



BULLETIN

FAL

FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Security in the logistics chain and its impact on Mesoamerican competitiveness

Introduction

Logistics security is an increasingly important issue in Latin America and the Caribbean and is crucial to the development of the region due to the potentially damaging social and economic effects of a break in the logistics chain. Therefore, national and regional coordination of the different public and private initiatives in this area is critical.

A break in the logistics chain, whether due to an administrative failure, a criminal act or a terrorist attack, has enormous consequences for the competitiveness of a country's economy. In addition to the direct losses caused by the event, there are repercussions along the rest of the supply chain, such as delays in delivery or failure to deliver to customers, contract losses or increases in inventory levels needed to compensate for the variability in delivery times, among other factors, which ultimately drive up national logistics costs.

In the case of the countries of Central America, the issue is even more strategic given the rising crime that is affecting logistics chains and driving up the logistics-related costs of doing business. The region invests over US\$ 6.5 billion per year to combat insecurity and violence (SICA, 2011), still too little to solve the problem and reduce the enormous loss of innumerable human lives and the damaging effects on the quality of life of the rest of the population. Moreover, the lack of security has pernicious effects on the economy, driving down competitiveness, reducing national and foreign investment, and dampening employment and productivity by making consumer products more expensive due to the extra costs involved.

This issue of the *FAL Bulletin* analyses the implications of logistics security for the competitiveness of the member countries of the Mesoamerica Project.

This study analyses a number of international indicators related to logistics security and proposes a set of actions to improve the organization of the governments and their coordination with the private sector, to enhance the efficiency of the measures implemented and thus the competitiveness of their economies.

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Introduction



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The International Conference in Support of the Central America Security Strategy, held in June 2011 in Guatemala, identified the main security threats in Central America as follows: (a) crime and violence; (b) drug activity; (c) organized crime; (d) gangs; (e) illegal trafficking in small arms and light weapons; (f) natural disasters; and (g) global warming and climate change.

With this phenomenon in mind, the objective of this bulletin is to quantify the seriousness of the problem and promote improvements in regionally coordinated national public policies to tackle this problem without driving up logistics costs or compromising economic competitiveness.

I. Impact of security on efficiency and competitiveness

Security in the logistics chain requires a coordinated approach between the public and the private sector. The government is responsible for providing the infrastructure and services needed to ensure an acceptable level of physical security (security) as well as guaranteeing the proper functioning of transport infrastructure services (safety) under normal conditions as well as in the event of a natural disaster. Meanwhile, the private sector is responsible for implementing the internal security measures and support needed to ensure adequate risk management and functioning of its processes. Private solutions to the problem of lack of security, such as escorts, checkpoints, or armed guards in transport, among other unilaterally implemented alternatives, have proven to be inefficient precisely because of the unilateral nature of the approach, often getting in the way of other initiatives and contributing to higher logistics costs, with adverse social and economic effects on the region's inhabitants, who are the ones who ultimately bear the cost of the service inefficiencies.

Thus, an integrated approach to logistics chains should be taken in the framework of a long-term government policy to prevent the dispersion and isolation of investment initiatives and promote collaboration between foreign trade agencies and transport operators and trade agents, in order to achieve integral solutions that benefit national competitiveness and national welfare. In this context, the Central American Security Strategy may provide the right framework for this purpose, as discussed below.

Logistics security is directly related to the competitiveness of an economy, since in addition to direct losses from crimes, there are costs related to dealing with the incidents (attorney fees, delays in collecting insurance, to name only a few), as well as significant national productivity losses, which end up making exports more expensive, to the detriment of the competitiveness of the economy.

Moreover, the image of the company and of the country itself is damaged. In the former case, the image of the manufacturing company is tarnished because stolen items are usually sold on the black market without any control, and may even be altered. Meanwhile, the image of the country is heavily damaged by crime, which discourages new domestic investment and makes the country less attractive to foreign investors.

Logistics security also has a major regional component. The growing interdependence of logistics networks reinforces the need to coordinate specific actions at the regional level to deal with organized crime and international terrorism. This is especially true for the member countries of the Mesoamerica Project, since, thanks to progress made under this initiative, it is increasingly the case that overland export logistics chains traverse several national borders before the destination is reached, so security problems in one area jeopardize the entire bloc. Accordingly, viewing foreign trade logistics chains as regional public goods is an important step in the search for comprehensive, coordinated solutions to this problem.

