









Cambodia Road Traffic Accident and Victim Information System



Annual Report 2004

Executive summary



Developed with the support of:

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World Health Organization



Foreword

Note from the Ministry of Public Works and Transport

A recent UNESCAP¹ report revealed that the numbers of traffic accidents increases every year in the world and that these accidents kill around one million people and injures 23 million others. 85% of the fatalities occur in the developing countries. The Asia–Pacific region alone accounts for up to 44% of global road deaths, although it is currently home to only around 16% of the world's motorized vehicle fleet.

In the Kingdom of Cambodia, the growing number of vehicles together with the efforts made by the Royal Government of Cambodia to develop and improve the traffic infrastructures (in order to facilitate transportation and to develop the national economy thus alleviating poverty), leads to a dramatic increase of road traffic accidents of 15% every year.

Traffic accidents can now be considered as the second largest catastrophe in the country after AIDS, killing 3 people and injuring many others per day, not considering damages and loss of public or private properties and the moral distress to society.

I do believe that, with the combined efforts of various institutions, NGOs, private companies as well as the people themselves, traffic accidents can be reduced in a near future.

On the occasion of the release of the First Annual RTAVIS report, I would like to express my sincere thanks to Handicap International Belgium who has consistently collaborated with the Ministry of Public Works and Transport to find out means and measures to refrain and reduce the traffic accidents to the lowest possible levels to the same extent as in the developed countries in the world or the other countries of the ASEAN region.

H.E. Sun Chann Thol Minister of Public Works and Transport

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¹ Editor's note: United Nations Economic and Social Commission for Asia and the Pacific.

Note from the Ministry of Health

Road traffic accidents are a major issue in the Kingdom of Cambodia. Every day, 3 people are killed and 100 are injured on Cambodian roads and those figures are increasing rapidly. This has an enormous negative impact on the development of the country. A recent study performed by the Asian Development Bank estimated the annual cost of road traffic accidents at 116 million US\$, representing more than 3% of the country GDP.

Road traffic accidents also have a strong impact on the health system of our country. In some hospitals, more than 50% of the patients are road traffic casualties. There is therefore an urgent need to tackle this issue seriously and to effectively implement the Road Safety Action Plan prepared by the Government of Cambodia.

One of the objectives of this action plan is to set up a road traffic accident data collection system. This system will allow to better understand the current situation and to evaluate the meaningfulness and effectiveness of the actions we take. As part of a comprehensive Injury Surveillance System, it is predictable that such a system may eventually be linked to other public health related data collection systems such a domestic accidents, small arms accidents or mine and UXO accidents.

Today, the Ministry of Health is delighted to collaborate with the Ministry of Public Works and Transport and the Ministry of Interior, as well as with non governmental organizations such as Handicap International Belgium and the Cambodian Red Cross to create a unique and standardized data collection system on road traffic accidents. This is useful for our country.

I would like also to emphasize again the commitment of the Ministry of Health to continue to collaborate to reduce the burden of road traffic accidents and to improve the quality of the emergency and rehabilitation services in hospitals.

HE Dr. Nuth Sokhom Minister of Health



Note from the Ministry of Interior

Road traffic accidents increase every year in Cambodia and can be considered as a new humanitarian tragedy for the country. In 2004, 3 people were killed every day due to road traffic accidents, causing inestimable human and economic damages, refraining the poverty reduction process, the economic growth and people's happiness.

Police services have noticed that two main factors are responsible of traffic accidents: human error and vehicle defect. Today, a series of actions within transparent mechanisms are required to manage those issues:

- 1. Setting up the locomotive to lead the road safety actions with the creation of a National Road Safety Committee and related local committees (provinces and towns). These committees will make it possible for all competent institutions to issue a common policy and important guidelines and assign each competent officer for the implementation and the monitoring of the identified actions.
- 2. Improving and strengthening the quality of road safety education at all levels of the population, focusing especially on people learning to drive, the vulnerable road users such as motorbike or bike drivers and the pedestrians.
- 3. Having an effective and complete traffic law and strict enforcement mechanisms allowing to control the two factors that cause accidents: human error and vehicle defect.
- 4. Studying and organizing the engineering of the road to improve safety.
- 5. Studying and researching new modern technologies to control the traffic. If possible, we should absorb the good experiences from developed countries for the standard base to develop the traffic safety.

