



# MEASURING ROAD SAFETY PERFORMANCE THROUGH REGIONAL OBSERVATORY IN LATIN AMERICA

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*The epidemic of road injury in the Latin American and Caribbean (LAC) countries is rising at an alarming rate (40% increase in 2010 compared to 1990) and is now one of the leading causes of death among young adults as confirmed by recent global reports on road safety. Besides being a major public health burden, road injury also burdens the economy, costing Low and Middle-Income countries around 2% to 5% of their annual GDP. To address this issue there is global recognition of the need for a systemic approach in road safety management and coordination. However, it is crucial to realize that the lack of reliable and comprehensive surveillance data impedes the prioritization of road safety among other national development challenges and priorities. Recent road safety reports have highlighted the shortcomings in the existing data systems prevalent in developing countries. The under-reporting of road death statistics by government agencies may be as high as over 100% of the actual numbers.*

*To illustrate the World Bank's effort and engagement towards addressing this challenge, this note highlights the development of the first regional road safety data observatory in the LAC region fostered through twinning training arrangements among the Ibero-American countries. The goals of the effort have been to improve capacity for harmonized collection of road injury data, improve sharing of data among relevant stakeholders, and build knowledge to guide policy making and targeted public health interventions. Countries committed to the UN Decade of Action for Road Safety and its 2020 target for reducing road deaths must ensure technical expertise, in-country capacity and ownership to maintain road safety data systems adhering to international best practice standards.*

## **FATALITIES AND SERIOUS INJURIES ARE UNDER-RECORDED IN DEVELOPING COUNTRIES**

Deaths and serious injuries from road traffic crashes contribute significantly to the global public health burden. The use of reliable data to identify problems and target resources

more effectively is a key element of the Safe System approach to road safety – an approach increasingly recognized as the most effective way to make road transport systems safer for all users. The recognition of road deaths and injuries as a global development challenge came with the joint publication, by WHO and the World Bank, of The World Report on Road

Traffic Injury Prevention; highlighting that around 1.2 million people die every year across the world as a result of road crashes. In response to this epidemic, governments worldwide in 2010 declared 2011-2020 as the Decade of Action for Road Safety with an ambitious target of stabilizing and reducing, by 50%, the predicted number of road deaths by 2020. Towards this endeavor, the 2013 Global Status Report (GSRRS, 2013) reported that 88 countries have managed to reduce the number of deaths on their roads, however; stabilizing the burden of road deaths remains a challenge in Low and Middle Income Countries (LMIC), which unfortunately account for 90% of global road deaths.

In order to meet the targeted reduction in road injuries, as outlined under the UN Decade of Action, it is necessary for country governments to first understand the magnitude of the road injury burden in order to make substantial political and economic commitments to address the problem. To this effect, reliable and accurate data is essential for the different stakeholder agencies (e.g., transport department, police and enforcement agencies, road works, emergency care services, education, legal systems) to prioritize road safety by:

1. Documenting the nature and magnitude of the road traffic injury problem;

2. Demonstrating the effectiveness of interventions that prevent crashes and injuries;
3. Using information on traffic management and travel behavior to guide policies and interventions to minimize the impact of road injuries to the society;
4. Providing information on reductions in socio-economic costs that can be achieved through effective prevention of road injuries.

Unfortunately, most Low and Middle-Income Countries (LMIC) either lack a central road safety data management system or the official estimates reported from single agencies (typically police or transport departments) have not been verified for accuracy. The 2009 WHO Global Status Report on Road Safety conducted the first global survey of official national road safety statistics, which when compared with WHO mortality models, suggested significant under-reporting of the problem (Figure 1). In the updated figures for 2013, two of the largest contributors to global road deaths, India and China, were under-reporting road death estimates by 78% and 300% respectively, when official estimates were compared with death registry data. A report on Transport for Health (World Bank and Institute for Health Metrics and Evaluation), shows that countries in Sub-Saharan Africa are estimated to under-report road crashes by over 500%.

