

Making Georgian Roads Safe

2007

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John Smith and FIA Foundation Fellow 2006

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1. Abstract

The main objective of my research is to elaborate alternative ways of solving problems which exist in the sphere of road safety and to propose a strategy aimed at increasing the level of safety on roads on the basis of a detailed analysis of the reasons causing road crashes in Georgia.

There are many facts supporting the inclusion of this issue on the current political agenda: a great deal of empirical data regarding road crashes has been culled recently whilst daily media reports tell of fatal results and serious injuries caused by road and motorway crashes. The eradication of the corruption at the traffic, registration and license institutions, dating to 2003, and the creation of the modern Patrol Police, which is responsible for Georgia's traffic safety, has had a positive influence upon the development of the country in the view of road safety. Georgia is aspiring to become full-fledged member of European Union. One of the priorities of the EU is improvement of road safety and the EU has a target of 50% reduction in road deaths by 2010. However, in Georgia, recent statistics show an unfortunate tendency towards an increase in road crashes. So if country hopes to raise to European safety levels, it will need to significantly improve its road safety systems and activities.

Not a single research study has been conducted in Georgia for last decade regarding road safety issues. Such a study would be useful for the Government, as well as for the non-governmental organisation and private sectors, because it would be possible to make long-term and economically effective projects in the sphere of road safety upon the basis of this research. The general aim of this policy paper is to prevent the tendency towards the increasing number of road crashes in Georgia and to provide the citizenry and the Government with ways of effectively mobilising existing resources.

2. Introduction

The Georgian transport sphere has undergone radical changes within the space of the last decade. Like other post-Soviet and Eastern European transitional economies in the 1990s, the country has carried out a move from the direct administrative administration to the state regulation of the market after the privatisation and demonopolisation of the sector. Whilst a new system of market regulation for the transport sphere was created, the organisation of the traffic system remained unchanged with the system currently retaining the features of the old Soviet system.

The effect of traffic crashes upon the Georgian economy is of further importance. According to the evaluations of the World Health Organisation and other international organisations, economic loss caused by traffic crashes constitutes 1 percent of the GNP for countries with low profit, 1,5 percent for the countries with average profit and 2 percent for the countries with high profit. The Russian economic blockade against Georgia had a considerable affect on the country with the loss constituting 1.5 percent of the GNP. Traffic crashes have influence not only upon the budget and the economy of the country, but also upon families who lose breadwinners or caregivers because of crashes that are occurring with an increasing frequency.

Physical damages because of traffic crashes are frequent but the public problem is neglected and the problem needs to be prevented. The traffic system is the most complex and dangerous system from amongst all the systems facing the population everyday. For Georgia, safeguarding traffic safety becomes a major challenge and is one which will undermine the development of the country and threaten the ethnic composition of the population if the problem remains ignored. The migration processes and the decrease in birth rate make the problems of the traffic security even more real and timely.

The Problem

It should be noted that the first step in the process of the reformation of the traffic infrastructure was carried out by the new governmental authorities beginning in 2003. The radical reforms implemented within the traffic police during the last three years have created favourable conditions and the population began to trust in the effectiveness and non-corruptibility of the institutions. The struggle against corruption at the traffic, registration and license institutions and the creation of the modern Patrol Police, which is responsible for the traffic security in Georgia, had a positive influence upon the development of the country. The trust in the police increased and, as a result, road traffic has become strictly regulated with the institution for the controlling of drivers on roads and motorways now properly functioning. The introduction of the “one window” principle and the radio station (022) for drivers and pedestrians has strengthened the reforms carried out within the police department. There are, however some remaining problems which need to be addressed and solved with various different branches of the authorities (The Ministry of Internal Affairs, the Road Department, Ministry of Labour, Health and Social Affairs, Ministry of Education) and different groups from society needing to also take part in the reformation process.

The low traffic capacity and the quality of the roads is a key problem in Georgia. The combined length of Georgian motorways constitutes 20,329 kilometres and is divided according to the international, intrastate and local destination categories. The local destination motorway is the longest—at 15,480 kilometres—of which only 26 percent is covered with modern surfacing meeting international standards.

The road infrastructure which exists in Georgia is not envisaged for a large quantity of vehicles. The formation and the calculation of the traffic infrastructure were done in the Soviet era when the level of motorisation was considerably low. In 2005, the level of motorisation was 90 vehicles for every 1,000 civilians. The flow of international and foreign vehicles creates additional problems on the motorways in urban areas. As a result, the traffic in the larger cities is intense and this causes economic and social losses. Georgia is a link between the countries of the South Caucasus region and traffic within the country is becoming more and more intense.

