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Roads and quality of life

National reporter: Dr.eng. Mihai Boicu – Secretary of the Romanian National Committee P.I.A.R.C.

Co-writers: Drd.ec. Aurel Petrescu – First delegate of Romania
General Manager of the National Administration of the Roads

Dr.eng. Liviu Dâmboiu – Regional Director of the Roads and Bridges Regional Directorate Timisoara

Dr.eng. Mihai Boicu – First-vicepresident of the Romanian Professional Association of Roads and Bridges

Eng. Mircea Nicolau – Technical Director of the BOMACO Bucharest company

Eng. Cornel Bota – General Director of the Municipal Roads Timisoara

Eng. Gheorghe Dinu – President of the National Union of Road Hauliers from Romania

Summary

In the introduction to the report some data about Romania can be found concerning: the public road network, the road network management, the vehicles fleet and the road traffic development.

The Romanian national report on this strategic theme is based on the answers to the questions addressed by the theme coordinator (Patrick Gandil).

1. The priority requirements which should be met for road construction:

- Preservation of the existing road network based on a rehabilitation program, started in 1993 with external credits and, partially, with Romanian Government contribution.

The report specifies the main objectives of the road rehabilitation works and the selection criteria for the respective road sectors.

- Execution of works in order to avoid the traffic congestion and increase the traffic capacity in the adjoining zones.
- Construction of motorway network, in stages.
- Bridge rehabilitation on the national roads, the repairing of some damaged bridges and bringing them to the European requirements level.
- In urban localities, rehabilitation of main arteries, reconstruction of streets paved with river stones or paving of earth roads, construction of new bridges and grade separations.

2. The planning and estimation of priorities in road construction field.

In Romania, for road transport infrastructure there is the Law no. 79/97 concerning the territory planning. The law is referring to motorways, expressways and railways. The proposals for new works are made by the National Administration of Roads on the basis of studies.

The Romanian Government approved a plan of measures in order to improve the transport infrastructure, in month of May, 2001, stipulating:

- Integration in the European transport system;
- New programs for road investments;
- Creating of conditions for the activity in road transport field to become efficient;
- Laws harmonisation in transport field.

It is mentioned the social and economic criteria for the opportuneness of constructing a road, the planning and the cost estimate methods for projects. The decisions are made according to the importance of works.

3. The impact of road development on the human activities.

Real examples are given on the road impact, as a result of the increasing motorvehicles fleet, of the execution of works to increase the traffic volume and the rehabilitation works. Only for DN7 between Ramnicu Valcea - Nadlac (Hungarian border), the rehabilitation works determined, on 430 km length, the development of specific services such as: accommodation, fuel supply, self-services, restaurants and parking places, with percentage between 320 - 575 higher than 1989, with a corresponding increase of employment possibilities.

4. The road perception in Romania; development and consequences

In Romania, the road is considered a public utility, perception which consolidated during the last years, due to the improvement of the road network technical condition and the overtaking of the increasing transport loads by road.

The National Administration of Roads and the county and local authorities took into consideration the proposals for development, the road importance and the traffic growth.

It is mention the malfunctioning of the local road network at its entire capacity, due to its technical condition. It is necessary to provide minimum funds for works, the local network representing 90% of total.

5. The active forces and means for a “Road and sustainable development” policy

A list of the main stakeholders of the road sector is given, but, also, other stakeholders outside the decision makers.

The measures which should be taken for a sustainable development in road sector are mentioned, among them:

- to pay an increasing attention to the activity of road and bridge maintenance;
- to continue the improvement of existing regulations concerning the setting up and the using of the Road Special Fund
- to consult the public regarding the activity of road organisations.

6. The making up of teams studying the roads projects

The design of new road infrastructure works is a complex activity today. In addition to the traditional teams of experts for surveying, road pavement structures, consolidations, bridges, other teams for environment impact, flora and fauna, in order to correlate them with the urban activities have been mobilised.

At present, there is a preoccupation to train experts and to employ them in the design companies.

