



BULLETIN

FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Fostering a transport policy paradigm shift: comprehensiveness, sustainability and co-modality

Introduction

The ECLAC Infrastructure Services Unit study on transport policies in the countries of Latin America shows that as the role of the State has weakened, especially since the 1990s, less use is being made of strategic planning instruments and tools. This has exacerbated two problems that threaten the effectiveness of sector-based public policy in the region and thus the efficient provision of infrastructure services for economic and social development. These problems are explained below.

- i) **The lack of an integrated view of transport, infrastructure, logistics and mobility policies.** Widely varying public positions on infrastructure and related services are leading to different approaches to the conception, design, implementation, follow-up, supervision and assessment of policies for the sector.
- ii) **The lack of sustainability criteria in policy design and execution.** This is reflected in the inconsistent ways in which the concepts of economic, social, institutional and environmental sustainability are taken into account, if they are considered at all, during the conception phase of infrastructure service policy, especially in the area of transport.

The policies adopted in the region have segmented the development of activities that are by nature interrelated. There is no sustainable, long-term vision or suitable institutional framework with effective regulatory regimes and appropriate systems of supervision.

This issue of the *FAL Bulletin* proposes a paradigm shift away from the traditional approach to transport policy in the region, so as to better address issues associated with development. It suggests working towards an integrated and sustainable infrastructure, logistics and mobility policy structure based on the principle of co-modality. This study is part of the work being done by the ECLAC Infrastructure Services Unit on the Sustainable Transport in Ibero-America project with the cooperation of the Spanish Port System.

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The challenge is so large that it calls for reviewing the policies now in place in the region and adopting a new paradigm with a comprehensive, sustainable vision for infrastructure services. This review should immediately be placed on the development agenda, both for the countries and for the region as a whole.

I. Integrated view

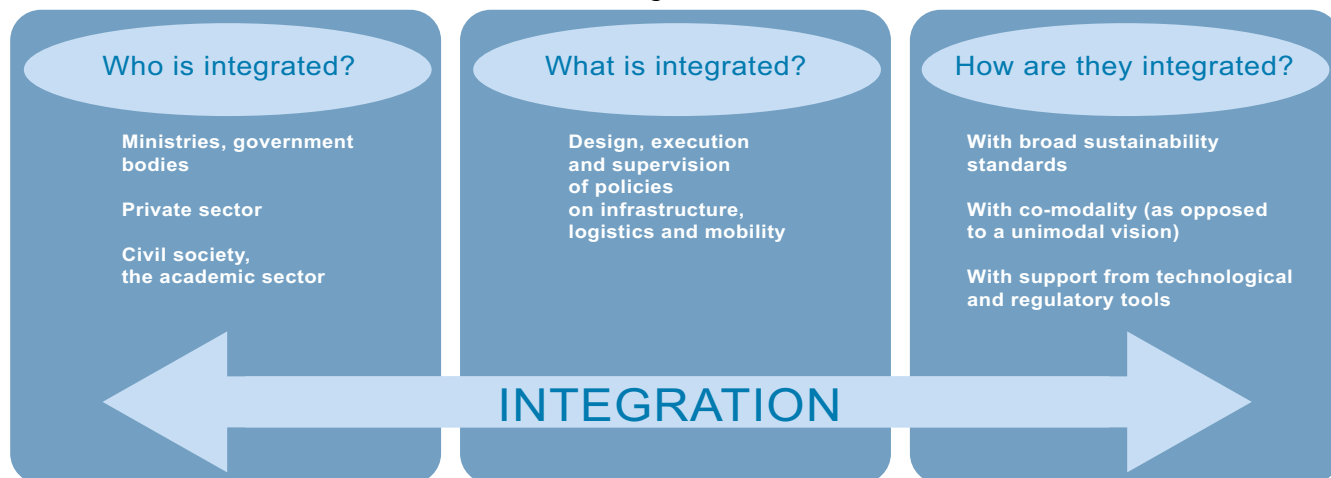
Traditionally, public policies on infrastructure and transport were dealt with separately and implemented in an uncoordinated manner depending on the modes of transport involved, with specific policies for each mode. As a result, there could be no efficient provision of strategically important public goods (see FAL Bulletin No. 263). As noted in earlier ECLAC studies, Latin America suffers from a divorce between policies for the design and provision of infrastructure and those relating to transport operation and promotion. This is because, in most cases, infrastructure is planned by one ministry, decisions are implemented by another, and services tend to be regulated by a third ministry which was not involved in their design. There is no coordination between environmental considerations and the planning of goods and passenger transport, and planning authority often lies with yet another public body unrelated to those already mentioned. Furthermore, while it is universally agreed that logistics are crucially important in the competitiveness

