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FACILITATION OF TRANSPORT AND TRADE IN **LATIN AMERICA AND THE CARIBBEAN**

Speed management in Latin America: the case of Argentina

Introduction

Caring for human life is a top priority of public policy, and road safety plays a key role in achieving it. Every year, road crashes cause 1.3 million preventable deaths and injure 50 million people around the world. Unsafe roads produce high social, economic and health costs. The number of road traffic fatalities globally is 17.4 per 100,000 inhabitants; however, evidence confirms that rates are higher

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This *FAL Bulletin* concerns one of the projects funded by the United Nations Road Safety Fund. In 2018, the United Nations General Assembly adopted resolution 72/271, entitled "Improving global road safety", which established the Fund, with a view to joining forces and consolidating action to achieve safe mobility targets. The project "Speed management in Latin America: the case of Argentina" was selected for implementation thanks to the Fund and aimed at strengthening technical capacity to implement public policies and strategies to change the perception of the public —in particular in the municipalities of Azul, Cañuelas and Pergamino— about the benefits of reducing speed on urban and rural roads with a clear goal in mind: to advocate for a safer road environment for all.

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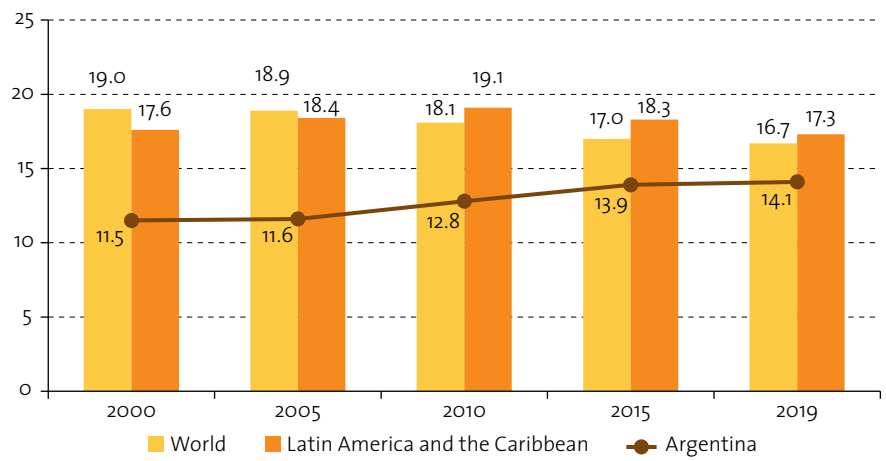
in low- and middle-income nations compared to high-income countries, denoting a clear disparity according to income level (OECD, 2020). Moreover, according to data from the World Health Organization (WHO, 2022), road traffic accidents are the second leading cause of death among persons aged 15–29 years in Latin America and the Caribbean.

WHO (2022) notes that in most countries, road accidents cost the equivalent of 3% of gross domestic product (GDP) and injuries resulting from such incidents disproportionately affect vulnerable road users, such as pedestrians, cyclists and motorcyclists.

Chen and others (2019) estimated that the economic cost of road traffic injuries to the global economy was US$ 1.8 trillion (at 2010 values) over the period 2015–2030, equivalent to an annual tax of 0.12% on global GDP.

In the period 2000–2019, road traffic mortality rates worldwide, regionally and in Argentina were not uniform (see figure 1). While the global rate trended downwards between 2000 and 2019, from 19.0 to 16.7 road traffic injuries per 100,000 inhabitants, in Latin America and the Caribbean the decline only started in 2010. In Argentina, by contrast, the rate has risen persistently. The mortality rate in Argentina increased from 11.4 to 14.1 per 100,000 inhabitants between 2000 and 2019.

Figure 1
Road traffic mortality rate, 2009–2019
(Per 100,000 inhabitants)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, Global SDG Indicators Database [online] https://unstats.un.org/sdgs/dataportal.

Reducing the number of road accident deaths requires investing resources in improving road infrastructure, education and training so that road safety can be strengthened at the global and regional levels.

In this context, on 12 April 2018, the United Nations General Assembly adopted resolution 72/271, welcoming the establishment of the United Nations Road Safety Fund. The purpose of the Fund, which was set up as a trust, is to finance and mobilize additional resources to implement high-impact projects based on internationally recognized best practices in order to increase road safety, with the ultimate goal of reducing and, ideally, eliminating the catastrophic consequences of road traffic accidents for all road users (UNRSF, n/db).

The Fund prioritizes projects that support countries in their efforts to achieve the road safety objectives set out in the Global Plan for the Decade of Action for Road Safety 2021–2030, and also in the 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs). It has a particular impact on two SDG targets: target 3.6 calls for the global community to halve the number of deaths from road traffic accidents by 2030, while target 11.2 focuses on improving road safety by fostering safer access and the adoption of sustainable mobility practices (UNRSF, n/da). The Fund contributes to the achievement of these objectives by financing projects on infrastructure improvement, road education programmes and accident data collection, and by facilitating collaboration between governments and organizations to address road safety challenges. As regards target 11.2, the Fund can finance projects that foster safer urban environments for pedestrians, cyclists and drivers, as well as encourage sustainable modes of transport, such as public transport and cycling, which contribute to accessibility and quality of life in cities.