A precise analysis of the situation of safe traffic movement in the field of road safety requires the existence of different indicators and data. In Georgia, statistical data sources of road-traffic crashes and injuries are: the Patrol Police and the Informational-Analytical Department of the Ministry of Internal Affairs, the annual statistical publication of the Department of Statistics and a report, entitled *Country Reports on Road Safety Performance*, prepared annually by the Organisation for

Economic Co-operation and Development (OECD) and the European Conference of Ministers of Transport (ECMT) Transport Research Centre.

Research Goals

In other countries, traffic crashes are studied more thoroughly and within a multi-disciplinary approach which takes all of the main factors into account, such as injuries and their results, and then studies and determines necessary counter-measures. Such thoroughly conducted research studies would be fruitful for Georgia, as well. Upon the basis of research in the sphere of road safety, it is necessary to give accurate recommendations to governmental bodies and interested non-governmental and private organisations in order to make long-term and economically effective steps which will be perceived and received positively by the population. The general aim of this policy paper is to encourage the containment of the trend towards a growing number of road crashes and, for this reason, it will offer effective ways for mobilising the existing resources to this end to both Georgian society and the Government of Georgia.

The research focuses upon three main fields: raising the level of public awareness, increasing responsibility and participation of the Government, non-governmental organisations and the private sector in the problem and putting forward the implementation of a new strategy. It will be impossible to improve road safety in Georgia in general without informing decision-makers about the possibilities for developing a systematic approach and partnerships for the reform. The reduction of road crashes and the number of deaths requires the mobilisation of resources on all levels.

Successful prevention requires a collective change in the way of thinking. The idea that road crashes are the results of mobility and economic development must be substituted by the notion of safety and prevention on each level of movement of the traffic system.

It is necessary to strengthen the existing institutions and make partnerships effective which will lead us to a safer system of traffic movement. This type of horizontal partnership must exist amongst different governmental bodies and with governmental, non-governmental and private organisations.

Partnerships amongst different sectors, such as healthcare, transport, finance, law enforcement and others, must be established. This research, therefore, is intended for persons who will develop road safety policy and programmes at the national level.

Research Methodology

We will use relevant Georgian and foreign literature and information obtained from interviews with representatives of governmental bodies and non-governmental organisations working on the problems of road safety in Georgia in order to illustrate the importance of road safety in Georgia and the problems within. At the second stage, whilst analysing the origin of the problem, we will deal with the existing literature and enter into discussions with individuals and groups who are interested and involved in this issue. At the third stage, we will have a discussion regarding the roles of different road safety factors with individuals and groups interested and

involved in the issue following which we will develop recommendations to improve legislation regarding road safety. At the fourth stage, upon the basis of the conducted research, recommendations will be prepared in order to develop a standard road safety policy in the country and to define short-term and long-term priorities.

Road Map of the Research

Initially, we will describe the general situation in the field of road safety in Georgia, evaluate activities conducted herein in this regard and analyse the successful experiences of developed and developing countries and international organisations in road safety. Subsequently, we will discuss the main reasons and the factors causing crashes on Georgian roads, the main elements of road safety in Georgia and their correlation with road safety, the ways of increasing awareness regarding road safety problems amongst society members and main interest groups, the forms of establishing partnership relations in the field of road safety and the current experience of other countries in this direction.

3. Problem Definition

Problems existing in the sphere of road safety are not new for Georgia. They have proved themselves to be most serious at the end of the 1980s when the majority of drivers were obtaining their driver's licences illegally. During the Soviet period, one of the most important problems was the total closure of real road safety statistics and information expressing social interests therein. Information regarding road crashes was inaccessible in its entirety for the public or it was provided, in some instances, after having undergone a censorship control. The main reason for censoring the incidences of deaths, injuries and other data was to hide the real numbers. Even though the government annually held "Road Safety Weeks" in schools and other educational institutions, the existing corruption encouraged an ignorance of the problem of road safety and influenced the effectiveness of the technical inspection vehicles, the issuance of driver's licenses and insurance systems. The unpopularity of traffic policemen amongst pedestrians and drivers led to the decline of respect towards traffic rules and law enforcement bodies.

During the first years of independence, the quantity of deaths due to traffic crashes reached alarming numbers—1,067 deaths in 1990 and 1,145 in 1991— as a result of the rising number of novice and inexperienced drivers and with a decayed transportation infrastructure (poor or insufficient road lightning, poor quality of pavement, lack of sidewalks, illegal buildings, a lack of underground and above-ground pedestrian crossings, etc.)¹. The unstable political and economic situation in the country and the chaos in state institutions directly affected the functioning of law enforcement bodies whilst traffic movement was not controlled at all. Together with this, civil confrontation and a complete ignorance of traffic rules by numerous paramilitary groups exacerbated the situation.