Romania is observing everything which is new in the road field and is trying to use as much as possible the available financial resources, by increasing the efficiency of the National Administration of Roads activities.

A. General data

The public roads network in Romania is, according to the Constitution, under public ownership. The Law no. 82/1998 which approved the Government Ordinance no. 43/1997 has established the following categories of public roads:

Table no. 1

| Category of road | Length, km | % of total |
|-------------------------------------|------------|------------|
| National roads, including motorways | 14,810 | 7.46 |
| County roads | 36,010 | 18.13 |
| Communal roads | 27,781 | 13.99 |
| Streets | 119,988 | 60.42 |
| TOTAL network | 198,589 | 100,00 |

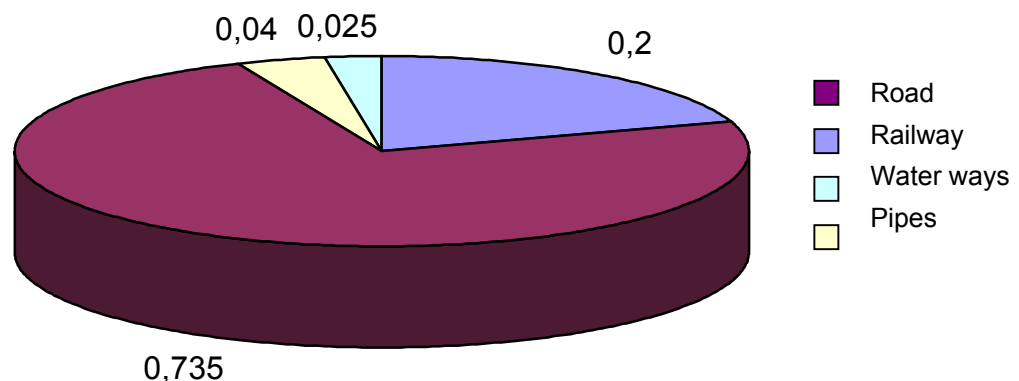
The management of this network is provided by:

- the Ministry of Public Works, Transport and Housing through the National Administration of Roads, for motorways and national roads
- the County Councils, through their specialised bodies, for county roads
- the Local Councils (communes, towns, cities) for communal roads and streets.

The motorvehicles fleet registered in Romania at the beginning of 2002 was of 4,575,747 representing an increase of 1.6% per total, in comparison with the previous year.

Among the categories of vehicles, the most significant increase is registered for cars (3.1%) and for goods transport vehicles (1.7%). The increase of number of vehicles is justified by the improvement of the main roads technical condition and respectively by the increase of the goods transport volume (figure no. 1).

Goods transport on types of transportation



Passanger transport on types of transportation

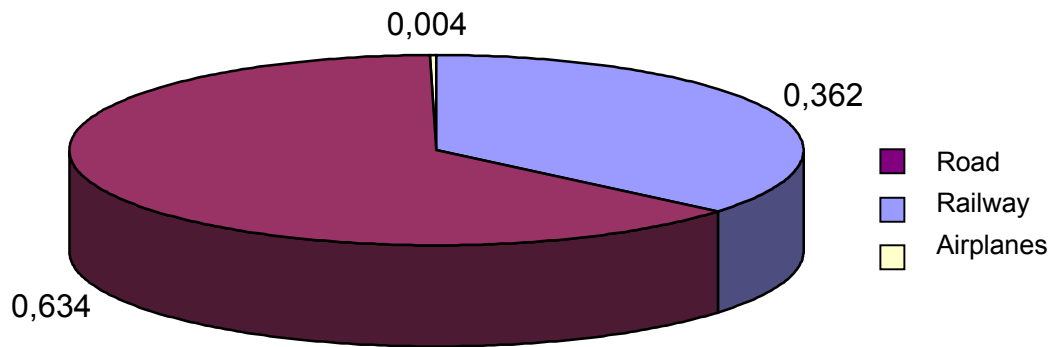


FIG. 1

The development of the traffic structure on the national roads network within 1990 - 2000 is shown in figure no. 2.

