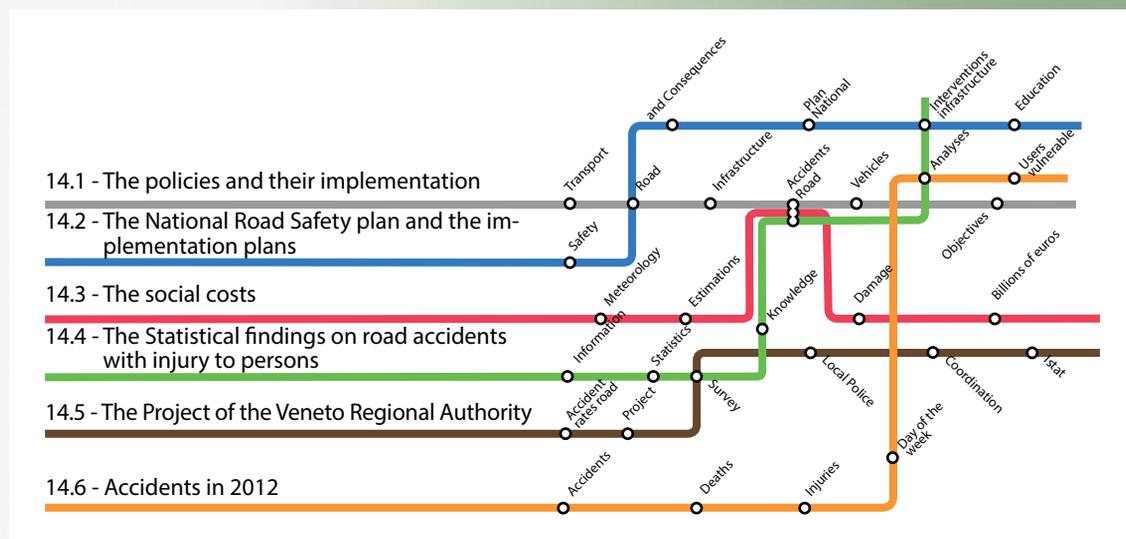




## Road accidents: the policies, costs and scale

For many years in Italy and in Veneto the awareness relating to the phenomenon of road accidents has been increasing and since 2000 the topic has been the subject of European Union directives. The policies implemented since that year have had the general and principal objective of halving the number of deaths on the roads in ten years as promoted by the European Union. These targeted actions have led to a 43% decrease in deaths caused by road accidents in the area of the European Union in 2010 with respect to the year 2001. In the same period, Italy achieved a decrease in line with this value, later reaching a value of 48.5% in 2012 while in the Veneto region, road deaths were reduced by 47% in 2012 in comparison to 2001. Nevertheless, in consideration of the fact that the number of accidents reported in Italy in 2012 amounted to over 186 thousand, it appears that the numbers in question could still be significantly reduced with the appropriate actions. In 2012, in the regional territory 13,995 accidents occurred, 7.5% of the figure recorded for the entire peninsula. As regards deaths, according to the statistical data there were 3,653 fatal accidents in Italy in 2012 and of these 367 occurred on the roads of the Veneto region. The mortality rate per day of the week highlights how Saturday and Sunday are the most dangerous days with the data of the Veneto region showing critical accidents also on Friday. The causes that determine the risk factors and the critical aspects are and should be analysed at various levels, intervening with targeted actions as indicated by the EU policies. Along these lines, for some years now the actions undertaken by the Veneto region have led to improvements and push towards new objectives for lowering the number of deaths and injuries on the roads. The significance of the phenomenon is well expressed also by social costs that for the Veneto region, in 2011 were estimated at around 1.6 billion euros, a figure however that has more than halved with respect to 2001.



## Road accidents: policies, costs and scale





## 14. Road accidents: policies, costs and scale

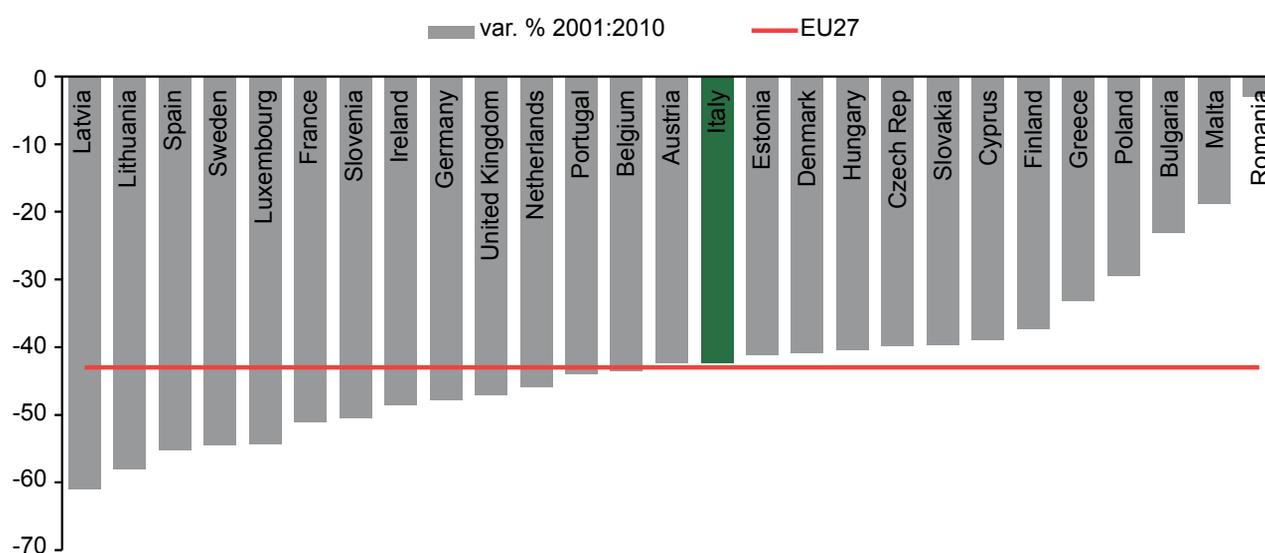
### 14.1 The policies and their implementation

With the adoption of the white book on transport of September 2001 the European Union, in addition to outlining a realistic picture of the situation of transport, undertook an ambitious plan of action aimed at achieving a series of objectives in the following decade scheduled with the deadline of 2010. The fact that the economic sector of transport represents around 1,000 billion euros, corresponding to more than 10% of the gross domestic product of the EU and creating employment for around 10 million people, strengthened interest in acting with concrete measures on a strategic sector in the growing globalisation also with the purpose of improving mobility, the interconnection and integration of European states and of bringing European citizens closer to one another. The measures adopted, supported by the application of funding, are intended to act as a driving force with the aim of solving many of the critical factors identified. The improvement of the connection infrastructures had already started in line with the needs deriving from the expansion of borders and globalisation of the markets.