In addition to the foregoing, the contamination of legal cargo with drugs by traffickers is another aspect that affects regional logistics, so much so that one United Nations agency has indicated that crime is the factor with the greatest impact on the stability and economic development of Central America, particularly trade in these countries.¹

Worldwide, estimated losses due to crimes against logistics chains equaled approximately 5% of global trade in 2007, and the International Cargo Security Council (ICSC) puts estimated losses at about US\$ 15 billion per year in Europe alone. However, a large portion of the losses from cargo theft goes unreported. The National Cargo Security Council (NCSC) estimates that losses from unreported theft and related indirect costs come to between US\$ 20 billion and US\$ 60 billion per year in the United States.² The NCSC and the Federal Bureau of Investigation (FBI) report that the areas most vulnerable to theft are cargo terminals, transfer facilities and cargo consolidation areas. According to the NCSC, 85% of cargo theft is associated with overland auto transport.³

In Latin America, the lack of comparable, regular statistical data on the sector makes it hard to adopt effective mitigation and eradication strategies. However, according to estimates by the Mexican Association of Insurance Companies, over 10,000 trucks are hijacked annually, in most cases for items that are easily sold, such as clothing, food, cigarettes, shoes,

¹ Eduardo Praselj, "La seguridad y su impacto en la logística [Security and its impact on logistics]," Forum on Security in the Logistics Chain, Venezuela, 2007.

² "Using Technology to Stop Cargo Theft in its Tracks," The Source-Newsletters, 2009.

³ David Cullen, "Shining a Light on Cargo Theft," *Fleet Owner Magazine*, 2006.

alcoholic beverages, household items, and pharmaceutical products, with losses of this last item equivalent to 2% of annual sales. For its part, the National Private Transport Association (ANTP), also in Mexico, estimates that between 15% and 20% of the money that companies spend on logistics is for investments in security, but these investments often fail to produce visible improvements. In the case of Brazil, the transport industry is believed to lose an average of US\$ 2.5 billion in revenue per year due to cargo theft.

II. Security indicators in Central America

Although there are a number of global indicators that can be used to evaluate the competitiveness of an economy, such as the Global Competitiveness Index (GCI), the Doing Business Index, the Enabling Trade Index (ETI), and the Logistics Performance Index (LPI), there are virtually no national surveys or regional studies that can be used to conduct a quantitative assessment of security in the logistics chain. To correct this omission, this paper analyses the various components of these global indicators, focusing on those aspects that create or are associated with logistics security. It is important to clarify that because these indicators are based on the perceptions of a panel of experts, the findings presented here are subjective and may not fully reflect the national and regional realities. The purpose of including them in this study is to educate the authorities and the private sector on the importance of taking an integrated and coordinated approach to logistics security in the framework of a public policy on logistics, both at the national and the regional level.

Logistics security and competitiveness

The GCI is an annual measurement taken by the World Economic Forum's Centre for Global Competitiveness and Performance, based on an analysis of 139 countries.⁴ Among the items analysed by this instrument, Institutions, in the category of Basic Requirements, looks at the legal and administrative frameworks within which individuals, firms, and governments interact to generate income and wealth for the country. Among other aspects, this item considers the costs incurred due to corruption, crime and violence, terrorism and organized crime in commercial activities. Table 1 summarizes the 2010 rankings for the countries taking part in the Mesoamerica Project, as well as for Chile, which received the highest ranking of any country in Latin America and the Caribbean.

At the aggregate level, Central America places near the middle of the global rankings, but it performs poorly in security-related indicators. For example, Colombia ranks last (139) in "business costs of terrorism," as do Guatemala and El Salvador in "business costs of crime and violence." For "reliability of police services," El Salvador is in last place (139), followed by Guatemala (138) and Colombia (137). Although, as indicated in previous sections, these indicators are often built on perceptions and may not be very objective, the aforementioned findings are in line with estimates by the Latin Security Index (LSI)⁵ on the business costs of security. That study notes that in El Salvador, companies use up to 2.58% of sales to cover security costs, a rate that is far above the regional average of 1.01% of sales and exceeded only by Egypt and other African countries.

