

# INTEGRATED NATIONAL STRATEGY FOR ROAD SAFETY IN MOROCCO

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## SUMMARY

Morocco experiences an important development of the road traffic which results unfortunately in a recrudescence of the accidents which involve each year of the thousands of victims. During the 20 last years, 741971 personal injuries of the road traffic were recorded in Morocco, that is to say on average 37100 accidents annually and 102 accidents per day. These accidents involved 1.147.564 victims including 59109 killed either, on average, respectively 57978 victims and 2955 killed annually, which corresponds to 157 victims and 8 killed per day. Between 1996 and 2004, the average annual increase in the number of killed is about 4,7%.

In order to rectify this dramatic situation which carries a heavy damage at our country, the Ministry for the Equipment and Transport worked out, within the framework of the North-South co-operation, an integrated national strategy of the road safety, which led to the formulation of strategic axes and an action plan being spread out over 10 years to make disappear the problem of the road traffic accidents. This strategy with for objectives:

- Inversion in less than three years, the upward trend of the annual number of killed and severely wounded persons.
- After this inversion of tendency, to maintain a reduction of the number of killed and severely wounded persons at annual rates of 5%

After two years of its implementation, this strategy made it possible to lead to encouraging results. Indeed, the comparative analysis of the statistical data of 2005 with those of 2004 emphasized what follows:

- a reduction of 7,11% of the number of killed while passing of 3894 in 2004 to 3617 in 2005
- a reduction of 11,37% of the number of severely wounded persons while passing from 13579 in 2004 to 12035 in 2005.

These promising results indicate relevance of the Moroccan strategy thus worked out and implemented, and challenge the Moroccan authorities with the continuation of the efforts made in this direction.

The present communication has the aim of dividing with the participants in the world congress, the Moroccan experiment in the field of the road safety, which is the fruit of a very profitable North-South co-operation.

## **1. INTRODUCTION**

Within the framework of the improvement of the road safety in Morocco, the Ministry for the Equipment and Transport concluded in 1998, a first draft-agreement with the Agency Suédoise of International Development (ASDI) for the realization of a study of audit of safety of 1500 km roads and making of a guide of audit of safety of the road infrastructures. A second draft-agreement was concluded with the same organization in 2001, for an assistance of the Moroccan part to work out an integrated national strategy of road safety. This strategy aims at the improvement of the system of road transport in order to ensure a durable and substantial reduction number of killed and severely wounded persons in the road traffic accidents.

During all the process of its development, the Moroccan persons in charge for the project and the team of Swedish experts took care that this strategy takes account of Moroccan specificities by:

- the comprehension of the problems of the road insecurity by all the speakers concerned
- the adhesion of these speakers to the various modes of treatment of these problems
- engagement to carry out the recommended actions.

With this intention, a steering committee ensuring as well the management of the project as the interface of the Swedish experts with the Moroccan speakers, was set up. This committee is composed of the Management of the Roads and the Road traffic (DRCR) and the National Committee of Prevention of the Accidents of Circulation (CNPAC).

## **2 - PROBLEMS**

### **2.1 - Statistics and forecasts**

Between 1996 and 2003, the automobile park knew a clear increase. It passed from 1.355.000 to 2.000.000 vehicles approximately. During the same period, the total road traffic on the interurban network increased by 35,4 to 48,87 million vehicles kilometers per day.

Each year, more than 3600 people are killed in road accidents in open country and in agglomeration. The number of casualties noted by the DRCR is of more than 70.000 people each year. The number of severely wounded persons exceeds 13.000 people each year.

The following table reports the evolution of the statistics of the accidents between 1996 and 2003 :

<b>Year</b>	<b>Accidents</b>	<b>Killed</b>	<b>Severely wounded persons</b>	<b>Total Wounded</b>	<b>Vehicles implied</b>
1996	38646	2807	11587	57285	58057
1997	40782	3081	12240	60577	61423
1998	41701	3242	12423	62722	63654
1999	46717	3394	13359	70331	71556
2000	48370	3627	13641	74265	74036
2001	50235	3644	14514	77925	77218
2002	52137	3761	14922	81365	80490
2003	53814	3878	15061	84522	83601

In addition to the pain and suffering, the road accidents cause enormous economic losses at the Moroccan company and its citizens. The cost of the road traffic accidents in Morocco amounts to 2,5% of the GDP, which is equal to 8 billion dirhams per year (equivalent with 0,73 billion euros).

If no innovative action is undertaken and circulation continues to increase by 3 to 5% per year; between 2000 and 2012, the number of accidents will increase by 57% and numbers it killed will increase by 32%.