Evolution of the traffic structure on the national roads network for the period 1990 - 2020

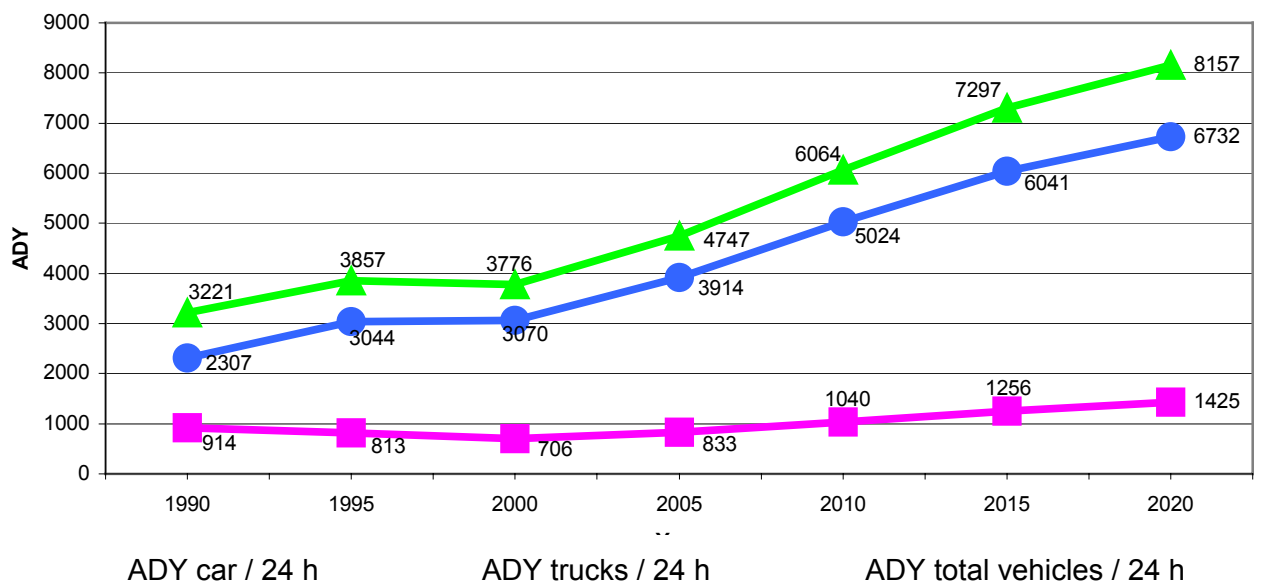


FIG. 2



B. Answers to questionnaire

1. Which are the priority requirements that should be met for road construction in your country?

1.1 Within the programs intended to develop and maintain the public roads network approved, starting with 1990, by the Romanian authorities (Government, Ministry of Transport), it was particularly underlined to preserve the existing roads network, as being under public ownership.

Due to a strategy different from the transport tendencies at world level and the orientation of the available funds to other transport modes, the roads network had reached an inadequate technical condition for 62% of its length, its service life has been exceeded for long time and would not stand anymore the traffic aggressiveness in the last years.

The preservation of the roads network consisted of performing a rehabilitation program, started in 1993 with the European national roads and for which credits from International Financing Institutions have been obtained.

The distribution by stages of the rehabilitation works costs and lengths are shown in table 2.

Table 2

| Period | Average length (km) | Average cost (mil. USD) |
|------------|---------------------|-------------------------|
| 1994-2000 | 1,031 | 388.67 |
| 2001-2004 | 632 | 463 |
| 2005-2008 | 685 | 526 |
| 2009-2012 | 536 | 410 |
| after 2012 | 577 | 568 |

Costs and lengths for each rehabilitation stage

| Stage | Length (km) | Costs (mil. USD) |
|-------|-------------|------------------------|
| I | 1031 | 388.67 completed works |
| II | 693.69 | 303.3 ongoing works |
| III | 550.33 | 364.75 |
| IV | 654.5 | 720.42 |
| V | 745.4 | 443.58 |
| VI | 643.7 | 509 |
| VII | 824.7 | 654.7 |
| VIII | 527.5 | 496.8 |
| IX | 624 | 505.3 planned works |
| X | 504 | 345.8 |
| XI | 543 | 395.2 |
| XII | 471 | 392.25 |
| XIII | 558 | 662,5 |
| XIV | 568 | 421.1 |
| XV | 604 | 621.2 |

The map and the rehabilitation program are shown in figure no. 3.



