



FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Logistics in Mesoamerica: outcomes of the policy workshops and logistics integration indicators 2017

Background

Regional physical integration, understood as the interconnection of economic infrastructure and of the services delivered through it, is one of the foundations of the entire integrationist process (Cipoletta, 2009).

Since its inception, the Economic Commission for Latin America and the Caribbean (ECLAC) has played a key role in the region's physical integration. As early as the 1950s, the Commission recommended that its member countries formulate programmes and adopt economic development measures considering the possibilities of expanding demand through reciprocal exchanges, with a view to improving the integration of their economies and increasing productivity and real income through the coordinated planning of productive and transport activities (Fuentes, 1973). Subsequently, in the 1960s, ECLAC spoke of the importance of infrastructure networks in regional integration and of developing a regional transport and energy policy that would favour regional economic integration (Brown, 1966).

In recent years, ECLAC has promoted a regional integration strategy aimed at helping its member countries to establish mechanisms for political dialogue and thus update the conception, planning, execution and follow-up processes of their policies on infrastructure provision and services regulation, and to adopt a shared long-term perspective on investment needs so as to integrate more efficiently and sustainably. To this effect, the Commission has developed various technical instruments for decision-making, recommendations for regionally coordinated logistics policies, actions aimed at institution-building, promoting regional dialogue and establishing logistics integration indicators, among other means to promote the region's integration and sustainable development.

This issue of the *FAL Bulletin* systematizes the main outcomes and findings of the 10 national policy workshops on logistics and mobility conducted by the Infrastructure Services Unit between 2014 and 2017. It also presents an update on the indicators for logistic integration in Mesoamerica for the 10 countries in the subregion. This bulletin was prepared by Gabriel Pérez, Economic Affairs Officer of the Natural Resources and Infrastructure Division of ECLAC. Rolando Campos Canales, a consultant for the same Division, also contributed to this issue. For more information on this topic, please contact gabriel.perez@cepal.org.

The opinions expressed in this document are the exclusive responsibility of the authors and do not necessarily represent those of the Organization.

-  Background
-  I. The process of the national workshops on logistics and mobility in Mesoamerica
-  II. Logistics integration indicators in Mesoamerica 2017
-  III. Findings and recommendations for the future
-  IV. Bibliography



UNITED NATIONS



I. The process of the national workshops on logistics and mobility in Mesoamerica

During the Tenth Summit of the Tuxtla Mechanism for Dialogue and Coordination, held in Villahermosa, State of Tabasco, Mexico, in July 2008, the countries requested ECLAC to promote actions conducive to the institutional strengthening of the sectoral ministries of transport and public works in a context of regional cooperation. Under this mandate, ECLAC drew attention to the importance of logistics and mobility in the sectoral ministries and began laying the foundations of what would become a future regional logistics policy based on successful international experiences (Cipoletta, PérezSalas and Sánchez, 2010). ECLAC presented a document entitled “Bases para la formulación de una política de logística y movilidad en Mesoamérica” (Sánchez and Pérez, 2013), which provided a general framework for the formulation of national policies on logistics and mobility—with common guidelines for Mesoamerican countries¹—and highlighted the need to gradually advance towards full integration, recognizing and acknowledging different ideas about the model of society to be aimed at and combining different initiatives and national perspectives around a model of convergence (Altomonte, Pérez and Sánchez, 2013).

Subsequently, at the Fifteenth Summit of the Tuxtla Mechanism for Dialogue and Coordination, held in Antigua, Guatemala, in June 2015, the Presidents and Heads of State, in line with ECLAC recommendations, decided to assign the highest priority to logistics and mobility as key components of their development strategies and regional integration, and requested the support of the Commission in the design and organization of national workshops for the development of integrated and sustainable policies for logistics and mobility that could evolve towards a shared policy, for both the Central American and the Mesoamerican regions, and thus favour the convergence of initiatives. On the basis of these mandates, the Infrastructure Services Unit of ECLAC began conducting a series of national workshops with representatives of the public and private sector and of civil society in each of the 10 Mesoamerican countries, with a view to disseminating information on the process and laying the foundations for logistics and mobility to become part of long-term State policies committed to regional integration. Details on the methodology that was developed can be found in the ECLAC document entitled “Políticas de logística y movilidad para el desarrollo sostenible y la integración regional” (Jaimurzina, Pérez and Sánchez, 2015). The workshops are described in the following pages.

A. National workshop – Nicaragua

The first national workshop was held in Managua, Nicaragua, from 30 September to 1 October, with the participation of more than 50 national experts. It was opened by Franklin Sequeira, Deputy Minister of Transport and Infrastructure of Nicaragua, and Ricardo J. Sánchez, Officer in Charge of the Natural Resources and Infrastructure Division of ECLAC. The event consisted of three sessions, during which participants focused on the complexities of logistics and mobility, and the need to achieve economic, social and environmental goals for national development.

Two documents were earmarked as the basis for developing the country’s national policy: The National Human Development Plan 2012–2016 and the National Transport Plan. The three working groups, led by Joe Henry Thompson, Secretary of the Interinstitutional Commission on Trade Facilitation (CIFCO); Marvin Altamirano, representative of the Association of Nicaraguan Transporters; and Rosa María Rodríguez, representative of the Ministry of Transport and Infrastructure, respectively, proposed the initial aims of a national policy for Nicaragua: cutting transport time and costs; improving the connectivity between production hubs and centres of domestic consumption; guaranteeing equality, safety and physical accessibility; investing in logistics nodes and smart systems, and optimizing flows; training human resources, innovation and process facilitation; promoting a resilient infrastructure to face natural disasters and climate change; improving modal distribution of passenger and freight transport, shifting to more efficient, safe and sustainable modes of transport; reducing accident rates, emphasizing prevention; improving mobility in urban centres and regulating the market to ensure fair competition.

