RCVIS
ROAD CRASH & VICTIM INFORMATION SYSTEM

Cambodia Road Crash and Victim Information System

Annual Report 2008

Developed by:

Ministry of Interior

Ministry of Health

Ministry of Public Works and Transport

Handicap International Belgium

Website: www.roadsafetycambodia.info

Table of Contents

List of Figures

Foreword

Note from the Minister of Public Works and Transport

The transport infrastructure sector is the second angle of the "Four-Angle Strategy" which is in the second phase of the fourth-mandate of the Royal Government of Cambodia. The strategy was designed to achieve rehabilitation and development since the transport infrastructure sector is treated as a nerve to facilitate transportation and other services to promote economic development, and to improve the living standard, by reducing poverty. While road transportation is building the national economy, road crashes are increasing day by day, and have become the second catastrophe after AIDS. Road crashes cause fatalities, casualties, disabilities, private and public asset damage, and negatively affect social harmony. Road crashes have become a challenge for the economic sector and social affairs, and hinder the progress of the poverty reduction policy of the Royal Government of Cambodia.

Within the scope of the law and regulations enforcement, the Royal Government of Cambodia and the National Road Safety Committee have developed a National Road Safety Policy and 15-point action plan, currently in its primary phase for 2006-2010. In the mean time, the second phase is planned for 2011-2015, which will aim to bring about increased efficiency to prevent and reduce of road crashes. There are three factors that cause road crashes in Cambodia: Human Error, Vehicle Defect, and Road Conditions.

I would now, on behalf of the Royal Government of Cambodia and NRSC, give my appreciation to all high level efforts and accountability made by the relevant Ministries, institutions, authorities at all levels, NGOs and the private sector to achieve road safety implementation. This joint collaboration has brought the **15 point of the national road safety action plan** to practical actions with efficiency. Increasing towards an alarming level, road crashes are like a war which requires a struggle to prevent and reduce.

I would like to express acknowledgement, and highly appreciate the significant involvement from Handicap International Belgium, who fundamentally supported the Royal Government and NRSC to organized education and awareness campaigns with the objective of changing improper behaviour among road users.

Lastly, I appeal to all road users to respect road rules and traffic law.

Minister and Chairman of National
Road Safety Committee (NRSC)

Tram Iv Toek

Note from the Minister of Health

The development of all sectors, the rehabilitation of the road infrastructures and increasing of vehicle volume and population density in Cambodia have contributed to road crashes. They are, currently, taking a heavy toll on lives, causing injury and disability for life. It is a destruction hampering the country's progress and poverty reduction policy made by the Royal Government as all casualties fall into the active age group. Road crashes have reached a scale of deep concern which requires cooperation from institutions, authorities at all levels, international and national NGOs and civil society to tackle and reduce.

The Royal Government as well as the Ministry of Health has been deeply concerned recently about these negative impacts and considers road crashes as one of the major factors, calling for urgent counter-measures since it is a huge obstacle hindering economic development.

In collaboration with the National Road Safety Committee, Ministry of Interior, and Handicap International Belgium since 2004, the Ministry of Health has been engaged in collecting road crash data from various hospitals across Cambodia to analyze and develop RTAVIS reports in order to analyze the figures, causes of the crash and challenges in emergency respond aiming to solve, as well as to minimize, road crashes in an efficient manner. Likewise, the Ministry of Health has run education campaigns on the new Road Traffic Law, and distributed safety helmets for its employees, aiming to prevent head injuries and to be a role model. Furthermore, it is reinforcing First Aid training to ambulance officers and traffic police who are the first responders to save lives before reaching hospitals. The Medical Emergency System is one of the strategic plans made by the National Road Safety Committee and Ministry of Health. Collaborated with Handicap International Belgium and World Health Organization, Ministry of Health has expanded RTAVIS into Injury Surveillance System (ISS) whereas non-road injury is growing noticeably.

All in all, I would like to give thanks to Handicap International Belgium, World Health Organization and European Union who are contributing in compiling this report to reflect road crash situation in the Kingdom of Cambodia. And I call for the public to respect the traffic law in order to decrease road crashes toward the lowest scale.

HE Dr. Mom Bunheng
Minister of Ministry of Health

Note from the Ministry of Interior

Road crash is a global issue in which it causes 1.3 million casualties every year. Many developing countries are facing a high road crash rate. One of which, Cambodia is currently obtaining the highest rate of road crashes in ASEAN region. Those crashes are mainly contributed by speeding, drink driving, not wearing helmets and not having rear vision mirrors for motorcycles, over loading, risk overtaking, not having vehicle checked mandatory and so on.

To curb with these challenges, guided by Royal Government of Cambodia and Ministry of Interior, General Commissariat of National Police has been strongly committed to taking a variety of measures to prevent and reduce road crashes and to improving traffic order by taking part in creating Traffic Law and other Regulations. Furthermore, it has collaborated with relevant partners to push forwards traffic law awareness and dissemination, as well as to make cooperation to seek support from inter/national communities such as technical support, means and equipments with the purpose of improving enforcement agencies' capacity so as to enforce the traffic law on an efficient manner.

Close collaboration between General Commissariat of National Police and Handicap International Belgium on road safety sector, especially on road crash data collection is one of the segments to produce a more accurate and complementary data in which it is considered as fundamental basis to make preventive and reducing measures. General Commissariat of National Police fully supports and is committed to continue this collaboration, especially on building capacity and equipping modern technologies with a hope to fruitfully achieve the goads of reducing road crashes and improving traffic order in the near future.

With this opportunity, General Commissariat of National Police herby call for the general public to promote traffic law compliance with a high accountability for the sakes of protecting lives, property, happiness and peacefulness; as well as that of involving in promoting national prestige.

General Neth Savoeun
General Commissioner of National Police

Note from World Health Organization

Every year nearly 1.3 million lives are lost around the world as a result of road traffic accidents. It is one of the top three leading causes of death for people aged between 5 and 44 years old and also causes about 50 million non-fatal injuries annually. It is worth noting that these figures, as shocking as they are, are an underestimate of the real scale of the problem. Due to under-reporting and insufficient data collection, many low- and middle-income countries do not know exactly how many of their citizens die or injured in road accidents annually.

In recent years, due to rapid increase in motorization, industrialization, urbanization, infrastructure development, and changes in lifestyle, Cambodia has increasing rates of road traffic accidents which contribute to a large proportion of deaths, injuries and disabilities, both in urban and rural areas. According to this official statistic of Road Crash and Victim Information System (RCVIS) annual report 2008, we are sad to know that motorcycle users are the biggest victims which account for the highest majority of casualties and deaths, at 77% and 68% respectively. The vast majority of the casualties with head injuries were motorcyclists who do not wear helmets. Excess speed and alcohol abuse also represented the highest proportion of traffic fatalities, at 50% and 18% respectively, if comparing to other kinds of human error.

The World Health Organization (WHO) appreciates the commitment of the Royal Government of Cambodia in recognizing the seriousness of this preventable epidemic by implementing mandatory road traffic law enforcement, in particular helmet enforcement and this is extended to the enforcements for drunk-driving and excessive speeding as well as educations and campaigns for road safety.

We also appreciate with the close collaboration between the Ministry of Health, Ministry of Interior, Ministry of Public Works and Transport, National Road Safety Committee, Handicap International Belgium and other institutions in maintaining the reliable road crash data collection with a detailed understanding of the circumstances that lead to accidents. These accurate statistics are essential for policy- and decision-makers to prioritize public health issues, monitoring trends and assessing intervention programmes.

Last but not lease, we will keep the continuation of our support to work closely with the government and other international agencies by putting the same mission to reduce fatalities, injuries, and disabilities due to road crashes in Cambodia.

Dr Michael John O'Leary

WHO Representative

Note from Handicap International Belgium

The fifth RCVIS annual report is a sobering read. With more than 25,000 road traffic casualties, including 1,638 fatalities and over 7,200 severe injuries, Cambodia ranks amongst the most affected countries in the ASEAN region.

This report clearly shows that the leading cause of road crashes and injuries is risky human behaviour such as speeding, driving while drunk and not wearing helmets. However, HIB believes that road crashes are preventable, and with appropriate interventions the carnage on the roads of Cambodia can be reduced.

In this respect, the decision of the Cambodian authorities to enforce specific articles in the road traffic law that aim to improve road safety is a clear sign of the Government's commitment to enhance the security Cambodian road users. Furthermore, over the past year, education campaigns are now increasingly linked with these enforcement actions, a definite good practice in the field of road safety.

We are also encouraged by the increased leadership demonstrated by the National Road Safety Committee to highlight the seriousness of the road safety situation within the government and throughout the Cambodian public.

As a result, an important decision was made this year to handover the RCVIS system to the relevant government authorities – National Road Safety Committee, Ministry of Interior and Ministry of Health by the end of 2009. We are fully confident that these institutions will provide the necessary resources and support to ensure that the system maintains its high standard of information.

Handicap International Belgium is proud to have contributed to the achievement of this report which not only contains a detailed and accurate assessment of the road safety situation, but also proposes specific recommendations which are based on the safe system approach – an internationally-recognized model for reducing and preventing road traffic injuries and fatalities.

This report could not have been possible without the cooperation of numerous people and institutions. Our particular thanks go to the National Road Safety Committee, the Ministry of Public Works and Transport, the Ministry of Health, the Ministry of Interior, and WHO, 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 their time to fill in the data collection forms every day. They are the key contributors in the success of the system.

Special thanks as well to the Handicap International Belgium road safety team, in particular to its manager, Ms. Sann Socheata, and her colleagues, Mr. SEM Panhavuth, Ms. Ou Amra, Mr. Ryan Duly, Mr. Meas Chandy, Mr. Uy Math, Mr. Yorn Virak, and our volunteer, Mr. Anthony Mrugacz from Texas State University-San Marcos for assistance on the 2008 Annual Report, whose commitment and hard work made the publication of this report possible.

Lastly, we are pleased to mention our generous donors, the Belgian Cooperation and European Union for their continuous support in this critical issue and the publication of this report.

Handicap International Belgium
Country Director

Bruno Leclercq

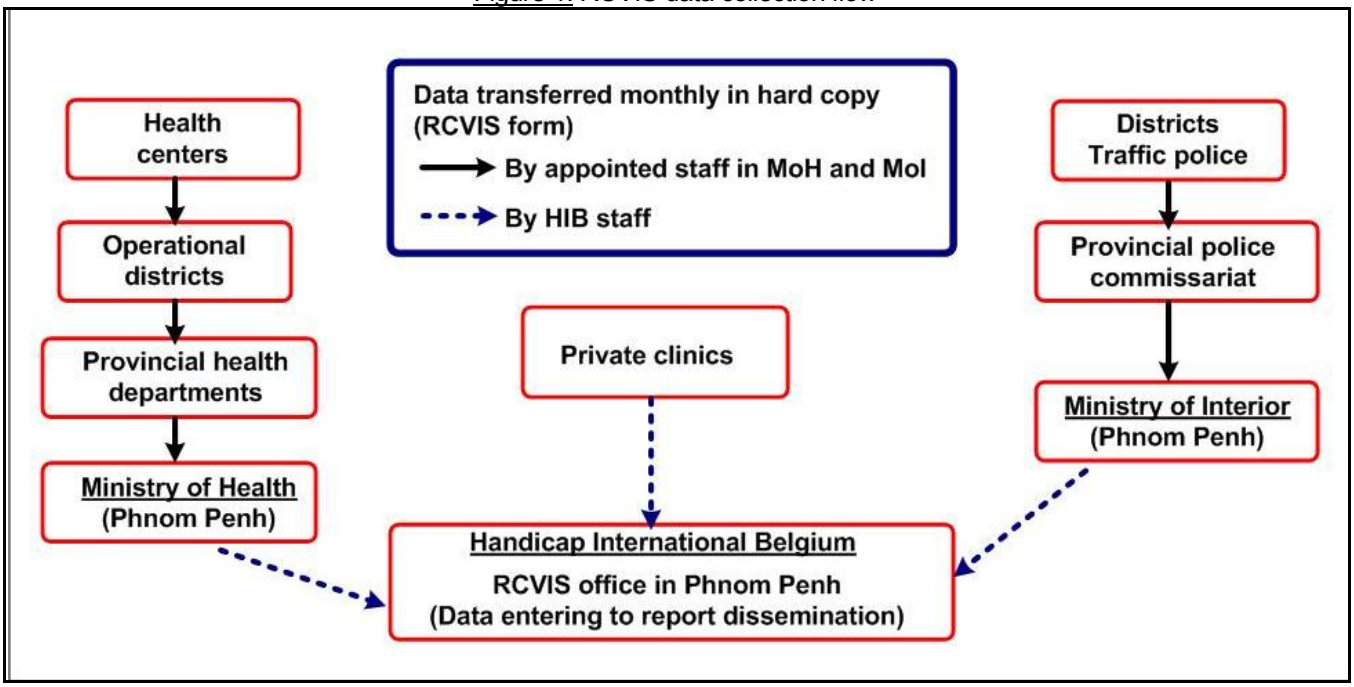
I. Introduction

The Road Crash and Victim Information System (RCVIS) 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. RCVIS is developed in the framework of Action 2 (Crash Data Systems) of the **National Road Safety Action Plan** of the Royal Government of Cambodia.

The **objective** of the Road Crash and Victim Information System (RCVIS) is to provide government and development stakeholders in Cambodia with accurate, continuous and comprehensive information on **road crashes and victims** for the purposes of increased understanding of the current road safety situation, planning appropriate responses and policy, and evaluating impact of current and future initiatives.

RCVIS collects, centralizes, analyses and disseminates information provided by **three different sources**:
- Traffic police.
- Public health facilities;
- Private clinics;

Figure 1: RCVIS data collection flow



This report analyses the information collected by RCVIS for the year **2008**. It is a synthesis of all the monthly reports that were published throughout 2008. The previous annual reports (2004, 2005, 2006 and 2007), as well as all monthly reports and other information related to road safety, can be found on the following websites: www.roadsafetycambodia.info.

By the end of 2006, **RCVIS, through the traffic police and health facilities, collected crash data from all 24 Cambodian provinces/cities[1].** All trainings in the RCVIS data collection forms were completed for traffic police officers in 2005, and for hospital and private clinic staff in mid-2006. .

In 2007, to identify road crash blackspots more precisely and to understand better the nature of crashes, Handicap International Belgium provided 215 GPS devices and training on their use to traffic police along main national roads to identify crash locations.

[1] Although they have received training on data collection, health facilities from Koh Kong, Kratie, Pursat, and Ratanak Kiri did not report to RCVIS in 2008.

II. Executive Summary

Road crashes are a major cause of death, injury and disability, especially among younger age groups. They negatively impact on individuals, families and communities, as well as the Royal Government of Cambodia.

The RCVIS Annual Report 2008 reviews the main road crash trends in Cambodia compared to previous years. The report shows that over the last 5 years, the number of crashes increased by 150% and the number of fatalities has almost doubled. . At the same time, the population has increased by 6% and the number of registered motorized vehicles has increased by 132%. The fatality rate per 10,000 registered vehicles has decreased from 17.8 in 2007 to 15.1 in 2008 although this number is still more than double the national target, which is set in the National Road Safety Action Plan.

Human error by road users is the leading cause of crashes and casualties on the roads of Cambodia, specifically dangerous behaviour such as excessive and inappropriate speed, drink-driving, dangerous overtaking and low helmet wearing rates. However, road crashes and casualties are preventable. Actions such as road safety education, awareness and enforcement should be increased to change the behaviour of drivers. Particularly, enforcing the new land traffic law is an important milestone for the Royal Government of Cambodia in its struggle against the rapidly increasing crashes and casualties, and worsening road safety situation, as the statistics in this report clearly highlight.

Global Positioning System (GPS) is integrated into this RCVIS Annual Report. This data is useful to identify crash locations, black spots and provides a deeper analysis on crashes. This information is being used by authorities and agencies active in the road safety sector, especially the Ministry of Public Work and Transport for interventions to reduce crashes and casualties on the road of Cambodia.

This report details the key findings of road crashes and casualties, and provides recommendations on how these findings can be used to improve the road safety sector and reduce road traffic crashes and casualties.

Key figures

General figures

- In 2008, **25,796 road traffic casualties** were reported to RCVIS, resulting from **10,015 crashes**. **1,638 were fatalities (an average of 4.5 fatalities per day)** and **7,226 were severely injured**. **21,305** vehicles were involved in those crashes[2].

- Road crashes increased more proportionally than road traffic and population. The number of road traffic **fatalities has almost doubled** over the last 5 years.

- The fatality rate per 100,000 inhabitants increased from 11.7 in 2007 to 12.2 in 2008, but the fatality rate per 10,000 registered vehicles decreased from 17.8 in 2007 to 15.1 in 2008.

