Issue No. 342 - Number 6 / 2015

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

Background

The Declaration of Moscow[1] —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.

ISU INFRASTRUCTURE SERVICES UNIT
Natural Resources and Infrastructure Division, UNECLAC

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.

The document's authors are Gabriel Pérez-Salas, Economic Affairs Officer at the Natural Resources and Infrastructure Division, and José Ignacio Nazif, a consultant with the same division. For more information, please contact gabriel.perez@eclac.org.

UNITED NATIONS
ECLAC

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.

I. 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.

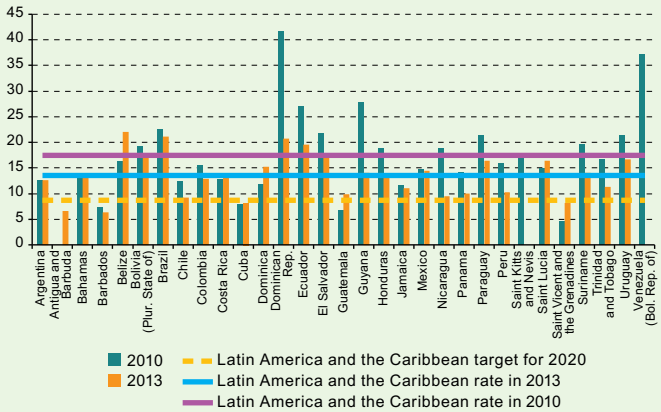
These figures show that all the Latin American and Caribbean subregions report higher mortality rates than North America (excluding Mexico). Of particular concern is the high number of pedestrians killed in the region which, in sub-regions such as Mesoamerica, account for up 31% of all traffic fatalities, 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 countries[4] 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).

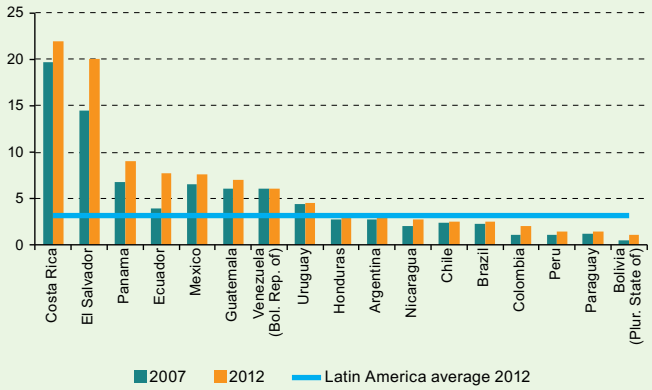
Second, as regards speed limits, all the region's countries have laws that set maximum permissible speeds, although only 69% of them have set maximums of <50 km/h in urban areas. Similarly, 81.48% of the countries have regulations governing driving under the influence of alcohol —a rise of almost 5% 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.

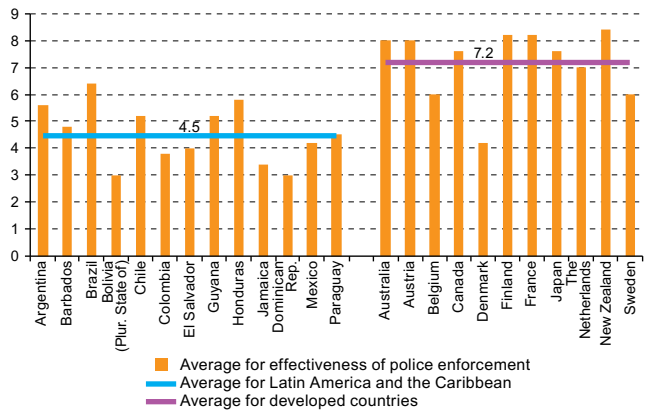
In the study "Road safety in Latin America and the Caribbean: Recent performance and future challenges" (Nazif and Pérez, 2013), ECLAC analysed the implementation of various road safety measures between 2008 and 2012. The authors found that by the end of the period analysed, 59% of drivers used their 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