Nicaragua’s progress in transport and facilitation was also recognized in the workshop, while acknowledging the need to garner support at the highest level (not only through a sectoral mandate), which would be led by the Ministry of Transport and Infrastructure and complemented by the work of public-private commissions such as CIFCO and its two subcommissions (the Committee on Transport and Logistics and the Operational Technical Committee). A time horizon of 20 years was proposed for the development of planning and follow-up tools, including performance measurement in terms of costs and timeliness of dispatches, number of documents and processes, use of innovation and technology, domestic and external connectivity, quality of infrastructure and services, accident rates, service accessibility, freight and road modal distribution, energy consumption and environmental impact. Lastly, participants believed the national legal and institutional framework did not require

¹ Refers to the countries belonging to the Mesoamerican Integration and Development Project (Mesoamerica Project): Belize, Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama.

major changes as the current framework provided for all the necessary modalities and mechanisms. Rather, what was needed was proper compliance.

As regards policy recommendations, participants highlighted the need to strengthen institutions, develop a national policy (including a national academic, technical and vocational education policy) and standardize logistics processes. Logistics investments were needed to improve infrastructure, build national and international terminals, use technology in processes to a greater extent, develop logistics nodes and one-stop shop solutions, implement multisectoral training, develop alternative transit routes, avoid the use of speed breakers in international transit corridors, replace vehicle fleets and improve conditions in competitive tenders so as to encourage private investment. Finally, participants remarked upon the need to update and complete the regulatory framework, increasing availability and access to information, developing the country's Commercial Code, ensuring the uniformity of rules in all locations and creating an agency with the authority to settle disputes.

B. National workshop - El Salvador

The workshop was held in San Salvador, El Salvador, on 22 and 23 October 2014, and was opened by Gerson Martínez, Minister of Public Works, Transport, Housing and Urban Development of El Salvador, and Ricardo J. Sánchez, Officer in Charge of the Natural Resources and Infrastructure Division of ECLAC. The event consisted of four sessions in which, apart from highlighting the key principles of comprehensiveness and sustainability, participants emphasized the importance of intergenerational sustainability, innovation, science and technology, citizen participation, entrepreneurship, a regional perspective, local adaptation of public policies and local capacity-building.

The goals proposed by the working groups included: improving living standards through efficient, safe and equitable mobility services; connecting with global chains; territorial integration; developing logistics nodes and co-modality; generating synergies and regulatory plans to provide greater certainty for investment; guaranteeing quality, resilient and sustainable infrastructure; and integrating public and private stakeholders.

Experts from the Salvadorian public and private sectors agreed on the need to adopt, at the presidential level, a working document on national policy, define a Five-Year Development Plan approved by the Council of Ministers, and establish a ministerial cabinet—made up of public and private institutions—responsible for mobility and logistics. Also considered was the need to develop a set of national performance indicators to ensure improved follow-up of the policy and its impact assessment.

Among the challenges to be addressed in the future, there was consensus on the need to boost public and private investment, the current lack of a vision for long-term planning, as well as persistent problems in facilitation and safety, urban logistics and mobility, and growing challenges in energy efficiency and transport rationality.

In the maritime and port sector, the lack of cranes and own equipment was also identified, as were delays and costs associated with red tape, lack of specialized staff, predominance of inspection over facilitation at customs, lack of regional cabotage and predominance of short-distance movements, obsolete IT systems for control and traceability, lack of an academic education policy in transport and logistics and the underutilization of existing infrastructure.

In the rail sector, participants noted the obsolescence of infrastructure and the encroachment on rights of way, as well as the need for a political agreement in favour of a multimodal vision that includes trains (ideally in its master plan) to promote their use as an alternative.

They also referred to the structural deterioration of road infrastructure in the country's main corridors, delays in maintenance and network refurbishment, the lack of drainage works and insufficient equipment for oversight activities (weighing and measuring). National road transport was characterized by high levels of informality (poor compliance with the law), the lack of a regulatory framework (weight, size, age of vehicle fleet, emissions, among others), a lack of an efficient and safe public transport, obsolete IT systems and the lack of a legal framework serving the network (as it was not the jurisdiction of the Ministry of Public Works, Transport, Housing and Urban Development or of the Road Conservation Fund).

The airport sector suffered from inefficient use of infrastructure and distribution of space, a lack of cargo equipment, security systems that were out of step, little attention for low-cost flights, the lack of a development plan for aviation integrating the customs and cargo processes.

Regarding customs and border crossings, it was noted that inadequate infrastructure produced delays and insecurity, and that there was a lack of mobile equipment, insufficient and non-specialized staff, complex and non-standardized processes and a lack of regulation to create a single management structure.

C. National workshop – Honduras

The third and final national workshop of 2014 was held in Tegucigalpa on 18 and 19 November 2014. It was opened by Roberto Pineda, Deputy Minister of Transport of the Ministry of Infrastructure and Public Services, Ana Julia García, Deputy Minister of Public Works, Transport and Housing, and Azhar



Jaimurzina, Officer in Charge of the Infrastructure Services Unit of ECLAC, who worked for two days together with experts from the public and private sector. During the first sessions, participants agreed on the following main policy objectives: to take advantage of the country's geographical location to make it into a logistics hub for freight services, create a regional integration system to facilitate freight and passenger transport, facilitate connectivity between populated areas (domestically and externally), strengthen institutions and reduce logistics costs.

