



Design and establishment of national observatories on freight transport and logistics

**Phases and strategic
considerations**

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**Inter-American
Development Bank**

Infrastructure and
Environment Sector

Transport Division

TECHNICAL NOTE

No. IDB-TN-509

March 2013

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2013

Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library

Inter-American Development Bank
Design and establishment of national observatories on freight transport and logistics / Inter-American
Development Bank; Pablo Guerrero, Julieta Abad, editors.
p. cm. (IDB Technical Note ; 509)
Includes bibliographical references.
1. Freight and freightage—Management. 2. Shipment of goods—Data processing. I. Inter-American
Development Bank. Transport Division. II. Guerrero, Pablo. III. Abad, Julieta. IV. Title. V. Series.

IDB-TN-509

Jel code: R11, R42,R58, P45,O51,O18,N76,L91

Keywords: Freight, Transport, Transportation Planning, Policy, Policy Making, Trade, Infrastructure,
Transportation, Urban, Congestion.

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[This document contains a guide and practical considerations on the subject of establishing national
observatories on freight transport and logistics.]

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Freight transport and logistics activities have substantially increased in volume in recent years, both at the global level and in Latin America and the Caribbean. The sector's growing importance—which is the result of its positive impacts as well as its relevant negative impacts—has increased the need for data about it. Such data are needed by private entities seeking to improve their business strategies, and also by authorities and institutions that are interested in improving the quality of public policies in this area. This need for information stands in contrast to the weakness of the statistics and analyses that are available about the sector.

Because of the discrepancy between the information needed and the information available, observatories have attracted consideration as an organizational model for meeting this need. International experience with observatories on freight transport has shown that the core of such observatories' activity consists of generating data and knowledge products. Observatories of various types have been identified; these observatories vary in terms of their geographic scope (a country, part of a country, or a region), their thematic focus (one or all modes of transport), the type of need they seek to address (data, information and knowledge products, or portals for information about real-time market conditions), and their accessibility (access to the public free of charge, or restricted and/or fee-based access). Based on an analysis and review of various cases, the functions that observatories generally serve have been identified. These functions can be summarized as: (i) generating and disseminating information; (ii) fostering inter-institutional cooperation and public-private cooperation; (iii) gathering and developing expert knowledge; (iv) defining, standardizing, and developing indicators; (v) conducting studies and contributing to existing knowledge; and (vi) supporting market functioning. Some factors that contribute to an observatory's success include: the ability to respond effectively to users' needs, the quality of their work and the prestige that accrues to them as a result, and stable funding, which enables them to maintain the continuity of their work.

The IDB's proposal: a network of National and Sub-regional Observatories, centered around a Regional Observatory

In this context, the Bank is encouraging the creation of a Regional Observatory on Freight Transport and Logistics (RO) for Latin America and the Caribbean, and the development of a network of national observatories (NOs).

From a technical perspective, the RO's functions focus on gathering and disseminating existing information, developing methodologies and indicators, fostering the creation of knowledge products, and contributing to the development of a network of national observatories. The objectives of the NOs would be consistent with those of the RO. The work of each NO would focus on the respective country, and the NOs would coordinate their activities and criteria at the regional level through the RO.

One of the key components of this observatory initiative is to establish a **network of experts on freight logistics** in the region. By means of this network, the Bank seeks to strengthen the development of local capacities and the exchange of experiences among countries in the region. The specialists connected to the Observatory's network cover a variety of specific topics related to freight transport and logistics, and they also have expertise in designing and implementing logistics policies and plans. Many of them have been involved in the process of setting up national observatories. As a result, they have practical, effective experience to contribute to the process of setting up new observatories.

In terms of its **institutional dimension**, the RO works through the INTAL to develop a policy dialogue at the regional level, and this dialogue serves to further the RO's activities and affirm consensus about the initiative's benefits. The INTAL, with its extensive network of expert contacts (not only on the subject of transport, but also in the field of planning), is able to help the network of observatories to attract greater notice and to disseminate information more widely.

