

# The use of KPIs in the policy process

Results of the Trendline Policy Integration Questionnaires



# The use of KPIs in the policy process. Results of the Trendline Policy Integration Questionnaires.

## Work package 3

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# About TRENDLINE

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Trendline brings together 25 EU Member States (as well as 4 other European countries as observers) for data collection, data analysis, delivery of road safety KPIs and for using these within road safety policies.

KPIs – Key Performance Indicators – are indicators that provide information about factors that are associated with crash and injury risks, e.g. speeding or drink driving.

Trendline is co-founded by the European Union and builds on the experience gained in the Baseline project. In addition to the eight KPIs that had been defined by the Commission and used within Baseline, the consortium will also identify some new indicators, develop appropriate methodologies and test these out on a limited scale.

# Terms and definitions

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**Baseline:** project that was co-founded by the European Commission and which was directed at the collection of data on KPI's. There were 18 countries that participated in the project.

**KPI:** Key Performance Indicators – are indicators that provide information about factors that are associated with crash and injury risks, e.g. speeding or drink driving.

**KSI:** Killed and seriously injured.

**Trendline:** project that is co-founded by the European Commission and which is directed at the collection of data on KPI's. Trendline is the follow-up of Baseline. There are 29 countries that participate in the project.

# Executive summary

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To investigate how Key Performance Indicators (KPIs) are used in the policy process in different countries the Trendline Policy Integration Advisory Committee (PAC) is sending out a series of questionnaires to countries that are participating in the Baseline/Trendline project. The findings will contribute to the collection of good practices that will be used for recommendations to both the European Commission and other countries.

A first questionnaire (Q1) was sent out in the spring of 2023 and has been completed by 26 of the 29 participating countries. Countries were asked to gather the relevant information before completing the questionnaire, which resulted in one (and not multiple) responses per country. A second questionnaire (Q2) was sent out in winter 2024 and has been completed by 24 of the 29 participating countries. The approach of finalising the questionnaire was similar to the first one.

**Purpose of using KPIs:** The questionnaire shows that most countries (Q1: 24/26 and Q2: 17/24) use KPIs for monitoring performance or progress. All countries that specified their level of use do this at least on national level, more than half (9/16) also on other levels like regional and local.

**Types of KPIs measured:** The KPI's that are measured by most countries are speeding (Q1: 24/26; Q2: 23/24), the use of protective equipment (by powered two-wheelers (Q1: 24/26; Q2: 22/24); or seatbelts and child restraint systems (Q1: 23/26; Q2: 23/24).. Infrastructure (Q1: 10/26; Q2: 6/24) and post-crash care (Q1: 10/26; Q2: 10/24) were measured least. In addition, a lot of other indicators were mentioned, some in line with the Baseline/Trendline-indicators (like other speed indicators) and with measurements of 'the use of lights by cyclists in the dark' as the most frequently mentioned experimental indicator (Q2: 8/24). But also other indicators were mentioned, like 'alternative protective equipment indicators' and 'alternative inattention indicators' (Q2: 4/24). Least mentioned were indicators that currently are not within the scope of the EU-definitions of SPIs or KPIs (EC, 2020), such as 'legal documentation' and 'activities of authorities'. Speeding was mentioned as the most frequently used KPI on regional or local level, followed by safe infrastructure. This might be explained by the fact that regional and local authorities are often road authorities and these KPI's are most relevant to their scope of work.

**Data collection methods:** For speeding, the use of seatbelts and child restraint systems, the use of protective helmets by riders of bicycles and powered two-wheelers, and distraction by a mobile device roadside observations are most common. For driving under the influence of alcohol self-report surveys are used most. For vehicle safety, infrastructure, and post-crash care existing databases are used most. However, it is not always clear how these existing databases are established.

**KPI dissemination:** Most countries have the information on KPIs publicly available (Q1: 20/25). Target groups are mostly the government or stakeholders in general (Q1: 12/14; Q2: 19/24), followed by the general public, including media (Q1: 7/14; Q2: 18/24). Publications and presentations (Q1: 13/23) are used most as the medium to disseminate knowledge and data. The reason for communicating KPIs mentioned most (Q1: 10/11) was to influence decision making.

KPIs can be presented positively (e.g. “90% of the car drivers is wearing a seat belt”) or negatively (e.g. “2,5% of drivers were drink driving”). Mostly KPIs are presented in a mixed way, which can depend on the level of the KPI, but also on the strategy or the public or situation at hand.

**KPI target setting:** In spring 2023, some countries (Q1: 7/26) indicated that they had set targets based on KPI’s, some even at regional or local level. Another group of countries indicated the intention of setting targets in the future (Q1: 10/26). During the second measurement in winter 2024/2025, somewhat fewer countries seemed to have started on this subject and had set KPI targets or were in the process of setting targets (Q2: 12/24). Most countries clearly stated that these targets for KPIs are used in addition to KSI targets (Q1: 5/8; Q2: 12/24). None of the countries have the intention to replace targets for killed and seriously injured by targets for KPI’s; if set, it is currently always in addition.

For countries that will set or have set KPI-targets, targets for speeding and wearing of protective devices are mentioned most, targets for vehicle safety, infrastructure and post-crash were mentioned least. The reasons for setting KPI-targets mentioned most often are to monitor progress or to help focussing on specific goals. Methods that most countries mention for setting targets is by reflecting on the current indicator levels in combination with what can be done to improve levels by stakeholders. Policy makers are the most mentioned acting professionals for determining the level of the target(s). Several countries are still looking for the best method they will use for setting targets and who to involve in determining the level of the target. The frequency in which targets are evaluated differs largely between countries and depending on KPIs for which targets have been set.

Reasons for **not** setting KPI-targets that are mentioned most are:

- the complexity of setting target levels,
- hesitation by politicians and
- not seeing the added value of those types of targets.

**The role of Baseline and Trendline:** This differs per country. Some countries (Q1: 5/26) reported no significant influence, due to their long history of working with KPIs, other countries (Q1: 3/26) reported that the project(s) provided significant impulse for the first collection of KPIs. Most of the countries (Q1: 13/26) mentioned other impacts. Most countries particularly mentioned the role of the methodological guidelines and methodological discussions as an important value of Baseline/Trendline (Q2: 14/24, even most of the countries who indicated that there was no added value for them of the Baseline/Trendline project mentioned this anyway), as well as the available co-financing (Q2: 12/24) and the KPI-framework provided (Q2: 11/24).

Most countries (Q1: 20/26) will continue collecting KPI-information after the project is finished (Q2: 14/24 are certain on this), but some state that this depends on factors like (increase of) budgets and political priorities. In winter 2024-2025, none of the countries indicated that they will stop collecting KPI information.

The results provide greater understanding of how road safety indicators other than crash and injury data (KSI) are used in the policy process in different countries. The answers can help guide further discussion for the collection of good practices that can be used for recommendations to the European Commission and countries.

# 1. Introduction and methodology

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The Trendline Policy Integration Advisory Committee (PAC) aims to gain a better understanding of how Key Performance Indicators (KPIs) are used in the policy process in different countries. That is: how road safety indicators other than crash and injury data are used. To investigate this, a series of questionnaires was sent out to countries participating in the Baseline/Trendline project. The findings will contribute to the collection of good practices that will be used for recommendations to both the European Commission and other countries.

This document reports the results of two questionnaires that were sent out to participating countries during the Trendline project. The first questionnaire (spring 2023, see *Appendix A*) was completed by 26 of the 29 participating countries. The second questionnaire (winter 2024/2025, see *Appendix B*) was completed by 24 of the 29 participating countries.

Countries were asked to gather the relevant information before completing the questionnaires, so that we would get one (and not multiple) responses per country. The results of the analysis of the first questionnaire were presented during the General Assembly of the 21<sup>st</sup> of November 2023 and the next version of the report, including the results of the second questionnaire was presented during the Trendline Final Conference on 11<sup>th</sup> of June 2025. Draft versions of the report were shared with the countries. They were asked to assess whether the report accurately reflects their answers and to provide more details on some of the questions after the first session. Six countries responded to this request: four of them providing additional information and two of them stating that the report reflects the reality and that they have nothing to add.

In the following chapters, the main points of the answers provided to the questionnaires are summarised. Some countries provided links to supplementary documents for more details on how their country is dealing with KPIs. These links can be found in *Appendix C*. *Appendix D* contains a condensed description of the process they went through in adopting a road safety approach based on Safe System and Key Performance Indicators. Here you can find texts that were provided by Sweden and Slovenia.

## 2. Results of the questionnaire

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This chapter summarises the results of the responses to the questionnaires. Each question is discussed in a separate paragraph. To distinguish the answers of both questionnaires, results are marked as follows:

- Spring 2023 (Q1) – discussing the answers to the first questionnaire
- Winter 2024/2025 (Q2) – discussing the answers to the second questionnaire.

Note that not all questions were similar in the first and second questionnaire. For those questions that appeared in both questionnaires, we will mainly focus in this chapter on results that were collected during the last one.

### 2.1. Use of KPIs in road safety policies

*Spring 2023 (Q1)* - Most countries (24 of 26) are using KPIs on a national level in one or more ways. Two countries did not report how they use KPIs either stating this was not applicable or not being defined yet. KPIs are mostly used for monitoring (16 of 24). Other uses are policy evaluation (including improving policy and the evaluation of road safety activities), road safety activities<sup>1</sup> (including planning activities and gathering background information for these activities), target setting, prioritising (problems or legislative framework tasks), identifying weaknesses, and data comparisons.

*Winter 2024/2025 (Q2)* – As in the first questionnaire, also the second questionnaire provides the insight that most responding countries (17 of 24) use the KPI measurements for monitoring purposes (safety levels and weaknesses in the system; see *Figure 1*). Also, evaluation of effectiveness of policy and actions (14 of 24) and prioritising safety issues (12 of 24) are mentioned by at least half of the responding countries. Eight countries responded that they have not defined yet how KPIs will be used, however, 5 of these also indicated they would use them for one or more of the other reasons. Two countries provide additional information on the process that they have setup to involve other authorities in the way how to use KPI's in the policy process.

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1. Some, but not all, countries provided example of what they mean by 'road safety activities'. For example: awareness raising campaigns, targeted enforcement, and expanding law enforcement.

### Use of Baseline/Trendline core KPIs in road safety policies on a national level

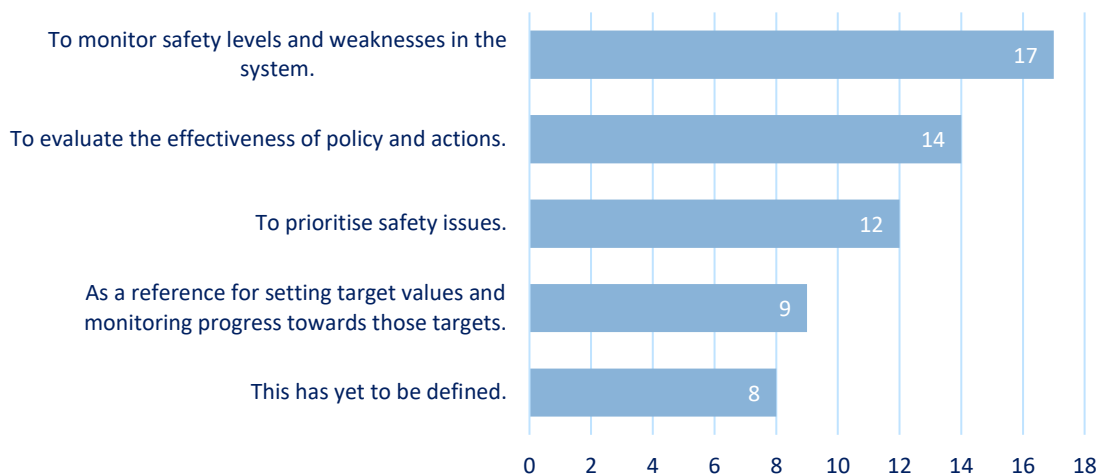


Figure 1. Ways in which countries use KPIs in road safety policies on a national level (n = 24) – answers from the second questionnaire.

#### 2.1.1. Level of use

Spring 2023 (Q1) -The 16 (of 26) countries that specified the level on which they are using KPIs use them at the national level. Nine of these countries also use or measure KPIs on more than one level (international, regional, or local). Appendix E provides detailed examples of the use and measurement of KPIs on regional and/or local level.

#### 2.1.2. Frequency and level of detail

Spring 2023 (Q1) -Twelve (of 26) countries included information about the measurement frequency in their answers. Most countries generally measure annually (eight countries), with some stating that there are exceptions for certain KPIs. One country measures every two years and one other country reported that measurements are done periodically but did not specify the intervals.

The level of detail was only specified by two countries: one stating “Intermediate (main disaggregations)” and the other stating “A sufficiently detailed level in order to better support national policy making, i.e. by road type, vehicle type, time period, user characteristics (gender, age, etc.)”. Two other countries reported that they are currently working on how frequently and with what level of detail they will measure KPIs.

## 2.2. KPIs measured at country level

Spring 2023 (Q1) - Of the list of KPIs provided, ‘speeding’ and the ‘use of helmets by bicyclists and powered two-wheelers’ are measured the most (both by 24 of 26 countries). ‘Infrastructure’ and ‘post-crash care’ are measured the least (both by 10 countries; see Appendix E for more details). Countries were prompted to report the types of data collection method for each KPI. Appendix E also summarizes these results for each of the eight Baseline/Trendline KPIs.