On top of the actions mentioned here below, there are many other tasks that need to be filled in to make the traffic accident demons disappear from the road and reduce the tragedy of people.

"Traffic accident is not an incurable disease"

"It is sure that the traffic accidents can be reduced and full safety be reached"

National Police Directorate General Ministry of Interior



Note from the Cambodian Red Cross

Over the last decade, while the number of mine/UXO victims tended to gradually decrease, the number of road traffic accidents has increased dramatically for several reasons, such as a lack of education, poor law and regulations and massive import of second hand cars with right-hand drive from Thailand.

The Cambodian Red Cross is very happy to collaborate to the development of the Cambodia Road Traffic Accident and Victim Information System. We are indeed convinced this system is the basis for a better understanding of the growing issue of road traffic accidents.

In the future, the Cambodian Red Cross wishes to collaborate with Handicap International Belgium and other stakeholders to develop education material for secondary schools as well as first aid strategies and toolkits aimed at improving first response to traffic accidents.

Mr. Hum Sophon Director Program Department Cambodian Red Cross



Note from Handicap International Belgium

In Cambodia, more than 3 people die and 100 are injured every day as a result of road traffic accidents, and the casualty figures are increasing dramatically.

To effectively tackle this complex issue, actions in multiple sectors must be taken involving numerous stakeholders.

In its "Road Safety Guidelines for the Asian and Pacific Region", published in 1996. which aimed to help countries bring about road safety improvements, the Asian Development Bank identified specific actions and interventions to be undertaken in 14 major sectors.

One of these priority sector relates to the setting up of a road accident data system, needed for accurate assessment of the road safety situation. Such a database can help stakeholders to identify appropriate measures to combat the consequences of road accidents. It is laudable that the Royal Government of Cambodia has decided to follow the same pattern, prioritising the creation of a road accident data system in its 2004 Road Safety Action Plan.

Handicap International (Belgium) is proud to have contributed to the achievement of this first report, following a year of collection and analysis of data recorded in Phnom Penh.

This report could not have been possible without the cooperation of numerous people and institutions who have an active interest in the subject of road safety in Cambodia. Our particular thanks go to the Ministry of Public Works and Transport, Ministry of Health and Ministry of Interior, to our long-time partner, the Cambodian Red Cross, as well as to the World Health Organisation, whose representatives in Cambodia have been very supportive.

Sincere thanks are also due to the numerous doctors and policemen who devoted time to collect information, as well as to the RTAVIS team who analysed the data.

Special thanks are due to the Handicap International (Belgium) road safety team, and in particular to its manager, Mr. Jean Van Wetter, whose commitment and impetus made the publication of this report possible, as well as to our injury surveillance technical advisor, Mr. Kao Vannarin and to our mine action & injury prevention coordinator, Mr. Christian Provoost, who greatly contributed to the quality of this report.

Last, I am pleased to mention our generous donors, the Belgian and French Cooperation, for their interest and support in this crucial issue.

This report includes a collection of data as well as relevant recommendations. We hope they will be of use to the road safety and public health stakeholders in Cambodia, helping them to develop measures, plans and programmes aiming at preventing accidents, disabilities and deaths.

Bruno Leclercq Country Director Handicap International Belgium



I. Introduction

The objective of the Road Traffic Accident and Victim Information System (RTAVIS) is to provide government and development stakeholders in Cambodia with accurate, continuous and comprehensive information on road traffic accidents and victims.

It should allow them to better understand the current road safety situation, plan appropriate responses and evaluate impact of current and future initiatives.

Three different ministries are involved in road traffic accident data collection in Cambodia:

- The Ministry of Public Works and Transport;
- The Ministry of Interior:
- The Ministry of Health.

