

Strategic targets board as a management tool for Spanish road safety

Pilar Zori Bertolin
Spain
Spanish Road Safety Observatory
Direccion General de Trafico. Ministerio del Interior.
pzori@dgt.es

Introduction

According to the World Health Organization's estimates, 1.2 million people die annually and more than 50 million are injured because of traffic accidents.

These figures and their important human, social and economic consequences have required national and international political authorities' attention recognizing the need for reducing the number of deceases and injuries caused by traffic accidents. Moreover, in the last decade, international organizations concerning road safety and many different countries have set ambitious goals to reduce the number of deaths.

Spain, in line with the European target set to reduce fatalities by 50%, adopted its 2004-2008 Road Safety Strategic Plan. This Plan attempted the reduction by 40% on the number of deceases because of traffic accidents.

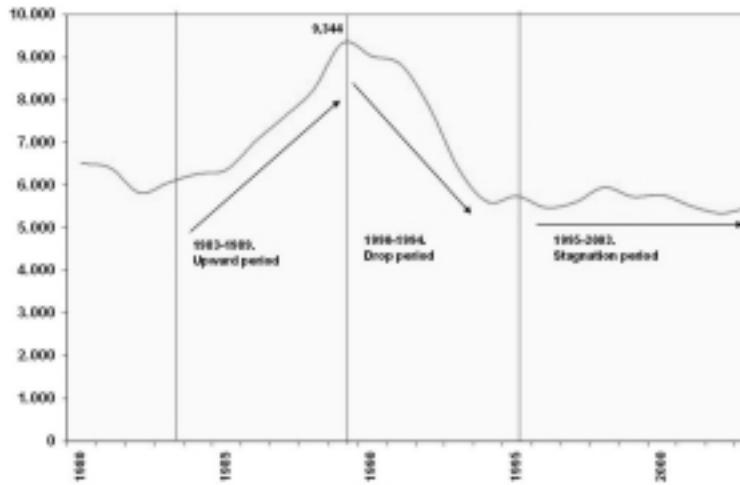
The Plan's goal has been achieved satisfactorily: 3.102 people died in Spain during 2008, 43% less than in the base year of the Plan (2003). Yet despite this important reduction in the mortal accident rate of Spain, the new Road Safety Plan continues to strive to achieve safer mobility.

Situation before the implementation of the 2004-2008 Road Safety Strategic Plan

In analysing the evolution of the number of mortal victims in Spain since 1980, different periods are identified:

- Between 1983 and 1989: There is an increase of the people killed in road traffic accidents. 1989 is the year with the largest number of deceases in road accidents, adding up to 9.344. In this period the vehicle fleet increased by 28% and the traffic's volume outside urban areas was increased by 41%, while high-capacity roads were only 3.505 km.
- Between 1990 and 1994: in 4 years, it is obtained a reduction in the number of killed to 33%. Is in this period when the new law of Road Safety was approved and there was an enormous constructive effort to improve high-capacity roads that in 1994 achieved 6.497 km , approximately twice. The increase of the traffic's volume outside urban-areas was a 17%.
- Since 1995 to 2003: there was not a clearly trend in the number of deaths. (+-5%), the traffic's volume increased by 42% in this period, and in 2003 the leght of high-capacity roads was 10.296 km.

In this last period of time, annual road safety plans were worked out, collecting the different activities from the official stratum. At these annual plans there were not marked quantified goals in accidents reduction..



Graph 1: Number of killed in road traffic accidents. Evolution.