One of the major lags seen in general worldwide, especially in Latin America and the Caribbean, is the lack of accession to the seven United Nations conventions on road safety, which provide the basis for States to establish national legal frameworks to prevent road traffic injuries and deaths. Road safety governance relies primarily on political will to create and implement national strategies and programmes. The United Nations General Assembly resolutions on improving global road safety urge all Member States to accede to those conventions and agreements (United Nations, 2020):

(i) The Convention on Road Traffic (1968) establishes rules on all aspects of traffic and road safety and serves as a reference for domestic legislation.

(ii) The Convention on Road Signs and Signals (1968) establishes more than 250 commonly agreed road signs, symbols and markings.

(iii) The Agreement concerning the adoption of harmonized technical United Nations Regulations for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these United Nations Regulations (1958), which provide the legal framework for the adoption of uniform regulations, specifically related to safety and environmental issues, for all types of manufactured wheeled vehicles.

(iv) The Agreement Concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of Such Inspections (1997).

(v) The Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts Which Can Be Fitted and/or Be Used on Wheeled Vehicles (1998), which provides a framework for developing global technical regulations on vehicle safety and environmental performance.

(vi) The Agreement Concerning the International Carriage of Dangerous Goods by Road (1957), which establishes standards, including requirements for operations, driver training and vehicle manufacture, that can be applied to prevent and mitigate the impact of collisions involving hazardous goods.

(vii) The European Agreement concerning the Work of Crews of Vehicles Engaged in International Road Transport (AETR) (1970).

At the time of publication of this report, Argentina had yet to accede to any of the seven conventions.

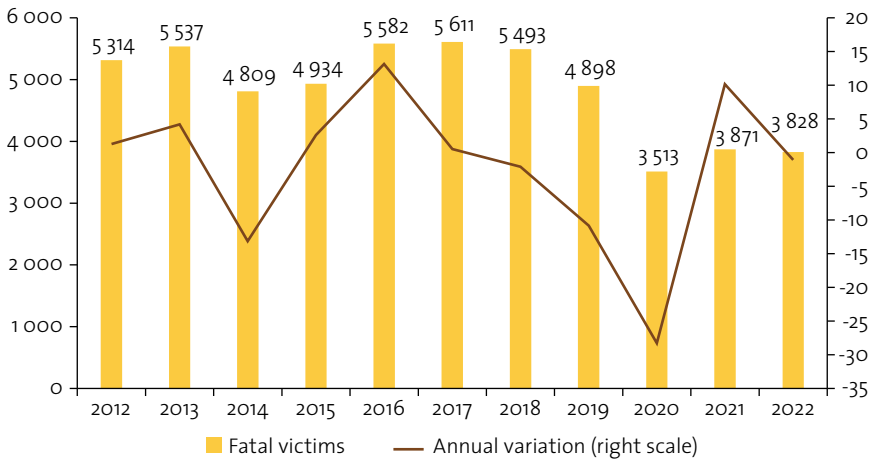
This report describes how the project was implemented in the municipalities of Azul, Cañuelas and Pergamino in Argentina, and is divided into three sections. The first section presents the country's road safety background, as well as road accident statistics and other key elements to understand the context of the project. The second section describes the objectives and components of the project. The last section sets out the main achievements, lessons learned and general conclusions.

I. Road safety in Argentina

The territory of Argentina (land, sea and air) covers a total of 3,761,274 square kilometres, encompassing 24 jurisdictions that include 23 provinces and one federal district, which are further divided into 1,231 municipalities (Government of Argentina, 2023). As regards the road system, it has an extensive network of 640,000 kilometres of highways and roads, covering the country's entire territory (Ministry of Public Works, 2021).

In 2016, the fatality rate began decreasing, a trend that accelerated in 2020 as a result of the COVID-19 pandemic, owing to lower vehicle traffic thanks to widespread activity closures (see figure 2). As traffic volumes picked up again, the number of victims of fatal accidents on the country's roads increased between 2020 and 2021 from 3,513 to 3,870. The number observed in 2021 was lower than in 2019 (4,898 victims) and, given that the 2020 value was skewed as a result of the pandemic lockdowns, it would appear that the human toll is indeed decreasing. Significantly, 50% of accidents occur on highways —with a higher incidence on national ones— and 5 in 10 fatal accidents are the result of collisions (Ministry of Transport, 2023).

Figure 2
Fatalities, 2012–2022
(Number of victims and annual variation)



Source: Prepared by the authors on the basis of Ministry of Transport of Argentina, "Informe de siniestralidad vial fatal 2022", 2023.

Speeding is the major contributing factor and aggravates the problem of road traffic injuries. As speed increases, so does the energy stored in the vehicle, increasing the braking distance required and, thus, the risk of an accident with other vehicles, roadway objects

or pedestrians. The evidence is clear. It is essential to be aware that driving at appropriate speeds and observing established speed limits contribute to road safety and help prevent tragedies that could have been averted. Effective speed control is a crucial tool to improve road safety. However, improving compliance with speed limits and reducing unsafe driving speeds is no easy task. A considerable number of drivers do not fully recognize the risks involved and, unfortunately, the "reward" (of reaching their destination faster) by driving over speed limits outweighs the possible negative consequences.

In Argentina, exceeding posted speed limits or driving at inappropriate speeds appear to be commonplace. Since December 2019, the National Road Safety Agency, a decentralized agency of the Ministry of Transport, has made significant efforts to reduce road accidents throughout Argentina. The Agency has concluded different agreements with Argentine provinces to carry out joint operations and control speeding on highways, freeways and expressways throughout the country. The aim of these measures is to encourage safer and more responsible driving, as well as to reduce the risks associated with speeding on Argentine roads. Some provinces also have their own speed control programmes. However, a comprehensive speed management programme that systematically covers the entire country and the various road types has not yet been implemented. It is important to move towards a unified strategy that encourages consistent and coordinated speed management in all the country's regions, which will ensure more effective accident prevention and a marked improvement in road safety nationwide.