- In Phnom Penh, 53% of casualties were injured in motorcycle collisions, and 21% were injured in motorcycle-four-wheeler. Conversely, **only 28% of fatalities occurred in motorcycle-motorcycle collisions while 49% of fatalities occurred in motorcycle-four-wheeler collisions.**

- In Phnom Penh, fatalities increased in almost all districts from 2007 to 2008. However, a significant decrease was noticed in **Ruessei Keo districts** (35% compared to 2007).

- Comparing 2007 to 2008, fatalities during Chinese New Year and Khmer New Year **increased by 45%** and **5% respectively.**

- Cambodia has the highest fatality rate per 10,000 registered vehicles among ASEAN member countries.

- The fatality rate of two-wheelers per 10,000 registered two-wheelers **decreased from 14.7 in 2007 to 12.6 in 2008.**

[2] The number of road crash and number of vehicle involved are estimated based on data from both sources: traffic police and health facilities

- **Compared to 2007,** the number of fatalities on the Asian highway network **increased (24% on NR4, 6% on NR5), except on national road 6A and 7 which decreased by 34% and 18% respectively.**

- 47% of crashes were due to speeding and another 14% to alcohol abuse. Conversely, **51% of fatalities** were due to **speeding,** while another **18%** were caused by **alcohol abuse.**

- Motorcycles constituted the highest road user category, followed by pedestrians.

- The majority of crashes occurred between **7 pm and 8 pm**.

Age of casualties

- The average casualty age was 28.
- People aged between **20 and 29 years old** represented the **highest percentage of fatalities and they have significantly increased from year to year**.
- People aged between **25-29 years old accounted for 23% of fatalities although they represent only 9% of the population**.
- **The number of casualties aged more than 55 years old increased by 12%** from 2007 to 2008. Among casualties from this age group, 47% were motorcycle riders, 27% were pedestrian and 14% were bicycle riders
- The proportion of young adults (age 20 to 29) affected by crashes was greater in Phnom Penh than in the provinces (50% compared to 42%).

Gender of casualties

- Males accounted for 73% of casualties, although they accounted for 49% of the population.
- On average, the male fatality rate per 100,000 inhabitants was **almost 4 times higher** than the female fatality rate (**23.2 compared to 5.6**).
- This over-representation of male casualties was important as most were of working age.
- Males were more vulnerable as drivers, whereas females were more at risk as passengers.

Occupation of casualties

- **The economically active part of the population (students, workers and farmers) was the most affected by road crashes.**
- **Farmers represented the highest percentage**, constituting the largest group of fatalities and casualties (30% of fatalities, 25% of casualties).
- 67% of casualties aged between 0 and 14 years old were students, followed by children (29%).

Type of road user

- **Motorcycle users accounted for the largest majority of casualties and fatalities** (77% and 68% respectively).
- Children, 9 years old and under, were most at risk as pedestrians and passengers.
- The percentage of motorcycle fatalities was higher in Phnom Penh than in the rest of the country and was **much higher among the 20 and 29 year old** age group.
- Children pedestrian fatalities aged between 0 and 14 years old **decreased by 13% from 2007 to 2008**. However, **30% of all pedestrian fatalities** were children aged between 0 and 14 years old.

Transfer to hospital

- **Only 27% of total casualties were transferred to the hospital or private clinic by ambulance**. However, more than 65% of fatalities and 50% of serious injuries were transported by Ambulance/samu. They played a bigger role than private transportation among fatalities and serious injuries.
- **40% of serious casualties** arrived at hospital more than 2 hours after the crash.
- 48% of casualties arrived at the hospital within a respectable 10 and 30 minutes after the crash in Phnom Penh, compared to only 28% **in the rest of the country.**

Severity of injuries

- **4% of casualties died immediately at the scene of the crash, 2% died at the hospital.**
- **28% of casualties were severely injured** (requiring surgery or admission to intensive care).
- **45% of casualties** with serious injuries were transferred to a hospital by an ambulance.

Nature of injuries

- **Head trauma accounted for 86% of motorcycle fatalities**.
- **27%** of casualties suffered upper/lower wound/cuts and 18% suffered from upper/lower fracture accounts**.**
- **A higher percentage of head trauma resulting from motorcycle accidents was noticed in Phnom Penh compared to the provinces (85% compare to 75%).**
- 46% of motorcycle casualties **who suffered from head trauma were aged between 20 and 29 years old.**

Helmet wearing

- 44% of motorcycle riders suffered from head trauma.
- Number of motorcycle casualties wearing helmet has **increased fourfold times in Phnom Penh** from 2006 to 2008**.**

Seatbelt Use

- **Only 14% of four-wheel vehicle drivers who were injured in a crash in 2008 wore a seatbelt** at the time of the crash. Among them, **82% were car drivers.**

Severity of crash

- 50% of all road crashes resulted in serious injuries, followed by slight injuries (50%) and fatalities at 23%.
- The Percentage of fatal crashes occurring at night (30%) was much higher than day time (20%).

Day and month of crashes

- A higher percentage of crashes were noticed during weekends (Saturday and Sunday). The highest number of fatalities occurred on Saturdays.
- Over the first four months of 2008, the number of crashes was noticeably higher than the remaining 8 months. The most crashes occurred during April.

Time of crash

- The largest number of crashes occurred between 5 pm and 6 pm during week days, and between 7 pm and 8 pm during the weekend.
- In total, a higher proportion fatal crashes at night were noticed in Phnom Penh (60%) compared to the rest of the country (35%).

Causes of crash

- **Human error was responsible for 98% of all crashes.**
- More than 50% of fatalities were due to **speeding**, while another 18% were caused by **alcohol abuse**.
- Crashes resulting from not respecting the right of way and dangerous overtaking occurred more during the day time than night time, but crashes involving alcohol abuse were more of a problem during the night time than daytime.

Hit and run crashes

- In 2008, hit and run crashes represented 23% of total crashes. Among those crashes, 39% were fatal crash, 43% were serious crashes and 18% were slight crashes.

Type of collision

- Almost 35% of fatalities were killed in motorcycle and 4-wheeler collisions and other 19% in motorcycle-motorcycle collisions.
- **13% of fatalities were pedestrians**. **More than half of them** (7.33% among 13.25%) **were killed by 4-wheeler**.
- **Motorcycle-motorcycle collisions** were responsible for 42.26% of all crashes.
- **29%** of 4-wheeler involved in road crashes were **right-hand drives**.
- **Head-on crashes** accounted for **25%** of the total crashes, but **29% of fatal crashes**.

Type of road

- **In total, 58% of crashes** occurred on **national roads** in 2008. Among the crashes that occurred on national roads, **27% were right-angle**, followed by head-on (23%) and rear-end (19%).

Road characteristics

- **77% of crashes** occurred on **straight road.**
- Crashes that occurred on X-junction was much higher on minor road in city/town
- 78% of crashes occurred on **paved roads**.

Urban and rural area

- **36% of crashes occurred in urban areas**. However, 61% of fatal crashes occurred in rural areas.
- Since 2006, the number of fatalities in urban areas has increased by 25%.
- Motorcycle riders and pedestrians represented 89% of fatalities in urban areas.
- In rural area since 2006, the number of fatalities has increased by 49%. In 2008, the number of fatalities increased among all road users, except car riders which decreased by 9% compared to 2007.

Type of vehicle involved

- Motorcycles were **the vast majority (72%) of vehicle involved** in crash in 2008, followed by cars (12%) and bicycles (5%).

Vehicle Manoeuvres

- 78% of crashes occurred while vehicles were traveling straight ahead, followed by left turn maneuvers (11%).

Characteristics of vehicle involved

- **63% of vehicles involved in crashes were left-hand-drive** and **20% were right-hand-drive.**
- Percentage of fatality involved in right-hand drive vehicles was higher than in left-hand drive vehicles (18% vs 10%).

Blackspot analysis

4 blakspot locations were identified with highest number of fatalities, server injuries and crashes in Phnom Penh and other 5 were identified in provinces.

Recommendations

This year, for the first time, the Road Crash Victim and Information System will present its recommendations following the safe systems approach. This system is promoted by the World Health Organization as the most comprehensive way to deal with road safety and it is based on the understanding that the human body is vulnerable and that the risk of serious injury increases the greater the impact of the crash. Therefore, it involves identifying the potential areas of intervention based on the interactions between the road user, the vehicle and the road environment to reduce crashes, and the severity of injuries.

To adopt a systems approach necessitates the involvement and collaboration of a number of sectors – transport, police, health, civil society, and special interest groups. Fundamentally, the implementation of this approach requires the collection of accurate data on the magnitude of road traffic crashes and their risk factors[3].

Priority recommendations for the Cambodian road safety sector are based on the statistics presented in this report and situational analysis of road safety in the country. They are presented below:

Safer Road Users

1) Enforce speeding, drink-driving and helmet laws

The top three causes of road traffic crashes, fatalities and injuries in Cambodia are caused by speeding, drink-driving and non-helmet wearing. It is highly recommended that traffic law enforcement prioritize and focus resources on these three risky behaviors, both in the urban areas and along National Roads. The traffic police recent actions to enforce helmet wearing nationally, and speeding and drink-driving in Phnom Penh, are encouraging signs. However, efforts must be sustained, consistent and expanded in order to deter the public from these dangerous behaviors on the road. A few specific recommendations are:

- Revise the traffic law to include mandatory helmet wearing for passengers and increase the existing fine
- Set up checkpoints at nighttime with particular focus on drinking and driving
- Set up speed checkpoints on black spot locations, particularly those characterized high frequency of speed-related crashes.
- Regular trainings and appropriate equipment should be provided to traffic police to effectively enforce these laws
- Awareness and education on these three risk factors should be expanded, and directly linked to the enforcement actions of the police.

2) Targeted Awareness Campaigns and Education

Targeted road safety campaigns are more effective than campaigns that target the general population. Limited resources could be better used by focusing efforts on those groups or events exhibiting the highest frequency of crashes and casualties. Two main priorities are recommended:

- *Young motorists:* the most at-risk group on the roads of Cambodia is young people aged 15-29 accounting for 46% of all road traffic fatalities. Campaigns should target this vulnerable group, tailoring the messages to be relevant to their daily lives. Increased research into their attitudes and behaviors while driving would greatly assist the efforts in developing appropriate campaigns for this age group.
- *Long national holidays:* Crashes and casualties spike during national holidays in particular Khmer New Year, Chinese New Year and the Water Festival. It is recommended that government authorities and other organizations active in road safety focus awareness campaigns (and enforcement measures) on risky behavior, particularly speeding, drink-driving, helmet wearing, and overloading which are common during the holiday travel period.

3) Improve Driver Training Schools

Driving schools are the training grounds for the future drivers of Cambodia. Therefore, it is essential that safe driving behavior is instilled in these learners. RCVIS recommends that a rigorous evaluation of the driving schools is conducted by the Department of Land Transport or an independent entity to assess the extent the trainers are teaching the correct road rules. Furthermore, the driver training curriculum should stress the key risky

[3] World Health Organization. *Global Status Report on Road Safety*. 2009.

behaviors exhibited on the roads of Cambodia as a means of educating the new drivers on the importance of safe driving.

Safer Road Environments

4) Black spot treatment in Phnom Penh and along National Roads

RCVIS is able to locate, through its GPS data, black spot locations and zones with frequent crashes in Phnom Penh and along the National Road network. These locations are clearly highlighted within this report. It is recommended that this data is utilized by the relevant national and provincial transport and public work authorities to investigate these hazardous spots or zones and fund road engineering measures to improve their safety and reduce crashes. Educational campaigns informing the public of the location of these black spots should be adopted by the National Road Safety Committee and road safety organizations. Additionally, it is further recommended that the traffic police should target black spot locations by setting up checkpoints and strictly enforcing dangerous driving behavior.

5) Creating safer environments along roads for children and pedestrians

The roads of Cambodian can be a dangerous place for pedestrians and young children. Pedestrians account for 13% of all fatalities, and 30% of those were children aged between 0 and 14 years old. It is recommended that specific simple measures are taken immediately to protect pedestrians and children such as:

- *Safe School Zones:* Promote the safety of children when entering and exiting schools through the creation of safe school zones. These measures could include enforcing appropriate speed limits in those zones, and ensuring school cross-walks are respected and clearly-marked;
- *Pedestrian Infrastructure and access*: Municipal transport and public work authorities, in particular, should ensure that proper facilities exist for pedestrians throughout urban areas which separate them from motorized traffic. There should be proper roadside facilities including footways on urban roads, footpaths on rural highways, and adequate crossing facilities (pedestrian refuges, medians, raised pedestrian crossings).

In both actions, the traffic police must play a role in enforcing violations. The NRSC and road safety NGOs can play the role of educating the public on the importance of respecting vulnerable road users.

Safer Vehicles

6) Phase-out of right-hand drive vehicles

20% of all crashes involved right-hand drive vehicle. This type of vehicle is clearly a risk factor. Therefore, RCVIS recommends that the Royal Government of Cambodia increase its efforts at restricting the import of right-hand drive vehicles, and to encourage all citizens to who own this type of vehicles to convert them into left-hand drive through the vehicle inspection process under the Department of Land Transport.

7) Include a seatbelt check requirement in the vehicle inspection process

RCVIS data shows conclusively that non-seatbelt wearing among Cambodian drivers is a risky behavior. 85% of car drivers and 93% of light and heavy truck drivers who suffered injuries in a crash were not wearing seatbelts. While education of drivers on the importance of wearing seatbelts and enforcement is critical, the vehicle inspection requirement at the Department of Land Transport should include a check on the presence of a seatbelt for the driver at a minimum, and preferably all seats. Like the other inspection requirement, the vehicle should not be able to pass the test if the seatbelt is not present.

8) Develop a motorcycle helmet standard

Motorcycles constitute 75% of the motorized vehicle fleet in Cambodia. 86% of all fatal motorcycle crashes involving motorcycles were as a result of head injuries. The enforcement of the motorcycle helmet law on January 1st 2009 was a positive step towards raising the helmet-wearing rate and reducing head injuries. However, the Government must also ensure that a national motorcycle helmet standard is created to ensure that all helmets sold provide a minimum level of protection to all motorcycle riders. It is recommended that a motorcycle helmet standard is developed suitable for the Cambodian context under the leadership of the National Road Safety Committee and the Cambodian Institute of Standards.

Safe Systems Management

9) Management, Coordination and Funding

The National Road Safety Committee is the body tasked with overall management and coordination of road safety in Cambodia. However, this body lacks the necessary resources and skills to make a significant impact on reducing accidents, fatalities and injuries on the roads of Cambodia. To ensure sustainability of road safety action and that the issue becomes a greater priority for the Royal Government of Cambodia, the government and donors should prioritize and increase funding for the NRSC. Opportunities for the Committee's decision-makers and staff should also be created to improve their management capacity of the road safety sector, as well as strengthening their ability to coordinate the diverse road safety actors and interventions.

10) Research

To date, there is very little research on road safety being conducted in Cambodia. Yet, road safety research is critical in improving the knowledge and understanding about factors that contribute to road crashes. A good quality body of research can provide the framework against which effective policies can be developed, can help to securing funds and determine appropriate strategies and activities. Recommended areas research could include:

- Cost of crashes on household incomes and the national economy
- Reasons for dangerous driver behavior in the context of Cambodia
- The situation and risks posed for vulnerable road users in Cambodia (pedestrians, cyclists, children and people's with disabilities)

To ensure that relevant research is conducted for the Cambodian context, focus should also be placed on developing local researchers with capabilities in road safety-related research.

