

Cambodia Road Traffic Accident and Victim Information System



Annual Report 2005

Summary



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Developed by:



Ministry of Interior



Ministry of Health



Ministry of Public Works
and Transport



Handicap International Belgium

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Foreword

Note from the Minister of Public Works and Transport

Today, road traffic accidents are a huge concern of the Cambodian Government, led by Samdach Hun Sen. Road traffic accidents have become the second largest killer after AIDS, causing fatalities, disabilities, injuries, damages and losses of public and private properties, moral distress to society and disrupt the government poverty reduction policy.

Between 2000 and 2004 the number of road traffic accident increased by 15% each year, and on average there were 3 fatalities and 20 injuries every day. Particularly, in 2005, the number of road traffic accidents decreased by 7%, fatalities decreased by 13.25% and injuries increased by 1.34%. According to the Asian Development Bank in a 2003 report, the cost of road traffic accidents to Cambodia was estimated at 120 million dollars every year, which equals 3.21% of the GDP.

Based on this observation, the Government has decided to establish the National Road Safety Committee aimed at coordinating resources and increasing cooperation, collaboration and facilitation between the Ministries and the related Institutions in order to prevent and reduce road traffic accidents to the lowest possible rate. At the same time, the national committee also drafted the road safety action plan, which consists of 15 action plans in order to achieve the goals.

In fact, there are 4 causes of accidents: human error, road conditions, vehicle defect and nature of law and its enforcement. Human error is the main cause, which means if there is no participation from people, especially all drivers, the road safety action plan would not be effective.

On this occasion, I would like to appeal to all people, especially drivers, to properly respect the traffic law and also maintain courtesy while driving in order to reduce accidents. Please be reminded that your family, parents, children, brothers and sisters are waiting for your safe return. Please do not let "joy become sadness".

H.E. Sun Chann Thol
Minister of Public Works and Transport
Chairman of the National Road Safety Committee



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Note from the Minister of Health

Road traffic accidents and injuries have an enormous impact on the social and economic welfare of our country. They hinder development by killing and disabling the economically active population. In the absence of social security and insurance systems, the cost of prolonged medical care and long term rehabilitation, coupled with the loss of income due to disability or loss of a family "bread winner" can easily lead an affected household into poverty.

There is therefore an urgent need to tackle the road safety issue seriously. The Ministry of Health is proud to actively participate to the implementation of the National Road Safety Action Plan. In particular, I am delighted to collaborate with my colleagues at the Ministry of Public Works and Transport and at the Ministry of Interior, as well as at Handicap International Belgium, to develop RTAVIS, a unique data collection system on road traffic accidents and injuries. This is useful for our country.

The Ministry is also keen to continue to collaborate with Handicap International Belgium and other partners to extend the current data collection system in hospitals and private clinics to cover other types of injuries and create a broader Injury Surveillance System. Injury in general is indeed an increasing health problem in our country and a good monitoring system does not exist yet.

On top of the development of RTAVIS, the Ministry of Health also participate actively in awareness and education campaigns to promote helmet wearing and a safer behaviour on roads. Those campaigns have been so far very successful.

In the coming years, the main challenge for the Ministry will be the improvement of the emergency assistance services and of pre-hospital and hospital trauma care. As this report will show, trauma care indeed plays an essential role in injury control.

Finally, I would like to thank Handicap International Belgium and the World Health Organization for their support in preparing this report and emphasize again on the commitment of the Ministry of Health to reduce the burden of injuries in Cambodia.

HE Dr. Nuth Sokhom
Minister of Health



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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 2005, 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**



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Note from Handicap International Belgium

Handicap International Belgium (HIB) is very proud to have contributed to the achievement of this second "Cambodia Road Traffic Accident and Victim Information System (RTAVIS)" annual report.

RTAVIS is a unique system to collect, centralize, analyze and disseminate data provided by public and private health facilities (hospitals, clinics, health centres...) as well as by the traffic police in the whole country.

As the number of road traffic accidents and casualties continues to increase dramatically in Cambodia, RTAVIS plays a crucial role in monitoring the current situation, evaluating existing prevention strategies and planning new actions.

2005 was a crucial year for the improvement of road safety in Cambodia: the creation of an inter-ministerial National Road Safety Committee will help strengthening the coordination of actions taken by stakeholders at all levels, while the approval of the first draft of the new land traffic law by the Council of Ministers reveals the preoccupation and commitment of the highest authorities of the state. This is promising for an issue that has too long been left unanswered.

Yet, as the data and recommendations of this report will show, Cambodia is still at the beginning of its "motorization curve" and many challenges are still ahead to make roads really safer. The coming years will be particularly critical with the progressive application of the new law and the active implementation of the National Road Safety Action Plan.

This report could not have been possible without the cooperation of numerous people and institutions that have shown a keen interest in the improvement of road safety in Cambodia. Our particular thanks go to the Ministry of Public Works and Transport, the Ministry of Health and the Ministry of Interior which continued to share their experience and data, as well as to the Belgian Technical Cooperation and the World Health Organization, whose representatives in Cambodia and in headquarters have been very supportive.

Sincere thanks are also due to the doctors and staffs of numerous hospitals, health centres, and private clinics as well as to all traffic police officers who devote time and enthusiasm to fill in the data collection forms every day. They are the key contributors in the success of the system.