of the economy, they are often neglected in transport and infrastructure planning. This lack of integration in the design and implementation of infrastructure policies ultimately affects the end user, who pays, directly or indirectly, for work whose uncoordinated nature leads to higher operating costs, safety problems and a lack of positive synergies in local and regional development (Cipoletta and others, 2010a).

That state of affairs underlies the lack of integration in public policies on infrastructure and transport. Integration is defined as the presence of coordinated planning and execution between public bodies and civil society, with a comprehensive view of all modes of transport involved in the movement of passengers and goods and external trade, as well as the logistics which link them together. Such integration requires coordinated criteria for the efficient use of transport infrastructure, the promotion of intermodality or co-modality and the adoption of intelligent transport systems (ITS) and, more generally, of information and communications technology (ICT).

Integration involves a union of parties, coming together to form a whole. As it relates to the situation of infrastructure and transport policies, integration concerns at least three areas, which are defined by the following questions: who is integrated, what is integrated and how are they integrated? The ideas included in the conceptualization of integration are shown in figure 1.

Figure 1



Source: Prepared by the author.

Evidently, integration in national policies requires recognition of the multidimensional characteristics of pillars of economic and social development such as

infrastructure, logistics and mobility, and achieving a more efficient approach through coordination of policies which are currently addressed separately.

Clearly, logistics are a totally cross-cutting area, covering production, commerce and business development, the transport sector, ICT, management of the movement of goods, and facilitation of transport and commerce; involving all entities taking part in the whole process. These entities belong both to the private sector (producers, businesses providing logistical services and the various forms of transport, distributors, and others involved in exchanges of goods) and the public sector (in areas such as regulation, supervision, security, provision of infrastructure, and trade facilitation). There are plenty of reasons for government to become involved in developing a more efficient logistical system, whether it be to promote the competitiveness of exports and national infrastructure, encourage external trade, open up new markets, promote employment in the service sector, and deal with environmental and social externalities such as congestion, accident rates, safety and security issues and pollution (Cipoletta and others, 2010a). Parallel approaches to measures on mobility in the field of transport are of particular importance because they connect the population and facilitate citizens' access to activities and services through a variety of forms of transport, maximizing freedom of access and at the same time cutting down on polluting emissions, accident rates and congestion.

In light of these factors, uncoordinated infrastructure policies which fail to take an integrated approach to the supply chain, commercial and productive flows, or the connectivity of the population, waste opportunities to improve mobility and the national logistical system; consequently, the resulting economic and social advantages are also lost.

Given the need to implement an integrated approach to infrastructure, logistics and mobility policies, there must be improvements and strengthening of institutions in the Latin American States, increasing coordination and coherence within the State itself and consolidating relations with the private sector through modern regulatory frameworks which achieve a balance between planning, assessment, capacity and maturing of investments. Thus, the main focus must be integrated development of the economy, taking into account not only financial aspects but also infrastructure, logistics and mobility, which are essential in fostering economic and social development in the region.

In light of this analysis, the establishment of an integrated policy on infrastructure, logistics and mobility at the national level through the organization, cooperation and coordination of intersectoral, interministerial and intermodal operations is clearly the most reasonable way to achieve the goal of ensuring that goods and

passengers can circulate efficiently, effectively and safely, to foster productivity and competitiveness and strengthen the country's economy, as well as social development and inclusiveness.