¹ Data provided by the Informational-Analytical Department of the Ministry of Internal Affairs of Georgia.

In the second half of 1990s, the Ministry of Internal Affairs represented one of the most corrupt bodies in the executive branch² and, according to public impression of the Ministry, functions overlapped amidst the overgrown bureaucracy. For the wider part of society, corruption amongst the lower-level policemen was most widely known. Corruption in the transport police, however, was systemic and high-level bureaucrats received most of the illegally obtained money. The following corruption schemes were typical for Georgia: staff selection and promotion in the traffic police with the appointment of managing positions costing USD \$10,000 and higher-level positions costing USD \$20,000, the existence of a system of illegal taxes at stationary posts, the payment of daily illegal taxes for mini-buses, taxis and trucks (amounting between two-to-ten lari), the receipt by private persons of tens of millions of lari from unofficial fines which bypassed the state budget and corruption during the issuance of vehicle licence plates, vehicle registration certificates and driving licences. Moreover, the majority of drivers received driving licences without taking exams in road safety rules.³ All of the abovementioned not only encouraged corruption but drivers with false driving licences directly threatened the safety and security of other drivers and pedestrians. The illegal income obtained from the changing of driving licences, diagnostic centres, insurance and the technical inspection of vehicles are the corruption gaps existing in the traffic police.⁴ According to the overall evaluation of the World Health Organisation, the United Nations and various other international organisations, the ability of middle- and low-income countries to introduce effective road safety policy is decreased if corruption is widespread. In this regard, the situation in Georgia after the 2003 Rose Revolution has dramatically changed and, unlike other post-Soviet countries, corruption in the Patrol Police has mostly been eradicated. The eradication of corruption on Georgian roads, within the registration and licensing services and the introduction of the “one window principle,” have further and positively affected the improvement of road safety although the alarming statistics of road crashes still remain on the agenda.

In Georgia, deaths and injuries resulting from traffic crashes are neglected by society which has caused this to become a hidden epidemic. Hundreds of car crashes remain as individual tragedies for those who were involved in them. There is a common sentiment that a victim of a road crash is often seen to be the initiator of the crash or as a victim of destiny.

Existing Problems

The total length of Georgian roads amounts to 20,329 kilometres and falls into the following categories: international, intrastate and local roads and motorways. From these, roads for local use represent the longest amount at 15,480 kilometres of which only 26 percent is properly surfaced according to international standards. The road network of Georgia is not made for large numbers of cars because it was designed and formed during the Soviet period when the level of the country's population possessing vehicles was low. By 2005, the ratio of cars per 1,000 persons amounted

² Data provided by the Corruption Research Centre of Georgia;

³ 49,812 driver's licences were issued in 2005. This number grew to 119,816 in 2006. 477 international driver's licences were issued in 2005 637 were issued the following year.

⁴ Diagnostic centres had an agreement to use one insurance company exclusively (Aldagi) with insurance issued by other companies not being recognised by the centres. The issuance of driver's licences was carried out by a company related to MIA officials from which certain persons annually received an average of five million lari.

to 90 units. In 2005-06, the number of vehicles—lightweight, transport and trucks—has increased.⁵ Additionally, the transit flow of cars also creates problems for the local road network and often causes an increase in road crashes. In recent years, the ongoing economic reforms in Georgia, the development of a road infrastructure and widened relations with neighbour states has caused a greater and more intensified traffic movement.

4,795 road crashes were recorded in Georgia in 2006. This number grew by 23,9 percent in comparison with the figures for 2005.⁶ Of these, 40 percent of crashes are caused by excessive speeding, 5 percent by the use of alcohol and 18 percent by the violation of other rules of the road (violation of the rule on overtaking, crossing the centre line and the violation of the rule on passage, amongst others).⁷ In 37 percent of the cases, however, it was impossible to determine the causes of the crash which indicates the low level of proficiency and the lack of experience of the officers. Concerning to excessive speeding, it worthy to mention that Georgia is one of the very few countries amongst OECD/ECMT members that still use only a single speed limit for urban areas(60kph). Most countries provide for lower speed limits (30kph - 35kph) for residential areas. The ignorance of the use of safety belts is a further important issue in that 90 percent of drivers do not use their safety belt whilst driving. In June 2007 Georgian non-governmental organization The Partnership for Road Safety made observation of seat belt use in Tbilisi and outside. The results were that 2.3% of drivers and passengers used seat belts in Tbilisi and 30.5% on the highway. According to World Bank Mission Georgia is now the only one out of 50 OECD/ECMT members that does not require seatbelt wearing on all roads and is one of only two of the 50 OECD/ECMT countries (the other being Mexico) where it is not yet compulsory to wear seatbelts in rear seats. Around 66% of deaths occur in “urban” areas and 33% occur on “rural roads.” Whereas on rural roads in Georgia deaths are increasing at 2% per year, deaths on urban roads are increasing at around 25% per year.