Steps to establish national observatories: phases and strategic considerations

Establishing a national observatory on logistics is a challenge with some characteristics that are unique to each country; these unique characteristics are related to type of work on which the observatory intends to focus, as well as the regulatory framework that will govern the observatory's actions. Nevertheless, it is possible to establish, in general terms, a typical procedure to be followed (with the appropriate adjustments in each case), to help countries that are interested in the process of designing and establishing an observatory. The procedure proposed in this guide entails a three-step sequence:

- i. *What is the current situation of the national logistics sector, and what type of work should the observatory perform?* Identify the main demands that the observatory should aim to meet, based on an analysis of the main challenges that the country is facing in regard to logistics and trade facilitation.
- ii. *Where and how will the observatory be established?* In view of these demands, the organization of the Government, and the legal framework in place in the respective country, design the observatory, establishing its location, governance mechanisms, organization, partnership with various stakeholders, funding, etc.
- iii. *What would the observatory's activities be during its first years?* Create a work plan that proposes activities (e.g., for the first two years) and establishes the content, responsible parties, etc., as well as the resources necessary to carry out these activities.

The following paragraphs present options and considerations related to the proposed steps.

Strategic analysis of the logistics sector and expected demands

The observatory's design should be based on an identification of the priorities that the observatory is expected to address. During this initial phase, developing a complete plan of action is not essential. What is essential, however, is to engage in a careful consideration of the country's needs in the area of logistics and trade facilitation, leading to the establishment of general guidelines on the type of work that the observatory should perform. This activity includes two components:

a) **Identify the country's needs in the area of logistics and trade facilitation.** This involves conducting a brief assessment of the current situation: recognizing the main trends, envisioning the logistics system that public policies are designed to create, identifying the most significant gaps between the existing situation and the desired situation, and—based on this information—establishing the priorities that the observatory should address. Based on the Bank's experience in similar processes, some relevant considerations for purposes of this strategic assessment are:

- Structure the analysis using the **taxonomy** provided in Annex I. This taxonomy facilitates the completion of a systematic, comprehensive assessment that encompasses, in summary form, all of the relevant components of the logistics system.
- **Start by summarizing existing assessments and analytical work**, to avoid duplication of effort and achieve a more organized discussion.
- Incorporating the **demand-side perspective** into the assessment is key, in order to ensure that the system's challenges are prioritized properly. This entails: (i) securing the participation of the private sector (both freight-generating companies and freight operators) in discussions; (ii) identifying, on an initial basis, the country's key logistics chains and considering their main problems; (iii) identifying the country's main freight corridors and their most urgent challenges.

- Incorporating the **academic perspective** into the discussion about the situation of the national logistics sector.

b) Establish **the basic characteristics that will shape the observatory's design.** These characteristics include the observatory's priorities for action, the expected users of its products and services, and the alliances and partnerships that the observatory may find it helpful to form in order to fulfill its purpose. The following considerations are relevant to this activity:

- Perform **benchmarking on logistics observatories that are already in existence** or in the process of being established, in order to provide feedback about the structure and development of the National Observatory on Logistics. This can be done through contact with public entities in other countries around the region that are undertaking initiatives of this type; the Bank can facilitate this contact.

The team handling this initial phase of the process must ensure **that the initiative is widely publicized among the relevant stakeholders** in the logistics sector, and should also endeavor to keep high-level political authorities informed of the initiative's progress. Although the strategic analysis will be carried out by a limited number of individuals, the results of the analysis must be presented to broad audiences of public and private sector stakeholders in the logistics sector, in order to maximize support for the initiative. To this end, it will be necessary to develop a concise presentation that highlights the project's benefits, underscoring its positive impact on decision-making processes in the sector for both public and private sector stakeholders.

Institutional design

In order to set up the observatory in an effective manner, it is necessary to define the type of institution to be created, in view of the numerous aspects that characterize it.

