



BULLETIN

FAL

FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Performance of Latin America and the Caribbean during the first years of the Decade of Action for Road Safety

This issue of the *FAL Bulletin* examines the performance of the countries of Latin America and the Caribbean during the first years of the decade of action for road safety.

This document is part of the activities being undertaken by ECLAC as a United Nations regional commission in preparation for the Second Global High-Level Conference on Road Safety, which is to take place in Brasilia on 18 and 19 November 2015.

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Background

The Declaration of Moscow¹ —adopted at the close of the First Global Ministerial Conference on Road Safety: Time for Action, held in the capital of the Russian Federation on 19 and 20 November 2009— states that road traffic injuries are a major public health problem and a leading cause of death and injury around the world, and that without appropriate action, by the year 2020 traffic accidents will be one of the main causes of death, particularly in low- and middle-income countries. For that reason, the Conference invited the United Nations General Assembly to declare the decade 2011-2020 the Decade of Action for Road Safety, in order to stabilize and then reduce global road fatality numbers by 2020.

In resolution A/RES/64/255 of 1 March 2010, the United Nations General Assembly proclaimed 2011-2020 to be the Decade of Action for Road Safety and asked the World Health Organization (WHO) and the United Nations regional commissions (with ECLAC responsible for Latin America and the Caribbean) to prepare, in collaboration with other institutions, a plan of action for the decade and to coordinate regular monitoring of global progress in pursuit of the goals set out in the plan of action.²

¹ The full declaration may be found at http://www.who.int/roadsafety/ministerial_conference/declaration_en.pdf.

² http://www.who.int/roadsafety/decade_of_action/plan/plan_english.pdf.

Four years later, by means of resolution A/RES/68/269 of 10 April 2014, the General Assembly both expressed its concern at the high number of road traffic accident deaths—which in 2010 totalled some 1.24 million people, half of whom were pedestrians, motorcyclists and cyclists—and called for a midterm review at the Second Global High-Level Conference on Road Safety: Time for Results, which is to take place in Brasilia on 18 and 19 November 2015. That event will once again bring together national delegations of representatives and ministers responsible for transport, public works, health, education and road safety and other agencies involved with the enforcement of traffic regulations. The objectives of this event are to examine the progress made in executing the Global Plan for the Decade of Action in attaining the goals of the Decade of Action, while at the same time offering the Member States an opportunity to exchange information and share best practices. In that context, ECLAC and the Pan American Health Organization (PAHO), as United Nations' regional bodies, have decided to organize a regional side event to analyse the current situation in Latin America and the Caribbean and identify measures for strengthening the course of action over the second half of the Decade of Action for Road Safety.

In spite of the broad range of activities undertaken and the resources assigned by countries, the United Nations and other multilateral agencies in pursuit of enhanced safety, major institutional challenges still exist; consequently, the results at the Decade of Action's midpoint may not be as encouraging as they should. The significant differences

between the approaches and measures adopted for addressing road safety in developed countries and those adopted by developing nations may explain the poorer performance observed in the latter group. This document analyses the current situation in Latin America and the Caribbean. In order to meet reduction targets set for the end of the decade and to provide sustainable and safe mobility for the region as a whole, as proposed by the United Nations Sustainable Development Goals, this document also describes both the main steps forward taken by the region and those aspects that need strengthening to improve the region's performance.

1. Latin America and the Caribbean: performance over the first half of the decade

Traffic fatality rates in Latin America and the Caribbean rose by 20% over the first decade of the century, from 14.75 deaths per 100,000 inhabitants in 2000 to 17.68 in 2010; thus, almost 960,000 people in the region died in traffic accidents between 2000 and 2010 (Nazif and Pérez, 2013). During 2010, road traffic injuries were the leading cause of death among children aged from 5 to 14 years, and the second most common cause of death among the 15 to 44 age group (PAHO, 2013). Among the region's vulnerable road users,³ pedestrians accounted for 27% of those fatalities, followed by motorcyclists (20%) and cyclists (3.7%), with some slight variations between subregions as shown on table 1.

