

The Safe System Approach in Action

The Trauma–Ouaga Project,
Burkina Faso

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*.

The case study was authored by Dominique Mignot (Université Gustave Eiffel), Amakoé Adoléhoumé (SITRASS) and Emmanuel Bonnet (IRD).

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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

The Trauma-Ouaga project focused on improving the collection of road-safety data by police and hospitals in Ouagadougou, Burkina Faso. It was the outcome of a series of generally successful interventions undertaken between 2005 and 2021. The project was undertaken by Burkina Faso's National Road Safety Agency (ONASER) and the Urban Observatory of Ouagadougou.

Road-safety themes: Road-safety data; Partners; Post-crash care

The Trauma-Ouaga Project originated in the Urban Risks programme on health equity funded by the Burkina Faso Health Research Institute. The issue of road safety emerged during discussions with local actors about health, technological and natural risks and thus the project is a by-product of a health programme. Thus the Trauma-Ouaga project started out as a sub-project within a larger programme of work.

At the outset of the project, it was deemed important to make an assessment of the road-crash situation based on the few existing data related with this issue. The objective was to assist the police, national fire departments and hospitals to count fatalities and identify care provided to victims after a crash. It included improving the counting of victims and also, ultimately, the collection of data on road-crash victims.

The project's first contact with the Burkina Faso National Police, in 2005, had concerned the collection of road-crash data. The initial proposal consisted in using a smartphone to geo-locate road crashes. This proposal was refused by the head of the National Police, who feared that police officers would declare the smartphones lost and divert them for their personal use.

Following this first refusal, it was agreed to instead install a geo-tracer inside nine police cars involved in reporting road crashes. Police officers continued with the practice of completing a paper-based crash report on their return to the brigade. The initial pilot lasted six months, during which there was no extra payment for the officers involved. For their part, the officers expected the intervention would lead to a lower administrative burden. On average, less than 10 crashes were recorded per car per day. The sensors made it possible to detect 85% of crashes recorded in the police register.

A second six-month pilot was established with one hospital to improve information on the number and type of injuries resulting from road crashes. The pilot involved many public and civic actors, including the national police, hospitals, universities, ICI Santé, Humanité et Inclusion (previous Handicap International) and Agir.

Medical interns (doctoral students committed to the subject) were paid to complete road-crash victim forms, for which the victims had previously expressed their agreement. Interns worked in three shifts to ensure round-the-clock recording. Interns called injured individuals seven days after a crash, asking about their injury status and the costs incurred. A second call 30 days after the crash asked about disability due to the crash. In terms of coverage, 100% of the crash-injury cases were identified during the observation period. An average of 15 injuries were identified per day. However, no link was formally established between the police and hospital data.

In a third study, Humanité et Inclusion (previously Handicap International) followed up with persons who had declared disabilities. This represented roughly 25% of the crash victims received in the emergency room. Requests to extend the project were not accepted. A new project was launched in 2017 by ICI Santé with the support of Expertise France. However, the project could not be completed due to lack of a formal demand from the Burkina authorities.

Finally, a road-crash surveillance and casualty management project was agreed in 2018, involving some actors who took part in the Trauma-Ouaga project. However, several actors who did not co-operate in the original project again decided not to take part in the 2018 project. Humanité et Inclusion produced a survey covering the most-affected injured. The holder of the Trauma-Ouaga project then took charge of monitoring, using smartphones and digitised road-crash forms, which were completed for 12 months. Data in hospitals was collected via an electronic tablet, enabling better data quality.

The successes of the project included the fact that local actors (National Police and hospitals) co-operated during the experimentation. There were also clear benefits in terms of data, knowledge and improved motivation.

There were also important limitations. At the end of the project, with no further funding, none of the partners continued or consolidated the actions undertaken. The notable absence of two important actors (ONASER and the fire brigades) also raised concerns regarding the commitment of key partners in road safety.

Funding

The Burkina Faso Health Research Institute provided USD 100,000 in funding for the project.

Actors and leadership

The six-month pilot involved many public and civic actors, including the national police, hospitals, universities, ICI Santé, Humanité et Inclusion (previous Handicap International) and Agir.

Interventions and results

Establish robust institutional governance

The Trauma-Ouaga project shows the importance of institutional governance and the collaboration of stakeholders in successful implementation. The commitments of the police officers and the hospital doctors were critical. The commitment of street-level actors needs to be associated with potential positive feedback for the actors in their professional activity.

Share responsibility

Sound road-safety interventions are best chosen and targeted to the nature and location of the problem, and this required valid, comprehensive crash data (as well as other information). The geo-located crash data were most helpful in drafting road-crash maps, which are used for allocating police resources for road-safety interventions. The collection of health and epidemiological data were helpful in determining

both the true number and the severity of road injuries and the types of injuries. The project also showed that road-safety improvement can include training police and health professionals to collect better information, supporting effective interventions.

Lessons

Establish robust institutional governance

This project showed the existence of potential resistance from local actors. ONASER and the Fire Brigade (which is involved in the emergency response) did not participate, and showed little concern with the project, because priority was given to assistance related to anti-terrorist activities.

The first ONASER director, who was contacted before the launch of the project, was very enthusiastic about this project. The prospect of a black-spot map (which already existed, albeit based on old data from the fire departments) prevented the next director from agreeing to the ONASER coming on board. ONASER was invited to the final conference of the project and did recognise the value of the work.

However, it was not clear whether ONASER chose not to participate because it could not lead the project, or because it was prioritising another project: seeking systematic substantial funding with the World Bank. Many projects in road safety are important, and the inability (or lack of focus) of ONASER and by the Fire Brigade, possibly due to other projects, suggests that resources within these organizations for road safety are quite limited.

The commitment of the police officers (based on expected decreased workload), and doctors and interns (based on their professional interest in the data gathered) resulted in good support from these people.

Unfortunately, because the police- and health-data projects were separate activities, the data was not linked. It is important to avoid this limitation in future, to add greater value for road safety.

On the geolocation of road crashes, each month the project leader provided a map identifying the black spots in Ouagadougou, as well as a map of the black spots within the near proximity of each brigade. Some police officers said that they continue to use the black-spot maps today, even though the last update to the data occurred in July 2015. Such outcome suggests that the data provides a real service to police officers, demonstrated by the concrete use of such information. It also suggests that an annual update would be more suitable.

Share responsibility

Multiple stakeholders collaborated throughout the project. Co-operation occurred between IRD and SITRASS, following the creation of GDRI Sud (IRD's international research group on the South), also involving researchers from Benin, Burkina Faso, Ivory Coast, Mali, and Senegal.

Conclusions

Collaboration was improved as a result of the work undertaken, although resistance was still identified, and this remains to be overcome. Stronger collaboration arrangements through regular meetings and better articulated roles and responsibilities may assist with such challenges in future.

The lack of connection between the police and health databases is an ongoing challenge. This disconnect may have been avoided by having the two databases integrated into one project from the start, or by ensuring compatibility of data systems during development. It should be possible (and valuable) to create this connection in future by creating compatible systems. Connecting these data systems with the Africa Road Safety Observatory will also add value, and enhance opportunities for others to benefit from this programme of work.

Continued sustainable data collection and greater use of the resulting data by stakeholders other than the police (e.g. to improve safety through better road design and engineering at serious crash locations) would further enhance shared responsibility and data-driven road-safety interventions across a range of Safe System contexts.

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.

The Safe System Approach in Action

The Trauma-Ouaga Project, Burkina Faso

This case study tells the story of the Trauma-Ouaga project, which focused on improving the collection of road-safety data by police and hospitals in Ouagadougou, Burkina Faso.

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.

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