

The Safe System Approach in Action

The Logitrans approach to
road safety

Case study

This case study is part of a package of materials accompanying the final report of a joint International Transport Forum–World Bank Working Group, entitled *The Safe System Approach in Action*.

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Introduction

This case study was prepared by a joint International Transport Forum–World Bank Working Group convened in 2020–2021. The case study forms part of a package of materials accompanying the Working Group’s final report, *The Safe System Approach in Action* (ITF, 2022a).

The Safe System approach to road safety takes as its starting point the ethical position that there is no acceptable level of road deaths and serious injuries. The report proposes a framework for designing, implementing and assessing projects with a Safe System focus. It draws on lessons from real-world case studies to offer guidance on implementing Safe System interventions.

The Working Group analysed 17 case studies in total, paying special attention to their Safe System content. While not every case study was a perfect example of the Safe System approach, all contained valuable lessons. In addition, several common themes emerged. A separate ITF Working Paper (2022b) sets out the thematic analysis.

This case study contains four parts. First, it provides context for the specific intervention and the road-safety problems it aimed to solve. Second, it outlines the interventions implemented to solve these problems and the results. The analysis is structured according to the five key components of the Safe System framework outlined in the main report (ITF, 2022a), namely:

1. **Establish robust institutional governance.** Permanent institutions are required to organise government intervention covering research, funding, legislation, regulation and licencing and to maintain a focus on delivering improved road safety as a matter of national priority.
2. **Share responsibility.** Those who design, build, manage and use roads and vehicles and provide post-crash care have a shared responsibility to prevent crashes resulting in serious injury or death.
3. **Strengthen all pillars.** When all road-safety pillars are stronger, their effects are multiplied; if one part of the system fails, road users are still protected.
4. **Prevent exposure to large forces.** The human body has a limited physical ability to tolerate crash forces before harm occurs; the system should prevent those limits from being exceeded.
5. **Support safe road-user behaviour.** While road-user errors can lead to serious harm, the Safe System focuses on roads and vehicles designed for safe interaction with road users. It supports humans not to make mistakes and tune their tasks as much as possible to their competencies.

Third, the case study identifies lessons from the project, again structured according to the five key components of the Safe System framework. Fourth, it offers conclusions.

Access the full set of case studies on the ITF website: <https://www.itf-oecd.org/safe-system-in-action>.

Context

Argos is a Colombian cement company active in 15 Latin American countries, with logistics and transport provided by a subsidiary, Logitrans. To increase efficiency, Logitrans has adopted a systemic approach to road safety, including speed management. Its multiannual road safety plan addresses the pillars of the Safe System approach. It has set speed limits for its subcontracting drivers and also aims to identify risks to which they are exposed at work and travelling to and from work (e.g. as pedestrians and cyclists).

Road-safety themes: Speed management, Road-safety strategies, Road-crash data, Partners, Fleet safety

Argos is a large Colombia-based company whose core business is the cement industry. Logistics are vital to carry out this activity, and transport represents up to 35% of the cost of its final products. In order to improve its reactivity and efficiency, and to reduce the mobilization of assets, Argos outsourced its transport activity to a subsidiary, Logitrans. In 2020, Logitrans contracted with 807 companies and a total of 1 507 truck drivers.

Argos is committed to sustainable development and road safety. The Logitrans strategic plan for 2020–22 defines a road safety doctrine based on best practices and on a systemic approach. Speed management is central to Logitrans' safety policy. It aims to manage the safety performance of its heavy-goods vehicle fleet and fulfil Argos' environmental goals. Goods in the cement sector are heavy. Therefore, high speed comes at a high energy cost, greatly increases pollution and deteriorates vehicles more rapidly.

Logitrans adopted a systemic approach to its speed management policy, taking into account the influence of speeding on crash severity, the performance of the vehicle fleet and the quality of the road infrastructure in Colombia, much of which is not designed for high speeds. Logitrans introduced a self-imposed speed limit of 70 km/h on interurban roads and 30 km/h in urban areas, monitored by GPS.

Logitrans took this opportunity to define its road safety plan, starting with institutional management and making a commitment related to its social responsibility. This approach goes beyond the obligations of the law, adopted in 2011, which requires companies to have a road safety plan. It is a highly structured, voluntary and pillar-by-pillar approach to people, vehicles and infrastructure.

The Logitrans approach covers training on the risks of speeding for 90% for drivers and other employees each year, communication tools, remote control of vehicles through GPS, and ultimately adapted fines. The approach also encompasses risk factors such as drink-driving and fatigue. The latter is a major risk factor for which Logitrans has adopted a prevention policy that must be shared by its subcontractors. Logitrans not only monitors its subcontractors' vehicles to control driving hours but also provides a rest room at each production site and tools to enhance driver awareness of the risks due to fatigue.

Logitrans regularly conducts surveys on mobility and the associated risks among its subcontracting companies. The aim is to identify employees' modes of travel and the road risks to which they are exposed. This applies both to the performance of their duties and to their travel between home and work as pedestrians, cyclists, motorcyclists or drivers.

Each road-safety incident is analysed using a clear methodology (mapping, statistics, diagnosis, action plan) to build a knowledge base. A trained team performs this work. All trucks are tracked through a GPS device, making it possible to obtain data on speed according to the context, driving time and resting time. The methodology for each pillar includes analysis, understanding, processing and monitoring. For each action, organised by risk factor, the methodology sets an activity, an objective, a person in charge, the location and the period of completion, complete with follow-up indicators.