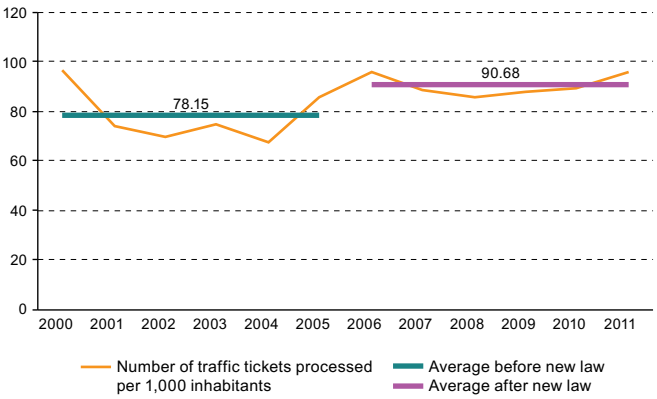


Source: World Health Organization (2013).

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 3 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 (SSESs) 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

		Montbenoît	Saint-Gérand-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 1 April 2015, France had 2,179 radar cameras installed and had issued 76 million speeding fines between 2003 and 2013. The revenue, equal to more than 4.2 billion euros, is used to improve the transport and traffic infrastructure, fund and maintain the operation of radars, deal with crime and modernize the driving licence database (DSCR, 2015).

VI. Towards better quality information

Finally, under Pillar 5, post-crash response and activities to strengthen road safety information gathering systems are essential for the proper implementation of corrective measures. The region has taken important steps to systematize, make available and update road safety information at the national level, with subnational coverage. Because most of the databases are prepared using police reports, many countries only report deaths occurring at crash sites and thus fail to follow the standardized WHO methodology. Such methodological differences on occasions make comparisons between countries and assessments of the effectiveness of the measures adopted a difficult task. In particular, under-

[5] Using information from 697 radar traps in 52 locations, at equivalent periods of time and trap distances, 2009.

reporting remains a challenge both in the Latin American and Caribbean region and in many developed countries (IRTAD/OECD, 2007), which hampers the prioritization of measures and undermines the effectiveness of the steps taken.

Collecting quality data is essential in strengthening road safety decision-making prior to, during and after road accidents. First, to correctly identify the magnitude of the problem and the users involved; second, to establish the main causes for accidents; third, in the planning phase when countermeasures are devised; fourth, in continuous monitoring; and, finally, in the evaluation phase, to determine whether the measures have brought about reductions in the indicators and attained the goals sought.

Along with improving data collection protocols, major efforts have been made to secure quality information through the introduction of methods estimating the scale of underreporting, such as by merging databases or surveys; one example of this comes from Brazil (de Morais and others, 2012), which analyses the mortality trend over time and detects the existence of high-risk points for deaths based on numerous sources of available data for states and municipalities.

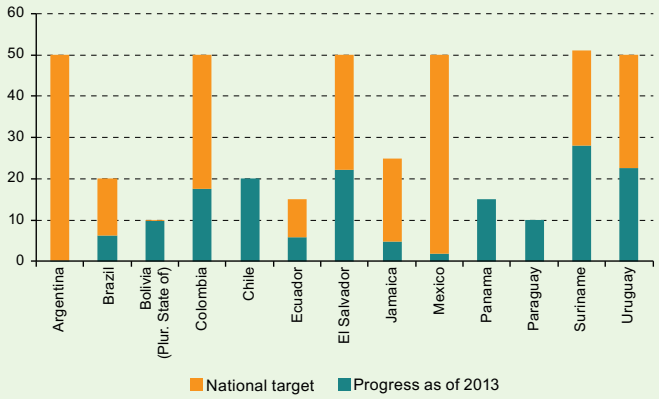
VII. Latin America and the Caribbean are seriously behind with their road safety targets

Only 57% of the Latin American and Caribbean countries have set targets for reducing traffic mortality rates, whereas all developed countries have exact reduction goals set at either the national or subnational levels.[6] The latter countries' goals are also on average more ambitious (reductions of around 41%) while the Latin American and Caribbean region seeks reductions of around 30%.

As shown in figure 5, the countries with the most ambitious goals in the region are Argentina, Colombia, El Salvador, Mexico, Suriname and Uruguay, while Argentina and Colombia have made the most impressive progress over the first half of the Decade of Action for Road Safety. Costa Rica, Cuba, Ecuador, Jamaica, Panama and Peru make up an intermediate group. Finally, the Bolivarian Republic of Venezuela has a reduction target of between 5% and 10%, while Paraguay and the Plurinational State of Bolivia have reduction targets of 10%.