II. Sustainability

Sustainability is defined as a set of strategies which ensures that current needs are satisfied without compromising the ability of future generations to satisfy their own needs (see Brundtland, World Commission on Environment and Development (WCED), 1987), covering the environmental, economic, social and institutional fields. Its manifestation in the area of infrastructure and transport services is sustainable transport, which is defined by policies which integrate infrastructure building, improvements in transport services and the inclusion of logistics, mobility and the facilitation of trade and transport, all on the basis of development which is sustainable in both time and space.

The extent to which Latin America lags behind in transport and infrastructure results not only from the significant deficit in the provision of that infrastructure and its associated services in transport and logistics, but also from the marked delay in the adoption of standards of sustainability in the design and execution of transport programmes and policies—and consequently, in investment decisions—from the economic, social, institutional and environmental viewpoints. That lag is clearly visible in the current modal distribution of transport in the countries of the region, which results in an upward trend in emissions. Unlike the European Union, where modal distribution is moving towards less polluting forms of transport, in Latin America it is a matter of concern that policy decisions tend to lean towards the road sector, at the expense of rail and water transport (such as short sea shipping and river and lake transport).

The study on transport policy in Latin America—coordinated by the Infrastructure Services Unit of the Economic Commission for Latin America and the Caribbean—found that in almost all the countries of the region, government policies clearly mention the sustainability criterion but that, in the specific area of transport policies and plans and their infrastructure services, there is very little effective development or implementation of that criterion. Some of the countries have drafted goals, strategies and guidelines to deal with environmental sustainability within transport policy; in most cases, however, those criteria are not included in the planned targets, and furthermore, the broad criterion of sustainability is habitually ignored, except in its



economic and, to a lesser extent, its social dimensions. The institutional aspect is practically nonexistent.

On the subject of institutional sustainability, case studies by ECLAC show a series of constraining factors regarding the formulation and implementation of public policies, resulting from weaknesses in the current institutional policy framework. Those factors include:

- Lack of political will for the effective implementation of formulated strategic plans (paying lip-service);
- Lack of policy continuity;
- Lack of measurable indicators for monitoring;
- Uncertainty when dealing with changes in public administration, apprehensive attitudes to paradigm shifts in policy planning and execution;
- Pressure, political lobbying and excessive dominance of trade union interests, all of which resist changes to existing modal imbalances;
- Other problems include uncoordinated multiple jurisdictions in federal territories and poor quality in the training of technical staff responsible for sectoral policies.

Such constraints are present in different forms and degrees in the various countries of the region and can be serious obstacles to policy formulation in transport and infrastructure. Their existence must therefore be borne in mind in order to find positive ways of dealing with them.

Although transport and infrastructure planning, policies and programmes in the region express the intention of improving sustainability in the various forms of transport, they provide for no tools for effective implementation. Environmental policies have begun to include proposals regarding transport and its infrastructure, but there are few examples of specific projects setting out clear and discrete targets for the development and promotion of infrastructure for low-emission forms of transport to replace road transport and improve the environmentally regressive modal distributions currently prevailing in Latin America. There is a shortage of instruments and methods for analysing the sustainability of policies for transport

infrastructure and also of supervision and monitoring mechanisms for the implementation of those criteria (for greater detail, see *FAL Bulletin* 291).

The countries of Latin America must therefore begin to take into account sustainability issues in the broadest sense within their public policies on transport and infrastructure. This new approach must not only see the issue as a way of dealing with negative externalities and mitigating environmental and social costs associated with the construction of infrastructure and its exploitation by transport services; it must also see it as a factor which can affect competitiveness and integration throughout the national economy. This is clearly seen in the actions of certain European governments and businesses, such as those which tend to demand carbon footprint labelling of imported foodstuffs to inform the consumer of the greenhouse gas emissions involved in the output and transport of the products. Aside from the fact that measures such as labelling often result in non-tariff barriers to trade, it should be borne in mind that although they are not currently widely present in regulations, they may potentially be so in the future. As governments continue to commit themselves to acceding to international environmental protocols, there will be growing concern and pressure for the adoption of such standards, which will then have a significant impact on the competitiveness of the exports concerned. The severity of the impact on national economies will then depend on the timing of the introduction of such directives. If timely measures are taken, they may contribute value added in terms of export competitiveness, capturing additional markets with greater purchasing power and ecological awareness. If their introduction is slow, however, markets may be lost even if the competitive value of the products is maintained.