Special thanks as well are due to the Handicap International Belgium road safety team, and in particular to its new manager, Ms. Sann Socheata, and her colleagues, Mr. Meas Chandy, Mr. Sem Panhavuth, Ms. Ou Amra, Mr. Uy Math, Mr. Yorn Virak and Mr. Pea Kimvong, whose commitment and hard work made the publication of this report possible.

Last, we are pleased to mention our generous donors, the Belgian and the French Cooperation as well as the World Health Organization, for their continuous support in this crucial issue.

In the coming years, HIB hopes to continue to work with all those partners to further improve RTAVIS, while contributing to develop a broader Injury Surveillance System, including data on injuries due to road traffic, but also to various other causes, such as falls, domestic violence, and drowning. According to several recent studies, the multiplication of injuries is becoming an increasing public health issue and an effective monitoring system will help Cambodia to take proper action on due time.

Bruno Leclercq
Country Director
Handicap International Belgium

Jean Van Wetter
Coordinator of Operations
Handicap International Belgium



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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.

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

- Public health facilities;
- Private clinics;
- Traffic police.

The system has been progressively developed since March 2004 by the **Ministry of Public Works and Transport**, the **Ministry of Interior** and the **Ministry of Health**, with the technical support of Handicap International Belgium. In Siem Reap, Otdar Mean Chey and Kampong Cham provinces, the system is also supported by the **Belgian Technical Cooperation**.

The system is developed in the framework of Action 2 (Road Accident Data Systems) of the **National Road Safety Action Plan** of the Royal Government of Cambodia.

The present report analyses the information collected by RTAVIS for the year **2005**. It is a synthesis of all the monthly reports that were published throughout 2005. The previous annual report (annual report 2004), as well as all monthly reports, can be found on the following website: www.cnctp.info

In 2006, RTAVIS will continue to be developed and will progressively be integrated in a **broader injury surveillance system**, collecting data not only on road traffic injuries but also on other kinds of injuries such as falls, domestic accidents, violence and drowning.

II. Executive Summary

Introduction

2005 was a crucial year for the improvement of road safety in Cambodia with the creation of the **National Road Safety Committee**, the adoption of a **National Road Safety Action Plan** and the elaboration of a new **land traffic law**.

The National Road Safety Committee, which is chaired by H.E. the Minister of Transport and is composed of high level representatives from various ministries involved in road safety, will be key in leading and coordinating the efforts of various stakeholders to improve road safety.

Cambodia is at the bottom of its vehicle-ownership curve but **exponential growth** of the number of road traffic casualties is expected in the coming years if no or little action is taken.

2006 will be another critical year with the **foreseen adoption of the new land traffic law by the National Assembly**. As the present report will show, **human behaviour is indeed by far the leading cause of road traffic accidents** in Cambodia and awareness and education campaigns alone are not sufficient to prevent them. Increased **legal framework and enforcement procedures** are now more than ever necessary to prevent road traffic accidents and make Cambodian roads safer.

Recommendation 1: Adopt the new land traffic law

The first draft of the new land traffic law has been approved by the Council of Ministers and will be now subject to **public hearing**. The new law will introduce key new elements that are expected to have a strong impact on the road safety situation:

- Every motorcyclist using a motorbike from 49 cc will need to have a driving license¹;
- Helmet wearing will be compulsory for all 2-3 motorized wheelers drivers²;
- Fastening seatbelts will be compulsory for all car front seat occupants;
- Blood alcohol concentration limit will be provided;
- Fines and penalties will be better detailed and adapted to the gravity of the infraction.

The new law will then need to be accompanied by several sub-decrees to describe the enforcement **mechanisms and their timing**. It is indeed, for example, unrealistic to make helmet wearing compulsory overnight. A **transition period, accompanied by effective awareness and education campaigns, will be necessary**.

Recommendation 2: Improve law enforcement by training and motivating traffic police³

Law enforcement is still 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 currently lack 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.

Recommendation 3: Provide the National Road Safety Committee with adequate funding⁴

The National Road Safety Committee will not function effectively if it does not have appropriate funding to perform its activities.

Recommendation 4: Continue to establish a "culture of road safety" in Cambodia

Besides the actions taken at the ministry level, the **civil society** has a very important role to play in improving road safety. Several actions can be taken simultaneously by victims' associations, NGOs, international organizations, private companies and individuals in a **coordinated way**. A particular emphasis should be put on the organization of **national** road safety campaigns and events, such as a National Remembrance Day of Road Traffic Victims⁵ in November and the United Nations Road Safety week in April.

¹ Driving licenses are currently not compulsory for motorbikes below 100 cc and 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.

² Ideally, motorbikes' passengers should also have to wear helmets.

³ Cf. Action 8 of the National Road Safety Action Plan: Law Enforcement.

⁴ Cf. Actions 1 and 3 of the National Road Safety Action Plan: Establishing a National Road Safety Committee and Road Safety Funding.

⁵ The same day of the International Remembrance Day of Road Traffic Victims.



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Recommendation 5: Further develop the national road traffic accident data collection system at the national level, combining data coming from various sources⁶.