Table 1
LATIN AMERICA AND THE CARIBBEAN: TRAFFIC MORTALITY RATE
BY SUBREGION AND ROAD USER TYPE, 2010

	Deaths per 100,000 inhabitants	Proportion of drivers in the total traffic mortality figures (percentages)	Proportion of pedestrians in the total road traffic mortality figures (percentages)
Spanish-speaking Caribbean	22.2	15.0	27.7
Andean Subregion	22.1	9.1	25.4
Southern Cone	20.3	28.0	22.8
Mesoamerica	14.5	25.6	30.8
English-speaking Caribbean	14.4	43.5	27.0
Northern America	11.0	69.9	12.1

Source: ECLAC, from the Report on Road Safety in the Region of the Americas (PAHO, 2015).

³ The PAHO study covers 32 of the 36 Member States in the Americas region, which together account for 98.5% of the total population. The subregions break down as follows: Northern America: Canada, United States of America; Spanish-speaking Caribbean: Cuba, Dominican Republic; English-speaking Caribbean: Bahamas, Barbados, Dominica, Guyana, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent

and the Grenadines, Suriname, Trinidad and Tobago; Southern Cone: Argentina, Brazil, Chile, Paraguay, Uruguay; Mesoamerica: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama; Andean Subregion: Bolivia, Colombia, Ecuador, Peru, Venezuela. Mortality rates for Antigua and Barbuda, Grenada, Haiti and Puerto Rico were taken from the database of the World Health Organization.

These figures show that all the Latin American and Caribbean subregions report higher mortality rates than North America (excluding Mexico). Of particular concern is the high number of pedestrians killed in the region which, in sub-regions such as Mesoamerica, account for up 31% of all traffic fatalities, compared to the rates of 12% and 14% recorded, respectively, in the United States and Canada. This suggests that road safety policies should take those differences into account and address the needs of vulnerable road users, such as pedestrians and cyclists, through improvements in the design of infrastructure (e.g. raised crossings, speed bumps, pavements along highways and streets so they can journey in safety, bicycle lanes, and other complementary measures), the provision of efficient and affordable transport services for the entire population, the better protection of those persons by enforcing the laws governing speed limits, drunk driving, the use of seat-belts, helmets and child restraints, and other important measures.

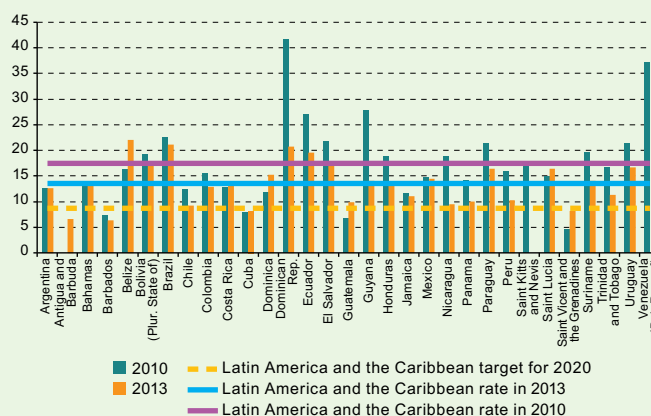
WHO fatality figures show that since the year 2000, the countries have in general seen increases —of varying degrees from one country to the next— in their traffic-related mortality rates: the figures for Argentina, Bahamas, Barbados, Chile, Costa Rica, Cuba, Guatemala, Jamaica, Mexico and Panama, remained more or less stable, while the Bolivarian Republic of Venezuela, Brazil, the Dominican Republic, Ecuador, El Salvador, Guyana, Paraguay and Uruguay reported significant figures over the decade (PAHO, 2013).

A similar trend can be seen in the national figures, where in general South America has made greater progress than Central America, whose results have remained practically unchanged since 2010 (see figure 1). One important fact is that although some of the region's countries report significant decreases in their fatality numbers, many of those statistics only report deaths occurring at the site of the crash and do not monitor injured victims over the following 30 days as recommended by the United Nations. That difference could create a false sense of security. For that reason, efforts by PAHO/WHO to standardize methodologies and ensure the proper processing of statistics are essential.