The main challenges at the institutional level and the recommendations for improving performance of national logistics and mobility included: the need for greater transparency in processes and in sharing regulatory information with public, private, civil and educational agencies, as well as strengthening the State's regulatory bodies to ensure efficient compliance with existing legislation. The need to strengthen forums for dialogue was also highlighted, as the existing mechanisms were considered insufficient to ensure appropriate participation of all stakeholders, especially members of civil society.

Regarding the institutional and legal framework, participation of transport, merchant marine and aeronautics institutions was regarded as crucial, as well as that of the Executive Directorate of Revenue and Finance, the Commission for the Promotion of Public-Private Partnership, the Secretariat of Agriculture and Livestock and the Ministry of Health. Also noted was the importance of establishing planning and follow-up tools to provide information on container transport, toll booths, traffic control, number of passengers, passenger mobility times, employment rates and maintenance cost per kilometre so as to ensure the best follow-up of the policy and its impact assessment.

Priority areas for action were the need to increase sectoral investment to address the poor state of physical infrastructure and maintenance problems affecting the secondary and tertiary road networks, as well as the lack of training in logistics and road safety. As regards regulatory aspects, participants identified legal uncertainties, the weak regulatory framework and the lack of transparency and systematization in decision-making (irregular practices, monopolistic markets), which facilitated discriminatory or corrupt practices.

D. National workshop - Costa Rica

The first national workshop of 2015 was held on 21 and 22 April in San José, Costa Rica. Carlos Segnini Villalobos, Minister of Public Works and Transport, opened the event together with Mauricio Fernández Ulate, Sector Planning Manager of the Ministry of Public Works and Transport; Carlos Carranza, Dean of the Faculty of Economic Sciences of the University of Costa Rica; Benito Coghi Morales, Assistant Director of the General Customs Administration, and Ricardo J. Sánchez, Officer in Charge of the Natural Resources and Infrastructure Division of ECLAC.

During the first sessions, the Government of Costa Rica noted that the three pillars of the National Development Plan were directly related to logistics and mobility: boosting economic growth and creating more and better jobs, reducing inequality and eliminating extreme poverty and corruption, and strengthening the State to make it more transparent and efficient. Government institutions also highlighted the fact that initiatives such as the renovation of the rail network, the inclusion of islands and archipelagos in road projects and the updating of digital information platforms (among other technological innovations), would help improve decision-making and establish forward-looking management and long-term planning, while maintaining the interconnection between public and private institutions.

Tasks for diagnosing subsystems and critical issues were set over a 10-year planning horizon, the main objectives of which were: improving productivity, competitiveness and integration in Mesoamerica, guaranteeing skilled human resources, transparency in processes, practicality and political sustainability in the long term, prioritizing investment projects and reducing unnecessary personal mobility.

Among the challenges considered priorities were the need to establish a quality-control agency responsible for overseeing the services delivered, developing new laws and garnering political support to reach sustainable decisions that would last beyond government terms in office. As regards planning and follow-up tools, it was considered important to have national logistics and mobility indicators to measure foreign investment, analyse the cost-benefit of logistics operations, and take into consideration the population's health and the electric power consumption of the supply chain.

Priority challenges identified in logistics were: solving infrastructure gaps in terms of public and private investment, the lack of a long-term vision in planning, persistent problems in facilitation and safety, urban logistics and mobility, energy efficiency and transport rationality challenges, cutting down on red tape and travel times,

developing and implementing digital signatures, measuring travel times in the national territory, and staff training. Creating a one-stop shop solution for transport was considered vital, as was developing skilled human resources, promoting interoperability and process automation, as well as improving coordination in border ports.

In terms of mobility, participants proposed diversifying public transport so as to include the interurban electric train, following up on development projects, improving human resource training and providing greater availability of financial resources so targets could be met. Other proposals included: greater clarity as regards the legal framework, establishing leadership to coordinate all stakeholders involved, reducing red tape affecting development, modernizing policies, fostering accessibility for all social groups, improving communication and the flow of information and repealing laws that were no longer abreast of the times.

E. National workshop – Colombia

The Colombia workshop was held in Bogotá on 4 and 5 November 2015. The event was opened by Enrique José Nates Guerra, Deputy Minister of Transport; Dimitri Zaninovich Victoria, National Planning Department; Antonio Felfle, Ministry of Transport Adviser; Ricardo J. Sánchez, Officer in Charge of the Natural Resources and Infrastructure Division of ECLAC; and Manuel Rodríguez, transport specialist of the Inter-American Development Bank (IDB).

In the opening sessions, the government underscored Colombia's progress in logistics policy, highlighting the Intermodal Transport Master Plan, the monitoring of all ports in the country, its actions aimed at reaching efficient and competitive mobility in mass transport and the national registry of freight transport, among other important milestones.