Through the implementation of European and national planning of transport this aided, among other things, the strengthening of connections between the countries. At the same time other questions still needed to be resolved or mitigated. The various problems include traffic congestion and protection of the environment, which could only be dealt with by redesigning the European model of transport. These should have now been resolved with a view to sustainability, placing the safety and quality of the services as the priorities for this action. This topic involves some of the issues we discuss when dealing with one of the central themes relating to transport, which via specific measures on people and infrastructures aimed at increasing safety on the means of transport themselves

On this theme in 2001 the European Union established the objective of halving of the number of road accident victims in the following decade<sup>1</sup>. For each EU state the objective of reducing the number of deaths by 50% per road accident thus became both an obligation to the European Union, and also an opportunity to improve roads and to increase the common sense, alongside the no less significant aspect of reducing the associated social costs.

Fig. 14.1.1 - Road victims - EU27 % Variation - 2010/2001



Source: Processing by Regione Veneto - Regional Statistical System on Eurostat data- European Commission

<sup>1</sup> The road accident is defined as cases in which at least one vehicle is circulating on the road network and that involves injury to persons (dead within thirty days and/or injured)

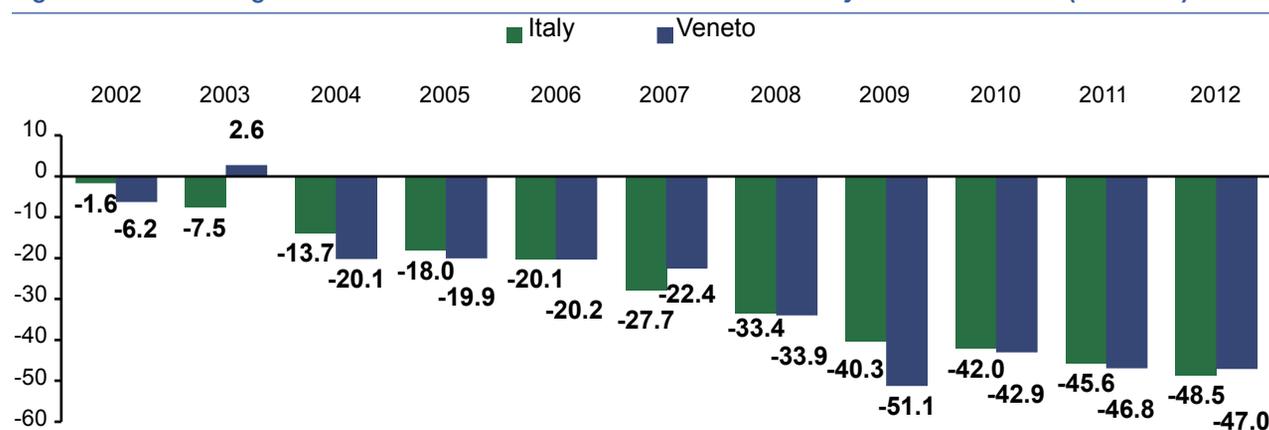


In order to achieve the objective, the national road safety plan for 2001-2010, set out by article 32 of Law 144 dated 17th May 1999, identified by means of the implementation Programmes both short term interventions and more long term actions. The first aimed to reduce the number and seriousness of road accidents by eliminating risk factors, while the second aimed at improving the infrastructure and mobility systems. The general criteria envisaged the concentration of the interventions on maximum risk situations, both by innovative measures in various sectors and by aiding close coordination between the various levels of the Public Administration and promoting a greater involvement of the private sector.

on the traffic infrastructures roads with the creation of roundabouts and the replacement of the more dangerous crossroads as well as public and private "car incentives". The latter have allowed a rejuvenation of the vehicle fleet with the subsequent circulation of safer and modern vehicles also from the point of view of safety as well as that of the environment with the reduction of the harmful emissions.

The historical period from 2001 to 2012 of the progress achieved by Italy and the Veneto region indicates a more gradual reduction in the death rate over the last years, after so many actions already undertaken had such great impact and made such a large contribution to the objective. In fact, we can suppose that over the last year, the component due to the slowing of the economy and the subsequent

Fig. 14.1.2 - Percentage variation in the number of deaths. Veneto and Italy - Years 2002:2012 (2001=100)



Source: Processing by Veneto Region - Regional Statistical Section System on Istat data

Thanks to the actions undertaken, even if the objective of halving the figures was not achieved, the mortality in road incidents in the European Union was reduced by 43%. Also in Italy the reduction of the deaths in the decade 2001-2010 was considerably in line with the average European reduction according to the last Eurostat update dating back to 21st January 2014. Veneto shows a figure that over the ten years is close to that of Europe reaching a reduction in deaths by 43%.

Among the various actions implemented to reach the objectives mentioned above it is also worth noting the so-called "penalty points" introduced in article 126 bis of the Highway Code by Legislative Decree no. 151 of 27th June 2003, converted with amendments to law no. 214 of 1st August 2003, the interventions

decrease of vehicles can be at least in part compensated by the increase of the obsolescence of the vehicle fleet with the reduction of the safety index of the vehicles. As proof of this the statistics show the mortality rate of road accidents in direct correlation with the level of development and the income of a country, the latter decreasing in Italy over the last years.

