

ESV CONFERENCE 2015 - ITALIAN GOVERNMENT STATUS REPORT

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ABSTRACT

This paper provides an overview of the main results achieved by Italy in the field of road safety during recent years. It focuses on the “National Plan on Road Safety” adopted in 1999, on its follow-up, in particular on its last edition titled “Horizon 2020”.

After a general introduction of main road safety results, this paper describes the principal measures adopted during the last period, focusing on regulatory policies and enforcement.

A brief description of the research activities in the field of vehicle safety is given as well as a summary of the main recommended actions to improve road safety.

GENERAL

Road Safety in Italy

In the period 2001-2010 Italy has reduced its fatality rate from 125 fatalities/10⁶ inhabitants to 68 fatalities/10⁶ inhabitants which is about 46% reduction. Figure 1 shows the reduction of mortality rate recorded in the same period in the Europe Union [EU 27] Member States.

Between 2001 and 2013, Italy recorded a 52% reduction of fatalities (from 7,096 to 3,385) as well as 31% reduction of injured. It should be highlighted that the reduction of fatalities is more significant in the recent years since in the period 2001 – 2010 it was about 42%.

Looking at the percentage variation of number of deaths and injured between 2001 and 2013 by mode of transport, an inhomogeneous trend results for different categories of road users. In the case of mopeds there is a significant reduction in both the number of deaths and injured. Other categories, such as passenger cars and goods vehicles, show a modest reduction of the number of injured while reaching a significant reduction of the number of deaths (more than 50%). Cyclists and pedestrians, show a reduction of the number of deaths and an increase of the number of injured. Finally, motorcycles show a slight decrease in the number of deaths (3%) and an increase in the number of injured (+ 19%).

In spite of the progress made, Italy remains a European country with high number of fatalities (3,385 in the year 2013); therefore further and continuous improvements are necessary.