Although the databases developed by these ministries have been providing relevant indications on the road safety situation of the country, a **need for improvement** has been observed:

- The databases are not compatible between each other and there are important discrepancies between them²;
- They under-report the real situation³;
- They are limited in their scope⁴.

For those reasons, in early 2004, Handicap International Belgium (HIB), in collaboration with the Cambodian Red Cross (CRC), has proposed to the three ministries to assist them to develop a new system, based on a standardized and more detailed data collection form⁵.

The new system has been progressively developed since the 1st of March 2004, in accordance with the requirements of the ASEAN and the United Nations and in the framework of Action 2 (Road Accident Data Systems) of the National Road Safety Action Plan of the Royal Government of Cambodia.

Today, RTAVIS collects, centralizes, analyses and disseminates information provided by three different sources:

- Public hospitals:
- Private clinics:
- Traffic police.

By the end of 2004, information was being collected at 11 hospitals and private clinics in Phnom Penh and at the Phnom Penh traffic police.

In 2005, the system will be progressively extended to cover the whole country, in collaboration with the mentioned ministries.

The present report analyses the information collected by RTAVIS for the year 2004. It is a synthesis of all the monthly reports that were published throughout the year.

⁴ For example, they do not provide sufficient information on the circumstances of the accidents nor on the injuries and the socio**economic situation** of the casualties. ⁵ See appendix





² e.g. Accident data reported by traffic police is 50% lower than data reported by Ministry of Heath.

³ e.g. in 2004, the Ministry of Public Works and Transport report 7,967 casualties and fatalities while the Demographic and Health Survey performed in 2000 estimates the number of casualties at around 40,000.

II. Executive Summary

Situation in Cambodia

- 3 persons die every day from road traffic accidents in Cambodia.
- Road traffic fatalities have doubled over the last three years.
- Road traffic accidents increase proportionally more than road traffic and population.
- Traffic increases by more than 10% every year.
- Cambodia has the second highest road traffic fatality rate (number of fatalities/10,000 vehicles) in the region. This rate is ten times higher than in developed countries and twice as high than the ASEAN average⁶.
- 18% of road traffic casualties reported in Cambodia occur in Phnom Penh.

<u>Recommendation 1</u>: Create a National Road Safety Council to implement the National Road Safety Action Plan of the Government⁷.

Cambodia is at the bottom of its vehicle-ownership curve and **exponential growth** of road traffic casualties can be expected in the coming years if no action is taken. A first draft of a **National Road Safety Action Plan** has already been developed by the Ministry of Public Works and Transport and its partners. This plan needs to be further refined and detailed.

Moreover, a **multidisciplinary National Road Safety Council** must be created to implement activities and manage interactions between ministries and partners involved.

Recommendation 2: Adopt the new traffic law as soon as possible⁸.

The current traffic law dates from 1991 and is obsolete. A new Traffic Law, which meets international standards, is now under preparation and contains new articles that are not included in the current law, including:

- Every motorcyclist using a motorbike from 49 cc must have a driving license⁹;
- Helmet wearing is compulsory for all motorbike users;
- Fastening seatbelts is compulsory for all car drivers and passengers;
- Blood alcohol concentration limit is provided;
- Fines and penalties are increased.

The introduction of this new law is urgent, seeing the figures of this report and especially given that more than 90% of road traffic accidents are the direct consequences of human errors.

Recommendation 3: Improve law enforcement by training and motivating traffic police 10.

Law enforcement is currently very weak. Experience in other countries shows that even if traffic laws are very stringent, they are useless without adequate enforcement.

Traffic police officers should be trained on the new traffic law and receive incentives to enforce it correctly. Traffic police officers also currently lack of respect by the population. A campaign to improve their legitimacy and their image should be developed, simultaneously with clear changes in the way they operate.

up.

10 Cf. Action 8 of the Road Safety Action Plan: Law Enforcement.



⁶ <u>Notice</u>: When calculated in comparison with the population (number of fatalities/100,000 persons), **the fatality rate is however in the ASEAN average**. Also, the actual number of vehicles in use in the country may be higher than the official figure due to illegal imports of vehicles which are not registered at the Ministry of Public Works and Transport.