Table 1
GCI-SECURITY-RELATED INDICATORS IN THE "INSTITUTIONS" PILLAR

GCI-Security-related indicators in the "Institutions" pillar							
Country	Global ranking	"Institutions" ranking	Irregular payments and bribes	Business costs of terrorism	Business costs of crime and violence	Organized crime	Reliability of police services
Chile	30	28	24	21	78	45	45
Costa Rica	56	51	52	40	115	101	101
Panama	53	73	78	77	112	103	103
El Salvador	82	101	74	113	138	139	139
Colombia	68	103	90	139	134	137	137
Mexico	66	106	91	112	132	136	136
Honduras	91	108	105	111	133	133	133
Dominican Republic	101	117	96	88	125	121	121
Guatemala	78	124	85	123	139	138	138
Nicaragua	112	127	108	118	105	105	105

Source: "The Global Competitiveness Report 2010-2011," World Economic Forum (2010).

⁴ The Global Competitiveness Report 2010-2011, World Economic Forum (2010).

⁵ The LSI is developed by a U.S. firm for the journal "Latin Business Chronicle." It analyses security and danger levels in 19 countries in Latin America, based on homicide rates and other factors that affect the security situation for companies and for multinational executives.



Despite the foregoing, El Salvador does very well in the GCI in other indicators, such as “efficacy of corporate boards” (25), “burden of government regulation” (55), and “wastefulness of government spending” (69), among other factors that determine the competitiveness of a country. This demonstrates that the country has significant institutional strengths and capacity in the private sector, which could be amplified by effective mechanisms and policies in logistics security.

A similar phenomenon is seen in the “market access” subindex of the ETI, where countries like El Salvador and Honduras lead the regional rankings (3 and 4, respectively). This seeming paradox demonstrates that the enormous institutional push to promote foreign investment may be threatened in the medium term by lack of security, in society in general and in the logistics chain. By taking specific and coordinated actions to improve logistics security, with active participation by the public and private sectors, at both the national and regional levels, the region could see an increase in competitiveness and foreign investment levels, which would convey social and economic benefits to the entire populace.

Logistics security and facilitation

Logistics security is also closely related to trade facilitation and transport facilitation, with these three

areas existing in a delicate balance. If extreme security measures are imposed, transport facilitation is affected, driving up logistics costs to the point of shutting down the flow of transport and thus, trade. Conversely, if the emphasis is placed on extreme facilitation, security measures become insufficient or nonexistent, also to the detriment of cross-border trade. With this in mind, the 2010 findings of the Enabling Trade Index (ETI) were analysed. The ETI, which is based on a universe of 125 countries, is prepared by the World Economic Forum annually in the context of the Global Competitiveness Network and the Industry Partnership Programme for the Logistics and Transport Industry.⁶

The ETI has four subindexes that analyse the different aspects of facilitation. The “business environment” subindex looks at physical security and the regulatory environment. The former, physical security, analyses the level of violence in a country and its impact on trade, in terms of the costs of both general crime and threats from terrorism, as well as the reliability of police services and their ability to enforce law and order. The latter, the regulatory environment, analyses how the government is organized to facilitate trade processes. The “physical security” performance of the countries in the Mesoamerica Project is presented in the following table.

Table 2
PHYSICAL SECURITY, ETI, 2010

Country	ETI 2010 – Physical security				
	Global ranking	Physical security ranking	Reliability of police services	Business costs of crime and violence	Business costs of terrorism
Chile	18	25	10	77	22
Costa Rica	44	72	53	98	47
El Salvador	57	111	72	123	93
Panama	61	85	96	84	67
Mexico	64	114	116	117	84
Honduras	66	109	104	116	86
Guatemala	69	124	118	124	95
Dominican Rep.	73	106	122	113	50
Nicaragua	79	90	66	95	105
Colombia	91	122	64	119	125

Source: “Global Enabling Trade Report 2010,” World Economic Forum (2010).

⁶ The Global Enabling Trade Report 2010, World Economic Forum (2010), website: www.weforum.org/getr.

Again, although the region performed strongly overall, its weakest results were in the variables associated with physical security, with Guatemala ranking 124th, followed by Colombia in the 122nd position. For “business costs of terrorism,” Colombia ranked last (125), and for “business costs of crime and violence,” Guatemala was 124th, followed by El Salvador in 123rd place and Colombia in 119th place. For “reliability of police services,” the Dominican Republic placed 122nd, followed by Guatemala in the 118th position and Mexico in the 117th position. Mexico ranked 117th in “business costs of crime and violence” and 116th in “reliability of police services.”