The Global Plan for the Decade of Action for Road Safety 2011-2020 (United Nations, 2011) aims to assist the implementation of coordinated measures for attaining the goals and objectives set for the Decade of Action. It is targeted at representatives of local and national governments, civil society and private companies who wish to adapt their activities to the global framework over the coming decade. The approach promoted by the

Global Plan is one of safe transport systems —that is, designed to allow for the possibility of human error— and, accordingly, transport systems and their supporting infrastructure must take into account the vulnerability of the human body and mitigate their effects.

Figure 1
LATIN AMERICA AND THE CARIBBEAN: TRAFFIC ACCIDENT MORTALITY RATE (PER 100,000 INHABITANTS), 2010-2014



Source: ISU-ECLAC, on the basis of official figures from WHO, 2015.

The Global Plan promotes actions at the local and national levels and encourages coordination at the global level, through an intervention centred on five pillars: (i) road safety management, (ii) safer roads and mobility, (iii) safer vehicles, (iv) safer road users, and (v) post-crash response. In reference to the five pillars, the next sections analyse the current road safety situation and pending challenges in Latin America and the Caribbean.

II. Road safety management: the region has made major progress in creating an institutional framework and updating its road safety laws

Under Pillar 1, road safety management, the plan urges countries to forge multisectoral partnerships and appoint lead agencies with the capacity to prepare national road safety strategies, plans and goals. It also promotes data collection and evidence-based research to assess the design of countermeasures and monitor their implementation and effectiveness. In this context, the region reported significant progress with several road safety policy indicators. Between 2008 and 2012, there was a significant increase in the number of road safety agencies in Latin America and the Caribbean. The

region attained a penetration rate of 89% (Nazif and Pérez, 2013), which is only slightly lower than the levels recorded in the group of developed countries⁴ selected as a control group, where the figure was 92%.

In terms of their institutional functions, 73% of these agencies in the region are responsible for coordination tasks: in other words, they foster or promote collaborative work with different sectors involved in road safety. This result is very similar to the 75% reported by the developed country control group (WHO, 2013).

Second, as regards speed limits, all the region's countries have laws that set maximum permissible speeds, although only 69% of them have set maximums of <50 km/h in urban areas. Similarly, 81.48% of the countries have regulations governing driving under the influence of alcohol—a rise of almost 5% compared to the number in 2008—although only 12 countries in Latin America and the Caribbean have blood alcohol limits of ≤ 0.05 g/dL. As of 2012, almost 100% of the region's countries had legislation regulating helmet use by motorcyclists and cyclists. Laws regulating the use of seat-belts by both passengers and drivers were in place in 74% of the region's countries in 2012, compared to only 60% four years previously. Laws requiring the use of child restraint systems are less established in the region (Nazif and Pérez, 2013).

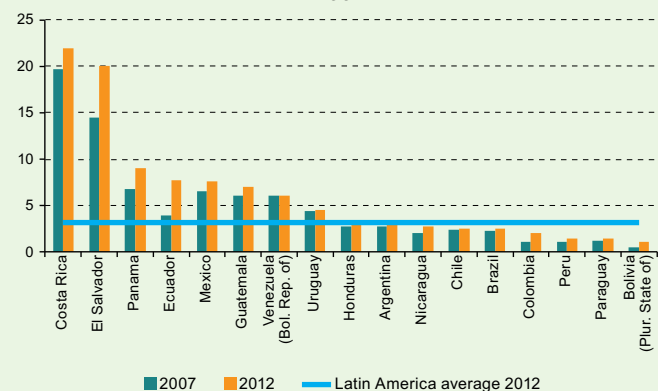
To summarize, important developments have taken place in the institutional framework for road safety and, while there is still room for strengthening the multisectoral approach and to significantly increase funding in accordance with its duties, this is one of the clearest examples of progress over the period. In the area of implementing and improving regulations, the region made formal progress in addressing the main risk factors, such as drunk-driving, speed limits and the use of protective devices such as seat-belts, helmets for cyclists and/or child restraint systems. However, it still needs stricter legislation for blood alcohol levels and speed limits in urban areas.