⁷ The Road Safety Action Plan of the Royal Government of Cambodia has been first drafted in 2004, based on the Road Safety Guidelines of the Asian Development Bank. Some of the recommendations provided in this executive summary correspond to actions identified in the action plan. The present recommendation of creating a road safety council corresponds to action 1 of the action plan: Establishing a National Road Safety Council for Coordination and Management of Road Safety.

Moreover, based on the National action plan, **several health partners**, including the World Health Organization, Handicap International, Unicef and the Ministry of Health, have taken a series of actions. Some of them are mentioned in this report.

⁸ Cf. Action 7 of the Road Safety Action Plan: Traffic law and regulation.

⁹ Driving licenses are currently not compulsory for motorbikes below 100 cc even though most motorbikes in use in the country are below 100 cc. Therefore, most motorcyclists in the country do not have to pass a theoretical and practical examination before driving a motorcycle and most likely do not know the traffic rules.

The new traffic law, which is currently under preparation, will oblige every motorbike driver to have a license to drive motorbike from 49 cc up.

Situation in Phnom Penh

4,508 casualties were registered in 2004 by the reporting hospitals, private clinics and the traffic police, resulting from **2.136** accidents.

Calmette hospital reported 35% of casualties, followed by Kossamak hospital (20%) and by the traffic police (15%).

<u>Recommendation 4</u>: Further develop a standardized road traffic accident data collection system at the national level, combining data coming from various sources¹¹.

Road traffic accidents and casualties data cannot be collected at a single source of information. Traffic police are not present at all accident sites and many road traffic casualties do not go to the hospital to receive medical treatment.

To obtain a complete and accurate analysis of the situation, data collection must be standardized and include several sources and partners. This is the objective of RTAVIS.

Age of casualties

- People aged between 15 and 24 years old account for 48% of casualties although they represent only 24% of the population.
- This proportion of young adults casualties is much higher than the worldwide average.

Recommendation 5: Develop a specific strategy to address road safety issues among young drivers.

The age pyramid of Cambodian population shows that **30% of the population is aged between 0 and 14 years**. It means that in the coming years, a growing number of young people will start to drive on Cambodian roads. Knowing that young people are currently associated with almost 50% road traffic casualties, there is a risk that this percentage will increase further in the future.

Gender of casualties

- Males account for 71% of casualties, although they account for only 48% of the population.
- This over-representation of males is in line with what is observed in other cities in the region and the world.

Type of transport

- **Motorcyclists** account for the large majority of casualties (**76%**), followed by **pedestrians (9%)** and car users (**7%**).
- Those figures are similar to those from cities such as Ho Chi Minh City and Vientiane but are far different from the situation observed in developed countries where the proportion of cars is much higher.

Recommendation 6: Develop a road design that allows a better separation of 4-wheelers and 2/3-wheelers 12.

Cambodian roads are characterized by a wide variety of types of traffic (motorbikes, cars, tricycles, tuk-tuks, minivans, trucks, oxcarts, etc).

Separation between four-wheelers and two-wheelers on national roads and on main town streets would reduce the number of accidents, and at the same time it would improve traffic flows.

 $^{^{12}}$ Cf. Action 5 of the Road Safety Action Plan: Road Environment and Road Design.



¹¹ Cf. Action 2 of the Road Safety Action Plan: Road Accident Data Systems. This action is supported by the World Health Organization, the French cooperation and Handicap International.

Recommendation 7: Educate children to adopt a safe pedestrian behaviour¹³.

Providing road safety education from the first grade of primary school is considered one of the best ways to improve the road safety situation on the long term.

Most child casualties are pedestrians. Teaching them the basic rules and risks of the road can allow them to travel safer from home to school and elsewhere.

Occupation of casualties

- Students¹⁴ represent the largest group of casualties (22.5% of casualties), followed by workers (22%) and vendors/small businesses (18%).
- Motorbike taxi drivers constitute only 3% of the total number of casualties.

Residence of casualties

15% of casualties injured in Phnom Penh come from the provinces.

