

Boris Orlović, Josip Mataija and Miron Huljak

NATIONAL ROAD  
SAFETY PROGRAMME OF THE REPUBLIC OF CROATIA  
2011-2020

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Zoran Ničeno

*Editor*

Gabrijela Gorše

*Prepared by*

Boris Orlović  
Josip Mataija  
Miron Huljak

*English translation*

Tajana Bašić

*Proofreading*

Sanja Veić

*Cover designer*

Vladimir Buzolić-Stegú

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Boris Orlović

Josip Mataija

Miron Huljak

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Zagreb, 2011

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## FOREWORD

Road casualties, as defined by modern medicine, became year by year an epidemic in the mid 80s of the previous century in the then Socialist Republic of Croatia. Thus, the number of fatalities, after a certain decrease in 1985, started to increase, so there were 1256 fatalities in 1986, which increased to 1321 in 1989. The worst in such a situation was that no strategy or tool existed for this problem in order to clearly define, solve, control and place it in an anticipated context.

The founders of road safety at that time gathered in the Institute of Traffic Sciences in Zagreb and the Road Safety Council of the Socialist Republic of Croatia, motivated by colleagues from the developed countries, and came to the conclusion that only synergic action by all institutions in charge of road safety can lead to its improvement.

Thus, in 1990 on the basis of the 'Road Safety Programme of the SR Croatia – Summarized report' from the year 1985, the 'Road Safety Programme of Croatia in 1990' was made.

That Programme would have been operationalised in that and the following years, if well-known events such as the disintegration of the former common state and the Homeland War had not put this valuable document on hold 'for better times'.

During 1993, with administrative decrease in the number of fatalities (975 people killed in 1992), caused by the occupation of almost one third of the Croatian territory, the Ministry of the Interior, which can be claimed without reserve, was the only authority having adequate personnel, and was professionally and organizationally capable of initializing and implementing something which could contribute to the improvement of road safety. The Ministry of the Interior initiated the making of the National Road Safety Programme from 1994 to 1995. The Programme could not have been the reprint of the Programme from 1989 because that one had been made in completely different political and social circumstances, but it was based on the long-recognized need for an interdisciplinary approach and awareness of solving the problem of road safety in such a way. Thus, the Government of the Republic of Croatia passed the first National Road Safety Programme of the Republic of Croatia on 16 June 1994.

After that first one, new National Programmes followed, this time for five-year periods. Owing to their implementation, the number of fatalities decreased from 1360 in 1990 to 426 in 2010, alongside with a great

increase in the number of vehicles, drivers and traffic flows, which must be respected. Thus, the number of fatalities per 100,000 inhabitants decreased from 15.1 in 2008 to 9.7 in 2010. For the first time, the set target, planned by the National Road Safety Programme, has been achieved as well as the best road safety conditions so far.

So far the main problem of the implementation of the National Programmes has been seen in organizing different authorities in joint actions in order to achieve the above mentioned synergy.

Therefore, this National Programme, which the Government passed on its session of 14 April 2011, tends to connect a lot more authorities to a joint action. It is worth mentioning the actors outside the state system, such as non-governmental, civil, professional and other associations, which, by the definition, and from previous experience, sometimes act faster than the inert state administration. Besides, this National Programme is harmonized with the Moscow Declaration from 2009, the UN Resolution 62/244 of March 2010 and the 4<sup>th</sup> Action Programme of the European Commission.

Finally, it should be mentioned that the main goal of the new National Programme is a 50% decrease in the number of fatalities till 2020, in comparison to the year 2010. Last but not least is the long-term goal of establishing the Road Safety Agency, which will take responsibility for the road safety in the Republic of Croatia in the near future.



Under Article 30 para 2 of the Government of the Republic of Croatia Act (»Official Gazette«, no. 101/98, 15/2000, 117/2001, 199/2003, 30/2004 and 77/2009), the Government of the Republic of Croatia, at its session held on 14 March 2011, passed

## **NATIONAL ROAD SAFETY PROGRAMME OF THE REPUBLIC OF CROATIA 2011-2020**

### **1. INTRODUCTION**

#### **1.1. NATIONAL PROGRAMME BACKGROUND**

The National Road Traffic Safety Programme of the Republic of Croatia, proposed by the Ministry of the Interior, was put into force for the first time by the decision of the Government of the Republic of Croatia at its session held on 16 June 1994.

Following a series of individual actions on the part of the actors responsible for road traffic safety and the achievements of specific short-term results, the conclusion has been reached that no long-term goals can be accomplished without a systematic and continuous implementation of measures.

The first National Programme was passed for a two-year period and after achieving positive results and accomplishing certain goals, it proved to have been justified, so in the subsequent periods three more Programmes were passed, the second one for the period from 1996 to 2000, the third from 2001 to 2005, and the fourth one from 2006 to 2010.

Each of these Programmes was passed in different political and social circumstances, which is why they are different, i.e. adjusted to the actual situation.

The first Programme was passed in 1994, and its application and operative implementation became possible after signing the Erdut Agreement in November 1995 and reintegrating the region of Eastern



Slavonia, Baranja and Western Srijem (Sirmium) into the Republic of Croatia with re-establishing free traffic.

In the period from 1996 to 2000 the National Programme was, mainly declaratively, moving in the right direction, regarding road safety in developed Western countries (the first 15 Member States of the European Union).

The next period, from 2001 to 2005, was characterized by growing tendencies towards Europe, and the consistent way of financing the National Programmes from three sources was established, i.e. budget funds, partly financial means obtained from vehicle testing and financial means obtained from insurance companies to the amount of the determined percentage of liability vehicle insurances.

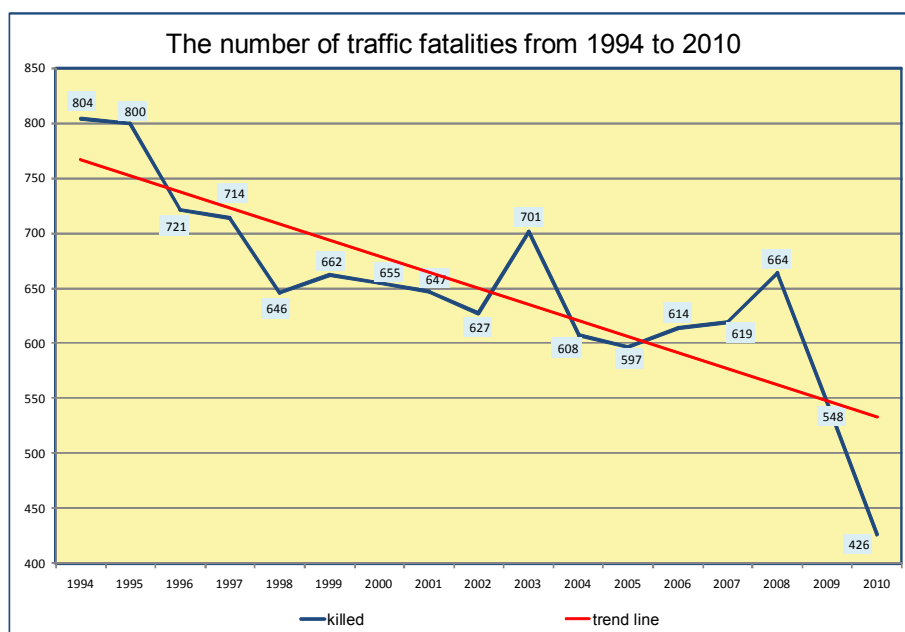
It is characteristic of the period from 2006 to 2010, when the accession of the Republic of Croatia to the European Union became realistic, that positive experience was taken from the developed countries of the European Union and its implementation was adjusted to the Croatian situation.

## **1.2. THE EFFECTS OF THE IMPLEMENTATION OF THE NATIONAL PROGRAMMES TO DATE**

Since the implementation of the first National Programme to date, a number of changes have occurred in road traffic in the Republic of Croatia. It is important to mention that the road traffic safety in Croatia has significantly improved, without taking into account the war period when certain parts of the country were occupied. A reduction from 1360 traffic fatalities in 1990 to 426 traffic fatalities in 2010, with an extremely high increase in the number of vehicles, drivers and traffic flows, is a very respectable fact.

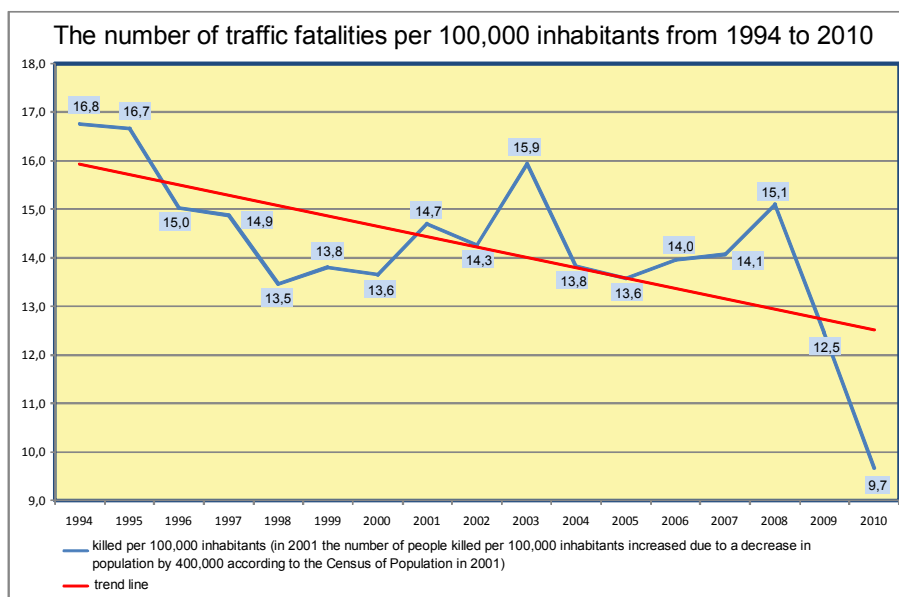
The safety of a country's road traffic is measured by the number of traffic casualties. There are three possible conditions of road users involved in crashes, i.e. killed persons, seriously injured and slightly injured. The main indicator is the number of killed persons per 100,000 inhabitants, regardless of the fact that this indicator can give an unreal picture of a real situation; its number symbolizes (un)successfulness of total activities of a country in implementing the road traffic safety policy.