What follows is the speed management project implemented in three municipalities in Argentina (Azul, Cañuelas and Pergamino). It was financed by the United Nations Road Safety Fund, managed by the Economic Commission for Latin America and the Caribbean (ECLAC) and executed with support from the team led by Anna Ferrer and Rosa Gallegos and the National Road Safety Agency. It began to show positive results only months into its implementation and the aim is for it to serve as a model to be implemented in other municipalities, other provinces of Argentina, and the region as a whole.

II. Objectives and implementation of the project "Speed management in Latin America: the case of Argentina"

The project "Speed management in Latin America: the case of Argentina" was selected by the United Nations Road Safety Fund to strengthen technical capacity in three Argentine municipalities (Azul, Cañuelas and Pergamino) and design effective policies and strategies for implementing speed management systems.

The main objective of the project was to change the public's views about reducing speed to make urban and rural roads safer and lower the number of road accident victims. To achieve this objective, support was provided in pilot projects; a manual of good practices was also shared with municipal technical authorities and policymakers involved in road safety. The overarching goal is to achieve the replicability of the project carried out in the three municipalities, in all provinces, the federal district and the rest of the municipalities throughout Argentina. Raising awareness and fostering cooperation to encourage safer and more responsible speed management on Argentine roads was key throughout the project.

The project ran from 1 April 2021 to 31 July 2023. A central element of the project was to bring together all stakeholders and the general public through educational strategies that promote the benefits of proper speed management. Thus, a multi-agent approach was adopted that actively involved the public and private sectors and civil society.

A. Project components

The following is a description of each of the four components of the project: (1) conference on speed management projects and best practices; (2) awareness and education campaign on the benefits of speed management based on opinion polls of citizens and drivers where pilot projects are implemented; (3) pilot projects implemented to improve speed management; and (4) pilot projects on safe fleet management.

Component 1. Conference on speed management projects and best practices

This component identifies and disseminates best practices and innovations in speed management among Argentine authorities and road safety stakeholders at the national and regional levels. To achieve this, conferences were held at the beginning of the project and a report was prepared with recommendations tailored to the reality of the beneficiary and the context of Latin America and the Caribbean.[1]

The event addressed the following topics: (i) speed control and enforcement technologies; (ii) infrastructure for speed management; (iii) fleet management as a tool for speed reduction; and (iv) good practices in the region in speed control.

The exchange of opinions, conclusions and recommendations from each conference contributed to the original design of each component of the project.

Subcomponent 1.1. Guide to good practices in speed management in Latin America

One of the key subcomponents of the project was the development in the wake of the conferences of a guide to best practices for speed management in Latin America. This guide[2] is available on the REDUX[3] website.

Among other things, the guide describes experiences in: (i) public awareness-raising; (ii) improvements in road infrastructure; (iii) countering unsafe practices; and (iv) secure fleet management in Argentina, Chile, Colombia, Ecuador, Mexico and Uruguay, among other countries.

Component 2. Awareness and education campaign on the benefits of speed management based on opinion polls of citizens and drivers where pilot projects are implemented

An opinion poll of citizens and drivers was conducted between April and December 2022 to raise public awareness of the importance of speed management measures. Aspects covered by the poll included: (i) reduction and observance of speed limits; (ii) traffic calming in crossing areas; and (iii) raising awareness about the vulnerability of pedestrians, cyclists and motorcyclists.

[1] The event was attended by 30 panellists and moderators, with more than 700 people participating virtually via the Zoom and YouTube platforms.

[2] Link to the good practice guide: [online] https://alianzaredux.org/publicacion-guia-buenas-practicas/.

[3] REDUX is a non-governmental organization formed by a group of professionals with expertise in public road safety management and extensive experience in Latin America, which has helped to define good practices for the public sector, academia, the private sector and civil society and which was inspired by the European Transport Safety Council.

The poll was conducted using a descriptive and follow-up study methodology and its purpose was to learn about the beliefs, road behaviour, and level of prior knowledge on the subject of members of the public and drivers in the three municipalities selected for the project (Azul, Cañuelas and Pergamino) in the province of Buenos Aires.

In order to ensure the quality of the information, prior to data collection, both virtual and in-person training was held for pollsters in each locality. Likewise, polls were supervised on-site by a coordinator to ensure the accuracy and consistency of the information. At the same time, to facilitate fieldwork and ensure collaboration from various sectors, links were established with government agencies, the private sector and civil society. This collaboration provided a more complete and representative picture of perceptions and behaviour with respect to driving speed.

Among the main results of the survey, the following stand out:

- **Speed radars**. More than 80% of those polled consider it essential to increase speed radars both in urban areas and on highways. They argue that such devices are essential for managing traffic on busy roads, which helps to reduce accidents and, ultimately, save lives.
- **Safety measures**: Ninety per cent of respondents believed that the measures proposed in the questionnaire would be effective in reducing the risks associated with traffic speed. The measures include: (i) installation of radar speed signs; (ii) more frequent speed-limit signage along highways; (iii) identification of high accident-frequency sections; and (iv) clear signage at approaches to urban areas, as well as in the vicinity of schools, hospitals and places of recreation.
- **Causes of accidents**. Respondents agreed that speeding and driving under the influence of alcohol are the main causes of traffic accidents.
- **Information media used**. In the surveys, both urban residents and highway drivers said that they obtained their information on social networks, television, radio and the Internet.