As frequently occurs, in these cases, obtaining significant results in a few years becomes not only more difficult but more expensive and for this reason the improvement curve over the next few years should be less accentuated although probably continual, by virtue of actions with less but persistent effects. In addition to the publicity campaigns that are based



on emotional response and often have immediate effect, many training activities aimed at young people and small children have been promoted. In fact these then transmit to the family a message of sobriety and civic sense, generating both an immediate impact and further recommendations for caution and awareness, given that these people will be primary actors in the use of transport infrastructures as drivers.

### 14.2 The National Road Safety Plan and Implementation programmes of the Veneto Region

With the modification of the Highway Code introduced by art. 1 of Legislative Decree no. 9 of 15th January 2002, it is envisaged that for the purpose of reducing the number and effects of the road accidents the Ministry of Infrastructures and Transport has defined the National Plan for Road Safety

then approved with deliberation of the CIPE no. 100 of 29th November 2002, along with the first annual implementation programme. Following expiry of validity of the planning and programming legislation that implemented the European directives 2001-2010 in acceptance of the new orientations of the European Commission and with the integration of suggestions and observations of the consultation of last March, the final version of the new National Safety Plan of the Road Safety Horizon 2020 should be drawn up. The current version of the document still missing integrations of the consultation again defines as a general objective the halving of road deaths by 2020 with respect to the total deaths recorded in 2010. Nevertheless, in view of the progress already made over the last decade by various member states of the European Union, today this common objective appears decidedly more ambitious with respect to that established previously. It can be achieved by actions aimed at solving the specific shortcomings of every territory in consideration of the priorities defined by the same European Commission and specified below. The priority intervention areas defined should involve the improvement of the training and education of the road users, the strengthening of the application of the

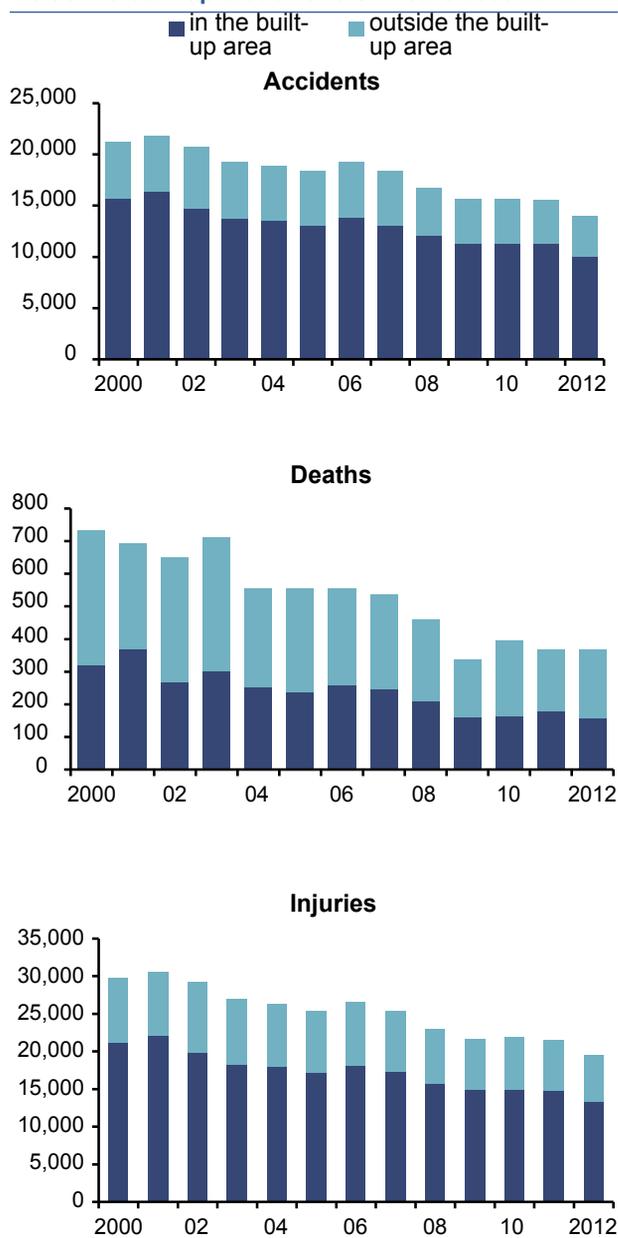
highway code, the improvement of the safety of road infrastructures, the improvement of vehicle safety, as well as the promotion of the use of safety equipment, the application of "intelligent" technologies designed to increase road safety, the improvement of emergency services and post-accident support and the greater consideration of vulnerable users such as pedestrians and users of two-wheeled vehicles.

In the Veneto region, for many years the awareness of the Region, Provinces and Municipalities in relation to the actions taken for road safety has been very high, as demonstrated in the planning and realisation of many projects. In particular the Veneto region has put into place various initiatives aimed at achieving improved safety conditions for traffic on the regional road network, and numerous interventions applied to the infrastructures in addition to initiatives aimed at education and promotion of correct behaviour by road users.

Among the many initiatives it is worth pointing out those related to the implementation of the Regional Law. 30.12.1991, no. 39 "Interventions in favour of mobility and road safety" which have been ongoing since 1992 to now, and the various activities promoted by Local Authorities and associations, pursuant to the Regional Law. 66 of 1987 later replaced by the Regional Law of 27th April 2012 no. 15 "Measures relating to education in road safety and prevention of road accidents". It is also worth noting the Road Safety National Plan (PNSS) which led to five implementation programmes, activated, in the case of the Veneto region, over the years with many interventions both of a structural type on the regional roads, and in terms of education and training respectively for users and technical decision makers. Last February the Regional Council approved the ranking of the initiatives in favour of road safety proposed by the Veneto public institutions on occasion of the fourth and fifth implementation programme of the aforementioned PNSS, tendering the funds assigned by the Region and aimed at sustaining the initiatives proposed by the Provincial and Municipal authorities. There were 13,995 road accidents with injury to persons in the Veneto region in 2012, a 34% reduction with respect to 2000. Of these, around ten thousand occur within the built-up areas and around four thousand outside the built-up areas.