[6] In accordance with their federal constitutions, Germany and Canada set their goals, respectively, at the level of their Länder and provinces and territories.

Figure 5
LATIN AMERICA AND THE CARIBBEAN: MORTALITY REDUCTION TARGETS BY COUNTRY, AND PROGRESS AS OF 2013



Source: Infrastructure Services Unit, ECLAC, based on information from WHO for 2010 and 2013.

The setting of reduction targets has been extensively promoted by ECLAC and the other regional commissions because they are a public policy tool that conveys the importance of road safety by:

- Urging the parties involved to act and to assume greater responsibility in attaining the goals set.
- Transmitting a message indicating that the government is serious about reducing the number of traffic accident victims.
- Building a sense of belonging by creating greater responsibility, forging more partnerships and introducing more measures.
- Increasing awareness among the public and the media, and encourages politicians to support legislative changes and to provide the necessary funding.

These recommendations are in line with a study analysing 14 OECD countries (Wong and others, 2006) that showed that countries which set targets between 1981 and 1999 obtained better results than those that did not. The study also revealed that in general, countries that set specific targets reported 17% fewer mortalities than those that did not.

The United Nations has recommended that national road safety strategies include goals that are ambitious but attainable, with the backing of national plans with ad hoc funding. Only 48% of the Latin American and Caribbean countries have the funding for road safety guaranteed, whereas the developed countries all have secure funding for their safety strategies. Similarly, another important element in the process is the establishment of

public methodologies indicating how the baselines for determining those targets were set and how progress with the measures is to be monitored. In spite of that, of those countries that have set targets, only Panama and Ecuador have made public the methodology applied.

This background information helps explain why, in spite of the progress made over this period, the region's results have not yet translated into sustainable achievements. The importance of monitoring and the allocation of resources in accordance with specific actions within a plan can make a major difference to the sustainability of results.

VIII. Recommendations for strengthening road safety in Latin America and the Caribbean

During the first years of the Decade of Action, while the developed countries have been implementing sustained and coordinated actions within a framework of road safety policies and securing good results in terms of lower mortality and injury rates, the countries of the Latin American and Caribbean region have performed much more poorly, albeit while making undeniable progress in the area of road safety.

In spite of the major efforts made by the region's governments, NGOs and multilateral agencies, a series of factors affecting the successful implementation of actions for safer transport in the region remain in place.

With the publication of the World report on road traffic injury prevention in 2004, the need to create coordinated actions across multiple sectors became apparent. In spite of that, the region is still characterized by partial approaches and scant coordination of actions, even between State agencies themselves, which undermines the effectiveness of the investments made. For that reason, it is essential to strengthen the integration of road safety actions within policies for mobility and sustainable development, in order to provide transport services that can efficiently and effectively accompany the growing demand for mobility with a comprehensive approach to safety. To achieve that, a series of priority actions must be undertaken:

Set reduction targets as part of the mobility policy, since they will serve to guide actions and send a political signal about the commitment to road safety that is being assumed. In the region, only slightly more than half the countries have targets, and methodologies for monitoring them are practically non-existent. Without those tools, it is difficult to reach an agreement to inform the different stakeholders about what they have to do, how they are to coordinate and what impact they could have on accident rates.

Leadership at the highest level regarding the importance of road safety for development is essential. In particular, the participation of players from different sectors and different hierarchical levels is needed, in order to bring together those who design, implement and benefit from road safety actions. Institutional dialogue among representatives of the different sectors that deal with road safety, and among different levels of government, is of particular importance: for example, for the development of sustainable transport policies that promote safe systems and provide properly for vulnerable users, such as pedestrians and cyclists, in both urban and rural areas.

The media can help to convey to the public how policies that they might initially see as arbitrary or unnecessary in fact contribute to the development of society. For example, the media can support to traffic control measures by describing the reasons for those actions and their importance in providing the social good that is road safety. Accordingly, the role played by associations of traffic accident victims, which bolster the ethical thrust of road safety policies, must be given a higher profile.

Other important groups are civil society organizations, together with industry representatives from the automobile, insurance and road construction sectors. Consideration should be given to their experiences and contributions in order to make the implementation of policies more effective. Similarly, universities and think-tanks should be brought on board to encourage and deepen research in this area.