The information polled supported the definition and design of priority messages in the awareness and education campaign to be implemented as part of the next component of the project.

Component 3. Pilot projects implemented to improve speed management[4]

Following the poll, four pilot speed management projects were designed and implemented on the three aforementioned sections of highway in the municipalities of Azul, Cañuelas and Pergamino. This component began with the awareness campaign mentioned in the previous component based on four main lines of action, as described below:

1. **Design and implementation of the highway traffic campaign *Estás apurado? Tomémonos unos minutos para hablar***

The campaign *Estás apurado? Tomémonos unos minutos para hablar* ("In a hurry? Let's take a few minutes to talk") was divided into two stages. In the first, interviews were conducted with relatives and friends of road traffic accident victims in each municipality. The material from this was used to create an awareness-raising video that was screened later in the campaign. It is reasonable to say that the results of the campaign were satisfactory since high-quality materials were produced that can be used in future public awareness activities and long-term proposals, as well as be replicated in all municipalities.

2. **Design and implementation of the school campaign Pintemos juntos el futuro ("Let's paint the future together")**

Various artists were chosen in each municipality to jointly design drawings related to speed control, which were well received by the community's students. In support of this initiative, a talk on the subject of speed was also given to students, which was attended by senior officials from the municipalities and schools in the three cities selected.

[4] This component is mainly based on the report prepared by the consultant Ghio (2023).

3. Braking distance demonstration carried out by CESVI Argentina in conjunction with Fundación MAPFRE[5]

The activity described below was one of the most impactful in terms of generating public awareness of the danger of speed. One of the leading entities, Fundación MAPFRE, held braking distance demonstration events in the selected municipalities with the aim of raising awareness of the serious consequences of impact at speed on the human body.

The demonstration consisted of showing how a vehicle travels at different speeds (30 kilometres per hour and 40 kilometres per hour) and the different braking distances required in each case. The exercise demonstrated the serious consequences of a hypothetical pedestrian being struck by a vehicle at increasing speeds. Using life-size dummies and actual vehicles, the demonstration was held at a location in the municipality. The demonstration showed that reducing speed not only reduces the adverse consequences of the impact on people, but also gives drivers more time to react and avoid possible serious incidents, which are often fatal.

The possibility of someone with a valid driving license being able to experience for themselves the difference between driving at 40 kilometres per hour and 30 kilometres per hour and realizing that simply by reducing their speed by 10 kilometres per hour they significantly increased safety and reduced the likelihood of an accident having fatal consequences, resulted in the exercise having a positive impact on the driving habits not only of the actual drivers, but also of the people who took part as onlookers.

The events were a success, as they drew a large number of members of the public and personnel from the selected municipalities, but above all because they achieved the objective of the exercise, which was to spread awareness of the risks of driving at high speeds. Although the project only included one demonstration per municipality, instructions and all CESVI Argentina's contacts were provided to the authorities so that other municipalities wishing to replicate the demonstration in the future could do so.

4. Design and dissemination of an awareness and training campaign for social networks

In this last subcomponent, customized awareness-raising and training materials for social networks were designed and disseminated for each of the municipalities selected. In the course of the activities, those responsible for relations with the press in each municipality displayed an excellent willingness and interest to disseminate the messages connected with the initiative.

Interventions on Argentine national highways[6]

Encouraging road safety and preventing accidents also require that infrastructure be safe and adequately designed for all road users. Therefore, a pilot project carried out interventions on three highway sections in the selected municipalities: Azul, Pergamino and Cañuelas. These sections were evaluated, and improvement measures subsequently proposed, with a focus on low-cost but high-impact solutions to improve road safety for all.

During the diagnostic process speed measurements were taken that revealed a high percentage of vehicles exceeding the maximum speed limits. In the Azul section, under free-flow conditions, 95% of the vehicles measured exceeded the speed limit established for that area (40 kilometres per hour). In Pergamino, 63% of the vehicles measured exceeded the speed limit established for the section (60 kilometres per hour), while in Cañuelas, 96% of the vehicles measured exceeded the speed limit established for that section (60 kilometres per hour). The findings highlighted the pressing need to take steps to encourage safer driving in those areas.

[5] CESVI Argentina has spent the last 25 years operating as a research centre specializing in road and vehicle safety. Its mission is to investigate and analyse these aspects, with a view to developing systems to improve the management of insurance companies and, at the same time, contribute to the modernization of the extensive repair market in Argentina (see [online] https://visionauto.com.ar/que-es-el-cesvi/#:~:text=Desde%20hace%2025%20a%C3%B1os%2C%20CESVI,vasto%20alcance%20en%20nuestro%20pa%C3%ADs).

[6] This section takes into account the report prepared by the consultant Rojas (2022).

Following the diagnostic assessment, a series of specific proposals were developed for each municipality, including: (a) a review and adjustment of speed limits; (b) improvements at intersections by means of signalling and marking; (c) installation of assistance points; (d) management of highway access roads; and (e) marking of pedestrian crossings at strategic points. At the end of the project period, measurements were repeated in each municipality under the original conditions, which made it possible to evaluate the impact and results of the measures implemented, which ultimately proved satisfactory.