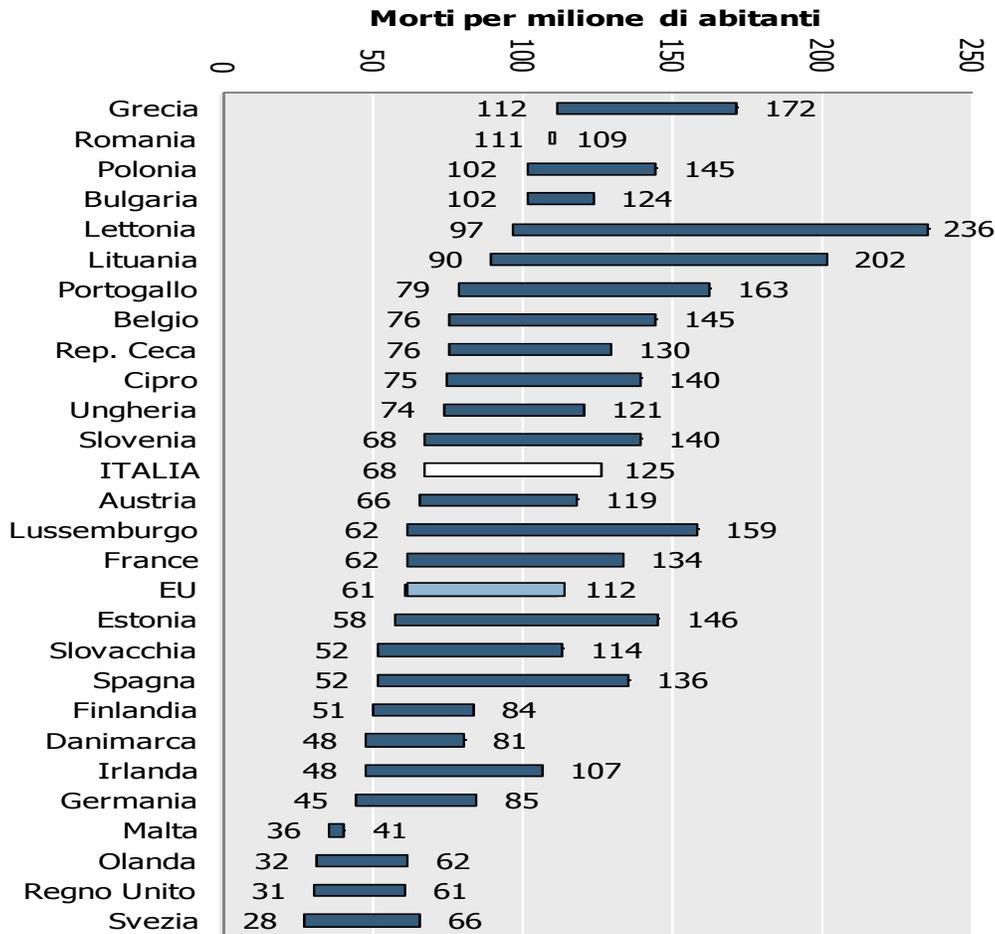


Figure 1 – Fatalities rate in EU 27 in period 2001-2010

THE MAIN ADOPTED MEASURES

The first National Plan on Road Safety covered the period 2001-2010 with the following strategic actions:

1. Regulatory policies

The main regulatory policies were represented by changes to the national highway code. In particular, the three major changes concerned:

- The introduction in 2003 of a penalty point system based driving license (Law No. 151/03). During the first two semesters of applications a reduction of 1,846 deaths was recorded as shown in figure 2.
- More empowerment to police agents and higher penalties, especially for “drink and drugs” drivers (Law No. 160/07).
- Zero tolerance for alcohol in case of young drivers (18-21 aged) and professional drivers.

2. Better enforcement

The main adopted enforcement actions were the following

- Increased number of checks on drink and driving. Between 2007 and 2012 the number of these checks increased by 220%
- The installation of automatic control systems (made by cameras and radars). The Italian automatic system to check average speed - so called “Tutor”- started to be implemented in 2004. In 2012 the system was in operation on about 3000 km of the highway network (the Italian highway road network is about 6700 km). In the period 2004-2011 a 48 % reduction of fatalities on highways was recorded.

3. Better road safety risk awareness

The adoption at national and local level of information campaigns has increased driver’s awareness with regard to drink driving, speeding, use of helmets and safety belts. The main national campaigns are:

- “The guardian angel” campaign” which was conducted in the period 2003-2004.
- “On the good road” campaign which was conducted in the period 2009-2011.

The above campaigns resulted in an increase of the road risk awareness and in a behavioural change; this emerged by interviewing two samples of people (respectively 3000 and 5000 people).

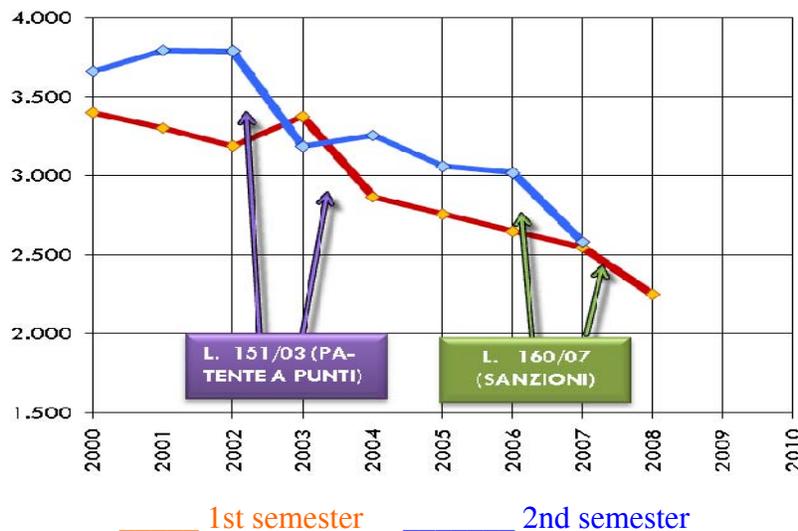


Figure 2 - The effect of introduction of a penalty point system based driving license

HORIZON 2020

The National Plan on Road Safety for 2001-2010 (hereinafter called NPRS 2001-2010) was developed in order to meet the goal fixed by the EU level of halving the number of fatalities in the EU.