The National Planning Department presented the results of its logistics survey (covering 768 companies), which concluded that logistics costs accounted for 14.97% of total sales, of which road transport was the main mode in the national territory. Thus, reestablishing rail and river corridors was essential to achieve a more balanced modal distribution. Other outcomes of the survey were the need to regulate the useful life of trucks, improve public-private interaction, improve coordination between different areas and levels of government, foster human capital for development and combat poverty. For their part, workshop participants highlighted some urgent matters, such as the greater availability of data and information on the sector, cooperation between the public and the private sectors through the work of the Colombian Chamber of Infrastructure, the deployment of managers for strategic

logistics corridors and, especially, the National Logistics Policy included in National Council on Economic and Social Policy (CONPES) document No. 3547 of the National Planning Department in 2008.²

The group of sectoral experts, made up of representatives from the National Business Association of Colombia, the Private Competitiveness Council and the Colombian Federation of International Trade Logistics Agents, proposed the following aims for a future logistics policy: reducing logistics costs, improving the quality of services, promoting industrial diversification, improving regional connectivity, improving territorial integration, making better use of infrastructure, promoting co-modality and using collaborative technologies and information systems.

Expert recommendations regarding the institutional framework included the need to include last-mile logistics in the plans, indicators on transit and freight, strengthening academic training in the public and private sector, achieving high-level (presidential) buy-in and improving management, execution and best-practice monitoring models. As regards the use of technology and smart transport systems, participants proposed promoting an open-data policy, encouraging the private sector to share information and modernizing systems and internal architecture for managing public data. In urban logistics, participants noted the need for specific studies on the subject and measuring flows, establishing co-modal networks to avoid transit through cities, generating policies for merchandise distribution and improving the use of existing infrastructure. As regards multimodal contracts, they proposed simplifying regulation, normalizing other modes, training human resources in the use of contracts and improving insurance performance, facilitating freight transport between operators to replace customs agencies, streamlining the transit of goods not entering jurisdictions using the authorized economic operator system and strengthening the anti-smuggling plan. Finally, in terms of implementing new ICTs, participants proposed strengthening the Single Window for Foreign Trade (VUCE) to streamline customs processes, improve competitiveness and efficiency in the development of foreign trade, as well as in the relationship between cities and ports.

F. National workshop – Panama

The Panama workshop was held in Panama City on 26 and 27 May 2015. Participants at the opening session and the high-level panel that closed the event included Ana M. Reyes, Logistics Cabinet Coordinator of the Ministry of the Presidency; Carlos González de la Lastra,

² See National Council on Economic and Social Policy (CONPES), "Política Nacional Logística", CONPES Document, No. 3547, Bogotá, 2008 [online] <https://onl.dnp.gov.co/es/Publicaciones/Paginas/CONPES-3547-Pol%C3%ADtica-Nacional-Log%C3%ADstica.aspx>.

member of the Management Board of the Land Transit and Transportation Authority; Aitor Ibarreche, Executive Chair of the Panama Ports Company; Rodolfo Sabonge, Rector of the University of the Caribbean; Eduardo Lugo, Dean of the School of Maritime and Port Logistics of UIP; and the Officers of the Natural Resources and Infrastructure Division of ECLAC, Ricardo J. Sánchez and Azhar Jaimurzina.

Workshop participants highlighted the importance of establishing a comprehensive logistics vision for the country, prioritizing the weakest links, such as ground transportation, and the inclusion of all public-sector stakeholders. Policies should aim to support public-private cooperation in sectoral plans and promote a multisectoral and multidisciplinary approach to encourage co-modal logistics. To this end, participants worked on targets focusing on reducing bottlenecks and unnecessary movement, managing freight vehicle movement (restricted timetables, dedicated roads), modernizing the traditional business model to create a more equitable and productive one, guaranteeing economically viable long-term planning as a policy of State and managing mobility demand in Panamanian cities in a suitable manner.

Participants noted that Panama lacked leadership in this area, and that it was difficult to find a possible agency to fulfil this role that did not have some sort of sectoral bias; thus, they proposed creating framework legislation in logistics to support decision-making at the national level, which would include a master plan with specific targets and indicators at the micro and macro levels, as well as establishing a satellite account to measure the social impact of investments made and consider the inclusion of public data systems to facilitate coordination and planning of new works for the benefit of the country's economic and social development.

The main logistics challenges identified were the dichotomy between the level of logistics services offered by the Canal, the nearby ports and the international airport, as compared with the rest of the country. In this sense, changing and modernizing the traditional approach would be key so as to increase added value in logistics services, as well as using new technologies and operational models, following the best international practices as a model. The need to develop a legislative policy that encouraged production hubs to generate greater volume of cargo was also considered essential, as was establishing a public agency to regulate activities, with the support of a group of experts. Complementary actions aimed at resolving the lack of skilled staff, the need for labour reform and the review of migration policies were also discussed.

G. National workshop – Guatemala

The event took place in Guatemala City on 27 and 28 May 2015 and was opened by Jorge Rodolfo Ortiz Asturias, Deputy Minister of the Ministry of Communications, Infrastructure and Housing; Vivian Esther Lemus Rodriguez and Edgar de León, of the Concessions and Divestitures Unit; Delfino Mendoza, Planning and Studies Division Coordinator, General Directorate of Roads of the Guatemalan Exporters Association; and Azhar Jaimurzina, Officer in Charge of the Infrastructure Services Unit of the Natural Resources and Infrastructure Division of ECLAC.