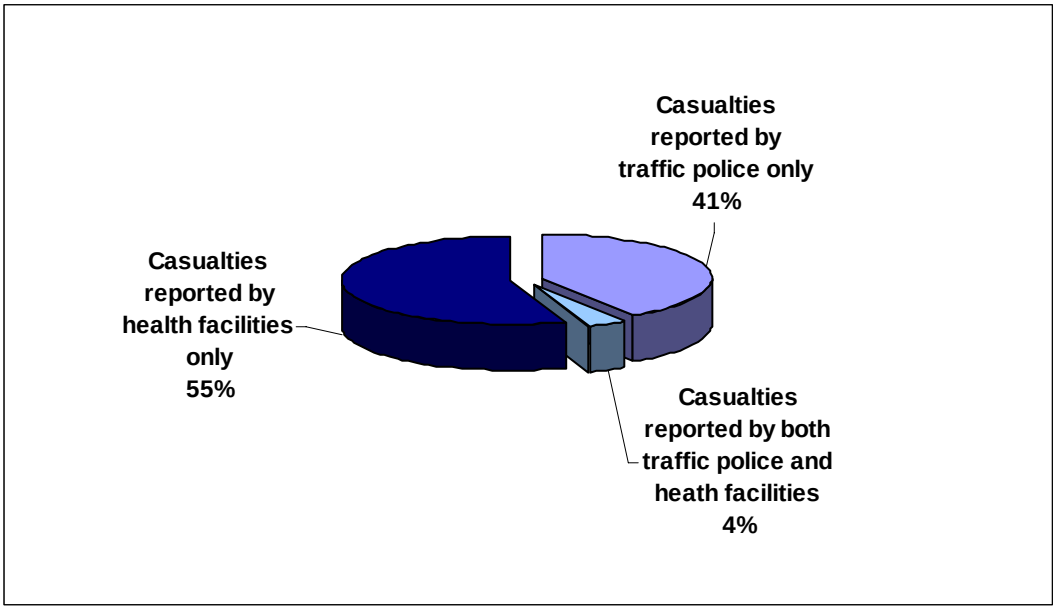
11) Emergency Medical Services

This annual report clearly highlights that over 40% of road traffic crash victims, particularly in rural areas, take over two hours to reach medical care. During this time, the severity of the injury is likely to worsen. However, transport to medical facilities is only one component of an efficient emergency medical response system. First response and first aid at the scene of the crash, transport services to the medical care, ensuring that the trauma centers and staff have adequate capacity to treat the victims, as well as the mechanisms to manage the system are all inadequate and result in road crash victims not receiving the emergency care required. This report therefore recommends that this important, but largely forgotten, component of reducing road traffic injuries is given more attention by the Royal Government of Cambodia, donors and road safety stakeholders through the development of an Emergency Medical Services strategy and action plan, coupled with a fundraising strategy, to begin addressing this critical gap in the road safety sector.

III. Data Source

In 2008, 41% of casualties were reported by traffic police only, 55% were reported by health facilities only and 4% were reported by both traffic police and health facilities as shown in the figure below.

Figure 2: Percentage of casualties reported to RCVIS – 2008



Notice:
To avoid double entries between health facilities and traffic police data, when a casualty is reported by a health facility as well as by the traffic police, it is taken into account only once and shared around 4% of the casualties.

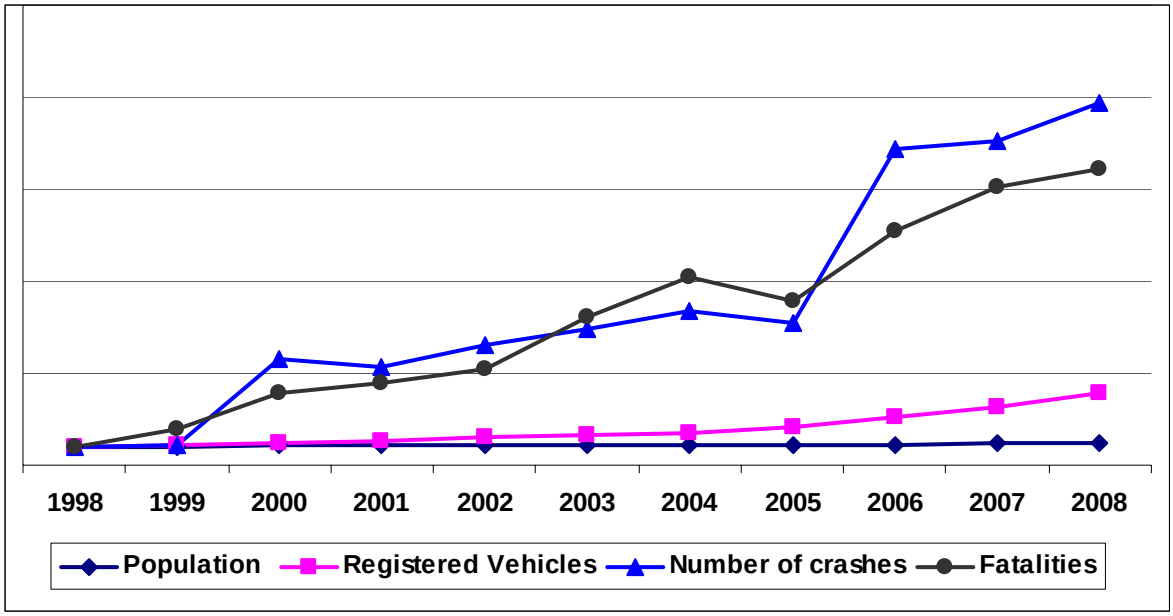
Private clinics are playing a growing role in the treatment of road traffic casualties. In Phnom Penh, they have treated more than **26% of the reported casualties** in 2008.

Notice:
Health staffs in 24 provinces have received training since 2005, but health facilities from Koh Kong, Kratie, Pursat and Ratanak Kiri did not provide RCVIS reports in 2008.

IV. Evolution of data

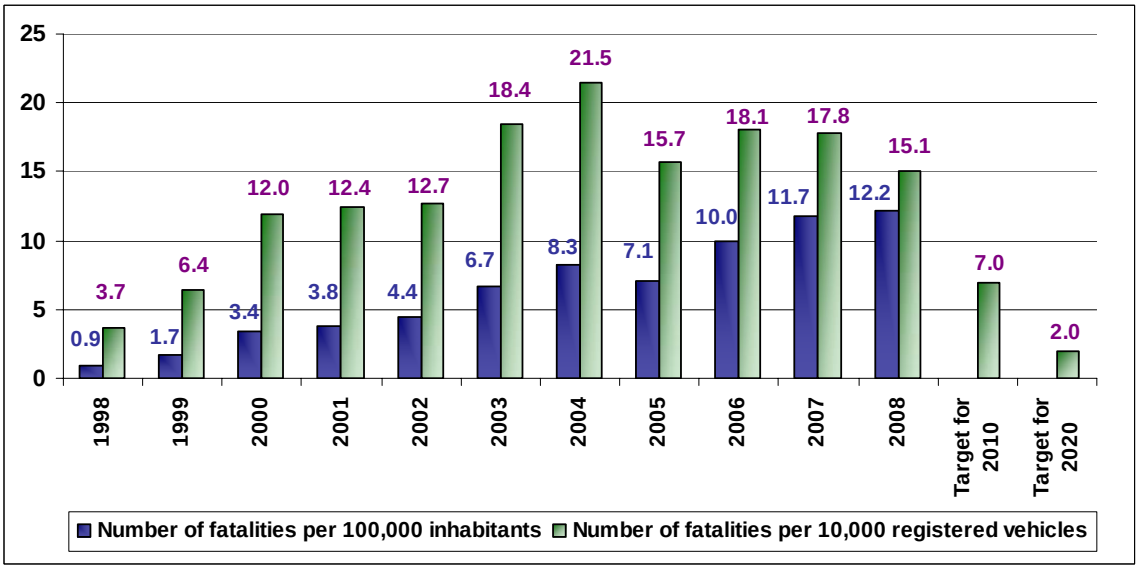
Road crashes, casualties and fatalities continue to increase more proportionally than road traffic and population. Over the last 5 years, the number of crashes increased by 135% and **the number of fatalities has almost doubled**. At the same time, the population has increased by 6% and the number of registered motorized vehicles has **increased by 123%.**

Figure 3: Evolution of road crashes and casualties in Cambodia[4], 1998 – 2008 (base 100 = 1998)



Based on the factors above, the fatality rate per 100,000 inhabitants has increased from 11.7 in 2007 to 12.2 in 2008, but the fatality rate per 10,000 registered vehicles decreased from 17.8 in 2007 to 15.1 in 2008 although this number is still **more than double the target for 2010.**

Figure 4: Fatality rates in Cambodia 1998 – 2008 and its target for 2010 and 2020[5]

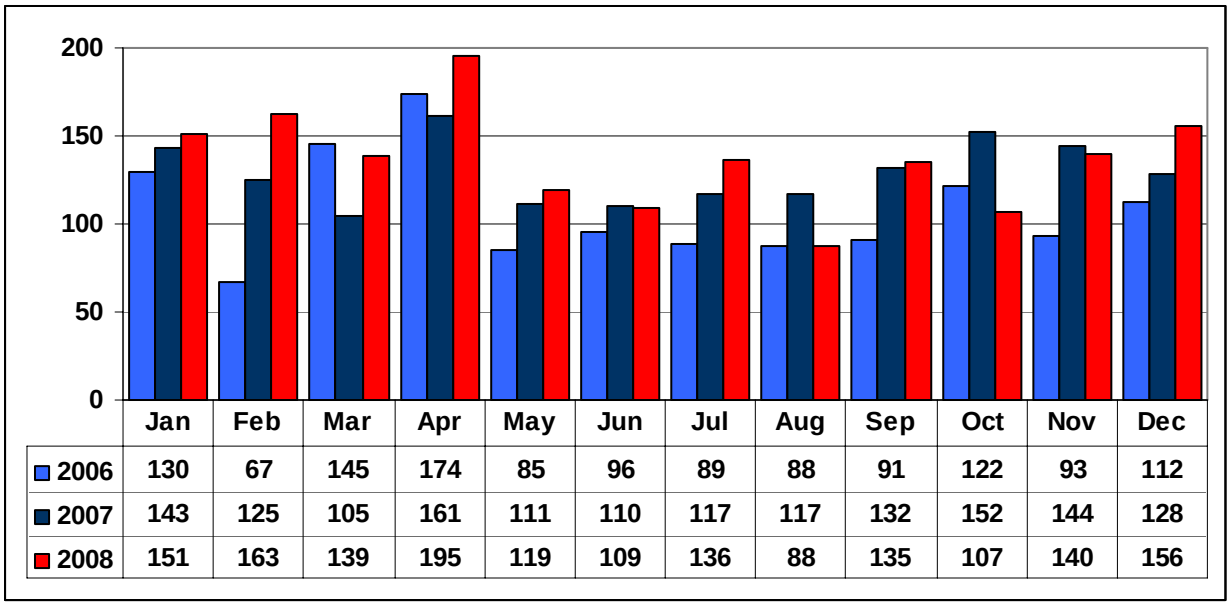


[4] Sources:
- Population: General Population Census of Cambodia 2008, Provisional Population Totals, National Institute of Statistics, Ministry of Planning, August 2008.
- Traffic and crash figures: from 1998 to 2005 based on traffic police only and 2006 to 2008 based on RCVIS.

[5] Royal Government of Cambodia National Road Safety Action Plan 2006-2010

In 2008, the fatality trend increased almost every month, except in August and October. The significant increase occurred from January to April as compared to previous years.

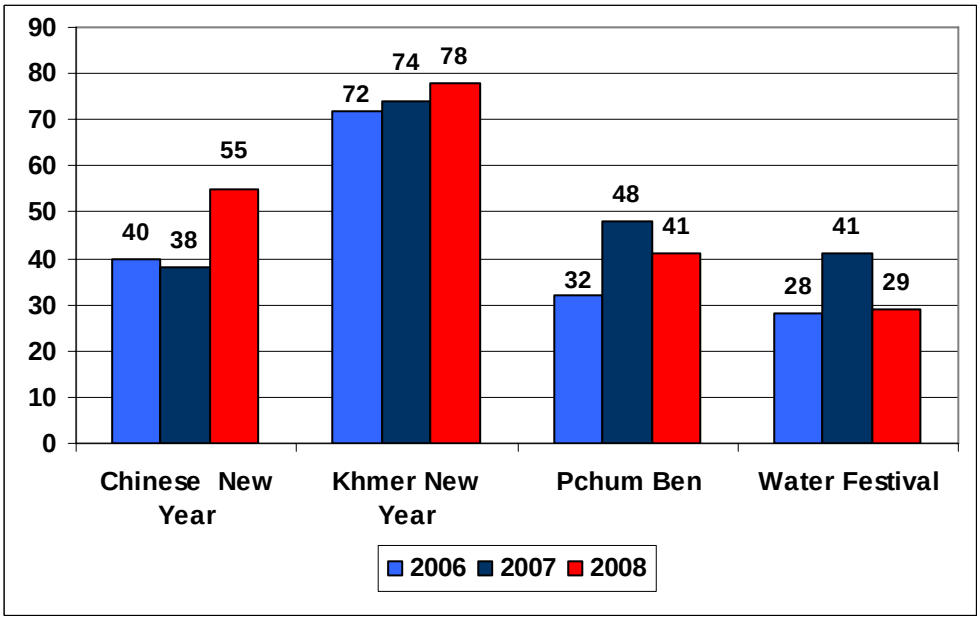
Figure 5: The evolution of the numbers of fatalities by month, 2006 – 2008



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	130	67	145	174	85	96	89	88	91	122	93	112
2007	143	125	105	161	111	110	117	117	132	152	144	128
2008	151	163	139	195	119	109	136	88	135	107	140	156

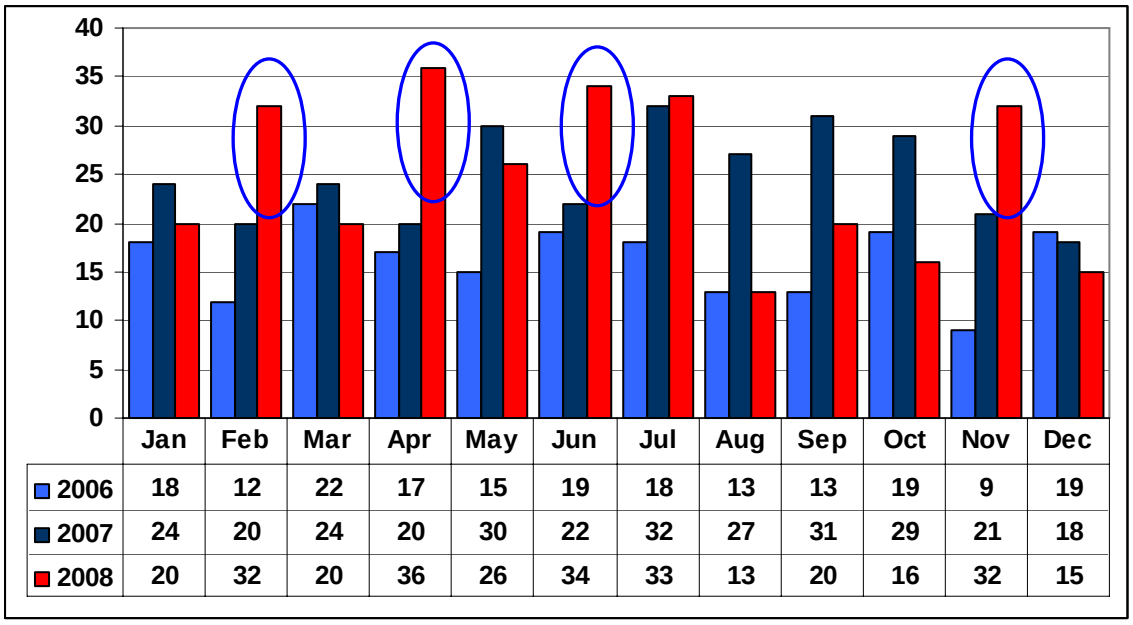
The number of road crashes noticeably increased during the major national holidays. Comparing 2007 to 2008, the number of fatalities during Chinese New Year **increased by 45%** and during Khmer New Year **by 5%. However, on Pchum Ben and Water Festival,** the number of fatalities **decreased by 15% and 29% respectively**.