III. The region needs to progress towards safer infrastructure services for quality mobility

ECLAC has documented at length how the development of infrastructure is a key element in improving people's living standards (Rozas and Sánchez, 2004; García-Alonso and Sánchez, 2014), with safety being an essential issue

both in infrastructure projects and in the regulation of the transport services that use it. As stated under the Decade of Action's Pillar 2, the safety and quality of both urban and rural roads must be increased to benefit all road users, especially the most vulnerable. For this, improvements in the planning, design, construction and operation of roads are necessary, together with regular road infrastructure assessments. The region is making progress with updating its road infrastructure, as shown on figure 2.

Figure 2
LATIN AMERICA: DENSITY OF PAVED ROAD NETWORK PER 100 KM²



Source: Infrastructure Services Unit, ECLAC.

In spite of this, some countries are still well behind in the design quality and maintenance of their road infrastructure, particularly that intended for vulnerable users. The lack of mechanisms for safety inspections in this area poses a significant threat to users' safety and sustainable mobility. Eight of the region's countries still have no form of regular inspections for checking the safety conditions of their road infrastructure (WHO, 2013).

International evidence shows that it is not enough simply to identify and acknowledge the existence of vulnerable users, such as cyclists, pedestrians, motorcyclists and passengers; instead, mobility policies must be designed in a coordinated way to favour safe journeys by all segments of the population. A number of studies and manuals have collected and systematized information on how to adapt infrastructure to promote transport that is safer and more sustainable (see, for example, World Resources Institute and EMBARQ, 2015). However, such investments will not be sufficient if coexistence between different road users is not properly resolved through adjustments to the available infrastructure to enable the safe and shared use of urban spaces.

New infrastructure concessions and successive contracts for existing roads must assume road safety as an essential element in their design. At the same time, in accordance

⁴ The countries selected were Australia, Austria, Canada, Denmark, Finland, France, Germany, the Republic of Korea, the Netherlands, New Zealand, Norway, Sweden and the United Kingdom.

with a comprehensive approach to road safety, the provision of passive safety features in road infrastructure must be seen as a source of savings and not as a factor that increases the price of construction projects. In this context, road safety audits are a tool that the regional multilateral banks are actively promoting as part of their support for the Decade of Action, through actions to promote their use and to ensure the availability of internationally certified companies for discharging those tasks.

IV. Incorporation of vehicle regulations and technological tools for road safety

Pillar 3 is composed of a set of measures intended to foster the universal installation of enhanced active and passive safety technologies in vehicles, combining the harmonization of the applicable international rules, consumer information systems and incentives for accelerating the introduction of new technologies. In this context, the steps taken under the New Car Assessment Programme for Latin America and the Caribbean (Latin NCAP) are worthy of note. This programme encourages manufacturers to improve the safety of their vehicles sold in the region and the respective governments to enforce the United Nations standards covering crash tests for passenger vehicles. Latin NCAP, which began operating in 2010, is now a legal entity, in which various foundations, NGOs and multilateral banks participate, providing consumers with information on independent and impartial evaluations of the safety features of new vehicles.

The introduction of technological resources to facilitate oversight of road safety measures has been limited in Latin America and the Caribbean. Tools such as automatic truck weighing, coordinated traffic lights and programmable warning signs are common in other countries and help increase the safety and flexibility of the road infrastructure. In those of the region's countries where these technologies are available, they are chiefly found on highways run through public-private partnerships and are not coordinated with the remainder of the urban road system. International experience shows that the introduction of technology has yielded excellent results in terms of reducing fatalities and injuries, mostly through the installation of active and passive safety devices in transport systems and the provision of timely information to reduce rescue response times; technology also impacts mobility in other ways, such as reducing journey times, which makes the available infrastructure both safer and more productive.

V. Measure oversight in many countries must be strengthened with resources commensurate with the topic's importance

Pillar 4 addresses comprehensive programmes to improve road user behaviour. As such, it promotes sustained or increased enforcement of laws and regulations, combined with public awareness-raising and education to increase seat-belt and helmet usage rates and to reduce drunk driving, speeding and other risk factors.