Winter 2024/2025 (Q2) – Figure 2 gives an overview of the KPIs that are measured in the responding countries of the second questionnaire. As in the first one, speeding and the use of protective devices

are measured by nearly all countries, with quality of infrastructure and post-crash care measured least. In particular, the quality of infrastructure is mentioned less often in the second compared to the first questionnaire, but the countries that responded to both were not entirely similar.

Figure 2 also indicates the number of countries that measure Trendline experimental indicators. The use of lights by cyclists in the dark is mentioned most often (8 of 24), share of 30km/h zones least (6 of 24). Six of the 24 countries that responded don't measure any of the Trendline experimental indicators<sup>2</sup>.

#### Measurement of Baseline/Trendline core KPIs

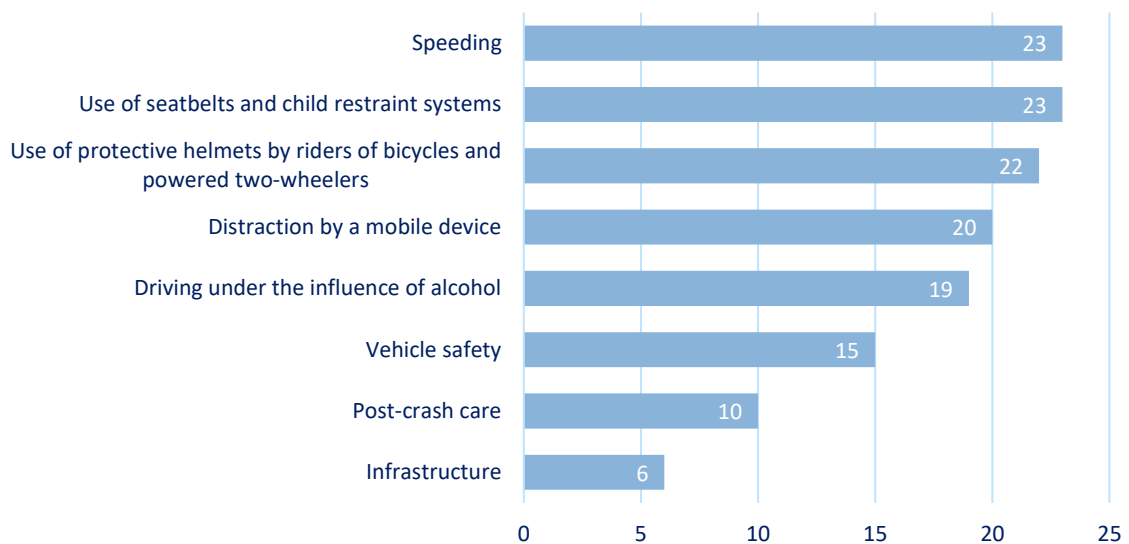


Figure 2. Number of countries that measure a Trendline KPI. (n = 24) - answers from Q2.

<sup>2</sup> Figure 3 shows that the number of countries that “measure experimental KPIs as part of Trendline or outside that project” is only 7 for self-reported behaviour and attitudes. This contrasts with the fact that 15 of the 24 countries participated in the ESRA<sub>3</sub> survey and hence do have KPIs on self-reported behaviour and attitudes. It seems that the survey responses are limited to formal uses of experimental KPI in the Trendline project, and sometimes leave indicators measured outside of the Trendline project out of scope

### Measurement of Trendline experimental KPIs

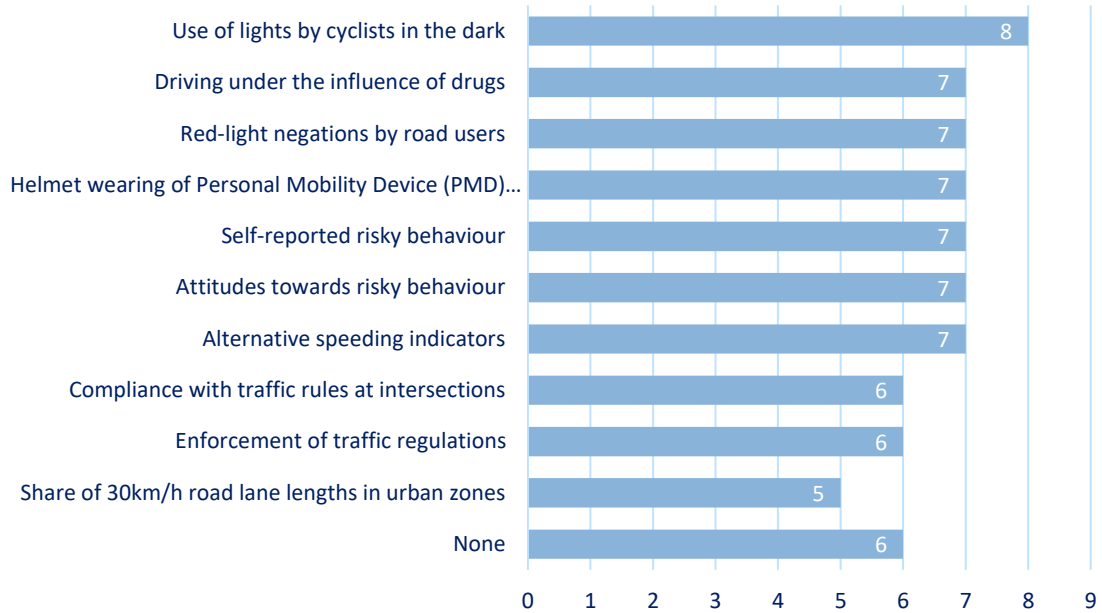


Figure 3. Number of countries that measure a Trendline experimental KPI. (n = 24) - answers from Q2.

Regarding other KPIs that are measured by countries, the second questionnaire provided closed questions of options that were inspired by the input of the first questionnaire. Figure 3 provides the results from the 10 countries who indicated they measure other KPI's. Four of those countries mentioned alternative protective equipment indicators and alternative inattention indicators and could be considered as the most used alternative KPI's. Apart from predefined alternative indicators that were mentioned in the first questionnaire, but were used by only one country, in this second questionnaire, 7 additional indicators were mentioned by a number of those 10 countries. These additions include indicators such as giving-way behaviour at several types of crossings, educational activities and other alternative indicators that were mentioned as category in the questionnaire (see Figure 4).

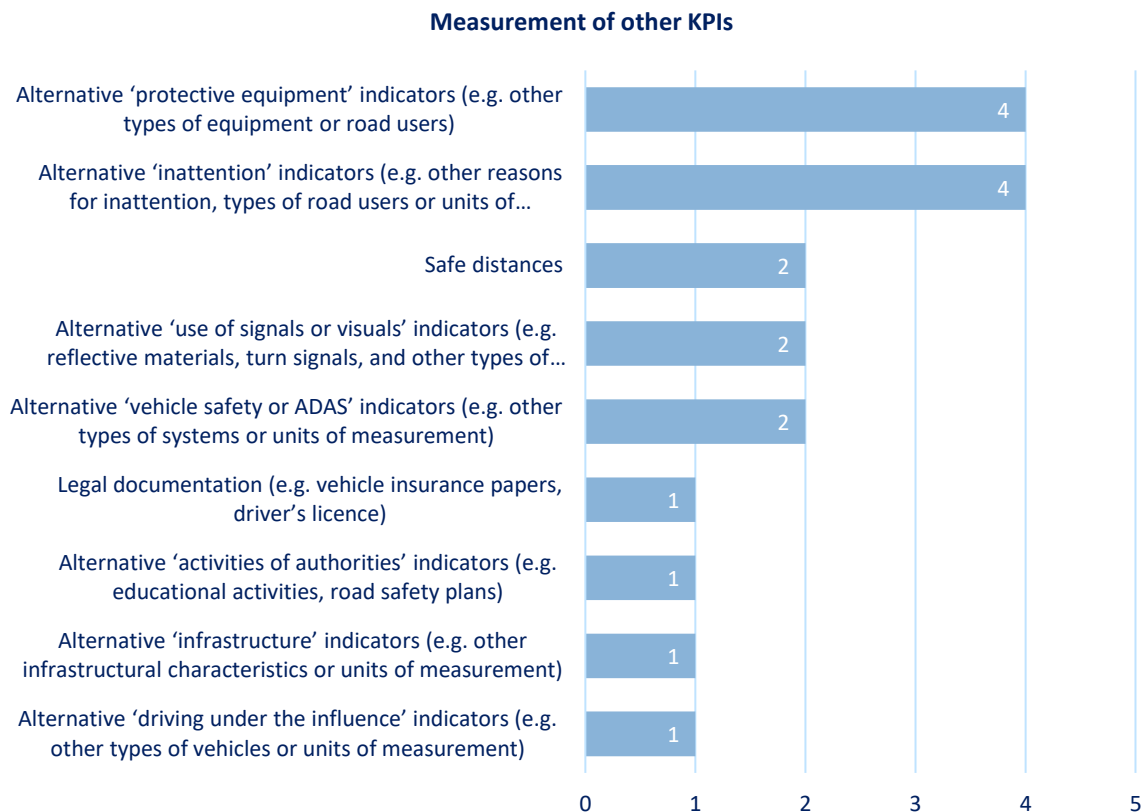


Figure 4. Number of countries that measure a KPI in addition to the core or experimental indicators within Trendline. (n = 10) - answers from Q2.

## 2.3. Dissemination of information about KPIs

*Spring 2023 (Q1)* -Most countries (25 of 26) have a strategy for disseminating information about KPIs. One country stated that their dissemination strategy has yet to be determined.

*Winter 2024/2025 (Q2)* – Except for one country that answered the second questionnaire, all other countries could indicate their dissemination strategy.

### 2.3.1. Public availability

*Spring 2023 (Q1)* - Most countries (20 of 25) clearly stated that the information about KPIs is publicly available. The other 5 countries did not clearly state whether the information is publicly available or only internally.

### 2.3.2. Type of public that is addressed

*Spring 2023 (Q1)* -Fourteen (of 25) countries clearly stated the type of public that is/will be addressed. Types of public that were mentioned are: general public (including media), government (including politicians, decision makers, policy makers, road authorities, road safety commissions), scientific

community (including universities, researchers), and stakeholders<sup>3</sup>. The government and general public were mentioned most often (respectively by 12 and 7 countries).

*Winter 2024/2025 (Q2)* – Figure 5 shows the responses to this question from the second questionnaire. Most countries (19 of 24) mention now that stakeholders are the public that is targeted for publication of KPI results, but also the general public (18 of 24) is mentioned often, and much more than in the previous questionnaire. A single country mentions other public, like the parliament.

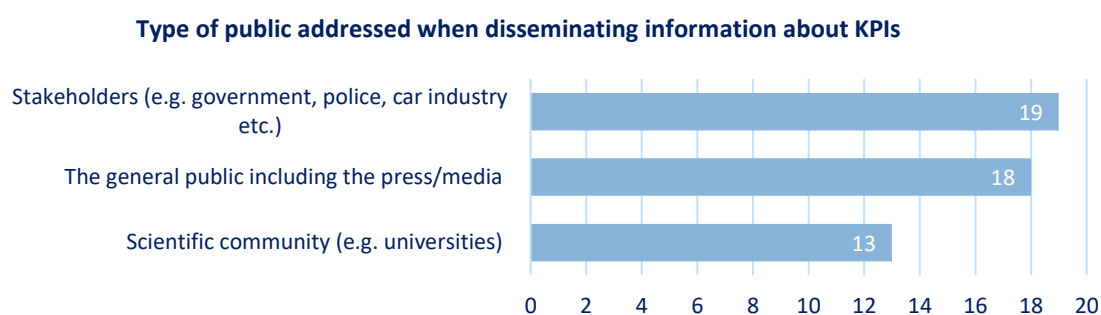


Figure 5. Number of countries that mentioned a type of public that is addressed in their dissemination strategy - answers from Q2.

### 2.3.3. Way of communication

*Spring 2023 (Q1)* -Twenty-three (of 25) countries clearly stated the way in which they communicate information about KPIs. Publications and presentations were mentioned most often (respectively by 16 and 13 countries). See *Appedix E* for more details.

*Winter 2024/2025 (Q2)* - as this question was understood a bit differently than intended during the first questionnaire, in the second questionnaire, this question was asked with predetermined options about the content of the presentation of KPI's in either a positive or negative way (e.g. 90% wears a seatbelt as example of the former, or 2.5% of the traffic was drinking and driving, as an example of the latter). By far most countries indicated that they use a mixed communication strategy, mostly depending on the level of the KPI, but some also stated that it depends on the strategy or the public or situation at hand. Three countries stated that they always use positive indications to give the good example, two always negative to indicate the challenges still ahead.

### 2.3.4. Purpose of communication

*Spring 2023 (Q1)* -Eleven (of 26) countries clearly stated the purpose of their communication. Purposes that were mentioned are:

- influencing decision making (including campaigns, garnering support from other organizations),
- informing (including research purposes, comparisons with KSI development),
- raising problem awareness (including public debate, expert discussions).

Influencing decision making was mentioned most often (10 times).