**Fig. 14.2.1 - Accidents, deaths and injuries outside and inside the built-up areas Veneto - Years 2000:2012**



Source: Processing by Veneto Region - Regional Statistical System Section on Istat data

These caused 19,524 injuries and 367 deaths, the latter decreased by almost 50%, again compared to the year 2000, highlighting the reduction in the seriousness of the road accidents. More than 43% of the deaths occur in built-up areas but, although there are fewer accidents outside the built-up areas, they are more serious. The main reason is attributable to the high speed of the accidents that take place on the long-distance and extra-urban connecting roads.

A demonstration of the fact, calculating the mortality rate<sup>2</sup> outside and inside the built up areas, the values of 5.27 and 1.57 were found respectively while the total regional value amounts to 2.62, with a marked decrease compared to the 3.45 recorded in 2000. Due to this the high level of road accidents in the built-up centres, which is furthermore subject to traffic congestion, the consequences are less critical for the people with respect to those that occur outside residential areas.

In the analysis of the data by type of road, it is noted how the accidents had worse consequences

mainly in the regional and provincial roads if considered in relation to the number of road accidents reported, and also in this case the speed of impact also contributes to these values. However, on the motorways the mortality rate per accident in 2012 was 4.85%, lower compared to the state, regional and provincial roads, but greater with respect to the municipal roads. To sum up, the accidents occur more frequently in urban environments but have worse consequences outside built-up areas.

For this reason the Region operates on all the fronts to limit the phenomenon on the regional roads, with structural and information interventions, and on the provincial and municipal roads with the granting of funds to Provincial and Municipal authorities. It is also of primary importance to adopt targeted actions aimed at protecting vulnerable users in the attempt to reduce the danger of traffic in the city, mainly by reducing the speed of vehicles and creating protected routes for pedestrians and cyclists.

For the factors outlined above, and to evaluate priorities on the interventions to carry out, the data of prompt identification of the place of the accident is of critical value and interest. Much still needs to be done in this area, although there are already territories, including some in the Veneto region, that, both with training and awareness activities and through the adoption of instruments designed for the improvement of precision and quality in the collection of information are considered state-of-the-art in Italy and in Europe.

### 14.3 The social costs

Although it may seem indelicate to economically quantify the life and death of people, in reality the interest and utility of determining the relative

<sup>2</sup> The mortality rate is calculated on the ratio of the number of deaths and the number of accidents multiplied by 100.



## Road accidents: the policies, costs and scale

measures, prescribed by the European and national standards, allows both the work employees and citizens to perceive and recognise the actual scale of the phenomenon. The social costs of the road accidents are defined as an estimation of the economic damage to the society and represented only in a small part by the direct expense incurred. These estimates are in fact the economic quantification of costs calculated in relation to the consequences caused by a road accident. With the Decree no. 189 of 24th September 2012 of the General Management for Road Safety by the Department for Transport, Shipping, Information and Statistical Systems of the Ministry of Infrastructures and Transport implemented by art. 7 of Legislative Decree no. 35 of 2011, implementing Directive 2008/96/EC on management of road infrastructure safety, a study on this topic was presented.

The methodology adopted allows an estimation of the total cost of accidents by calculating the average social cost by accident, classed as fatal or with injuries, the latter without distinction of seriousness since this is not envisaged by the national survey on road accidents as there is not yet an agreement on the homogeneity of the data surveyed in the European Union. The information on the ranking of the seriousness of injuries by road accident is however envisaged and incorporated in the new survey model that will be introduced and adopted at a EU level in future years. The costs involved when associated with a road accident, the cost of

human life is the most significant, representing alone over 90% of the costs. The is made up of two main components, the loss of present and future production capacity following a death and non-pecuniary damage calculated by an estimation of the pain and suffering linked to the loss.

The costs due to the lack of production are calculated on the average of the years of life lost on the basis of mortality rate of road accidents divided by age group. According to the ministry estimations, in 2010 this value was estimated at 940,291€ per death for an Italian total of over 3.8 billion euros, of which 86% can be attributed to males. The imbalance of gender is due both to the greater average male income and to the greater years of life lost by the males due to accident. As regards the deaths by accident reported in Veneto in 2010, the total value generated by the lack of productivity is 372 million euros, consisting of almost 10% of the national share.

The non pecuniary damage linked to deaths by accident are therefore intended as moral damages incurred due to unjust suffering for the loss caused by a wrongdoing. Although the total compensation due is left to the discretion of the court, the criteria to quantify the non-pecuniary damage established by the Court of Milan can be applied at a national level according to sentence no. 12408 of 07/06/2011 of the Supreme Court. The estimation of the damage was therefore calculated by attributing one hundred "points

**Tab.14.3.1 - Total social cost of road accidents with injury to persons estimated in euros. Italy and Veneto - 2010/2011**

	Italy			Veneto		
	2011	2010	var. %	2011	2010	var. %
Average human cost by death (€)	1,503,990			1,503,990		
number of deaths	3,860	4,090		369	396	
Total cost of deaths (thousands of €)	5,805,401	6,151,319	-5.62	554,972	595,580	-6.82
Average cost per injured (€)	42,219			42,219		
number of injured	292,019	302,735		21,517	21,860	
Total cost of the injured (thousands of €)	12,328,750	12,781,169	-3.54	908,426	922,907	-1.57
General average costs per incident (€)	10,986			10,986		
number of road accidents	205,638	211,404		15,564	15,651	
Total general cost (thousands of €)	2,259,139	2,322,484	-2.73	170,986	171,942	-0.56
Social cost of the accidents with injuries to persons (thousands of €)	20,393,290	21,254,972	-4.05	1,634,385	1,690,429	-3.32

Source: Processing by Veneto region - Regional Statistical System Section on ISTAT data and the Ministry of Infrastructures and of Transport and Veneto Region.



of invalidity", the maximum possible, expressed in a table with a value that varies depending on the age and degree of permanent invalidity ascertained. In application of the methodology the average value per death is equal to 561,734€. From this it derives that the total Italian non-pecuniary damage is estimated at 2.3 billion euros while the Veneto value reaches 222 million euros. If we combine these values with direct health costs per accident victim, which amount to values slightly less than 2,000 euros per victim, and virtually almost insignificant in comparison to the previous components, we obtain the average human cost per death. These are significant values, which exceeded 6.1 billion euros in 2010 falling to 5.8 in 2011. This estimated value of the victims is part of the total social cost due to the accidents with injury to persons as well as the costs of the accidents with injuries, calculated using similar methods and general costs, calculated as damage to property of the injured party along with administration and legal costs.