In 2006, 675 drivers died during road crashes and 7,084 sustained injuries. The number of deaths increased by 16.1 percent and the number of injured by 27.7 percent in comparison with 2005.⁸ It must also be noted that the numbers of children below the age of 15, the number of people aged 17-40 as drivers or passengers and the number of pedestrians who were killed or injured in road crashes have risen from the year before.⁹ In total, 530 children and 2,034 pedestrians were injured during road crashes in 2006. According to the statistics, injuries sustained during road crashes is a serious public health problem for Georgia and the health sector will benefit greatly if the situation on Georgian roads and the overall safety within improves. The beds in emergency wards of some Georgian hospitals often are taken up with road crashes victims consuming medical and other resources which are already in short supply. A lack of awareness of the traffic rules and their ignorance by pedestrians is extremely alarming. In 2006, 2,034 pedestrians were injured and

⁵ See Chart 1.

⁶ The improvement in the registration and recording of road accidents in 2006, as compared to previous years, is one of the main reasons for this change. Before 2003 government hid real picture from the society.

⁷ See Chart 2.

⁸ See Chart 3.

⁹ See Chart 4.

203 were killed as a result of traffic crashes. In comparison with the previous year, the number of injured increased by 34.2 percent.

Everyone is affected—family, friends and other acquaintances—when someone is injured or killed in a road crash. The financial effect and social cost therein is difficult and sometimes impossible to determine. In general, the economic loss caused by traffic crashes constitutes 1 percent of the GNP for low-income countries, 1.5 percent for average-income countries and 2 percent for developed countries. Global damage caused by road crashes amounts to USD \$528 billion annually. From this, USD \$65 billion is the loss for developing countries like Georgia which have low- and average-incomes. This amount is more than the financial aid received annually by these countries—including Georgia—from different donor organisations.¹⁰ Traffic crashes have an influence not only upon the economy of the country but upon the families which often lose their breadwinners and caregivers. Road safety, therefore, affects the social and economic situation of the country as well and is one of the most important factors for their improvement or regression. According World Bank only in 2006 economic losses to the Georgian economy of at least US \$100 millions (about 1.4% of annual GDP). For the last 4 years 2003-2006 over 2400 persons have died and this has cost the Georgia at least US\$315 millions.

Data regarding the occurrences and types of crashes, as well as realising the conditions that cause crashes, is necessary for conducting safety policy. Being aware of the causes and types of injury is also important in order to become effectively involved in solving this problem and then assessing the situation. Despite that, the collection of road crash data is lack systematisation. In this regard, the health sector can play an important role in delivering information about injuries and deaths to the general public. One of the main problems is the formation of an effective data collection mechanism. In particular, a detailed analysis of road safety is hindered by the problems in the system of information storage and the lack of databases containing detailed information about road crashes and the violation of traffic rules. In addition to analysing final data, such as the number of road crashes or the number of deaths and injuries, it is necessary to examine the factors that cause traffic crashes and influence these results such as, for example, excessive speed on certain categories of roads, the ignorance of the use of safety belts, the abuse of drugs and alcohol and an unawareness of the rules and the rights of pedestrians, amongst others. These indices give us the possibility to learn about the system more thoroughly than is done by only analysing the final and more general data. According to the evaluations of experts, the simplification of the registration of driver's licences has had a positive as well as negative affect upon road safety.

Technological Problems

The ignorance of modern technology greatly hinders the growth of effectiveness of functioning at any level. The use of the technical component is minimal and speed detecting facilities have hitherto not been introduced on Georgian roads and motorways. As a result, there are often disputes between police officers and drivers regarding alleged over-speeding. It is worth mentioning that, according to the decision of the Minister of Internal Affairs, Vano Merabishvili, 190 speed cameras will be installed in Tbilisi during the year 2007.

¹⁰ Lord Robertson, *Commission for Global Road Safety Report*, 20 February 2006.