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3. Only one country has indicated what public they mean by stakeholders. Public that fits into other categories has been categorised as such.

## 2.4. Target setting for KPIs

*Spring 2023 (Q1)* -Seven (of 26) countries have set targets on a national level. Two of them also set targets on a regional or local level. The remaining 19 countries have not (yet) set targets for their KPIs. However, ten of them intend to set targets on a national level. One of those ten also intends to set targets on a regional or local level.

*Winter 2024/2025 (Q2)* – Now, half of the countries that responded to the second questionnaire (12 of 24) indicate that they have set (or will set) target values of KPIs in addition to targets for killed and seriously injured (KSI). None of the responding countries will replace KSI targets. Two countries indicate that they have not set any targets now (not for KSIs nor for KPIs), 9 countries indicate that they have only set targets for KSI.

### 2.4.1. How targets are set

*Spring 2023 (Q1)* -The eight countries that have set targets, were asked to specify how targets were set. They were prompted to include information about:

- Whether these targets will be used in addition to killed and seriously injured statistics.
- Arguments for and against target setting.
- Arguments that are used to determine the level of target(s).
- Methods that have been used for target setting.

Details are provided in *Appendix E*.

*Winter 2024/2025 (Q2)* – For the 12 countries that have indicated to set or will set target levels for KPIs, the second questionnaire asked for which KPIs targets have been or will be set. The reactions are summarised in *Figure 6*. Speeding and the use of seatbelts and child restrained systems are mentioned most often as topic for target setting; vehicle safety, infrastructure and post-crash care were mentioned least. Three countries indicate that they have (also) other KPI's for which targets are or will be set.

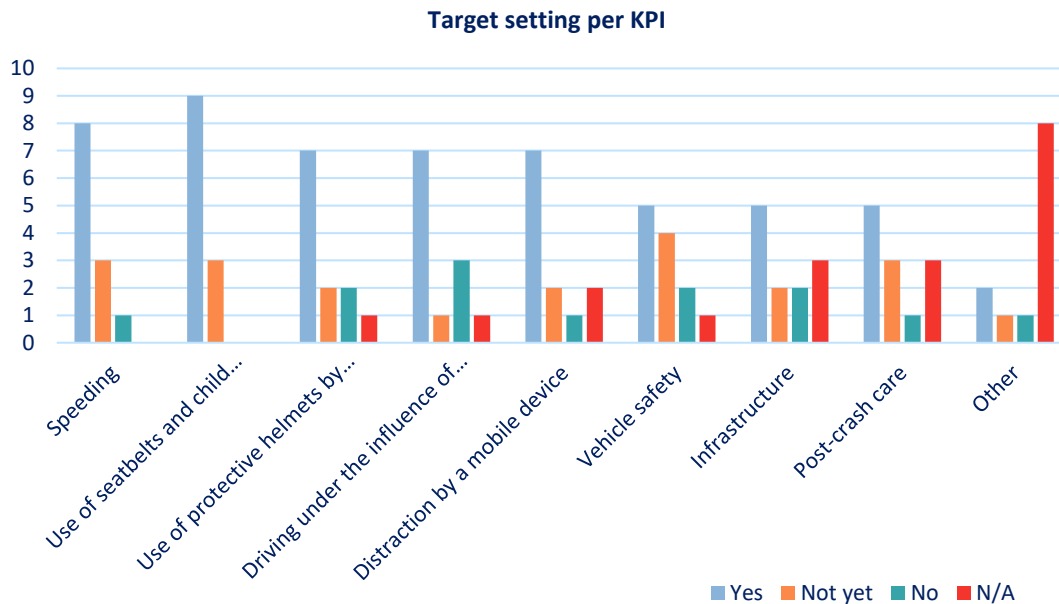


Figure 6. KPIs for which targets have been or will be set (n = 12) - answers from Q2.

The 12 countries that indicated they have or will set targets for KPIs, answered further questions on arguments behind the target setting process. Most of those countries (8 of 12) indicated that target values have been set to enable progress measurement. Four countries indicated that target values were set to help focusing on specific goals. Two countries mention setting target values to show commitment to improving road safety. One of the responding countries indicates that all the beforementioned arguments are seen as important, including target values to hold policy makers accountable.

The 12 countries indicate the following when it comes to the arguments how the target levels are determined for KPIs:

- Most countries (5 of 12) indicate that target levels are determined by assessing the current situation and what realistically can be done by stakeholders (e.g. national authority, road authorities, police etc) to improve a certain KPI.
- This is followed by 4 countries that mention that arguments are still to be determined as they are still busy with target setting.
- Two countries indicated that targets are mainly set ambitious and symbolically, without any assessment of feasibility or benchmarking.

Other arguments that are given by single countries is that target levels are based on international standards, based on shares of Baseline results or just improvement of the level, without a specific numerical value.

Figure 7 shows that methods that countries use for setting targets for KPIs. Four of the 12 countries mentioned that the method still has to be determined, another four stated that they use information from previous KPI's measures such as those from Baseline. Two countries mentioned other methods than the preselected ones, which are 'similar to fatality reduction' and 'mixed methods'.

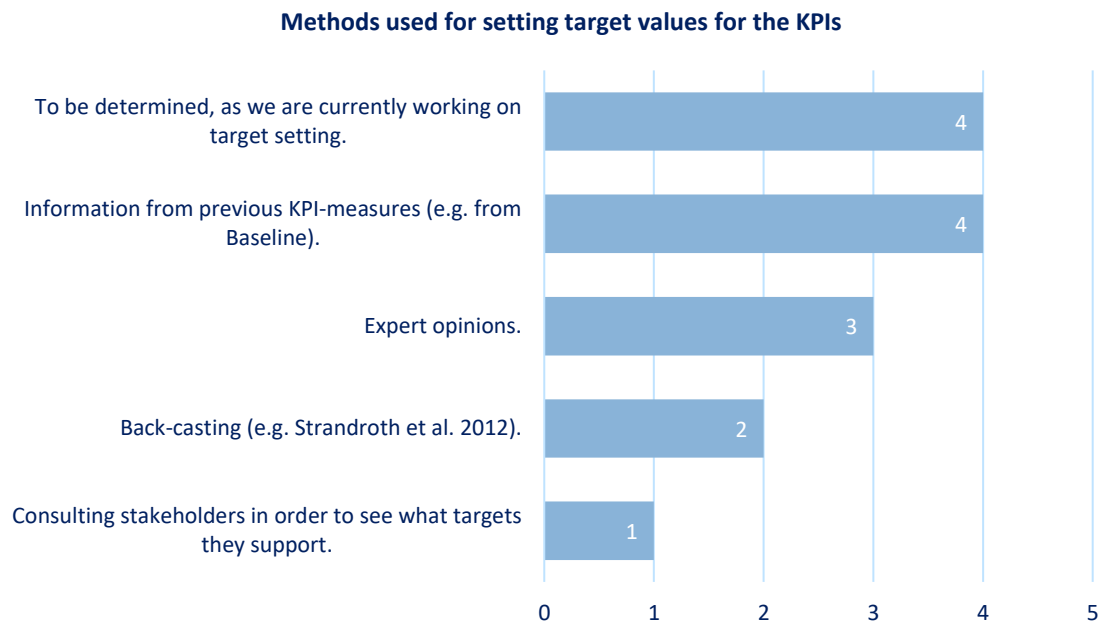


Figure 7. KPIs for which targets have been or will be set (n = 12) - answers from Q2.

Regarding the people involved in target setting, policy makers are mentioned most often (4 of 12 countries). Three countries still don't know yet, as they are in the process of target setting. Two countries mention scientists and one 'other stakeholders than policy makers'. Two countries indicate that they use a mixture of groups, such as scientists and experts or policy makers.

When countries are asked for the frequency in which they reviewed their KPI-targets, most of them (4 of 12) indicate that they don't know yet as they are still busy with setting targets. For the countries who do know already, frequencies of five, two and one year are used, but also additional options, such as differing intervals, depending on the KPI or what is indicated in the road safety strategy.

#### 2.4.2. Reasons for not setting targets

Winter 2024/2025 (Q2) - The other half of the countries that responded to the second questionnaire, answered questions why they have not or would not set targets for KPIs. Three of those countries mention that KPI targets have not been set because defining target levels is too complicated, three mention that politicians are hesitant to set targets and three mention that their country does not see the added value of setting targets for KPIs. Two of the countries give more than one reason.

### 2.5. The influence of Baseline/Trendline in the use of KPIs in the policy process

Spring 2023 (Q1) -The influence of Baseline/Trendline on the use of KPI's in the policy process differs largely between countries. Details can be found in *Appendix E*.

Winter 2024/2025 (Q2) – All 24 countries that participated in the second questionnaire answered this question. The results are described in the next paragraph.

### 2.5.1. The role or added value of Baseline in that process

Winter 2024/2025 (Q2) – The arguments for the added value of Baseline and Trendline can be seen in Figure 8, in order of how often the arguments were mentioned by the countries. From this, it can be concluded that the methodological guidelines and discussions, the available co-financing and the KPI framework were most often mentioned as added value of Baseline and Trendline. Seven of the 24 responding countries gave one argument for the added value of Baseline/Trendline, the other 16 countries gave more than one argument. Even some of the eight countries that responded that Baseline/Trendline had no (significant) effect on their datacollection, mentioned the value of the methodological guidelines and discussions.

Five countries made use of the possibility to provide even other arguments. Some used this for some additional comments why they had chosen their answers, such as ‘...KPIs are used since more than 20 years for monitoring and policy’. Others provided additional issues, such as ‘helped to be aware of the fact that we use no targets for most KPI’s’ or ‘Helped for traffic safety communication’.

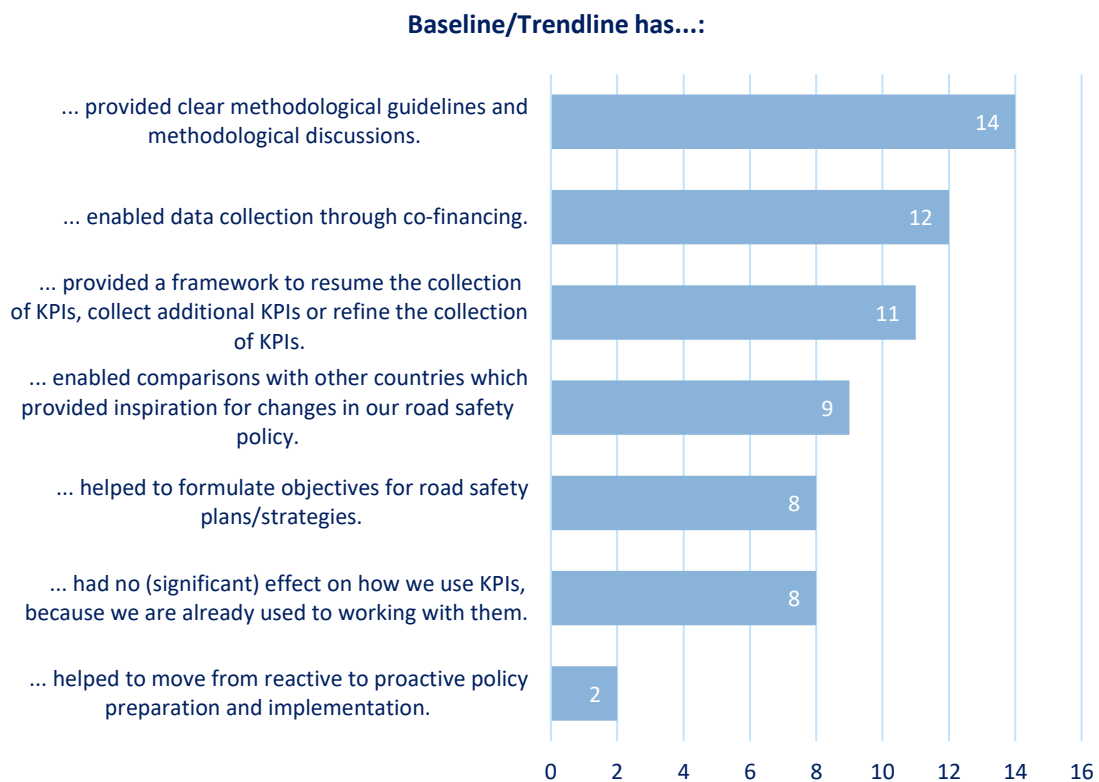


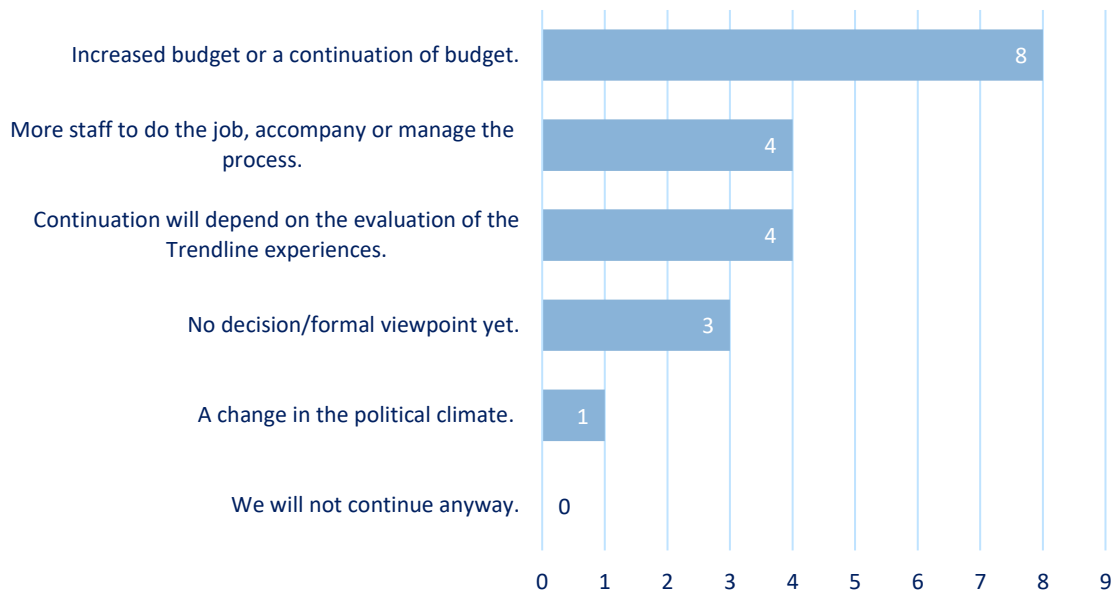
Figure 8. Number of countries per argument to value the influence of Baseline/Trendline (n = 24) - answers from Q2.