The question of road safety funding must be resolved appropriately, in order to ensure the necessary conditions and human and financial resources needed to carry out the policies that have been designed. One key aspect arising from an observation of some developed countries' experiences is they have not only guaranteed funding for their road safety strategies over the medium term but also numerous networks that produce and reproduce knowledge about road safety. Such networks enhance the measures in place and underpin evidence-based improvements, generating a virtuous circle of innovation and research. There are experiences in this region (Argentina, for instance) where the road safety agencies have been provided with resources on a much more continuous basis, allowing the planning of actions in the medium term regardless of the political cycle. Given the budgetary constraints on research in many of the region's

countries, which can impede sufficient local knowledge generation, the creation of regional partnerships to deal with this topic would ensure financial resources in sufficient amounts to better support decision-making, by reliably establishing when, where, and what measures to prioritize in order to reduce traffic fatalities, injuries and crashes in Latin America and the Caribbean.

Education has a key role to play, not only through a culture of self-care in the area of road safety, but within the broader framework of civic behaviour. For that, educational programmes must introduce or reinforce issues related to trust, gender equality and legitimate practices both within and beyond the transport system (see, for example, Rozas and Salazar, 2015). At the same time, families also play a key role in the transmission of values; therefore, education campaigns and programmes must include families, either directly or indirectly. Young people, as the most vulnerable age group, must be targeted with actions involving educational programmes, road safety campaigns, and measures to ensure that proper process are followed for issuing driving licences.

In the final analysis, the appropriate and permanent integration of all these elements —the setting and monitoring of targets, the exercise of leadership, the involvement of various sectors and the development of financial and human resources— with a comprehensive and participatory approach will serve to strengthen the design, implementation and evaluation of road safety policies. This mechanism is a long-term commitment resulting in the formalization of a national agreement or compact with a high degree of legitimacy. Agreements of this type help achieve sustainability, since once the general principles of the policy have been established, all the players involved place greater emphasis on the general objectives of the policy than on any legitimate individual interests they might have. These issues are examined in greater detail in the ECLAC document on a comprehensive policy for logistics and mobility, which covers road safety (Jaimurzina, Pérez and Sánchez, 2015).

IX. Summary

- Even though road safety in Latin America and the Caribbean is evolving positively in terms of raising awareness of the issues and of the need for road safety policies, commensurate outcomes in the form of significant reductions in the numbers of deaths and injuries are yet to be seen.
- The five pillars of the global plan for the Decade of Action for Road Safety provide guidelines for coordinating road safety actions. Within that framework, the main points to be strengthened are: improving inter-agency coordination; encouraging the establishment of reduction targets and their continuous monitoring; strengthening monitoring of road safety measures by providing the agencies responsible with the necessary human and technological resources; promoting safe, quality infrastructure; improving data gathering systems; and various other issues.
- As regards reduction targets, not only have a minority of countries in Latin America and the Caribbean assumed formal reduction commitments, but their targets are also much less ambitious than those of the developed countries. Over the first five years of the Decade of Action, the progress made by the countries in attaining its goals remains slight; commitments must therefore be redoubled and more effective actions put in place.
- Higher quality, safer infrastructure is needed. Designs and operations should follow principles for harmonizing the needs of economic development with social progress, while paying due attention to vulnerable road users in urban and rural areas alike.
- Regional studies to support policy decision-making are lacking. Given the cultural differences that exist with developed countries, regional research must be bolstered in order to pay greater attention to the sociocultural dynamics of Latin American and Caribbean countries.
- Because of the wide range of causes behind traffic accidents in the region, road safety must be a part of an integrated mobility policy that combines actions in the short, medium and long terms in such diverse areas as road infrastructure, vehicle design and conditions, transport user behaviour, education, the health system and the monitoring and oversight of those measures. Given the complexity of the phenomenon and the many different players involved, the institutional framework for road safety must explicitly take into account the interactions between different stakeholders (those of the State, civil society and the private sector), at both the local and regional levels, and focus their actions on specific road users.

X. Bibliography

De Morais Neto, Otaliba Libânio and others (2012), "Mortalidade por Acidentes de Transporte Terrestre no Brasil na última década: tendência e aglomerados de risco", *Ciência & saúde coletiva*, vol.17 no.9.