One of the most important problems is the low passing ability of Georgia's roads and the condition of their surface. The size of the Georgian territory (69.5 thousand km²) and its geographic location have determined its natural diversity. Approximately two-thirds of Georgia is mountainous which means, naturally, that roads within do not lie only upon straight sections but also in mountainous areas with large slopes, curves and limited visibility. The country's mountainous relief is a threat for drivers and requires professional experience and great care. Further, drastic changes of climate also hinder normal movement and, therefore, safe traffic speed. A second important feature of Georgian roads is that they pass through inhabited areas where pedestrians, by their movement, create dangerous situations for drivers and for themselves. In recent years, the importance of Georgian transport inside the country, as well as in international transportation, has increased. Goods from almost the entire post-Soviet space head to different countries by passing through Georgia. The amount of vehicles, as well as passenger and cargo transport on Georgian roads, are increasing because Georgian transport communications connect the Caspian with the Black Sea. Neighbouring Russia and Turkey have made Georgia a central connecting link between these two regional leaders. At the same time, the amenable climate, the natural conditions and beauty of the natural landscape together with the country being a resort zone attract many tourists to Georgia who arrive by different modes of transport, amongst them by vehicle. The number of arrivals from Armenia, Azerbaijan, Russia and Ukraine increases greatly during the summer months with a large increase in traffic movement in Georgia during this period.

In consideration of the abovementioned, three main problem areas can be underlined within the road safety sphere whose solution would greatly improve the existing general situation: **1. The low road traffic culture of drivers and pedestrians.** This factor is known as the human factor of road safety and it refers to the violation of traffic rules, the ignorance of using safety belts, the usage of mobile telephones whilst driving and the low level of acknowledgement of the heavy risks proceeding from the violation of traffic rules. **2. The low level of passing ability** of the roads and the insufficient quality of the infrastructure is another serious problem. It should be underlined that 79 percent of all road crashes occur only on local category roads within cities, regions, towns, and villages.¹¹ The development of state economics and the enlargement of the relationships with neighbouring countries have caused the increase in the intensity of traffic which complicates the problem even more. **3. The existence of poor mechanisms of road safety management.** Herein, this refers to the non-existence of a common strategy on both a road safety concept and traffic management. It is necessary to define the status of roads (central, local, magistral) and to clearly separate the responsibility between the Government and private entities for the development of a suitable infrastructure.

4. Policy Options

The improvement of road safety in Georgia depends upon the solution of three main problems: the human factor, road infrastructure and the introduction of a National Concept. Below we will try to compare several alternatives for such a solution according to various different criteria as follows:

¹¹ See Chart 5.

1. Improvement of a road safety culture (education, training and campaigning, etc.) amongst drivers and pedestrians:

- The initiation of a special awareness raising campaign with the assistance of the Georgian media and non-governmental organisations to familiarise the population with the risks caused by driving at excessive speeds and ignoring the use of safety belts.
- The offering of tenders for implementing special projects in order to improve a road safety culture (producing advertisements, increasing the knowledge of school pupils, etc.).
- The preparation of weekly television and radio programmes about the consequences of driving at excessive speeds and ignoring the use of safety belts.
- The preparation of advertisements and short films and their broadcast by the local media.
- The arrangement of different activities for drivers and pedestrians in order to acquaint them with the risks and threats caused by the violation of traffic rules. Such campaigns will include the participation of famous or other well-known people.

2. Improvement of the low level passing ability of Georgian roads and the transportation infrastructure according to safety requirements and international standards:

- The fixing of traffic signs, traffic lights and lighting on internal category roads.
- The establishment of speed-reducing bumps near schools and other educational institutions as well as installing special pedestrian crossings for children and the disabled.
- The maintaining of safety standards whilst constructing roads and improving transportation infrastructure.

3. Improvement of the system of road safety management:

- The creation of a road safety strategy through a dialogue between stakeholders to include the Ministry of Internal Affairs, the Ministry of Education, central and local authorities, non-governmental organisations, the media, insurance institutions and others.
- The creation of a national road safety concept should be created through the participation of the Government and the private and non-governmental sectors which will prevent traffic crashes. The concept will be submitted to and approved by the Parliament.
- Georgia should join different international conventions and organisations working in the sphere of road safety.

Criteria

We will use the following different criteria to compare the methods for the abovementioned solutions to the problem:

1. **Political feasibility** – the acknowledgement of the problem by the Government, the existence of political will and the acceptance by the political leadership of the country of the ways for solving the problem.
2. **The existence of institutional resources** – the level of the preparedness of the personnel and the type of outcomes it can give.
3. **Cost effectiveness** – defining the effectiveness of a particular alternative according to its costs.
4. **Time constraints** – the time needed for the implementation of the option and reaping its benefits.

Analysis

According to political feasibility, the first and second ways for the solving of the problem as abovementioned are equally acceptable to the country's authorities as they reflect their involvement and their political will to produce a solution. Despite the political will of the Government, however, the overall population is indifferent to the concept of road safety and does not acknowledge the risks and consequences of violations of road safety rules such as, for example, the overwhelming majority of population ignoring the usage of safety belts.

The first alternative will be the preparation of a fundamental rule to make the usage of safety belts obligatory whilst driving on all categories of roads and not only on motorways. Statistically, only 21 percent of crashes occur on motorways.