### 2.5.2. Likelihood of continuation of KPI data collection and analysis after Trendline

Spring 2023 (Q1) -Most countries (20 of 26) answered ‘yes’ when asked this question. Six answered ‘maybe’ and none answered ‘no’. When asked to elaborate, 3 countries that answered ‘maybe’ stated that the continuation depends on the availability of resources (monetary as well as non-monetary). Others elaborated that the continuation is always a topic of evaluation, depends on how policy evolves after upcoming elections, or that no official standpoint has been given yet.

Winter 2024/2025 (Q2) – In the second questionnaire, 14 of 24 countries answered 'yes' to this question, 9 countries answered 'Maybe'. The countries that answered 'No' or 'Maybe' were consequently asked for the needs they have, to make it more likely that they would continue measuring KPI's. The answers of those 10 countries can be seen in *Figure 9*. An increase in budget is mentioned most (8 of 10 countries). It is interesting that none of the countries that are not certain about continuation of measuring KPIs mention that they will stop anyway. Two of the three countries that indicate that there has been no decision made or no formal viewpoint yet, also indicate some of the other options.

**Needs for continuation of the collection and analysis of KPIs**



*Figure 9. Arguments for making it more likely to continue measuring the Baseline/Trendline core KPI's (n = 10) - answers from Q2.*

## 3. Summary and discussion

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In this final chapter, a summary is provided of the results from the questionnaire. Furthermore, it discusses the issues that were encountered in gathering information via the questionnaires. This all ends in a proposal for how to proceed.

### 3.1.1. Summary of the results

**Purpose of using KPIs:** The questionnaires shows that most countries (Q1: 24/26 and Q2: 17 /24) use KPIs for monitoring performance or progress. Also evaluation of effective policy and actions is mentioned often (Q1: 7+7/26; Q2: 14/24). Target setting and monitoring is mentioned by several countries (Q1: 6/26; Q2: 9/24). All countries that specified their level of use (Q1: 16/26) do this at least on national level, more than half (Q1: 9/16) also on other levels like regional and local level.

**Types of KPIs measured:** The KPI's that are measured by most countries are speeding (Q1: 24/26; Q2: 23/24), the use of protective equipment (by powered two-wheelers (Q1: 24/26; Q2: 22/24); or seatbelts and child restraint systems (Q1: 23/26; Q2: 23/24). Infrastructure (Q1: 10/26; Q2: 6/24) and post-crash care (Q1: 10/26; Q2: 10/24) were measured least. In addition, a lot of other indicators were mentioned, some in line with the experimental Baseline/Trendline-indicators (like other speed indicators) and with measurements of 'the use of lights by cyclists in the dark' as the most frequently mentioned experimental indicator (Q2: 8/24). But also other indicators were mentioned, like 'alternative protective equipment indicators' and 'alternative inattention indicators' (Q2: 4/24). Least mentioned were indicators that currently are not within the scope of the EU-definitions of SPIs or KPIs (EC, 2020), such as 'legal documentation' and 'activities of authorities'.

Speeding was mentioned as the most frequently used KPI on regional or local level (Q1: 4/6), followed by safe infrastructure (Q2: 3/6). This might be explained by the fact that regional and local authorities are often road authorities and these KPI's are most relevant to their scope of work.

**Data collection methods:** For speeding, the use of seatbelts and child restraint systems, the use of protective helmets by riders of bicycles and powered two-wheelers, and distraction by a mobile device by means of roadside observations are most common. For driving under the influence of alcohol self-report surveys are used most. For vehicle safety, infrastructure, and post-crash care existing databases are used most. However, it is not always clear how these existing databases are established.

**KPI dissemination:** Most countries have the information on KPIs publicly available (Q1: 20/25). Targets groups are mostly the government or stakeholders in general (Q1: 12/14; Q2: 19/24), followed by the general public, including media (Q1: 7/14; Q2: 18/24)). Publications (Q1: 16/23) and presentations (Q1: 13/23) are used most as medium to disseminate the knowledge and data. The purpose for communication that was mentioned most (Q1: 10/11) was to influence decision making.

The direction in which KPIs are communicated (e.g. positively as for instance "90% of the car drivers is wearing a seat belt" versus negatively as for instance "2,5% of the drivers combine drinking and

driving”) is mostly done in a mixed way, either depending on the level of the KPI, but also depending on the strategy or the public or situation at hand.

**KPI target setting:** In spring 2023, some countries (Q1: 7/26) indicated that they had set targets based on KPI’s, some even at regional or local level. Another group of countries indicated the intention of setting targets in the future (Q1: 10/26). During the second measurement in winter 2024/2025, somewhat fewer countries seemed to have started on this subject and had set KPI targets or were in the process of setting targets (Q2: 12/24). Most countries clearly stated that these targets are used in addition to KSI targets (Q1: 5/8; Q2: 12/24). None of the countries have the intention to replace targets for killed and seriously injured by targets for KPI’s; if set, it is currently always in addition.

For countries that will set or have set KPI-targets, targets for speeding and wearing of protective devices are mentioned most, targets for vehicle safety, infrastructure and post-crash were mentioned least. Most mentioned reasons for setting KPI-targets are for monitoring progress or to help focussing on specific goals. Methods that most countries mention for setting targets is by reflecting on the current indicator levels in combination with what can be done to improve levels by stakeholders. Policy makers are the most mentioned acting professionals for determining the level of the target(s). Several countries are still looking for the best method they will use for setting targets and who to involve in determining the level of the target. The frequency in which targets are evaluated differs largely between countries and depending on KPIs for which targets have been set.

Reasons for not setting KPI-targets that are mentioned most are:

- the complexity of setting target levels,
- hesitation by politicians and
- not seeing the added value of those types of targets.

**The role of Baseline and Trendline:** This differs per country. Some countries (Q1: 5/26) reported no significant influence, due to their long history of working with KPIs, other countries (Q1: 3/26) reported that the project(s) provided significant impulse for the first collection of KPIs. Most of the countries (Q1: 13/26) mentioned other impacts. Most countries particularly mentioned the role of the methodological guidelines and methodological discussions as an important value of Baseline/Trendline (Q2: 14/24, even most of the countries who indicated that there was no added value for them of the Baseline/Trendline project mentioned this anyway), as well as the available co-financing (Q2: 12/24) and the KPI-framework provided (Q2: 11/24).

Most countries (Q1: 20/26) will continue collecting KPI-information after the project is finished (Q2: 14/24 are certain on this), but some state that this depends on factors like (increase of) budgets and political priorities. In winter 2024-2025, none of the countries indicate that they will stop with KPIs anyway.

### 3.1.2. Methodological discussion

The following issues were encountered during the analysis of results:

- To prevent the questionnaire becoming too long, not all questions asked in the first questionnaire were repeated in the second one.
- Although it was stated in the beginning of the questionnaire that answers should be limited to KPIs other than KSI, it seems like this wasn’t always clear to respondents, especially during the first

questionnaire. This resulted in countries providing (additional) information about KSI. It might have been better to offer to include reminders throughout the questionnaire and in the second questionnaire this was solved in providing as many 'closed questions' or predefined answering options as possible.

- Questions with multiple prompts often weren't fully answered during the first questionnaire. For many questions we asked respondents to include certain aspects in their answer (e.g. 'What are the aims of using KPIs in your country? Please include the following in your answer: possible aims (...), possible use (...), frequency and level of detail (...)). These prompts were often (partially) ignored or overlooked by the respondents. Asking multiple questions instead of trying to get as much information from only one questions was thus used in the second questionnaire to prevent this.
- Some questions (or prompts) appear to be not clearly phrased. For example, the prompt about how the message will be communicated depending on the public that is addressed in the dissemination strategy. We were looking for explanations on how results will be explained to put across the right message. However, respondents almost exclusively answered this prompt with the type of communication (through websites, presentations, media etc.) they are using. It might have been better to provide an example of the types of answers that we were looking for. This is exactly what was done in the second questionnaire. The drawback of this approach might be that we could get less feeling for what the countries understood from the question.
- During the first questionnaire, respondents sometimes provided links to documents (in their native language) or just stated that they are following Baseline/Trendline guidelines instead of writing an answer, which makes analysing the results increasingly time consuming and difficult. As these additional documents were not analysed, this might have led to incomplete information. During the second questionnaire, this was mostly overcome by using closed answering options. In a very few cases, countries were referring to documents in the 'other'-option where they could provide additional information.
- Respondents to the first questionnaire sometimes used phrase like "including but not limited to x and y". This indicates that we are missing information for some Q and A. Again, the second questionnaire might have solved this by using closed answering options but also providing some limited space to provide additional information.
- Respondents to the first questionnaire sometimes answered questions stating how things *should* be, rather than how things *are* in their country. This might be avoided by better phrasing questions or placing reminders throughout the questionnaire stating that we are interested in how they are *actually* doing things. The approach of the second questionnaire was directed at preventing this weakness.

### 3.1.3. Conclusion

The results of the two PAC-questionnaires that are discussed in this report provide more understanding of how road safety indicators other than crash data and injury data (KSI) are used in the policy process in different countries. The results show that quite a number of countries were enabled and stimulated by the Baseline/Trendline project to start measuring or improve existing measurements. Also, an increasing number of countries started the process of target setting based on KPIs.

But there also large differences between countries where they are in the process of measuring and using KPIs in road safety policy making. Some countries explicitly state that they are still studying on how to proceed. This report gives an overview of what the practices and issues are. In the Appendices of this report, more elaborated information of some countries is provided. It might be helpful to share

these stories and experiences on a larger scale to guide countries that are still looking for strategies and ways forward how to use KPIs in the policy process. It might even be inspiration for a European strategy to strengthen the efforts to go for zero casualties in 2050.

The results that are described in this report also make clear that it will be very helpful or even a requirement for a number of countries to continue the measurements and use of KPIs that confounding will remain available. This confounding can also provide a common framework in which further cooperation and inspiration among countries can be organised. It can help guide further discussion for the collection and use of KPIs, including practical solutions to issues, but also for finding ways how to commit stakeholders to activities that are required to further improve results on road safety.

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Stelling, A., Boets, S., González Hernández, B., Jankowska, D., Larsson, P., Schumacher, M., Vieira, S., Ziakopoulos, A., (2023). KPI Distraction. Methodological Guidelines. Report produced as part of the Trendline project, supported by the European Union.

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# Appendix A First questionnaire

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1. For which country are you filling out this form?

***Please do not complete this form more than once per country. Be aware that partially completed forms will be cleared when the browser tab is closed (it is not possible to save your answers and continue later). Make sure to gather all relevant information from colleagues before completing the form.***

[text box]

2. What is your name?

[text box]

3. What is your email address?

[text box]

4. What are the aims of using KPIs (or Safety Performance Indicators, SPIs) in your country?

*Please include the following in your answer:*

- Possible aims e.g.: monitoring progress, prioritizing problems, benchmarking, etc.
- Possible use: international, national, regional, local, etc. (and how this is linked to the aims)
- Frequency and level of detail needed for which approach.

[text box]

5. How has Baseline/Trendline been influencing the use of KPIs in the policy process? What was the role or added value of Baseline in that process? In what way?

*Please provide information as far as relevant given the stage of the project.*

[text box]

6. Which KPIs does your country measure?

*Please tick all applicable boxes.*

- Speeding
- Use of seatbelts and child restraint systems
- Use of protective helmets by riders of bicycles and powered two-wheelers
- Driving under the influence of alcohol
- Distraction by a mobile device
- Vehicle safety
- Infrastructure
- Post-crash care
- Other (please specify in the next question)

7. If you ticked the option 'other' in the previous question, please specify which KPIs are measured.

Type 'NA' if not applicable.

[text box]

8. What type of data collection method (e.g. questionnaires, road side measurements, etc.) is used to monitor the KPIs?

Please provide your answer for each KPI that your country is measuring.