Over the last 2 years, RTAVIS has been able to combine data coming from 3 different sources to produce detailed analysis on road traffic accidents and casualties. Such a system must be further developed in the future in order to:

1. Have a better understanding of the road safety situation;
2. Evaluate road safety actions and the implementation of the national road safety action plan;
3. Advocate for more action on road safety.

Key figures

General figures

Notice:

Although RTAVIS now covers the whole country geographically, traffic police data from the provinces have been integrated only in July 2005 and new hospitals, clinics and health centres have been progressively added to the system.

The number of casualties and accidents provided in this report is therefore **lower than the actual number**.

The Demographic and Health Survey 2000 indeed estimated the number of road traffic casualties at around 40,000, while RTAVIS reports 15,943 casualties.

- In 2005, **15,943 road traffic casualties** were reported to RTAVIS, resulting from **6,301 accidents**. Among them, **904 were fatalities** and **4,097 were severely injured**. More than 10,000 vehicles were involved in those accidents.
- The number of road traffic **fatalities has doubled** over the last 5 years.
- Road traffic accidents **increased proportionally more** than road traffic and population.
- **Cambodia has one of the highest fatality rates in the region, compared to the number of vehicles in use in the country and the length of the paved road network**. Compared to the number of inhabitants, the rate is however still below the ASEAN average.

Notice on 2006:

The figures for the 4 first months of 2006 **show a sharp increase of the number of fatalities**: on average, during the first 4 months of 2006, **4 people died per day due to road traffic accidents in Cambodia**.

Age of casualties

- The average age of casualties is 29.
- 75% of casualties are among the active part of the population (age 20 to 64).
- People aged between **20 and 24 years old account for 24% of casualties although they represent only 10% of the population**. Conversely, **children (0-14) account for 9% of casualties although they represent 39% of the population**.

Recommendation 6: Develop a specific strategy to address road safety issues among young drivers.

The age pyramid of Cambodian population shows that **almost 40% of the population is aged below 15 years old**. It means that in the coming years, a growing number of young people will start to drive on Cambodian roads. Knowing that young people between 15 and 24 are currently associated with almost 40% road traffic casualties, there is a risk that this percentage will further increase in the future.

It is therefore essential to target future road users by notably **developing effective road safety education in primary and lower secondary schools**.

Gender of casualties

- **Males** account for **71% of casualties**, although they account for only less than 50% of the population.
- This over-representation of males in the casualties is especially important in the **working-age proportion**.

⁶ Cf. Action 2 of the Road Safety Action Plan: Road Accident Data Systems.



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Type of transport

- Motorbikes' users account for the large majority of casualties (72%), followed by pedestrians (9%), car users (6%) and bicycle riders (5%).
- Although car drivers and passengers represent only 6% of road traffic casualties, **cars represent 15% of the vehicles involved in accidents.**
- **The percentage of pedestrian and bicycle casualties is much higher among children and old people.** Almost 50% of casualties below 5 years old are pedestrians.

Recommendation 7: Develop a road design that allows a better separation of 4-wheelers and 2/3-wheelers⁷.

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.

Recommendation 8: Continue to implement a road safety curriculum in primary schools to educate children to adopt a safe pedestrian behaviour⁸.

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

- **Students⁹ constitute the largest group of casualties** (21% of casualties), followed by workers (20%) and farmers (19%). Motorbike taxi drivers constitute 5% of the total number of casualties.

Residence of casualties

- 17% of casualties are injured in a province other than their province of residence.

Severity of injuries and hospital discharge

- **More than 25% of casualties are severely injured** (requiring surgery or admission to intensive care).
- Car users and pedestrians suffer more fatalities than other types of road users.
- Although 82% of the casualties were fully treated and sent home, 6% were referred to another hospitals and 3% requested to be treated by a private clinic or a traditional healer.

Nature of injuries

- **31% of casualties suffer from head injuries**, which is slightly higher than the world average of 28%.
- **A higher percentage of head injuries is noticed in Phnom Penh** compared to the rest of the country (more than 40%).
- The average cost of medical treatment is 96 US\$ per casualty.

Recommendation 9: Further develop awareness and enforcement campaigns to increase helmet wearing¹⁰.

A large number of head injuries could be avoided if people were wearing helmets correctly. Awareness campaigns organized so far by Handicap International Belgium in collaboration with the Ministry of Health and several other stakeholders have already allowed to almost double the helmet wearing rate in Phnom Penh (from 8 to 15%).

⁷ Cf. Action 5 of the Road Safety Action Plan: Road Environment and Road Design.

⁸ 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.

⁹ Students are defined as follows: from first grade of primary school to last grade of university/higher education.

¹⁰ 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.



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Driving license

- **Only 55% of car/truck/bus drivers have a valid driving license** at the time of the accident.

Day of accident

- On average, more than **40 road traffic casualties are reported every day by RTAVIS¹¹**. **Several peaks (up to 150 casualties a day) are noticed**, corresponding mainly to Khmer national holidays.
- Weekend (Friday 6 pm until Sunday midnight) accidents are responsible for 35% of casualties.
- A higher percentage of casualties is noticed on Saturdays, **especially during the night**. A lower percentage of casualties occur on Friday evenings.

Time of accident

- Nighttime accidents are responsible for 33% of casualties.
- One peak of casualties is observed between 6 pm and 8 pm.