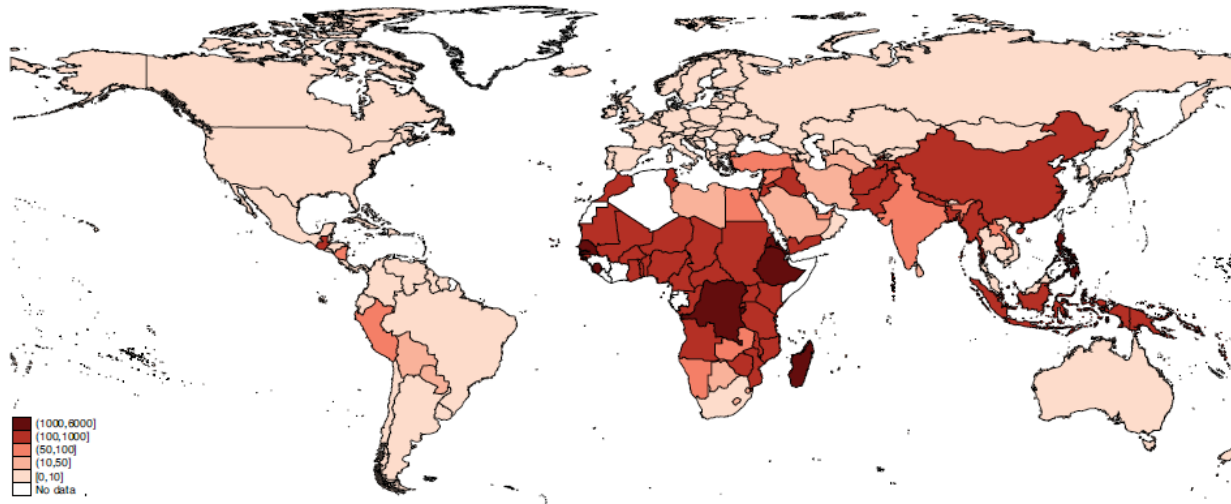


Figure 1. Estimates of under-reporting of road deaths based on official statistics as reported in the 2009 WHO Global Status Report on Road Safety.

Besides the accuracy of the data systems, there are methodology standards which must be complied with, to be useful for informing road safety practice. Therefore, while daily road safety data is captured in most countries, there are technical gaps in coding, processing and maintaining computerized database systems. The WHO manual on Data Systems (WHO 2010), gives practical guidance on establishing data systems that produce timely, reliable data on road traffic injuries that can be used to inform road safety management. At a minimum, good road crash data systems should:

1. Capture nearly all crashes that result in death and a significant proportion of those that result in serious injuries;
2. Provide adequate detail on the vehicle, the road user and the road/environment to assist with identification of causes, and selection of countermeasures;
3. Include accurate crash location information;
4. Provide reliable output in a timely manner to facilitate evidence-based decisions.

### ROAD SAFETY IN LATIN AMERICA AND THE CARIBBEAN

A recent publication by the WHO and Pan American Health Organization (PAHO, 2013) indicated that in the Americas, road injury is the leading cause of death for children aged 5-14 and second leading cause for the age group 15-44. In Latin America and Caribbean region (LAC), 110,000 lives were lost due to road traffic crashes, with an average mortality rate of 19 deaths per 100,000 population (among the sub-regions the average mortality rate per 100,000 population ranges between 14.4 in Non-Spanish speaking Caribbean<sup>1</sup> to 22.2 in the Spanish speaking Caribbean<sup>2</sup> sub-regions). This is particularly alarming as the number of aggregate road deaths in 2010 has increased by 40% compared to the 1990 estimates shown by the Global Burden of Diseases study (GBD 2013).

<sup>1</sup> Bahamas, Barbados, Dominica, Guyana, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago

<sup>2</sup> Cuba and Dominican Republic

Among the victims of road traffic crashes, the vulnerable road users, including pedestrians, bicyclists and motor-cyclists, are particularly affected. Based on the GBD study for 2010 estimates, passengers of motorized vehicle (3 or more wheels) account for 42% of all deaths followed by pedestrians with 35% of all deaths in 2010. In terms of time trends, while deaths due to road injuries has increased by 35% compared to 1990 statistics, the increase for bicyclists and motorized two-wheeler riders has been 110% and 79%, respectively, confirming the increasing burden on vulnerable road users.