[text box]

9. How are KPIs used (e.g. monitoring, target setting, evaluation of policies) in road safety policies on a national level?

Please consider only those types of indicators that are comparable to those used in Baseline/Trendline. Leave out the use of fatalities and injuries.

Type 'NA' if not applicable.

[text box]

10. Are you aware of any regional or local relevant examples of KPIs in road safety policy making?

If so, please provide the following in your answer:

- Examples of KPIs that are used and how they are used.
- How these KPIs divert from the KPIs used at national level.

Type 'NA' if not applicable.

[text box]

11. Is it likely that the data collection and analysis of KPIs will continue after the Trendline project will be finished?

- Yes
- No
- Maybe

12. Please elaborate on your answer given in the previous question.

Please include the following in your answer:

- Arguments for the (dis)continuation of the data collection and analysis of KPIs.
- Requirements for successful continuation, and whether those requirements will be provided.

[text box]

13. Have targets been set for the KPIs?

Please tick all applicable boxes.

- Yes, on a national level
- Yes, on a regional level or local level
- No, but we intend to set targets on a national level
- No, but we intend to set targets on a regional level or local
- No

14. If targets have been set, how have these targets been set for the KPIs?

*Please include the following in your answer:*

- *Whether (and if so, how) they will be used in addition to killed and seriously injured statistics.*
- *Arguments for and against setting targets.*
- *Arguments that are used to determine the level of the target(s).*
- *Methods that have been used for target setting.*

*Type 'NA' if not applicable.*

[text box]

15. How is information about the KPIs being disseminated?

*Please include the following in your answer:*

- *Whether the information will be publicly available, or only internally.*
- *Which public is/will be addressed (e.g. large public/politicians versus peers).  
How the message will be communicated depending on the public that is addressed (e.g. provide examples how the results will be explained in order to bring over the right message).*
- *The purpose of the communication (e.g. raising problem awareness, influencing decision making, informing).*

[text box]

# Appendix B Second questionnaire

## The use of KPIs in the policy process

The Trendline Policy Integration Advisory Committee (PAC) aims to gain a better understanding of how **Key Performance Indicators (KPIs)** are used in the policy process in your country. That is: how road safety indicators other than crash and injury data are used.

This is the **second questionnaire** that has been sent out for this purpose and an updated version of the first questionnaire that was sent to you in the spring of 2023. By completing this questionnaire for your country you will contribute to the collection of best practices that will be used for recommendations to both the European Commission as well as to the other countries.

Please note that, unless specifically stated, these questions are exclusively about **the eight core KPIs** that are measured in Baseline/Trendline and not about fatalities and injuries or any other (experimental) indicators.

If you have any questions about the questionnaire, please reach out to us via [trendline@swov.nl](mailto:trendline@swov.nl).

Please do complete this form only **once per country**. Be aware that partially completed forms will be cleared when the browser tab is closed (it is not possible to save your answers and continue later). **Make sure to gather all relevant information from colleagues before completing the form.** You can use the PDF-version of this questionnaire for preparation.

1. For which country are you filling out this form?
2. What is your name?
3. What is your email address?
- 4 How has Baseline/Trendline been influencing the use of KPIs in the road safety policy process in your country?

Baseline/Trendline has:

- helped to move from reactive to proactive policy preparation and implementation.
- helped to formulate objectives for road safety plans/strategies.
- provided a framework to resume the collection of KPIs, collect additional KPIs or refine the collection of KPIs.
- provided clear methodological guidelines and methodological discussions.
- enabled data collection through co-financing.
- enabled comparisons with other countries which provided inspiration for changes in our road safety policy.
- had no (significant) effect on how we use KPIs, because we are already used to working with them.
- Other [text box]

5. Which of the following eight core KPIs that are measured in Baseline/Trendline does your country measure?

Please tick all applicable boxes.

- Speeding
- Use of seatbelts and child restraint systems
- Use of protective helmets by riders of bicycles and powered two-wheelers

- Driving under the influence of alcohol
- Distraction by a mobile device
- Vehicle safety
- Infrastructure
- Post-crash care
- None

6. Which of the following experimental KPIs that are measured in Trendline does your country measure (as part of Trendline or outside that project)?

Please tick all applicable boxes.

- Driving under the influence of drugs
- Share of 30km/h road lane lengths in urban zones
- Red-light negotiations by road users
- Compliance with traffic rules at intersections
- Helmet wearing of Personal Mobility Device (PMD) riders
- Self-reported risky behaviour
- Attitudes towards risky behaviour
- Use of lights by cyclists in the dark
- Enforcement of traffic regulations
- Alternative speeding indicators
- None

7. Does your country measure KPIs that are not captured by the core or experimental indicators that are measured within Baseline/Trendline?

- Yes
- No [Q8 will be skipped]

8. [Q7 = 'yes'] You have indicated that your country measures KPIs that are not captured by the core or experimental indicators measured within Baseline/Trendline. In what category do these other KPIs fall? Please tick all applicable boxes and only include indicators that you have not considered in the previous questions about core and experimental indicators.

- Alternative 'driving under the influence' indicators (e.g. other types of vehicles or units of measurement)
- Alternative 'inattention' indicators (e.g. other reasons for inattention, types of road users or units of measurement)
- Alternative 'vehicle safety or ADAS' indicators (e.g. other types of systems or units of measurement)
- Alternative 'protective equipment' indicators (e.g. other types of equipment or road users)
- Alternative 'infrastructure' indicators (e.g. other infrastructural characteristics or units of measurement)
- Alternative 'use of signals or visuals' indicators (e.g. reflective materials, turn signals, and other types of road users)
- Alternative 'activities of authorities' indicators (e.g. educational activities, road safety plans)
- Safe distances
- Legal documentation (e.g. vehicle insurance papers, driver's licence)
- Other (than killed and injured) [text box]

9. How are the core KPIs that are measured in Baseline/Trendline used in road safety policies on a national level?

Please tick all applicable boxes.

- To monitor safety levels and weaknesses in the system.
- To evaluate the effectiveness of policy and actions.
- As a reference for setting target values and monitoring progress towards those targets.

- To prioritise safety issues.
- This has yet to be defined.
- Other [text box]

10. Is it likely that the data collection and analysis of the core KPIs that are measured in Baseline/Trendline will continue after the project will be finished?

- Yes [Q11 will be skipped]
- No
- Maybe

11. [Q10 ≠ 'yes'] What is needed for a continuation of the collection and analysis of core KPIs that are measured in Baseline/Trendline?

Please tick all applicable boxes.

- Increased budget or a continuation of budget.
- More staff to do the job, accompany or manage the process.
- A change in the political climate.
- Continuation will depend on the evaluation of the Trendline experiences.
- No decision/formal viewpoint yet.
- We will not continue anyway.
- Other [text box]

12. Have target values been set or will they be set for KPIs in your country?

Please note that KSI stands for 'killed and seriously injured'.

- Yes, (they will be set) in addition to target values for KSI.
- Yes, (they will be set) instead of target values for KSI.
- No, but target values have been set for KSI.
- No target values for KPIs or KSI have been set.

13. [Q12 = 'yes...'] You have indicated that your country has set targets or is planning to set targets for KPIs. Please indicate for each of the KPIs whether targets have (yet) been set.

Tick N/A if the KPI is not measured by your country.

KPI	Yes	Not yet	No	N/A
Speeding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of seatbelts and child restraint systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of protective helmets by riders of bicycles and powered two-wheelers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driving under the influence of alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distraction by a mobile device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vehicle safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post-crash care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. [Q12 = 'yes...'] What is the reasoning behind setting target values for KPIs in your country?

- Target values help to focus on specific goals.
- Target values enable progress measurement.
- Target values can be used to hold policy makers accountable.
- Setting target levels is a way to show our commitment to improving road safety.
- Other [text box]

[Q12 = 'no...'] What is the reasoning behind not setting target values for KPIs in your country?

Please tick all applicable boxes.

- Defining target values is too complicated.
- Politicians are hesitant to set target levels.
- If target levels are not met, the efforts made thus far might seem futile.
- There is no added value in setting target values.
- Other [text box]

15. [Q12 = 'yes...'] How are target levels determined for KPIs in your country?

Please tick all applicable boxes.

- Target levels are determined by assessing the current situation and what realistically can be done by stakeholders (e.g. national authority, road authorities, police etc) to improve a certain KPI.
- Target levels are based on international standards/targets that are also used in other countries.
- Targets are set ambitiously and symbolically, without specific feasibility assessment or benchmarking.
- To be determined, as we are currently working on target setting.
- Other [text box]

16. [Q12 = 'yes...'] What methods are used for setting target values for the KPIs in your country?

- Back-casting (e.g. Strandroth et al. 2012).
- Expert opinions.
- Consulting stakeholders in order to see what targets they support.
- Information from previous KPI-measures (e.g. from Baseline).
- To be determined, as we are currently working on target setting.
- Other [text box]

17. [Q12 = 'yes...'] How often are target values for KPIs (going to be) reviewed in your country?

The frequency might differ depending on the KPI, please tick most relevant option.

- We do not plan on reviewing target levels
- Whenever a target value is reached
- Once every year
- Once every two years
- Once every five years
- To be determined, as we are currently working on target setting
- Other [text box]

18. [Q12 = 'yes...'] Who is involved in reviewing the target values for KPIs in your country?

- Policy makers
- Stakeholders other than policy makers
- Scientists
- To be determined, as we are currently working on target setting
- Other [text box]

19. What public is addressed when disseminating information about KPIs in your country?

Please tick all applicable boxes.

- The general public including the press/media
- Stakeholders (e.g. government, police, car industry etc.)
- Scientific community (e.g. universities)
- Other [text box]

20. In what way is the information about KPIs presented when disseminated in your country?

- We always present the information in a positive way (e.g. 90% wears a seat belt) to provide the 'good example' to the public.

- o We always present the information in a negative way (e.g. 2% drunk-driving) to emphasize on the challenges we are working on.
- o Whether we present information in a positive or negative way depends on the level of performance of a KPI.
- o Other [text box]

# Appendix C Links to supplementary documents

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## Denmark

<https://www.faedsselssikkerhedskommissionen.dk/media/5usbkdl/maal-og-strategi.pdf>

[https://www.faedsselssikkerhedskommissionen.dk/media/eymfxron/fsk\\_resume\\_handlingsplaneng\\_2021-2030\\_final.pdf](https://www.faedsselssikkerhedskommissionen.dk/media/eymfxron/fsk_resume_handlingsplaneng_2021-2030_final.pdf)

<https://www.faedsselssikkerhedskommissionen.dk/media/xoepoebj/foerste-status-paa-handlingsplanen-2021-2030-2021.pdf>

<https://www.faedsselssikkerhedskommissionen.dk/media/5usbkdl/maal-og-strategi.pdf>

## Lithuania

<https://tka.lt/2023/04/03/es-projekto-baseline-pagrindiniu-eismo-saugos-rodikliu-surinkimas-rezultatai/>

[https://tka.lt/wp-content/uploads/2023/04/KPI-rezultatai\\_TKA-svetainei-04-03.pdf](https://tka.lt/wp-content/uploads/2023/04/KPI-rezultatai_TKA-svetainei-04-03.pdf)

## Sweden

<https://trafikverket.diva-portal.org/smash/get/diva2:1779579/FULLTEXT01.pdf>

<https://trafikverket.diva-portal.org/smash/get/diva2:1363391/FULLTEXT01.pdf>

<https://trafikverket.diva-portal.org/smash/get/diva2:1363478/FULLTEXT01.pdf>

# Appendix D Experiences of countries

## Experiences of Sweden

### Brief overview of the road safety work

Swedish road safety work is based on Vision Zero. The long-term goal for road safety is hence zero fatalities and severe injuries but interim targets are set on the way to track progress towards its achievement. The current interim target for road safety is to halve the number of fatalities from 266 (the average annual number 2017-2019) to a maximum of 133 fatalities in 2030. The interim target also specifies that the number of seriously injured on the roads is to be reduced by 25 per cent from a corresponding number.

An important conclusion from earlier evaluations of the Swedish road safety has however shown that only setting targets for fatalities and serious injuries is of marginal support for stakeholders when planning countermeasures. Setting targets only on this level will not give enough guidance for identifying and taking effective measures. For that reason, Sweden in 2008 introduced the notion Road Safety Performance Indicators (SPI) in 2010. These indicators describe a condition in road traffic with a verified relationship with the safety outcome, e.g. sober traffic and share of traffic volume on state roads with a speed limit above 80 km/h with median barriers. These conditions are based on the design principles of Vision Zero. Each condition is then expressed in one or more SPI. The indicator must be measurable and intermediate targets are set also for the indicators. This will make it easier for the stakeholders to see how their different operations influences the road safety outcome and hence make it easier to identify effective measures.

The road safety work in Sweden is carried out in a systematic way using a 'management by objectives' model. Interim targets are set for the numbers of fatalities and severely injured by the government in interaction with important stakeholders. The model further involves measuring and following up a series of current conditions in the road traffic system which have a verified relationship with the trend for the numbers of fatalities and severely injured on the roads. These conditions are measured using what is known as 'road safety performance indicators' (SPI). Interim targets are set also for these indicators and together these target values correspond to the overall target for road safety development. In the next paragraph the key principles for SPIs in Sweden are described. In the *Figures 10, 11 and 12* (next pages) the different indicators and their targets for 2030 are shown.