The first presentation consisted of the Strategic Mobility Programme in the Central Area of the Republic of Guatemala, which seeks to promote the mass transport of passengers and other less polluting and non-motorized modes of transport, reducing the use of light vehicles, providing a transfer centre and building a scaling system. Targets agreed by participants included: positioning Guatemala among the top 10 most competitive countries, with reliable and sustained changes, achieving sustained urban mobility, with greater territorial integration, preventing and reducing negative externalities and guaranteeing suitable levels of equality, integral safety and security and physical accessibility in transport services. Participants proposed using existing mechanisms (Ministry of Economic Affairs through the Guatemala National Competitiveness Programme (PRONACOM), development councils, the Maritime Port Cluster of Guatemala, the National Council for the Promotion of Exports (CONAPEX) and private chambers of commerce) and establishing a logistics and mobility government agreement at the presidential and ministerial level to develop indicators on times, costs, user satisfaction and competitiveness.

In terms of recommendations, participants noted the need for enacting a law to regulate the participation of all public and private stakeholders in the logistics and mobility sector, adopting, by decree and Congress, the National Development Plan *K'atun Nuestra Guatemala 2032*, promoting financing through private-public partnerships, achieving greater levels of investment for multimodal reengineering, maintaining and modernizing port and airport infrastructure, building and maintaining the roads network, as well as suitably managing social and environmental externalities. Also highlighted were the need to update regulation of transfer centres so as to make the system more efficient and reduce the duplicity of inspections, training staff on current laws, treaties and agreements, generating statistical records for subsequent analysis, improving coordination between port authorities, adopting the Trade Facilitation Agreement, improving public safety and creating port captaincies to coordinate State institutions.

H. National workshop - Dominican Republic

The workshop was held in Santo Domingo, Dominican Republic, on 19 and 20 April 2017. Participants at the opening session were Enrique Lied, Deputy Minister of Oversight and Control of the Ministry of Public Works and Communications; Carmen Leiva of the Ministry of Public Works and Communications; Tobías Crespo, member of Parliament; Rosa Abreu of the Presidential Commission for Road Safety; Claudia F. de los Santos, Deputy Minister of Public Works and Communications, Chief Coordinator of the Presidential Commission for Road Safety; Miguelina Figueroa, General Director of the Office of the Minister of Public Works and Communications and Secretary of the Presidential Commission for Road Safety; and Víctor Ventura, Logistics Coordinator of the Ministry of Economy, Planning and Development. Participants from international organizations included Azhar Jaimurzina and Gabriel Pérez of the Infrastructure Services Unit of ECLAC, and Robert Nowak of the Transport Division of the United Nations Economic Commission for Europe (ECE).

In the first session, participants highlighted recent progress by the Dominican Republic in terms of mobility and road safety, such as the establishment of the Presidential Commission for Road Safety, Law No. 63-17 on Mobility, Ground Transport, Transit and Road Safety, and the establishment of the National Institute of Traffic and Land Transportation (INTRANT). Aside from referring to new regulations and institutions, participants also noted greater oversight and coordination within the State. These actions in the mobility sphere had promoted coordinated investments for the expansion of the Metro and the inclusion of new buses, a cable car system and other non-motorized services in the public transport network. This, together with the renewal of the vehicle fleet, regulating parking lots and controlling road safety measures, were all contributing to more sustainable forms of mobility. In logistics, participants noted the work carried out to develop regulation for truck weights, operating zones and timetables, managing night-time deliveries, logistics centres, exclusive corridors and shared warehouses in order to improve urban logistics and sector competitiveness.

The recommendations by working groups for national logistics included addressing the following challenges: the need for harmonizing transit regulation, regulating transport of hazardous materials, periodic vehicle and road infrastructure inspections, assigning number plates to international vehicles and trails, controlling national and international driving licenses, standardizing the national signalling system and basic regulations to facilitate international transit, making correct use of detention areas and considering the social costs of evaluations. As regards mobility, participants identified road safety needs, such

as improving lighting and signalling, using technology and control devices, identifying evacuation routes for emergencies, reinforcing signalling in school areas and public transport stops, road safety campaigns, using lights on vehicles during the day. Noteworthy contributions included those aimed at creating a multimodal, accessible and sustainable integrated public transport system (physical, tariff-based and technology-based) by expanding Metro lines and feeding routes to include persons with reduced capacities, coordinating and integrating freight and passenger transportation, and promoting public-private partnerships to help decongest large city centres.

I. National workshop – Mexico

The Infrastructure Services Unit of the Natural Resources and Infrastructure Division of ECLAC, together with the Mexican Institute of Transportation and the Directorate-General of the Mesoamerica Project of the Mexican Agency for International Development Cooperation held the Mexico workshop at the Mexican Institute of Transportation offices in Querétaro on 13 and 14 June 2017. Participants at the opening of the event included Jessica Duque Roquero, General Director of Outreach of the Secretariat of Communications and Transport of the Federal Government of Mexico, Marco del Petre Tercero, Sustainable Development Secretary of the Government of the State of Querétaro, Juan Carlos Rivas of the Mexican Agency for International Development Cooperation, Roberto Aguerrebere, Director of the Mexican Institute of Transportation, and Gabriel Pérez of ECLAC.

Seventy representatives of the public and private sector participated in the event, including specialists on transport, energy, public works, commerce and customs, as well labour sector representatives and several academics from the Mexican Institute of Transportation specialized in logistics and transport, together with representatives of the countries of the Mesoamerica Project to the Regional Technical Commission on Transport. The main purpose of the event was not only to create a forum for national discussion and analysis to develop and validate the bases of the national logistics policy, but also to share information on logistics experiences in Mexico with other Mesoamerican experts.