Subcomponent 3.1. Analysis of the regulatory framework governing speed in Argentina[7]

The purpose of this subcomponent was to identify and analyse the regulatory framework governing road safety in Argentina. It included both an analysis of the legal prerogatives of the National Road Safety Agency and the regulations on speed and their enforcement (speed, control, technology, sanctioning procedure, criminal liability, and ethics). In addition, proposals for strengthening the regulations were developed based on the weaknesses and opportunities for improvement identified, with a focus on speed management and, in particular, lowering of speed limits.

According to the research carried out, Argentina has taken a comprehensive approach to road safety issues, following a necessary trend in Latin American countries to establish uniform public policies. This, in spite of the array of regulations and competencies that exist at the local level. Even before the inception of the Agency in April 2008, Argentina already had National Act No. 24.449,[8] which addressed traffic in general and governed the permissible maximum speed limits.

The strengths identified in the review of the regulations include the fact that the National Road Safety Agency has implemented public policies on road safety at the national level, which has led to (i) a standardization of laws; (ii) control procedures; (iii) driving license requirements; (iv) management of offences; (v) technical requirements; and (vi) training courses.

The Agency, using its own budget supplemented by external contributions, has expanded its powers through a national law, becoming an executive agency with greater authority and presence through operational bases throughout the country. It uses a proportion of traffic fines to enforce road safety laws, demonstrating its commitment to address speeding, and it has updated the weighting of driving license points deductions for speeding. The criminal laws related to road traffic offences have also been modified to include the possibility of amicus curiae involvement and the introduction of the crime of road traffic homicide. The agency has implemented national alcohol control policies and offers an assistance hotline service for victims of traffic accidents. These measures seek to encourage responsible driving and provide support for victims and their families at a difficult time.

Some shortcomings were noted in the implementation of public policies on road safety during project implementation. They include: (i) in some cases, public policies on road safety have been undermined by a lack of inter-agency coordination, while turnover of government authorities has impaired the continuity of some policies; (ii) the enforcement of speed controls depends on municipal or provincial initiatives, so responsibility for their implementation will also depend on them; (iii) the lack of a single source for data on road traffic accidents makes consistent analysis difficult; and (iv) physical distance and poor communications also undermine local road safety solutions.

To address these limitations, it was recommended that public policies on road safety be enshrined in the Argentine Constitution, backed by a national law ratifying international commitments and, at the same time: (i) strengthening the National Road Safety Agency; (ii) replacing the term *accidente* (accident) with *siniestro de tránsito* (road traffic accident); (iii) setting speed limits based on road categories; (iv) encouraging the reduction of

[7] This subcomponent is based on the document prepared by the consultant Lencina (2023).
[8] Traffic Law (Law No. 24.449): https://www.argentina.gob.ar/normativa/nacional/ley-24449-818.

maximum speed limits; (v) ordering the adaptation of roads using traffic-calming signage; (vi) and encouraging the creation of 30 zones in urban areas for the safe coexistence of vulnerable users and drivers of four-wheeled vehicles.[9]

Comprehensive speed control management requires a balanced approach. While policy proposals are crucial, if implemented in isolation they are insufficient to ensure ongoing success. An adequate legal framework is essential to maintain a comprehensive public road safety policy and to enforce regulations with an effective offence control and management system, as it is the basis for bringing about an effective reduction of traffic accidents in the short term.

Component 4. Pilot projects on safe fleet management[10]

In the next stage of the project, specific workshops were held for fleet truck drivers employed by the company Loma Negra, which focused on encouraging awareness and responsibility at the wheel. Given that these drivers spend a lot of time on the roads and their vehicles represent greater risk —e.g. speeding, unsafe driving, fatigue or substance abuse— the aim has been to bring about a cultural shift that aids road safety.

The topics covered by the training included road coexistence with a focus on awareness and individual and group reflection on the relationship that each driver establishes with their speed while driving, as well as the impact on their state of mind and how to improve it. The risks associated with fatigue and alcohol at the wheel were also discussed. Fatigue was one of the issues given greatest emphasis with the four groups of Loma Negra professional drivers, since the company regarded it as the biggest challenge at the time.

Loma Negra has been taking a comprehensive approach to road safety for more than 10 years. Their focus has been on speed management, for which they have introduced a digital monitoring and prevention tool. The tool monitors the driving behaviour of most of the drivers working for Loma Negra and its outsourced companies throughout Argentina. As a result, they have achieved a significant reduction in road accidents and high potential events. To encourage drivers to meet indicators, they have implemented a system of positive incentives, as well as a scoring system, by which each driver can track their progress on their phone. In addition, the company provides driving instruction and maintains weekly contact with drivers through its health and safety staff.

As is well known, road insecurity is a complex problem that requires constant, diverse interventions. In the case of Loma Negra, training is useful when it is participatory and contributes to specific changes in behaviour in the short, medium and long term. Loma Negra drivers have extensive experience (more than 10 years) as professional truck drivers and register good safe-driving indicators. Therefore, meetings were held in advance with each group of drivers to assess their awareness and understanding of their responsibility to drive safely. The resulting diagnostic assessment was used to adapt the training more effectively.

The activities included four diagnostic meetings with drivers in the following groups: (i) Lomax Group: Loma Negra employees who work by day in the City and Metropolitan Area of Buenos Aires; (ii) Olavarría Group; (iii) Expreso San José Group and (iv) Sian Group.

The meetings were designed to encourage an open conversation with each group in order to get to know each other prior to the workshops and obtain direct feedback from the participants on current concerns and challenges of the drivers as regards compliance with company rules.