The summarised data of 2011, 20.4 billion euros as the total estimated cost, nevertheless shows values decreasing over the years, if not only for the unitary costs which can be moderately reduced, but above all due to the decline in the number of accidents, as also demonstrated by the multi-year trend. Therefore, given the 50% reduction in the number of road victims since 2000 and the reduction of the average human costs per death and injury it can be reasonably affirmed that in the same period, the total social cost of accidents with injuries has at least halved.

#### 14.4 Statistical survey on Road accidents with injury to persons

On the basis of all these aspects, the importance of the governance of processes linked to a good awareness of information on accidents through the effects on infrastructure interventions, their planning and definition of the priorities is shown. The most significant consequence from a point of view of the interventions on viability regards the effectiveness in the use of resources where the most advantages can be gained. For example the prompt analysis of accident "black spots" along with the awareness of environmental conditions of the road allows to act in the in road areas

where there is a greater mortality in relation to the flow of traffic. In many cases many risk factors can be reduced through low cost actions such as the improvement of the signage or visibility of the latter, which could be compromised by the variability of the environmental factors. Other variables taken into consideration by the survey instead allow to analyse behavioural factors that allow the Police force to implement actions that prevent and deter with suitable controls and with the help of suitable instrumentation.

On these aspects the Statistical Survey on Road Accidents with injury to persons is relevant, as part of the current National Statistical Programme (PSN). This is part of the type of Statistics resulting from surveys and draws information from the surveys of accidents with injured persons conducted by the police force. The Survey, which is managed by ISTAT is structured so as to generate an archive of data as uniform as possible for the production of useful statistics for various purposes both at a local and supra-national level, also enabling benchmarking analyses by member states of the European Union.

The main units of analysis are road incidents, deaths and injuries in individual incidents, which are also handled by intermediary bodies to the survey, as well as by the aforementioned police force such as the Statistics Office of the main municipalities, provinces and regions. The data is collected by means of a hard copy questionnaires, although compilation is then processed electronically. The main statistics collected regard the time of the event to the minute, the place in which it occurred, including the province and municipality, but also the road and kilometre point, through to georeferencing. Moreover, the circumstances and nature of the accident are identified as well as the data on the outcome of the accident, with reference to the driver, passengers and pedestrians, the type of vehicles involved, the name of the injured party and the hospitals/clinics concerned. This mass of data has a knowledge value that is particularly high for the transport sector and for health authorities. The first benefits from it mainly due to the infrastructure interventions on the critical aspects of road networks and the preparation of appropriate preventive counter measures and territorial control activities performed by the Police Force and coordinated by the Prefectures, both with training



and targeted awareness raising activities, the latter for the analysis of the socio-health aspects linked to the phenomenon such as the connection of databases for the study of the causes of death.

### 14.5 The project of the Region of Veneto

The regional project relating to the Statistical Survey of Road Accidents with injury to persons involves the set-up of an IT and organisational system within the existing information flow for data collection.

With regard to the Veneto Region, the regional authority had already signed the first Memorandum of Understanding of 13th December 2007, for the coordination of the activities relating to the statistical surveys on road accidents between ISTAT the Ministries of the Interior, of Defence, of Infrastructures and Transport, the Conference of Regions and Autonomous Provinces, the Union of the Italian Provinces (UPI) and the National Association of Italian Municipalities (ANCI), adopting it through the Decree of the Regional Government.

No. 1446 of 6th June 2008. Subsequently, the same parties signed the new Memorandum of Understanding of 6th July 2011, adopted with Decree of the Regional Government No. 1789 of 8th November 2011, with which the scheme of the Implementation Agreement of the Protocols and of the Project for the statistical surveys on road accidents was also approved. Finally with notification of approval of the Regional Project of 26th March 2012 by the Director of the central Management of socio-demographic and environmental statistics of ISTAT, and with the signing of the Implementation Agreement of the Protocols and the Project for the Statistical Survey on Road Accidents of 11th September 2012, the Veneto Region became an intermediary body for the coordination and collection of data. The regional structures involved in the Project collaborated to produce the project with an economy-based approach, using and improving tools already available internally. The Regional Statistical System Section, coordinator of the Project, since the start of 2013, after one year of experimentation, dealt with the collection and monitoring of the provisional territorial data that arrive directly from the local police forces and, via ISTAT, from the Carabinieri and the Traffic Police.

This already enables improvements in the territorial coverage and in the timeliness of the statistics that can be produced.

As envisaged by the Implementation Agreement, in addition to the Regional Statistical System Section, the Project also involves the Infrastructure section of the Veneto Region, Veneto Strade s.p.a., the Veneto Traffic Police Department and the Provinces of Veneto participating in the same agreement and whose representatives participate in the Regional Coordination Committee. This examines the trend of the survey activities through periodic meetings.

For implementation of the project training activities have also been set up in collaboration with the Provinces of Veneto and with ISTAT. The training activities and the support of specific instruments have also allowed the complete dematerialisation of the data flow towards the Veneto region, which to date and already as of January 2013, receives every single piece of information electronically.