In the study "Road safety in Latin America and the Caribbean: Recent performance and future challenges" (Nazif and Pérez, 2013), ECLAC analysed the implementation of various road safety measures between 2008 and 2012. The authors found that by the end of the period analysed, 59% of drivers used their seat-belts (5% less than in 2008); this lower usage rate occurred in conjunction with a 60% rate of oversight of the measure. The evidence indicates that police enforcement is one of the most effective road safety measures. Elvik (2001), for example, conducted a meta-analysis of 36 studies on the effectiveness of alcohol control measures, with results indicating that measures of this kind can reduce traffic alcohol-related fatalities by 9% and traffic alcohol-related injuries by 7%. He also reported that speed checks are very effective. This particular measure can reduce fatalities by 14% and injuries by 6%. Finally, enforcement of seat-belt use can also yield considerable benefits, with a 6% reduction in fatalities and 8% in injuries.

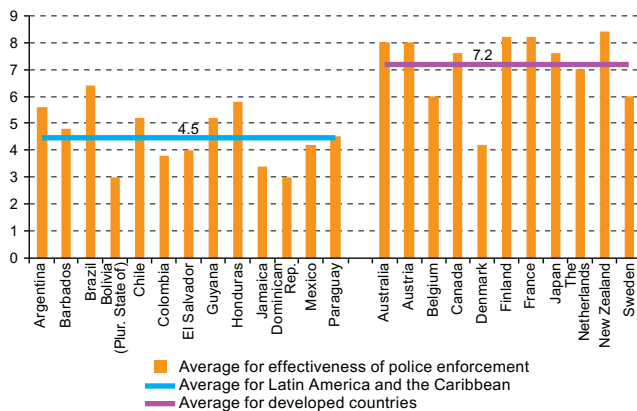
Data from WHO can be used to analyse how government officials in Latin America and the Caribbean rate police enforcement of five road risky behaviours: helmet use, seat-belt use, speed, mobile telephone use, and child restraint use. The effectiveness of police enforcement was assessed on a scale of zero to ten. The average for the Latin America and the Caribbean region was 4.5, while the developed country control group obtained a score of 7.2, as shown in figure 3. The difference in the quality of the police enforcement performed is an element that must be considered when analysing countries' road safety performance.

The types of police enforcement applied vary from one country to another depending on the national context and on the behaviours that are to be penalized or encouraged. Check points can be static or mobile, and may vary depending on whether they are comprehensive or specific. Comprehensive checks are those that monitor



most of the risk behaviours, while in specific checks police officers use devices such as breathalysers or speed radars to focus on monitoring one specific behaviour (i.e. alcohol consumption or speeding).

Figure 3
QUALITY OF POLICE CHECKS IN LATIN AMERICA AND THE CARIBBEAN AND IN DEVELOPED COUNTRIES, 2013



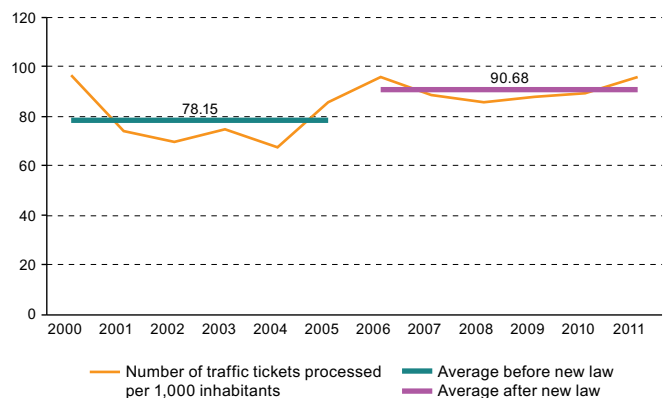
Source: World Health Organization (2013).

These measures need to be made more effective and sustainable over time. Although in some cases police efforts can be legitimately focused on other tasks, such as controlling crime, it is important that consideration be given to alternative measures to support these efforts—such as the introduction of speed control technologies, to allow ongoing enforcement without the measures losing effectiveness.