The information yielded by these meetings helped in the design and implementation of specific workshops for groups of 15 drivers from each company. The aim was to increase the value of these drivers with specific technical knowledge of road safety and the benefits of organizational and neuroscientific coaching.

[9] The *Calles para la vida* ("Streets for Life") initiative sets the speed limit for streets in urban areas at 30 kilometres per hour and foster local assistance for safe cities (see [online] https://www.argentina.gob.ar/noticias/calles-para-la-vida-una-medida-eficaz-que-requiere-tan-solo-decision).

[10] This section was developed based on the report prepared by the consultant Bisiau (2023).

One notable conclusion of the workshop was the high level of receptiveness and engagement on the part of the drivers, who were greatly interested in the topics addressed. It was recommended that more information be provided on speed and its consequences, including data specific to Argentine highways and the role of trucks in road accidents. Data prior to the implementation of the law that reduced the maximum speed limit for trucks to 80 kilometres per hour was also considered.

Implementation of a virtual platform for speed management and a driver scoring system[11]

In 2014, Loma Negra initiated vehicle safety management with the aim of ensuring transport safety. The strategy consisted of auditing all the transport companies and establishing an individual action plan for each one, with a clear goal: zero accidents.

In 2017, the company focused on management of high potential events, where the factors that led to those events were identified and analysed. In the course of this review, the following were identified among the main factors to be evaluated: speed management and rest breaks on roads.

The Road Safety Statistical Management Model was implemented to address this problem. This model includes the installation or integration of a GPS system and a collaborative virtual platform that collects all data related to road safety, such as speeding on arterial roads and expressways, sudden turns, hard braking, accelerations and fatigue management.

Thanks to this platform, all the information obtained is systematized using geolocation, enabling a score to be generated for each driver, form of transport, zone and fleet. In addition to strengthening logistical and operational management, these indicators are analysed monthly with Loma Negra's management.

Evaluation of specific results and benefits

According to available information, in the period 2017–2021, Loma Negra achieved outstanding results in terms of road safety. The company has significantly reduced high potential events, which fell from 17 in 2017 to only 2 in 2021. In the same period, the high potential event rate per million kilometres travelled declined substantially from 0.29 to 0.03.

The actions taken by Loma Negra have produced several positive results: (i) a 38% reduction in the rate of speeding; (ii) a considerable decrease, especially in Buenos Aires, in the number of traffic accidents reported to insurance companies. This helped lower insurance premiums and brought fuel savings, since the outsourced companies have reduced their costs by doubling the useful life of tyres, thanks to greater efficiency and care in handling when braking or negotiating curbs, potholes or speed bumps; and (iii) a reduction in the amount of servicing of trucks.

In addition to the economic benefits, these improvements have had an impact on journey times, as drivers, feeling calmer and safer, lose less time in stressful situations. All this has helped to generate a shared culture of safety, encompassing not only freight loaders, but also strategic partners, such as outsourced carriers and more than 45 associated companies, together with their more than 1,000 drivers distributed across the country.

Fleet Management[12]

Proper fleet management offers benefits for road safety and achieving it requires: (a) the company's commitment to dedicating time, resources and personnel to road safety; (b) using technology platforms and data monitoring; (c) proposing specific management indicators for monitoring and evaluation; and (d) establishing results-focused management objectives.

Recommendations for safe fleet management based on the work performed include: (i) allocating resources to organize fleet management measures aimed at reducing speed and traffic accidents; (ii) establishing a specific fleet road safety area, with a designated

[11] This section is mainly based on the report prepared by the consultant Bisiau (2022).
[12] This section is mainly based on the final project reports prepared by the consultants Ferrer (2023) and Gallego (2023).

person in charge; (iii) establishing a road safety committee; (iv) investing in technology to obtain vehicle data and monitor indicators; (v) organizing driver training courses; (vi) analysing data and providing information to each driver to assess their own driving; and (vii) setting objectives with short- and medium-term plans of action.

These technology-supplied data make it possible to measure several key data points, including real-time location, excessive braking, sudden acceleration, and acceleration and deceleration management around obstacles such as speed bumps, among other elements. The data yield detailed and valuable insights to improve both road safety and fleet management. The tools also offer relevant information both for the driver —by providing details about their driving behaviour— and for the company, enabling them to make informed decisions. The results obtained in Loma Negra's fleet highlight the positive impact of using this technology platform. In the period analysed (2017–2021), the rate of speeding and accidents came down significantly, by 38% and 75% respectively. These data underscore the value and effectiveness of such tools in improving road safety and operational efficiency.

III. Main achievements, lessons learned and project conclusions

A. Project contributions

Among the project's contributions, it is worth noting that specialized consultants provided support and guidance to strengthen speed management efforts through the implementation of a comprehensive methodology backed by data, scientific evidence and best practices. In addition, data related to accidents, locations and speeds on different sections of the highways were provided, making it possible to identify trouble spots and possible causes; public perceptions of the risks associated with speed were also collected.

The project also contributed to the development of proposals for improving road safety tailored to the particular situation of each of the selected cities. Designs for low-cost but high-impact road improvements were also provided. In addition, communication tools were made available to interact with the media and raise awareness of the need to change speed limits.

Training for civil servants and awareness-raising for political leaders provided them with tools for effective management, and collaboration between the public and private sectors gave rise to notable initiatives, as in the cases of Loma Negra and Fundación MAPFRE.