Causes of accident

- **"Hit and run" accidents¹²** represent 25% of accidents and are responsible for 24% of casualties.
- Only 32% of the casualties are responsible for the accident in which they have been injured.
- **Human error is responsible for more than 90% of casualties**. Road and weather conditions are responsible for less than 10% of casualties while vehicle defect is responsible for only 5% of casualties.
- **Non appropriate speed** is responsible for almost 40% of casualties, **followed by alcohol** (17% of casualties) and by **non respect of rights of ways** (14%).

Recommendation 10: Develop enforcement campaigns on driving rules and improve the driver training system¹³.

Current road users' behavior in Cambodia is generally **erratic, undisciplined and inconsistent**. With the rapid increase of speed and traffic, the situation will worsen and awareness campaigns alone will not be sufficient. A strict **enforcement of the law**, a **better driving examination system** and a **better control of the driving schools** should be ensured.

Recommendation 11: Develop awareness and enforcement campaigns targeting drunk drivers

Type of collision (vehicles involved)

- **Motorbike-motorbike collisions** are responsible for 33% of the casualties, followed by **motorbike-car collisions** (14%) and motorbikes that fell alone (11%).
- **Pedestrians are mainly injured by motorbikes rather than by cars**. Motorbike-pedestrian collisions indeed represent 6% of casualties while car-pedestrian collisions represent only 1% of casualties.
- **34% of four-wheelers involved in road traffic accidents are right-hand drives**.
- **On average, 2.53 people are injured per accident**.

Type of collision

- 23% of accidents are **head-on collisions**, followed by right-angle (21%) and rear end (16%).
- 71% of vehicles were going straight ahead at the time of the accidents.

Cost of accident

The average damage cost per vehicle involved in accident is **173 US\$**. Knowing that **10,397 vehicles were involved in accidents in 2005**, the total estimation of damage cost is **1,798,681 US\$**.

¹¹ All hospitals and private clinics do not yet participate to RTAVIS and the actual average daily number of casualties is therefore higher than 40. The Demographic and Health Survey 2000 indeed estimated the number of road traffic casualties at around 40,000. We estimate that this figure is more close to the reality, which would make an average daily number of road traffic casualties of 100.

¹² Accidents where the driver of the vehicle causing the accident escapes after the accident.

¹³ Cf. Action 10 of the Road Safety Action Plan: Drivers Training.



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Location of accident

- More than **40% of casualties are injured in urban areas.**
- Almost **25% of accidents** occurred in Phnom Penh.
- In Phnom Penh, the top three communes affected by road traffic casualties (measured as number of casualties per 1,000 inhabitants) are Preah Liep, Chaom Chau, and Chakto Mukh. The two first are located along major national roads.

Type of road

- **50% of casualties** are injured in accidents occurring on **national/provincial roads.**
- **In comparison with the volume of traffic, national road 4 is the most deadly**, followed by national roads 2 and 7.

Road characteristics

- More than 75% of casualties are injured in accidents occurring on **straight roads.**
- 80% of casualties are injured in accidents occurring on **paved roads.**

Recommendation 12: Develop specific actions targeting the national roads¹⁴.

There is a direct link between the length of the paved road network and the number of accidents. National roads have recently been rehabilitated and traffic volume, as well as speed on those roads, is increasing rapidly. The number of accidents on those roads is therefore expected to increase even more rapidly.

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, notably 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

- **Only 32% of casualties are transferred to the hospital or clinic by ambulance.** This is mainly an issue in provinces where only 20% of casualties are transferred to the hospital by ambulance.
- 42% of casualties arrive at the hospital **less than 30 minutes** after the accident while more than 25% of casualties take **more than 2 hours to reach hospital.**
- In the provinces, 47% of seriously injured casualties take more than 2 hours to reach the hospital.

Recommendation 13: Improve emergency assistance to traffic victims¹⁵.

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 taken 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.

Ambulance services should also be improved and people should 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).

Traffic police should as well be properly trained on **first aid.**

Police attendance

Police are present on the accident site in almost **60% of the cases.**

¹⁴ 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.

¹⁵ Cf. Action 11 of the Road Safety Action Plan: Emergency Assistance to Traffic Victims.



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Differences between Phnom Penh and provinces

The key indicators mentioned here above are **national averages**. However, important differences are noticed between Phnom Penh and the provinces. The figure here below summarizes the main differences.

Figure 1: Main road safety indicators - differences between Phnom Penh and provinces