The following diagram shows the number of traffic fatalities from 1994 to 2010.



The trend of a decrease in the traffic fatalities is obvious in the whole period.

The number of traffic fatalities per 100,000 inhabitants is shown in the following diagram.



The trend of a decrease is also present here.

Besides the above statistic data the following should be mentioned:

- a decrease in the most severe consequences of traffic accidents in fast growing traffic;
- a significant increase in preventive police (as well as other actors) actions and a decrease in repressive actions;
- raising citizens' awareness about the traffic safety problem through continuous campaigns;
- adjusting legislation with consequences and causes of traffic accidents;
- making the media and the public aware of the problem with traffic casualties;
- an increase of traffic culture;
- involvement (at least formal) in the programme implementation of all state bodies and professional organizations whose work is

connected to the road traffic safety, which enables an interdisciplinary and interdepartmental modern approach to the problem of road traffic safety.

### **1.3. THE EFFECTS OF THE IMPLEMENTATION OF THE NATIONAL PROGRAMME FROM 2006 TO 2010**

The basic characteristics of the National Programme are set quantitative and qualitative goals defined by programmes, road authorities, ways of adoption of established measures, analysis of results and the programme evaluation.

Quantitative goals are defined according to the European goals for the same period, regarding the number of fatalities related to the number of inhabitants. The goal of the European Union is to decrease the number of fatalities in road traffic by 2010 to the level of seven fatalities per 100,000 inhabitants.

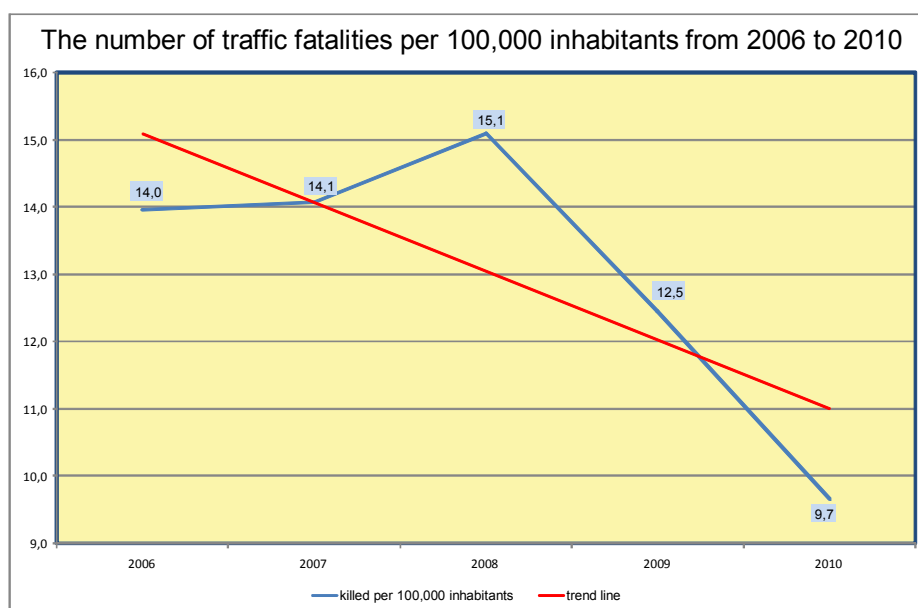
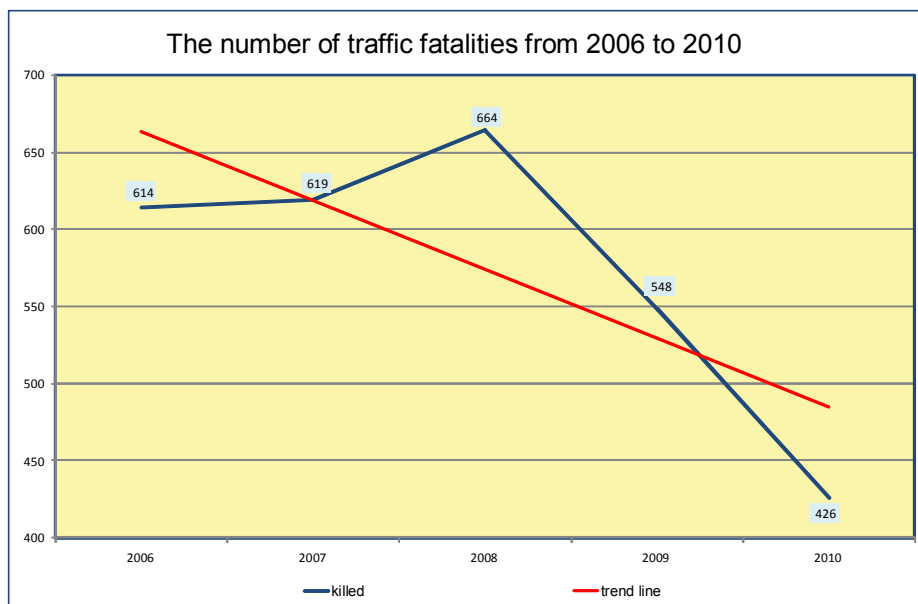
Croatia should have aimed at reaching the European goal, but taking into account many specific circumstances and since the funds which are set aside are not nearly as big as the funds set aside by Western European countries, it is reasonable to expect a decrease from 13.8 to 10 fatalities per 100,000 inhabitants in 2010.

Also, qualitative goals correspond to the European goals while taking into account specific features of the Croatian territory, which determine the established quantitative goal.

The goal was to decrease the number of traffic fatalities in five years, proportionally by about 30 persons a year (from 597 in 2005 to 440 in 2010). Unfortunately, this number increased in 2006 and 2007, and in 2008 it reached 664 fatalities or 15.1 fatalities per 100,000 inhabitants. The set goal seemed impossible to achieve.

Today, at the beginning of 2011, after the review of final official data for the year 2010, it is obvious that after the decrease in 2009 of 116 fatalities compared to the previous year, the trend of decrease prevailed in 2010, so the number of fatalities accounts for 426, i.e. there is a decrease of 122 persons compared to the year 2009. So, the number of fatalities per 100,000 inhabitants decreased from 15.1 in 2008 to 9.7 in the year 2011, which means that the goal of the National Programme was not only achieved but exceeded as well.





After the increase of fatalities in the first three years of programme implementation, it is realistic to pose a question: What caused the significant decrease in the subsequent two years? It is not possible to give a correct answer. It is often heard in the media, in the conversations with people who think that they are competent, that the reason is the omnipresent recession. Namely, the explanation is that people in today's situation are cautious about everything and thus are more careful in traffic. This explanation is not absolutely acceptable, but is a priori not rejected. Recession is not a healthy condition and people are burdened with their own livelihood, distracted, lost, absent-minded, thoughtful, which does not go along with the traffic safety. In our opinion, the answer to this question is much more complex, as is traffic itself.

In this sense, it can be said that police activities contributed to the better situation. On the basis of analysis of statistical and analytical indicators of safety situation (accidents are analyzed relating to time and space), the police observe certain phenomena which endanger the traffic safety and on the basis of collected data, by proper organization of the service, i.e. deploying police officers to the most critical spots on highways, efficiently deal with such phenomena.

In the last couple of years more than a thousand kilometres of roads of highest level of service (motorways and fast roads) have been built in Croatia and a large number of the most frequent state roads have been reconstructed.

Also, the fleet of Croatian legal and physical persons has been renewed so on our roads there are vehicles equipped with devices which enable a high level of passive safety.

Besides, it should be emphasized that the legal regulations provided faster and more effective implementation of provisions regarding this field and the public get the impression that all those who break traffic rules are promptly punished.

In our opinion, the cause of a better situation is mobilization of experts and pundits who are intensively involved with this problem. There have never been so many various actors, from citizens' associations, professional associations to state institutions, which organize and perform different activities, seminars, round tables etc. on the topic of road safety.



It is necessary to emphasize that such a positive trend is noticed in the majority of European countries, but in none of them is there an official opinion of the reasons for that.

Consequently, the truth could be in the fact that lately a lot of things have happened, which more or less are conducive to an improvement in road traffic safety.

It should be emphasized that according to the survey on the National Programme implementation, citizens perceive the Ministry of the Interior, i.e. the police as the service provider exclusively responsible for the road traffic safety.

Indeed, regardless of the moves in the right direction, it is high time for all, especially state bodies which deal with road traffic safety, to assume responsibility and contribute to the full affirmation and implementation of the National Programme.

## **2. CIRCUMSTANCES IN WHICH A NEW NATIONAL PROGRAMME IS BEING INTRODUCED**

### **2.1. THE GLOBAL RISE IN ROAD TRAFFIC INJURIES**

1.3 million people are killed and 50 million injured annually in traffic accidents each worldwide. By 2030 road crashes are forecast to become the fifth leading cause of death rising to 2.4 million fatalities per year if current trends continue.

Low and middle income countries account for 90% of global deaths from traffic accidents every year but have only 48% of the world's registered vehicles. By 2020 their share of vehicle use will rise to 60% as the fleet more than doubles.

Traffic accidents are already the number one killer of young people in all world regions aged between 10 and 25. Namely, the most vulnerable are children, young people and other vulnerable groups (cyclists, motorcyclists, pedestrians). This is a preventable epidemic. Proven effective road injury prevention policies include promoting seat belt and helmet use, discouraging drink-driving and speeding, building safer roads and motor vehicles, and improving post crash response.



## 2.2. THE 'SAFE SYSTEMS' APPROACH

Human errors which cause traffic accidents should be tolerated in a 'forgiving' road system that is designed to ensure, as far as possible, that the consequences of human errors are non-fatal. This requires that the levels of kinetic energy released in a crash must be managed at levels that are survivable by the human body – usually an impact of less than 40 kph.