The actual numbers of fatalities and severely injured together with the outcome of the indicators, are then followed up and analysed annually. The analysis is documented in a report which is presented at annual results conferences attended by various stakeholders. These stakeholders are important since they, through their activities and operations, can contribute to the fulfilling of the interim targets.

With the analysis report as a starting point, these stakeholders plan measures in their different activities and operations. This planning is administrated by the Swedish Transport Administration and results in an action plan where all stakeholders' commitments are documented. The action plan is followed up and revised annually.

The fundamental idea is that the 2030 goal must be achieved as a result of a systematic road safety work – regardless of the effect of external factors, such as e.g. increased traffic volumes, and any random variation on the outcome.

Outcome indicator	Starting position	Target 2030
Number of fatalities in road traffic accidents (-50 %)	266	133
Number of seriously injured in road traffic accidents (-25 %)	4200	3100
Number of seriously injured in pedestrians falls (-25 %)	3500	2600
Number of suicides in the road transport system	52	Lower
Number of seriously injured cyclists in single bike accidents (-25 %)	1600	1200

Figure 10. Outcome indicators.

System indicator	Description	2020	Target 2030
Safer roads. national road network	Share of traffic volume on roads with median barriers, national roads with speed limits 80–120 km/h	64 %	70 %
Safer roads. national road network	Share of traffic volume on roads with median barriers, national roads with speed limits 90–120 km/h	85 %	96 %
Safe state road intersections	Share of traffic in intersections with very high or high safety standard	80 %	85 %
Safe state road intersections	Share of traffic in intersections with very high, high or medium safety standard	93 %	99 %
Safe pedestrian, cycling and moped passages, state road network	Share of pedestrian, bicycle and moped crossings of good or medium safety classifications	60 %	80 %
Safe pedestrian, cycling and moped passages, municipal road network	Share of pedestrian, bicycle and moped crossings of good or medium safety classifications	50 %	75 %
Safer vehicles	Share of new cars sold with 5 stars in a Euro NCAP test	89 %	90 %
Systematic measures for safe pedestrian and cycle traffic	Survey of selected municipalities, share of municipalities with a high level	15 % (2021)	70 %
Suicide preventive road design	Suicide barriers on high bridges near urban areas		50 %
	Access barriers on busy roads near urban areas		50 %
	Viaducts across busy roads near urban areas		25 %

Figure 11. System indicators.

Use indicator	Description	2020	Target 2030
Compliance with speed limits, national road network	Share of traffic volume within speed limits	49 %	80 %
Compliance with speed limits, municipal road network	Share of traffic volume within speed limits	67 %	80 %
Sober drivers	Share of traffic volume with sober drivers	Not determined	99,9 %
Seat belt	Share of passenger car occupants in the front seat observed using a seat belt	97,9 %	99,5 %
Helmet use, cyclists	Share of cyclists observed wearing a helmet	47 %	80 %
Helmet use, moped riders	Share of moped riders observed wearing helmet	98 %	100 %

Figure 12. Use indicators.

## Key Principles for Developing Safety Performance Indicators (SPIs)

- 1. Validity and Safety Impact:** Safety Performance Indicators (SPIs) must measure important conditions that have a strong and verified potential to improve road safety. They should be tied to known risk factors, such as head-on collisions, while also addressing the control of kinetic energy, for example, speed in relation to the protective capacity of vehicles and infrastructure. They could also be tied to conditions or technologies in the vehicle or infrastructure that support road users and mitigate human error, such as incorporating indicators related to effective Advanced Driver Assistance Systems (ADAS), ensuring a holistic approach to improving road safety.
- 2. Alignment with the Safe System Approach:** Indicators should reflect the principles of the Safe System, which is designed to mitigate human error and prevent serious injuries, rather than relying on perfect driver behaviour. The system should account for human limitations, and indicators should focus on factors such as speed control, protective infrastructure, and vehicle safety.
- 3. Shared Responsibility:** Indicators should emphasize the responsibility of system designers (governments, businesses, organizations) to contribute to road safety, as highlighted by the WHO's Global Plan for Road Safety." Indicators that measure organizational and corporate safety contributions are considered valuable.
- 4. Feasibility of Intervention:** An indicator should only be developed if countermeasures with a proven effect can be applied. For example, physical separation of oncoming traffic is a known effective measure for reducing fatalities in head-on collisions and speed limits of 30 km/h in cities have proven effective in protecting vulnerable road users, such as pedestrians and cyclists. Indicators that drive the implementation of such proven measures are prioritized.
- 5. Innovative Potential:** Even if effective countermeasures are not immediately clear, an indicator can still be valuable if it prompts innovation to find new solutions for a road safety issue.
- 6. Measurability and Comparability:** The indicator should be measurable consistently across time and regions to track progress. However, the focus should be on indicators that reflect meaningful safety improvements rather than conditions that are hard to quantify or have a marginal impact.

**7. Focus on Physical and Kinetic Energy Management:** Instead of focusing on behaviours like the correct behaviour of car drivers at intersections, it is more aligned with the Safe System approach to focus on kinetic energy control, physical separation, and the infrastructure's role in reducing impact severity. These principles guide the prioritization and refinement of indicators that can genuinely contribute to reducing fatalities and serious injuries in road safety efforts.

**8. Setting Norms and Responsible Behaviour:** It can be valuable to measure certain behaviours not only to assess risks, but also to evaluate the overall safety level of the road transport system. Indicators such as seat belt use, sobriety, and speed compliance help signal what is expected from road users and set a standard for safe behaviour. This knowledge is crucial for setting appropriate target levels for other indicators and understanding the key factors influencing the safety performance of the transport system. While the system should be forgiving of genuine mistakes, there is value in demonstrating that deliberate rule-breaking and carelessness are not acceptable, and that road users still play a crucial role in contributing to safety by adhering to rules and doing their best.

## Experiences of Slovenia

### Brief overview of the road safety work

Slovenia has achieved significant progress in road safety over the past two years, marking one of the lowest fatality rates in the country's history. In 2024, 68 people lost their lives on Slovenian roads, representing an 18% decrease compared to 2023 (83 fatalities) and placing Slovenia among the top-performing EU countries in terms of road deaths per million inhabitants.

This success is largely attributed to the implementation of the National Road Safety Programme 2023–2030, which is based on the Vision Zero approach. The primary goal is to halve the number of fatalities and serious injuries by 2030 and, in the long term, to achieve zero road deaths on Slovenian roads. Slovenia's national targets are to reduce annual fatalities to no more than 50 and serious injuries to no more than 400 by 2030, using 2019 as the baseline year. The programme emphasizes the protection of vulnerable road users, including pedestrians, cyclists, motorcyclists, children, and older people, and systematically addresses key risk factors such as speeding, alcohol and drug impairment, and driver distraction.

In 2023, the Government adopted the Resolution on the National Road Safety Programme, which set out strategic objectives and established a framework for annual action plans. These plans allow measures to be continuously adapted based on data and results, ensuring alignment with international policies and EU good practice.

Several coordinated measures have contributed to the progress achieved so far. Legislative reforms have strengthened rules on e-scooter use, speeding, and driver distraction, including higher penalties for mobile phone use while driving. Since 2016, the Slovenian Traffic Safety Agency (AVP) has conducted in-depth crash investigations to identify systemic causes and recommend improvements to road infrastructure. In 2024 alone, 26 fatal crashes were investigated, revealing that road design contributed to 23% of crashes and significantly influenced the severity of 35% of cases. These findings have supported continued investment in safer infrastructure, clearer signage, and better road maintenance.

The Slovenian Traffic Safety Agency (AVP) places strong emphasis on prevention, education, and raising awareness, recognizing that improving road safety culture is the key to long-term progress. In 2023–2024, AVP carried out numerous national prevention campaigns, often in cooperation with the police, municipalities, schools, and NGOs. These targeted activities addressed the main risk factors and vulnerable groups. Initiatives included campaigns to improve pedestrian visibility and protect children on their way to school, annual programmes for cyclists and e-scooter users, and measures to raise awareness about the dangers of speeding, such as deploying speed display signs that help reduce average speeds near schools and residential areas. Motorcyclists received dedicated training and workshops to refresh safe riding skills, and older drivers participated in the Sožitje Project, which supports them in adapting to age-related challenges.

All prevention efforts are supported by extensive media campaigns and collaboration with local road safety councils, as well as participation in European Mobility Week. A strong focus is placed on research and data analysis to inform new measures and legislation. Recent studies, for example on the impact of roadside advertising on driver distraction, provide a solid evidence base for future policies.

Slovenia's approach combines also evidence-based enforcement, infrastructure upgrades, education, prevention, and data-driven policymaking. The country's Vision Zero-based strategy has already delivered measurable improvements and is fully aligned with EU and United Nations targets to reduce road fatalities and serious injuries by 50% by 2030.

Overall, AVP's integrated approach aims to build a shared sense of responsibility among all road users and to shape generations that respect traffic rules and each other, thereby reducing risks in the long term.

### **Road Safety Performance Indicators**

The overarching strategic document in the field of road safety is the Resolution on the National Road Safety Program for the period 2023 to 2030 (ReNPVCP23-30). Its main purpose is to improve road safety in Slovenia and reduce the number of fatalities and seriously injured persons in traffic accidents. The document was developed based on a detailed analysis of the road safety situation for the past period (2013-2022) and in cooperation with the Ministry of Infrastructure, AVP, and other key stakeholders. The resolution outlines nine pillars of a safe road system, among which safe road use is one of global pillar. Driving over speed limits, driving under influence of alcohol, driver distraction, and non-use of seat belts, child safety seats, and safety helmets contribute to injuries and fatalities in road traffic.

AVP regularly monitors indicators that significantly influence road safety and accident outcomes. The following presents results from the Trendline project's indicator monitoring, along with findings from previous studies. The Trendline project specifically tracked seat belt usage among drivers and passengers in passenger cars, helmet use among cyclists and motorcyclists, compliance with speed limits, and instances of driving under the influence of alcohol.

Analysis of 2024 results, compared with previous measurements, indicates visible progress in Slovenia's safe road use initiatives. Notably, there has been a significant improvement in the use of safety helmets, with usage among all cyclists reaching 47%, representing an approximate 60% improvement compared to previous measurements. Motorcyclists showed an impressive 99.3% helmet usage, an approximate 15% improvement. Seat belt usage in passenger cars has also improved, particularly among passengers.

Front-seat passengers showed a 96.0% usage rate, while rear-seat passengers had an 86.0% usage rate. Passenger vehicle drivers also maintained a high usage rate of 96.0%. A survey of passenger vehicle drivers revealed that 90.7% had driven without consuming alcoholic beverages beforehand. Furthermore, studies on driving speed measurements on Slovenian roads showed that 74.3% of drivers complied with speed limits. However, the highest percentage of speeding passenger cars was observed on motorways, where only 54.6% of drivers adhered to the speed limit. This figure was significantly higher on urban roads (79.8%) and rural roads (80.2%).

Indicator	Description	2022	2024
<b>Seat belt</b>			
<b>Seat belt - drivers</b>	Share of passenger car drivers observed using a seat belt	96,3 %	96,0 %
<b>Seat belt - front passengers</b>	Share of passenger car front seat passengers observed using a seat belt	94,4 %	96,0 %
<b>Seat belt - rear passengers</b>	Share of passenger car rear seat passenger observed using a seat belt	72,5 %	86,0 %
<b>Helmet</b>			
<b>Helmet - riders of bicycles</b>	Share of riders of bicycles wearing a protective helmet	29,2 %	47,0 %
<b>Helmet - riders of PTWs</b>	Share of riders of PTWs wearing a protective helmet	86,8 %	99,3 %
<b>Speed</b>			
<b>Adhering to the speed limit</b>	Share of passenger car travelling within the speed limit	/	74,3 %
<b>Alcohol among drivers</b>			
<b>Driving under the influence of alcohol</b>	Percentage of drivers driving within the legal limit for blood alcohol concentration	/	90,7 %

The indicator monitoring results confirm that substantial progress has been made, particularly in improving seat belt usage in cars and helmet use on bicycles and motorcycles. To achieve future goals, additional activities are planned, focusing on improving compliance with legal speed limits and addressing driving under the influence of alcohol, drugs, and other psychoactive substances.

# Appendix E Details of Q1-results

## Use of KPIs in road safety policies

Spring 2023 (Q1) -Eight (of 26) countries provided specific examples of KPIs that they are or have been using on regional and/or local level. Five of the eight Baseline/Trendline KPIs were mentioned, with 'speeding' being mentioned most often (four countries, see *Fout! Verwijzingsbron niet gevonden.13*). Two of these countries also mentioned other KPIs: 1) behaviour at pedestrian crossings (especially near schools) and 2) cyclists' habits and equipment. One of the countries that measures speeding mentioned that regional targets are not perfectly aligned with national targets, stating: "An example could be that on national level we have KPI units such as distance driven on roads or incoming AADT in intersections, while on regional/local level it tends to be road length or number of intersections of a specific type".