	Phnom Penh only 2005	All Provinces without Phnom Penh 2005
Number of casualties reported to RTAVIS	5,553	10,390
Age		
Percentage of casualties aged between 15 and 24 years old	43%	35%
Type of road user		
Percentage of motorbike riders	83%	67%
Percentage of pedestrians	9%	8%
Percentage of car riders (private and taxis)	3%	7%
Percentage of bicycle riders	3%	6%
Occupation		
Percentage of students	23%	19%
Percentage of farmers	3%	27%
Percentage of workers	25%	17%
Nature of injuries:		
Percentage of casualties suffering from cranial trauma	43%	28%
Day of accident:		
Percentage of casualties injured during the weekend (from Friday 6 pm to Sunday midnight)	40%	32%
Time of accident:		
Percentage of casualties injured during nighttime (from 6 pm to 5.59 am)	44%	27%
Peak(s) of casualties	9pm - 10pm	6pm - 8pm
Cause of accident		
Percentage of casualties injured in accidents due to human error	98%	91%
High speed	34%	40%
Alcohol or drug abuse	18%	16%
Non respect of rights of way rules	20%	11%
Other	26%	24%
Percentage of casualties injured in accidents due to road conditions	2%	10%
Percentage of casualties injured in accidents due to weather conditions	1%	3%
Percentage of casualties injured in accidents due to vehicle defect	1%	6%
Type of collision:		
Percentage of casualties injured in motorbike-motorbike collisions	41%	26%
Percentage of casualties injured in motorbike-car collisions	27%	16%
Percentage of casualties injured in motorbike-pedestrian collisions	9%	7%
Hit and Run		
Percentage of casualties injured in accidents where the driver of the vehicle causing the accidents escaped after the accident	29%	23%
Time to be transferred to hospitals:		
Percentage of casualties arriving at hospitals between 10 and 30 minutes after the accident	54%	30%
Percentage of casualties arriving at hospital more than 2 hours after the accident	13%	34%
Way to be transferred to hospitals:		
Percentage of casualties transported by ambulance	50%	20%
Attendance of police:		
Percentage of cases where police was present on the accident site	61%	57%

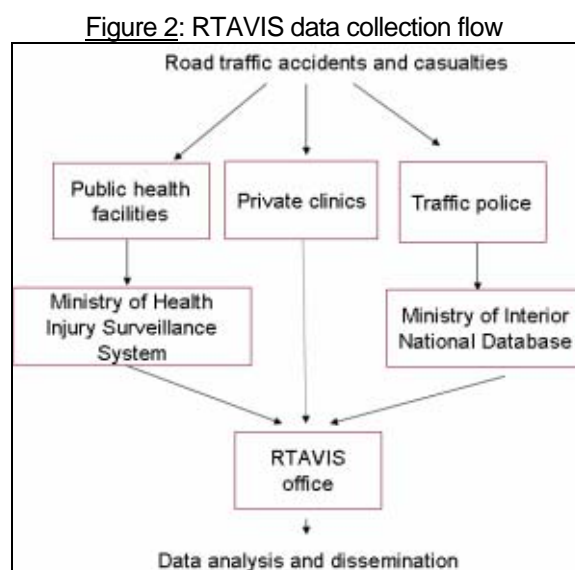
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III. System coverage

Data sources

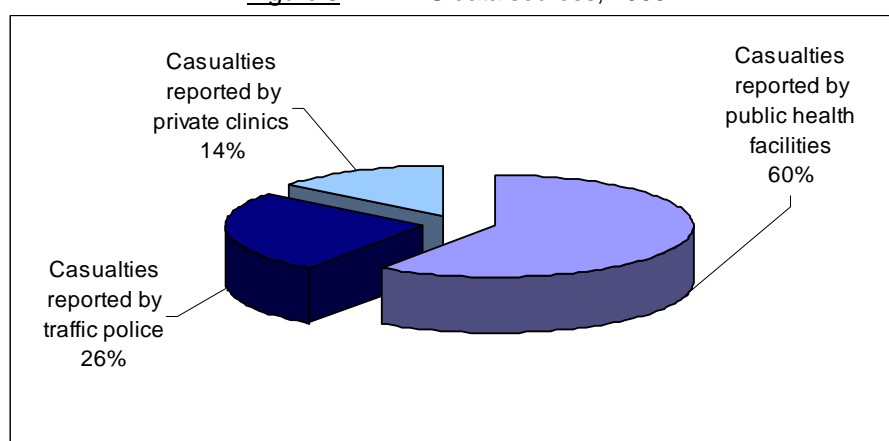
Research shows that in most countries official accident statistics based on traffic police reports only underestimate the real number of road traffic casualties¹⁶.

To avoid this underreporting, RTAVIS therefore collects data at **three different data sources**, as illustrated by the figure here below:



In 2005, public health facilities reported 60% of casualties, followed by traffic police (26%) and private clinics (14%), as shown on the figure below.

Figure 3: RTAVIS data sources, 2005



Notice:

To avoid double entries between health facilities and traffic police data, if a casualty is reported by a health facility as well as by the traffic police, it will be taken into account only once and reported as hospital data. Double entries concern around 7% of the casualties. Also, traffic police data from provinces has been integrated to RTAVIS only since July 2005. This explains why the percentage of cases reported by the traffic police is so low.