<b>Year</b>	<b>Accidents</b>	<b>Killed</b>	<b>Cost (dirhams million per year)</b>
2000	48 370	3 627	8 000
2012 (Estimate)	76 000	4 800	10 000

## 2.2 - Road users

The geographical distribution of the accidents and victims of the road traffic for the year 2003 is given afterwards :

- 27,9% the accidents took place in open country and made 68,5% of the total number of killed, 72,6 of the total number of the severely wounded persons and 31,0% of the total number of the light casualties
- 72,1% of the accidents took place in agglomeration and made 31,5% of the total number of killed, 27,4% of the total number of the severely wounded persons and 69,0% of the total number of the light casualties Among the victims, one notes that

more than 12,2% of killed have less than 14 years, and more than 49,9% of killed have less than 34 years.

The distribution of the victims by categories of users is as follows:

- motorists come at the head from killed with 37,7% and 47,2% of the severely wounded persons and 42% of the light casualties
- the pedestrians follow with 30,5% of the total of killed; 20,1% of the severely wounded persons and 24,3% of the the light casualties
- cycles or auto-cycle riders account for 18,5% of killed; 18% of the severely wounded persons and 24,2% of the light casualties
- the truck-drivers account for 8,5% of killed; 9,7% of the severely wounded and 5,1% of the light casualties
- the users of bus account for 1,9% of killed; 2,6% of the severely wounded persons and 3% of the light
- users of other vehicles (assembled animal, cart, agricultural machine, machine of public works,...) represent 2,9% of killed; 2,4% of the severely wounded persons and 1,4% of the light casualties.

In addition, more than 76,6% of the victims of personal injuries of the road traffic are of male sex while 23,4% of female sex.

### 2.3 - Other factors of danger

Several urban zones having heterogeneous characteristics of circulation present in a considerable way a greater risk. The road environment is often incomprehensible by the road users. This situation leads to uncertainty and the hesitations which often cause accidents. Many agglomerations are crossed by an important through traffic. It is a problem of safety in particular for the pedestrians, since speeds of the vehicles are often high. The animals crossing the road cause the insecurity with the drivers in open country. There is to make so much in order to reduce the risk to have human damage if the accidents occur. The road environment must be more "tolerant" and the road must forgive the error. Many vehicles are not as sure as they should not be it. The services of the urgencies and the medical care must be of a better quality and more effective. That would save lives and would reduce the suffering.

### 3 - VISION

#### 3.1 – Why a vision?

The priority given to the road safety must reflect the value which the community gives to safeguarding human life and the prevention of serious wounds.

However, this could not be made that within the framework of an optimal safety which can appear contradictory with mobility, concept impossible to circumvent for the economic and social development of the communities. Consequently, it is necessary to take care to find a compromise and a balance between the safety and mobility within the framework of an in the long run suitable vision.

This vision of the road safety must present an ultimate image to reach. Any strategy in the field of the road safety remains dependent on the definition of a vision which must report the image final and ideal of the safety of the system of the road transport and that the whole of the speakers in the field must set according to following process's:

- Comprehension
- Adhesion
- Engagement.

A vision is necessary in order to bring the policies, the media and the citizens to be been interested more in the road safety. In the field of the road safety, the safeguarding of the human life remains the Master word in the formulations of the visions of share the world. The idea is such as the vision traces the strategic route towards a system of road transport without dangers and which must be followed by all the actors implied in the road safety.

#### 3.2 - Moroccan vision

Taking account of Moroccan specificities, the following vision was proposed: **“National Priority of the road safety for a substantial reduction and continues killed and severely wounded persons of the traffic accidents”**

In a long-term prospect, the structure and the function of the system of road transport must answer this vision.

The vision admits that the prevention of all the accidents is not a realistic action. The stress must be laid on the serious accidents.

The responsibilities must be shared between the managers of the system and the road users:

- The managers of the roads and the urban roadway system must aim at the creation of an environment of the infrastructure which minimizes the risk of the users to make errors as well as the consequences of accidents which would occur
- The manufacturers and the owners of vehicles must aim at the creation and the use of vehicles which minimize the risk of the road users who make errors and which prevent the serious human wounds if an accident occurs
- All the road users must maintain a behavior sedentary by respecting the highway code. If the users make faults for lack of knowledge, acceptance and adhesion or capacity, the persons in charge must make the readjustments necessary to prevent that people are killed or seriously wounded.

The requirements before making an approach of the vision are that all the company is committed in the efforts of the road safety, that the government and the public authorities are powerful actors. As is it necessary as objectives are laid down, of the actions carried out and evaluated.