In the particular case of freight transport, the lack of sustainability criteria is very obvious from the increasingly preponderant share of road transport at the expense of other available modes of transport. Consequently, the transport system cannot be assessed, in terms of all the available technologies, on the basis of objective parameters such as required investment levels, operating costs and the number of tons transported per unit of emissions generated. All these factors lead to logistical excess costs which reduce the competitiveness of the economy and generate growing negative social and environmental externalities because of overuse of road transport over distances for which it is not economically viable.

Changing the current distribution of modes of transport for the internal and regional movement of freight

and passengers is therefore a central objective for the achievement of sustainable transport; this demands that the co-modality principle should be applied. The situation in Latin America is one of growing freight and passenger traffic and growing risks from congestion and pollution. This is an obstacle both to potential improvements in the effectiveness, productivity and competitiveness of the economies, and to chances of increasing equity. The countries must therefore strive to achieve sustainable public policies, in order to foster modal shifts which will be advantageous for the four pillars of sustainability: economic, social, environmental and institutional.

III. Achieving co-modality through technical and economic regulation

For sustainable transport to be achieved in Latin America, changes are needed in the current modal distribution of the internal, regional and international movement of freight and passengers through the application of the co-modality principle. The region must depart from the traditional, strongly unimodal, focus of its transport policies, shifting to a new paradigm in the design, execution and supervision of integrated and sustainable policies for infrastructure, logistics and mobility. One of the major axes of the proposed paradigm is the promotion of modal shifts towards an advanced form of intermodality based on co-modality. The principle of co-modality within transport policy should be understood as an approach which seeks to achieve efficiency in the modal distribution of transport and related services, for each journey and group of journeys, through the optimal use of each mode of transport and its possible combination with others, making the complete journey efficient and sustainable in accordance with the particular requirements of transport and the distance to be covered.¹ In other words, the principle of co-modality is applicable to both passenger transport and freight, in all geographical contexts.

Thus, the co-modality concept represents a new approach to transport policy. Rather than being based on simple competition or interconnection between modes of transport, it seeks to achieve optimal utilization of resources through the use or combination of whichever modal choices are most appropriate and sustainable.

The co-modality concept incorporates and even surpasses those of multimodality and intermodality. The emphasis is not on legal regulation of transport operations, or on whether they use two or more modes of transport or who

organizes and takes responsibility for transport routes; rather, it is on the effectiveness and efficiency of the transport service as an integral component of the logistical chain. Co-modality is therefore the criterion to be applied in order to achieve sustainable transport infrastructure services, since the paradigm shift it entails has positive impacts on reductions in logistical and transport costs (economic and social aspects), on the energy efficiency of transport (environmental and economic aspects) and on reducing externalities (social and environmental aspects).

Transport, mobility and logistics are essential for the supply chain, production and commerce, for people's everyday lives and for social development. The application of the co-modality principle in public policy will therefore encourage finding and promoting a number of technological alternatives to take account of and to satisfy varying needs for passenger transport and freight, ensuring connectivity and flows which are continuous, safe and efficient, both in economic, social and environmental terms (for example, reducing accidents, emissions and congestion). It also emphasizes the need to achieve optimal complementarity among modes of transport in the framework of a transport system which is effective and solid, offering transport users the best possible services.

The proposed new paradigm to improve infrastructure and transport services should be seen in the broader context of a State policy strategy designed to increase competitiveness and economic and social development. Efforts towards modal complementarity, modernization, and reductions in pollution and carbon emissions in the transport sector will be a contribution towards those goals and must be managed through an integrated policy. This is vitally important because, as was emphasized above, the lack of integration in dealing with issues which by their nature require holistic treatment is a failing which has been observed in the Latin American countries. In most of them, reduced emissions in the transport sector have been achieved as a result of other partial policy goals, such as the promotion of more efficient transport services as well as local efforts to reduce urban congestion or atmospheric pollution. None of the countries analysed in the aforementioned ECLAC studies has an integrated low-carbon infrastructure policy which promotes modal complementarity; nor do they have instruments incorporating objective indicators for follow-up to the measures implemented.