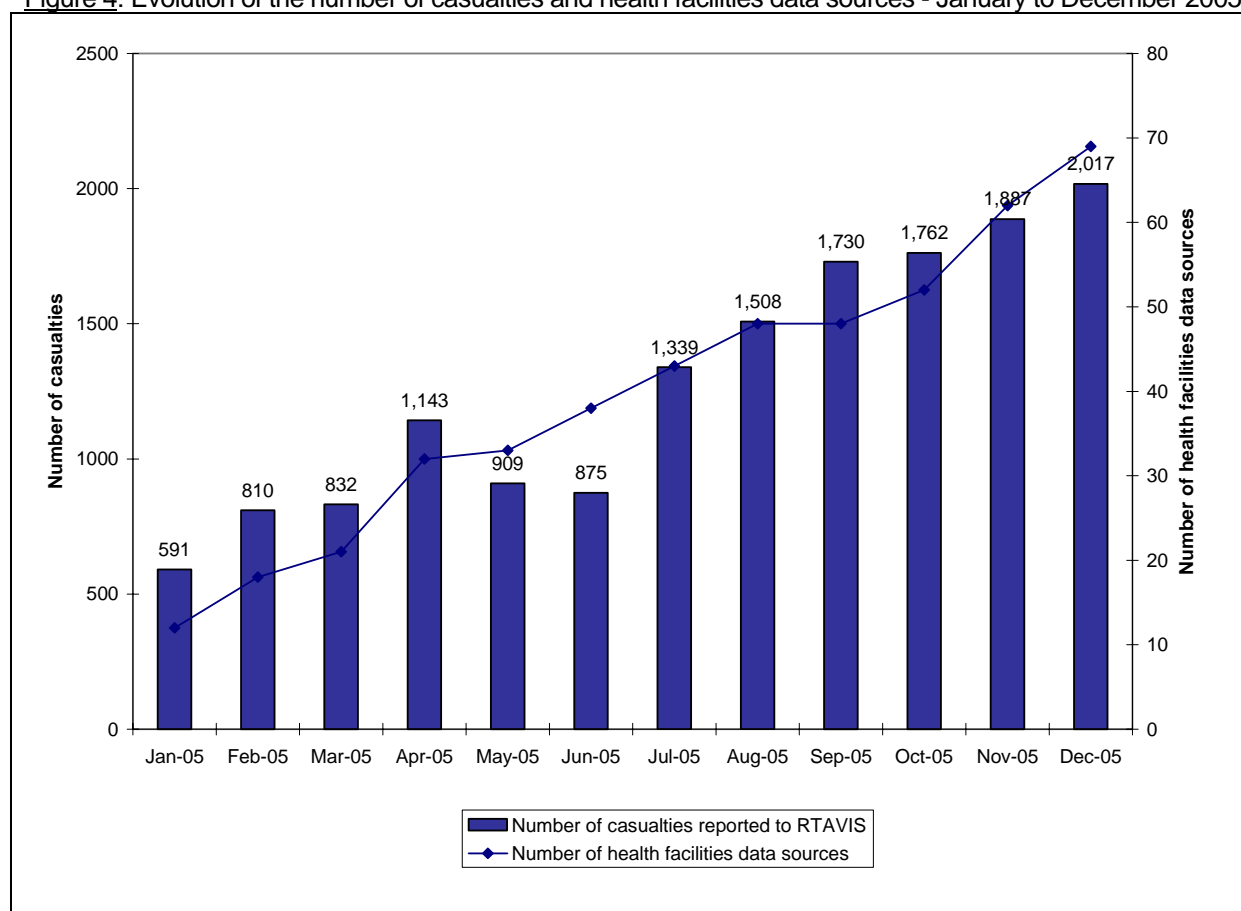
¹⁶ Recent research shows that statistics based on traffic police only report 60% of seriously injured road traffic casualties in developed countries.

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Private clinics play a growing role in the treatment of road traffic casualties. In Phnom Penh, they have treated more than **34% of the casualties** in 2005.

Health facilities data sources have been progressively added into the RTAVIS coverage, as shown on the chart below. **In December 2005, 69 health facilities (provincial hospitals, referral hospitals and health centers) were participating in RTAVIS** and this number is growing every month. Full country coverage with hospital and traffic police data will be achieved in 2006.

Figure 4: Evolution of the number of casualties and health facilities data sources - January to December 2005



Notice on Injury Surveillance

In 2006, several workshops will be organized by the Ministry of Health and other interested stakeholders to **extend the data collection system set up for RTAVIS to other types of injuries**, such as falls, drowning, domestic violence,...

Injuries in general are indeed estimated to be a **growing cause of death and disability in Cambodia** but there is currently no ongoing data collection system to monitor these issues¹⁷.