The main objectives of the rehabilitation works for the national roads network are:

- Improvement of transport infrastructure and traffic conditions by observing the European norms,
- Bearing capacity increase for rehabilitated road sectors in order to pass from 10 t to 11.5 t load per axle,
- Bridges integration within E loading class, (E, exceptional)
- Construction of a third lane, for slow vehicles on downwards and upwards slopes for heavy traffic segregation,
- Providing the rainwater collection and drainage,
- Procurement of high performance equipment.

The selection criteria of the road sectors which are to be rehabilitated have been based on:

- economic efficiency;
- bearing capacity, existing and perspective traffic;
- cost of works;
- optimum technological alternatives;
- legal status of the related lands.

The financing of the national road sector is provided through the State Budget, the Public Roads Special Fund and the external credits. A significant component of this activity is represented by the credits assured by IBRD, EBRD, EIB, PHARE and ISPA for financing the rehabilitation works of the national roads network and the management of border crossing control points. The limited financial resources of the state budget in comparison with the needs claimed by the road network condition induced a large legislative program to financially involve the road users.

In accordance with the provisions of the Law no. 74/1997 regarding the approval of the Government Ordinance no. 3/1997 for the ratification of the Loan Agreement between Romania and EBRD, *“the borrower shall keep any time a state budgetary allocation of sufficient amount to provide the adequate maintenance of the national roads network and at any rate, at a level not less than the relevant level of expenditures related to 1995 financial year, respectively 120 mil. USD”*.

In order to observe the provisions of the loan agreements between Romania and the financing banks for the national roads rehabilitation projects, starting with 1994, PRICEWATERHOUSE COOPERS has audited, in accordance with international standards of audit, the bookkeeping balance, the profit and loss account and the cash flows statement. The PRICEWATERHOUSE COOPERS declared, without reserves, that the audited financial situations reflected in a true manner, from all points of view, the results of the operations and the cash flows of the National Administration of Roads from Romania.

Unfortunately, the progress of rehabilitation works is influenced by our capacity to attract credits into the budget of the Ministry of Public Works, Transport and Housing. Thus, the budgetary allocations proposed for 2002 can not be increased in the future. Under these conditions, in order to increase the number of projects, the Ministry of Public Works, Transport and Housing must find out alternative solutions for financing from state budget. For these reasons, starting with 2002, a complementary new strategy will be initiated, that is the financing and carrying out of road infrastructure works in public-private partnership system, according to EU requirements. Starting with 2002, an action will be taken for creating the adequate legal frame in order to carry out the motorways projects in BOT system.

For the remaining part of the network, the needed funds intended to minimum maintenance works were allocated.

1.2. During the last years, the activity for avoiding the congestion and for increasing the traffic capacity started and is going on, as it is stipulated in the government program approved in May 2001. So, the followings will be carried out:

- widening to 4 lanes of DN5 Bucuresti - Giurgiu (border with Bulgaria) and Ploiesti ring roads;

- carrying out of motorway type by-passes for some towns and cities located on Corridor IV, such as: Pitesti, Sibiu, Orastie, Deva, as well Timisoara and Craiova.

1.3 The construction of a motorway network, in stages, depending on the traffic requirements and financial possibilities. The first stage of this program covers 1,300 km length and has an estimated value of 7.5 billions USD. The stages of the program are based on the following economic criteria: the efficiency and the minimising the initial investment. The program started by the rehabilitation of A1 Bucuresti-Pitesti (96 km), the construction of the Bucuresti-Cernavoda motorway (130 km) on the Pan-European Corridor IV.