Instead of a fixing a general target, the National Plan on Road Safety Horizon 2020 (briefly Horizon 2020) has set two levels of goals:

- I. **General goals** concerning the level of safety of the whole road network where the final goal is the reduction of number of fatalities. The first target is to halve the number of fatalities by 2020 according to the European target. In terms of figure that means to reach a fatalities rate of 33 fatalities/10⁶ inhabitants.
- II. **Specific goals** defined according to the road user categories with higher level of risks. The categories which were identified are: pedestrians, cyclists, two-wheeler motor vehicle users and accidents of commuters. The result of a study shows the following:
 - Pedestrians have an accident rate 6.7 time higher than car users;
 - Cyclists have an accident rate 9,4 time higher than car users;
 - Two-wheeler motor vehicle users have an accident rate 12,0 time higher than car users;
 - The fatalities of commuters are about 6% of total road fatalities but they have risen by 52,1% between 2001 and 2010

Moreover, “Horizon 2020” adopted the principle of “no child dead on the road” aiming to involve all citizens to adopt a new culture of life.

WHAT TO BE CHECKED

The analysis of risk factors shows that the main factors triggering a road accident are the following.

- The high vehicle speed – both the absolute speed and relative speed between users – is the main factor causing about 30% of fatal accidents and is responsible for 17% of the accidents occurred in suburban area as recorded by police in 2012.
- The visibility is a main factor especially for vulnerable road users (pedestrian, cyclist and children).
- The “drink and drug” driving is a main factor especially for young drivers. According to a study conducted during 2008 and 2011 about 10% of drivers do not observe drink limit value.
- Use of safety protection systems. In the period 2009-2011, only 64% of front seats occupants used seat belt against a European average of about 78%. In the rear seat, the seat belt use rate is very low, around 10%. With regard the use of helmets it is estimated at about 90 %.
- The environmental factors are mainly related to the design and road maintenance. In 2012, 16% of deaths in road accidents occurred on wet or slippery road.
- Mass and shape of the vehicles is an important factor especially for vulnerable road users (cyclists, pedestrians and motorcyclists).
- Lack of experience leading to underestimation of risk and overestimation of their abilities are factors typically associated with young drivers and novice drivers. In Italy, 36% of young drivers aged up to 24 declare they over speed when driving, compared to a European average of 31%.
- Fatigue, stress and distractions while driving. It is estimated that drowsiness/fatigue is one of the causing factor in 10-20% of all road accidents, with an almost twice mortality rate compared to accidents due to other causes. The distraction is often linked to the use of mobile phones while driving. It is estimated that in Italy about 9% of people use a mobile phone when driving without a headset.

VEHICLE SAFETY RESEARCH

Research in the field of vehicle safety is mainly carried out in the framework of the activities of the European Enhanced Vehicle-safety Committee – EEVC of which Italy is member.

Researches conducted by EEVC are taken into account by the European Commission when preparing new legislation on road vehicle safety and by the UNECE which adopts technical regulations under the framework of the 1958 and 1998 Agreements.

The EEVC technical work is made by nine working groups, six of them dealing with passive safety, two with active safety and one with accidentology.

In the future, further progress in vehicle safety is mainly expected in the area of active safety rather than passive safety, but also in the field of integrated safety (combining passive and active safety for a more realistic performance evaluation). A key role is expected to be played by accidentology that will allow the definition of testing scenarios as well as real world assessment of active and passive systems.

Several are the ongoing actions.

With reference to accidentology and data collection Italy, through Florence University and FCA, is involved in the **IGLAD** (Initiative for the Global Harmonisation of Accident Data) **Consortium**. IGLAD was initiated in 2010 by European car manufacturers and is a consortium for harmonisation of global in-depth traffic accident data to improve road and vehicle safety. Main objectives of the consortium are the data collection and the recoding of data according to a standardized data scheme to enable comparison between datasets. At present, information on 75 variables regarding accidents, roads, participants (vehicles or VRU's), occupants and safety systems have been harmonized.

In the field of active safety, with more emphasis on the driver monitoring, a relevant Italian research project is **DRIVE IN²** Project (DRIVER Monitoring: Technologies, Methodologies and IN-vehicle INnovative systems for a safe and eco-compatible driving), which is coordinated by FCA Italy and involves several Universities.

