

**Programme Support Action (PSA)
to support Member States
in collecting Key Performance Indicators (KPIs) for road safety**

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KPIs collection for Road Safety



Baseline

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Policy report



Baseline



Belgium | Austria | Bulgaria | Cyprus | Czech Republic |
Finland | Germany | Greece | Ireland | Latvia | Lithuania |
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Spain | Sweden

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The aim of the Baseline project was to estimate Road Safety KPIs (Key Performance Indicators) in EU Member States that are comparable across borders via the implementation of minimum methodological requirements set by the European Commission. The eight KPIs were Speed, Alcohol, Distraction, Safety belt, Protective equipment, Vehicle safety, Infrastructure and Post-crash care. Each participating Member State provided between one and eight national KPI values.

All results were described in eight different KPI reports and can be consulted via the Baseline website (<https://baseline.vias.be/en/>). In order to receive more background information on the collection of KPIs in the different Member States, the partners were asked to fill in a national policy report. The following information was asked:

- History on KPI collection
- National objectives for Baseline
- Summary of implemented actions, achievements and deviations
- Study limitations
- National conclusions and recommendations
- Dissemination

This information was summarized and compared in the present document to provide a brief overview. Due to the availability of the different KPI reports, it was decided not to cover KPI specific issues in this report.

1 KPI history and national objectives

Baseline had two main purposes: a) to produce estimates for Road Safety KPIs that would be comparable across countries based on the minimum methodological requirements of the European Commission (cf. European Commission, 2019); b) to contribute to capacity building in the EU, in particular in the Member States which have not yet collected and calculated the data for the KPIs.

One of the key challenges of Baseline therefore was to bring together Member States with various backgrounds in the calculation of the KPIs for road safety. The methodological requirements and guidelines were developed in such a way that it would be feasible for Member States with no previous history in road safety KPIs but at the same time did not conflict in a too large extent with the methodologies used by experienced Member States. This would make it possible for experienced Member States to compare the Baseline results with previous statistics.

The Member States that had little to no experience in the collection of any of the road safety KPIs included in the road safety policy framework 2021-2030 were Bulgaria, Luxembourg, Cyprus, and Malta. Statistical information was mainly focused on for example the number of road traffic accidents and road traffic violations. Baseline was also the first extensive KPI collection experience for Greece, even though they already did conduct a roadside survey for seatbelt use, helmet use and driver distraction. These Member States demonstrated the important role of Baseline in capacity building in the EU in road safety KPIs. They saw Baseline as an opportunity to start with the development of an international network in road safety and to discover good practices and lessons learned from other Member States. They had the goal to build a strong foundation in resources, both in personnel and in equipment, for the long term and to experiment with road safety indicator research while receiving methodological support from international experts.

Other Member States had more extensive experience in the collection of various KPIs. The only road safety KPI integrated in the Baseline project that was previously collected by all these Member States was speed, even though the methodology often varied from the guidelines defined in the Baseline project. The other types of KPIs that were collected and the level of integration of these values in other research and policy making afterwards was often different in each Member State. Lithuania for example already conducted measurements to better understand pedestrian

behaviour at zebra crossings, speed on urban roads, distraction behind the wheel and the use of pedestrian light reflectors, but their data collection and calculation methods so far lacked statistical precision. In Sweden KPIs have been playing a central role in their national road safety work for many years and are measured each year in the same way to guarantee a reliable comparison. The outcomes and developments of these results are compared to the national targets in annual public reports in a process that they call 'management by objectives' in order to reach zero fatalities and serious injuries. The same is true in the Czech Republic, where data has been collected and evaluated annually since 2005. It is an important source of information for the national road safety strategy and its action plan. Among other things, preventive measures and changes in legislation are implemented based on the research results. Austria also has an extensive background in the collection of the road safety KPIs and they used to a great extent the same methodology as adopted in the Baseline project (small differences could for example be found in the seatbelt assessment for trucks and buses). In 2018, the Dutch government and regional authorities decided on a national road safety strategy with a risk-based approach as key element. This approach placed the use of KPI measurements in the spotlights and the approach was developed further for monitoring progress in relation to the aim to reach zero causalities. The experience of Belgium in the systematic collection of road safety indicators on behaviour in traffic goes back to 2001 when the first General Assembly for Road Safety recommended the use of objective observations by the side of the road and self-reports in attitude surveys. These methods allowed to monitor progress not only at the level of the final road safety outcomes (i.e. fatalities and injuries), but also at the level of the underlying risk factors. This resulted in 10 behavioural measurements on speeding (4 million vehicles in each edition), 7 on drink driving (10.000 drivers in each edition) and 11 on seat belts (20.000 in each edition) since 2001.