1.4 An intense activity is developed for bridges rehabilitation on the national roads, bridges having been damaged by floods, so that their technical features (geometric elements, loading class) reach the European requirements. During the last years only, a number of 456 bridges in length of 28,214 m of a total of 3.271 bridges in length of 136,688 m have been rehabilitated.

1.5 For the built up areas, it is necessary to have in view:

- the rehabilitation of the main arteries designed for vehicles of axle loads less than those of today's vehicles;

- the reconstruction of river stones or earth materials streets, after being equipped with the necessary underground utilities;

- the construction of new bridges and overpasses in critical spots and the opening of new streets within recently built up areas.

2. About planning and estimation of opportunity in road construction field

2.1 In Romania, the governing law concerning the communication ways is the Law no. 79/1997 regarding the territory planning. This law is referring to motorways, express ways and railway. Based on this law establishing the guiding lines, the works on sectors are approved by Government, following the site survey, the traffic study, the environment impact assessment, the cost-benefit internal rate study.

Any new works which are to be executed by external credits should be approved by law; the law, besides the loan conditions, also, stipulates the technical characteristics of works. The proposals for new works are made by the National Administration of Roads which, also, examine them within the technical and economic board. Then, the proposals are submitted to the ministry management for approval and then, the ministry management submits them to Government in order to be approved as investments works. The proposals are revised every five years.

Within the Action Plan of the government Program for 2001 - 2004, adopted by the Government, in month of May 2001, some measures and actions for improving road transport infrastructure have been taken, some of them are the followings:

a) Integration in the European transport system of the present road transport system, for this purpose being expected:

The rehabilitation of the European and national road network:

- rehabilitation works included in II-IV stages, amounting about 1,760 km. of European and national roads;

- rehabilitation program, motorways construction and road infrastructure upgrading on the Pan-European corridors routes IV and IX, of which the main works are:
 - Bucuresti - Constanta motorway, Bucuresti - Cernavoda section;
 - Nadlac - Timisoara - Deva motorway (210 km);
 - Widening to 4 traffic lanes of DN5 Bucuresti - Giurgiu (border with Bulgaria) and Ploiesti town ring road;
 - Development of access ways and border control and crossing points at Giurgiu and Bechet with Bulgaria, Varsand, Petea and Cenad with Hungary;
 - Carrying out motorway type by-passes for some towns and cities located on corridor IV: Deva, Orastie, Sibiu, Sebes, Pitesti.
 - program for traffic safety and institutional development;
 - actions concerning the privatisation of the national roads maintenance activities.
- b) New programs for road investments:
- bridge over the Danube river in Braila zone;
 - Bucuresti - Brasov motorway
 - Bucuresti town ring road;
 - development of the communal roads infrastructure.
- c) Creating of favourable conditions to maximise the activity in road transport field.
- d) Laws harmonisation in transport field.

2.2 In order to decide the opportunity of constructing a road, the following socio-economic criteria are taken into consideration:

- opening of remote regions and providing the transport connections;
- economic development of region;
- diminishing of traffic congestion;
- improvement of road traffic safety;
- impact on human activities.

Also, the examined studies are land surveying studies, geotechnic studies, hydrography studies, traffic studies (present and perspective), demographic studies, environmental studies, economic profitability studies, etc.

2.3 The planification or the decision procedures are different depending on the importance of works. The works of national interest are approved by Government decision, and the ones of local interest are approved by local authorities (county or local councils) after examining them by these management bodies. The difficulty consists of the fact that, excepting some big cities of the country, the local councils have not efficient management groups for urban roads. Also, few towns possess studies and other documents against which be able to take decisions for transport infrastructure. These decisions are taken by the local councils following the major's proposal and are based mainly on the direct objectives than the studies and analyses.

3. Which was the impact of the road development on the human activities?

3.1 The road phenomenon became true within 1990 - 2002 by:

- increasing more than two times of the vehicles fleet from 2.17 mil to 4.57 mil;
- increasing the number of vehicle drivers of 1.8 times, from 3.08 mil to 5.6 mil.