The 'Safe systems approach' treats the road user, the vehicle and the road as three parts of a dynamic system with the following priorities for action:

- Safer Road Users: promoting use of helmets and seat belts, and preventing speeding and drink-driving;
- Safer Roads: investing in 'forgiving and self enforcing' roads that have high iRAP (International Road Assessment Programme) protection scores;
- Safer Vehicles: applying global passive safety standards, and crash avoidance systems such as Electronic Stability Control (ESC), and using NCAPs (New Car Assessment Programmes) to create a market for safety.

## 2.3. PROGRESS IN EUROPE

The European Union has made good progress in reducing road crash fatalities over the last decade. Countries such as France, Portugal and Spain have made the biggest reductions, whilst the Netherlands, Sweden and the UK remain world leaders in road injury prevention. Others have fared much less well such as Greece and Romania.

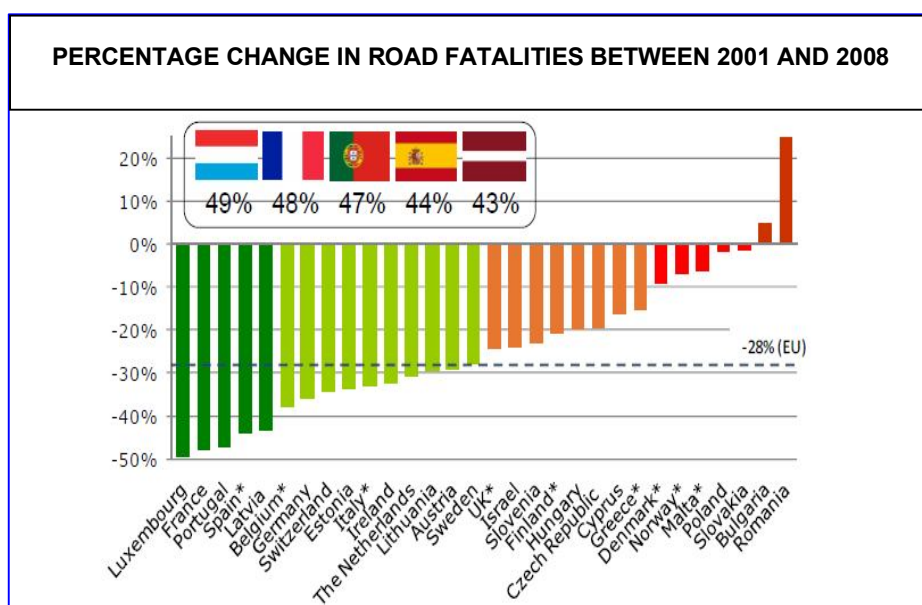
Beyond the European Union the rest of Europe has many of the characteristics of other low and middle income regions. Road injury is either still rising or declining at too slow a rate.

The World Health Organization European Status Report shows that more than 120,000 people are killed and 2.4 million are injured each year across the region. Road crashes are the leading cause of death of adolescents and young adults. Pedestrians, cyclists and motorcyclists account for 39% of all fatalities. And a third of the countries in the region



do not have national, multi-sectoral road safety strategies, despite costs that can exceed 3% of GDP (gross national product).

The UN Decade of Action provides a great opportunity for all of Europe to improve.



## 2.4. A DECADE OF ACTION

In 2004 the World Health Organization and the World Bank published the World Report on Road Traffic Injury Prevention. It described road injuries as a growing, but preventable public health crisis costing low and middle income countries 65 billion dollars.

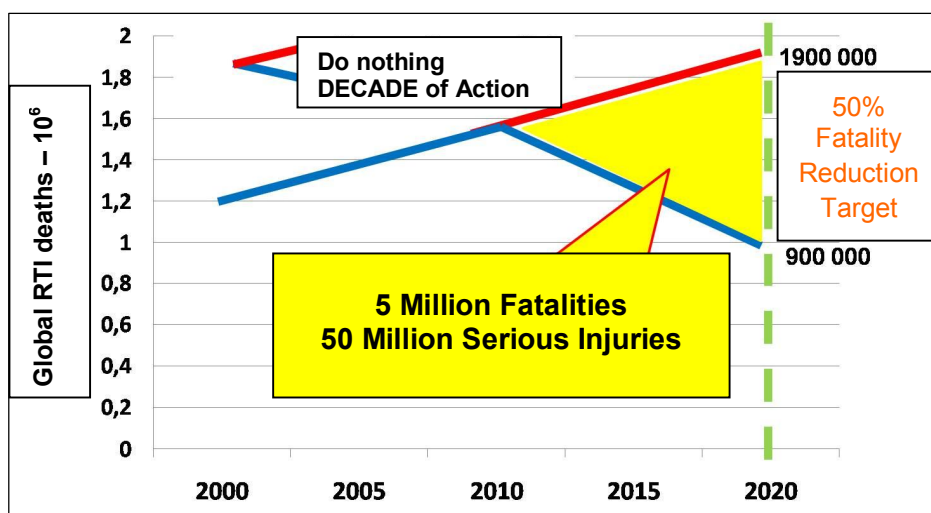
In 2006 and 2009 the Commission for Global Road Safety, chaired by Lord Robertson, published reports which called for action:

- proposing a 300 million dollars worth ten-year Action Plan to promote road safety capacity building in developing countries;
- organizing the first ever Ministerial Conference on global road safety and

- declaring a UN Decade of Action with the goal to reduce by 50% the forecasted level of road fatalities by 2020.

The first ever Ministerial Conference on Road Safety was held in Moscow on 19-20 November, 2009, hosted by President Dmitry Medvedev of the Russian Federation. 1,500 delegates from 147 countries and 80 ministers participated, and adopted the Moscow Declaration, which endorsed the call for a Decade of Action.

The UN General Assembly proclaimed the Decade of Action on 2<sup>nd</sup> March 2010. The resolution, sponsored by 100 countries, supports the goal to „stabilize and then reduce the level of road fatalities“. This will require a 50% reduction in the forecast level of fatalities by 2020. If achieved this would avoid 5 million deaths, 50 million injuries and save 3 trillion in social costs.



The Decade of Action will be launched by a global relay of events planned for 11<sup>th</sup> May 2011.

The Decade Action Plan will be based on five pillars:

1. Building Management Capacity
2. Encouraging Safer User Behaviour
3. Building Safer Roads
4. Building Safer Vehicles
5. Improving Post Crash Care.

Each pillar will include indicative and interim targets to progress towards the overall goal of saving 5 million lives. A mid-term review of the Decade of Action will be hosted by the Sultanate of Oman in 2015.

The symbol of the Decade of Action was launched in September 2009 at the UN Millennium Development Goals Summit by the Mayor of New York, Michael Bloomberg and by Lord Robertson at the World Conference on Injury Prevention in London.



### **3. NATIONAL IMPLEMENTATION OF EUROPEAN AND WORLD MOVEMENTS**

Safety of all road users is one of the basic social goals. Regardless of the results achieved in implementing the last National Programme, which are encouraging, but yet do not bring great pleasure because we are far from achieving goals set in the 3<sup>rd</sup> EU Action Plan for Member States for the period from 2001 to 2010.

In July 2010, the European Commission adopted the 4<sup>th</sup> Action Programme for the road traffic safety from 2011 to 2020, which should be the framework for national strategies of all EU Member States. Probably the forthcoming accession of Republic of Croatia to the European Union imposes a need to implement the framework of actions and goals established in the 4<sup>th</sup> Action Programme into our National Programme.

The framework for the new National Road Safety Programme of the Republic of Croatia is based on the regulations and guidelines of the Moscow Resolution of 2009, UN Resolution 62/244 of March 2010 and adopted the 4<sup>th</sup> Action Programme of the European Commission.

Based on the above-mentioned:

- The National Road Safety Programme is adopted for the ten-year period, from 2011 to 2020.
- Its programme overlaps with the framework for the Decade of Action for the road safety.
- The National Programme is adopted by the Government of the Republic of Croatia, and starts with the date of the adoption, at the beginning of 2011. Its promotion is planned for 11 May 2011, in accordance with the global promotion and beginning of activities of the Decade of Action for road safety.
- National Programme is implemented in two-year interim periods.
- At the beginning of 2011, a detailed report will be made on the effects of the National Programme from 2006 to 2010, and will be a guideline for defining activities in the first two-year interim period.
- The Programme determines the competent authorities for each planned activities for the whole period.
- After each interim period a report will be made on undertaken activities and their effects assessed.
- The evaluation of effects will be a basis for possible correction of goals, activities, competent authorities, co-competent authorities or deadlines for achieving goals for the following reporting period.
- A final report and valorisation of effects are expected at the beginning of 2021.



## **4. A VISION AND GOALS OF THE NATIONAL PROGRAMME**

### **4.1. A VISION**

**A drastic decrease in traffic fatalities and serious injuries, costs of traffic accidents, improving health and quality of life, and safe and sustainable mobility.**

### **4.2. QUALITATIVE GOALS**

- Encourage the implementation of the recommendations of the World Report on Road Traffic Injury Prevention made by the World Health Organization;
- Reinforce governmental leadership in road safety, including designating or strengthening lead agencies and related coordination mechanisms at national and sub-national level;
- Set ambitious yet feasible national road traffic casualty reduction targets that are clearly linked to planned investments and policy initiatives and mobilize the necessary resources to enable effective and sustainable implementation to achieve targets in the framework of a safe systems approach;
- Make particular efforts to develop and implement policies and infrastructure solutions to protect all road users, in particular those who are the most vulnerable such as pedestrians, cyclists, motorcyclists and users of public transport, as well as children, the elderly and people with disabilities;
- Begin to organize and implement safer and more sustainable transportation, including land-use planning initiatives and by encouraging alternative forms of transportation;
- Promote harmonization of road safety regulations and good practices through the implementation of relevant resolutions and instruments and a series of manuals on road traffic safety issued by the United Nations;
- Raise awareness of the need for systematic improvement of legislation – the existing legislation on traffic safety, vehicle safety regulations and vehicle registration systems using the appropriate international standards;

- Encourage organizations to contribute actively to improving work-related road safety through adopting the use of best practices in fleet management;
- Encourage collaborative action by fostering cooperation between relevant entities of public administrations, private and public sectors, and with civil society;
- Improve the methods and ways of data collection and comparability at the international level, including adoption of a standard definition of a road death as any person killed immediately or dying within 30 days as a result of a road traffic crash and standard definitions of a minor, medium or serious injury in a road traffic crash; which facilitates harmonization, reliability and measurability of collected data on road crashes;
- Strengthen the provision of trauma care of people injured in road traffic crashes, improve pre-hospital emergency services, hospital rehabilitation and social reintegration through the implementation of appropriate legislation, development of human capacity and improvement of access to health care so as to ensure the timely and effective delivery to those in need.