With the exception of Colombia and Nicaragua, the countries were strongest, relatively speaking, in the “business costs of terrorism” variable, compared with the other variables. The “business costs of crime and violence” variable was their worst, with most member countries in the Mesoamerica Project ranking in the riskiest quintile. This notwithstanding, the focus of most international assistance as well as of public policy has been on issues related to terrorism, ignoring the rest of the problem. Accordingly, there is an urgent need to address the lack of security in logistics chains with a holistic, long-term approach, as proposed in the final section of this document.

Logistics security and crime

Based on a non-exhaustive analysis of press clippings, crimes against logistics security in Central America mainly target overland cargo, particularly cargo shipped by truck, although railway attacks are also common. In many of these cases, criminal gangs are aided in their actions by infrastructure weaknesses, which allow them to set up roadblocks and demand payment for the right to proceed, which the gangs levy on the transit of merchandise. In the case of Mexico, a recent study described this problem in the supply chain and identified the corresponding needs in Mexico’s business sector. The study polled professionals in supply chain logistics and administration in Mexico and found, among other things, that the main risk factors are drug trafficking (identified as high risk by 30% of respondents), followed by theft (identified as high risk by 25% of respondents), while factors associated with terrorism and sabotage present less of a risk (Cedillo-Campos and Cantú-Sifuentes, 2011).

All of the above points to a situation of acute insecurity⁷ in the countries participating in the Mesoamerica Project, and for many of their governments, it is now the top political priority. Thus, a comprehensive solution to the problem is urgently needed, with the active participation

of the public and the private sector, in order to prevent this scourge from becoming a “structural problem” in the region.

The preceding analysis shows the negative impact that insecurity has on the performance of international supply chains, which when coupled with the historic lack of investment in infrastructure services in the transport sector, becomes a serious threat to the future development of the region, driving up the cost of trade, discouraging foreign investment, and significantly impairing the quality of life of the region’s people.

III. Security initiatives and standards in the region

Notwithstanding this stark scenario, the tremendous efforts made on a daily basis by the public sector and the private sector alike to combat insecurity and resolve this scourge cannot go unmentioned. Many security initiatives and standards have emerged in the global arena to protect international trade from terrorism threats and illegal trafficking, such as the Customs-Trade Partnership against Terrorism (C-TPAT), the Container Security Initiative (CSI), and Free and Secure Trade (FAST) programme, and they have benefited from the active and strong support of government agencies. However, the same degree of focus and support as seen at the international level is not in evidence when it comes to tackling the internal logistics security problems that affect and drive up the price of products consumed domestically.

Important initiatives have also been launched by the private sector, such as the Business Alliance for Secure Commerce (BASC) and quality and security certifications, such as ISO 28000, which is a crosscutting standard that promotes best practices in risk audits and management of security events in supply chains.

Description of initiatives implemented in areas related to logistics security

The World BASC Organization is an international nonprofit group consisting of trade logistics companies that work together with customs administrations, governments and control authorities to promote secure and nimble trade. BASC has 28 chapters in 14 countries in Latin America, with a total of 1,761 certified companies variously involved in international trade activities. Colombia has the largest concentration of these certified companies (53%), followed by Peru (19%), whereas Honduras, Belize and Nicaragua have none. BASC has cooperation agreements with customs administrations in Argentina, Bolivia (Plurinational State of), Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, France, Italy, Mexico, Nicaragua, Panama, Spain,

⁷ Insecurity is present in every country of the world. Acute insecurity refers to extreme levels of insecurity, often beyond the control of the authorities.

United States of America, Uruguay and (the Bolivarian Republic of) Venezuela.

In Latin America, Mexico is the country that is most active in the programmes proposed by the United States for its neighbouring countries, such as C-TPAT and FAST, and also the Merida Initiative to improve citizen security, in which Belize also participates. With respect to foreign trade security, Mexico is developing the Safe Trade Alliance (STA) programme in cooperation with the United States' C-TPAT, with operations slated to begin in 2012. The Mexican authorities are also studying and identifying the area in which crimes are most frequently committed and have implemented a number of operations in recent years to dismantle gangs that rob and hijack cargo shipments.