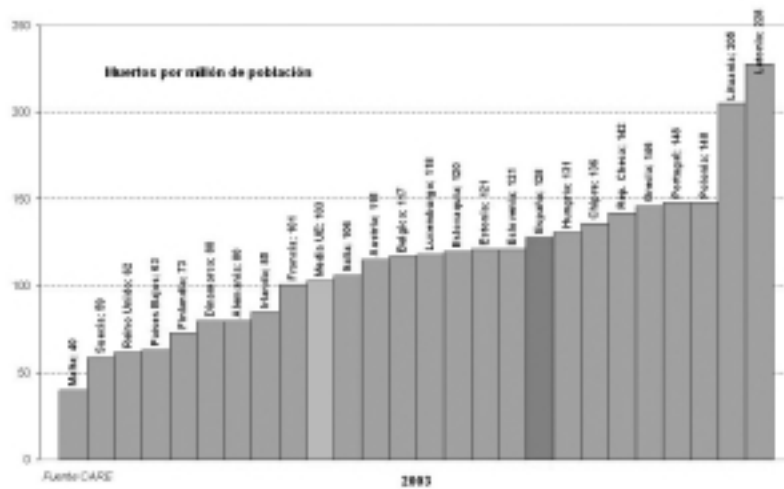
International context

In 2004, in Spain, all political groups included in their political programs, targets for reducing the number of road traffic deaths, showing their implication with road safety. It was in 2004, too, when the Spanish goal for reducing the number of deaths in road accidents by 40% was assumed. This goal was aligned with EU goal of 50% reduction and also with the objective set up by ECMT.

Looking at the Spanish road safety situation in 2003 from the international level, we can appreciate how ambitious the Spanish objective was: Spain had a mortal accident rate of 128 deaths per million population, while the European Union showed a rate of 103.

This rate placed Spain far away from the countries with the best results in terms of road safety: Sweden, United Kingdom and The Netherlands.

The reduction of 40%, which was also established for the rate of deaths per million population, meant that in 2008 this rate would be set at 76, less than the one held by Germany in 2003.



Graph 2. Killed by million population

The Spanish Road Safety Plan

The Spanish Road Safety Strategic Plan has three axis:

- 1.- In 2004 DGT introduced a group of 2004-2005 Road Safety special measures in order to achieve quickly the results:

The measures were the introduction of the Penalty Points license, Creation of the National Road Safety Observatory, Promotion of the Road Safety Council, A Significant Increase of traffic Agents and the introduction of speed cameras in highways.

- 2.- With the purpose that the previous measures have a lasting effect over time, it was elaborated the 2005-2008 Key Strategic Action Plan, in which civil society and the rest of administrations play a crucial role in its elaboration, performance and monitoring process.

The elements of 2005-2008 Key Strategic Action Plan were:

To coordinate the Agents: ministries, regional and local management

To identify specific targets from the accident pattern analysis, in order to set up specific targets and measures for the priority road users.

To establish an indicators system which allow to measure and to evaluate the targets and the actions and measures progress.

Monitoring the Plan each six months.

The Plan is an integral model with measures from user-behaviour point of view, vehicles security and infrastructure.

- 3.- In order to address the traffic accidents in urban areas, it was elaborated a Basic Urban Road Safety Plan, aimed at defining a methodology for interventions in this specific area of road safety policy.

The score board basic indicators

The score board basic indicators was based on the analysis of the pattern of injury accidents ordered around 3 pillars (user, vehicle and road) and 2 additional lines of analysis (timing factors and gravity).

Historical data and the European objectives in order to adapt to the Spanish case were analyzed. The resulting pattern was as follows:

- A high number of people killed by night (37%) and in the weekend (42%).
- Motorcycles were the only group of vehicles which increase their presence in injury accidents.
- The 57% of dead people was a passenger car's occupant and the main problems were alcohol, 36% of the killed drivers, speeding in the 29% of the fatal accidents and the lack of use of seat belt and helmet in mopeds.

From these results, we identified 26 strategic objectives in the belief that achieving these targets for a long time would improve road safety in Spain.

The strategic objectives taking 2003 as base year, and establish for the year 2008 objectives of reducing accidents, such as the objectives of reducing the number of deaths by 40%, the reduction in the number of serious injuries by 24%, reducing the number of deaths and serious injuries on weekend and others.

Not only objectives directly related to the results of accidents are considered, but also includes road safety performance indicators, such as reaching a 90% of the seat belt use in urban areas in front seats or to decrease the rate of drivers killed with positive alcohol to a 20%.