### 4.3. QUANTITATIVE GOALS

Since the National Programme has been adopted for the same period for which the European Union adopted the 4<sup>th</sup> Road Safety Action Programme in which it is suggested, even if the set goal will not be achieved till then, to plan for the next period (2011-2020) a decrease of 50% in the number of traffic fatalities, especially for the reason of Croatia's forthcoming accession to the European Union, it should adjust its goals to the European ones. If by 2020 this goal of reducing by 50% the number of persons killed in road traffic accidents is achieved, the Republic of Croatia would significantly come close to the countries which for many years have had excellent results in traffic safety.

Such an ambitious goal is achievable if it gets, not only declarative, but real support from the highest state bodies and individuals and if civil society institutions get involved in its realization in order to sensitize and encourage a wider circle of people to contribute to the common goal.



Killed in road crashes	2009	2010	Expected number in 2020 with achieved reduction target of 50%
Killed	548	426	213

Besides, quantitative goals, as part of aspirations of previous National programmes are defined by:

- 90% of drivers obeying the speed limit for road vehicles in optimal traffic conditions, whereas other drivers must not exceed the speed limit by more than 15%;
- the level of speed dispersions of vehicles moving in a traffic flow up to 10%;
- 98% of drivers and passengers using seat belts;
- 98% of moped riders, motorcyclists and passengers wearing helmets;
- decreasing the number of people who cause road traffic crashes under the influence of alcohol from 13.5% to 8%, as well as the decrease in fatalities in these crashes from 30.3 % to 15%;
- decreasing by 30% the number of people who died during transportation to hospital or within 30 days of being injured in road traffic crashes.

## 5. PRINCIPLES OF THE NEW NATIONAL PROGRAMME

### 5.1. STRIVING FOR THE HIGHEST STANDARDS

Road safety policy has to put citizens at the heart of its action: it has to encourage them to take primary responsibility for their safety and the safety of others. The road safety policy of the EU aims at raising the level of road safety, ensuring safe and clean mobility for citizens every-



where in Europe. Since the Republic of Croatia is very soon to be accepted as a Member State of the European Union, these standards of traffic safety must be widely accepted.

A particular standard which should be accepted, promoted and supported is fostering equity among road users through focused activities to improve the safety of the most vulnerable road users.

## **5.2. AN INTEGRATED APPROACH TO ROAD SAFETY**

The future road safety policy should be taken into account in other policy fields, and it should take the objectives of these other policies into account. Road safety has close links with policies on energy, environment, employment, education, youth, public health, justice, insurance.

## **5.3. SUBSIDIARITY, PROPORTIONALITY AND SHARED RESPONSIBILITY**

The question of governance is essential: in accordance with the principles of subsidiarity and proportionality, which in road safety are embodied in the concept of shared responsibility. Commitment and concrete actions, as appropriate, will be required at the level of the European authorities, the Member States, regional and local bodies and the actors in civil society. The European Road Safety Charter is a good example of commitments.

## **6. STRATEGIC OBJECTIVES OF THE NATIONAL PROGRAMME**

The road user is the first link in the road safety chain, whatever the technical measures in place and the effectiveness of a policy. Road safety policy depends ultimately on the users' behaviour. For this reason, education, training and enforcement are essential. However, the road safety system also has to take into account human error and inappropriate behaviour and correct it as much as possible. All components,



in particular vehicles and infrastructure, should therefore be 'forgiving', so as to prevent and limit the consequences of these failures for the users.

Measures which should be taken in order to achieve goals set by this Programme can be divided into five categories:



**Improvement in road user behaviour**



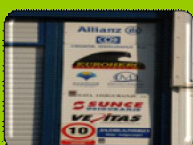
**Better road infrastructure**



**Safer vehicles**

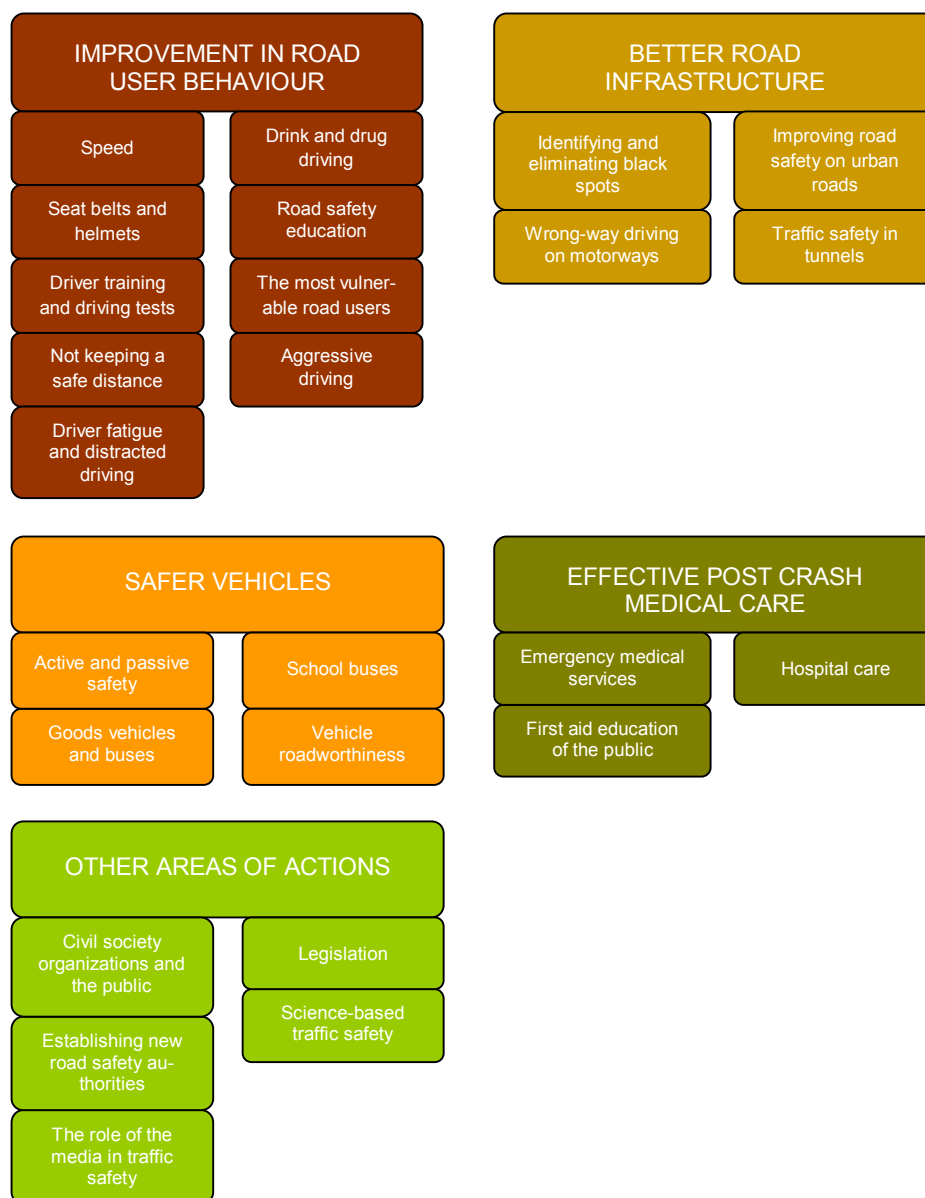


**Effective post crash medical care**



**Other areas of actions**

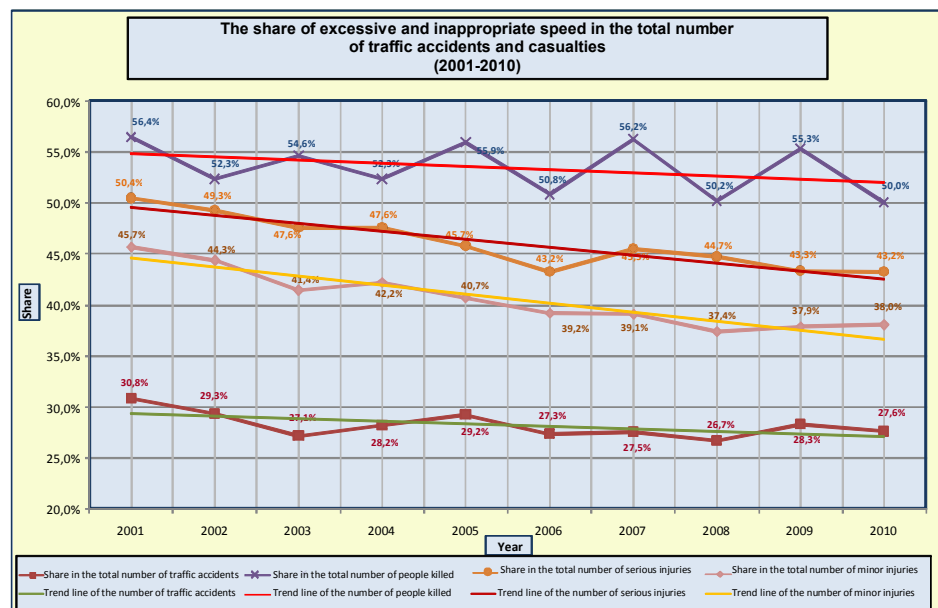
This Programme also specifies particular segments of each category which should be focused on.