Comparisons across countries in LAC show that Upper Middle-Income countries such as Dominican Republic, Venezuela, and Ecuador have fatality rates in excess of 25 per 100,000 population. Interestingly, the vehicle registration rate in these three countries is below 300 vehicles per 1000 population - a significantly lower rate compared with North American countries (over 700 registered vehicles per 1000 population). As highlighted in the PAHO 2013 report on the Region of the Americas, North America has 66% of the vehicles but accounts for 28% of all road deaths. On the other hand, sub-regions like the Andean, Mesoamerica and the Southern cone, have a 4%, 9% and 20%, share of vehicles respectively, but contribute to 16%, 17% and 36% of the overall share of road deaths in the region.

Besides taking a toll on human lives, road traffic crashes also incur a huge economic loss to the country governments in the region. On average LAC countries lose around 4.4% of their GDP as a result of road traffic crashes which adds up to an estimated loss of USD 246 billion every year. Venezuela and Dominican Republic in particular, lose a staggering 9.1% and 10.2%, respectively, of their GDP to road

crashes<sup>3</sup>. A related report prepared for the Inter-American Development Bank (Bhalla, 2013) indicated that countries like Colombia, Argentina, Mexico and Paraguay lost up to 3% or 4% of their national GDP as a result of road traffic injuries. Historically, time-trend data has indicated that with economic prosperity and efficient management of road safety systems, countries have been able to improve their road safety performance. However in the LAC region, no distinct difference in the road safety performance was observed between the Upper-Middle Income Countries and the Low and Lower-Middle Income countries as shown in Figure 2.

While a significant number of countries in the region have established a dedicated lead agency for road safety (27 of 32, Global Status Report 2013), only 12 of them have an annual budget devoted to implementing a road safety national strategy.

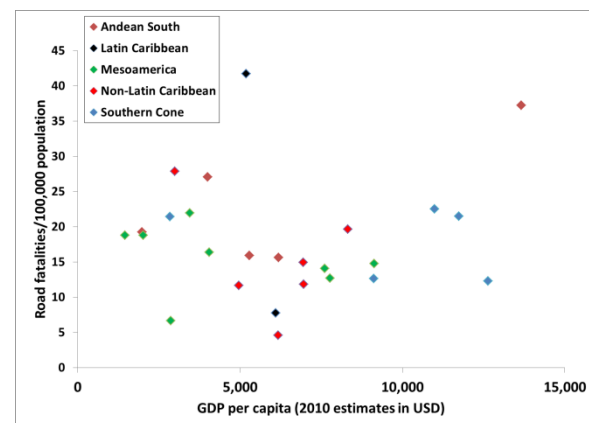


Figure 2. Relationship between GDP per capita income and road fatalities per 100,000 population for all LAC countries (iRAP, 2013)

It should also be noted that only around half of the countries in the region have comprehensive laws on drink-driving, helmet use, seatbelt use, and child restraints. The lack

<sup>3</sup> Findings of the International Road Assessment Program, 2013



of legislative measures with accompanying enforcement capacity has serious consequences for the vulnerable road users like pedestrians, bicyclists and motorized two-wheel riders as they contribute significantly to the overall proportion of road crash victims.

## **ESTABLISHING THE IBERO-AMERICAN REGIONAL ROAD SAFETY OBSERVATORY**

### ***Building Capacity for Data Systems in Argentina***

The World Bank has played a significant role in placing road safety on the political and developmental agenda in the LAC region. In 2008, the Argentina National Road Safety Agency (ANSV), a decentralized lead agency with financial autonomy and legal capacity, was established within the Ministry of Interior. To support the mission of ANSV in reducing road traffic crashes along its high risk corridors, the World Bank financed a stand-alone project to provide strategic guidance for strengthening the institutional framework and improving the management of road safety interventions. The project included a key component of USD 10 million for developing a road safety monitoring and evaluation system within the ANSV-National Road Safety Observatory. The goal of this task was to develop a comprehensive crash data management system by integrating the existing frameworks from individual provinces at the national level. Further, it was envisioned to incorporate best practices guidelines outlined by the OECD's International Traffic Safety Data and Analysis Group (IRTAD) using a peer-based mentoring program with the OECD countries.