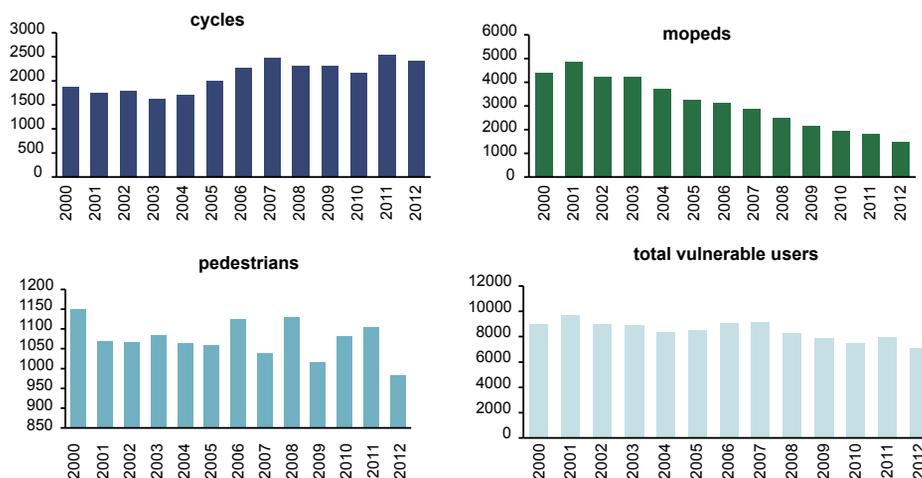
Along with the training activities aimed at the successful outcome of the Regional Project, work was also performed as part of the National Training Plan of local police implemented by ISTAT in order to make the local operators aware of the utility of the information collected by legislative requirement with their work. In this case, action was taken in accordance with the directives and principles of collaboration at the various levels of the local and central public administration to improve upon the best skills and experience available. During the meetings ISTAT distributed the authorisations for access to a distance learning portal, issued to the same operators of the local police force. The training sessions were specifically designed and agreed upon with the authorities interested in the analysis of requirements, the organisational model and the level of training of the participants.

From the point of view of the standards governing privacy, the handling of personal data collected in relation to the survey was carried out in accordance with Legislative Decree no. 196 of 30th June 2003 (Code relating to the protection of personal data) and measures relating to protection of statistical confidentiality referred to in art. 9 of Legislative Decree no. 322 of 6th June 1989 (Regulations on the National Statistical System and on the reorganisation of the National Institute of Statistics). As already stated, the manager of the personal data handling on road



## ROAD ACCIDENTS AND VULNERABLE USERS IN VENETO

Historical series on road accidents in which vulnerable road users were involved from 2000 to 2012



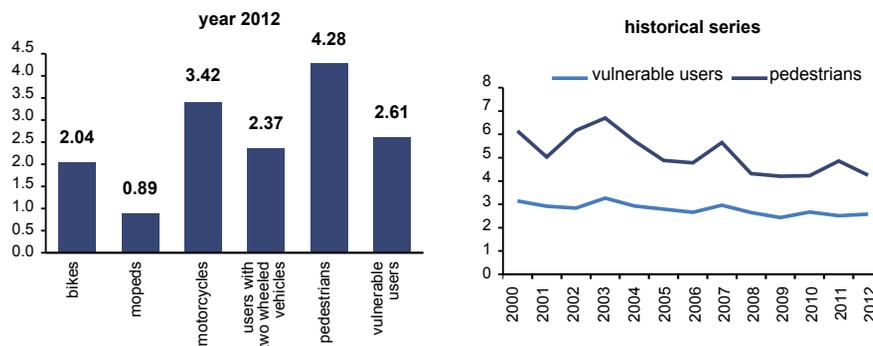
The total number of accidents involving vulnerable road users represented by pedestrians and people on two-wheeled vehicles, that is to say motorcycles, motorbikes and bikes, is decreasing. The components are changing, the number of bicycles involved has increased and the number of motorcycles has decreased.

Accidents, deaths and injuries in accidents involving vulnerable road users in Veneto in 2012

	Bicycles	Mopeds	Motorcycles	Users on two wheels	Pedestrians	Total vulnerable users	Total Accidents
Accidents	2403	1457	2576	6201	982	7049	13995
var. % 2001/12	38.0	-69.9	-2.9	-29.9	-8.1	-27.3	-35.8
Injuries	2553	1674	3041	6918	1092	7811	19524
var. % 2001/12	35.9	-68.8	-6.2	-30.2	-8.8	-27.7	-36.1
Deaths	49	13	88	147	42	184	367
var. % 2001/12	-29.0	-82.4	-19.3	-40.0	-22.2	-35.7	-47.0

The total number of vulnerable users involved is decreasing even if to a lesser extent than the total

Mortality rate(\*) in accidents involving vulnerable road users in Veneto



\* The mortality rate is calculated on the ratio of the number of the deaths and the number of accidents multiplied by 100

The mortality rates have decreased even if pedestrians remained highly vulnerable at 4.28% in 2012

Source: Processing by the Veneto Region - Regional Statistical System on Istat data and Veneto region



accidents is ISTAT according to the provisions of art. 11 (Protection of personal data) of the national Memorandum of Understanding of 6th July 2011. However the director of the Statistics Office of the Veneto Region and the managers of the various Statistics Offices, where present, of the local organisations involved are responsible for the data handing. In turn the data controllers can nominate other personnel to perform the activities relating to data handling. With the help of the Provinces, after establishing whether a Statistical Office was present at the various municipalities or groups of Municipalities, in the case that this office was not present, the Veneto

Region appointed the manager of personal data, following designation by the same authority, and provide the necessary instructions.

