the maximum being 93.2% for Brazil, followed by Peru and Chile, respectively. In the case of Paraguay, the importance of the Paraguay-Paraná waterway can be seen in the fact that 43.5% of its imports enter through the waterway (represented in the table as river and lake vessels). Lastly, only 12.2% of the imports of the Plurinational State of Bolivia are transported by railway, while trucks are the most important mode of transport for both the Plurinational State of Bolivia and Paraguay, accounting for 75.9% and 48.3% of total transports, respectively.

Table 5: Modal distribution for imported goods (all SITC), 2007

	Air	Maritime	River and lake vessels	Railway	Truck
Argentina	0,3%	75,5%	0,0%	0,7%	17,3%
Bolivia (Plurinational State of)	1,3%	0,0%	10,5%	12,2%	75,9%
Brazil	0,3%	93,2%	0,1%	0,3%	5,8%
Chile	0,3%	84,8%	0,0%	0,0%	9,6%
Paraguay	0,3%	0,0%	43,5%	5,5%	48,3%
Peru	0,2%	88,8%	0,3%	0,0%	2,7%
Uruguay	0,1%	68,6%	2,0%	0,0%	27,5%

Note: Paraguay data is from 2006.

Source: BTI, ECLAC, 2009

In order to ascertain the portion of total cost of imports attributable to transport (the CIF value), a per-product analysis is required. Category 7 products, under the Standard International Trade Classification, Revision 3 (SITC), which addresses machinery and equipment, have been used as examples because these are usually imported and are essential factors to production in these countries. In 2007, transport costs accounted for more than 6.1% of the total cost of SITC 7 merchandise imported by the Plurinational State of Bolivia, while the average for the rest of the countries was about 3.8%. In the case of Paraguay, the costs of international transport accounted for 11.2% of total cost of imports (see table 6).

Table 6: Cost of transport as portion of total cost of imports, 2007 (Only STIC 7)

	Air	Maritime	River and lake vessels	Truck	Average
Argentina	3,8%	2,9%		3,4%	3,4%
Bolivia (Plurinational State of)	5,0%		8,3%	5,0%	6,1%
Brazil	5,6%	3,1%	4,7%	1,3%	3,7%
Chile	4,6%	4,9%		3,9%	4,5%
Paraguay	3,1%		27,1%	3,3%	11,2%
Peru	4,3%	5,9%	3,6%	3,4%	4,3%
Uruguay	4,8%	5,8%	2,3%	3,2%	4,0%
Total	4,5%	4,5%	9,2%	3,4%	5,7%

Note: Paraguay data is from 2006.

Source: BTI, ECLAC, 2009

It is important to note that transport costs reported by customs agencies include only the costs of international transport and not the domestic costs. This is an important distinction, given that in some cases the cost of domestic transport can represent a significant portion of total cost and could be significantly reduced through appropriate domestic measures.

The data from customs agencies provides a breakdown by transport mode and reveals that air transport costs are not much higher in LLCCs. In fact, Paraguay has the lowest air transport cost in the group. In maritime transport, there is a clear difference in cost between the east and west coasts of South America. It is possible that, in the case of LLDCs, the use of rivers and lakes as waterways actually increases costs, as compared with the average costs of maritime transport, under current conditions. Paraguay's high costs might reflect the precarious infrastructure and upkeep costs of the Paraguay-Paraná waterway. This point has been stressed by ECLAC experts on numerous occasions. When it comes to transport by truck, the Plurinational State of Bolivia has

the highest costs, at more than 5% of total costs, while Paraguay's costs are close to the group average.

Lastly, as can be seen in table 6, the Plurinational State of Bolivia and Paraguay have the highest average transport costs, which is between two and three times higher than the costs of the transit countries.



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