STRATEGIC OBJECTIVES	HISTORICAL 2000	REFERENCE 2005	TARGET 2008
1 Reduction in the total fatalities in accidents per million inhabitants	145	127	76
2 Reduction in the total number of fatalities/serious injuries	5,726 - 27,764	5,395 - 26,365	~3,290 - 21,000
3 Reduction in the ratio of fatalities per 100 casualty accidents	5,7	5,4	3,4
4 Reduction of the total no. of casualty accidents	101,729	99,887	95,000
5 Reduction in the number of motorcycle riders between 15 and 20 years old killed/seriously injured in casualty accidents	194 - 2559	136 - 1,799	<100 - 1,000
6 Reduction in the number of serious (>18 years old) killed/seriously injured as passengers in private car casualty accidents	141 - 753	135 - 827	100 - 494
7 Reduction in the number of private car drivers between the ages of 15 and 24 killed/seriously injured in casualty accidents	982 - 4,297	952 - 4,286	~600 - 2,800
8 Reduction in the number of private car driver/passenger/pedestrian riders >34 years old killed/seriously injured in casualty accidents	1,052 - 3,573	1,063 - 3,922	~750 - 3,200
9 Reduction in the number of pedestrians >49 years old killed/seriously injured in road accidents in urban areas	263 - 1,205	204 - 967	~300 - 700
10 Reduction in the total number of killed/seriously injured in summer (July and August)	1,167 - 5,322	1,119 - 5,170	725 - 4,008
11 Reduction in the total number of killed/seriously injured on weekends	2,687 - 11,691	2,401 - 11,716	1,500 - 8,800
12 Reduction in the percentage of young people between 15 and 29 years old killed/seriously injured in casualty accidents on weekends	998 - 5,136	863 - 4,255	325 - 2,008
13 Reduction in the average age of the vehicle fleet	58% < 30 years	59% < 10 years	60% < 10 years
14 Reduction in the total number of requests involved in casualty accidents on urban roads	72,417	16,911	11,403
15 Reduction in the total number of motorcycles involved in casualty accidents	10,810	12,211	9,240
16 Reduction in the total number of heavy vehicles for goods transport involved in casualty accidents on roads and conventional roads	3,297	2,109	2,890
17 Reduction in the percentage of drivers exceeding the speed limit with respect to the total number of drivers checked on the road	=	51% (2005 data)	15%
18 Increase in the number of total alcohol roadside checks (in million) and 20% of the driver census is achieved	1,7 (9,3%)	2,6 (11%)	4,6 (20%)
19 Reduction in the percentage of fatalities among drivers with blood-alcohol levels >0,2 g/l	41,3%	37,3%	30%
20 Increased use of front and rear-seat safety belts in urban areas and rear-seat safety belts on the road	85% F, 91% R, urban 41% R, road	81% F, 84% R, urban 45% R, road	90% F, 70% R, urban 70% R, road
21 Increased use of crash helmets by motor riders/passengers in urban areas	67% F, 36% R (motorcycle operators and passengers)	65% F, 51% R (on all 2-3 wheel motor vehicles)	93% F, 75% R
22 Reduction in the total number of killed/seriously injured per type of road (motorway, highway, conventional road)	357 - 1,128 M 784 - 2,898 H 3,487 - 11,222 CR	570 - 1,218 M 723 - 1,142 H 3,108 - 10,212 CR	290 - 1,200 M 930 - 2,900 H 2,080 - 11,080 CR
23 Reduction in the number of road accidents involving vehicles leaving the road	17,421	19,420	17,000
24 Reduction in the number of road casualty accidents with road-related factors associated with the road (road conditions/signposting, construction zones)	851	870	750
25 Reduction in the total number of "black spots"	890	998	880
26 Reduction in the number of fatalities per 100 accidents in "black spots"	8,1	6,6	5

Graph 3. Score board basic indicators

Monitoring Methodology: continued evaluation

The establishment of these strategic objectives has helped to track the evolution of the major problems of road safety.