The co-operation between the authorities and the private and non-governmental actors (such as insurance companies, for example) in **improving traffic culture** will be a good example for stakeholders to co-operate whilst solving significant problems including traffic jams and air pollution resulting from vehicle emissions. This abovementioned co-operation will reduce the criticism by opponents who blame the Government for its inactivity and for conducting unpopular reforms.

Georgian authorities have underlined the importance of **the development of road infrastructure** for the last several years but international standards of road safety are more often than not disregarded. The improvement of the infrastructure, mostly of the internal one, which is used by the majority of drivers will increase the support of the authorities as injuries and casualties occur mainly on internal category roads. The development of the road infrastructure will improve the international image of the country as well and attract more tourists to Georgia which will have a positive impact upon the welfare of the local population and the rate of support for the authorities.

The initiation of a dialogue between the stakeholders of the road safety sphere and the creation of a road safety strategy is less attractive to the authorities as it will not be highly publicised and the activities carried out by the Government will not be so evident. Without the existence of such a strategy, the scope of obligations, as

well as the individual functions to be undertaken by different agencies, is not understandable. The threat is that the elaborated concept will remain on paper and without any practical implementation. The abovementioned dialogue will assist in the clarification of the obligations of the different structures and in the introduction of the specific standards for a more efficient management of scarce resources. The involvement of different civil organisations in the dialogue process and publicising the results will positively illustrate the activities of the Government in this sphere. The main outcome of the dialogue would be the accepting of achievable and concrete decisions.

According to the second criteria, the first alternative—**the improvement of road safety culture**—is more acceptable as it does not require major institutional resources and the personnel employed in this field is quite skilled. The availability of skilled clip-makers and public relations managers will contribute to the successful implementation of this alternative. The major obstacle herein can be the co-operation with road safety experts. Georgia has a significant shortage of skilled experts in this field but co-operation with foreign experts is quite possible. The invitation of these experts will also be able to provide training for local staff. This alternative requires the involvement of civil, non-governmental and private organisations in a more active manner than of those who are state actors. As such, less institutional resources would be required.

The existence of institutional resources are very important in order to efficiently conduct the process **of the development of an international road infrastructure and bring it to conditions acceptable to international standards**. The abovementioned alternative requires, in the first place, skilled experts who will plan the road construction and the establishment of relevant road safety standards such as, for example, the fixing of traffic signs, traffic lights and pedestrian crossings and speed cameras, amongst others. Firm political will is a precondition herein in order to avoid economising on financial means whilst implementing the road safety standards. The arrangement of transparent calls for tender will be one of the key preconditions to fully implement this alternative and enable the improvement of the road infrastructure according to international standards.

The existence of experienced personnel is required in order to **improve the road safety system management** and the creation of different interest groups to fulfil this goal through co-operation and development of a safe road strategy. Today, Georgia faces not only a shortage of road safety specialists but a lack of non-governmental actors and research institutions in the field. As a result, no serious research has been conducted in this sphere even after Georgia gained independence. The small amount of existing literature has been translated from Soviet sources and does not correspond to the present reality. The deregulations conducted during the last few years (the last step was taken in March 2007 when the Commission for Transport Regulation was dismissed) do not clarify which structure is responsible for particular road safety issues nor do they list their functions. Given the fact that this sphere does not receive proper attention, the country lacks trained personnel and institutions which could prepare qualified officers. It would be useful to invite foreign experts and specialists from different countries to Georgia in order to train local staff.

The improvement of the traffic culture is composed of two components; namely, informing the population and conducting educational campaigns. The

informing of the population is possible through the production of short advertisements and broadcasting them on television. The broadcasting is free of charge on public channels as these activities are considered to be social projects. If the advertisements are broadcasted by commercial channels, these activities can be financed by companies (insurance companies or automobile dealers, for example), who will participate in the creation of such advertisements and, thereby, also advertise themselves. The creation and broadcasting of these short advertisements on television will cost approximately 300,000 GEL annually and will aim to show the public the risks caused by the violations of traffic rules and increase their attention to such problems. Television is more popular than the press in Georgia and so the monthly programmes will also be an efficient means for improving traffic culture. The preparation and broadcasting of informational programmes for various channels will cost approximately 100,000 GEL annually. In order to increase public awareness of the problem, 10,000 informational pamphlets will be prepared and distributed amongst drivers at a cost of approximately 2,000 GEL. The educational field includes the activities of school patrols and the introduction of monthly lessons on road safety rules. According to the practice of other countries, it is possible to create a road safety prevention centre which can be established with the help of state institutions and also by insurance and automobile dealers as well as other interested parties. The centre would conduct transparent tenders in order to reveal the best project for the improvement of road safety culture. The abovementioned steps will provide two major outputs: first, scarce resources will be spent more efficiently and second, the general culture of citizens will increase and a dialogue and co-operation amongst stakeholders will be initiated. The large-scale informational campaign requires less material inputs than the improvement of the road infrastructure with the outcomes being received in a short period of time.