The workshop agenda included a session on the logistics approach in planning and regional economic development through the establishment of exclusive economic zones in which the Federal Authority for the Development of Special Economic Zones of Mexico and Chinese and Panamanian experts shared their knowledge on the role of regional integration. The workshop also included presentations on international experiences on establishing and monitoring logistics policies in the Republic of Korea and the Netherlands, as ways of offering new ingredients to regional discussions.

The working groups noted that the main objectives of the national logistics policy should be: improving national logistics performance, reinforcing the country's participation in global value chains and favouring value added services, including the use of new technologies. In this sense, useful indicators to monitor a national logistics policy would be those related to efficiency (savings, time, fluidity), competitiveness (productivity, quality), disruption, losses due to theft, waste resulting from different causes, including climate, aside from other elements such as environmental emissions and other negative externalities.

Participants also focused on the use of new technologies in the logistics sector. The initial diagnosis was that the region suffered from a wide digital divide, and that therefore having access to minimum bandwidth was a basic requirement to at least be able to monitor transport activities. As regards logistics and supply chain policies, safety and security, standardized processes and simple implementation were seen as the key components of a successful implementation. Participants also referred to supporting national logistics planning with IT tools for optimizing routing, together with complementary technologies such as georeferencing, social networks, the Internet of Things (IoT) and big data, as a way of making both public and private decision-making more robust in areas such as supply chain fluidity, full traceability from point of origin to final destination, congestion points, fuel consumption, driving patterns, tyre pressure mechanisms, and wear and tear testing to measure road quality, among other things. Participants also highlighted the need to consider technology as an investment and not an expenditure, for which the availability of open public data was crucial.

J. National workshop – Belize

The most recent Mesoamerican workshop was held in Belmopan, Belize, on 28 and 29 November 2017. Participants at the opening of the event included René Montero, Minister of Public Service, Energy and Public Utilities; Patrick Andrews, Deputy Minister of Foreign Affairs; Errol Gentle, Deputy Minister of Public Service, Energy and Public Utilities; Ricardo J. Sánchez, Deputy Chief of the Natural Resources and Infrastructure Division of ECLAC; and Gabriel Pérez, Economics Affairs Officer, also of ECLAC.

Thirty representatives of the public and private sector participated in the event, including specialists from the transportation, public works, commerce, customs and ports sectors, as well as members of academia specializing in logistics. The first sessions included presentations on the progress made by Belize in road safety, the competitiveness of its ports and the actions undertaken in developing the Comprehensive National Transportation Master Plan (CNTMP) for Belize 2030, coordinated by the Department of

Public-Private Dialogue of the Office of the Prime Minister, with financing by the Inter-American Development Bank (IDB). Also analysed was the link between the country's Growth and Sustainable Development Strategy (GSDS) 2016-2019 and the logistics and mobility sector, with participants concluding that expanding and improving national infrastructure was essential to boost the production of goods and services, especially those linked to strategic sectors (agriculture, tourism and energy). Participants noted the investments in recent decades to improve the domestic roads network, which have increased connectivity, competitiveness and available services in a sustainable manner.

After the first day, consensus was reached on the principles of comprehensiveness and sustainability as the foundations of national policy, and to use these as the foundation to establish priorities and finance and promote actions conducive to greater complementarity in the economy, thus favouring competitiveness and well-being of the population. The role of logistics integration in achieving a more sustainable extraction of natural resources in Latin America and the Caribbean was also analysed, as the country has huge potential to participate in the Mesoamerican value added chains linked to agricultural production. In addition, participants also examined social and environmental challenges in the provision of infrastructure for regional integration, highlighting that it was essential to improve the country's connectivity and the quality of connections by air, ground and sea, without affecting national sustainability.

Challenges in logistics affecting Belize included the lack of infrastructure, especially in secondary and tertiary roads, as well as their maintenance and signalling, especially in the context of natural emergencies. Participants also remarked the lack of specialized facilities for trade, including those for inspection, packaging and refrigeration at ports, the need to include improvements and more technology, as well as solving the vulnerabilities of a great part of the existing infrastructure in the face of floods and climate change issues, as well as congestion problems due to the lack of available land for expanding ports and international airports. As regards mobility, participants referred to road safety problems and the lack of regular and reliable public transport services in the country's main cities. Special attention was drawn to the importance of following up after meetings as a way of building consensus on processes, and thus not having to start each project from scratch.

The working groups concluded that participating in this regional effort represented an excellent opportunity for the country, especially in light of potential improvements in the economy's competitiveness. Participants stressed the importance of adopting a long-term perspective in which

private sector and academic participation would be key, as would the support of regional institutions. The participation of Lidia Fromm, Executive Director of Mesoamerica Project, was relevant in this sense as she highlighted the importance of multilateral development agencies in offering advisory services and solving issues related to the coordination of domestic initiatives, which could later be prioritized and referred to the regional level. She went on to remark that, with this workshop, ECLAC and the Executive Directorate of Mesoamerica Project had fulfilled the commitments they had made at the most recent events of the Summit of Heads of State and Government of the member countries of the Tuxtla Mechanism for Dialogue and Coordination, as regarded topics of logistics and mobility coordinated by the Mesoamerican Integration and Development Project.