Figure 6: The evolution of the numbers of fatalities by main holidays, 2006–2008



In Phnom Penh, the total number of **fatalities remained stable** from 2007 to 2008. However, the graph below depicts that the **number of fatalities has significantly increased in February, April, June and November** 2008 as compared to 2006 and 2007**.**

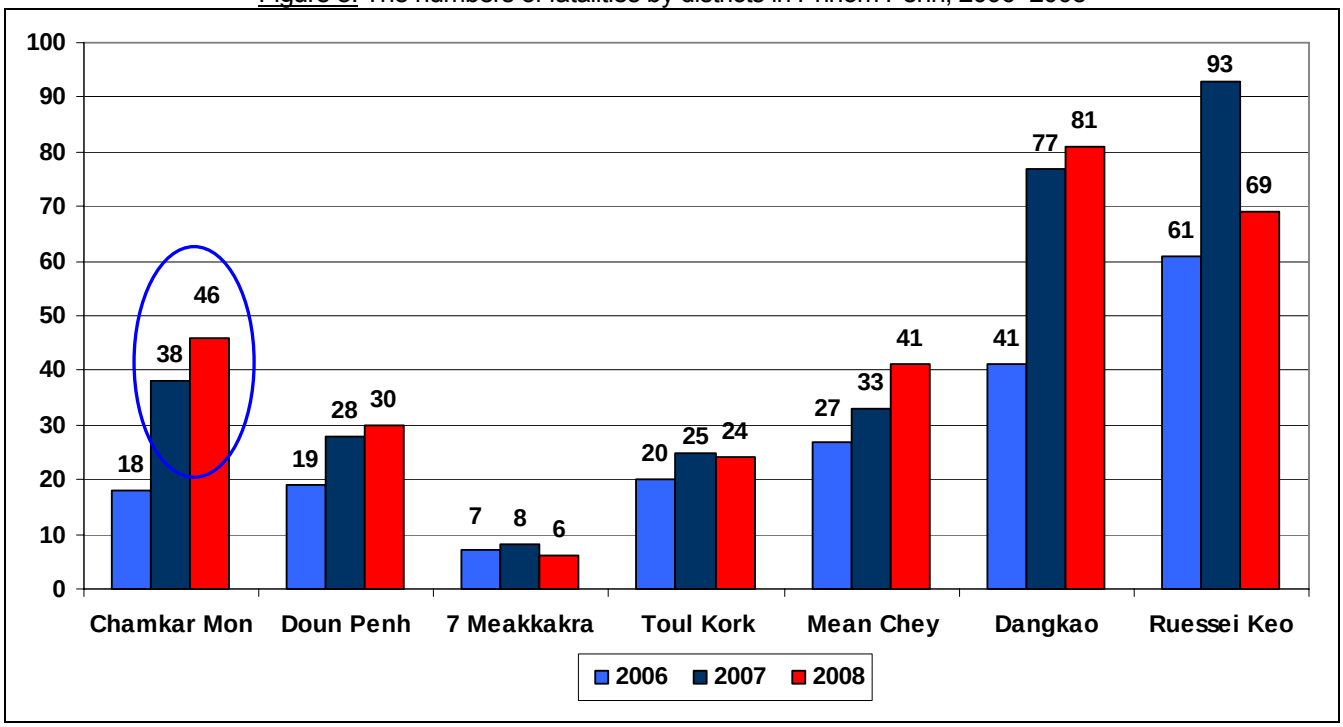
Figure 7: The evolution of the numbers of fatalities in Phnom Penh, 2006–2008



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	18	12	22	17	15	19	18	13	13	19	9	19
2007	24	20	24	20	30	22	32	27	31	29	21	18
2008	20	32	20	36	26	34	33	13	20	16	32	15

In Phnom Penh, the number of fatalities increased in almost all districts from 2007 to 2008. However, a significant decrease was noticed in **Ruessei Keo districts** (35% compared 2008 to 2007). There was **a significant increase in Chamkar Mon district** (21% compare 2008 to 2007). The number of fatalities in three districts (Dangkao, Mean Chey and Ruessei Keo) **was higher than** the other four districts due to those districts being crossed by the main national roads.

Figure 8: The numbers of fatalities by districts in Phnom Penh, 2006–2008

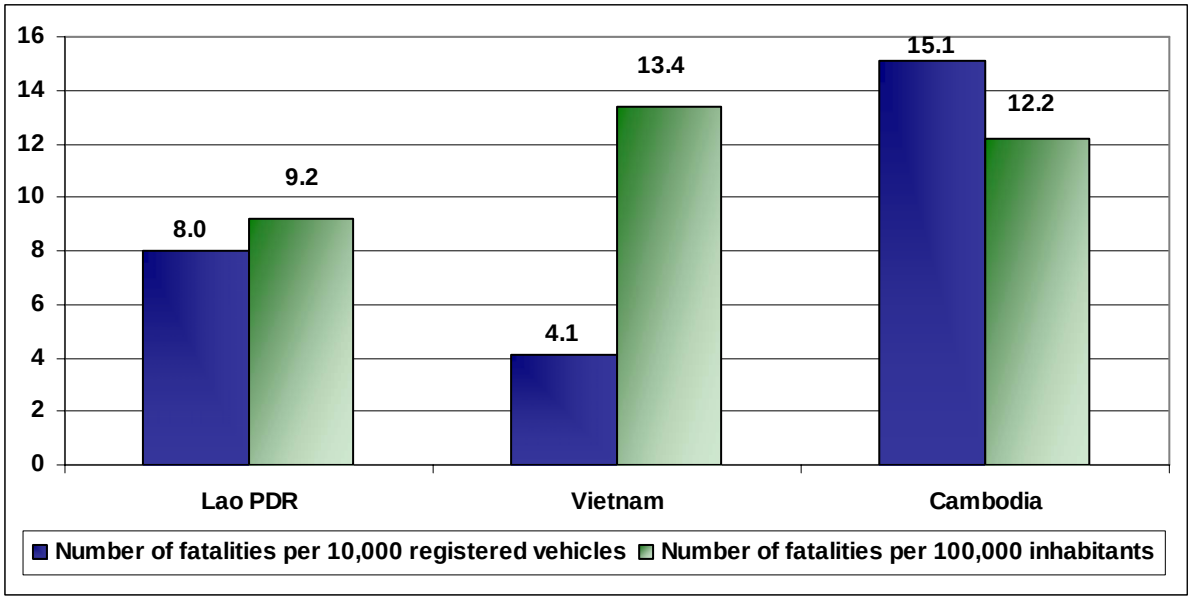


V. 2008 data analysis

V.1 Regional and National Comparisons

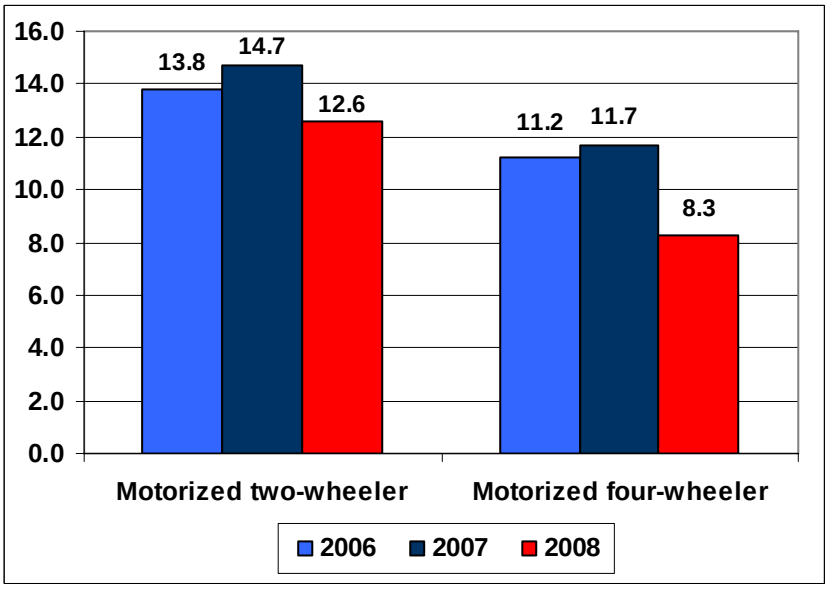
In 2008, **25,796 road traffic casualties** were reported by RCVIS, resulting from **10,015 crashes**[6]. Among them, **1,638 were fatalities**. In the comparison of fatality rate per 10,000 registered vehicles among ASEAN member countries, Cambodia has the highest rate, although the fatality rate per 100,000 inhabitants is a bit lower than Vietnam.

Figure 9: Fatality rates – comparisons between selected countries in Asian[7] – 2008



The fatality rates for both **two-wheeler** and **four-wheeler decreased** in 2008.

Figure 10: Comparison of fatality rates between two-wheeler and four-wheeler calculated per 10,000 registered two-wheeler and four-wheeler[8], 2006–2008

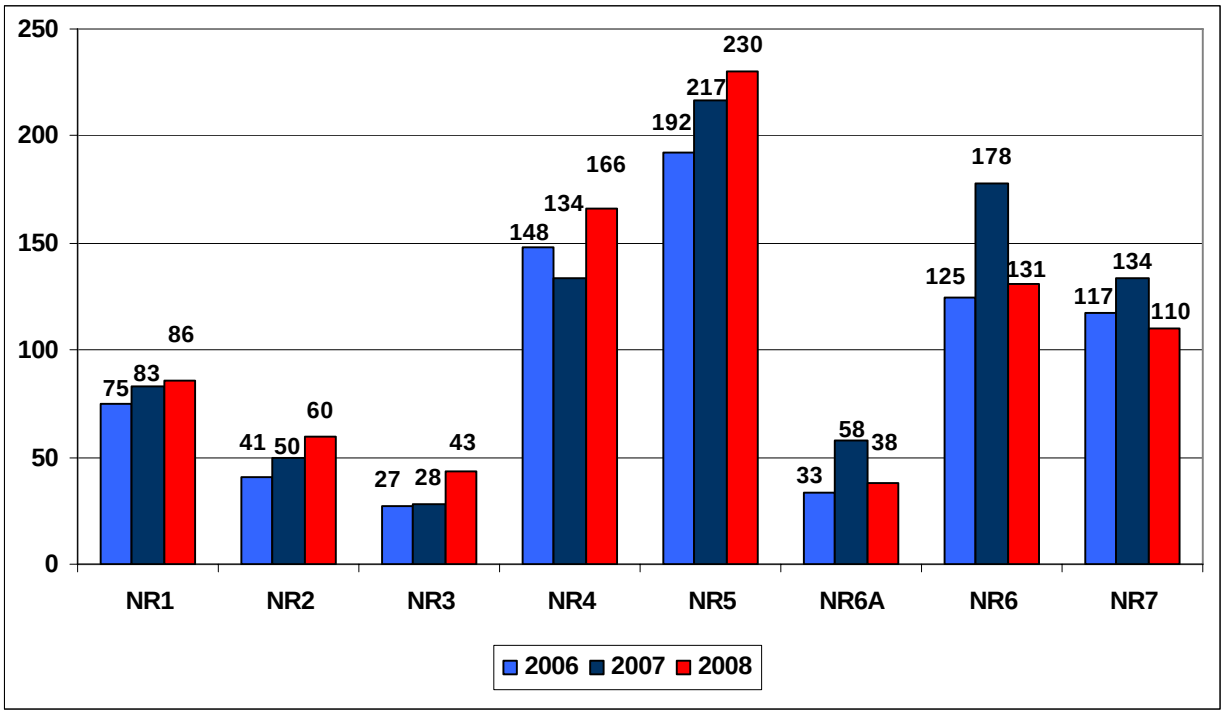


[6] The number of road crash is estimated based on data from both sources: traffic police and health facilities
[7] Source:
- Lao PDR: Handicap International Belgium in Lao PDR
- Vietnam: World Health Organization in Vietnam

[8] Source: Number of vehicles registered: Ministry of Public Work and Transport

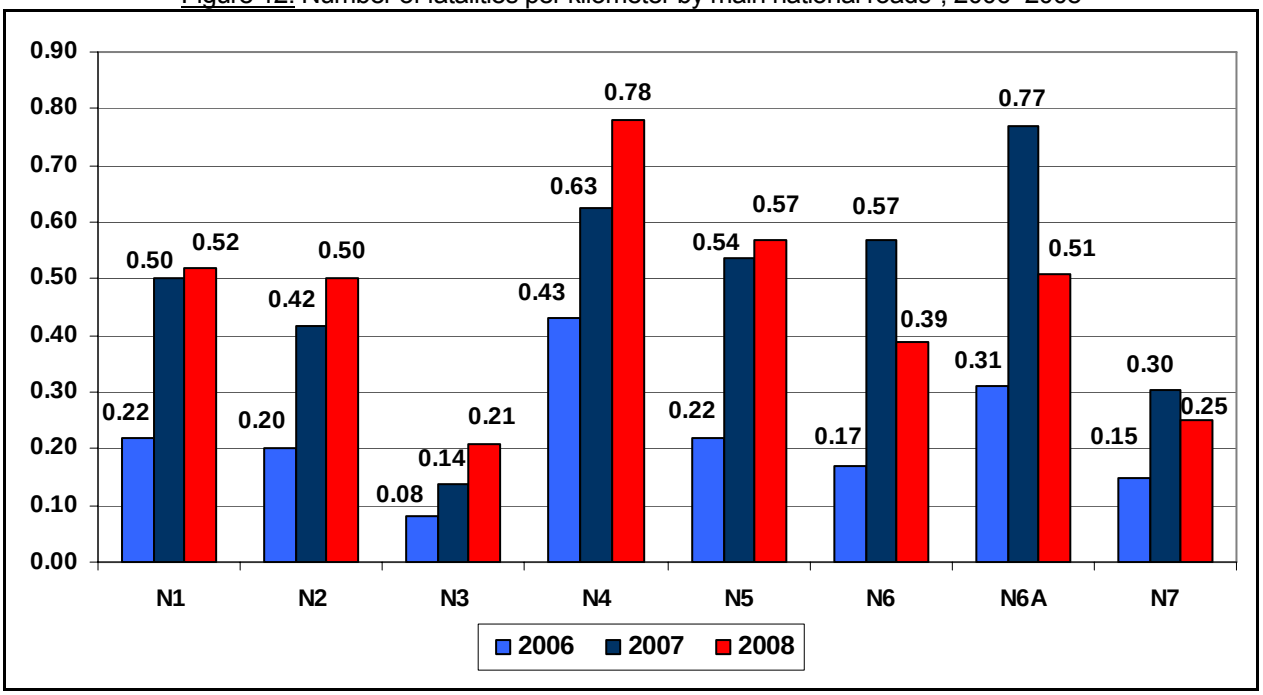
In 2008, there were changes in road fatalities on National Roads (NR). **NR 5 contributed to the highest number of fatalities. Significant increases had observed in NR 3 (54%) and NR 4 (24%),** while decreases were noticed in NR 6A (34%), NR 6 (26%), and NR 7 (18%)

Figure 11: Number of fatalities on main national roads network, 2006–2008



In comparison of fatalities per kilometre, **National Road 4 was the most deadly** followed by National Road 5 and National Road 1 in 2008. Significant decreases were noticed on national road 6A, 6 and 7 compared to 2007.

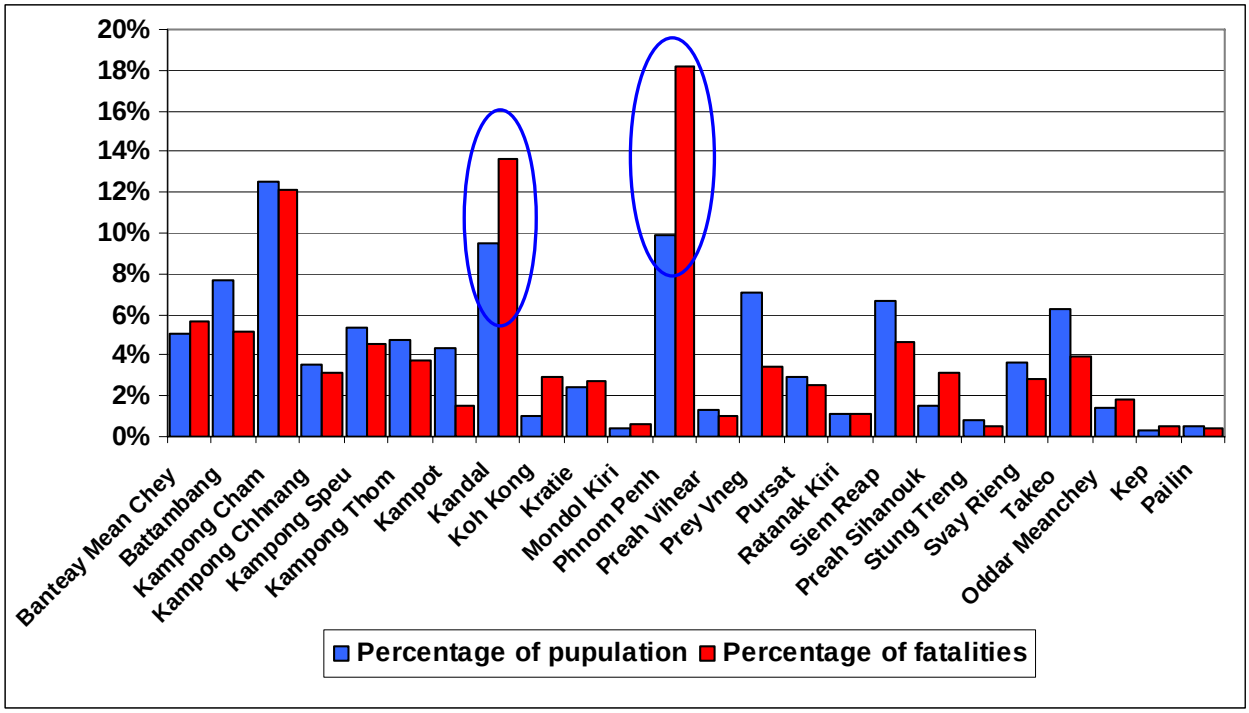
Figure 12: Number of fatalities per kilometer by main national roads[9], 2006–2008



Phnom Penh and Kandal province accounted for the highest of fatalities although they represented less than 10% of population.