The concepts of low-carbon transport infrastructure and more generally of cutting pollution must therefore be included in the development of national policies and in the planning of infrastructure and related transport services. Nonetheless, not only carbon should be taken into consideration; equally important are reductions in

¹ This definition of co-modality is consistent with that produced by the European Commission (COM 2006, 336 final), which describes co-modality as efficiency in the use of modes of transport, on their own and in a framework of multimodal integration in transport systems, which will result in an optimal and sustainable utilisation of resources.

other pollutants such as nitrogen oxides, hydrocarbons, sulphides and particulate matter. Early adoption of these concepts at the infrastructure planning stage would considerably reduce emissions and negative externalities at a reasonable cost.

This can be achieved through a coordinated combination of measures and the adoption of standards and regulations, such as the promotion of new technologies for electric and hybrid vehicles, smart traffic systems, developing networks of electrical transport, improvements in logistics and measures to cut pollution from land vehicles, aircraft and watercraft.

While co-modality is essential for sustainable policies on logistics and mobility, the full functioning of mobility policy depends on the support of technical and financial regulatory instruments. This relates to measures or standards which tend to alter the behaviour of transport users, to facilitate sustainable modal shifts and cut pollution. Users consider the transport system as a whole and make their decisions on the basis of substitutability and complementarity among the various modes; therefore, if pricing policy encourages or discourages the use of a particular transport choice (for example, through subsidies when there are economies of density, or through congestion charging), other modes will also be affected (De Rus and others, 2003). Introducing a regulating, compensating or correcting mechanism will therefore stimulate changes in modal distribution and lead to a balance among modes of transport which will optimize resource use.

The following are examples of the type of actions being discussed: imposing measures to improve the quality of motors and fuels and the energy efficiency of vehicles; encouraging users to change to cleaner energy sources; monitoring vehicle emissions, penalizing (taxing) the use of leaded petrol, periodic checks of vehicles in circulation and requiring gas emission certificates; imposing maximum emission standards in the manufacture of new vehicles, and providing incentives (subsidies or tax breaks) for the renovation of vehicles with lower pollution outputs.

Lastly, the new paradigm of integrated and sustainable policies for infrastructure, logistics and mobility, operating in accordance with the principle of co-modality and supported by appropriate regulatory instruments, is the best way of helping to reduce the climate impact of transport through more efficient provision of infrastructure and the promotion of more sustainable modes of transport. At the same time, it contributes to the pursuit of nations' major economic and social development goals.

IV. Recommendations for the establishment of integrated and sustainable policy

The main results obtained during the case study on transport infrastructure service policies in Latin America clearly reflect a number of problems. First, the policies adopted in the region are not integrated; they provide for segmented development of activities and functions which are by their nature interconnected. Furthermore, they tend to lack long-term vision and they do not have the support of appropriate institutions, which would include effective regulatory frameworks and appropriate monitoring measures and supervisory instruments.

Second, the countries have clear weaknesses in the application of sustainability criteria within their policies. Although in most cases this issue is mentioned in transport and infrastructure policies and plans, at the same time there is little effective development and implementation.