With support from the World Bank, the Global Road Safety Facility (GRSF), and the Spanish Government, a pilot training/twinning

arrangement was initiated between the ANSV National Observatory and the Spanish Directorate General of Traffic (DGT). The twinning program involved study tours to Spain, development of methodological tools, and expert guidance on the capacity building activities mentioned below:

- Assessing the current metrics and statistical information management system, together with the processes employed for data gathering, loading and processing used by the Road Observatory.
- Establishing a working group comprised of experts from ANSV/DGT, dedicated to technical assistance tasks.
- Designing technical elements to ensure the objectiveness of data gathering.
- Designing and developing a program focused on data gathering and processing, with standardized practices to allow for the inclusion of the ANSV Database in the IRTAD group.
- Training the technical teams from all the jurisdictions at the national, provincial and municipal levels, in order to ensure an adequate data analysis and quality in preparing the diagnoses and reports.
- Monitoring and evaluation of progress in the improvements implemented by the ANSV as part of the Bank financed project.

### ***Establishment of the Regional Road Safety Observatory - OISEVI***

The improved capacity for data collection and maintaining a data management system resulted in the inclusion of Argentina in the IRTAD Group (see box on page 7). The World Bank-led twinning initiative in Argentina, contributed to a broader cooperation regarding road safety among the LAC countries particularly on important issues like harmonized data collection and sharing mechanisms. Following the 9th and 10th

Ibero-American meetings of Heads of Road Safety and Traffic Agencies, held in May 2010 in Montevideo (Uruguay) and in May 2011 in Mexico City, 18 countries<sup>4</sup> agreed to create the Ibero-American Road Safety Observatory (OISEVI). The OISEVI's main objective is to share relevant information about road safety indicators and best practices concerning policy-making, planning and other topics related to road safety. The program also linked the participating countries to the IRTAD resources on harmonized data collection methods (the "IRTAD-LAC Database").

Supported by the World Bank-led Global Road Safety Facility (GRSF), the monitoring program was scaled up to link 22 countries in the region to create the initial framework and web-based platform for the Ibero-American Road Safety Observatory (OISEVI). A Memorandum of Understanding between the OECD's IRTAD Group and OISEVI countries was signed at the end of 2011 to formalize the agreement to set up a regional road safety database, based on the IRTAD model.

The OISEVI is governed by its General Assembly, composed of all its member states, which holds annual meetings. Its executive body is the Steering Committee, which is composed of five member states, elected by the General Assembly and rotating every two years. Technical activities are managed by the Technical Secretary, who is appointed by the Steering Committee for a two-year period. The Technical Secretariat is in charge of coordinating data collection and analysis, which is then consolidated into the OISEVI's annual reports and published in the IRTAD-LAC database, in cooperation with the

technical teams of the IRTAD network. There is also a Cooperation Committee composed of international organizations like development banks, PAHO, regional NGOs, research institutions and universities, among others, that provide technical and financial support to OISEVI activities in the region.

#### *Outcomes and Current Challenges*

With the establishment of the OISEVI with 22 affiliated countries, the leading governments have pledged to increase allocation of resources to reduce the incidents of road traffic crashes. Along with the World Bank, other regional development partners, namely the Inter-American Development Bank and Latin American Development Bank, are co-financing initiatives led by the OISEVI. The Observatory mandate includes the promotion and exchange of information and statistics between member countries; collecting, harmonizing and disseminating accident data; and use of information and conclusions to identify particular matters to conduct further research on road safety improvements.