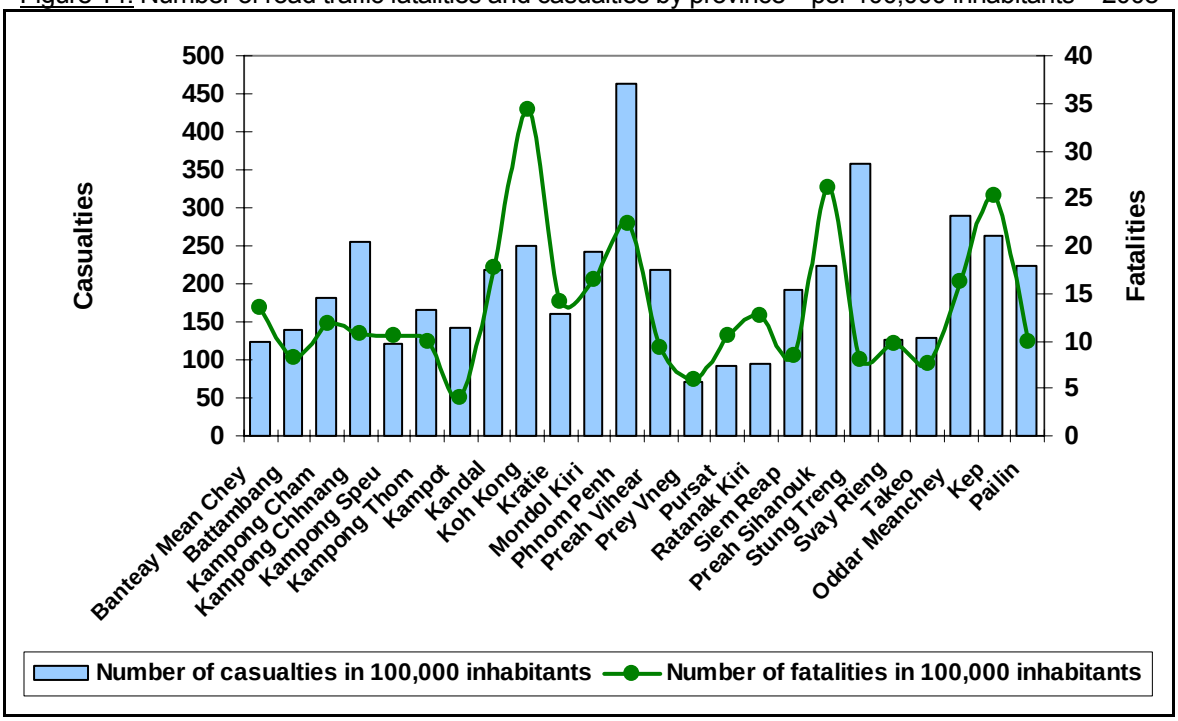
[9] Source: Number of kilometer by national roads: Ministry of Public Work and Transport.

Figure 13: Percentage of population[10] and fatalities – 2008



In terms of population density, **the highest fatality rates were in Koh Kong, Preah Sihanouk and Kep provinces.**

Figure 14: Number of road traffic fatalities and casualties by province[11] per 100,000 inhabitants – 2008



[10] and
[11] Sources: RCVIS and General Population Census of Cambodia 2008, Provisional Population Totals, National Institute of Statistics, Ministry of Planning, August 2008.

V.2 Victim Information

In 2008, **25,796** of casualties were reported. Among them, **1,638 were fatalities and 7,226 were severely injured**. Number of fatalities has **increased by 6% every year,** since 2006**.**

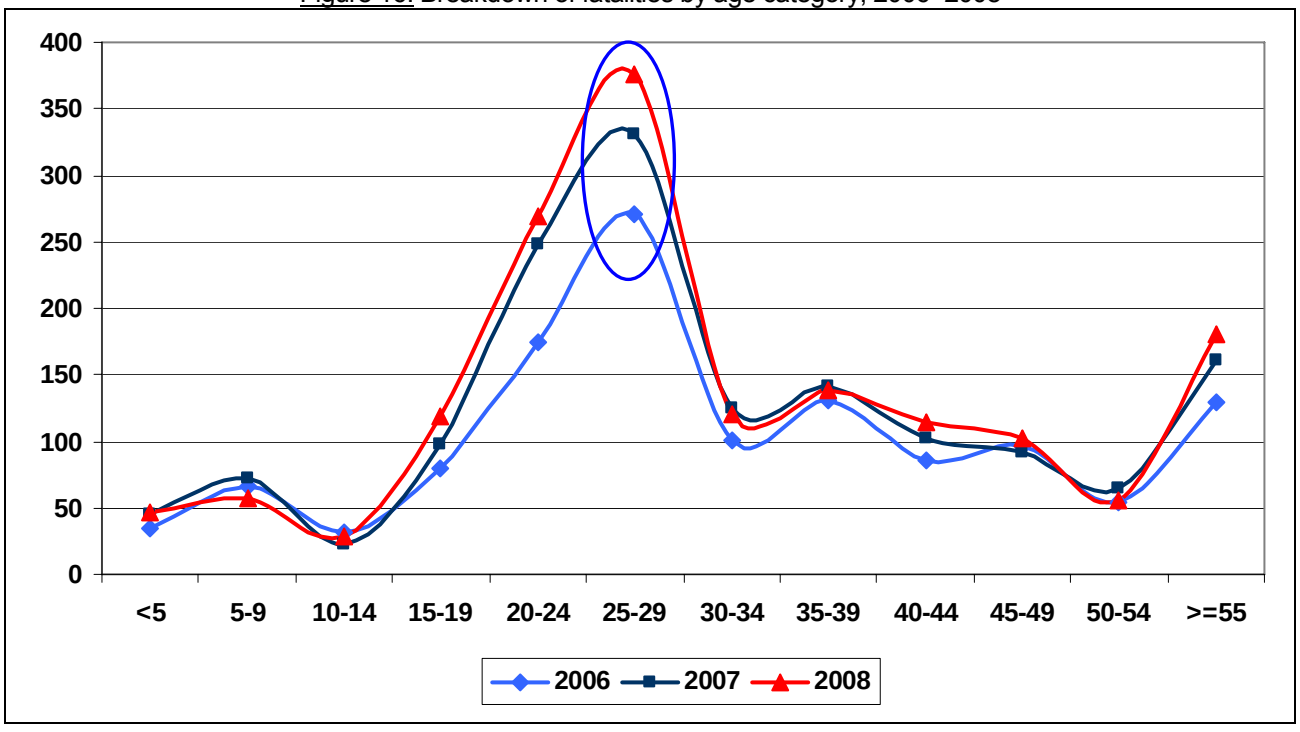
Figure 15: Breakdown of casualties by severity of injury, 2006–2008

Type of injury	2006		2007		2008	
Killed	1,292	5%	1,545	6%	1,638	6%
Severe injuries	6,033	23%	7,150	26%	7,226	28%
Slight injuries	17,836	68%	17,655	64%	15,985	62%
Unknown	985	4%	1,053	4%	947	4%
Total	26,146	100%	27,403	100%	25,796	100%

V.2.1 Age

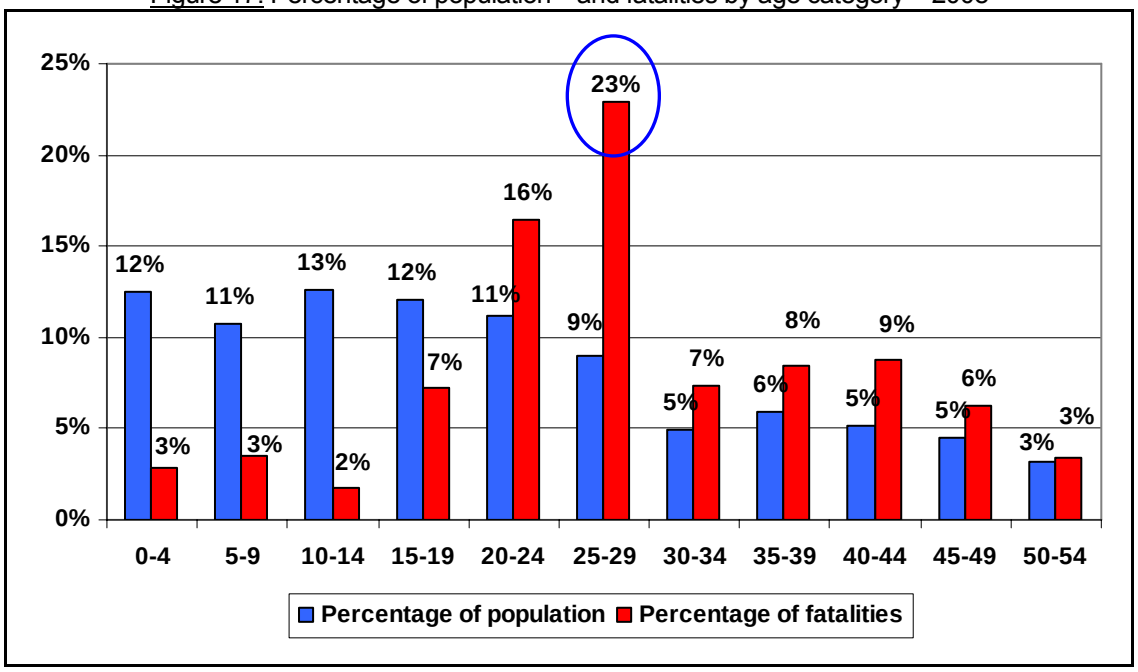
- The average age of a casualty was 28 years old.
- People aged between **20 and 29 years old** represented the **highest percentage of fatalities and they have significantly increased from year to year**.
- The economically active population (20-54 years old) was the most affected representing **72% of fatalities**.
- **Fatalities for those more than 55 years old increased by 12%** from 2007 to 2008.

Figure 16: Breakdown of fatalities by age category, 2006–2008



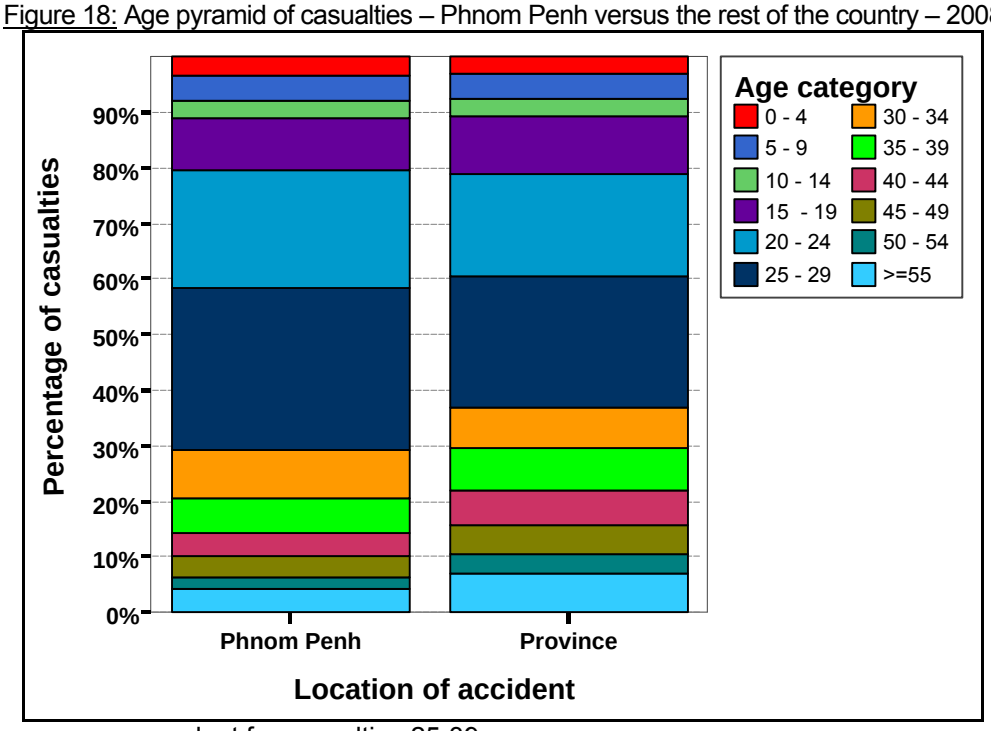
25-29 years olds accounted for 23% of fatalities yet were only 9% of population. Children, 14 and under, were 8% of fatalities and 36% of the population.

Figure 17: Percentage of population[12] and fatalities by age category – 2008



The proportion of young adults (age 20 to 29) affected by crashes was greater in Phnom Penh than in the provinces (50% compared to 42%). However, the proportion of people above 55 years old was higher in provinces than in Phnom Penh.

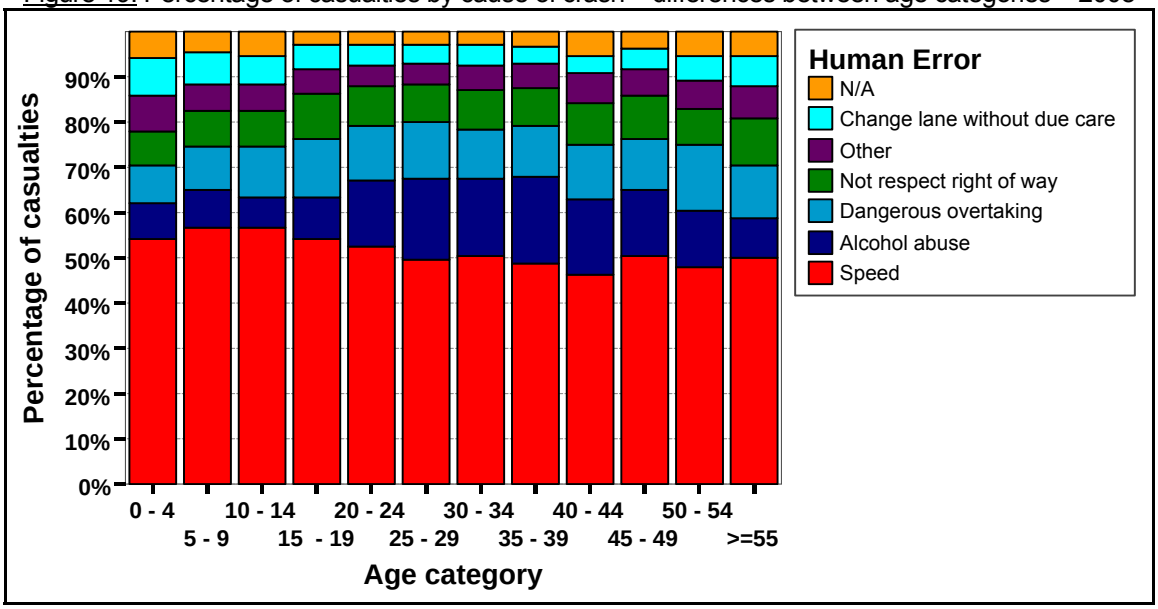
Figure 18: Age pyramid of casualties – Phnom Penh versus the rest of the country – 2008



Alcohol abuse was more prevalent for casualties 25-39 years.

[12] Sources:
- Total population: General Population Census of Cambodia 2008, Provisional Population Totals, National Institute of Statistics, Ministry of Planning, August 2008.
- Population projection by age categories: First Revision Population Projections for Cambodia 1998-2020, National Institute of Statistics, Ministry of Planning, June 2004.

Figure 19: Percentage of casualties by cause of crash – differences between age categories – 2008

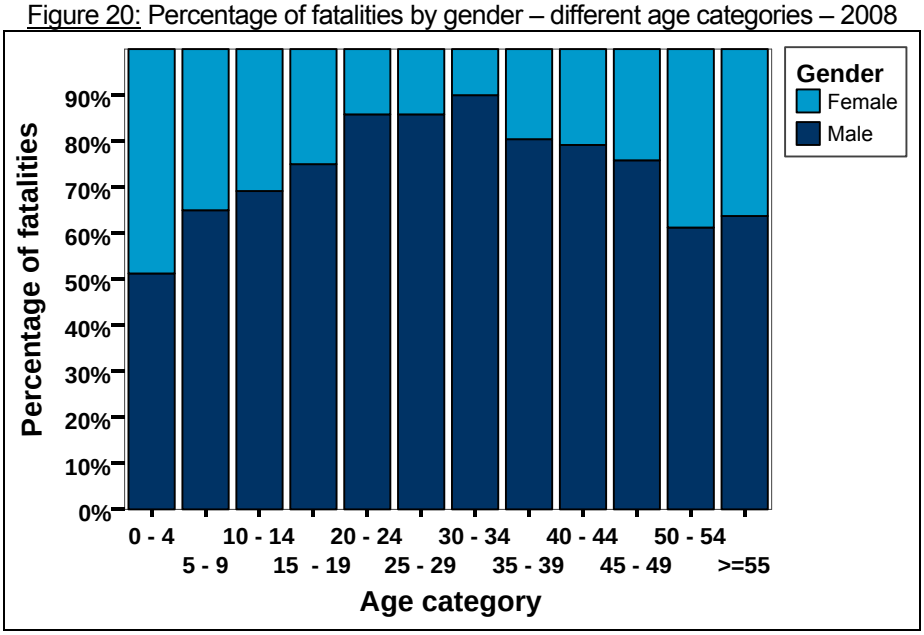


V.2.2 Gender

Males represented a higher ratio of casualties per inhabitants: they **accounted for 73% of casualties yet were only 49% of the population**[13]**.** Male were much likely more than female to be killed by crash in 2008.