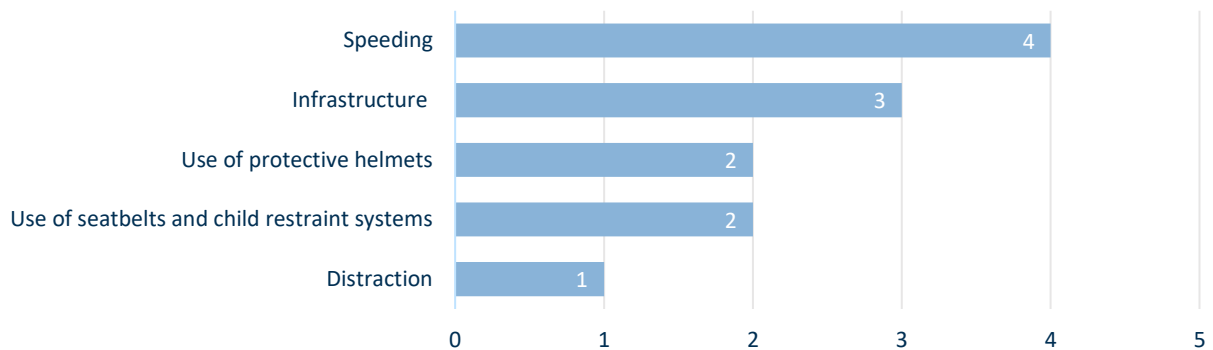


Figure 13. Number of countries that measure a KPI on a regional or local level - answers from Q1.

Three other countries stated that they are (planning on)/have been measuring KPIs on regional and/or local levels but did not specify the KPIs. One country stated that they are measuring KPIs on regional and local levels to "provide data to improve rescue operations, decrease impact of crashes, and develop regional infrastructure and policies to provide safe conditions and environment for everyday life" and that the KPIs are "related to regional policies and planning associated with pedestrians, cyclists, e-scooter drivers, and motorcycles". Another country stated that they "are looking at some simple KPIs for local municipalities. These should be easy to measure and monitor (e.g. share on 30 km/h zones from the whole road network, number on road crossings from certain safety threshold, number on school zones with safety level higher than...)". The third country stated that "in the past years, some local administrations have collected KPIs specifically for road safety policy evaluation purposes. However, we are not currently aware of any continuous monitoring of KPIs (e.g. as a part of a medium-term strategy). As part of Trendline, we will be collecting KPIs and stratifying the sample per 3 macro-regions to capture a more comprehensive view of the impact of national and local policies".

The remaining countries either marked the question as NA (not applicable, 12 countries) or answered that Road Safety plans are created by local authorities and that they can choose whether or not KPIs at local levels are included (two countries) or that, due to the small size of their country, KPI efforts are coordinated on a national level (one country).

## KPIs measured at country level

Spring 2023 (Q1) - *Fout! Verwijzingsbron niet gevonden.*<sup>14</sup> shows the frequency of countries that are measuring the listed Baseline/Trendline KPIs.

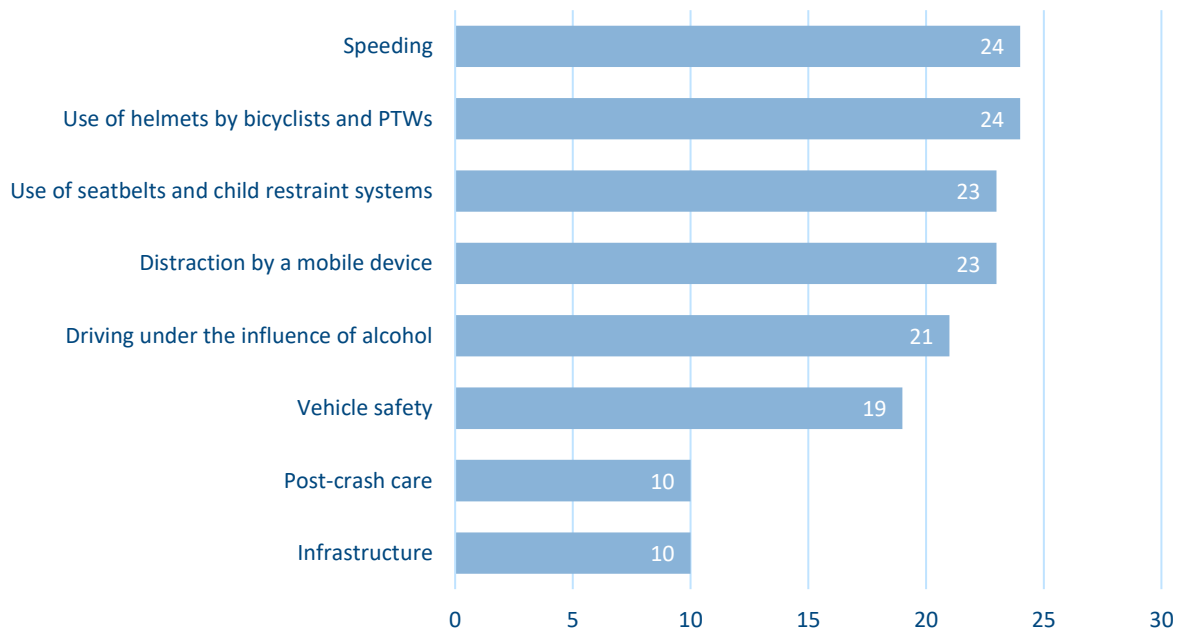


Figure 14. Number of countries that measure a KPI. PTWs = powered-two-wheelers.

Twelve countries have reported that they measure KPIs other than those provided in the questionnaire. These KPIs are:

- Speed-indicators
  - Speeding for motorcyclists
  - Speeding for vans
  - Average speed (2 countries)
  - 85<sup>th</sup> percentile of free speed distribution
  - Speed of personal mobility devices (PMDs, including E-scooters)
  - Speed of cyclists
- Driver under influence
  - Driving under the influence of alcohol for motorcyclists
  - Use or driving under the influence of drugs (3 countries, of which 1 specifically mentioned drivers and motorcyclists)
- Use of signals and other visuals
  - Red light compliance of pedestrians
  - Red light compliance of drivers
  - Use of reflectors by pedestrians
  - Use of reflective materials by PMD (including E-scooters)
  - Use or reflective materials by cyclists.
  - Use of turn signals by car drivers
- Attention-related indicators.
  - Fatigue (2 countries, of which 1 specifically mentioned drivers and motorcyclists)

- Distraction by a mobile device for pedestrians
- Distraction by mobile phones or headphones by pedestrians while crossing the street.
- Activities of authorities
  - Educational activities in the primary school system
  - Road safety plans in municipalities
- Protective equipment
  - Use of protective helmets by riders of PMDs (including E-scooters, 2 countries)
  - Use of protective clothing by riders of PTWs
- Safe distances
  - Distances between vehicles
  - Safe distance between PMDs (and other vehicles)
  - Safe distance between cyclists (and other vehicles)
  - Safe distance between PTWs (and other vehicles)
- Legal documents
  - Absence of vehicle insurance
  - Absence of relevant driver's license
- ADAS and other vehicle safety
  - New passenger cars equipped with ISA and AEB
  - Traffic volume with highest Euro NCAP safety rating
  - Official statistics on share of new cars sold and distance driven.
- Infrastructure
  - Share of rural roads with forgiving roadside
  - Share of national road network roads through villages complying with safe system principles
  - Share of pedestrian and cyclist crossings respecting safe system principles
  - Share of intersections respecting safe system principles
  - Traffic volume with median barrier on roads with speed limits  $\geq 80$  km/h
  - Traffic volume with median barrier on roads with speed limits  $\geq 90$  km/h
  - Traffic in intersections with high safety ranking
  - Traffic in intersections with high or medium safety ranking
  - Safe pedestrian, cycling and moped passages.
  - Safe or medium safety ranked pedestrian, cycling, and moped passages.
  - Share of 30 or 40 km/h speed limit in urban areas (30, 40 or 50 km/h)
  - Municipalities with good quality maintenance of pedestrian and cycling paths.
  - Road design for suicide prevention in urban areas (bridges, motorways, and viaducts)
- Compliance with giving the right of way at intersections (different vehicle types)
- Pedestrian-driver interactions around pedestrian crossings
- Attitude towards risky behaviour
- Number of car occupants

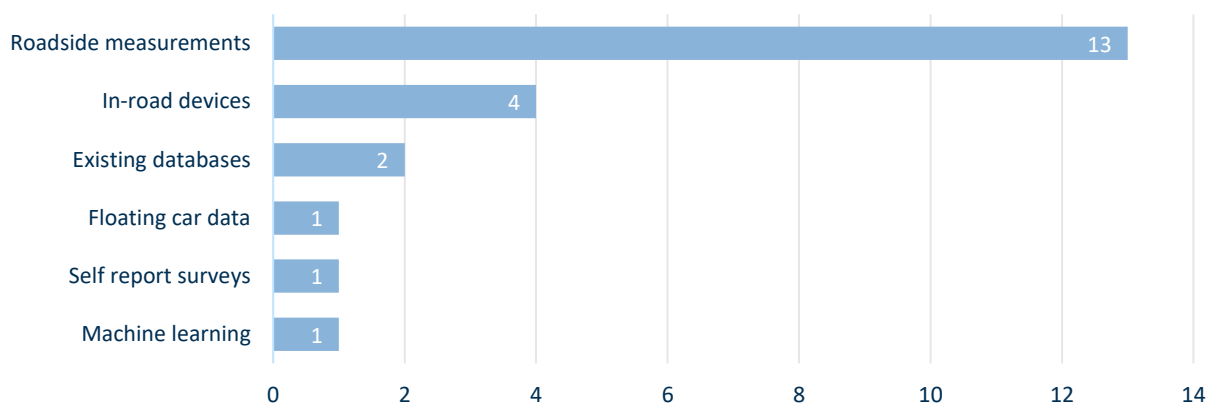
### Types of data collection methods used

*Spring 2023 (Q1)* - Countries were prompted to report the types of data collection method for each KPI. This was done by 13 (of 26) countries. Four (of 26) countries reported the data collection method for some, but not all, KPIs that they are measuring. The remaining nine countries did not report their data

collection methods in a way that they could be matched with the KPIs.<sup>4</sup> The following paragraphs summarize the reported data-collection methods for each of the eight Baseline/Trendline KPIs. Some countries have reported more than one data-collection method per KPI.

### Speeding

The data-collection methods for speeding were reported by 16 of the 24 countries that are measuring this KPI. Roadside measurements were mentioned most often (13 countries, see *Figure 15*). When we compare the data-collection methods that are used by the countries with the Trendline methodological guideline for speed measurement (Laiou et al., 2023), roadside measurements and measurements with in-road devices seem to fit in the Trendline standard. Possibly also data from existing databases might fit in, depending on the original measurement method that has been used.



*Figure 15. Data collection methods for speeding – answers from Q1.*

### Use of seatbelts and child restraint systems

The data collection methods for the use of seatbelts and child restraint systems were reported by 17 of the 23 countries that are measuring this KPI. Roadside observations were mentioned most often (15 countries, see *Figure 16*). This is in line with the Trendline methodological guidelines (Kšicová et al., 2023a) which recommend the use of roadside observations. In addition, detailed in-vehicle inspections for CRS are recommended. The results show that at least two countries also use these vehicle inspections.

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4. This includes countries referring to external documents.

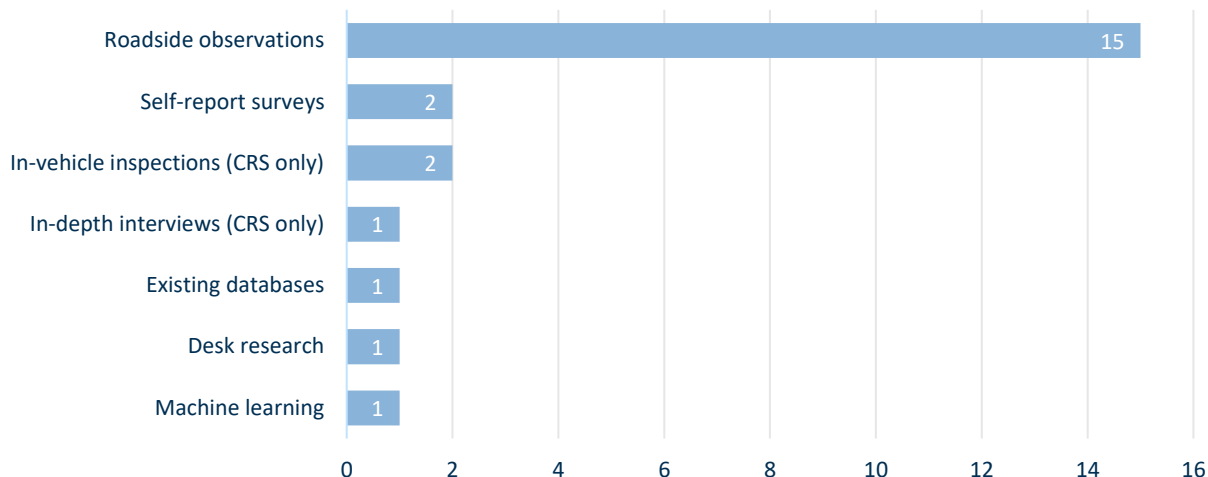


Figure 16. Data collection methods for the use of seatbelts and child restraint systems – answers from Q1.