For following the development of the Plan, there are three bodies involved in its evaluation:

The National Road Safety Observatory, that provides the indicators each six months and prepares the Report of Activities, the Annual Action Plan and the Annual Evaluation Report.

The second body is the Director Committee, that is integrated by the DGT General Director, Infrastructure General Director, Public Health General Director and others Directors involved in Road Safety. This Committee follows evolution of the targets and the degree of implementation of the Action Plan. This is an executive Committee and they meet each six months.

Finally the Road Safety Council is advised of the status of the Plan's performance and the achieved results. It is a body of participation through working groups that are created within it.

2003-2008 main indicators' evolution

Of the objectives outlined in the Plan, some were reached in 2008. This is the case of the total number of deaths, total number of seriously injured, moped riders fatalities, child casualties in tourism, victims in summer time (July + August), young victims (18 and 29 years old) at weekend.

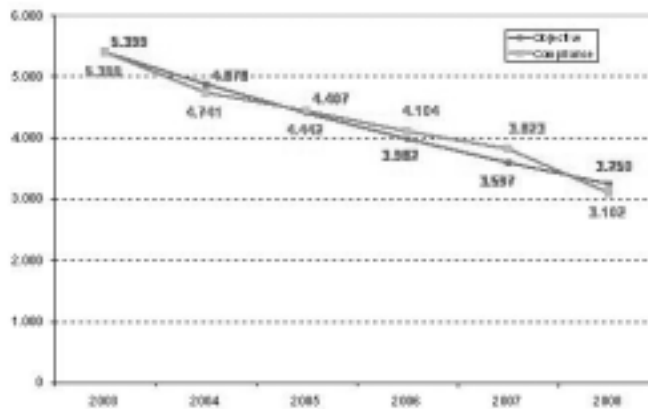
There is another set of goals that are unlikely to be achieved, although they are showing a downward trend. This is the case of the people killed at weekends, or the number of deaths in conventional roads.

And finally, there is another set of targets that show an increasing trend. This is the case of motorcycles and pedestrian more than 45 years old in urban areas.

These are some cases of the indicator's evolution. The line in blue shows the objective and the line in green shows the actual data.

Case 1.

The indicator named as "Number of deceases" has fallen by 43% between 2003 and 2008. This indicator has declined every year during the period observed without rebounding upward, and the number of deaths in 2008 (3.102) is lower than that established in the Road Safety Plan (3.250).

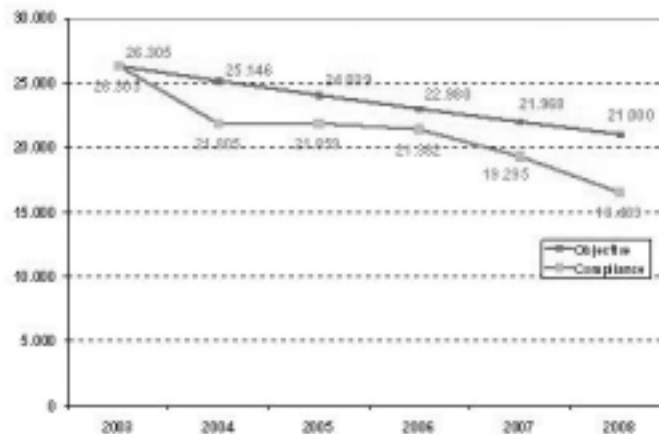


Graph 4. Deaths in traffic accidents

Case 2.

With regard to the number of road users seriously injured, the goal set in the Plan consisted on achieving a reduction by 20%. This objective has already been achieved in 2007, when the reduction since 2003 represented 27%. In 2008, the number of people seriously injured was 16.489, a reduction of 37%.

In Spain a person is considered seriously injured when he is at the hospital more than 24hours.



Graph 5. Seriously injured in traffic accidents

The cases mentioned above are related to overall objectives. Let's consider now the evolution of some specific objectives.