This over-representation of males in the fatalities was especially important in the **working–age proportion** of the population (20-34 years old), where males represented **more than 80% of fatalities**.

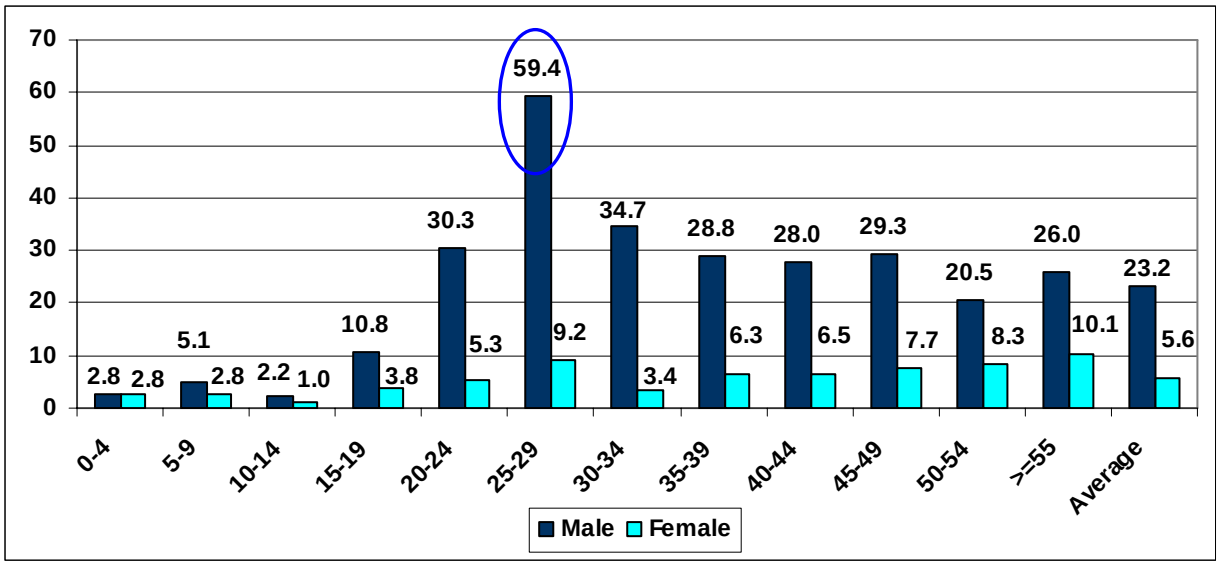
Figure 20: Percentage of fatalities by gender – different age categories – 2008



On average, the male fatality rate per 100,000 inhabitants was **almost 4 times higher** than the female fatality rate **(23.2 compared to 5.6**). The highest male fatality rate was among 25-29 years old group (almost 60). The highest rate among female was the group older than 55 years old (10.1).

[13] Sources: RCVIS and General Population Census of Cambodia 2008, Provisional Population Totals, National Institute of Statistics, Ministry of Planning, August 2008.

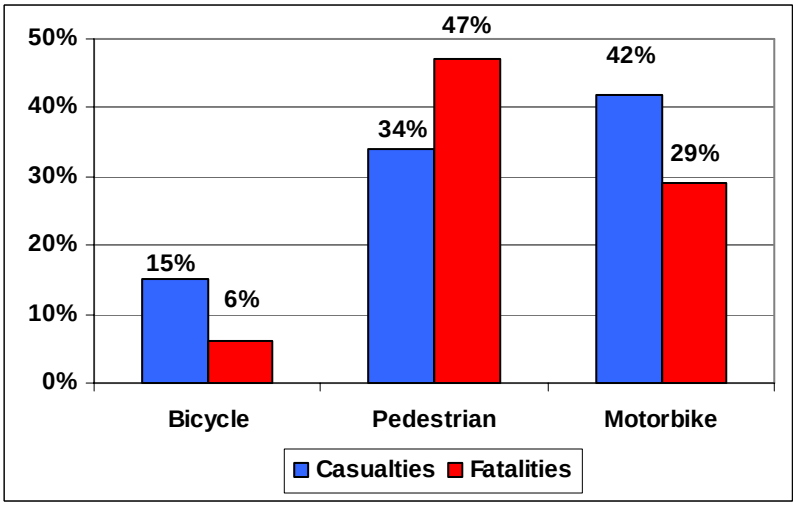
Figure 21: Number of fatalities per 100,000 inhabitants by gender for different age categories[14] – 2008



In 2008, **the number of casualties aged between 0 and 14 years old decreased by 12%** compare to 2007. They represented 8% of total fatalities and 11% of all casualties.

- 67% of casualties aged between 0 and 14 years old were student.
- **39% of casualties** aged between 0 and 14 years old were injured on national road and **30% were injured on local road/track**.
- Casualties aged between 0 and 14 years old were mostly injured during the time from 11am to 12am and 4pm to 6pm.
- 42% of casualties aged between 0 and 14 years old were motorcycle riders but it was noticed that 47% of fatalities aged between 0 and 14 years old were pedestrian, as in the figure below.

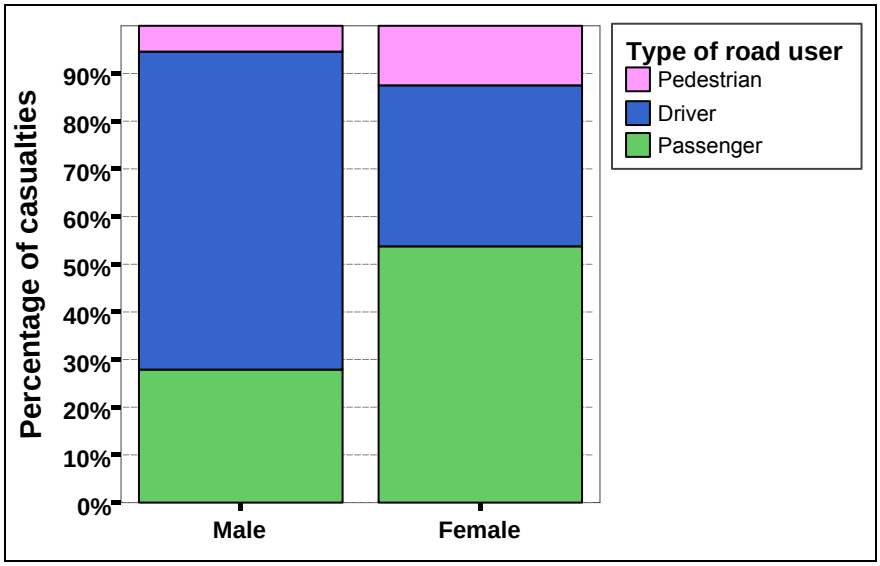
Figure 22: Percentage of 0-14 years old casualties by type of transport – 2008



Males were more vulnerable as drivers, whereas females were more at risk as passengers.

Figure 23: Percentage of casualties by gender and type of road users – 2008

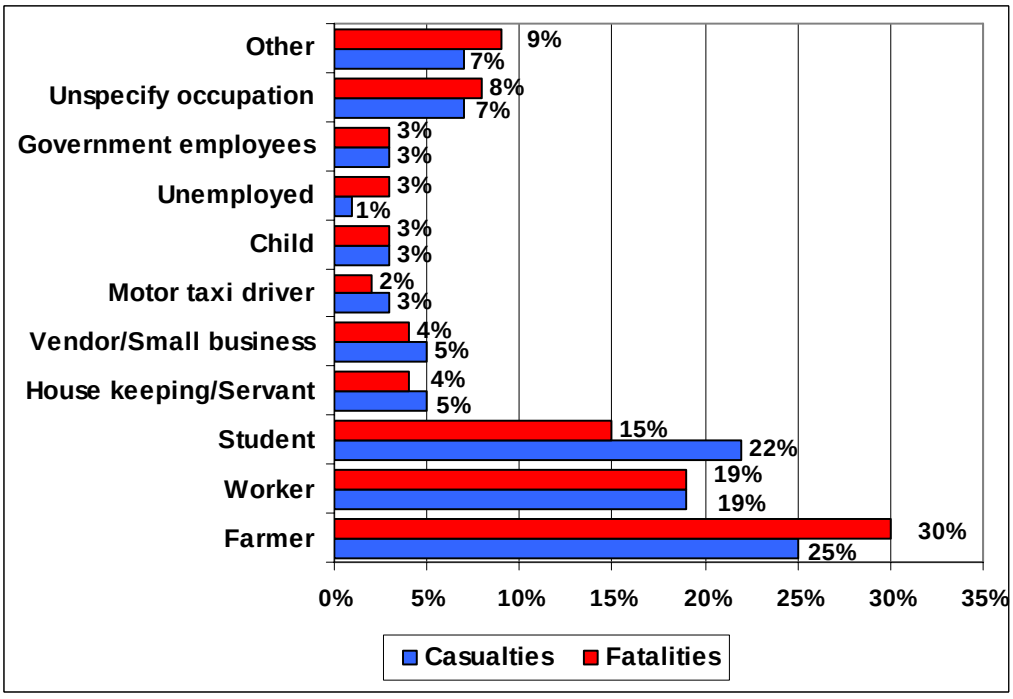
[14] Sources:
- Total population: General Population Census of Cambodia 2008, Provisional Population Totals, National Institute of Statistics, Ministry of Planning, August 2008.
- Population projection by age categories: First Revision Population Projections for Cambodia 1998-2020, National Institute of Statistics, Ministry of Planning, June 2004.



V.2.3 Occupation

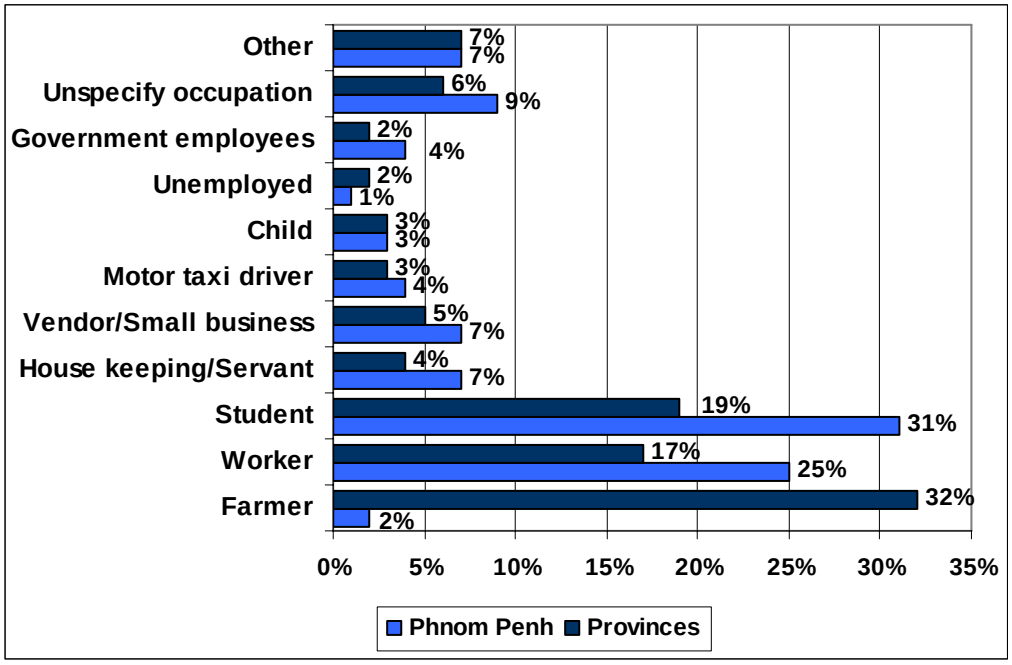
- **The economically active part of the population (students, workers and farmers) was the most affected by road crashes.**
- The percentages of fatalities by occupation followed a similar pattern as casualties: **farmers represented the highest percentage, constituting the larger group of fatalities and casualties** (30% of fatalities, 25% of casualties), followed by workers and students.

Figure 24: Percentage of fatalities and casualties by occupation – 2008



Farmer casualties were much higher in the provinces than in Phnom Penh. Conversely, Phnom Penh students and workers casualty rates were much higher.

Figure 25: Percentage of casualties by type of occupation – Phnom Penh versus provinces – 2008



V.2.4 Type of road user

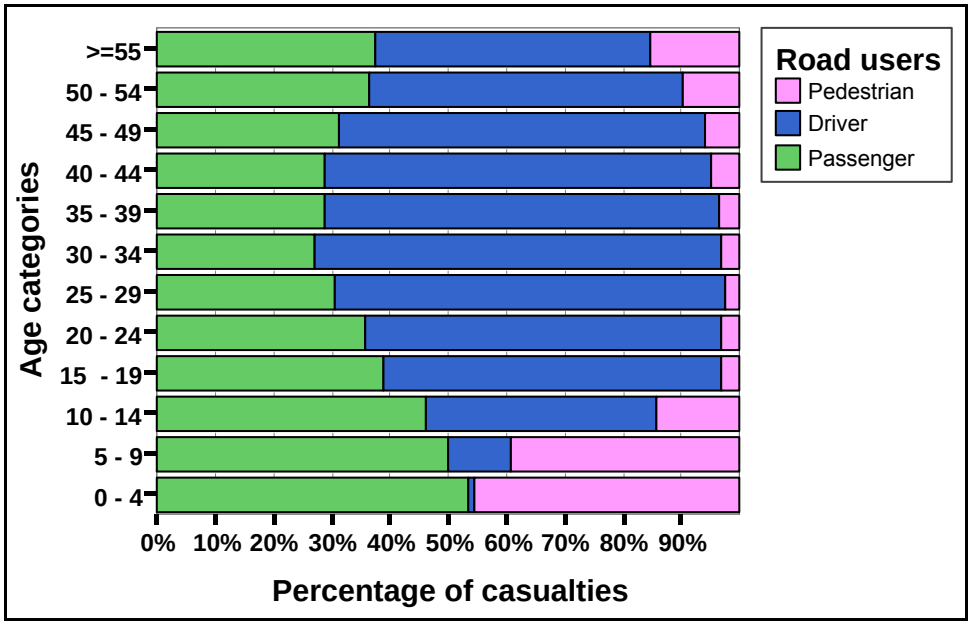
Over the last 3 years, number of motorcycle riders **killed has increased by 48%**. More attention to promoting helmet wearing is needed to reduce fatalities.

Figure 26: Number of road crash fatalities by type of road users and severity of injury, 2006–2008

Type of transport	2006				2007				2008			
	Killed	Serious	Slight	Unknown	Killed	Serious	Slight	Unknown	Killed	Serious	Slight	Unknown
Motorbike	749	4,110	12,924	568	971	5,349	13,375	663	1,107	5,600	12,489	683
Pedestrian	198	582	1162	119	206	583	1,260	71	207	537	1,127	48
Bicycle	67	337	894	65	73	294	762	56	71	272	665	34
Car	106	396	923	98	133	404	926	117	115	386	722	99
Light truck	41	138	487	47	44	160	451	42	39	119	242	23
Heavy truck	35	70	146	16	46	82	178	36	23	63	86	18
Minibus	10	28	133	6	6	27	51	4	9	42	102	3
Bus	2	10	47	3	2	3	40	7	3	4	20	2
Agriculture vehicle	29	73	303	22	35	90	227	15	36	87	196	5
Other	55	289	817	41	29	158	385	42	28	116	336	32
Overall	1,292	6,033	17,836	985	1,545	7,150	17,655	1,053	1,638	7,226	15,985	947

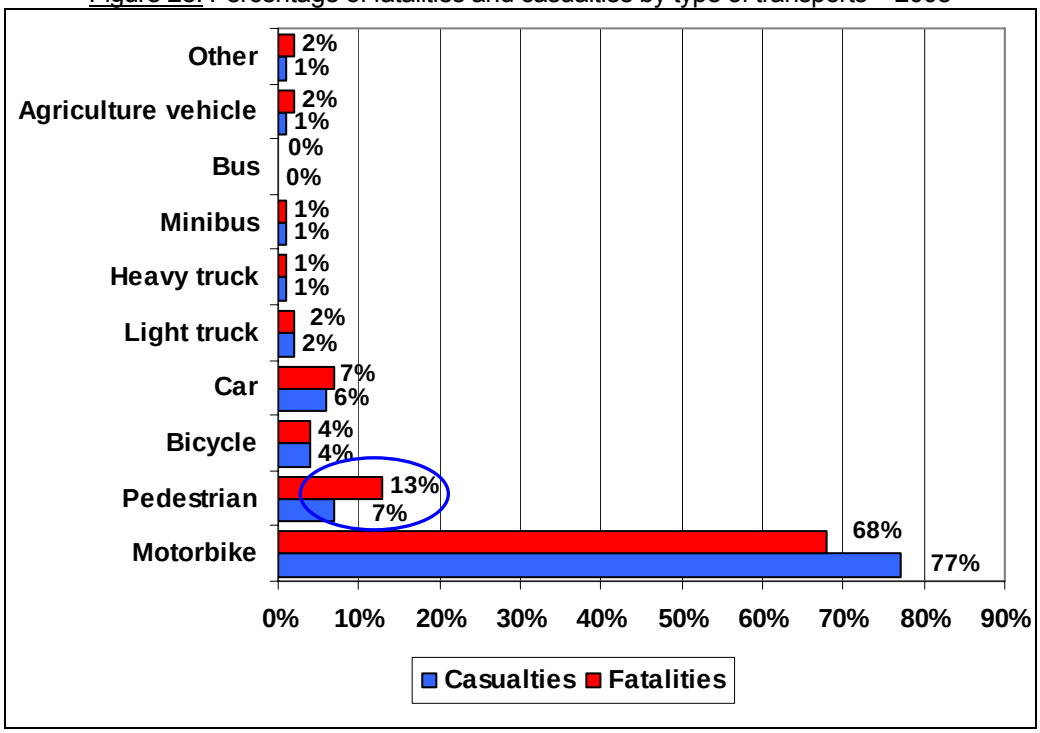
Children, 9 years old and under, were most at risk as pedestrians and passengers.