## 6.1. IMPROVEMENT IN ROAD USER BEHAVIOUR

### 6.1.1. Speed

Statistics show that the main cause of road crashes is inappropriate and excessive speed. It particularly applies to traffic accidents with serious consequences.



The Figure shows that, despite the downward trend, inappropriate and excessive speed remains the main cause of traffic accidents.

As speed control is one of the fundamental tasks of traffic police, it is necessary to provide new speed measurement devices to make their work more effective. Therefore, outdated or worn-out devices should be replaced by new ones, for monitoring places and state, county and local road sections, identified by the analysis as potentially hazardous.

In addition to police speed monitoring and sanctioning people who break regulations, it is necessary, especially in densely built-up areas, to use vehicle-based Intelligent Speed Assistance system (ISA), which informs drivers about their immediate speed and warns them if the speed is inappropriate.

Speed-monitoring cameras will be used on motorways and risky road sections to provide continuous monitoring.

Furthermore, it is necessary to raise public awareness of speed limits and adjustments of speed to suit road conditions through the preventive and educational media campaign, regardless of extraordinary traffic conditions, weather conditions or any other exceptional circumstances on or off the roadway.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Using preventive and repressive monitoring devices on roads		X	X	X	ministry in charge of transport, motorway concession companies, Croatian Roads Ltd., County Road Offices
Acquisition of devices for traffic police	X	X	X	X	Ministry of the Interior
Sanctions for exceeding the speed limit	X	X	X	X	Ministry of the Interior
Using Intelligent Speed Assistance (ISA) system				X	Local administration
Adjustment of speed limit signs to the actual roadway conditions			X		ministry in charge of transport
Undertaking preventive and educational speed-related campaigns			X	X	Ministry of the Interior
Research			X	X	ministry in charge of science

### 6.1.2. Drink and drug driving

Drink driving is still, despite the severe sanctions for offenders, a frequent cause of traffic accidents in the Republic of Croatia.

Mandatory breath testing of all road users after accidents and frequent road checks have contributed to the decrease in the number of drink drivers, so these methods, together with the mass media campaigns for reducing alcohol-impaired driving, should be implemented further on.

**DRINK DRIVERS IN TRAFFIC ACCIDENTS**  
(COMPARISON BETWEEN 2009 AND 2010)

				Share in the total number of traffic accidents and casualties	
TRAFFIC ACCIDENTS CAUSED BY DRINK DRIVERS	2009	2010	2010/2009 +/- %	2009	2010
with people killed	141	124	-12,1	28,6%	30,8%
with people injured	3 283	2 388	-27,3	21,5%	18,6%
with material damage	4 685	3 475	-25,8	13,5%	11,2%
TOTAL	8 109	5 987	-26,2	16,1%	13,5%
CONSEQUENCES FOR ALL TRAFFIC ACCIDENTS VICTIMS, CAUSED BY DRINK DRIVERS	2009	2010	2010/2009 +/- %	2009	2010
people killed	150	129	-14,0	27,4%	30,3%
people seriously injured	987	763	-22,7	25,2%	24,0%
people slightly injured	3 915	2 808	-28,3	21,7%	18,5%
TOTAL	5 052	3 700	-26,8	22,5%	19,7%
CONSEQUENCES FOR DRINK DRIVERS IN TRAFFIC ACCIDENTS, CAUSED BY	2009	2010	2010/2009 +/- %	2009	2010
people killed	57	68	19,3	18,7%	29,2%
people seriously injured	532	414	-22,2	22,5%	22,4%
people slightly injured	1 647	1 206	-26,8	15,1%	13,5%
TOTAL	2 236	1 688	-24,5	16,5%	15,3%

Regardless of the decrease in the number of drink drivers who caused traffic accidents, the Table shows the increase of involvement of drink drivers in traffic accidents with people killed as well as the number of people killed.



Therefore, intensive repressive and preventive activities will be conducted further on, as obviously almost one third of all serious traffic accidents are caused by drink drivers. **In this sense, it is suggested that the installation of an Alcohol Interlock system should be mandatory for repeat offenders.**

The problem of drug driving has increased lately. Substantial costs of drug detection devices, together with the difficulty of recognizing impairment in drivers under the influence of drugs, are the reasons that this problem is probably far greater than shown by the official statistics.

A few years ago the police in the Republic of Croatia started with harsher sanctioning of drug driving. They use a certain number of preliminary drug testing devices, some of which are funded by the Instrument for Pre-Accession Assistance (IPA).

The indicators for 2010 show that out of 2331 drivers who were offered preliminary testing, 2021 of them agreed to it. The presence of drugs was found in 644 drivers, and out of this number 352 drivers agreed to give urine and blood samples for further analysis. Finally, after blood and urine analysis the presence of drugs was found in 59 drivers. Accusatory motions were filed against 661 drivers (310 for refusing testing, 292 for refusing to give blood and urine samples and 59 for the presence of drugs).

It should be mentioned that testing is of a preliminary character. The basis for filing accusatory motions is not just a positive result, but a positive result after blood and urine analysis.

Since the problem of drug driving is usually related to younger drivers, who belong to the risk group, it is necessary to allocate more resources for acquisition of drug detection devices and for training of police officers in easier identification of drivers under the influence of drugs (use findings of EU DRUID (Driving under the Influence of Drugs, Alcohol and Medicines) project).

On Croatian roads there exists, to a certain extent, a problem of driving under the influence of medicines, which are forbidden to use when driving. This problem is insufficiently researched, so it is difficult to say how such behaviour can influence road safety.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Regular and targeted checks of drivers with the purpose of sanctioning drug driving	X	X	X	X	Ministry of the Interior
Extraordinary medical check-ups of repeat drunk drivers			X	X	Ministry of the Interior, ministry in charge of health
Strict obeying provisions of Article 233 of the Road Traffic Safety Act			X	X	ministry in charge of health
Suggesting installing Alcohol Interlock for repeat drink driving offenders				X	ministry in charge of health, ministry in charge of transport, Ministry of the Interior
Implementing alcohol, drug and medicines-related preventive and educational campaigns	X		X	X	ministry in charge of health, Ministry of the Interior, Croatian Autoclub (HAK)
Research			X	X	ministry in charge of science, ministry in charge of health

### 6.1.3. Seat belts and helmets

Documents of all relevant world organizations dealing with road safety specify that one of the most important safety elements for drivers and passengers is higher percentage of using seat belts and restraints for small children.

In addition, another very important segment of passive safety is wearing helmets by all moped riders or motorcyclists.

Lately, because of an increasing number of cyclists on roads, a helmet has become essential equipment for these road users.



Out of 205 passenger car drivers and passengers killed in 2010, 72 of them i.e. 35% did not use seat belts, and 18 out of 70 motorcyclists and motorcycle passengers killed did not wear safety helmets.

Generally speaking, without an exact confirmation, 70-75% of Croatian drivers use seat belts today, and the same percentage of motorcyclists and moped riders wear helmets.

According to the data selectively collected in Croatia several years ago, 40% of observed road users used seat belts and 30% wore helmets. Nowadays, using passive safety equipment has increased but still not enough, so a long-term target of 98% of its usage remains.

Furthermore, proper use of child seats is necessary to increase safety of children in vehicles, and the data that more children were killed as passengers in vehicles than as pedestrians impose the need for proper and prevailing use of protective equipment.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Regular and targeted checks of drivers and passengers in vehicles with the purpose of warning and sanctioning those who do not use seat belts or do not wear helmets - a special emphasis on passengers in back seats	X	X	X	X	Ministry of the Interior
Enacting bylaws concerning drivers and passengers in vehicles who will not be obliged to use seat belts			X		ministry in charge of health
A special attention should be paid to the necessity of using seat belts by children on supervised bus trips (or on other vehicles)			X	X	Ministry of the Interior, ministry in charge of education
Implementing preventive and educational campaigns related to using seat belts, helmets and proper transport of children in vehicles	X		X	X	ministry in charge of education, Ministry of the Interior
Research			X	X	ministry in charge of science

#### 6.1.4. Road safety education

Early traffic safety education is necessary in order to have long-term road users, who will obey regulations and recognize dangers in traffic. Parents should also be educated, so that they can teach children how to use roads safely.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Implementing traffic safety education as a compulsory subject in all stages of education (kindergarten, primary school, secondary school)				X	ministry in charge of education
Designing a cycling training course, cycling exam and a form of certificate			X		ministry in charge of education
Traffic safety education action plan 'Safely in traffic'	X		X	X	Croatian Autoclub, Education and Teacher Training Agency
Traffic safety education action at the beginning of a school year	X		X	X	Ministry of the Interior, Croatian Autoclub
A pilot project 'Road safety prevention in primary schools'	X				Education and Teacher Training Agency, Croatian Autoclub, Ministry of the Interior
A pilot project 'Road safety prevention in secondary schools'			X		Education and Teacher Training Agency, Croatian Autoclub, Ministry of the Interior
An education project for kindergarten children 'See and be seen'			X		Croatian Autoclub, Ministry of the Interior
An education project for fifth and sixth elementary school graders 'Look out for cars!'				X	Education and Teacher Training Agency, Croatian Autoclub, Ministry of the Interior

### 6.1.5. Driver training and driving tests

The driver training system should be adapted to the European standards and EC directives. Good practice from the European countries, which has been evaluated and has shown good results, should be implemented in our system (graded driving licence).

**CHARACTERISTIC INDICATORS OF TRAFFIC ACCIDENTS  
CAUSED BY YOUNG DRIVERS  
IN 2009 AND 2010**

		Comparison between 2009 and 2010		The share in the total number of traffic accidents and casualties	
2009	2010	difference	%	2009	2010

TRAFFIC ACCIDENTS						
TOTAL	8 758	6 739	-2 019	-23,1%	17,4%	15,2%
CASUALTIES	3 253	2 463	-790	-24,3%	20,7%	18,6%
- with people killed	107	56	-51	-47,7%	21,7%	13,9%
- with people injured	3 146	2 407	-739	-23,5%	20,6%	18,7%
WITH MATERIAL DAMAGE	5 505	4 276	-1 229	-22,3%	15,9%	13,7%

CASUALTIES						
TOTAL	5 060	3 761	-1 299	-25,7%	22,5%	20,0%
KILLED	116	67	-49	-42,2%	21,2%	15,7%
INJURED	4 944	3 694	-1 250	-25,3%	22,5%	20,1%
- seriously	832	590	-242	-29,1%	21,3%	18,5%
- slightly	4 112	3 104	-1 008	-24,5%	22,8%	20,5%

The Table shows a considerable decrease in the involvement of the 16 to 24-year old drivers in causing traffic accidents and casualties, so there is a positive trend in the decrease in the involvement of young drivers responsible for traffic accidents and casualties.