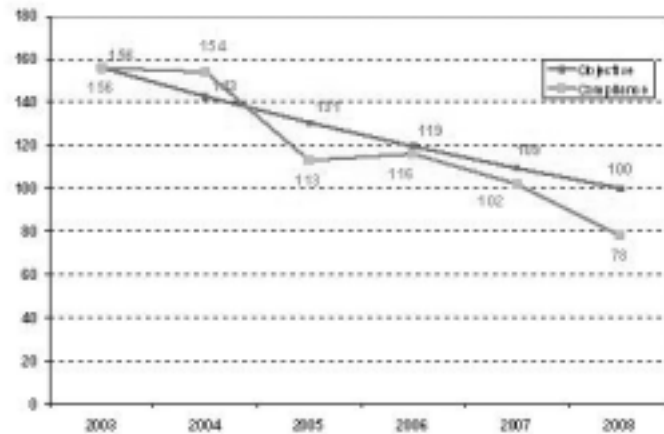
Case 3.

There were established targets for vulnerable road users and one of them was the users of mopeds, aged between 15 and 20 years old.

This age group was in 2003 the 40% of the killed in moped. Moreover, almost half of the deaths in that age group did not use helmets.

The figures of the series shows a reduction in the number of mopeds deaths from 2003 to 2008, this last year the reduction was a 50%

Oral Presentations



Graph 6. Mopeds deceases between 15 and 20 years old.s

One of the goals outlined in the Road Safety Plan was to increase moped helmet use in urban areas. The target for 2008 was to achieve a use rate of 95%, we started from a rate of use in 2003 of only 66%. The figures indicate that the goal has been reached, being this increase of the helmet use one of influence factors in the reduction of the number of deceases in motorcycle.

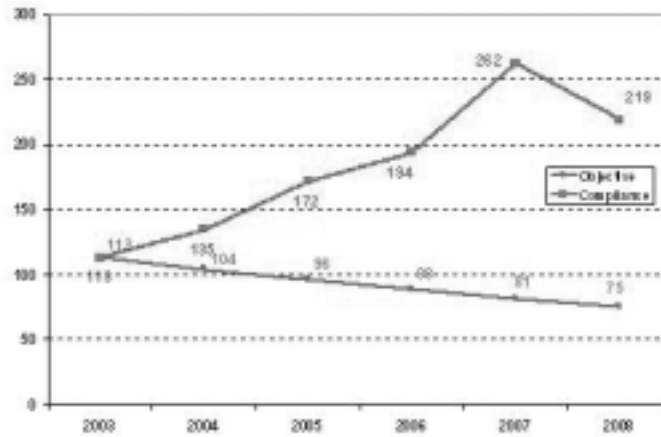


Graph 7. Use of helmet in moped's riders in urban areas.

As an example of measure that has been taken, every year, in addition to the usual enforcement of helmet use, it has been made a specific campaign for the use of helmets in mopeds. The police surveillance's campaign joins an information campaign in the media.

Case 4.

We are going to consider now the opposite trend. This is the case of those killed in motorcycle. Drivers over 34 years for cars and for motorcycles were selected as a group of interest and a reduction by 34% was established. This goal is not going to be achieved and the figures show an increasing trend: between 2003 and 2008 this indicator has grown, with a strong annual growth up to 2007.



Graph 8. Killed riders on motorcycle more than 34 years old.