Thus, for example, the Chilean case analysed by Nazif, Quesnel-Vallée and van den Berg (2015) suggests that over the 2000-2012 period, police enforcement was associated with an 8% reduction in road fatalities and a 7% drop in serious injuries. Over the 2006 to 2012 period, following a major amendment of Chile's road traffic law, those indicators fell by 41% and 33% respectively. That study controlled for various factors, including alcohol consumption, the young male population, fuel prices, etc. Figure 4 shows how police enforcement grew over time. Whereas before the amendments the number of

offences detected per 1,000 inhabitants totalled 78.15, following the introduction of the new law the figure rose substantially, to 90.68.

Figure 4
CHILE: NUMBER OF OFFENCES PER 1000 INHABITANTS, 2000-2011



Source: Nazif Quesnel-Vallée and van den Berg (2015).

Over this period, the total number of traffic tickets processed was 16.5 million: in other words, during this 10-year period, every driver in Chile was on average fined on one occasion as a result of a police check. This experience shows the role of traffic tickets in modifying driver behaviour. However, making this sustainable over time requires funding and an institutional commitment towards their enforcement. Thus, for example, although it has a low rate of accidents compared to global averages, Finland maintains a rate of 400 checks per thousand inhabitants (Veisten and others, 2011), which corresponds to 2 million alcohol and driving checks every year; this means that on average, a driver undergoes an alcohol check every 30 months, compared to Chile's result of once every 10 years.

The introduction of speed control technologies has yielded excellent results across the world. In the case of the Republic of Korea, for instance, 32 automatic systems were introduced in 1997, a figure that was greatly increased to reach a total of 4,633 stationary systems and 387 mobile systems by May 2012. During that period, the roads equipped with those devices reported reductions of 40.7% in traffic fatalities and 29% in road accidents. In addition, in 2012, Section Speed Enforcement Systems (SSEs) were introduced to monitor average speeds on nine stretches of freeways and in six urban areas (over distances ranging from 5.6 to 14 km). A comparative analysis of the automatic speed control system between 2005 and 2010 shows that the total number of fatalities fell by 60.1% and the number of accidents by 24.3% (see table 2).

Table 2
REPUBLIC OF KOREA: IMPACT OF SPEED CONTROL EQUIPMENT, 2005-2010

Year	Number of devices installed	1 year before device installation		1 year after device installation		Reduction (percentages)	
		Number of accidents	Number of deaths	Number of accidents	Number of deaths	Number of accidents	Number of deaths
2005	448	4 379	176	3 548	83	19.0	52.8
2006	174	2 344	77	1 912	47	18.4	39.0
2007	428	4 521	205	3 067	64	32.2	68.8
2008	650	7 178	257	5 208	89	27.4	65.4
2009	963	10 907	331	8 593	138	21.2	58.3
2010	680	6 592	221	4 871	84	26.1	62.0
Total	3 343	35 921	1 267	27 199	505	24.3	60.1

Source: Traffic Accident Reduction Effects of Section Speed Enforcement Systems (SSES) Operation in Freeways (Jung and others, 2014).

France, a country that monitors speeding throughout its entire road infrastructure, reports a similar situation with excellent results. In 2002, the Government of France began the gradual installation of both fixed and mobile speed cameras, installing a total of 1,950 by 2007: in other words, almost five devices per 100,000 vehicles. As a result, average speeds fell by 10 km/h between 2002 and 2010, with a drop of around 50% in the number of traffic fatalities. In spite of the remarkable

results obtained, the government continues to promote the adoption of new speed control technologies and, according to the Observatoire National Interministériel de Sécurité Routière, this has brought about a 66% fall in traffic mortality rates in the vicinity of the radars since their installation.⁵ Table 3 shows a selection of radar traps installed in various localities in France that have been particularly successful in reducing traffic fatalities and injuries.

Table 3
FRANCE: IMPACT OF SPEED CONTROL EQUIPMENT, 2009

		Montbenoit	Saint-Gérard-le-Puy	Saint-Martin-l'Hortier	Massac-Séran	Le Perrier	Morbier
Before	Deaths	8	5	2	4	4	4
	Injuries	16	25	9	10	6	9
After	Deaths	0	0	0	0	0	0
	Injuries	0	0	0	0	0	0

Source: Direction de la sécurité et de la circulation routières, France, 2015.

The most recent figures available indicate that on corrective measures. The region has taken important

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