The advantages of the goods and passengers road transport, due to its accessibility are shown up only if the road infrastructure provides speed, safety and comfort conditions.

In Romania, the sizes for vehicles in international and national traffic, as well the tonnage allowed for international traffic will be in the line with the European ones mentioned in EU Directive no. 96/1996, on the roads networks open to international traffic, at the extent the road network will be rehabilitated.

Another aspect is related to the importance of the main European transport corridors, that is Corridors IX and IV crossing our country from North to South and from West to East respectively, which will ensure a continuous and permanent national and international traffic flow.

The increasing of traffic volume on the rehabilitated roads, construction of the emergency stopping lane resulted in decreasing the transport time. As example: the needed time for travelling the distance between Bucuresti - Arad of 540 km was decreased up to two hours. The decreasing of the transport time has as effects, besides the economic effects, the decreasing of pollution in the zones travelled by vehicles.

The construction of by-passes for jammed traffic towns and the rehabilitation of other important routes on the national roads network, with significant increase of traffic, the upgrading of the border crossing points, the link of all county residence towns to the national roads network will have as effect, an efficient goods transport activity.

By the works for developing additional parking places and the re-arrangement works for the existing ones, the road transport operators will be able to develop their activity, observing the norms of the European Agreement regarding the activity of vehicle team operating international transport (AETR), that is observing the working and resting periods.

The effects of works destined for the improvement of the road safety and signing the rehabilitated national roads are visible even from 2000. Thus, it was recorded a decreasing in number of the accidents with serious casualty on the national roads of about 3.3% in 2000 in comparison with 1999, about 4.1% in 2001 in comparison with 2000, and for the first three months of 2002, the accidents with serious casualty have been decreased by 8% in comparison with the same period of the last year.

3.2 As it has been shown, in Romania of the last 10 years, a greater attention has been paid for improving the existing network. In this situation, the impact on the human activities was experienced in all the zones where works have been carried out.

The rehabilitation of the national roads within 1993 - 1998 period, determined significant increase and development of services intended to the road users. By examining a road sector of about 482 km length, on DN7 Pitesti - Ramnicu Valcea - Sibiu - Deva - Nadlac, it is shown the following progress:

Table 4

| | Valcea County | | Sibiu County | | Hunedoara County | | Arad County | | TOTAL DN7 | | % |
|------------------------|----------------------|-------------|---------------------|-------------|-------------------------|-------------|--------------------|-------------|------------------|-------------|----------|
| | 1989 | 2002 | 1989 | 2002 | 1989 | 2002 | 1989 | 2002 | 1989 | 2002 | |
| Motels | 5 | 11 | 5 | 12 | 3 | 15 | 2 | 10 | 15 | 48 | 320 |
| Fuel stations | 3 | 12 | 3 | 15 | 9 | 20 | 1 | 22 | 16 | 69 | 431 |
| Vehicles service shops | 0 | 4 | 4 | 7 | 0 | 4 | 0 | 8 | 4 | 23 | 575 |
| Restaurants | 6 | 28 | 9 | 20 | 5 | 12 | 2 | 17 | 22 | 77 | 350 |
| Parking places | 4 | 14 | 0 | 4 | 4 | 7 | 2 | 14 | 10 | 39 | 390 |

During the last ten years, the impact of the urban roads on the human activity was very significant. The traffic increase, mainly in towns, the increase of number of vehicles caused an increase in importance of the urban roads, both for economic development and for any citizen perception. More and more citizens and business agents are interested in the quality of road, construction of new streets and possibility of traffic regulation.

The impact on the travels and transports is carried out by traffic monitorization.

The heavy traffic monitorization appeared as a necessity in order to protect the road network against the destructive action of goods and passengers vehicles, mainly of the overloaded vehicles.

The monitoring program of the heavy traffic on the road network was approved by the National Administration of Roads (N.A.R.) during the second half of 1997, but became operational starting from 2000.