B. Main achievements

Among the main achievements of the project is the confirmation of the initial hypothesis that speeding is a real problem on the stretches of highway that pass through the three cities studied: Azul, Cañuelas and Pergamino. More than 70% of light and heavy vehicles exceed the speed limits. Collisions mainly occur in urban areas, where there are more access roads and intersections, as well as in the vicinity of schools and high-traffic areas.

The opinions of members of the public and drivers on these highways are very favourable. More than 75% of respondents were in favour of implementing speed management measures and even installing speed cameras.

A key element of the project is the broad potential of the secure fleet management pilot, which is proving a highly effective tool. This applies both for driver self-assessment and for the company to make informed decisions. As previously mentioned, the outcomes of this experience included a notable (38%) drop in the incidence of speeding, as well as a 75% reduction in the number of road accidents.

Lastly, it is clear that the implementation of road safety policies is more effective when approached from the perspective of shared responsibility between the public and private sectors, companies and workers. Two examples eloquently support this notion: first, the successful implementation of the secure fleet management component was achieved thanks to the collaboration of the company Loma Negra; second, the valuable technological and economic contribution of Fundación MAPFRE for braking distance demonstrations in cities.

C. Road safety initiatives linked to the project

As mentioned, when public policies are approached in a multidisciplinary manner and responsibility is shared with various public and private sector actors, the impact on people's lives is much greater. In this regard, on 11 May 2023, the closing event of the project was held at the facilities of the Ministry of Public Works in Buenos Aires, Argentina.[13] The meeting sought to bring together all the actors directly involved in road safety in Argentina, in order to foster collaboration and highlight the contributions of each in improving road safety in the country. Thus, at the meeting were officials from ECLAC; the National Road Safety Agency; REDUX; authorities of the beneficiary municipalities of Azul, Cañuelas and Pergamino; authorities of the Ministry of Transport, the Ministry of Health and the National Road Safety Agency Training Centre for Road Safety Policy and Management; and Loma Negra, representing the private sector. At the event, the United Nations Road Safety Fund project was presented, and all the road safety initiatives related to the project of each of the aforementioned representatives were discussed. The implementation of the Argentine project financed by the Fund is described in the course of this document. In conclusion, it is necessary to describe the main activities that the Ministry of Transport, the Ministry of Health, Corredores Viales and the National Road Safety Agency Training Centre for Road Safety Policy and Management have carried out in the area of road safety.

1. Ministry of Transport

There is a collaboration agreement between the National Road Safety Agency and the Ministry of Transport to contribute to the study, planning and treatment of urban highway sections.

Formal and informal urban land growth and production trends in Argentine cities encourage the existence of a large array of highway sections set in urban environments. Along these urban highway sections there coexist: (i) urban activities and land uses; (ii) heterogeneous flows, including through and local traffic traveling at different speeds, and vulnerable road users (pedestrians or cyclists); (iii) vehicles of different masses and sizes (e.g. cars, buses, motorcycles and trucks); (iv) and tired or fatigued drivers with different reaction times, levels of skill, and attitudes (Rodríguez, 2023).

The improvement of urban highway sections makes a positive contribution to road safety. The methodology used for the study was validated by the region and can be replicated for other provincial highways. There is the possibility of building a monitoring panel to identify concentrations and problem areas. A second stage is also planned to continue working on other specific cases, provide technical assistance to municipalities, and work on new synergies with other road safety projects, plans and/or programmes (Gallego, 2023).

2. Ministry of Health

This entity is working on the National Programme for the Prevention and Control of Injuries from External Causes, which aims to generate information for local measures through the registration of injuries from external causes.

The programme includes three activities: (i) an injury surveillance system (SIVILE) that collects data for local measures through the registration of cases of injuries caused by external factors admitted to health facilities. Its purpose is to collect information on the circumstances in which each event occurred, the nature of the injury, the characteristics

[13] Closing conference of the project Speed management in Latin America: the case of Argentina [online] https://www.cepal.org/es/eventos/conferencia-cierre-proyecto-gestion-la-velocidad-america-latina-caso-argentina.

of the injured and the risk factors associated with the injuries; (ii) sentinel units, which are mainly located in hospital wards, as well as in emergency units, in different provinces in the country to obtain and collect information in a reliable manner; iii) provision of information in a mortality yearbook format; coordination at the national level and with local areas (Breit, 2023).

3. Corredores Viales S.A.

This company developed a road management system that aims to provide an easy way to: (i) access contextual geographic information on road traffic accidents; (ii) provide support for analysis activities; (iii) prepare a base map of satellite images with a layer showing concentrations (in grey) of accidents; (iv) identify areas that are statistically atypical in terms of accidents; and (v) develop causal studies of road safety and local social factors, such as the identification of urban intersections (Poletti and Moffa, 2023).

Every accident that occurs at the site is recorded and processed, and an advanced system is in place that uses technology to manage this information. In addition, an image bank with more than seven million records is available, making it possible to establish the condition of highways and plan the necessary measures. Thanks to this technology, informed and effective decisions can be made to ensure safety in all operations (Gallego, 2023).

4. Training Centre for Road Safety Policy and Management

As part of the National Road Safety Agency, the Training Centre for Road Safety Policy and Management implements the 2020–2023 Federal Road Safety Education Plan. The purpose of this initiative is to encourage schools throughout the country to approach road safety through different lines of action; it includes: (i) delivery of education guides for road safety and coexistence, for the preschool, primary and secondary levels; (ii) teacher training courses in the provinces (with scores); (iii) workshops for supervisors and school directors; and (iv) awareness-raising talks for secondary school students (Carrillo, 2023).