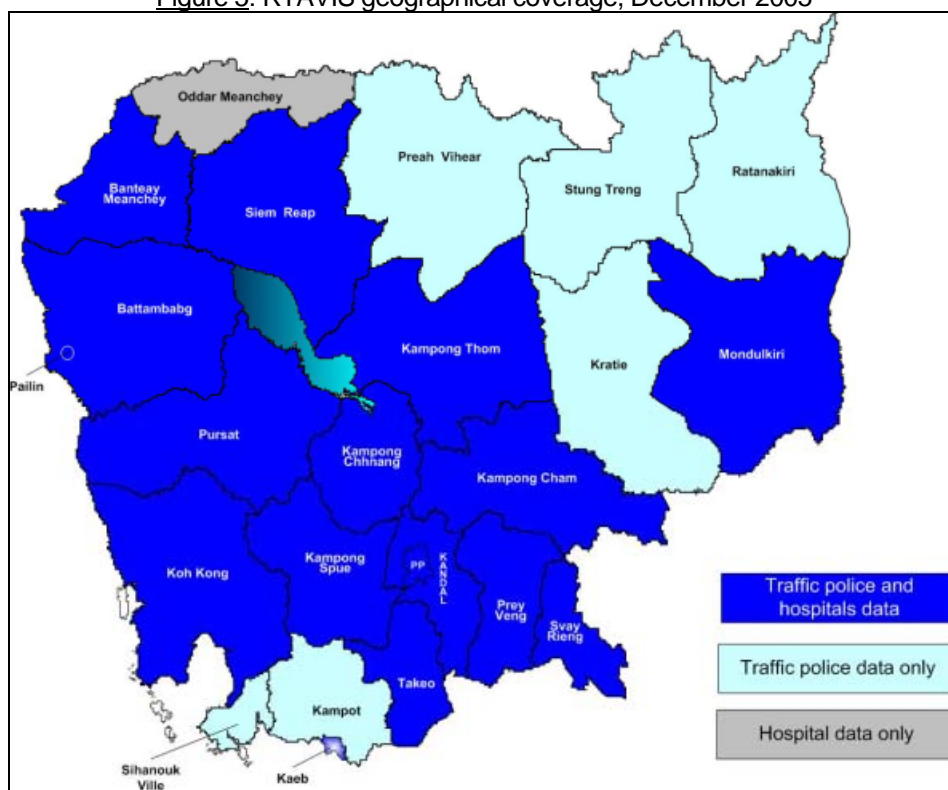
¹⁷ The Demographic and Health Survey performed in 2000 in Cambodia estimated that road traffic injuries represent 34% of injuries, followed by falls (13%).

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Geographic coverage

By the end of 2005, RTAVIS covered 23 Cambodian provinces with traffic police data and 18 provinces with health facilities data, as shown on the figure here below. Training of hospital and private clinic staffs is ongoing, in collaboration with the Ministry of Health.

Figure 5: RTAVIS geographical coverage, December 2005

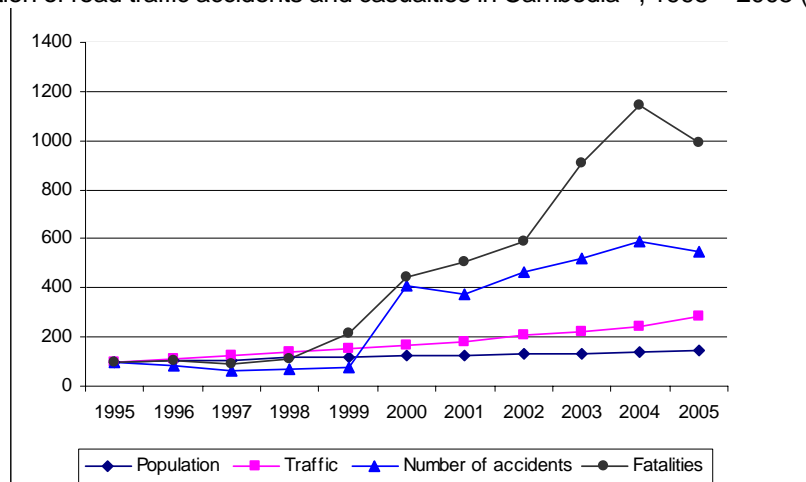


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IV. Evolution of data

Road traffic accidents, casualties and fatalities increase more proportionally than road traffic and population. Over the last 5 years, the number of accidents increased by 50% and the number of fatalities has doubled. In the meantime, population has increased by 12% and the number of registered motorized vehicles by 55%.

Figure 6: Evolution of road traffic accidents and casualties in Cambodia¹⁸, 1995 – 2005 (base 100 = 1995)

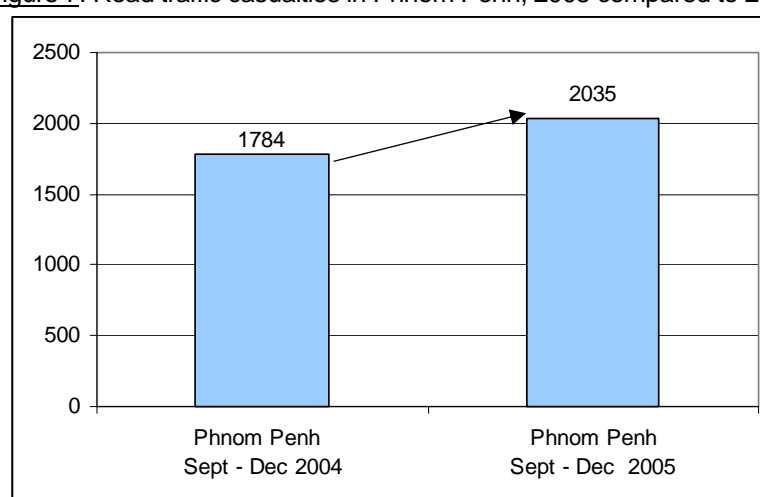


Notice:

RTAVIS has been recently created. Long period evolution charts or year to year comparisons at the national level are therefore not yet possible. The graph here above is based on figures provided by **the traffic police only**. The decrease of accidents and fatalities in 2005 is probably due to underreporting of road traffic accidents in some provinces rather than to a real decrease of the number of accidents.

In Phnom Penh, the number of casualties has increased by more than **14% between 2004 and 2005**¹⁹.