The project received the Smart Communities award at SMAU (Salone Macchine, Attrezzature Ufficio, -exhibition of machinery and equipment for office) the most important Italian event dedicated to Information & Communication Technology- Naples, 2014. The objective is to develop advanced methodologies, technologies and systems for driver-vehicle interaction that help prevent accidents and reduce polluting emissions, with particular emphasis on the role of the driver. A key strength of the project is its multi-disciplinary approach, which includes:

- cognitive and behavioural analysis to identify factors having the greatest impact on the level and quality of driver awareness;
- monitoring of physical and psychological condition of drivers, including alcohol and/or drug use;
- application of data fusion and data mining techniques for an integrated analysis of vehicle variables;
- monitoring of driving style to determine maximum efficiency thresholds for key vehicle performance parameters.

One of the most interesting results from the project was the development of the SIM-Panda, the first prototype for safe road testing of driver monitoring systems. The vehicle enables realistic testing of systems that monitor the effects of fatigue, intoxication etc., without the dangers associated with real non-controlled driving conditions.

The Italian Ministry for Transport and Infrastructure recognized the DRIVE IN2 project as one of best practice, according to the National Action Plan for Intelligent Transport Systems (ITS), which was adopted by Ministerial Decree of 12 February 2014.

In the field of integrated safety, a relevant Italian project is **APPS4Safety** (Active Preventive Passive Solutions for Safety). The project is co-founded by Research Ministry and is included in the programs of DATTILO (the transport and logistic district), in the Campania Region. The project is coordinated by FCA (Italy), and is developed in collaboration with universities, several engineering firms and SAPA, an automotive parts supplier. APPS4Safety is focused on increasing the use of virtual engineering tools and methodologies in the automotive design and validation process to achieve a more integrated approach to safety challenges.

This multidisciplinary approach includes use of accidentology data, advanced components for non-conventional crashes (i.e., small overlap and pedestrian crash), new active and preventive safety technologies and systems, driving simulators, and new procedures for testing in the laboratory, on the vehicle or in a virtual environment.

With reference to ADAS evaluation Italy, is involved in the “Harmonization Group on Prospective Effectiveness Assessment for Road Safety (PEARS)”. The objective of the group is to provide an open platform to discuss methodologies to evaluate the real-world effectiveness of advanced driver assistance systems in potentially hazardous traffic scenarios through virtual simulation. This cooperative research and development initiative involves major automakers, universities and automotive research institutes in Europe.

With reference to new test procedures Italy, is involved into the **CATS consortium** (Cyclist Autonomous emergency braking Testing System). The Consortium is working into the definition of a new testing procedure to assess Cyclist AEB (Autonomous Emergency Braking) systems and consumer tests of those systems.

Finally, Italy is involved in the field of tertiary safety on the work about new ISO 17840-1 for emergency rescue sheets.

ACTIONS TO BE TAKEN

Italy has been experiencing the greatest and most relevant amelioration process in the field of road safety during the last 30 years, which made it possible to re-align with the other EU countries.

A series of actions have been recommended by the transport administration and are being considered at political level.

First of all, in order to improve the effectiveness on road safety it is necessary to reinforce the action and ensuring a better coordination at central, regional and local level

In this respect, the Directorate General for Road Safety of the Ministry of Infrastructure and transport

plays a pivotal role. This organisation is linked to the corresponding regional offices which makes it possible to deal with road safety in a more systematic way.

Secondly, it is clear that the enforcement action is producing positive effects; therefore, we expect to continue to increase the number of controls on the roads with a better and dissuasive enforcement of traffic rules.

Another priority is the creation of a road safety culture, starting from school level with the aim of making the young population more aware of the need of careful and responsible driving. This priority should also concern administrations dealing with road safety in order to better train the existing human resources and prepare the new professionals to better deal with the subject.

The Road Safety National Plan has strongly recommended the adoption of a monitoring network based on local administrations and coordinated at national level. The aim of the monitoring is to have a better knowledge of the state and the evolution of road safety, the road safety measure adopted during the years and the results which have been achieved, to assess the effectiveness of the adopted measures.