## **4 - STRATEGY**

The general principles, the national objectives, the priorities and the strategic axes described hereafter, are a base necessary for the development of the action plan afférant to this strategy.

### **4.1 - Guiding principles**

For the success of any strategy of road safety to propose for Morocco, some guiding principles fundamental and impossible to circumvent are to be observed by the whole of the speakers, for tending towards the fixed vision, namely that:

- The actions adopted to reach system of a sedentary and effective road transport must be perennial and in constant improvement. That will contribute to a durable development of the company
- The Man with his needs, his values, his capacities, his will, his experiment, his direction of the responsibility, his obligations and his limits must be the pivot of any effort of improvement
- All links of the company, and more particularly of concerned with the road safety, of which in particular the road users, the professionals of transport, the decision makers of

the various sectors, must be conscious of the priority to be given to the road safety. This on the matter will increase the requirements on all the levels

- Work in collaboration is essential. Also, the sectoral speakers must they develop a culture facilitating the opening with the team work

- The fact of considering the pedestrians as integral part of the system of road transport is an absolute need and a requirement.

These guiding principles must constitute a federator background of the action of the whole of the speakers as regards road safety. Everyone must be engaged in this direction: Administration, private Sector, Professionals, Civil Company. These operators must set up their own action plans and their own objectives for their contribution to the improvement of the road safety within the framework of the total strategy. These actions must be the subject of a permanent follow-up and a periodic total evaluation at least once per annum.

In a broader context:

- Environment: the efforts of the road safety must contribute to the improvement of the environment. To reduce speed and to manage the circulation in a better manner for example, will reduce pollution and in particular the sound harmful effects

- International co-operation: it is necessary to collaborate narrowly with other countries in particular those of the EU whose level of road safety is advanced.

- The social development: surer roads must contribute to a better communication between the various communities, which will support cohesion and the economic and social development.

#### 4.2 - National objectives

In order to tend towards the above mentioned vision, the following objectives considered to be realistic were retained for one 10 years period as from the year of bringing into force of the strategy:

**1st Objective:** To currently reverse the upward tendency after 3 years of application of the strategy;

**2nd Objective:** After this inversion of the tendency, to maintain a reduction of the numbers of killed and severely wounded persons at annual rates of 5%.

#### 4.3 Priorities

General philosophy is of:

- To concentrate the work of the road safety on the central and obvious problems of the road safety
- To select the actions for which one envisages a relatively fast result compared to the actions which have relatively slow results but on another side, have durable effects
- To give a great priority to the actions directed towards the vulnerable users, with a concentration on the children.

The sectors of road safety were grouped by set of priorities decreasing. The criteria hereafter were at the base of the hierarchisation of the actions and road safety measures:

- The degree of gravity of the problem
- Importance for the road safety
- The current level of the activity and progress
- Time and efforts necessary to the recommended changes
- Celerity to obtain significant results as for the road safety.

The financing is not explicit among these criteria. The insufficiency of the funds can explain a slow improvement, whereas it is also a business of priority. Any budget is a compromise between the competing requests and needs. By supposing that a great priority is sufficiently granted, there will be always funds for the efforts of the road safety.

#### 4.4 - Strategic axes of the road safety

The axes stopped for the national strategy of the road safety are as follows:

- Coordination and road security management
- Financing of the road safety
- Identification, Characterization and Quantification of the Problems of the road safety
- Adequate Data bases of road safety

- Legislation
- Control and sanction
- Education with the road safety
- Sensitizing as regards road safety
- Planning, Design, Maintenance and Exploitation of the sure roads
- Formation and examination of the drivers
- Safety of the Vehicles
- Interurban and urban Transport travellers and goods
- Helps exempted with the victims of the road accidents
- Evaluation and research in the field of the road safety
- Estimate of the costs of the traffic accidents

Considering the time and means necessary for the reduction of the accidents and the number of killed and taking into account gravity of the situation, it proved to be necessary to engage of the urgent actions to quickly reverse the upward tendency currently of the number of killed and severely wounded persons. The strategic program integrated urgently (PSIU) of road safety was built. It related to one three years period and took into account the realization of the axes considered to be urgent by the national strategy with knowing:

- Coordination and road security management
- Legislation
- Control and sanctions
- Formation of the drivers and reform of the system of the examinations of the driving licence
- Road Infrastructures and urban roadway systems

- Helps exempted with the victims of the traffic accidents
  
- Communication and education

These axes were declined in concrete actions with estimate of the costs and the estimated times of realization. After 34 months of application of the PSIU, the results obtained are recapitulated in the following chapter.