II. Logistics integration indicators in Mesoamerica 2017

In view of the importance of infrastructure projects and logistics services for both the countries and the regional integration process itself, generating tools for subregional analysis is essential in order to guide actions and assess in the broadest sense the performance of logistics and of integration itself (Pérez, 2017). With this in mind, the Executive Directorate of the Mesoamerica Project considered it was necessary to generate a set of sectoral indices for monitoring the progress of the initiative and supporting decision-making in technical and political matters. Thus, at the Mesoamerican Meeting of Transport Ministers, held in San José, Costa Rica, on 4 December 2013, it requested ECLAC to provide technical support to develop a proposal for follow-up and monitoring indicators for the transport office of the Mesoamerica Project (Lupano, 2013).

The table below provides an update on these logistics integration indicators for 2017, as developed by the Infrastructure Services Unit on the basis of information provided by members of the Regional Technical Commission on Transport, government agencies and information provided by ECLAC. The indicators include developments in the provision of road, rail and port infrastructure, as well as the services provided through this infrastructure. As regards rail transport, they include total passengers carried and total tonnage of transported cargo. As for maritime transportation, indicators include seaborne cargo in tons and twenty-foot equivalent units (TEU), whereas air transportation includes total number of passengers carried and total tonnage of transported cargo. Comparable information on ground transportation (tonnage transported, and number of international passengers carried) for all countries in the period analysed is not yet available and is therefore omitted.

The methodology developed by ECLAC envisages the construction of an index³ which uses information from 2008 as its base year, when the Mesoamerica Project was established. Thus, on the basis of 2017 data, performance can be compared within and between countries, showing the aspects in which greater progress has been made and those which require additional efforts. Countries in green have shown the greatest level of progress and those in red have recorded reversals with regard to base-year measurements. Lastly, the average index reading for the Mesoamerica Project is shown in the column headed MP.

Changes in the logistics integration indicator of the Mesoamerica Project at 2017 reflects the progress recorded by each country and by the region in transport infrastructure with regard to the base year 2008. As shown, most performance readings for all indicators are higher than 100, indicating that the provision of infrastructure and the volume of transport has grown since the beginning of the Mesoamerica Project. The railway sector stands out because its latest figures compare negatively to the base year, as they did in 2014. Some countries have also recorded reversals in certain indicators, as for example total road extent in El Salvador and total airborne cargo in Costa Rica and Honduras (all 7% lower than in 2008). Overall, these changes may be attributed to recent changes in the way national authorities measure these values.

As for road networks, paved roads in the Dominican Republic have recorded significant progress, with available paved kilometres almost doubling in one decade. As for rail transport, the number of passengers carried in Costa Rica more than tripled thanks to upgrading projects which allowed a large number of urban transport users to be shifted to this mode of transport. Maritime transport in Honduras has also evolved positively, with both total tonnage and total number of containers rising substantially in the period under review. As in 2014, air transport indicators improved significantly in the regional hubs of Colombia and Panama, and in the Dominican Republic and El Salvador, where the number of passengers and cargo tonnage both expanded significantly.

Finally, logistics infrastructure has increased in the subregion, especially as regards maritime cargo (up 65% for the period) and passengers carried by air (up 60%). Notwithstanding the substantial rise in passengers carried by rail in Mexico and Costa Rica, the limited penetration of this rail transport the rest of Mesoamerica renders its average impact less significant vis-a-vis other modes of transport.

³ A simple index is a statistical measurement designed to show the relative variation of a given phenomenon between two periods, taking one as the reference or base period. It is obtained by dividing the value in the current period by the value in the base period, multiplied by 100.

Table 1
Infrastructure provision index of
the Mesoamerica Project, 2017

2017	Country	Belize	Colombia	Costa Rica	Dominican Rep.	El Salvador	Guatemala	Honduras	Mexico	Nicaragua	Panama	MP
Road (infrastructure)	Total roads (km)	136	136	116	111	96	109	117	109	113	119	116
	Total paved roads (km)	126	110	126	205	114	114	127	133	155	133	134
Rail (infrastructure)	Total rail tracks (km)		98	120	187				101			126
	Total passengers transported (km)		191	328					636			385
	Total freight transported (tons)		95	38					127			52
Maritime (infrastructure)	Total freight transported (tons)	142	168	126	117	109	173	135	116	172	177	144
	Total freight transported (TEU)	116	201	148	162	134	153	124	192	272	148	165
Air transport (infrastructure)	Total passengers transported	116	241	135	153	154	118	162	168	132	224	160
	Total freight transported (tons)	n.d.	150	95	164	143	129	93	141	134	122	130

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the respective countries.

III. Findings and recommendations for the future

Having a logistics and mobility policy coordinated at the subregional level represents a huge opportunity to improve the efficiency and connectivity of mobility services at a much lower cost than offering a service of the same quality on a country-by-country basis. Thus, logistics and mobility have strategic importance, especially as regards infrastructure planning and management, the design of logistics networks with a regional perspective and the development of terminals that operate at a scale that makes them efficient and attractive, and which are well connected with the global economy and the domestic networks. Similarly, infrastructure planning with a long-term view and stable sectoral investment over time allows effective support to be provided for industrial transformation and better adaptation to economic changes and new social and environmental concerns that emerge together with development (Pérez, 2017).

However, if this policy is to become a truly powerful tool for regional development, a series of actions and reforms are needed to drive gradual progress in its implementation. The following have been identified as urgent priorities:

- Strengthening forums for coordination among countries, especially in terms of assessing and financing specialized structures to provide regional services.