The observatory may be an office that is part of a line ministry (the Ministry of Transport, Ministry of Production, Ministry of Trade), a relatively autonomous agency, or a task force in the service of a government department (as are competition committees, facilitation committees, users councils, and logistics councils). Multiple

options exist, and the appropriateness of adopting one option or another depends on the country's system of administrative laws and a particular government department's focus on promoting the agenda. One key aspect to consider involves the partnerships that the observatory should form with public-sector stakeholders (at the national and sub-national levels) and with the private sector, since private-sector stakeholders play a determining role in managing logistics services. The following basic questions should be answered in establishing the observatory's institutional design: ¹

- **What type of institution** is going to be created, according to what legal concept, and with what specific responsibilities?
- By what **administrative order** will it be created?
- **Where is the new institution located** (on the Government organizational chart)?
- What will the institution's **governance structure** be? Who will be part of the governance structure, what decision-making power will its executives have, and will there be support advisory groups?
- **How will it be funded?** What is the source of the funds, how are they tied to budget processes, and what is the potential for private contributions?
- **How is the institution organized internally?** The answer to this question should include such aspects as:
 - functions that the institution should serve,
 - key processes that the institution should ensure,
 - internal organization, work and support areas,

- mechanisms for partnering with other public and private entities, including line ministries having a mandate that involves the freight logistics sector, and the Institute of Statistics (or equivalent),
- ways of interacting with private entities,
- instances of collaboration/partnership with the academic sector,
- allocation of human resources,
- computer systems and other technological resources.

Creation of a work plan

After the observatory's desired focus is identified and the observatory is designed, the proposed next step is to develop a program of activities. This entails creating a work plan for a certain period of time, which should not be less than two years. The activities may be organized by area of work, addressing the priorities identified during previous steps of the process. Specific activities may be defined for each area of work; this includes establishing the activities' content, the resources needed, the parties responsible for carrying them out, etc. At this initial point, as the specific activities that constitute the observatory's output are being defined, plans should also be made to put the observatory's basic infrastructure in place. In particular, plans should be made to set up the observatory's website and associated systems, which will be key tools for organizing and disseminating its activities. The following points list typical activities that have been included the initial work plans of observatories that are being established:

Gathering and processing of data about freight logistics

- Mapping of data about the country's transport sector: identify sources, existing data-gathering methodologies, and gaps. Annex II contains a proposed list of relevant data for compiling a Transport Statistics Yearbook. It is important to note that many of the proposed variables are usually gathered and monitored by government offices, while others require additional calculations or estimates.

¹ Although there are no specific guides for developing observatories on freight transport and logistics, there are guidance documents about implementing coordination mechanisms to facilitate transport and trade, particularly in Asia. See, for example, UNESCAP 2007 and UNESCAP 2011 ("Study on National Coordination Mechanisms for Trade and Transport Facilitation in the UNESCAP Region," link: http://www.unescap.org/ttdw/Publications/TFS_pubs/Mechanisms/Study_on_Coordination_Mechanisms_full-text.pdf).

- Proposing indicators to measure the country's logistics performance and the impact of public policies in this area: consider existing data and data-gathering efforts needed.
- Identifying and proposing methods to bring together the various information systems in the freight transport sector, in order to develop indicators. Also, identifying and recommending methodologies for developing forecasts and managing information.
- Designing an information system (software) and methodology that would enable the observatory to gather and manage data in a flexible manner, taking into account the technology platforms used by the entity managing the system.
- Gathering performance data through a National Logistics Survey: In countries where the immediately-available data do not provide a picture of logistics performance, surveys designed to measure this are conducted (using logistics chains or corridors as a point of reference).
- Applying existing methodologies to measure logistics costs at the national level, in order to identify the critical points where adjustments can be made.

Analysis of relevant topics

- **Urban logistics:** Analyze problems related to urban logistics in the country's major cities, taking performance into account, attempting to estimate the cost of congestion, and mapping the relevant stakeholders for the purpose of developing applicable policies and regulations.
- **Trucking industry analysis:** Conduct a systematic analysis of the trucking sector's performance, attempting to gather information about the most significant market segments. Annex III offers a proposed segmentation for the purpose of analyzing this sector.