Other Member States, such as Spain and Portugal, mentioned the use of the methodology recommended in the EU project SafetyNet (cf. e.g. Hakkert & Gitelman, 2007).

Apart from these experiences, most Member States are also involved in other type of road safety monitoring such as the collection and analysis of road crash statistics and self-reporting surveys such as ESRA (E-Survey of Road Users' Attitudes) (<https://www.esranet.eu/>).

For the Member States with more experience in collecting KPIs, Baseline was viewed as an opportunity to start the collection of KPIs that did not yet receive as much attention as other KPIs (e.g. vehicle safety & post-crash care), to compare national values with other Member States (benchmarking) and to discuss the use of indicators and different methodologies on an international level.

2 Limitations and deviations

The detailed results, achievements and limitations per KPI can be read in the different KPI reports. However, this section in the policy report will highlight some key messages, similarities and deviations across the different KPIs and Member States.

The Baseline project is, together with the project SafetyNet, a pioneer in the development of a common international methodology for road safety KPIs. Therefore, it was difficult to estimate the timing of all the different tasks that had to be accomplished. For Member States with little or no experience in KPI data collection, this created issues in terms of execution and national timing. Due to the methodological guidelines only being finalized in summer 2021 (instead of spring 2021), these Member States experienced a delay of multiple months before they could start with the development of their own national methodologies. As a consequence, Bulgaria, for example, had no opportunity anymore to launch a public tender for the execution of the fieldwork and the software, forcing them to do the fieldwork with their own team and to use open source software.

This made the execution of the project more challenging and time consuming than originally planned.

Another external factor that had a large impact on the timeline of the project was COVID-19. Since the main objective of the Baseline project was to obtain KPI estimates representative for the entire volume of (normal) traffic per country, field work had to be organized in months with as little as possible impact of covid measures on the type and volume of traffic. The pandemic forced the Member States to postpone most of their fieldwork and to perform the data collection and data analysis in a very limited timeframe, which was a big challenge for Member States with less trained personnel available. Even though it was decided to extend the duration of the project with three months due to these postponements, multiple Member States indicated that time and resource constraints were the main motivator to either work with more subcontractors than originally planned (e.g. Ireland for the KPI vehicle safety) or to drop the delivery of one or more KPIs completely (e.g. Cyprus for the KPIs alcohol and infrastructure).

Another limitation that was mentioned in the national policy reports was the collaboration with third parties and how many KPIs were dependent on these collaborations. The KPI post-crash care appeared to be a difficult KPI in several Member States since the medical services only had incomplete data available (e.g. old data or missing geographical areas) or only delivered the data after many delays. For the KPI Alcohol, it was recommended in the methodological guidelines to collaborate with the traffic police to collect the data. However, due to a limited availability of the employees of the police in some Member States, the number of measurement sessions required during the weekends were sometimes barely or not met. Some KPI measurements turned out to need further interpretation of the observers which could lead to misinterpretations. For instance, observers who evaluated the use of mobile phones on the side of the road had to rely on their own interpretation to decide whether the driver was using a hand-held device or if the driver was touching his or her face randomly (as there was no guidance on how to decide this). Furthermore, some Member States highlighted that due to the absence of section-based data on exposure, the experts had to rely on estimations and the weighting had to be carried out on a relatively superficial level. Consequentially, the representativeness and the comparability of the overall KPIs estimates may be limited in certain cases.

Sometimes the minimal sample sizes required for the estimates of the KPI (e.g. cyclists in rural areas and motorcyclists on motorways) were experienced as impractical, required adaptations in the surveys, or were simply impossible due to low availability of these traffic modes in Member States. This issue was also raised by Malta in a broader perspective. The road network on the islands of Malta and Gomez is so short that it was a challenge to find enough locations that met all the requirements, and in the end the selected road categories made up more than 27% of the entire road network. For many Member States, the combination of the different road categories with a difficult to reach minimum sample size and the required sampling time periods made the executions of certain surveys economically problematic.

3 Achievements and recommendations

The results of Baseline show the complexity that appears in conducting studies at an international level while ensuring comparability between Member States. The Member States agreed that some minimum requirements of the KPIs should be reconsidered due to the high costs on labour and equipment. For some KPIs (e.g. KPI protective equipment or restraint system, which approaches 100% and hence is not considered informative), the utility was also questioned by some Member States (e.g. KPI protective equipment or restraint system, which approaches 100% and hence is not considered informative). The results of Baseline however, prove that these KPIs still have a crucial role to play in other countries of the European Union. In Greece, only 80,3% of the motorcycle riders and only 65,5% of the motorcycle passengers wear a helmet. On rural roads, this percentage drops

further to 75,5% and 60,5%. The measurements in Baseline gave the opportunity to quantify earlier observations on this KPI.