### 14.6 The accidents in 2012

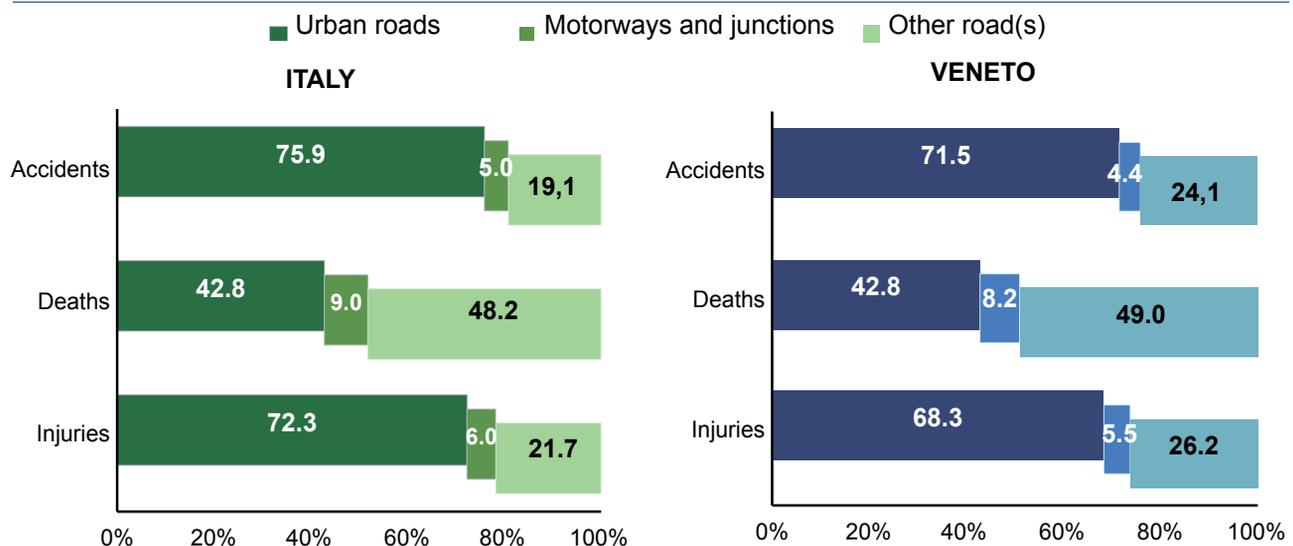
In 2012 in Italy 186,726 road accidents were found with injury to persons, in which over 3,653 people died, while 264,716 injuries were recorded. With respect to 2011, the accidents decreased by 9.2%, the injuries by 9.3% and the deaths by 5.4%. In Veneto, again in 2012 the accidents reported were 13,995 showing a 10.1 % decrease with respect to the previous year.

**Tab.14.6.1 - Road accidents with injury to persons, deaths and injuries. Veneto and provinces - Years 2011:2012**

	Accidents			Deaths			Injuries		
	2011	2012	Var. %	2011	2012	Var. %	2011	2012	Var. %
Belluno	564	463	-17.9	25	24	-4.0	802	652	-18.7
Padua	3,535	2,806	-20.6	65	77	18.5	4,829	3,778	-21.8
Rovigo	650	590	-9.2	32	26	-18.8	904	847	-6.3
Treviso	2,514	2,150	-14.5	68	70	2.9	3,594	3,093	-13.9
Venice	2,494	2,569	3.0	60	55	-8.3	3,480	3,731	7.2
Verona	3,238	3,048	-5.9	63	62	-1.6	4,413	4,169	-5.5
Vicenza	2,569	2,369	-7.8	56	53	-5.4	3,495	3,254	-6.9
Veneto	15,564	13,995	-10.1	369	367	-0.5	21,517	19,524	-9.3

Source: Processing by Veneto Region - Regional Statistical System Section on Istat data

**Fig. 14.6.1 - Road accidents with injury to persons, deaths and injuries according to road category. Veneto and Italy (% share) - Year 2012**

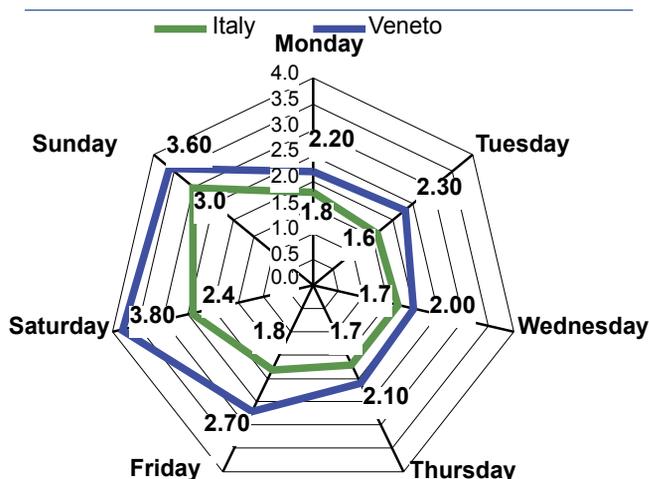


(a) The category other roads includes the state, regional and provincial roads outside of the built-up area and the extra-urban municipal roads

Source: Processing by the Veneto Region - Regional Statistical System on Istat data and Veneto region



**Fig. 14.6.1 - Mortality rate by day of the week - Year 2012**



Source: Processing by Veneto Region - Regional Statistical System section on Istat and Veneto Region data

The injuries, decreasing by 9.3% in 2011, amounted to 19,524 and there were 367 deaths, a fall by 0.5%. The comparison of the Veneto data with that of the provinces shows more fluctuating differences in percentage.

Therefore also in the provinces, considering the accidents and injuries, a downward trend can be confirmed, with the exception of the province of Venice. As regards the deaths the variations are affected by an inadequate number of statistics and show a more marked variation.

On the city streets in 2012 in Italy 141,715 accidents occurred with 191,521 injuries and 1562 deaths, while in Veneto the respective values amount to 10,008 accidents, 13,329 injuries and 157 deaths. These represent around 7% of the national figures on accidents and injuries on urban roads and little more than 10% of the national number of deaths, always on the same type of road. The comparison of the percentage ratings of the events by type of road between the Veneto region and Italy provides an outlook with fewer road accidents in comparison with the rural situation and a similar division of the mortality rates with respect to Italy in the various road categories.