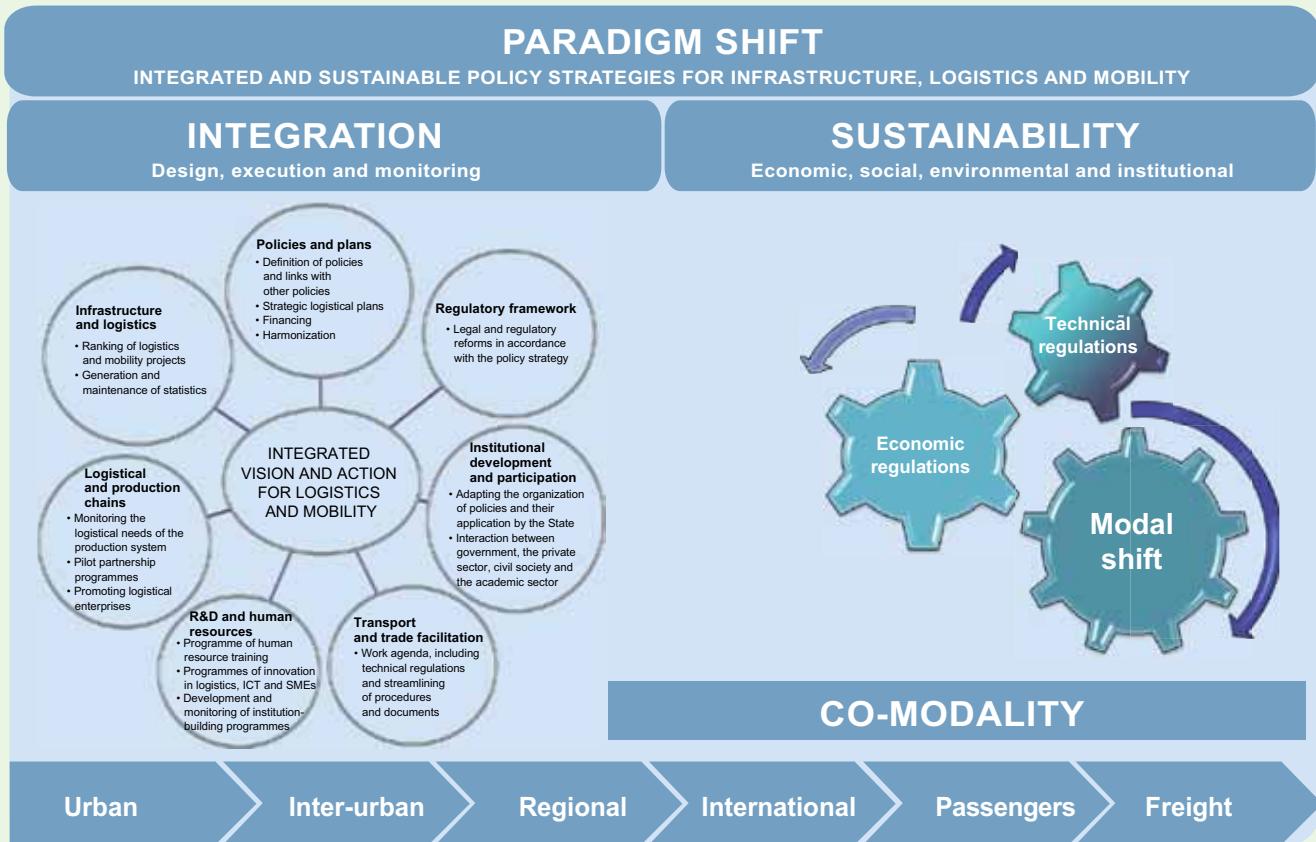
Given the virtuous effects of the development of infrastructure and its services on the countries' economic and social development, this situation is clearly an obstacle to the effective implementation of development policies, to the achievement of improved growth levels, and to progress in terms of productivity, competitiveness and the quality of life of the population.

To help to resolve the issues which have arisen in the region, the present document proposes to bring about the beginning of a paradigm shift, from the current policies—designed modally and separately—to new policies with integrated and sustainable design and a co-modal vision, calling for the use of market (economic) regulatory instruments and the technical characteristics of the activity, pushing modal shifts towards sustainability.

The proposed paradigm shift is needed in order to progress towards formulation of a strategy of integrated and sustainable policies for infrastructure, logistics and mobility in Latin America and the Caribbean, which will not only make possible better approaches to development issues, but also give incentives for seeking improved economic efficiency in transport services and reducing the negative externalities affecting the population.

Figure 2 represents the proposed paradigm shift towards a strategy of integrated and sustainable policies for infrastructure, logistics and mobility.

Figure 2



Source: Prepared by the author.

The region should review its transport infrastructure policies and adopt a new paradigm incorporating an integrated and sustainable approach. The major challenge is to harmonize the conception, design, execution, follow-up, supervision and assessment of infrastructure service policies and maximize their impact on development. The development and incorporation of indicators for monitoring the strategy will be vital for policy supervision, assessment of progress and readjustment of variables which will be needed in due course.