Training

- Identify training needs of officials at various levels of government in relation to freight logistics.

Once the work plan has been developed and the resources to implement it have been assured, the launch of the observatory will remain

to be completed. This means resolving such matters as arranging the space where the observatory will be located, assembling its staff, reaching agreements to secure funding, and acquiring minimum equipment for the observatory to begin its activities. The observatory's structure should include accountability mechanisms, to enable tracking and oversight of the observatory's work in accordance with each country's rules.

The following diagram shows the phases suggested in this guide, listing the main activities in each phase.

**GRAPHIC 1:
SUGGESTED PHASES FOR ESTABLISHING A NATIONAL OBSERVATORY**



Source: prepared by the authors

Team of professionals

The composition and location of the team responsible for the activities proposed in this guide will depend on each country's situation. In most of the initiatives of this kind that are underway, the team working to set up the observatory tends to belong to the line ministries that are interested in advancing the logistics agenda. These teams are small, specialized groups, with experience performing analytical work and putting together events on logistics, and they generally have ad hoc support from external consultants on specific topics. It is important to note that this refers not to the team that will make up the National Observatory, but rather to the team carrying out the preparatory activities to set up the observatory (although the team's members may continue to serve once the Observatory is established).

Below is a representative summary of the types of members needed on the team responsible for the preparatory work:

- **Logistics professional:** an economist, civil engineer, or industrial engineer, with experience in transport, logistics, and foreign trade, with at least 10 years of relevant experience.
- **Transport professional:** a civil, road, or transportation engineer, with at least 10 years of experience in relevant projects.
- **Professional in statistics and sampling:** an economist or specialist in statistics, with at least 5 years of experience, preferably in the area of transport.
- **Systems professional:** a systems engineer with at least 5 years of experience in software design.
- **Legal specialist:** an attorney with at least 3 years of general experience, experience in transport and urban planning projects, and

post-graduate studies in administrative and/or commercial law.

- **Communications specialist:** a journalist or individual with a degree in communications, with experience organizing and moderating events with large audiences. Ability to develop media and communications strategies.

ANNEX i: TAXONOMY OF FREIGHT LOGISTICS AND
TRADE FACILITATION

Inter-American Development Bank (IDB) Taxonomy of Freight Logistics and Trade Facilitation (FLTf)			
Dimensions	Functions	Components	
1	Infrastructure and services	1 Domestic flows	1 Roads (urban and interurban road network)
			2 Automotive freight transport
			3 Railways
			4 Waterways and cabotage (fluvial and maritime)
		2 Transfer nodes	5 Ports
			6 Airports
			7 Logistics platforms
			8 Border crossings
		3 International flows	9 Air transport
			10 Maritime transport
			11 International road transport
		4 Intermodal coordination	12 Intermodal operations (interconnection at nodes)
			13 Multimodal transport
2	5 Supply chain organization	14 Supply chain and inventory management	
		15 Distribution strategy	
	6 Logistics service providers	16 Third-party logistics providers and 3PL	
		17 Forwarding agents and intermediaries	
3	7 Border control	18 International transport of goods	
		19 Modernization and integrated border management	
		20 Operational performance at border crossings	
	8 Trade policy and regulations	21 Air and maritime regulations	
		22 Trade agreements and regional integration	
		23 Market access	
		24 Sectoral and employment policies	
	9 Freight security	25 Domestic transport security	
		26 International freight security agreements	