One of the initiatives carried out in the framework of the project together with the National Road Safety Agency was to establish a partnership with the Ministry of Education and to actively participate in the National Institute of Teacher Training. Through various courses on road safety, the training centre described the characteristics of the sociocultural approach. An innovative approach was to provide training to managers, supervisors and coordinators, who play key roles in education institutions. The training enabled the transfer of knowledge and concepts in relation to road safety education, allowing the actors concerned to pave the way for effectively imparting those concepts to students in schools (Gallego, 2023).

During the implementation of the 2020–2023 Federal Road Safety Education Plan, an extensive training programme was implemented that involved more than 25,000 teachers and nearly 3,000 supervisors and directors. Schools received 17,000 booklets, which were also available for download in PDF format from the National Road Safety Agency website and were an effective resource for teachers in their educational work. In addition, awareness-raising talks were held in classrooms, benefiting more than 10,000 children and young people (Gallego, 2023).

The various initiatives linked to the project are essential for fostering comprehensive road safety education and awareness, providing innovative tools to help reduce accidents and improve mobility, and contributing to the formation of responsible citizens committed to road safety for safer and more responsible driving.

IV. Conclusions

Road safety is a priority on public policy agendas. Argentina has made great strides in reducing the number of road accident victims, though much remains to be done. Although the challenge is great, evidence has shown that there are examples of policies that, if well implemented, can produce positive changes.

Thanks to the adoption of the United Nations Road Safety Fund on 12 April 2018, it has been possible to finance and mobilize additional resources to implement high-impact projects based on internationally recognized practices to improve road safety and ultimately, ideally, eliminate the catastrophic impacts of road traffic accidents for all road users. The projects that are prioritized support countries in their activities to achieve the road safety objectives defined in the Global Plan for the Decade of Action for Road Safety 2021–2030, and also in the 2030 Agenda for Sustainable Development and the Sustainable Development Goals.

The project presented here was implemented thanks to the support provided by the United Nations Road Safety Fund, which serves as a key mechanism for enabling middle- and low-income countries to implement measures that represent a real public policy focus shift. However, this cannot be an external, unilateral effort. To achieve the expected progress, the region's governments must become actively involved in the issue and develop the necessary measures, in conjunction with civil society, the private sector and local agencies, to achieve a substantial improvement in road traffic safety in the region.

To date, the Fund has financed 44 high-impact projects in five regions and 88 countries (UNRSF, n/da). They include the project "Speed Management in Latin America: the case of Argentina".

It is fair to say that the project in Argentina achieved its objective of encouraging a change of outlook in municipal technicians, politicians and members of the public by encouraging the implementation of speed management measures based on best practices and pilot projects that can be replicated throughout the country. It also succeeded in raising awareness among pilot project participants of the benefits of proper speed management in reducing road traffic fatalities and serious injuries. Speeding is a real problem in the highway sections studied, and the implementation of speed management measures is, for the most part, supported by members of the public and drivers.

The results of the project confirm the need to connect with public opinion and correct the lack of technical knowledge in order to make progress in this area. They also underline the importance of collaboration between the public and private sectors, companies and workers to achieve more effective road safety policies. Thanks to that collaboration, the use of safe fleet management proved highly effective in reducing speeding and accidents.

The participation of various political and social actors in the success of this type of project was key and was reflected in the project in the municipalities of Azul, Cañuelas and Pergamino that this bulletin describes. The joint work of ECLAC; REDUX; the National Road Safety Agency; the municipalities of Azul, Cañuelas and Pergamino; the Directorate General of Traffic; the Ibero-American Federation of Victims' Associations against Road Violence; Fundación MAPFRE; the Ibero-American Road Safety Observatory; Loma Negra; and CESVI Argentina were crucial.

There is still a long way to go. Thanks to the United Nations Road Safety Fund, significant progress has been made in road safety in these municipalities, but it is not enough. The experience should be extended to all the other municipalities in the provinces of Argentina and, ultimately, to all the countries of the region. It requires a joint effort from all, through the National Road Safety Agency and the ministries involved in road safety, such as those for transport, public works, health and education. In this initiative, the different agencies must be in sync and share their experiences to consolidate the rules, laws and regulations on road safety. The success of any public policy will depend on the involvement of all public, private, civil society and academic stakeholders, with a single objective in mind: to reduce road traffic fatalities.

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VI. Publications of interest

FAL Bulletin No. 396

Strengthening road traffic enforcement in the State of Pará, Brazil: a successful road safety project

Francisca Pinto
Miryam Saade Hazin
Eliana P. Barleta

This issue of *FAL Bulletin* shows how the adoption of appropriate road safety measures has not only contributed to reducing the number of traffic-accident fatalities and injuries in the Brazilian State of Pará, but has also become a road safety benchmark for other entities and countries. It is also worth noting the leading role played by the approach to road safety in Australia, as a guide and key to the successful implementation of the project in Brazil.

Available in: Spanish English

FAL Bulletin No. 367

Road transport in Latin America: evolution of its infrastructure and impact between 2007 and 2015

Pablo Chauvet
Albertone Baptiste

This issue analyses data on investments in Latin American road infrastructure between 2007 and 2015, examines the subsector's evolution and emphasizes the negative repercussions of accident fatalities and carbon emissions. It aims to raise awareness about the importance of this mode of transport in the region and to underscore the need for socioeconomic evaluations of road projects and for additional, better and more transparent data and information on the sector, using a cross-cutting approach in pursuit of sustainable development.

Available in: Spanish English