Figure 27: Percentage of road crash casualties by type of road users for difference age category, 2008



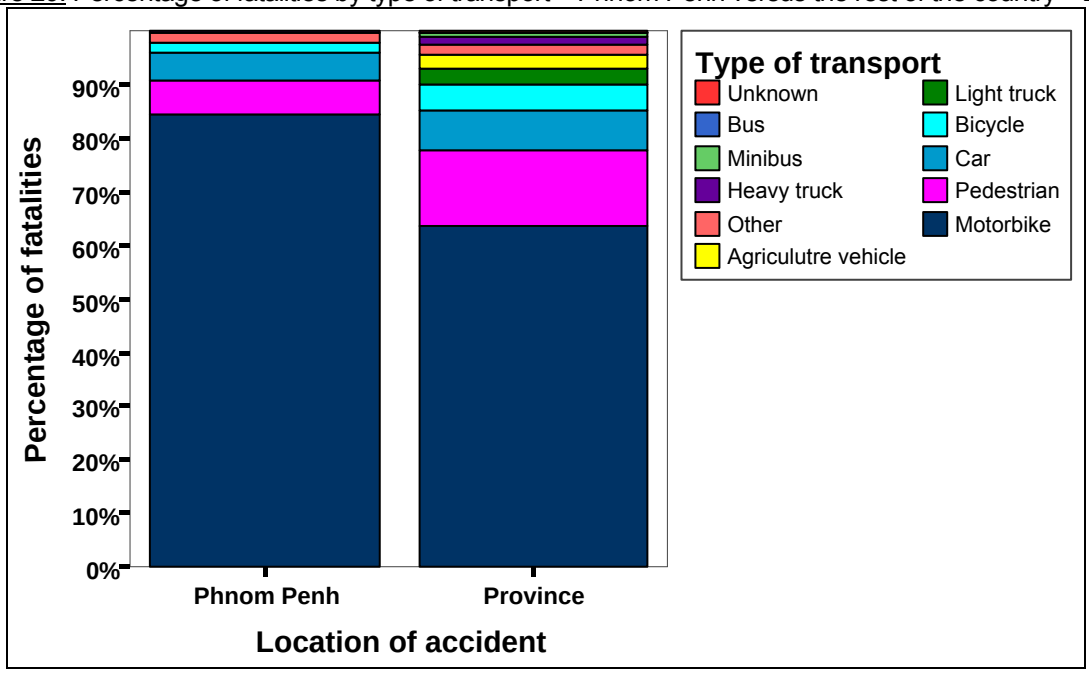
Motorcycle users accounted for the largest majority of casualties. Pedestrian fatality rate was almost double the casualty rate.

Figure 28: Percentage of fatalities and casualties by type of transports – 2008



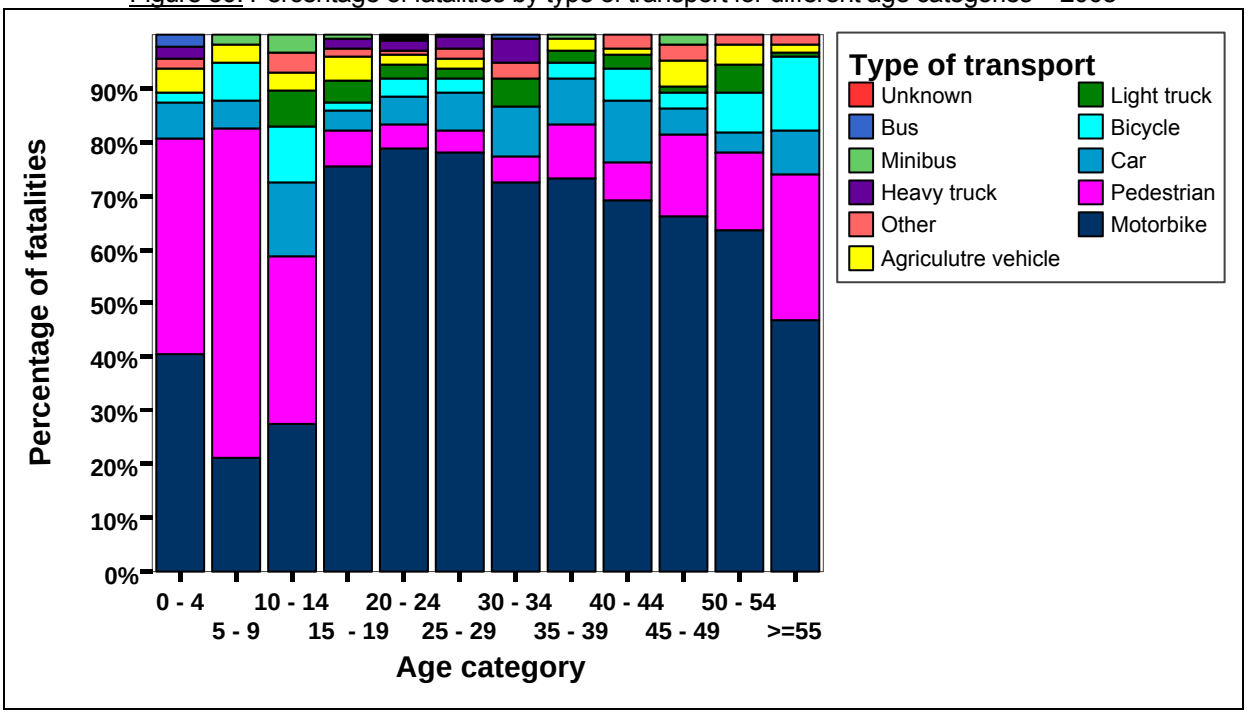
The percentage of motorcycle fatalities was higher in Phnom Penh, while pedestrian, bicycle and agriculture vehicle fatalities were higher in provinces.

Figure 29: Percentage of fatalities by type of transport – Phnom Penh versus the rest of the country – 2008



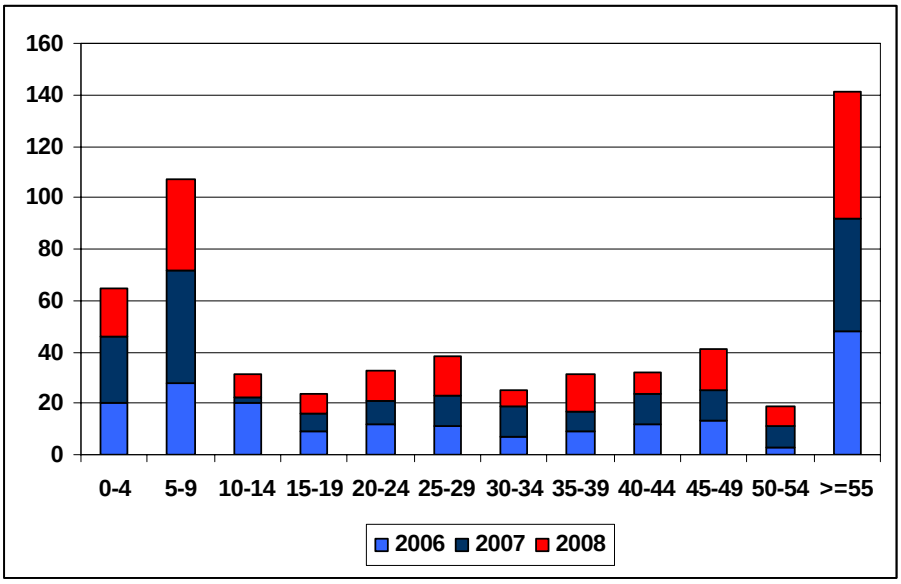
Motorcycle fatalities were **higher among income producing adults. Children** and the elderly were more vulnerable as pedestrians.

Figure 30: Percentage of fatalities by type of transport for different age categories – 2008



- Without helmet, seat belt or other means of protection, a pedestrian was the second most vulnerable road user. Pedestrian casualties have decreased by 9% but overall pedestrian fatalities have not.
- Child pedestrian fatalities, 14 years old and younger, **decreased by 13%**. These children represented **30% of all pedestrian fatalities** yet accounted for **48% for all pedestrian casualties**.
- Children 0-9 years old and elder (more than 54 years old) accounted the most pedestrian fatalities.

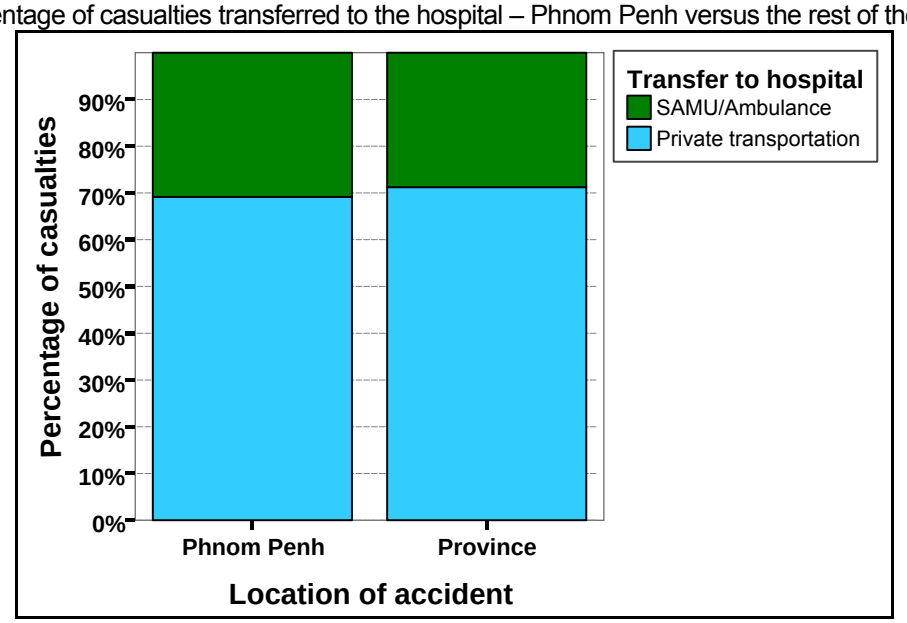
Figure 31: Number of pedestrian fatalities by age categories, 2006–2008



V.2.5 Transfer to hospital

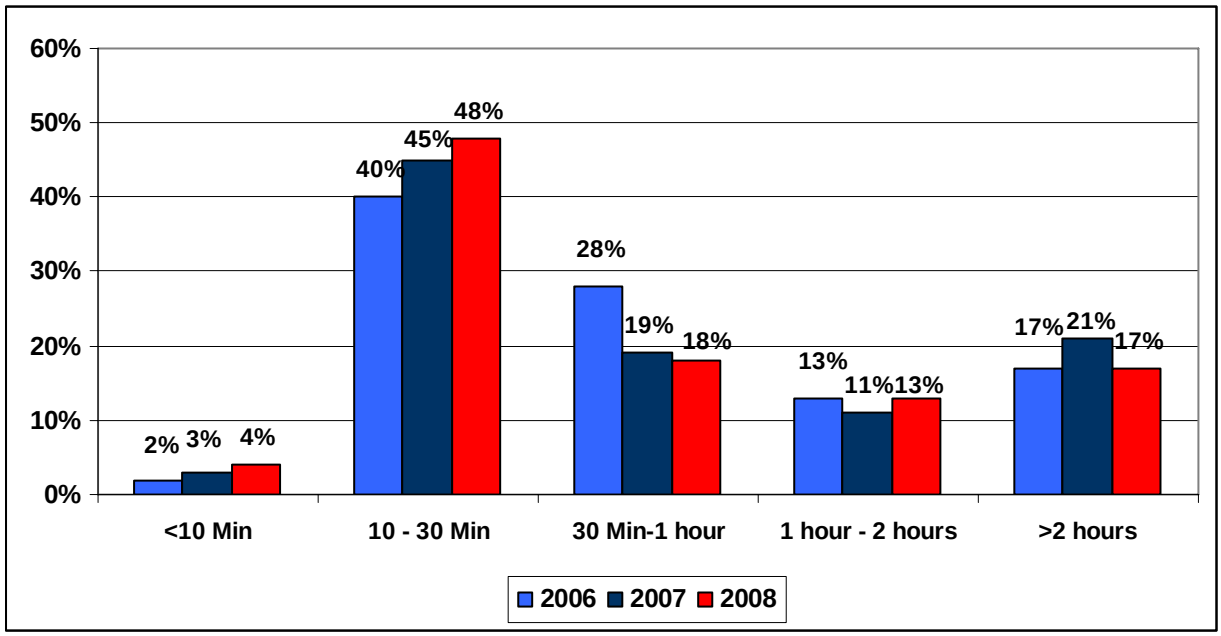
Around 70% of casualties were transferred to hospital by private transportation. **Phnom Penh and the provinces shared similar statistics on type of transfer to hospital.**

Figure 32: Percentage of casualties transferred to the hospital – Phnom Penh versus the rest of the country – 2008



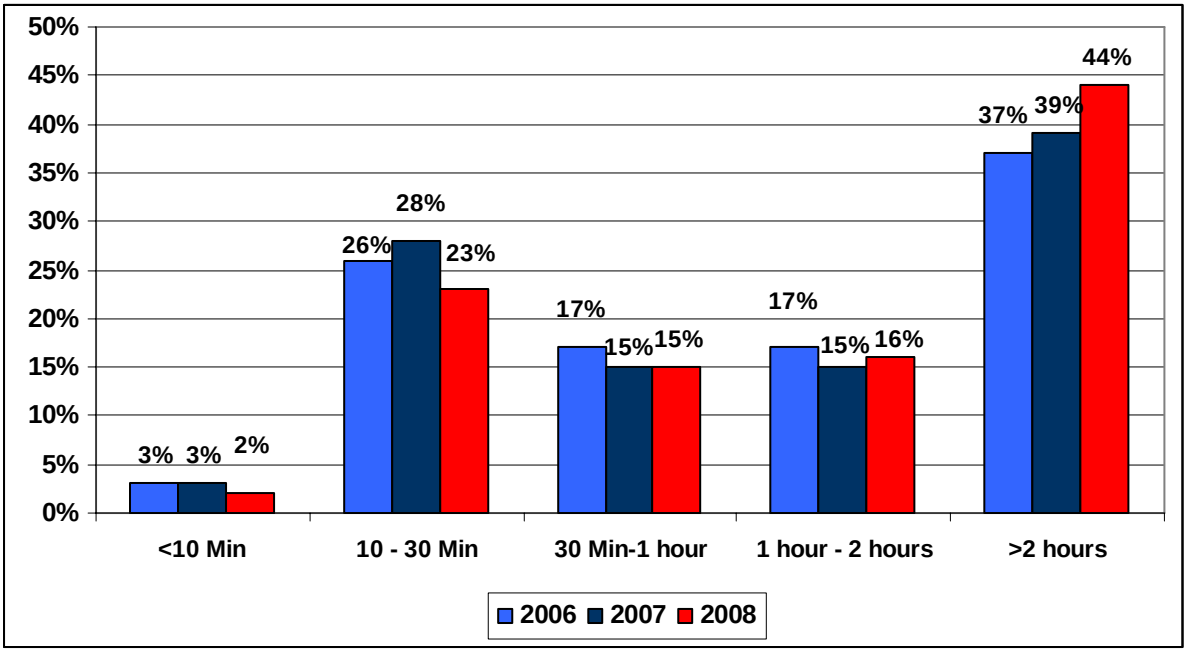
In general, transfer times for provincial casualties arriving at hospitals have been declining. In Phnom Penh, casualties arriving at a hospital under 30 minutes have been increasing since 2006.