Logitrans is also thinking for the future with a team working on smart logistics with the use of simulators to improve driver skills. It is also working with banks to help its subcontractors purchase safer and more environmentally friendly vehicles.

Funding

The initiative is self-funded by the company.

Actors and leadership

The initiative is led by Argos. Logitrans is also working at the national level with the Colombian road safety agency and in working groups with other firms to share best practices. It is also exchanges information with other branches of Argos in other countries to gain external knowledge of best practices.

Interventions and results

Establish robust institutional governance

Colombia's Law 1503 of 2011 made it mandatory for large companies to have a road safety strategic plan. When defining its road safety strategic plan, Logitrans addressed institutional management. A dedicated team provides detailed information on mobility, crashes and behaviour. Objectives are set, risk factors are identified, and action plans are built.

A road safety committee was also set up. It defines who is in charge of which policy (e.g. policies on institutional management, human behaviour, safer vehicles and safer roads, work and safety within work, environment, traffic and driving). It also defines and plans specific interventions, progress indicators and the monitoring process. Each person in charge has a dedicated road map with defined responsibilities and actions. A 156-measure plan including a mobility survey is regularly updated, and the collection and analysis of incident data are undertaken through GPS devices.

Share responsibility

Logitrans is a logistic company that trades with 807 subcontractors. A strong contract process set the rules to be followed by Logitrans and its subcontractors delivering transport goods (mainly cement delivery).

Logitrans' preventive policy is based on shared road safety values and social internal norms (i.e. not on a "you must" attitude but rather with "shared knowledge" because "it is in our own interests to do so").

Social events are regularly organised with drivers, employees and communities. As an example, at the "punto seguro" event, cyclists were invited to sit in the cabin of a heavy-goods vehicle to understand what a blind spot is for a driver.

Logitrans assists the subcontractors in benefiting from suitable loans to renew their fleet and facilitate investment in high-level safety equipment. It also provides data and crashes analysis to public and private road owners to help them deliver safer infrastructure and services.

Strengthen all parts

Logitrans regularly conducts road crash analysis to identify all factors involved when an incident occurs. AS mentioned above, it introduced self-regulated speed limits of 70 km/h on interurban roads and 30 km/h in urban areas. Logitrans is also working with local authorities to share their findings on crash analyses and modelling, so that they can address issues related to the infrastructure component.

Prevent exposure to large forces

The self-regulation of driving speed aims at reducing the occurrence and severity of crashes. In addition, Logitrans provides incentives for investing in safer vehicles, and addresses fatigue management.

Support safe road-user behaviour

Logitrans keeps up to date with the latest technological advances in the digital, environmental and safety fields. Team members regularly take part in conferences and meetings at the national and international levels.

To prevent errors due to fatigue, drivers are regularly informed and trained. All Argos sites are equipped with resting rooms. Surveys are regularly conducted on the wellbeing of drivers and GPS monitoring is used.

There are regular discussions with road managers or concessionaries to share crash analyses and identify and remove factors that might be a source of crashes (e.g. low visibility or poor legibility of road signs).

Lessons

Establish robust institutional governance

Logitrans has strengthened its institutional management of road safety step by step, following the logic of project management and the quality process that the Argos group, to which Logitrans belongs, applies daily to produce cement.

A strong commitment has been taken at the highest level. A dedicated team is in charge of the scientific input and follow up. Clear responsibility, objectives, measures, planning and indicators are set at the highest level with a follow-up process.

Prevent exposure to large forces

The self-regulation of speed limits, training and events helped change the speed culture among drivers, employees and communities. GPS monitoring contributed to removing pressure from drivers.

Support safe road-user behaviour

Human-error prevention is considered through actions on fatigue, alcohol consumption, use of mobile phones and so on. The systematic analysis of crash data with all stakeholders has proven effective in identifying sources of incidents.

Conclusions

Logitrans has followed Safe System principles by demonstrating strong leadership commitment, developing objectives and indicators, and introducing a multiannual plan addressing safe vehicles, safe behaviour and safe infrastructure. As part of these efforts, it has self-regulated speed limits of 70 km/h in interurban road sections and 30 km/h in urban areas as well as GPS monitoring of speeds and, eventually, fines. Consequences are critical: monitoring has less value if there are no consequences for drivers.

This focus on speed management accurately reflects the increased understanding of the importance of this factor in both crash occurrence and severity (Job and Brodie, 2022). Logitrans carefully assessed multiple areas of cost for higher speeds, including fuel costs, vehicle deterioration and pollution, as well as road safety. Other companies could improve their speed management policies by considering these factors, instead of the current misleading focus on travel-time savings in assessing optimal speeds.

References

ITF (2022a), *The Safe System Approach in Action*, Research Report, OECD Publishing, Paris, <https://www.itf-oecd.org/safe-system-in-action>.

ITF (2022b), “Safe System Implementation in Practice”, ITF Working Paper, available on request.

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The Safe System Approach in Action

The Logitrans approach to road safety

This case study describes how Argos, a Colombian cement company, and its logistics and transport subsidiary, Logitrans, adopted a systemic approach to road safety, including speed management for its fleet.

The case study is part of a package of materials accompanying the final report of a joint International Transport Forum–World Bank Working Group, entitled The Safe System Approach in Action.

The Safe System approach to road safety takes as its starting point the ethical position that there is no acceptable level of road deaths and serious injuries. The report proposes a framework for designing, implementing and assessing projects with a Safe System focus.

The report also draws on lessons from real-world case studies to offer guidance on implementing Safe System interventions. While not every case study was a perfect example of the Safe System approach, all contain valuable lessons for policy makers and road-safety actors.