The federal government and the National Chamber of Cargo Auto Transport (CANACAR) have decided to create an information clearinghouse on crime and a work programme to improve transport security and combat theft. The study for export supply chains in Mexico (Cedillo-Campos and Cantú-Sifuentes, 2011) asked whether security initiatives have been implemented and whether there were plans to participate in any over the next two years and found that over 25% of respondents have not implemented any initiatives at their company. Of those that have implemented security measures, over 20% have opted for C-TPAT, followed by programmes such as BASC, ISO 28000 and CASCEM (Secure Foreign Trade Supply Chain in Mexico), each at a rate of about 5%. Regarding future participation (next two years), the majority of the respondents reported no plans to implement any initiative (about 25%). Most of the rest responded that they were considering C-TPAT (over 20%), followed by ISO 28000 standards (10%).

In Guatemala in 2010, the Authorized Economic Operators (AEO) programme was launched, and the Bioterrorism Law was enacted, which requires all ships that could threaten the country's ecological balance to submit to checks while they are offloaded. Programmes to facilitate and improve foreign trade in Guatemala have been implemented, such as AGEXPORT, a one-stop facility for exports and the integration of customs with Honduras and El Salvador. Among the reforms adopted to fight crime, an "anti-Mara" bill was presented to Congress in September 2010 that seeks to eradicate organized crime and systematic violence in the country by dismantling youth gangs.

In 2008, El Salvador launched the Business Compliance Customs Programme (PACE), through its customs administration under the authorized economic operator (AEO) model. This programme gives priority to certified companies for expedited customs procedures and

formalities, as well as a special lane, similar to the FAST programme. El Salvador has also used Safety of Life at Sea (SOLAS) and International Ship and Port Facility Security (ISPS) certifications since 2004. One of the most important trade facilitation reforms has been the Unified Customs Codes of Central America (CAUCA), which was launched in 2008 and has been adopted by El Salvador, Guatemala, Honduras and Nicaragua, with legislative approval pending in Costa Rica.

Honduras has also adopted the SOLAS and ISPS certifications at its ports and has joined the CSI. Among the reforms it has implemented to facilitate foreign trade is the Special Interagency Commission for Modernization of the Customs Service (CEIMSA), which is running psychometric tests on customs personnel to ensure that they are qualified to perform their duties.

Nicaragua has participated in some agreements and integration projects with the Central American region, notably its fight against food insecurity.

Costa Rica is in the final stages of developing the AEO programme. In 2009, it joined the programme developed by the United Nations Office on Drugs and Crime (UNODC) and the World Customs Organization (WCO) to improve container security and share information to fight crime. It has also participated in the SOLAS and ISPS certifications at such ports as Limón and Moín. Costa Rica has adopted reforms to facilitate foreign trade, such as the "Exporta Fácil" project run by the Costa Rican Postal Service and the Foreign Trade Promotion Agency (PROCOMER), which is also in charge of the one-stop facility project.

Panama has developed the AEO project since 2009, through its Customs Administration, and expects to launch the initiative in late 2011. The Dominican Republic is developing the AEO project through its Customs Administration.

In Colombia, the AEO pilot programme was launched in 2009 and is expected to be implemented in late 2011. And in the framework of public-private collaboration, Colombia has partnered with the United States to implement a Port Security Programme (PSP), via an agreement of intent signed by the National Police, the United States Embassy, the Office of the Prosecutor General, and in time, two maritime terminals in Cartagena. The basic purpose of this partnership is to protect Colombian foreign trade from being contaminated by drug trafficking.

Central America Security Strategy

The Central America Security Strategy was adopted by the Heads of State and Government of the Central American

Integration System (SICA) at its XXXI Regular Meeting, held in Guatemala on 12 December 2007, with the objective of “setting up the components and activities needed to strengthen the security of citizens and their property in the Central American region, allowing our peoples to achieve the human development goals.”

In response to the increasingly international nature of the crimes, the 2007 Strategy has been amended to include innovative elements that give it a comprehensive view of the problem and provide solutions that are effective and viable for the Central American reality. Because the document’s scope of action encompasses much more than logistics security, it provides the policy framework within which the various public and private sector initiatives should be situated. In fact, the strategy’s specific objectives include the following:

- To integrate the different regional efforts on security matters, to harmonize them and achieve better results.
- To facilitate coordination, exchange of information and experiences among the different entities and operational agencies in the region, to more effectively tackle regional criminal activities.
- To identify and manage the financial needs, resources and training required by the institutions responsible for security.