Severity of injuries

- In total, more than 4% of casualties die either at the scene of the accident or of their injuries later (an average of 17 fatalities per month).
- Around 30% of casualties have severe injuries requiring surgery or admission to intensive care.
- Car users and pedestrians suffer more fatalities than other types of road users.

Nature of injuries

- In total, **65% of casualties suffer from head injuries**, much higher than the world average of 28%.
- 9% of them are considered as severe¹⁵.
- 80% of casualties suffering from head injuries are motorbike users. Among them, only 4.39% are wearing a helmet at the time of the accident.
- Only 30% of those wearing a helmet suffer from head injuries while 70% of those not wearing a helmet suffer from head injuries. This confirms the importance of helmet wearing.

Recommendation 8: Further develop awareness and enforcement campaigns to increase helmet wearing¹⁶.

65% of casualties suffer from head injury. A large number of casualties could therefore be avoided if people were wearing helmets correctly.

In addition, 24% of casualties suffer from fractures and 33% suffer from serious cuts/wounds.

The philosophy of those campaigns is to increase the helmet wearing rate via mass media awareness campaigns before to introduce the new law making helmet use compulsory. There is indeed a risk of non-acceptance by the population if the new law is introduced directly, with no progressive awareness campaigns.



¹³ Cf. Action 6 of the Road Safety Action Plan: Road Safety Education for Children. This action is supported by a program of Handicap International aiming at introducing a new road safety curriculum in the formal primary school curriculum.

¹⁴ Students are defined as follows: from first grade of primary school to last grade of university/higher education.

¹⁵ Classification of severe head injury is based on the Glasgow Scale, which defines neurological impairment in terms of eye opening, speech, and motor function. The maximum score is 15, and severe head injury is determined by a score of 8 or less persisting for 6 hours or more.

¹⁶ Cf. Action 12 of the Road Safety Action Plan: Road Safety Public Campaigns.

This recommendation is strongly supported by the World Health Organization and Handicap International, which launched several campaigns to promote the use of helmets.

Driving license

- Less than 50% of car/truck/bus drivers' casualties have a valid driving license at the time of the accident.

Day of accident

- An average of 15 casualties are reported every day in Phnom Penh. Several peaks (**up to 50 casualties a day**) are noticed, corresponding mainly to Khmer national holidays.
- Weekend (Friday 6 pm until Sunday midnight) accidents are responsible for 36.5% of casualties.
- A higher number of casualties occur on **Saturdays and Sundays**¹⁷, especially during night time.

Time of accident

- Nighttime accidents are responsible for 39% of casualties.
- Two **peaks** of casualties are observed: at noon and at 9 pm.
- Most weekday casualties are reported during the day while weekend casualties are equally spread during day and night.

Causes of accident

- High speed and non-respect of give way rules are responsible for more than 60% of casualties.
- Alcohol/drug abuse is responsible for 15% of casualties.

Recommendation 9: Develop awareness and enforcement campaigns targeting drunk drivers.

Alcohol/drug abuse is a major problem, especially during the night. It is believed that the figures provided here underestimate the real situation because traffic police and hospital staff do not have the material or the time to assess alcohol/drug consumption. The figures are therefore just based on assumptions.

Traffic police should have breathalysers to measure alcohol consumption correctly and enforce the law.

- In total , **human error** is responsible for more than 90% of casualties.

<u>Recommendation 10</u>: Develop awareness and enforcement campaigns on driving rules and improve the driver training system¹⁸.

Current road users behavior in Cambodia is generally erratic, undisciplined and inconsistent.

A large percentage of four-wheelers' drivers do not have a valid driving license and most motorcyclists do not have a driving license. The introduction and the enforcement of the new law should partly remedy this situation. A **better control of the driving schools** and the driving examination should also be ensured.

Type of collision

- **Motorbike-motorbike collisions** are responsible for 36% of the casualties, followed by motorbike-car collisions (25%) and motorbike-pedestrian collisions (6%).
- 6% of motorbike casualties fell alone.
- An average of 3.6 persons are involved and 2.1 are injured in each accident.