- Engaging the private sector and civil society as vital stakeholders in the process as to ensure implementation and long-term commitment, especially as regards organizing regional markets, resolving regulatory failings and operational issues of public-private partnerships, regional regulation and regulatory convergence.
- Establishing methodologies and procedures to prioritize and finance subregional infrastructure, taking an approach that supports complementarity between economies and, thus, reduces operational costs as well as negative externalities for the environment and society.
- Reaching a consensus among the countries on a regional integration strategy that can identify and value the differences in the current model of society in order to reconcile the various technical and economic regulations and standards, with a view to achieving convergence that will foster logistical and industrial integration.

One of the most noteworthy aspects of the process in Mesoamerica was the emergence of a public-private dialogue for intersectoral coordination which allowed synergies to be leveraged with other agencies and the creation of a long-term State vision on the importance of logistics and mobility for development in the region. This is important, as the infrastructure and provision and regulation of transport services sectors, for both passengers

(mobility) and cargo (logistics), are characterized by frequent changes and often come under strong social pressures. As a result, the first working sessions in each country were quite tense, inasmuch as both the private sector and civil society saw the workshop—in the absence of formal participation mechanisms—as an opportunity to put forth all their complaints about the way the sector worked. The methodology developed by ECLAC was instrumental in channelling these discussions, so they could contribute positively to the work carried out in groups.

Another aspect that became quite evident in most workshops was the lack of statistical data on the transport sector, or widespread lack of familiarity with it. While international indicators such as the Doing Business indicator or the Logistics Performance Index (LPI) of the World Bank were mentioned quite frequently by private sector representatives, the absence of national indicators and statistics often made it difficult to contrast the data and single out the component of perception of these indicators. Accordingly, the role of ministries in compiling information was highlighted, as from there it would be possible to generate reliable, regular and comparable indicators that would serve to monitor policy measures and support public and private decision-making. In this regard, ECLAC proposed a methodology to measure progress in Mesoamerican logistics infrastructure integration, which it is implementing together with the Regional Technical Commission on Transport.

The establishment of a national network of logistics and mobility experts, made up of representatives of the public and private sectors and including specialists in transport, public works, trade and customs, as well as labour sector representatives and academics specializing in logistics and mobility, provides national governments with an excellent opportunity to continue deepening their analysis of these topics and sustainably follow up on these efforts over time.

Although the logistics challenges faced by Mesoamerican countries share common causes—lack of infrastructure, precarious institutions, absence of public-private coordination mechanisms, the practically non-existent participation of civil society in sector governance, the precarious conditions in the automotive sector and the overall insecurity in logistics activities (in terms of both regulation and exposure to vandalism), among others—it is worth recalling that the region's heterogeneity and that of the countries themselves makes it difficult to simplify problems and find a single solution for all the countries. Although they face similar challenges, each country must face these in a different context that is conditioned by its existing institutions, its development priorities and the governance mechanisms it has developed. It is to be expected that each country will afford different levels of importance to logistics and mobility; accordingly, their institutional timeframes and formal or informal logistics governance will determine the next steps regarding the priority actions identified.

Despite the significant advantages posed by the regional integration process, establishing an expanded logistics and mobility market could lead to significant changes in investment allocations, in the technical and economic regulation of the sector and in the allocation of costs associated with the new operations model among member countries. This partial transfer of national sovereignty to a supranational forum entails mayor challenges, and the coordination of these measures will no doubt bring significant complexities. Similarly, new pressure groups will likely emerge as sectors currently favoured by existing asymmetries or regulatory gaps will try to prevent regulatory convergence. Thus, strengthening regional integration processes and addressing the structural asymmetries between territories and countries will be essential for all countries to be able to take advantage of all the benefits of a comprehensive and sustainable integration.

IV. Bibliography

- Altomonte, H., G. Pérez and R. Sánchez (2016), "Un nuevo diálogo para la integración de las infraestructuras económicas de América Latina y el Caribe", *Desarrollo e integración en América Latina* (LC/G.2674), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), December.
- Brown, R. (1966), *Transport and the Economic Integration of South America*, Washington, D.C., Brookings Institution.
- Cipoletta, G. (2009), "Physical infrastructure and regional integration", *FAL Bulletin*, No. 280, Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), December.
- Cipoletta, G., G. Pérez and R. Sánchez (2010), "Políticas integradas de infraestructura, transporte y logística: experiencias internacionales y propuestas iniciales", *Natural Resources and Infrastructure series*, No. 150 (LC/L.3226-P), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), May.
- Fuentes, A. (1973), *La creación de un mercado común: apuntes históricos sobre la experiencia centroamericana*, Buenos Aires, Institute for the Integration of Latin America and the Caribbean/ Inter-American Development Bank (INTAL/IDB).
- Jaimurzina, A. G. Pérez and R. Sánchez (2015), "Políticas de logística y movilidad para el desarrollo sostenible y la integración regional", *Natural Resources and Infrastructure series*, No. 174 (LC/L.4107), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), November.
- Lupano, J. (2013), "Developing integrated and sustainable policies on infrastructure, logistics and mobility in Mesoamerica", *FAL Bulletin*, No. 319, Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), March.
- Pérez, G. (2017), "Institucionalidad y políticas de logística: lecciones para América Latina y el Caribe del proceso implementado por la República de Corea", *Natural Resources and Infrastructure series*, No. 185 (LC/TS.2017/126), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), December.
- Sánchez, R. and G. Pérez (2013), "Bases para la formulación de una política de logística y movilidad en Mesoamérica", document presented at the Mesoamerica Ministers of Transportation Meeting, San José, Economic Commission for Latin America and the Caribbean (ECLAC), 4 December.