Figure 7: Road traffic casualties in Phnom Penh, 2005 compared to 2004



¹⁸ Sources:

- Population: First Revision of Population Projections for Cambodia 1998 -2020, National Institute of Statistics, Ministry of Planning, June 2004;
- Traffic and accident figures: Ministry of Public Works and Transport.

¹⁹ **Notice:** This comparison is made between the 4 last months of 2004 and the 4 last months of 2005. New data sources had been progressively added in Phnom Penh in 2004. It is only since September 2004 that the number of data sources reached its current level.



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The **Cambodian vehicle-ownership rate is still low** compared to other countries in the region but is rapidly increasing, notably due to the relatively strong economic growth. If the Cambodian economy continues to grow (e.g. +13% growth in 2005), this vehicle-ownership rate will continue to grow as well. That, combined with a **continued increase and improvement of the road network (allowing speed increases)²⁰, will have a negative effect on the number of accidents and casualties, despite all prevention efforts and education campaigns currently going on.**

Figure 8: Comparison of vehicle-ownership rates (motorized vehicles per 1,000 persons) – most recent year available between 2003 and 2005²¹

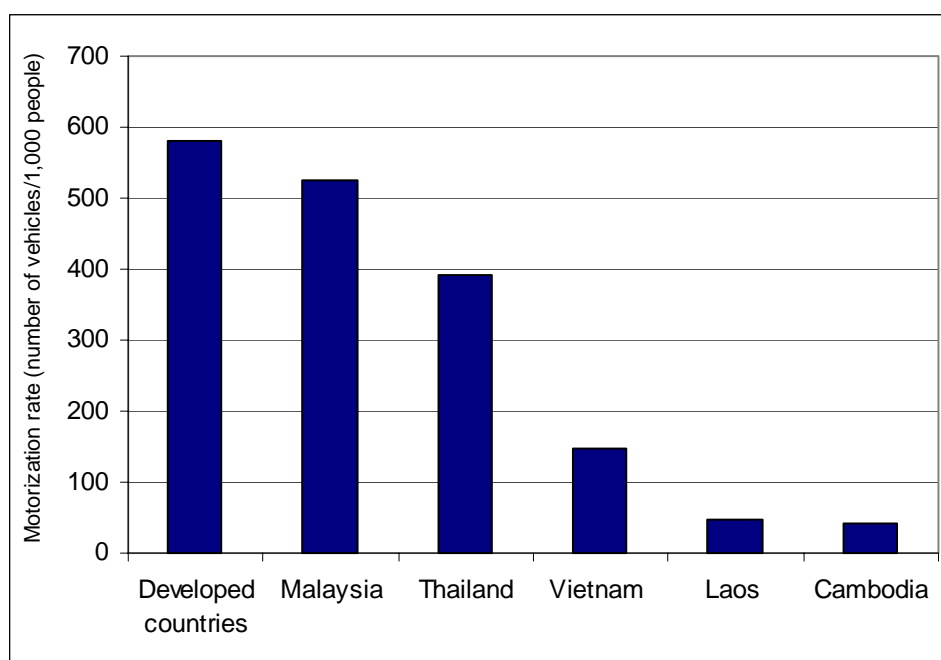
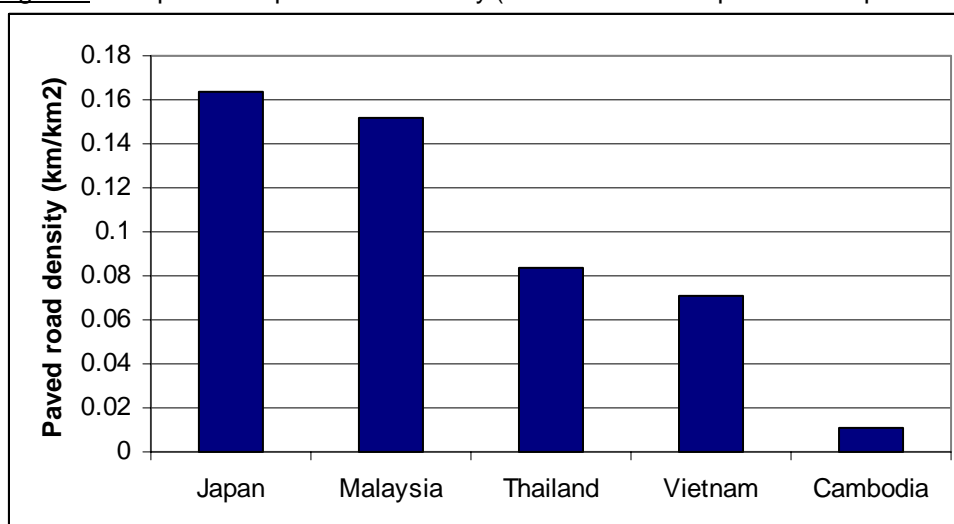


Figure 9: Comparison of paved road density (measured in km of paved roads per km²)²²



²⁰ The paved road density of Cambodia is currently 15 times lower than in developed countries and 6 times lower than neighbour countries

²¹ Source: *Scale, Characteristics and Costs of the Road Safety Problem in ASEAN*, presentation by Dr. Alan Ross, ADB – Fourth ADB/ASEAN Regional Road Safety Workshop, May 2004, Malaysia..

²² Source: *Study of the Road Network Development in the Kingdom of Cambodia, JICA-MPWT, 2005*



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