The monitoring and control system of heavy traffic includes, now, besides the classical investigation methods for traffic, some specific methods, such as:

- static vehicle weighing on roads, by mobile weighing platforms;
- static or dynamic vehicles weighing at border crossing points;
- dynamic vehicles weigh in motion on the national roads network.

The main objectives of the traffic monitoring program are:

- establishment of traffic distribution on the national roads network and its monitoring in time;
- estimation of heavy traffic aggressiveness on roads by determining the distribution of real loads per axle for heavy vehicles being in traffic;
- establishment of design parameters for road structure design (equivalence coefficients of actual physical vehicles into design vehicles, establishment of equivalent standard axle of 115 kN);
- establishment of design parameters needed to determine the traffic capacity and the levels of service (traffic distribution on traffic directions, hourly traffic flow, traffic speed, etc.)
- identification of overloaded vehicles, with total weight or weights per axle, exceeding the limits allowed by the road legislation and taking measures for their penalty or prohibition to traffic;
- heavy traffic distribution to permitted routes taking into account the vehicles tonnage and the existing constraints on the national roads network.

In order to fulfil the proposed goals, the traffic monitoring and control system meet the following functions:

- classification of the real vehicles within a limited number of categories established by system user;
- weighing of each axle and determination of vehicle total weight;
- comparison of the real loads per axle and total vehicle loads, with the maximum allowable loads established by law for the respective vehicle and road category, establishment of tariff category, penalties or traffic constraints;
- establishment of other traffic features needed for road structure sizing and traffic capacity determination.

The fulfilment of the above functions is provided by road traffic investigation systems:

a) Road traffic traditional investigation systems:

- traffic general census performed every 5 years once on 3.162 posts;
- automatic traffic recordings made on 380 posts;
- origin - destination traffic survey (121 posts on national roads network).

b) Road traffic new investigation systems introduced in our country, in the last years providing the classification and the static or dynamic vehicles weighing:

- classification and weigh in motion for vehicles (68 posts equipped with WIM type installation);

- heavy vehicles weighing at border crossing points;

- vehicles static weighing, on road, using mobile weighing platforms (29 installations).

3.3 The special means for determining the impact on the human activities are not available, but all the mentioned aspects can be estimated at local level by road representatives and specialised bodies representatives (e.g. agriculture, health, education, economic and social organisation, access to market). It has to be mentioned that these aspects regarding the road impact on the human activities is particularly shown in the adjoining zones of executed works (on the national roads and in towns).

3.4 In case of dissatisfaction of the population, in Romania, it is also used, as means of pressure, the traffic break on roads, for short periods of time, in the zones where the problems appeared. We mention that this method is not frequent and it is used when other negotiations has no result. In this period, the traffic is deviated on other routes or some of the traffic participants wait for traffic opening.

4. What is the road perception in your country? What are the development and the consequences?

4.1 In Romania, the road is considered a public facility and the problems appeared in the developed countries concerning the dissatisfactions related to roads (lack of comfort, noise, pollution) are less perceived because the road network is under reconstruction and rehabilitation and does not meet the country's social and economic needs. The elected representatives and the business community rely on the road network, both for social activities and social and economic development.

This perception, formally declared after December 1989 has been consolidated during the years, mainly, due to a permanent improvement of the technical condition of road network and an increasing taking over of the transport loads by roads. Today, in Romania, according to statistical data, the road transport accounts for 73.5% of the goods transport total volume and 63.4% of the passengers transport total volume.

In our opinion, the road will continue to be the main transport way to solve the human activities, but it is necessary to improve the disadvantages criticised by the users, up to these disadvantages elimination.

The National Administration of Roads and the specialised county and local bodies took into consideration for their development proposals, the road importance and the foreseen traffic increase. As it was mentioned above, depending on the parameters for social and economic development, some modifications in the decision may occur, but these ones are not essentials, they are more amendments of the programs, the guiding lines being the same.