Dimensions		Functions	Components
4	Institutions	10 Organization	27 Analysis of institutions and stakeholders in the area of freight logistics
			28 Regional logistics integration
			29 Logistics councils
		11 Policies and planning	30 Freight transport and logistics policies and plans
			31 Freight transport demand modelling
			32 Impact analysis of improvements in the logistics sector
5	12 Humanitarian logistics	33 Disaster relief and prevention	
		34 Fine-tuning of disaster response mechanisms	
		35 Natural disaster response	
		36 Recovery	
	13 Climate change and energy efficiency	37 Models for calculating GHG emissions	
		38 Funding mechanisms related to climate change	
		39 Fleet renewal	
		40 Energy efficiency in freight transport	
	14 Green logistics	41 Reverse logistics	
		42 Carbon-neutral supply chains	
6	15 Methodologies and data	43 Collaborative planning	
		44 Value chain analysis methodologies	
		45 Methodologies of measuring logistics costs	
		46 Congestion analysis	
		47 Observatories on Freight Transport and Logistics	
		48 Freight logistics data and indicators	
	16 Performance analysis	49 Urban and regional logistics	
		50 Logistics and SMEs	
		51 Analysis of logistics performance at the regional or country level	
		52 Analysis of logistics performance by value chain or trade corridor	
7	17 Technology	53 ICTs and automation	
		54 Management and process optimization technologies	
		55 Freight exchanges and Cargo Community Systems	

ANNEX ii: PROPOSED VARIABLES AND
INDICATORS FOR THE PURPOSE OF COMPILING A
FREIGHT TRANSPORT STATISTICS YEARBOOK

Type of indicator		Mode	Units	Source
General indicators				
1	Basic data	Transport share of GDP	%	IMF
2	Basic data	Total population	persons	IADB/WB/IMF/UN
3	Basic data	Area	km ²	IADB/WB/IMF/UN
4	Basic data	GDP	US\$	IMF
5	Basic data	GDP-PPP	US\$	IMF
6	Trade	Import of transport services	US\$	UNCTADStat
7	Trade	Export of transport services	US\$	UNCTADStat
8	Trade	Exports - value	US\$	WITS
9	Trade	Exports - volume	Ton	WITS
10	Trade	Imports - value	US\$	WITS
11	Trade	Imports - volume	Ton	WITS
Road transport				
12	Infrastructure	Road network - total	km	IRF
13	Infrastructure	Highways	km	IRF
14	Infrastructure	Primary roads	km	IRF
15	Infrastructure	Secondary roads	km	IRF
16	Infrastructure	Other roads	km	IRF
17	Infrastructure	Paved roads as a % of total roads	%	IRF
18	Fleets	Number of trucks (total)	#	IRF
19	Fleets	Trucks less than 4 tons	#	Ministry of Public Works/Transport or equivalent
20	Fleets	Trucks more than 4 tons	#	Ministry of Public Works/Transport or equivalent
21	Fleets	Static fleet capacity	ton	Ministry of Public Works/Transport or equivalent
22	Fleets	Average fleet age	years	Ministry of Public Works/Transport or equivalent
23	Fleets	Number of trailers	#	Ministry of Public Works/Transport or equivalent
24	Fleets	Number of semi-trailers	#	Ministry of Public Works/Transport or equivalent
25	Fleets	Total vehicles	#	Ministry of Public Works/Transport or equivalent
Number of automotive freight transport				
26	Organization	companies	#	Ministry of Public Works/Transport or equivalent
27	Organization	Companies with 1 or 2 vehicles	#	Ministry of Public Works/Transport or equivalent
28	Organization	Vehicles per operator (average)	#	Ministry of Public Works/Transport or equivalent
29	Organization	Direct employment	persons	Ministry of Public Works/Transport or equivalent
30	Energy	Diesel oil use	L	GTZ
31	Energy	Gasoline use	L	GTZ
32	Energy	Diesel oil station price	\$	GTZ
33	Energy	Gas station price	\$	GTZ
34	Emissions	Estimated CO ₂ emissions	Ton	