### Use of helmets by bicyclists and powered two-wheelers

The data-collection methods for the use of protective helmets by bicyclists and powered two-wheelers were reported by 17 of the 24 countries that are measuring this KPI. Roadside observations were mentioned most often (15 countries, see Figure 17). As with the use of seat belts and CRS, this is in line with the recommended method of Trendline (Kšicová et al., 2023b). Also, the use of camera and validated automatic detection is allowed in the Trendline methodology. One country specified to use this type of roadside observation method.

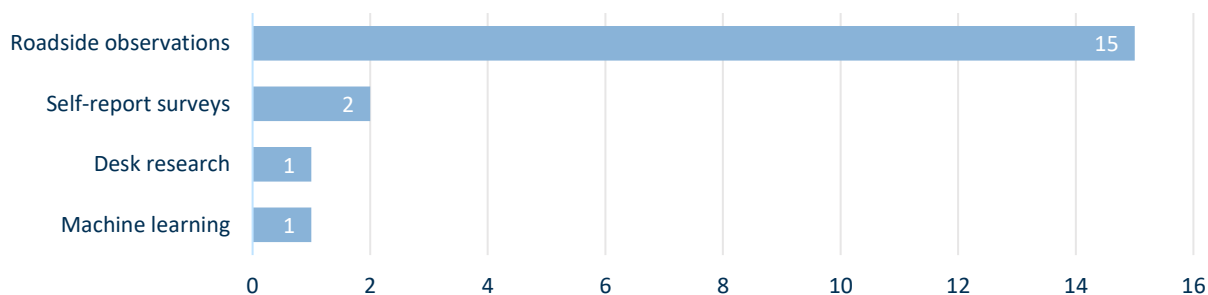


Figure 17. Data collection methods for use of protective helmets by riders of bicycles and powered two-wheelers – answers from Q1.

### Driving under the influence of alcohol

The data-collection methods for driving under the influence of alcohol were reported by 16 of the 21 countries that are measuring this KPI. Self-report surveys were mentioned most often (8 countries), closely followed by roadside observations/inspections done by or in collaboration with the police (6 countries, see Figure 18). According to the methodological guidelines of Trendline, driving under the influence of alcohol can be measured at the roadside by random breath testing, or – alternatively – via self-reporting surveys that are trip-based or period-based (Boets et al., 2023). Most countries seem to follow one of these observation methods, as far as we can conclude from the information provided.

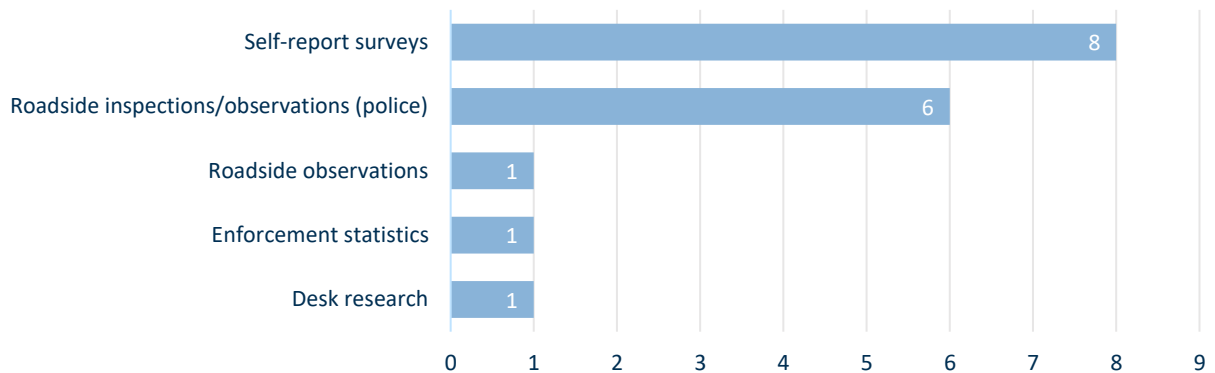


Figure 18. Data collection methods for driving under the influence of alcohol – answers from Q1.

### Distraction by a mobile device

The data-collection methods for distraction by a mobile device were reported by 14 of the 23 countries that are measuring this KPI. Roadside observations were mentioned most often (12 countries, see Figure 19). This is the preferred and described method in the Trendline methodological guidelines for the measurement of distraction by mobile devices (Stelling et al., 2023).

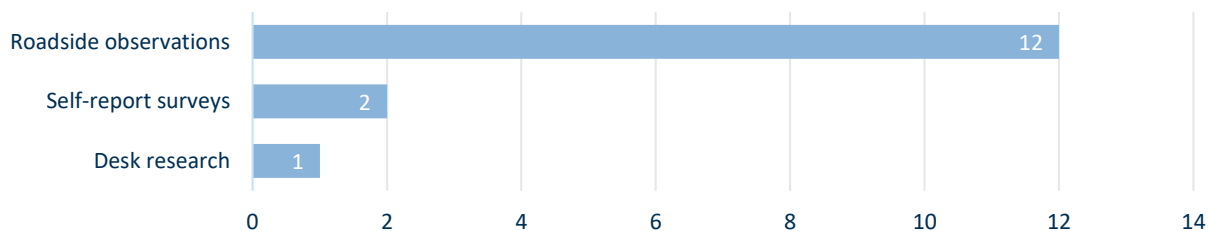


Figure 19. Data collection methods for distraction by a mobile device – answers from Q1.

### Vehicle safety

The data-collection methods for vehicle safety were reported by 11 of the 19 countries that are measuring this KPI. All countries seem to use existing databases. From these existing databases, many different types of data are being collected: Euro NCAP data, car registry data (age, new cars sold, brand, model, and passing periodic technical inspections), traffic police data, and distance driven. One country also reported using self-report surveys. In the Trendline methodological guideline for measuring vehicle safety (Wardenier et al., in preparation), a match is required between Euro NCAP ratings and the vehicle parc data. This requires Euro NCAP data and car registry data such as age, brand and model.

### Infrastructure

The data-collection methods for infrastructure were reported by 6 of the 10 countries that are measuring this KPI. The use of existing databases was mentioned most often (4 countries, see Figure 20). Two countries elaborated on how these existing databases are established: one country stated that their database is a collaboration of all road authorities who deliver information on their road network to the database. The other country provided a detailed description on how a GIS database with layers of information on infrastructural elements and regulations is managed. The Trendline methodological guidelines for measuring safe infrastructure (Dragomanovits. & Van den Berghe, 2023), explains how

this can be assessed by data about (mainly) road design matching the specific road type. The safe infrastructure indicator primarily uses the EGRIS Network-Wide Assessment (NWA) for this, but also national methods are possible. A further analysis would be required of the national practises to get a better picture on how these practises match to the Trendline guideline.

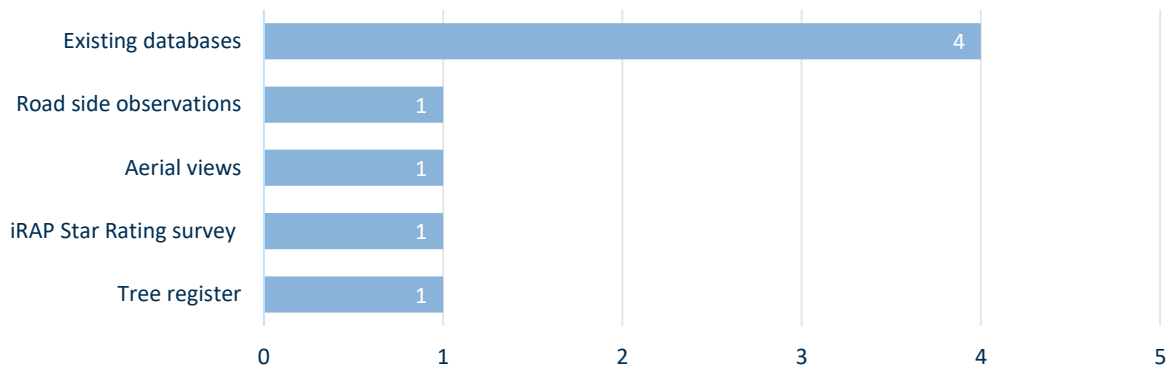


Figure 20. Data collection methods for infrastructure – answers from Q1.

### Post-crash care

The data-collection methods for post-crash care were reported by 8 of the 10 countries that are measuring this KPI. All countries stated that they are using existing databases, with most of them specifying that these are emergency service databases. As can be learned from the Trendline methodological guidelines on measuring post crash care (Weijermars et al., 2023), the use of national emergency service databases is the preferred methodology. Alternatively, a sample could be used from responses to emergency calls.

### Dissemination of information about KPIs

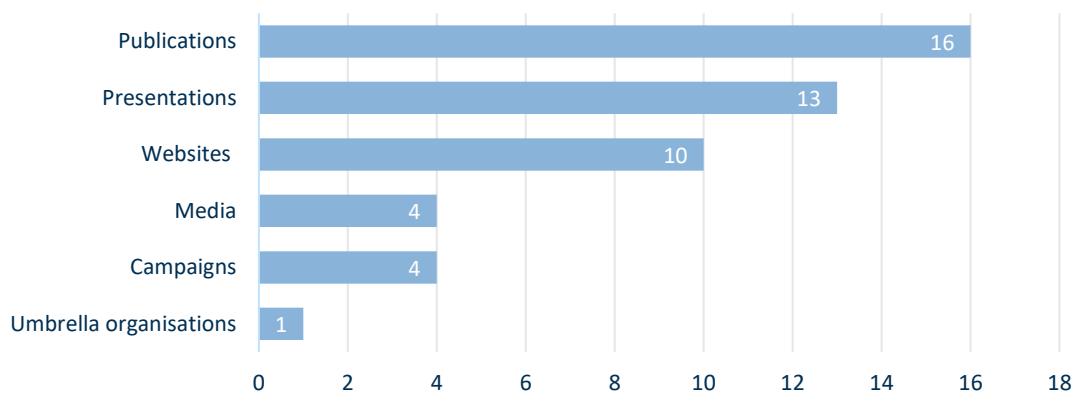


Figure 21. Number of countries that mentioned a way of communication - answers from Q1.

Spring 2023 (Q1) - Ways of communication that were mentioned are provided in Figure 21.

Three countries specifically stated that they are tailoring messages towards the target audiences they are addressing (e.g. more technical for the scientific community and more straightforward for administrators and stakeholders).

## Target setting for KPIs

*Spring 2023 (Q1)* -The eight countries that have set targets, provided the following information on the way they set targets:

1. Whether these targets will be used in addition to killed and seriously injured statistics.
  - Five countries clearly stated that this was the case.
  - One country clearly stated that this was not the case (but that targets have been defined on a national level per field of action, which contains multiple KPIs and measures).
  - Two countries did not specify this.
2. Arguments for and against target setting.
  - One country stated that you need to have an idea of where you want to go if you want to accomplish something.
  - Seven countries did not state arguments for or against target setting.
3. Arguments that are used to determine the level of target(s).
  - One country stated that they tried to set reasonable goals, which were oriented towards international values.
  - One country stated that KPIs are being used to reach both targets for killed and seriously injured and that the argument is that successful KPIs have a clear link to road safety, a significant safety potential and verified effects of relevant countermeasures.
  - Six countries did not state arguments for determining their target levels.
4. Methods that have been used for target setting.
  - One country stated that they used back-casting as described in Strandroth et al. (2012).
  - One country stated that they started with an overall expert-assessment of the road safety of their country compared to other EU countries. They then used the KPIs as calculated within the Baseline project as their baseline measure, while the respective targets for 2025 and 2030 were formulated based on the current level of performance of the best performing countries in the EU.
  - Six countries did not state which methods they have used.

One country stated which targets they have set for their KPIs.

## The influence of Baseline/Trendline in the use of KPIs in the policy process

*Spring 2023 (Q1)* -The influence of Baseline/Trendline on the use of KPI's in the policy process differs largely between countries. Five (of 26) countries indicated that they have a long history of working with KPIs and that Baseline/Trendline did not influence their use of KPIs in the policy process in a significant way, while three other countries indicated that they measured KPIs for the first time during Baseline and that the project gave a significant impulse to the collection of KPIs (and the subsequent use of the results in policy) in the coming years.

Thirteen countries that reported other impacts of Baseline/Trendline indicated that the projects influenced them by:

- Providing a framework to resume the collection of KPIs and/or collect additional KPIs.

- Providing clear methodological guidelines<sup>5</sup> (and access to the Trendline Key Expert Groups).
- Helping to refine existing KPIs (inspired by discussions within the project).
- Furthering the development of the existing concept for the use of KPIs.
- Helping to formulate objectives for road safety plans/strategies.
- Helping to move from reactive to proactive policy preparation and implementation.
- Providing a coherent international basis to support the inclusion of KPIs in road safety plans/strategies and enabling comparisons with other countries (which in some cases has already resulted in legislative changes to address the identified problem areas).
- Enabling data collection through co-financing.

Four countries indicated that they were not involved in Baseline but that they observed the project with great interest. One of these four countries even indicated that they used the Baseline methodological documents to define a preliminary data collection method for KPIs and that they conducted multiple data collection campaigns. One other country indicated that they could not provide an answer to the question at this time.

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5. One country stated that some methodological guidelines made it difficult to utilise nationally collected data.