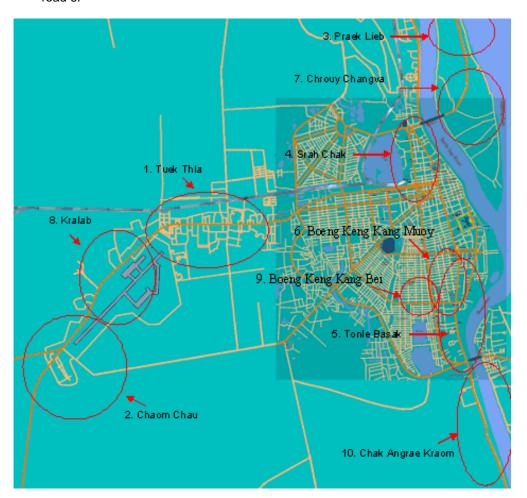
 $^{^{18}}$ Cf. Action 10 of the Road Safety Action Plan: Drivers Training.



¹⁷ An increase of 40% of the number of casualties is noticed on weekends compared to the average number of casualties on weekdays.

Location of accident

- **28% of casualties** receiving medical treatment in Phnom Penh are injured in accidents occurring in the **province**.
- The districts and communes crossed by national roads suffer larger numbers of road traffic casualties than other districts and communes:
 - Ruessei Kaev district represents 28% of Phnom Penh casualties while it represents only 22% of Phnom Penh population. This district is crossed by major national roads 4, 5 and 6.
 - Tuek Thla commune in Russei Kaev district represent more than 7% of Phnom Penh casualties while it represents less than 4% of the population. The commune is crossed by national road 4.
 - Preaek Lieb commune in Russei Kaev district reports almost than 5% of Phnom Penh casualties while it represents only 1.5% of the population. The commune is crossed by national road 6



Type of road

More than 42% of casualties are injured in accidents occurring on national/provincial roads.

Road characteristics

- More than 80% of casualties are injured in accidents occurring on **straight roads**.
- More than 90% of casualties are injured in accidents occurring on **paved roads**.



Recommendation 11: Develop specific road safety action plans targeting national roads¹⁹.

There is a direct link between rehabilitated roads and the number of accidents.

National roads have recently been rehabilitated and traffic on those roads is increasing rapidly. The number of accidents on those roads is therefore expected to increase even more rapidly.

Injuries on national roads are in general more serious than on smaller roads in urban areas because of the higher speed of the vehicles.

The percentage of pedestrian casualties may also be higher because the roads cross villages, schools and markets.

Therefore road safety action plans are urgently needed to accompany road rehabilitation and construction to ensure that:

- Hazardous locations and black spots are clearly identified and marked;
- Schools and markets are clearly identified and protected with speed breakers;
- Villagers are properly informed on the additional risks that the road brings;
- Speed limits are clearly indicated and respected.

Transfer to hospital

- Almost **50% of casualties** are transferred to the hospital/private clinic by **ambulance**. Around 10% arrive alone.
- 45% of casualties arrive at the hospital/private clinic less then 30 minutes after the accident while almost 30% of casualties took more than 2 hours to arrive at the hospital.
- Casualties taking more than 2 hours to arrive at the hospital are mainly injured in province accidents.

Recommendation 12: Improve emergency assistance to traffic victims²⁰.

This is one of the most urgent recommendations. The current Cambodian healthcare system is currently not capable of absorbing the current and expected number of road traffic casualties. The problem is especially serious in remote areas along national roads where casualties sometimes have to wait several hours before being brought to hospital. The equipment and competence of the district hospitals are generally not sufficient and casualties often travel from one district hospital to a referral hospital before being sent to Phnom Penh or to Vietnam.

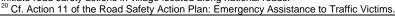
Ambulance services should be improved.

People should also be better informed of what to do in case they are victims or witnesses of accidents (who to call, what first aid they can provide, etc).

Police attendance

- Police are present on the accident site in more than 60% of the cases.

¹⁹ This recommendation is supported by a program of Handicap International which is supporting local NGOs and village committees to initiate road safety actions in village located along national roads.





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