Type of indicator		Mode	Units	Source
35	Activity	Freight transported (domestic) in tkm	tkm	IRF
36	Activity	Freight transported (domestic) in tons	ton	
37	Activity	Average distance	km	
38	Activity	Freight vehicle traffic	vehic-km	IRF
39	Activity	Own transport as a % of the total	%	
40	Performance	km per truck (annual average)	km	
41	Performance	Empty trips	%	
42	Performance	Average warehouse occupancy	%	
43	Performance	Average rate per tkm of freight	\$	
Rail transport				
44	Infrastructure	Total rail network	km	UIC
45	Infrastructure	Railways with two or more tracks	km	UIC
46	Infrastructure	Electrified railways	km	UIC
47	Fleets	Total locomotives	#	UIC
48	Fleets	Front locomotives - for freight	#	
49	Fleets	Average power of freight locomotives	HP	
50	Fleets	Freight cars	#	UIC
51	Fleets	Static freight capacity	ton	
52	Fleets	Average car age	years	
53	Organization	Number of rail freight companies	#	
54	Organization	Direct employment (attributable to freight transport)	persons	
55	Energy	Fuel used for freight	L	
56	Energy	Electricity used for freight	kw/h	
57	Emissions	Estimated CO2 emissions	ton	
58	Activity	Freight transported (domestic) in tkm	tkm	UIC
59	Activity	Freight transported (domestic) in tons	ton	UIC
60	Performance	Ton-km per front locomotive per year	tkm	
61	Performance	Ton-km per car per year	tkm	
62	Performance	Average rate per ton-km of freight	\$	
Air transport				
63	Infrastructure	International freight airports (IFA)	#	
64	Infrastructure	Maximum category of aircraft at IFAs	FAA/ICAO category	

Type of indicator		Mode	Units	Source
65	Infrastructure	Instrument approach facilities at IFAs	yes/no	
66	Infrastructure	Area of freight terminals at IFAs	m2	
67	Activity	Air freight transport - domestic	ton	
68	Activity	Air freight transport - international	ton	Cargo Intelligence Services
69	Activity	Air freight transport - domestic (tkm)	tkm	Cargo Intelligence Services
70	Performance	Average rate per ton of freight (domestic)	\$	
71	Performance	Average rate per ton of freight (international)	\$	
Water transport				
72	Infrastructure	Maximum draft allowed at container terminal	feet	
73	Infrastructure	Gantry cranes for containers	#	
74	Infrastructure	Dock length at multi-purpose and container ports	m	
75	Infrastructure	Area of container dockyards	m2 ton port	
76	Fleets	Vessels under flag	raw	UNCTAD Handbook
77	Activity	Total port handling	ton	AAPA
78	Activity	Freight port handling - exports	ton	
79	Activity	Freight port handling - imports	ton	
80		Freight port handling - domestic		
81	Activity	(removed outgoing and incoming)	ton	
82	Activity	Container port handling	TEU	AAPA
83	Activity	Freight transported in fluvial cabotage	tkm	
84	Activity	Freight transported in maritime cabotage	tkm	
85	Performance	Average rate per ton-km of freight - fluvial cabotage	\$	
86	Performance	Average rate per ton-km of freight - maritime cabotage	\$	
87	Performance	Average rate, customs clearance, export container	\$	
88	Performance	Average rate, customs clearance, import container	\$	
89	Performance	Liner Shipping Connectivity Index (UNCTAD)	position	UNCTAD

Type of indicator	Mode	Units	Source	
Pipeline and conveyor transport				
90	Infrastructure	Liquid pipeline network	km	
91	Infrastructure	Conveyor network for bulk transport	km	
92	Activity	Freight transported by pipeline	tkm	
93	Activity	Freight transported by conveyor	tkm	
Logistics activities				
94		Area of logistics centers	m2	
95		Cold chain facilities - total	m2	Global Cold Chain Alliance
96		Cold chain facilities - for public use	m2	Global Cold Chain Alliance
97		Outsourcing of logistics activities	%	
98		Logistics costs as a % of sales	%	
99		Position in the LPI ranking (2007, 2009, 2012)	#	LPI

ANNEX iii: PROPOSED SEGMENTATION FOR TRUCKING SECTOR ANALYSIS