DSCR - Direction de la sécurité et de la circulation routières, online: http://www.securite-routiere.gouv.fr/.

Elvik, R. (2001), "Cost benefit analysis of police enforcement", The ESCAPE Project, http://virtual.vtt.fi/virtual/proj6/escape/escape_wp1.pdf.

Garcia Alonso, Lorena; Sánchez, Ricardo, (2015), "El papel del transporte con relación a los Objetivos de Desarrollo del Milenio", *Naturales e Infrastructura Series*, No. 160, ECLAC, United Nations.

Huerta Melchor, Oscar, (2008), "Managing Change in OECD Governments, An Introductory Framework", OECD, *Working Papers on Public Governance*, No. 12, OECD Publishing.

Jaimurzina, Azhar, Gabriel Pérez Salas y Ricardo Sánchez (2015), "Políticas de logística y movilidad", *Recursos Naturales e Infrastructura Series*, No. 173, ECLAC, United Nations.

IRTAD/OECD (2007), "Underreporting of Road Traffic Casualties", [online] http://www.international transportforum.org/irtadpublic/pdf/repNDL2007.pdf.

Jung, Yong Il and others (2014), "Traffic Accident Reduction Effects of Section Speed Enforcement Systems (SSES) Operation in Freeways", *Journal of Korean Society of Transportation*, Volume 32, Issue 2, pp.119-129.

Nazif J. (2011), "Guía práctica para el diseño e implementación de políticas de seguridad vial integrales, considerando el rol de la infraestructura", Santiago, Chile, ECLAC, United Nations.

Nazif J. I. and G. Pérez (2013), "Road Safety in Latin America and the Caribbean: recent performance and future challenges", FAL Bulletin 322:1-8. Santiago, Chile, ECLAC, United Nations.

Nazif-Munoz, J.I., A. Quesnel-Vallée, y A. van den Berg (2015), "Did Chile's traffic law reform push police enforcement?-Understanding Chile's traffic fatalities and injuries reduction", Inj. Prev. 21:159-165.

Observatoire National Interministériel de Sécurité Routière (2006), "Impact du contrôle sanction automatisé sur la sécurité routière (2003-2005)", [online] http://www.driea.ile-de-france.developpement-durable.gouv.fr/IMG/pdf/1-_CSA_evaluation_rapport_definitif_corrige1_cle5153a4.pdf.

PAHO (2015), "Informe sobre la situación de la seguridad vial en la región de las Américas", Organización Panamericana de la Salud, OMS-Naciones Unidas.

Rozas, P. and L. Salazar (2015), "Violencia de género en el transporte público: una regulación pendiente", *Serie Recursos Naturales e Infrastructura*, No. 172, ECLAC, United Nations.

Rozas, P. and R. Sánchez (2004), "Desarrollo de infraestructura y crecimiento económico: revisión conceptual", *Serie Recursos Naturales e Infrastructura*, No. 75, ECLAC, United Nations.

United Nations (2010), "Improving global road safety: setting regional and national road traffic casualty reduction targets", United Nations Development Account, United Nations, New York and Geneva, [online] http://www.oecd.org/aidfortrade/48179248.pdf.

United Nations (2011), "Global Plan for the Decade of Action for Road Safety 2011–2020", [online] http://www.who.int/roadsafety/decade_of_action/plan/english.pdf.

Veisten, K. and others (2010), "Cost-benefit analysis of drug driving enforcement by the police", http://www.bast.de/Druid/EN/deliverales-list/downloads/Deliverable_3_3_1.pdf?__blob=publicationFile.

Wong, S. C., and others (2006) "Association between setting quantified road safety targets and road fatality reduction", *Accident Analysis & Prevention*, 38.5: 997-1005.

World Economic Forum (2015), *The Global Competitiveness Report 2014-2015*, Geneva. http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf

World Health Organization (2009), "Global status report on road safety: time for action", Geneva.

World Health Organization (2013), "Global status report on road safety 2013", Geneva.

World Resources Institute and EMBARQ (2015), "Traffic Safety on Bus Priority Systems". http://www.wricities.org/sites/default/files/Traffic-Safety-Bus-Priority-Corridors-BRT-EMBARQ-World-Resources-Institute.pdf.