A few other suggestions to the methodologies of the different KPIs were mentioned by the Member States. It was for example suggested to further segregate the KPI speed with the percentage of drivers exceeding the speed limit by 10km, 20km or 30km per hour to have a more in-depth knowledge on the issue. Both Malta and Bulgaria requested to finetune the methodologies further so that Member States with significant geographical and infrastructural differences would better understand their challenges and the relationship with KPI performance, while still ensuring comparability on an international level. Nevertheless, other Member States highlighted that the set of required strata, the sample sizes and the time periods should be better adapted to an economically reasonable level. By simplifying the methodological guidelines, Member States would be able to collect data in a consistent and cost-effective way, creating more opportunity to place an emphasis on the strategic power of KPIs. Not only should there be more attention to the usefulness of KPI measurements for policy making in future projects, but it should also be considered how results can be disseminated to both the scientific community and to the broader public. For example, when addressing a larger audience, it can be more interesting to communicate the share of non-compliance if the compliance rate is already quite high if the goal is to increase the compliance even further.

Relating to the dissemination of results to the broader public, a last important remark was given by Ireland about the national context of KPI results. Ireland experienced the highest rate of seatbelt use in 2022, but other research on fatal collisions showed that approximately 1 out of 4 drivers and passengers that were killed were not wearing a seatbelt. Another issue mentioned was the feedback on the KPI vehicle safety, where the KPI on the safety of the national fleet was limited since the analysis was limited to a database regarding newly registered vehicles only.

4 Use of KPIs in road safety policy

The results of the Baseline project can be used by both the European Commission and the Member States to ask for more attention for road safety issues that were hidden under the surface due to a lack of evidence. It will be the foundation for new research that will examine these issues more in depth and will be integrated in national road safety plans. The experience and expertise built via Baseline will help Member States with little to no experience to continue the KPI data collection and start a tradition of objectively monitoring KPIs over time and to benchmark national performances on the basis of internationally comparable methodologies.

The value of the Baseline project is visible in the fact that all Member States included the KPIs in various ways in their national road safety action plan. Sweden already has an extensive experience with the use of KPIs via a management by objectives method linked to their aim for zero fatalities and serious injuries. This method involves measuring and following up a series of KPIs. The KPIs are used to measure the current hazards in road traffic, and interim targets are set for these KPIs. These targets, together with the targets set for the number of fatalities and severely injured, correspond with the overall target for road safety development and are set on the basis of stakeholder contributions that can influence the KPI values. The actual numbers of fatalities and severely injured together with the outcome of the indicators are followed up and analysed annually. Other examples are Austria, that will present and discuss the outcome of the KPIs and the progress towards the various targets in the Road Task Force of the Austrian Transport Safety, and Belgium, that included Baseline in their federal and interfederal action plans. Greece set quantitative targets for 2030 and interim targets for 2025 for all eight road safety KPIs. The KPIs for 2022, as calculated within the Baseline project, were set as a baseline, while the respective targets for 2030 were formulated based on the current level of performance of the best performing countries in the EU. The achievement of these KPI targets will also be interlaced with the

achievement of the casualty targets. Therefore, the systematic data collection of KPIs will contribute to the monitoring of the progress towards both types of targets and of the effectiveness of the associated measures. Bulgaria has presented the national Baseline results during multiple occasions at conferences and during interviews on television and radio and will create short videos about the KPIs.

The national policy reports illustrate the intention of the Member States to continue with the collection of road safety KPIs to measure the progress made over time and to evaluate the effectiveness of measures and actions implemented. At the time of the publication of this policy report, 25 EU- Member States formed a consortium under the coordination of SWOV to reply to the follow-up call for tender MOVE/C2/2022-54— Technical Assistance for the development and collection of Road Safety Key Performance Indicators (KPI). This project started October 2022 under the name of Trendline. Four other countries have joined as observers.

The objective of the Trendline project is to continue the Baseline work on the KPIs defined in the EU Road Safety Policy Framework 2021-2030, by reviewing and adapting the current methodological guidelines and to collect new data for all current KPIs in the period 2023-2025. In parallel, the current set of 8 KPIs will be extended with experimental and complementary indicators to cover other road safety indicators so far left out of scope. One of these indicators will concern enforcement of traffic offences.

In this sense Baseline can become the start of a tradition of harmonized measurements of KPIs in European countries. Trendline will be able to depict historical trends in national KPI performances over time by using the Baseline estimates as the base line to which future developments can be compared.

5 References

European Commission (2019). COMMISSION STAFF WORKING DOCUMENT EU Road Safety Policy Framework 2021-2030 - Next steps towards "Vision Zero". Brussels, 19.6.2019 SWD(2019) 283 final.

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