## **5 - EVALUATION AT January 31, 2007**

### 5.1 - Coordination and road security management

Coordination as regards road safety on high level is entrusted to the interdepartmental committee of the road safety chaired by Prime Minister (CISR). The Standing Committee of the road safety (CPSR) thus and of the regional committees of the road safety (CRSR) were also create. The institutionalization of the CISR and the CRSR was made by the decree n° 2/04/266 of July 25, 2006.

In the framework of the realization of the PSIU, the CISR 5 meetings with in the chair Mister the Prime Minister held. The principal decisions taken are:

- Validation of the integrated national strategy of the road safety and the PSIU
  
- Validation of the national plan of control
  
- Validation of the strategy of short-term communication of the national committee of the prevention of the accidents of circulation (CNPAC) to accompany the new policy by the road safety
  
- Reinforcement of road control by the fixed radars of control the speed and the stations of control of the overload
  
- Approval of the programme of renewal of the freight vehicle stock of goods and public transport travellers
  
- Validation of the project of reform of the vehicle system of inspection of the vehicles
  
- Development of the joint circular in order to inform the various bodies of control on the decided operational actions and to clarify the procedures of their implementation.

The CPSR held 4 meetings under the presidency of the Minister for the Equipment and Transport. These meetings were devoted to the follow-up and the evaluation of the

implementation of the decisions of the CISR. The regional committees also held several meetings of follow-up and evaluation of the realization of the actions selected at the regional level.

## 5.2 - Legislation

The decree relating to the safety devices, adopted in 2005, founded the obligation to equip certain categories of freight vehicles with goods and traveller out of limiting device speed, speed reducer, ABS and tires without tire tube, as well as the obligation of the port of the belt of safety in the places before and back. A new project of highway code was worked out and approved by the Council of Ministers on July 20, 2006. It was the subject of a broad dialogue between the various departments concerned. This project which is submitted to the Parliament brings new provisions of which in particular:

- penal responsibility for the driver, the owner and the client
- professionalisation of the trades of the teaching of control and the vehicle inspection
- licence at point at limited lifespan
- automobile license at limited lifespan
- professional driver

## 5.3 - Control road

Development of a national plan and regional plans of road control: A national plan of control was worked out by the ministry for the equipment and transport, in collaboration with the supervising authorities of the royal gendarmerie and national safety. This plan was declined in regional plans of control.

Modern acquisition of material of control: In addition and in the objective to develop and crédibiliser the action of the agents of control, of the modern equipment for the control of the excess speed, the overload and the mechanical state of the vehicles were acquired by the ministry for the equipment and the transport and placed at the disposal of the various bodies of control:

- acquisition of 419 radars placed at the disposal of national safety and the royal gendarmerie :
  - 47 numerical radars of control the speed equipped with the system of catches with photographs and data-processing data processing

- 32 numerical radars being able to be equipped with the system of catch of photographs and data-processing data processing
- 340 portable radars
- acquisition of 13 rockers mobile of control of the overload
- acquisition of 150 fixed radars of control speed

Control of the overload of the trucks: In order to contribute to the modernization of road control, in particular with regard to the overload of the heavy lorries, the ministry for the equipment and transport identified 7 sites of adjustment of stations of fixed weighing of the vehicles. The first station was brought into service in 2005 in Casablanca. Two other stations are in the course of construction with Rabat and Fès.

In addition, the ministry for the equipment and transport set up 7 control units of the overload at the level of the areas of, Tangier, Casablanca, Marrakech, Agadir, Oujda and Fès. In the same way the control of the means of transport public travellers is reinforced in the road stations.

Control speed: The year 2005 knew an increase in the number of exits of the brigades of the general direction of national safety (DGSN) and royal gendarmerie (GR.).

Vehicles technical inspection: A plan of levelling of the technical centers of visits (CVT) was set up in order to guarantee real and non virtual technical visits incentive with the improvement of the mechanical state and the reliability of the automobile park. Within this framework and to encourage the CVT to conform to the schedule of conditions in force, 4 operations of audit were carried out since June 2005.

In addition, new specifications were elaborate; it was used as call for tender for the introduction of two operators organized in networks. The examination of the offers is in hand.

## **6 - FORMATION OF THE DRIVERS**

### 6.1 - Automation of the theoretical examination of the driving licence

This action was implemented in February 2004 in order to return the examination of the driving licence transparent and objective. It consists of the installation of a multi-media system of questions to multiple choices (QCM) and autocorrection. In addition, the reflexion is in hand for the levelling of the practical examination of the driving licence

### 6.2 - New track of examination practises driving licence

A first new track of a surface of 6000 m<sup>2</sup> has been just arranged in Rabat for the course of the practical examination of the various categories of vehicles.