Notable progress has been made at the regional level in these areas, including regularly scheduled regional meetings such as the First Central American Conference for a Culture of Legality (October 2009), the Regional Meeting of the Private Sector for the Prevention of Violence (July 2010) and the Regional Meeting of Civil Society for Democratic Security (November 2010) (SICA, 2011).

Last, the International Conference in Support of the Central America Security Strategy was held in Guatemala on 22-23 June 2011 for the purpose of convening a substantive political dialogue at the highest level around security in Central America, seeking to establish a sound and predictable foundation to finance the assistance needs related to democratic security in Central America.

IV. Public policy recommendations for logistics security

Citizen security is an item on the agendas of the governments and has given rise to reforms and projects to stop crime and violence. However, these initiatives have been pursued separately from trade promotion and logistics and facilitation policies, despite the obvious

relationship that exists between security, logistics costs and national competitiveness.

Since the events of 11 September 2001, a large number of security initiatives and standards have emerged and spread to address the threat of international terrorism, the infiltration of organized crime in trade in goods and the need for effective risk management in supply chains. However, the need to implement security programs while lowering the overall cost of logistics requires an integrated approach by the countries to improving logistics performance, so they are able to coordinate their efforts and attain the desired goals of reducing risks and lowering excessive costs.

Consequently, there is a need to propose comprehensive policies for logistics security in foreign trade, together with national security policies and domestic trade and transport logistics and facilitation policies, so timely, efficient, lowest-cost solutions can be found for managing logistics risk. Along these lines, an effective public-private partnership would help lower costs and improve the efficiency of the actions taken, beyond port security or the customs checkpoints that are the links in the chain where efforts have been focused thus far.

Integrating all of these elements in the National Logistics Plan is essential, so this legal instrument can serve as the master plan, coordinating and drawing together the various international, regional, national and local initiatives, both public and private, to produce integral, efficient solutions. It should be generated with the participation of private stakeholders and should consider at least three interrelated pillars: trade facilitation, logistics and infrastructure. Activities should be included in a National Logistics Plan that incentivizes the creation of new markets for cargo, strengthens the culture of timely risk management and promotes the systematic reduction of logistics costs, encouraging innovation and the incorporation of technology to generate value, in accordance with the integrated policies paradigm developed and promoted by ECLAC.⁸

As a policy element, there may be a need to move towards developing observatories to provide systematized, periodic, standardized and harmonized field data on comprehensive security and logistics costs at the national and regional levels as a way to strengthen decision-making in the public sector (public security) and in the private sector (internal risk management). Another element that this plan should incorporate is the creation of local and national public-private committees to work on the coordinated implementation of specific

⁸ Cipoletta T., G., Pérez S., G., and Sánchez, R. (2010) “Políticas integradas de infraestructura, transporte y logística: experiencias internacionales y propuestas iniciales”, ECLAC, Natural Resources and Infrastructure Division.

mitigation measures, in order to improve the level of service (time and cost) as well as facilitate logistics along the entire chain.

Some initiatives that could be pursued to achieve this objective are as follows:

- Identify critical logistics chains that are a priority for studies and programs to improve security.
- Categorize and monitor harmful factors and events that impede the normal transit of logistics chains on main and secondary roads or make it unsafe, with a special emphasis on routes used for shipping goods to international destinations.
- Generate knowledge on the characteristics of criminal events, such as type of event, frequency of occurrence, degree of impact, estimated losses, type of cargo, modus operandi of the perpetrators, etc., and make this information freely available to the actors involved in trade activities, where the implementation of a shared geographic information system that is updated in real time will help improve the efficiency of police action and carrier decisions on the best routes or itineraries to take.
- Analyse customs data on critical logistics chains, with support from the TIM project and customs intelligence processes.
- Prepare an in-depth study on the role of physical infrastructure in security incidents along the priority logistics chains: lack of unloading or rest areas for drivers, poor road maintenance, etc.
- Design a pilot program to improve the traceability of cargo and carriers throughout a given group of critical logistics chains, with implementation support from the TIM project and technology firms that develop hardware and software solutions.
- Develop a security program for small and medium-sized carriers and an expanded security program for cargo producers.

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