About 300 million GEL were spent to **improve the road infrastructure** in 2006. The improvement of this infrastructure did not decrease the road crash number which came, as a result, from the economising of additional funds and ignoring the international safety structures during the road reconstruction process. The abovementioned alternative requires more resources and will not have a sufficient effect if it is only partially implemented. The US, for example, has one of the best road networks in the world but its record is quite poor from within developed countries because of a lack awareness of road safety amongst its drivers.

The third alternative—**the improvement of road safety system management mechanisms**—does not require a major input of resources. The initiation of the dialogue between the stakeholders of the road safety sphere, the organisation of their meetings and the resulting creation of a road safety strategy will presumably cost no more than 50,000 GEL. Without implementing the first two components, however, the effect will be insignificant.

The first activities carried out to **improve road safety culture**, such as the preparation of short advertisements and informational-educational television programmes, will have an outcome within several months. The implementation of school patrols and the introduction of monthly lessons on road safety rules will need much more time to produce results.

The option of the **improvement of the road infrastructure in Georgia and its equipment according to the international road safety standards** is the most long-

term and time consuming project and, as such, needs much more time than the other options.

The development of a road safety strategy in order to **improve the road safety system management** is the least time consuming. It can be implemented in several months but the threat within is that the elaborated concept will remain on a paper and will not have any tangible results.

To provide an analysis, we will use the following matrix to compare the different problem solving alternatives wherein the maximum grade will be 3 and the minimum grade will be 1.

	Improvement of road safety culture	Improvement of infrastructure	Improvement of the road safety system management
Political feasibility	3	3	1
Existence of institutional resources	3	2	2
Cost effectiveness	3	2	1
Time constraints	2	1	3
Total	11	8	7

According to analysis, we can conclude that the most efficient of the abovementioned three alternatives will be the conducting of large scale informational-educational campaigns which will aim at the improvement of the traffic culture amongst drivers and pedestrians.

5. Recommendations

As a result of the analysis, the following option from amongst the others is deemed to be the most effective; that is **the improvement of road safety culture (education, training and campaigning)** amongst drivers and pedestrians. The main component of this alternative is the initiation of an informational-educational campaign throughout the country in order to familiarise the population with the risks and threats caused by road crashes with the assistance of the local media, non-governmental organisations and private companies. Our recommendations can be divided into short-term and long-term strategies.

The informational campaign can make the problem more important for the population, it can change their attitude towards road safety, increase the level of awareness regarding the issue and create a climate wherein people understand the problem and accept road safety measures. The planning of a powerful and effective informational-educational campaign for increasing public awareness towards specific problems of road safety is certainly needed. The best allies for governmental bodies in the implementation of this campaign will be companies interested in road safety such as, for example, automobile dealers, insurance companies, fuel stations, mobile telephone companies and non-governmental organisations, amongst others.

Short-Term Strategy

Media and Publicity Campaign

With the support of the media and non-governmental organisations, the initiation of a publicity campaign regarding the risks and threats of road crashes and creation of web sites can include:

- The initiation of a campaign calling for the necessity of using safety belts and limiting speed throughout the country within weekly television and radio programmes.
- the preparation of short advertising spots and other advertising materials which will be submitted to the media, especially to television.
- The arrangement of different activities for drivers and pedestrians in order to acquaint them with the risks and threats caused by the violation of traffic rules with the participation of famous and other well-known persons or celebrities.
- As past experience and the research of other countries have shown us, the advertising of specific problems—such as the ignorance of the use of safety belts and excessive speed—results in an increased awareness towards road safety in general. As television and radio are more popular than the press in Georgia, the best ways of advertising road safety problems will be the preparation of short advertising spots and other advertising materials and broadcasting them on television, the preparation of weekly television and radio programmes and the arrangement of different activities with participation of celebrities or other well-known persons.

Education, Training and the Establishment of Partnership Relations

- Conducting trainings and consultations for Patrol Police units on the issues of road safety.
- Arranging educational and publicity activities in universities together with Ministry of Education.
- Arranging demonstration stands (for the use of safety belts, for example) and creating advertising posters.
- Organising educational stands in kindergartens, schools and universities.

- Establishing a public organisation under the name of the “National Centre for Partnership for Road Safety” which will include the governmental, non-governmental and public sectors.