The need to implement the integrated approach to policies on infrastructure, logistics and mobility entails improving and strengthening institutions in Latin America and the Caribbean, increasing coordination and coherence within the State itself and consolidating its relationship with the private sector through modern regulatory frameworks which will balance planning, assessment, capacities and the maturing of investments. The main focus must be integrated development of the economy, including not only financial aspects but also the infrastructure, logistics and mobility which are essential to the region's

development. Constructing an integrated policy on infrastructure, logistics and mobility at the national level through organization, cooperation and coordination of intersectoral, inter-agency and intermodal operational activities is the most viable choice for achieving the goal of making the circulation of freight and passengers take place in the most efficient, effective and safe manner, to promote productivity, competitiveness and the country's economy, as well as social inclusiveness.

In parallel with the integrated approach, the countries of Latin America and the Caribbean should, within their public policies on infrastructure and transport, begin to consider issues of sustainability in the broadest sense, so that they see it not only as an issue of tackling negative externalities and mitigating the environmental and social costs of infrastructure construction and its exploitation by transport services, but also as a factor which can affect competitiveness and integration throughout the national economy. They must therefore strive to achieve sustainable public policy, with the goal of promoting a modal shift which can contribute to the four pillars of sustainability.

The modal shift that is needed is not a mere redistribution but a change in accordance with the co-modality principle. This principle, which falls within the area of transport policy, should be seen as an approach which seeks to maximize efficiency in the modal distribution of transport and its services, for each journey or group of journeys, through the optimal use of each means of transport and in some cases its combination with others, so that the complete journey is efficient and sustainable in accordance with the particular necessities of the journey and the distance to be covered. The principle therefore applies to passenger transport and freight, in all geographical contexts (urban, inter-urban, regional and international).

Co-modality is the criterion to be applied in order to achieve sustainable infrastructure and transport services. It has a positive impact in terms of both reducing logistical and transport costs (economic and social aspect), on the energy efficiency of transport (environmental and economic aspect) and on reducing externalities (social and environmental aspect). The full functioning of mobility policy depends on the support of technical and financial regulatory instruments, through the introduction of technical standards to constitute a regulatory and supervisory mechanism, at the same time as pricing instruments are adopted in order to correct, penalize, compensate or encourage certain types of behaviour on the part of the users in order to stimulate the modal shift and achieve a balance between the modes of transport which will optimize resource use.

Lastly, it should be noted that the proposed paradigm shift to improve infrastructure and transport services should be considered in a broader context of a State policy designed to increase competitiveness and economic and social development. Efforts to achieve modal complementarity, modernization and reductions in emissions in the transport sector should be understood as a contribution to those objectives and, therefore, managed within an integrated

and sustainable policy framework. To conclude, the new paradigm of integrated and sustainable policies on infrastructure, logistics and mobility, operating under the principle of co-modality and supported by appropriate regulatory tools, is an approach which can make a real contribution to achieving countries' major objectives in terms of economic and social development and to reducing the negative externalities of transport (including climate, environmental and social impacts), through more efficient provision of infrastructure and the promotion of more sustainable modes of transport.

The foundation for the adoption of the paradigm shift has been laid. It draws attention to the need to review the structure of current policies and work to create a strategy for the formulation and establishment of integrated and sustainable policies on infrastructure, logistics and mobility, incorporating it into the development agenda in the region as a whole and its countries.

The proposals put forward herein should be considered in the light of the ECLAC document "Time for equality: closing gaps, opening trails". Much of the analysis underlying current infrastructure and transport policies corresponds to a system of relations between the market, the State and society which has so far failed to maximize the positive effects that infrastructure can have for development. ECLAC (2010) argues that achieving fuller development entails working towards a new market-State-society equation, which must include political agreements for a new social and intergenerational agreement, with well-defined responsibilities and clear accountability. There must therefore be integrated and sustainable public policies on logistics and mobility which will truly be State policy; rather than tied to a particular government, they should become institutionalized. This entails strengthening the capacities of States, achieving more integrated and sustainable coordination of public policies and building stronger private-sector and civil-society participation.