To date, a lot of laws have come into force, which are related to learner drivers training, driving tests and professional drivers training. In



the years to come it will be possible to evaluate the impact of these measures on road safety. However, during public and expert discussions, it was concluded that this system should be further improved, especially related to young drivers.

The Republic of Croatia must strongly engage in the problem, and promote a wider approach to it as well as enforce principles of 'life-long learning' about traffic and traffic safety education, with special emphasis on conducting driving tests.

In addition, it should be taken into account that the costs of training for the purpose of acquiring a driving licence stay reasonable.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Preparing for a driving test (provisional driving licence)				X	Croatian Autoclub Ministry of the Interior
A driving test (with greater importance of defensive and eco driving)		X	X	X	Croatian Autoclub
Post-driving test education (safety driving school)			X	X	Ministry of the Interior Croatian Autoclub
A theoretical part of a driving test - topic: 'Traffic accidents and their consequences'		X	X	X	Croatian Autoclub Ministry of the Interior
Eco driving for professional drivers				X	ministry in charge of transport, ministry in charge of environment, Croatian Autoclub
Additional training of professional drivers - safety driving school - big companies				X	ministry in charge of transport Croatian Autoclub
Implementing preventive and educational campaigns			X	X	Ministry of the Interior Croatian Autoclub

#### 6.1.6. The most vulnerable road users

The number of deaths and serious injuries in traffic accidents among the most vulnerable road users, such as children, motorcyclists, moped riders, cyclists and pedestrians, is significant. Also, elderly people, small children and people with disabilities are especially vulnerable groups, regardless of their role in traffic.

Children, motorcyclists, pedestrians, cyclists, the elderly and people with disabilities are the most endangered groups, and a special attention should be paid to their safety.

In 2010, 10 children were killed and 1327 injured in Croatia, which is a decrease of more of 50% compared to the year 2009. In addition, after several years, a 70% drop was recorded in the number of children killed as passengers. It is obvious that the traffic education of children and frequent media campaigns targeting parents produced positive results.

Regarding casualties among motorcyclists and moped riders, 70 of them were killed in 2010. Also, 28 cyclists and 105 pedestrians were killed. Compared to 2009, the number of motorcyclists and moped riders killed has decreased by 27%, cyclists by 3.4%, and the number of pedestrians killed has increased by 1.9%.

In view of all this, it is obvious that a lot more should be done for the protection of these road users, for which there are enough resources available.

For additional protection of this category of road users, it is necessary to educate them permanently about responsible and safe road use, as well as to raise the awareness of other road users to the presence of and threat to the most vulnerable groups in traffic.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Safety education activities for target groups	X		X	X	Croatian Autoclub, ministry in charge of education, Ministry of the Interior
Constantly promoting compliance with the statutory requirement of using reflective material by pedestrians and cyclists			X	X	Ministry of the Interior, Croatian Autoclub, ministry in charge of education
Building adequate infrastructure for pedestrian and cyclist routes as well as those for mobility impaired persons			X	X	Ministry of the Interior, Croatian Autoclub, ministry in charge of transport, local administration
Creating training grounds for cyclists			X	X	Croatian Autoclub, local administration
Implementing preventive and educational campaigns			X	X	Ministry of the Interior

#### 6.1.7. Not keeping a safe distance

Traffic accidents are frequently caused by not keeping a safe distance, and the consequences are often fatal when they occur on a motorway, where speeds are high. The traffic police monitor speeds on motorways, and in order to monitor a safe distance of vehicles, the legislation should determine reference point values for keeping a safe distance between vehicles, put adequate traffic signs and acquire equipment for controlling if signs are being obeyed.

Besides police monitoring, the media campaigns should warn drivers of the necessity of keeping a safe distance.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Initiation of regulations governing a required following distance between vehicles				X	Ministry of the Interior
Acquisition and implementation of devices for calculating following distance				X	Ministry of the Interior
Placing adequate traffic signs on roads				X	ministry in charge of transport
Implementing preventive and educational campaigns				X	Ministry of the Interior

#### 6.1.8. Aggressive driving

Aggressive behaviour is often a cause of aggressive driving. A very wide range of aggressive behaviours that can provoke aggressive driving can be summed up as follows:

- Speeding, tailgating, not giving way, weaving in and out of traffic, overtaking from the right side, changing lanes without signalling, speeding up before the light turns red or running stop signs, nervous horn honking, headlight flashing, etc.
- In the anonymity of his/her car, expressing his/her frustration at other road users – by rude, obscene hand gestures, yelling at other road users, swearing
- Allowing oneself a high level of frustration, fighting for domination on the road and disregard for other drivers' needs
- Drink or drug driving, driving unbuckled or any other impaired driving

Regardless of the causes, aggressive driving and aggressive behaviours should be recognized and properly sanctioned. In order to achieve this goal, first of all, aggressive driving must be defined according to its manifestations, from mild to extreme forms of aggressiveness in road traffic.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Defining and grading of aggressive driving				X	Croatian Autoclub
Sanctioning of aggressive driving				X	Ministry of the Interior
Implementing preventive and educational campaigns				X	Ministry of the Interior

#### 6.1.9. Driver fatigue and distracted driving

The geographic position of Croatia as a transit and tourist country places focus on the problem of driver fatigue as one of risk factors in traffic. A special attention must be paid to this problem because of intensive transit cargo and passenger traffic the whole year round, and a lot of motorized tourists in summer, some of them travelling a long distance.

Besides that, a lot of new devices are used during driving, such as mobile phones, navigation devices and others, which often, despite their usefulness, distract the driver's attention from the road and cause an incident.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Providing adequate rest areas on all major routes				X	ministry in charge of transport
Monitoring tachographs related to the driving time (goods vehicles and buses)	X	X	X	X	ministry in charge of transport, Ministry of the Interior
Implementing preventive and educational campaigns			X	X	Ministry of the Interior

## 6.2. BETTER ROAD INFRASTRUCTURE

### 6.2.1. Identifying and eliminating black spots

Apart from drivers and vehicles, road infrastructure is a major factor of road safety. Regardless of the existing indicators which show that poor road conditions cause a small percentage of traffic accidents, it is obvious that well-designed, well-built and properly maintained roads have a great influence on road safety.

For several years now road black spots have been eliminated in Croatia due to implementation of the National Programme. Project documentation, funded by the national Programme, was made ten years ago for eliminating 64 black spots on the state, county and local roads in Croatia. Projects are being made to eliminate 4 black spots on motorways and total elimination of 6 black spots on county and local roads is being carried out. It should be pointed out that the number of traffic accidents and casualties decreased and that road crashes never occur on all eliminated black spots.

Besides, since last year the police have been using the Global Positioning System (GPS) to find all accident locations, which makes detection of black spots easier.

In addition, the risk mapping of 3,400 km long Croatian roads is being made by the European Road Assessment Programme (EuroRAP), which is an international not-for profit association, founded by motoring organisations and road authorities with the goal of safety road improvement on European roads.

Railway level crossings are potential accident black spots. From 2007 to 2010, 30 people were killed on these crossings. The characteristic of accidents in which a train crashes into a road vehicle is that people are seriously injured. Thus, special attention should be paid to this problem.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Developing Global Positioning System of road crashes and its easier availability to all road safety professionals	X	X	X	X	Ministry of the Interior
Eliminating black spots	X	X	X	X	County Road Offices, local administration, motorway concession companies
Defining responsibility of designers and builders working on accident black spot elimination and their sanctioning			X	X	ministry in charge of transport, Ministry of the Interior
EuroRAP - Making a risk mapping of 3,400 km long Croatian roads	X	X	X	X	Croatian Autoclub, The Institute of Transport and Communications
Proposing the elimination of certain railway level crossings and additional safety to others (light and sound signals, full barriers and half barriers)	X	X	X	X	ministry in charge of transport, Croatian Railways
Making a programme for safety improvement on railway level crossings in Croatia from 2011 to 2020		X	X	X	ministry in charge of transport, Croatian Railways, Croatian Roads Ltd., County Road Offices, local administration
Implementing preventive and educational campaigns			X	X	ministry in charge of transport, Croatian Railways, Croatian Roads Ltd., County Road Offices



### 6.2.2. Improving road safety on urban roads

Most traffic accidents occur on urban roads. A significant improvement in safety on urban roads can be achieved by redesigning the existing roads and especially crossroads, and by implementing new technological solutions to improve safety. Positive experience of some Croatian towns, which made big moves in that aspect, should be implemented.

We should continue to implement the European consumer-testing programme (EuroTest), which conducts testing and analysis of safety parameters for urban traffic and road infrastructure (road work zones, pedestrian crossings, road signs, park and ride systems, public transport) and the CIVITAS Initiative for promoting sustainable, cleaner and energy-efficient transport in cities (road infrastructure, traffic signs, road design, public transport, etc.), and apply the research findings to improve the current situation.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Introducing new technologies for urban safety management				X	ministry in charge of transport, local administration
Solving traffic jam problems in cities with more one-way streets and building roundabouts				X	ministry in charge of transport, local administration
Improving public transport				X	ministry in charge of transport, local administration
Building pavements, bicycle lanes, pedestrian crossings				X	ministry in charge of transport, local administration
EuroTest - testing road infrastructure, organization and quality of urban traffic and public transport		X	X	X	Croatian Autoclub, Ministry of the Interior, local administration
Implementing preventive and educational campaigns			X	X	Croatian Autoclub, Ministry of the Interior, local administration

### 6.2.3. Wrong-way driving on motorways

As the length of new motorways has increased with more exits and entries, drivers often enter the wrong lane and continue to drive in the wrong direction. Such driving often results in fatal consequences. Future actions should be based on developing and implementing technological achievements, which could prevent such situations and teach other drivers how to behave in the situations with a vehicle moving in the wrong direction.