4.2 The greatest dissatisfaction caused by the road network is its non-operability at its capacity, since the technical condition of the local roads network (county, communal roads and streets) is poor and has a tendency to further deteriorate. In this case, the main problem is to provide the minimum financial means needed for this part of roads network, representing about 90% of its total. For this purpose, the National Administration of Roads makes efforts together with the local administrations, by submitting the situation to the decision making bodies in order to save this part of the public assets. The sectors most affected by this situation are the tourism, forestry, agriculture and social activities.

5. Which are the active forces, at present and the implementation means for “Road and sustainable development” policy?

5.1 In order to implement “Road and sustainable development” policy, some stakeholders of the road sector and the decision makers shall be taken into consideration.

The main stakeholders in the road sector in Romania are as follows:

- * The Ministry of Public Works, Transport and Housing is the technical authority body in the road sector for the whole country. The Ministry exercises its prerogatives through its specialised directorates and the National Administration of Roads;

- * The National Administration of Roads is the national roads administrator and the coordinator of technical aspects relating to the other roads. The Administration has an important role concerning the development political by promoting its own proposals in order to be approved and applied; it is involved in environment matters through its specialised unit. In the last ten years, the national roads rehabilitation program, by stages, motorways construction program and maintenance works program were approved;

- * The county councils, by its authority for the administration of roads of county interest;

- * The local councils for communal roads and streets;

- * The Romanian Road and Bridge Professional Association contributes to the technical and engineering training of specialists. The Association has preoccupation, also, in the environment domain.

- * The internal and external financing institutions which can influence the decisions by the specialists from these institutions having experience in other countries or, internally, by selecting projects on the basis of their efficiency.

Other stakeholders outside the decision makers are as follows:

- * The National Union of Road Hauliers in Romania which gathers the most part of the goods hauliers;

- * The transport, environment, contractors associations which can influence the decisions, but not in a decisive manner.

- * The political parties can influence in taking very important decisions when they are governing the country. If the program of these parties include the sustainable development, the chances of performing it increase very much.

- * The press, of any kind, can influence the decisions taking action, can support the immediate intervention in difficult situations, can prepare a rational roads development.

5.2 For a sustainable development in the roads field, we consider that some more measures must be taken, such as:

- * to improve the specific legislation for roads sector by stressing the operation manner of local administrations, within the existing legal frame;

- * to continue the action concerning the harmonisation and putting the Romanian technical standards, norms and regulations in line with the European ones;

- * to pay an increasing attention to the activity intended to road and bridge maintenance, located on the public roads network;

- * to jointly cooperate with the environment protection organisations and other organisations adjoining the road activity;

- * to consult the public regarding the activity of road organisations and, mainly, to solve the problems promoted by the public;

- * to apply starting with 2002, the “VIGNETTE” system for users’ contribution in keeping the roads network under good traffic condition;

- * to continue the improvement of regulations concerning the setting up and the using of the Roads Special Fund;

- * to train a sufficient number of experts for the entire sector;
- * to cooperate with or to train experts from other fields for roads sector (economists, landscape architects, aestheticians, sylviculturist, etc.)

6. How are the teams studying the roads projects made up?

The design of new road infrastructure works is a complex activity today. In Romania, as it was shown, we were, mainly, concerned with the European roads rehabilitation and only in the last years, with the design of great interest works, such as Bucharest-Cernavoda motorway or big towns by-passes, specially on the Pan-european corridor IV.

For these new works, experienced design companies, with experts teams for surveying, road pavement structures, consolidations, bridges, have been mobilized. Concerning the other activities, cooperation contracts have been concluded with specialised companies. The same policy was applied for environment impact studies, norms regarding the flora and fauna, in order to correlate them with the urban activities. This pluridisciplinary activity can not be easily coordinated and for this reason it would be preferable that the experts from other fields than roads and bridges, be trained for such activities in school and, then, employed by design companies.

At present, in Romania through the National Administration of Roads, new working teams of experts coming from faculty, research, environment, landscape media, architects, economists, experts for fauna and flora are made up. The coordination of the experts' activity is the responsibility of the project design manager.