During the implementation of these projects, we must remember that one of the problems of the attitude towards road safety is that society does not often see the benefit that it will receive after changing its behaviour. People on the whole are resistant to change and try to avoid it under different excuses and for different reasons. We must concentrate on specific problems instead of making general statements in order to make sure that the main message of the campaign is not left beyond public attention.

Long-Term Strategy

- Improvement of road safety legislation:
 - Adoption of the law on the “obligatory use of safety belts.”
- Improvement of the control on the implementation of existing laws.
- Adoption of the institution of a Road Safety Officer within the Patrol Police. This person within his competence will actively be involved in the issue of informing society and awareness raising.
- Improvement of educational programmes and trainings.
 - Implementation of road safety courses in schools in co-operation with the Ministry of Education.
 - Implementation of the institution of a school patrol.
- Improvement and raising the standards of training courses regarding speed and car safety for drivers.

The following should be undertaken for the successful implementation of these measures:

- **Specific problems and target groups must be identified.** Data, such as the statistics of crashes, injuries and deaths, should be used in the identification process at this stage. It is impossible to plan and implement an effective campaign if specific problems and target groups are not identified. Subjects of traffic movement that suffer from crashes must be identified as well and their behaviour and awareness of the traffic rules must also be studied.
- **An informational campaign must be planned.** After identifying the problems and the target groups, the following factors must be taken into consideration whilst planning the informational campaign:
 - **Target groups and their behaviour** – target groups may include not only drivers but those people who influence drivers’ behaviour.

- **Motivation of target groups** – factors motivating the driver to obey road safety rules must be identified.
 - **Message content** – the message must be clear, directional and concrete. It should have a positive content.
 - **Media selection** – depends upon the target group. Leaflets, posters, billboards and other forms of advertising can be used as well.
 - **Campaign timing** – the campaign length, as well as the time of the year that is most appropriate for its implementation, must be identified.
- **Evaluation of the campaign.** In the short-term period, an evaluation of the informational campaign by road crash statistics (how the number of crashes, injuries and deaths decreased) will not be effective. The evaluation must be done according to the following results as well: how effective the message was, the number of road users reached by the campaigns, the change in attitude and behaviour within society and the overall decrease in the number of crashes.

6. Conclusion

This paper has tried to systemise the most important road safety problems in our country and the reasons which cause them. We have also tried to represent our vision of overcoming the problem which envisages using strategies of developed countries as well as the best examples of developing states. Together with that we would like to underline that it is impossible to increase the general level of road safety in the country by eliminating only one aspect of a specific reason or simply decreasing its influence. On the contrary, it is necessary to implement several successive strategies simultaneously. In many countries of the world, traffic crashes are studied more thoroughly and multi-disciplinarily whilst taking into account the main factors, the injuries incurred and their overall results in order to determine necessary counter-measures.

The existing road safety problems and the condition of the system of traffic movement in Georgia have made it impossible to discuss the problem from a narrow point of view. Without a systemic approach and a thoughtful partnership amongst the governmental, non-governmental and private sectors, the state will not be able to realise its obligations of protecting safety on the roads, ensuring proper transportation service for its citizenry, improving traffic mobility and protecting the environment.

As a result of this analysis, it was established that it is necessary to improve the road safety culture amongst the participants of the system of traffic movement with the support of governmental, non-governmental and private sectors as a means of changing the existing situation in the country. We hope that this research will encourage the formation of new policy in the sphere of road safety and governance for which these recommendations can be used

Resources

Materials from the Informational-Analytical Department, Ministry of Internal Affairs of Georgia, 1990-2006.

Economic Tendencies of Georgia, Quarterly Review, June, 2006.

Methodological Directions for Engineers of Traffic Movement Safety Service, Tbilisi, 1989.

Materials from the Fédération Internationale de l'Automobile (FIA Foundation) <http://www.fiafoundation.com>, <http://www.makeroadssafe.org>.

Materials from the Automobile Association Motoring Trust (AA Motoring Trust).

Materials from the Royal Society for the Prevention of Crashes (ROSPA) – www.rospa.org.

Materials from the Parliamentary Advisory Council for Transport Safety of Great Britain (ACTS).

Materials from the Organisation for Economic Co-operation and Development (OECD) and the European Conference of Ministers of Transport (ECMT), <http://www.cemt.org>.

Road Crashes in Georgian SSR, Tbilisi, 1986.

Materials from the UK Department for Transport, <http://www.thinkroadsafety.gov.uk>;

Road Casualties Great Britain: 2003 Annual Report, Department for Transport

Tomorrow's Roads – Safer for Everyone, Department for Transport, Local Government and the Regions, London, 2000.

www.eurorap.org

Strategic Guidance for Road Safety Professionals, ROSPA, 2003.

Materials from the Indian Institute of Technology, Delhi, <http://www.iitd.ac.in>.