It is necessary to systematically observe this hazardous situation and possible accidents, which may lead to the designing and implementation of other effective solutions, even mechanical barriers, and will result in drastic decrease in such behaviour and accidents.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Introduce the existing traffic sign "Stop - Wrong Way" into the Regulation of Traffic Signs	X	X	X		ministry in charge of transport
Place the sign on all possible wrong-way entries with technical solutions for preventing the wrong-way driving			X		ministry in charge of transport, motorway concession companies
Implementing preventive and educational campaigns			X	X	ministry in charge of transport, motorway concession companies

#### 6.2.4. Traffic safety in tunnels

Through active participation in the European Tunnel Assessment Programme (EuroTAP), Croatia tested some of its tunnels and won an award for achieving safety standards. This positive experience should be used for testing and improving the safety of those tunnels that were not assessed by this project.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Strict sanctioning of drivers who do not obey traffic rules for driving in tunnels	X	X	X	X	Ministry of the Interior
EuroTAP - tunnel assessment	X		X	X	Croatian Autoclub, motorway concession companies, Croatian Roads Ltd.
Installing vertical and horizontal signalization, lighting, video monitoring systems in tunnels				X	ministry in charge of transport, motorway concession companies, Croatian Roads Ltd., County Road Offices
Implementing preventive and educational campaigns			X	X	Ministry of the Interior, ministry in charge of transport, motorway concession companies, Croatian Roads Ltd., Croatian Autoclub, the media



## 6.3. SAFER VEHICLES

### 6.3.1. Active and passive safety

In the previous period, major breakthroughs were made in traffic safety. Although the safety of passenger cars has increased, due to passive safety devices in cars, such as seat belts and air bags, not enough attention has been paid to installing electronic systems in other vehicles, especially motorcycles.

For several years now, a lot of research has been made about the Intelligent Transport Systems (ITS). In the years that follow, this system should contribute to the efficiency and a quicker response of emergency services, and especially to the implementation of pan-European in-vehicle emergency service - eCall. This initiative of the European Commission has as its goal that every vehicle should be equipped with devices which would enable that, in case of a traffic accident, a vehicle notifies rescue services about the exact location of the accident site and thus reduce the period between the arrival of medical services and the transport of the injured to hospital. The effect and range of e-Call transmission should be tested, especially with reference to motorcyclists, heavy vehicles and buses in order to improve post-crash response.

Despite its impact on traffic safety increase, a development of intelligent systems, especially those installed in vehicles, can sometimes cause negative effects (distraction during driving).

The already mentioned European project 'EuroNCAP', through performing crash testing of new vehicles, informs potential buyers about safer cars and recommends buying them.

A significant progress in road safety is expected from the development and implementation of the so-called "cooperative systems" where data are exchanged between vehicles, as well as between vehicles and infrastructure, in order to inform drivers at any time about the situation on the road.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Exploring new technologies and according to the actual situation demanding to ban the import of vehicles which do not comply with certain standards				X	Vehicle Center of Croatia, State Office for Metrology, scientific institutions

### 6.3.2. School buses

A significant number of school children travels by buses. Thus, even a small move in safety standards for these vehicles is very important. Besides modern equipment for active and passive safety, the European Commission recommends installing mandatory instalment of an alcohol breath screening device that prevents a vehicle from starting if it detects alcohol (Alcohol Interlock).

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Safety inspections of school buses (fulfilment of conditions specified in the Regulations)	X	X	X	X	ministry in charge of transport, Ministry of the Interior
Mandatory use of seat belts by children			X	X	ministry in charge of education
Mandatory instalment of Alcohol Interlock device in school buses			X	X	ministry in charge of transport
Implementing preventive and educational campaigns			X	X	ministry in charge of education, Ministry of the Interior



### 6.3.3. Goods vehicles and buses

Heavy goods vehicles are over-involved in fatal accidents, since their high mass leads to severe consequences. That is why a special attention should be paid to this category of vehicles as far as road safety is concerned.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Initiate mandatory technical solutions for heavy goods vehicles for the purpose of safety			X	X	ministry in charge of transport, Vehicle Center of Croatia
Redirect heavy goods vehicle traffic to motorways			X	X	ministry in charge of transport
Implement preventive and educational campaigns			X	X	ministry in charge of transport

### 6.3.4. Vehicle roadworthiness

All statistical data show that human error is the most frequent cause of all accidents, while a vehicle is the least contributing factor. However, data analysis of vehicle technical inspection during 2008, 2009 and 2010 showed that more than 20% of vehicles did not meet the required technical conditions, i.e. that they were unroadworthy. It can be assumed that the number of unroadworthy vehicles, which caused road accidents, is higher than recorded by the official statistics. In favour of it are the data that, in the Republic of Croatia, a certain number of unregistered vehicles are on roads daily, whose roadworthiness is in question.

As a vehicle technical inspection is not performed on vehicles which were involved in traffic accidents, in most cases it is not possible to determine if unroadworthiness was the cause of the traffic accidents. Due to the lack of relevant information about the technical condition of a vehicle, some other contributing factors instead of a vehicle, are mentioned (mostly human). Thus, there is a danger of misinterpreting statis-



tical data, which results in bad preconditions for further actions in order to prevent traffic accidents.

On the basis of foreign experience regarding the issue in question, especially indicative are data about the last ten years, collected by Dekra, a German company, which has been performing vehicle technical inspections since 1976 in the Federal Republic of Germany, that as much as 36% of vehicles involved in traffic accidents were unroadworthy. According to the collected data, the most frequent causes of road crashes are the following car parts: tyres 30%, braking systems 30% and the car body 20%. Taking into account that the average age of vehicles in Germany is lower than in Croatia, that the car maintenance is better due to a higher standard of living and that a certain number of cars are unregistered in Croatia, it is expected that vehicle unroadworthiness as a cause of traffic accidents may be significantly greater than officially recorded.

In addition, it is necessary that all companies in Croatia in charge of vehicle technical inspection, registration and insurance permanently (annually) conduct preventive safety actions to sensitize vehicle owners about regular maintenance, regarding roadworthiness, regular vehicle registration and mandatory insurance.

Besides, it should be mentioned that, for some years past, as an obligation under the European directive, the Republic of Croatia regularly performs technical roadside inspection of the roadworthiness of commercial vehicles in order to eliminate unroadworthy vehicles from the roads. These inspections are performed by police officers, inspectors from the ministry in charge of transport together with inspection station supervisors.

Insurance companies should be also mentioned, which suffer great damage due to unregistered and uninsured vehicles on the roads. Lately, there has been a significant decrease in the number of unregistered vehicles. The preventive and educational campaigns by the Croatian Insurance Bureau in cooperation with the Ministry of the Interior surely contributed to it. Such cooperation, with the higher number of companies involved, as well as promoting new activities, should raise drivers' awareness of regular vehicle technical inspections, regular insurance and vehicle registration, and explain the consequences of avoiding those measures.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
More frequent technical roadside inspection of the roadworthiness	X	X	X	X	ministry in charge of transport, Ministry of the Interior, Vehicle Center of Croatia
Promoting greater involvement of citizens in the prevention and safety campaign 'Roadworthy and insured vehicle'			X	X	ministry in charge of transport, Vehicle Center of Croatia, Ministry of the Interior, Croatian Autoclub
Promoting an obligation of vehicle technical inspection after serious traffic accidents				X	ministry in charge of transport, Ministry of the Interior, Vehicle Center of Croatia, Croatian Autoclub, Croatian Insurance Bureau
Compliance of vehicle inspections and roadworthiness assessments with directives and recommendations of the European Parliament			X	X	Vehicle Center of Croatia, Croatian Autoclub
Cooperation between the Ministry of the Interior and the Croatian Insurance Bureau in order to exchange data about hazardous events			X	X	Ministry of the Interior, Croatian Insurance Bureau
Implementing preventive and educational campaigns to raise public awareness of regular vehicle technical inspection and mandatory insurance			X	X	ministry in charge of transport, Ministry of the Interior, Vehicle Center of Croatia, Croatian Autoclub, Croatian Insurance Bureau



## 6.4. EFFECTIVE POST CRASH MEDICAL CARE

### 6.4.1. Emergency medical services

On the Croatian roads, out of the total number of fatalities in 2009, 341 of them or 62.2% died at the scene of the accident, 58 or 10.6% died during transport to hospital, and 149 or 27.2% died in hospitals within 30 days of the traffic accident. In 2010, 258 or 60.6% of them died at the scene of the accident, 48 or 11.3% of fatalities died during transport to hospital, and 120 or 28.1% died in hospitals within 30 days of the accident.

Regardless of the probable influence of several factors, it can be assumed that a number of fatalities who died on the way to hospital or during hospital treatment would have survived if emergency medical service (EMS) response had been faster and more effective and hospital trauma care more adequate.

Data from the medical literature and opinions of medical professionals presented at various conferences on road safety, point out that better organized outpatient EMS and more adequate hospital treatment would decrease the number of fatalities by 20%. The same is true for disabilities as outcomes of inadequate medical care of seriously injured people in traffic accidents.

The 'golden hour' rule should be mentioned here, as it expresses the need to provide emergency medical care and transport to hospital within 60 minutes after the accident. Namely, it is the optimal time for rendering the first aid to the injured in order to avoid preventable death.

It should be emphasized that the EMS reorganization is taking place in Croatia for the purpose of better availability of emergency medical teams, i.e. improvement of emergency medical care. Tenders are invited for the supply of 128 fully equipped ambulances, financed from the World Bank loan. The ambulances will provide the highest standards of emergency medical care. The World Bank loan was approved in October 2008, for a five-year term.

The ultimate goal would be that, in the next five years, 80% of EMS teams will need less than 10 minutes to reach the patient in an urban area and 20 minutes in a rural area, the time from receiving an emergency call to arrival at hospital will be within the 'golden hour' in 80% of cases.