Up to date the Observatory has produced the following outputs:

- Three annual reports consolidating regional road safety data; held three annual training workshops for national data collection teams;
- Technical conferences on specific topics (for example, workshop on motorcycle safety held in Sao Paulo in November 2013);
- Baseline data to analyze behavior changes in pilot countries through the carrying out of observational surveys on specific risk factors (use of seat belts, distraction factors, use of child restraints, drunk-driving);

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<sup>4</sup> Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Spain, Uruguay and Venezuela

- Guidelines on setting up a national/local road safety observatory;
- Training workshops for regional media in the region; among other outputs.
- A cooperation agreement between the Observatory and IRTAD to create a regional chapter for LAC as part of this global network linked to OISEVI, and the setting up of a web site to host the Observatory and database.

This project is continually scaled-up through the inclusion of additional countries seeking to enjoy the benefits of the OISEVI. The next phase of this project in particular will serve to utilize baseline statistics to measure the region's compliance and progress towards the UN's Decade for Action road safety indicators and goals. The results of this evaluation and analysis will subsequently guide future road safety efforts in the region. At the regional level, the launching of the OISEVI ensures the availability of data which will support regional M&E efforts and is critical for the design and implementation of effective results-based programs.

As this initiative moves forward, there remains a significant gap in technical capacities amongst member countries regarding collection, processing and publication of road safety data. The next phase of this project seeks to utilize baseline statistics to measure the region's compliance and progress towards the UN's Decade for Action road safety indicators and goals. The results of this evaluation and analysis will subsequently guide future road safety efforts in the region and beyond.

### **INTERNATIONAL TRAFFIC SAFETY DATA AND ANALYSIS GROUP (IRTAD)**

In 1988, the OECD Road Transport Research Program established the International Road Traffic and Accident Database (IRTAD) as a mechanism for providing an aggregated database, in which international accident, victim and traffic-system data are collected on a continuous basis. IRTAD comprises both a database and a working group:

The IRTAD database includes accident and traffic data and other safety indicators for 32 countries.

The International Traffic Safety Data and Analysis Group (known as the IRTAD Group) is an on-going working group of the Joint Transport Research of the OECD and the International Transport Forum. It is composed of road safety experts and statisticians from renowned safety research institutes, national road and transport administrations, international organizations, universities, automobile associations, motorcar industry, etc. Its main objective is to contribute to international co-operation on road accident data and its analysis.

At present the following countries are included: Argentina, Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea (South Korea), Luxembourg, Malaysia, the Netherlands, New Zealand, Norway, Poland, Portugal, Sweden, Switzerland, Spain, Slovakia, Slovenia, Turkey, -, the USA, the UK.

### **RESOURCES FOR IMPLEMENTING ROAD SAFETY DATA INITIATIVES**

- World Bank-led Global Road Safety Facility (GRSF), a global partnership program established in 2006 with a mission to help address the growing crisis of road traffic deaths and injuries in low and middle income countries. The Facility provides funding, knowledge and technical assistance services with the aim of achieving

sustainable results and leveraging investments opportunities in client countries.

- World Bank Institutional Development Fund (IDF) that has been recently redesigned with a stronger focus to enhance the delivery and implementation of programs that will lead ultimately to better development results. Therefore there will be stronger alignment with the twin goals of the World Bank Group: ending extreme poverty and boosting shared prosperity. Road Safety projects that are aligned with the Bank's twin goals could also benefit from IDF support.
- Aside from World Bank resources there are also opportunities for partnerships with the Private Sector to leverage road safety resources. For example, GRSF and the oil company TOTAL launched an initiative in Africa along the main transport corridors starting with the Northern and Central corridors.
- Multi-Development Banks Road Safety Initiative, which was launched in 2009 to jointly leverage country and regional road safety program to help accelerate knowledge transfer, strengthen institutional capacity, and scale up road safety investment. Since then, this initiative has led to several joint projects. Under this Initiative, the World Bank is partnering with the European Investment Bank to jointly address road safety in Morocco and possibly Egypt and Jordan.

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