## **7 - IMPROVEMENT OF INFRASTRUCTURES ROUTIERES AND ROADWAY SYSTEMS URBAN**

### **7.1- Adjustment of road safety**

During the period 2004 - 2006, the ministry for the equipment and transport carried out 55 adjustments of road safety at a total cost of 137 million dirhams. During the same time, the ministry also realized more than 18 km of low walls of protection of the road users at a cost of 8 million dirhams.

### **7.2 - Installation of the cycle tracks and side tracks**

The ministry for the equipment and transport set up a program for the installation of the cycle tracks and the side tracks for the carts. The year 2006 knew the realization of 36 km cycle tracks on the level of Marrakech, Errachidia and Taroudant at a cost of 11 million dirhams.

### **7.3 - Improvement of the road signs**

Within the framework of the improvement of the road signs, the ministry for the equipment and transport started the following actions: - Development of the decrees relating to the new road signals - Development of technical instructions on the indication of gyratory and the elevated roadways - Making of a guide on the road signs in urban environment - Animation of a technical workshop on the road signs

## **8 - FIRST AID**

The departments of health and civil protection undertook, each one in what relates to it, of the great efforts, as well in the field of the primary prevention as the plan of the secondary prevention.

### **8.1 - Reinforcement of coordination**

Installation of a system of urgent medical care (SAMU) which will be established with the level of 11 sites covering all the own territory to face the medical urgencies.

### **8.2 - Reinforcement of competences of the personnel**

Starting in 2005, of the institute of training of the technicians ambulance men to the techniques of collecting, brancardage, first aid and making safe control of the ambulances.

### 8.3 - Regulation of medical transport

A bill on medical transport is in the course of finalization. The ministry for health began with the ministry for industry and levelling of the economy in a process of standardization of the ambulances.

## **9 - COMMUNICATION, SENSITIZING AND EDUCATION ROUTIERE**

The national Committee of prevention of the accidents of circulation worked out a triennial plan of total communication around the following axes:

- An institutional communication to create, sit and confirm the notoriety of the governmental policy and interdepartmental committee of road safety
- A behavioral communication to act on the recurring factors of the traffic accidents, to correct the attitudes of the road users
- A didactic communication and of popularization to inform the public on the new laws and new payments
- A technological survey to benefit from the international experiment while benefitting from the successes
- Organization of the national day of the road safety all on February 18

## **10 - STATISTICS OF THE ACCIDENTS APRIL 2004 - JANUARY 2007**

Thanks to the mobilization and to the dynamics of the whole of the speakers in the action of the road safety, the statistics of the road traffic accidents recorded since the implementation of the strategic program integrated urgently (PSIU), i.e. since April 2004 until January 2007, knew encouraging results.

If one takes into account the period April 2004 - January 2007 which corresponds to all the period of implementation of the aforesaid plan, one leads to the following results:

- 155138 injuries personal of the road traffic, is an increase of 0,28% compared to the period April 2001 - January 2004
- 10201 killed, is a reduction of 0,80% compared to the period April 2001 - January 2004
- 34793 severely wounded persons, is a reduction of 15,60% compared to the period April 2001 - January 2004

- 193326 casualties light, is an increase of 2,74% compared to the period April 2001 - January 2004.

Thus, in spite of a light increase in the total number of accidents during this period, the number of killed corresponding recorded a reduction, while that of the severely wounded persons in recorded a substantial fall. Table Ci after reports the data on the road traffic accidents before and after the implementation of the integrated national strategy of safety.

<b>Year</b>	<b>Accidents</b>	<b>Killed</b>	<b>Severely wounded persons</b>	<b>Total Wounded</b>	<b>Vehicles implied</b>
1996	38646	2807	11587	57285	58057
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1998	41701	3242	12423	62722	63654
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2001	50235	3644	14514	77925	77218
2002	52137	3761	14922	81365	80490
2003	53814	3878	15061	84522	83601
<b>2004</b>	<b>51687</b>	<b>3894</b>	<b>13579</b>	<b>80150</b>	<b>80702</b>
<b>2005</b>	<b>51559</b>	<b>3617</b>	<b>12035</b>	<b>77264</b>	<b>80349</b>

I estimate that the number of victims of road accidents will know a major reduction once the new code the road is applied.

## **11 - CONCLUSION**

The above mentioned statistical data indicate positive impact of the PSIU in terms of reduction of the numbers of killed and severely wounded persons. Indeed, they show that the aforementioned plan achieved its first goal consisting in stopping the recrudescence of the numbers of killed and of severely wounded persons.

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