Regardless of the above-mentioned, the fact is that the helicopter, especially equipped for this purpose, provides the most effective care of the injured, especially on motorways far from a hospital.

**Thus, the Helicopter Emergency Medical Service (HEMS) operations should be implemented in order to provide adequate medical care to the injured and fast transport to hospital.**

**With that in mind, it is necessary to continue with the activities undertaken under the Regional Competitiveness Operational Programme co-financed by the EU through the European Regional Development Fund in the health and social welfare sector.**

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Establishing the Helicopter Emergency Medical Service			X	X	ministry in charge of health, Croatian Institute of Emergency Medicine, Croatian Autoclub, Croatian Mountain Rescue Service
Reorganization of outpatient emergency medical service		X	X	X	ministry in charge of health, Croatian Institute of Emergency Medicine, Croatian Autoclub

#### 6.4.2. Hospital care

It has already been said that almost 30% of the seriously injured die in hospitals. Undoubtedly, a certain number of patients would survive if they had received more adequate hospital care. With the reorganization of emergency medical service in Croatia, which is in progress, the emergency hospital reception of patients is expected in each county hospital, with the purpose of providing higher effectiveness of patients' care.

Also, impression can be gained that in certain number of cases the traffic accident was mentioned as the cause of death, whereas the real cause was the post-treatment complication, which might have been



avoided. That is why the autopsy must unmistakably determine the exact cause of death of a person injured in a road crash.

In addition, it is necessary to determine which injuries can be classified as serious and which as minor, in accordance with the terms and definitions used in the EU Member States.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Improving hospital care			X	X	ministry in charge of health
Mandatory autopsy and determining the exact cause of death				X	ministry in charge of health
Defining serious and minor injuries			X		ministry in charge of health

#### 6.4.3. First aid education of the public

Bystanders should be the first to provide first aid to the injured. That is the reason for organizing the first aid training and exercises through long-life learning (primary and secondary schools, driving licence renewal), in order to avoid more serious consequences of injuries.

Exercises would be organized by the Road Safety Boards within the Prevention Councils of Municipalities, Cities and Counties.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Implementing 'First aid' in long-life learning				X	ministry in charge of health, Croatian Institute of Emergency Medicine, Croatian Red Cross
Organizing 'First aid' exercises				X	ministry in charge of health, Croatian Institute of Emergency Medicine, Croatian Red Cross



## 6.5. OTHER AREAS OF ACTIONS

### 6.5.1. Civil society organizations and the public

It is hard to imagine raising awareness of road safety without the cooperation between civil associations dealing with this issue, i.e. the public in general.

Namely, when speaking about traffic, information is gathered exclusively through the articles in the Crime columns in newspapers. The media mostly write about traffic after serious traffic accidents. In the public opinion only the police are responsible for road safety. It is obvious that this is wrong and that this perception should be changed.

That is why interactive communication is necessary, which is easy to initiate owing to the Internet. Citizens would be able to express their opinions, propose solutions, be informed and educated, as well as actively participate in traffic policy-making and its implementation.

Besides, the existing cooperation with civil society organizations dealing with traffic safety would expand.

Also, in the current era of globalization and on the eve of Croatia's accession to the European Union, cooperation with all the relevant actors dealing with road safety from other Member States will be initiated.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Creating a website for public relations purposes				X	all actors
Initiating the celebration of the World Day of Remembrance for Road Traffic Victims (21 November) as the National Day of Remembrance for Road Traffic Victims			X		all actors
Proposing a location for the National Day of Remembrance for Road Traffic Victims				X	all actors
Cooperation with associations from the Republic of Croatia and other EU Member States				X	all actors

### 6.5.2. Legislation

Often laws and subordinate regulations, i.e. their incompleteness, provide possibilities for different interpretations of procedures related to competent agencies or courts. Thus, it is necessary to observe the practice and initiate amendments to certain laws and regulations.

Besides, it is necessary to comply with the EU regulations and guidelines related to medical check-ups of driver candidates.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Analyse court practice and initiate amendments to some laws			X	X	ministry in charge of justice
Medical check-ups of driver candidates			X		ministry in charge of health
Medical check-ups of drivers				X	ministry in charge of health

### 6.5.3. Establishing new road safety authorities

Since road traffic is extremely complex, it is necessary in Croatia to establish over the long term an authority in charge of road traffic. In this way it would be possible to avoid widespread voluntarism and volunteerism in the approach to such an important social issue.

It should be pointed out that most European countries, among which are our two neighbouring countries, the Republic of Slovenia and the Republic of Serbia, have authorities in charge only of road safety.

Besides the fact that the general road safety problem is not unambiguously determined, it is also territorially specific, thus establishing traffic safety boards (already existing in some towns and cities) will be initiated through the Prevention Councils, which are established under the community-policing programme at municipal, city and county levels. In this way, the information will be gathered in the field, and through the quality action plans directly take road safety to a higher level.



ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Establishing the Road Safety Agency				X	Government of the Republic of Croatia
Establishing the Road Safety Councils within Prevention Councils			X		Ministry of the Interior

#### 6.5.4. Science-based traffic safety

No developed country in the world has achieved progress in social, political, economic or any other field without science.

Traffic safety, as a matter of course, is not an exception. Because of that, a special attention will be paid to the research in traffic safety.

After road safety performance indicators have been analyzed and after evaluation of measures taken according to the National Programme from 2006 to 2010, the decision will be made about future research.

In addition, the application of new scientific discoveries in conducting traffic accident investigations has improved police procedures after a traffic accident. That is why it is necessary to invest into equipment and training of police officers for this extremely important and sensitive segment of police work.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Conducting research relevant for taking road safety to a higher level			X	X	all actors
Obtaining equipment and additional training of police officers for conducting traffic accident investigations			X	X	Ministry of the Interior

#### 6.5.5. The role of the media in traffic safety

Nowadays, it is not necessary to emphasize the 'power' of the media to shape public opinion or attitudes toward certain social issues. In that sense, especially when speaking about public media such as Croatian Radiotelevision, a broadcasting company, with road safety as a topic, the responsibility of Croatian Radiotelevision is enormous.

Thus, the public radio and television broadcasters should permanently cover road safety and be obliged to take part in preventive and educational campaigns if only by allocating **free** air time for this purpose.

ACTION MEASURE	IMPLEMENTATION				RESPONSIBLE FOR IMPLEMENTATION
	IMPLEMENTED	IN PROGRESS	PRIORITY	LONG-TERM	
Permanent media coverage of road safety			X	X	Croatian Radiotelevision
Promoting desirable behaviour in road traffic through TV and radio broadcasting			X	X	Croatian Radiotelevision
Taking part in preventive and educational campaigns			X	X	Croatian Radiotelevision



## **7. NATIONAL AUTHORITIES RESPONSIBLE FOR THE IMPLEMENTATION OF THE PROGRAMME**

### **7.1. WORKING GROUP**

Based on the positive indicators of the justification of the National Programme, the Government of the Republic of Croatia appoints the Ministry of the Interior as the competent authority. In order to implement the Programme more effectively the Minister of the Interior shall appoint the working group proposed by ministries and expert organizations. One leader, one deputy leader and two members will be appointed on behalf of the Ministry of the Interior as a competent authority responsible for the implementation of the Programme, one deputy leader and one member on behalf of the Ministry of the Sea, Transport and Infrastructure, and one member on behalf of the Ministry of Science, Education and Sports, the Ministry of Health and Social Welfare, the Ministry of Justice, Croatian Autoclub, Vehicle Center of Croatia, Croatian Roads Ltd., Croatian Insurance Bureau respectively.

### **7.2. WORKING GROUP'S AREA OF WORK**

Members of the working group act as an expert team.  
They are responsible to the Minister of the Interior.

The working group has the following tasks:

- propose a financial plan for the fiscal year,
- propose a procurement plan to the Minister of the Interior,
- discuss the report on the implementation of the National Programme and propose improvement measures,
- propose or make action programmes or plans,
- observe and make suggestions for plan implementations,
- submit annual reports to the Government of the Republic of Croatia on the achievements of the National Programme together with the financial report,
- in cooperation with the Ministry of the Interior, notify the public in general of the planned actions and achieved results.

## **8. FINANCIAL PLANNING, DEVELOPMENT AND REPORTING ON THE NATIONAL PROGRAMME**

### **8.1. FINANCIAL RESOURCES**

The following financial resources are planned for financing the National Programme:

- financial resources of expert organizations set by the special contract with the Ministry of the Interior;
- financial resources of insurance companies set by the special contract with the Ministry of the Interior;
- financial resources from donations by physical and legal entities.

### **8.2. FINANCIAL PLANNING, DEVELOPMENT AND REPORTING**

Financial resources for the implementation of the National Programme will be paid into the state budget account for the Project K553092 National Road Safety Programme to the source 43 – revenues for special purposes (financial resources of expert organizations set by the special contract with the Ministry of the Interior and financial resources of insurance companies set by the special contract with the Ministry of the Interior) and to the source 61 – donations (financial resources from donations by physical and legal entities). Pursuant to Article 48 of the Budget Act (NN 87/08), these revenues are budget revenues and are paid into the budget. Earmarked budget revenues and receipts not used in the previous year are carried over into the budget for the current budget year (Article 49 of the Budget Act), and if paid into the budget at the level lower than the one presented in the budget, the user may assume the liabilities and pay for them only in the amount of funds actually paid or available (Article 50 of the Budget Act).

The National Road Safety Programme is included into the budget of the Ministry of the Interior.

The Minister of the Interior approves the Financial Plan and the Procurement Plan for the fiscal year, at the proposal of the working group.



Professional services of the Ministry of the Interior make financial reports on the development of the Procurement Plan for the National Road Safety Programme, and inform the members of the working group quarterly or more often if the need arises. The report of the working group on the review of financial reports shall be submitted to all competent authorities who finance the National Programme.

The Procurement Plan for the National Road Safety Programme shall be implemented pursuant to the Public Procurement Act (NN 110/07, 125/08).