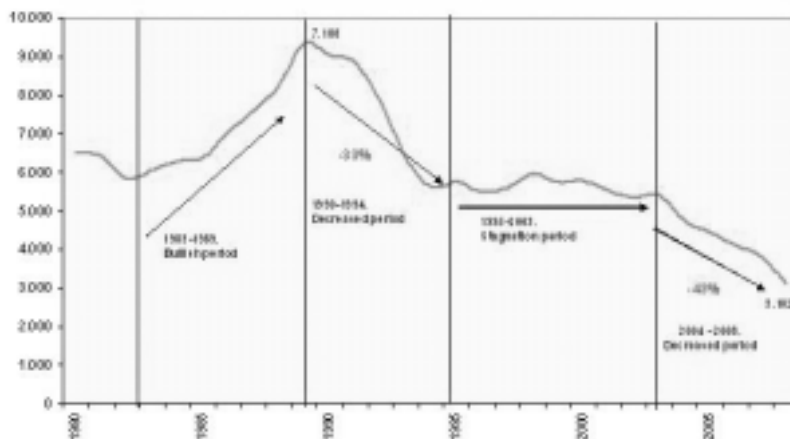
The number of deaths in motorcycles shows an opposite trend to other vehicles, including mopeds, whose figures of deaths go down.

The monitoring indicator of motorcycles has served to highlight the problem quickly, so that in 2007 it was established a Working Group with the participation of all stakeholders and launched a motorcycles plan, which executive summary is available in English in the following address:

http://www.dgt.es/was6/portal/contenidos/documentos/seguridad_vial/planes_seg_vial/sectoriales/plan_sectorial006.pdf

Main measures carried out during the 2004-2008 Plan.

As already shown in Figure 1, during the period previous to the 2004-2008 Road Safety Plan, the number of deaths in road traffic accidents was stuck at around 5.000 deaths per year. It is in the year 2004 when it begins to experience a period of continuing decline in the figures of people killed (see graph 9) and this is due to the introduction of many measures in this period of time.



Graph 9: Number of killed in road traffic accidents. Evolution.

The main measures which have been carried out are stated as follows:

- In July 2004 the National Road Safety Observatory was created.
- In September 2004 the automatic speed cameras Plan 2005 -2008 was launched
- The Road Safety Strategic Plan 2005-2008 was designed at the end of 2004.
- A new system for collecting accident data was established in January 2006.
- Road Safety was introduced as a compulsory subject in the Educational System in May 2006.
- The Penalty point system was introduced in July 2006.
- Specific Prosecution for Road Safety was created in November 2006.
- Urban Road Safety standard pattern Plan was finished in 2007
- Estrada, administrative center for processing overspeeding fines was created in 2007.
- The Strategic Plan for Motorcycles was launched in 2007
- The reform of the Spanish Penal Code was done at the end of 2007: main issues were regarding alcohol, speed and driving without licence.

Conclusions

- Targets are primarily considered as a performance management tool, used to gauge progress over time towards a desired objective and compare that progress. This makes it easier to assess the achievements, to carry out the measures and to promote the participation of the involved organizations.
- It is necessary to work in targets that also provide a way of ensuring accountability for public monies spent towards the achievement of government goals.
- But obtaining indicators quickly is not an easy task. In this sense, we have identified the need to fully automate the process of obtaining results, and promote the collection of information from other agents external to DGT.
- The constant assessment process helps us in identifying particular problems and defining specific measures for its treatment. For example, during the period 2005-2008, the evaluation of the indicators related to motorcycles has allowed the design of a collection of actions to improve the road safety of this specific group.
- The Strategic Objectives panel for 2005-2008 has offered the opportunity to learn some lessons:
 - The road safety targets should be more rigorous, easy to measure and achievable.
 - Stakeholders must agree on the targets and see the benefits.
 - They must be useful as motivation to work in casualty reduction activity and carry out efficient measures.

References

- World Health Organization (2009). Global Status Report on Road Safety.
- Commission of the European Communities (2001). White Paper. European transport policy for 2010:time to decide.
- Dirección General de Tráfico (2004).Road safety special measures 2004-2005.
- Dirección General de Tráfico (2005).Key Strategic Action Plan 2005-2008.
- Dirección General de Tráfico (2004). Statistical Yearbook 2003.
- Dirección General de Tráfico (2005). Statistical Yearbook 2004.
- Dirección General de Tráfico (2006). Statistical Yearbook 2005.
- Dirección General de Tráfico (2007). Statistical Yearbook 2006.
- Dirección General de Tráfico (2008). Statistical Yearbook 2007.