Nevertheless the mortality rates are higher in the Veneto region when compared with the Italian values. Again for the road category in 2012, the mortality rate is higher by around 0.5% with respect to the Italian figures both on the urban and rural roads.

**Tab.14.6.2 - Road accidents with injury to persons, deaths and injuries by type. Veneto and Italy - Year 2012**

	Italy			Veneto			Italy	Veneto
	accidents	deaths	injuries	accidents	deaths	injuries	mortality rate	
Head-on collision	11,284	589	19,028	889	60	1,497	5.22	6.75
Side collision	63,560	842	93,670	5,336	93	7,496	1.32	1.74
Side collision	22,251	174	29,151	1,557	14	2,008	0.78	0.90
Rear collision	33,777	325	55,447	2,523	41	4,124	0.96	1.63
Collision with vehicle temporarily stationary or stopped	6,245	78	8,501	351	5	465	1.25	1.42
Total accidents between vehicles	137,117	2,008	205,797	10,656	213	15,590	1.46	2.00
Pedestrians run over	18,915	534	21,400	982	38	1,093	2.82	3.87
Collision with a parked vehicle	2,066	36	2,429	86	3	97	1.74	3.49
Collision with an accidental obstacle	7,778	296	9,661	381	16	446	3.81	4.20
Collision with a train	9	0	11	0	0	0	0.00	-
Exit from road	17,098	724	21,396	1,605	90	2,007	4.23	5.61
Sudden stop	768	5	857	46	0	48	0.65	0.00
Fall from vehicle	2,975	50	3,165	239	7	243	1.68	2.93
Total accidents with isolated vehicles	49,609	1,645	58,919	3,339	154	3,934	3.32	4.61
<b>Total</b>	<b>186,726</b>	<b>3,653</b>	<b>264,716</b>	<b>13,995</b>	<b>367</b>	<b>19,524</b>	<b>1.96</b>	<b>2.62</b>

Source: Processing by Veneto Region - Regional Statistical System Section on Istat and Veneto Region data



## Road accidents: the policies, costs and scale

The same data on the Veneto motorway network although 1.4 points above with respect to the Italian data, is affected by the annual fluctuations due to the poor number of statistics. However, from the analysis of the deaths by day of the week it is clear that the mortality rate in the Veneto region is greater with respect to the Italian average every day of the week, as is shown on the Italian graph, completely limited to within the Veneto figures. The most dangerous days are Saturday and Sunday, while Friday also stands out in the Veneto region, with a rate of 2.7, unlike the values of the other working days which in Italy are around 1.7, Veneto shows figures above this by around 0.5 per cent as noted previously.

The most frequent type of accident is the head-on-side collision between vehicles, with over 63 thousand collisions in Italy of which 5,336 occur in the Veneto

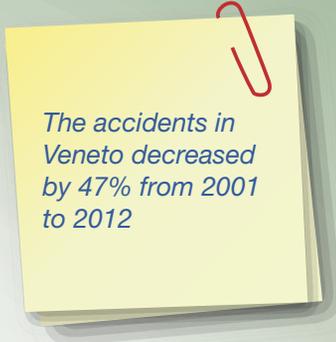
region. The seriousness of this type accident between moving vehicles is in any case less than four percent with respect to the head-on collisions, which make up around 6% of the total accidents and cause around 16% of the victims. Other accidents with serious outcomes by type are those which see vulnerable users involved. These are represented by pedestrians and by people on two-wheeled vehicles, i.e. mopeds, motorcycles and bicycles. In fact, the mortality rate for pedestrians run over, with the values of 2.82 for Italy and 3.87 for Veneto, exit from the road, rated at 4.23 for Italy and 5.61 for Veneto, and falling from the vehicle, respectively 1.68 and 2.93 indicate that these accidents are highly dangerous, mainly involving vehicles with two wheels. For more information on the vulnerable users see the dedicated sheet.

## **What is the Statistical Survey on Road accidents with injury to persons?**

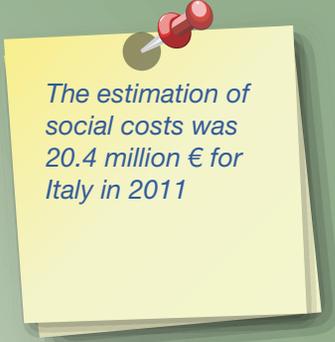
The Statistical Survey on Road Accidents with injury to persons is a survey in the National Statistical Programme and belongs to the category of survey-based statistics. It obtains the information from surveys of accidents with injuries conducted by the Police force and produces useful statistics at a local, nation and supra-national level, allowing infrastructure interventions on the critical aspects of the road network, preparation of preventive measures and analysis of the socio-health aspects linked to the phenomenon.

## **What is the scale of the accident phenomenon in Italy and the Veneto region?**

In 2012 in Italy there were 186,726 road accidents with injury to persons that caused 3,653 deaths and 264,726 injuries. With respect to 2011 the accidents decreased by 9.2%, the injuries by 9.3% and deaths by 5.4%. In the Veneto region, again in 2012, there were 13,995 accidents reported, with a 10.1% decrease with respect to the previous year. The injuries, dropping by 9.3% in 2011 amounted to 19,524 and the deaths 367, showing a decrease of 0.5% . Between 2001 and 2012 the reduction in deaths due to road accidents in Veneto was 47%.



*The accidents in Veneto decreased by 47% from 2001 to 2012*



*The estimation of social costs was 20.4 million € for Italy in 2011*



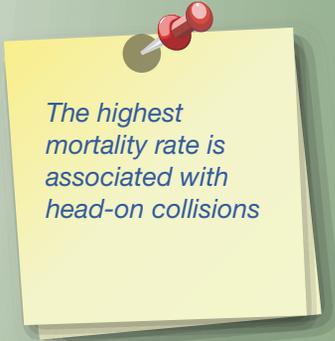
*More bikes involved, but mortality rate decreasing*



*Saturday and Sunday are the most dangerous days*



*For every 100 pedestrians involved in an accident 4.3 die.*



*The highest mortality rate is associated with head-on collisions*