Figure 33: Duration to arrive at the hospital in Phnom Penh, 2006–2008



In provinces, 44% of casualties arrived hospital more than 2 hours after the accidents.

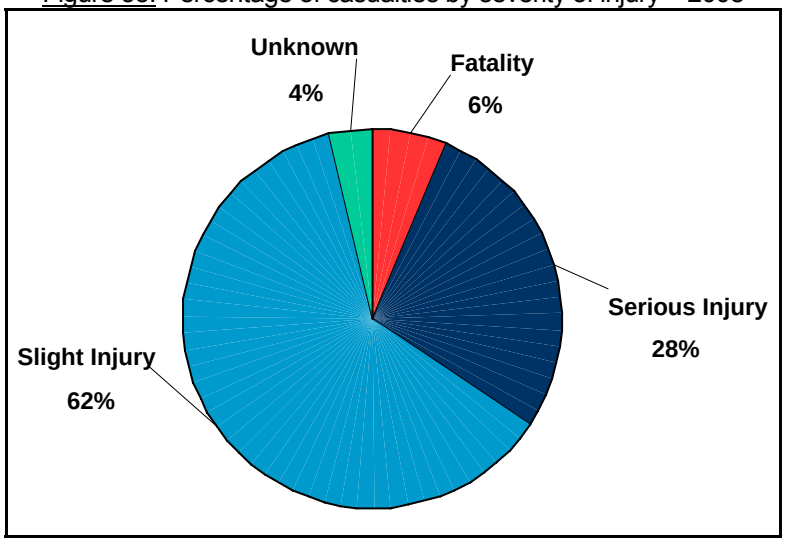
Figure 34: Duration to arrive at the hospital in provinces, 2006–2008



V.2.6 Severity of injuries

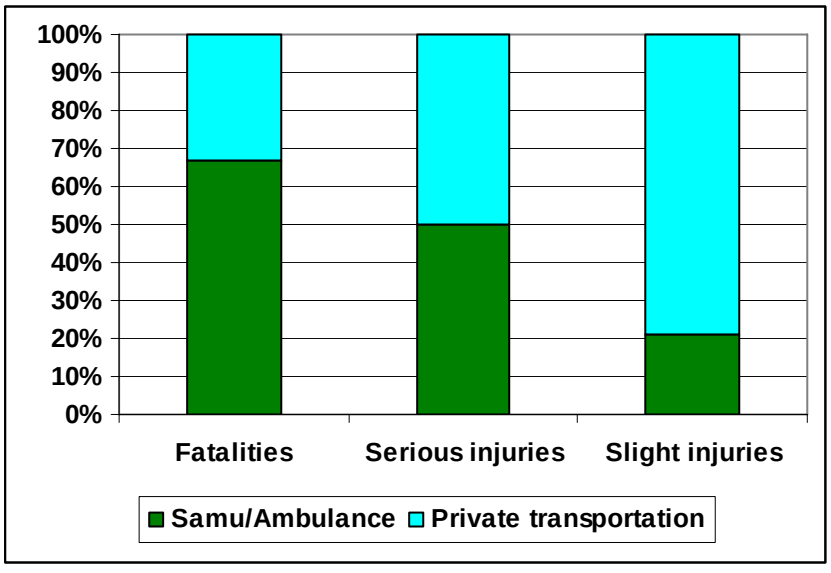
6% of casualties were fatalities. **66% of those fatalities died immediately at the scene** and the remainder at hospitals.

Figure 35: Percentage of casualties by severity of injury – 2008



More than 65% of fatalities and 50% of serious injuries were transported by Ambulance/Samu. They played a bigger role than private transportation among fatalities and serious injuries.

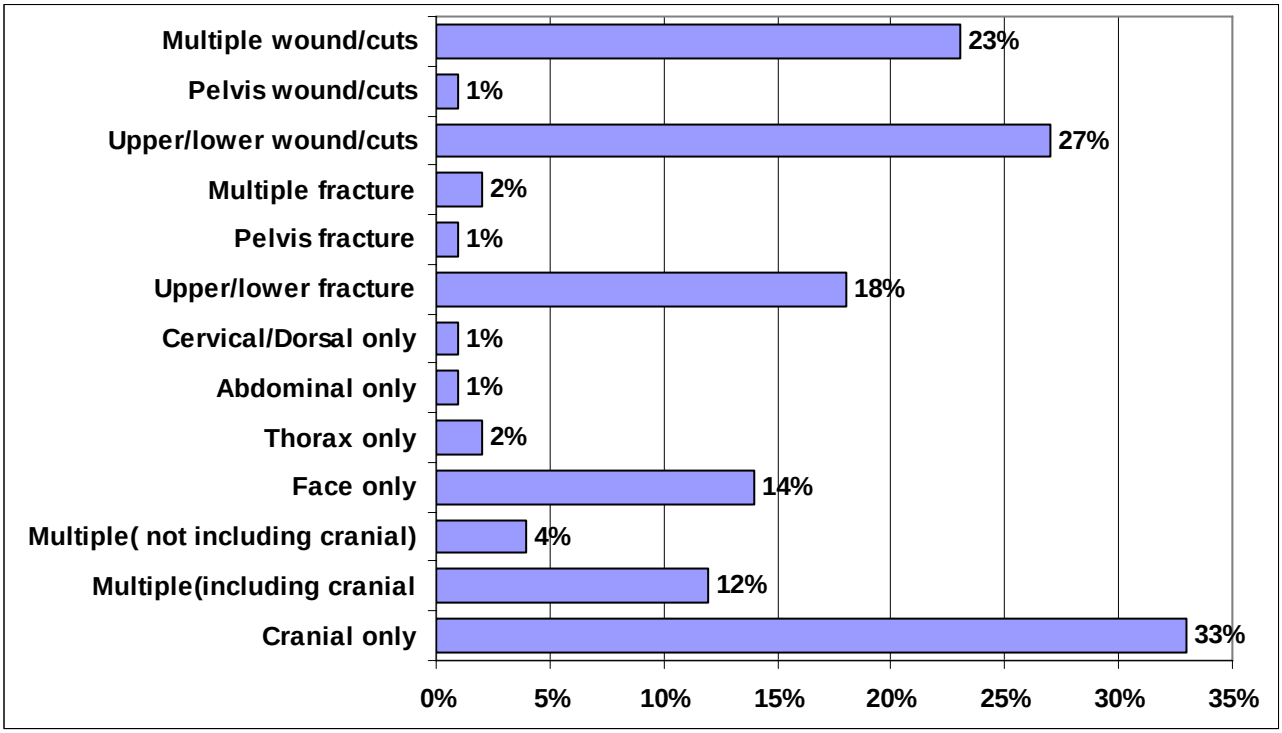
Figure 36: Percentage of casualties by severity of injury – the ways transferred to hospital – 2008



V.2.7 Nature of injuries

In total, **45% of casualties suffered from head injuries**. Upper/lower wound/cuts represented **27%** of casualties and upper/lower fracture accounted for **18%**.

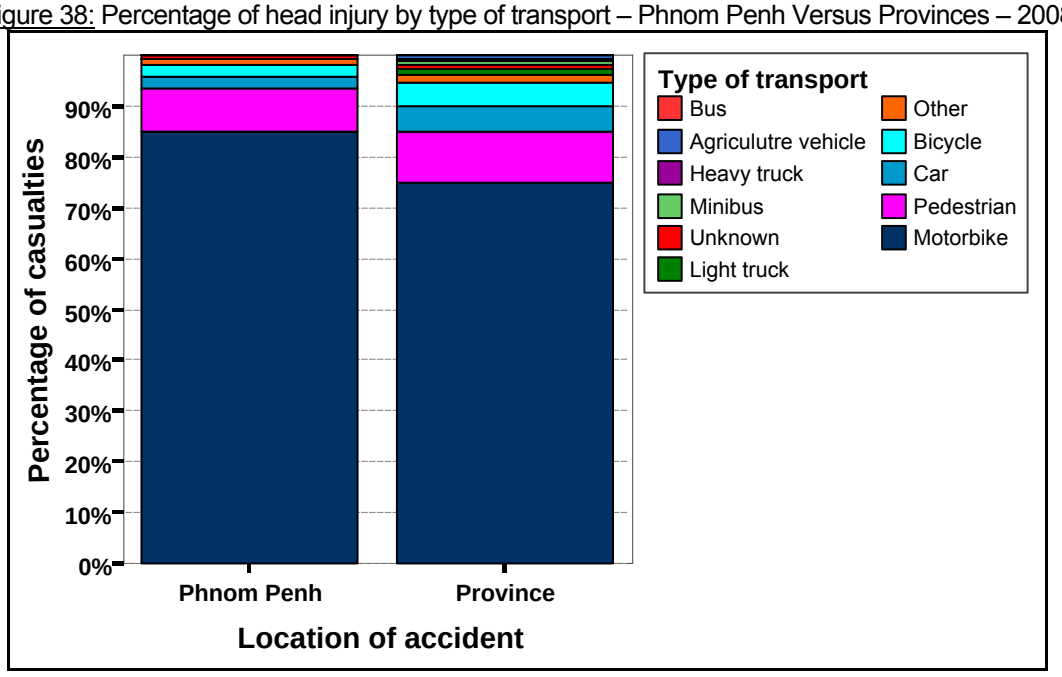
Figure 37: Percentage of casualties by category of nature of injuries[15] – 2008



The most common type of motorcycle crash injury was to the head. This was partly due to not wearing a helmet. Additionally, **head injuries accounted for 86% of motorcycle fatalities** and only 4% of these fatalities were wearing a helmet.

Among motorcycle riders, percentage of head injuries in Phnom Penh was higher than in provinces.

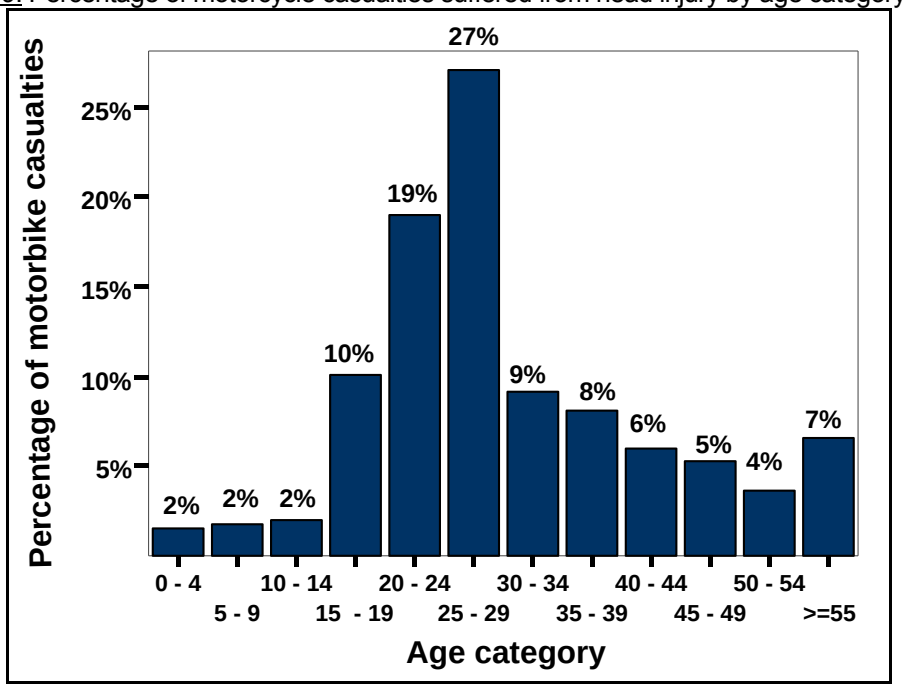
Figure 38: Percentage of head injury by type of transport – Phnom Penh Versus Provinces – 2008



[15] Percentages may add up to more than 100% as a casualty may have injuries to more than one body region

46% of motorcycle casualties suffer from head injury aged between 20 and 29 years old. Among them, workers represent 28%, followed by students (22%) and farmers (18%).

Figure 39: Percentage of motorcycle casualties suffered from head injury by age category – 2008

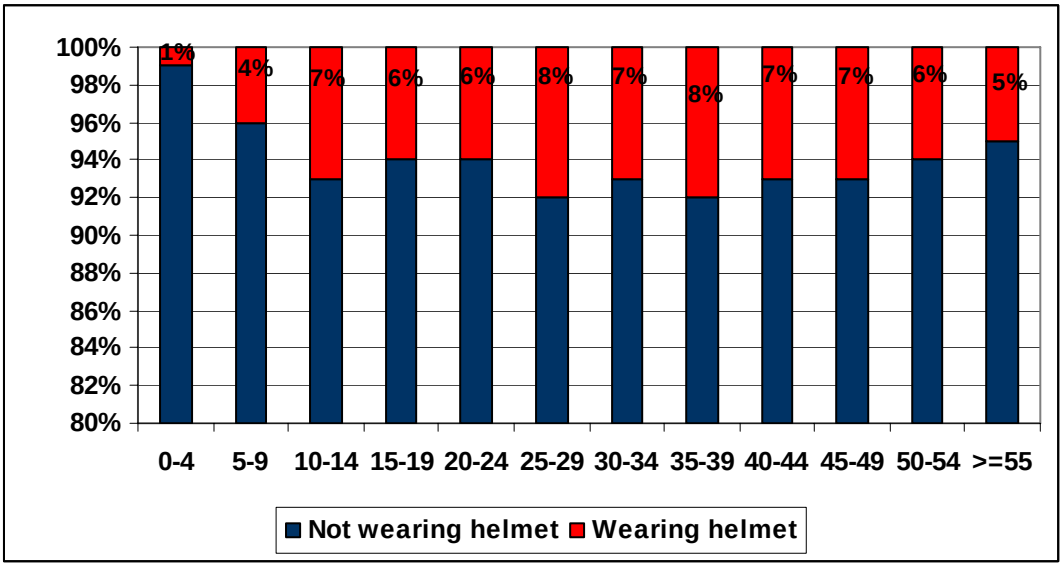


V.2.8 Helmet wearing

Only 6% of motorcycle casualties in 2008 wore a helmet at the time of the crash. The average wearing rate measured in Phnom Penh[16] in February, 2009 was **56%** among drivers and **11%** among passengers.

Children casualties (0-9 years old) had lowest wearing rate among other age categories.

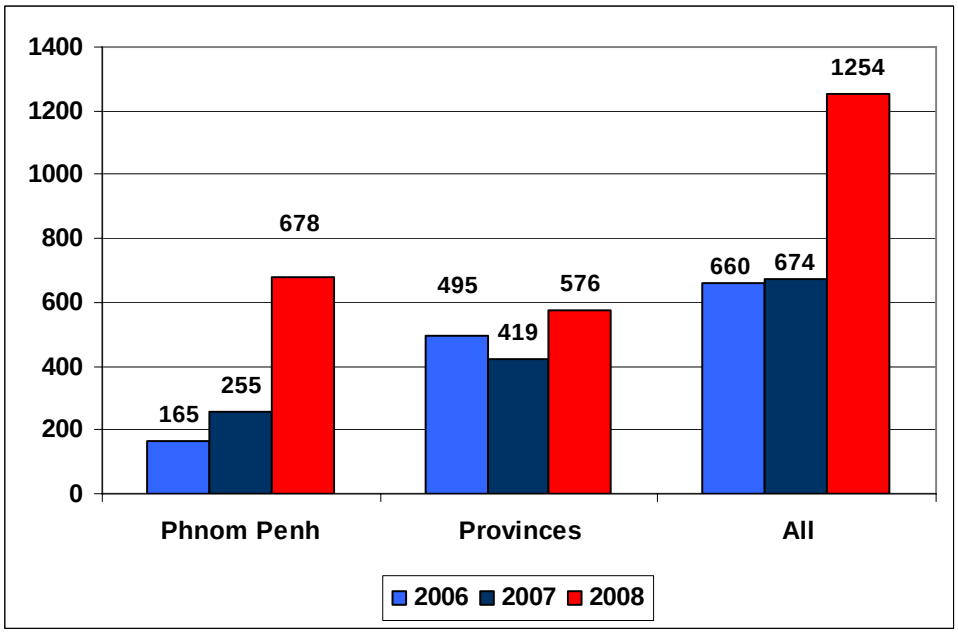
Figure 40: Percentage of motorcycle casualties by age category and helmet uses – 2008



[16] This average helmet wearing was conducted by Handicap International Belgium, during 6 days at the beginning of February 2009, at different time and locations, to measure the effectiveness of helmet wearing awareness campaigns in 2009.

Since 2006, the number of motorcycle casualties wearing a helmet **has increased 4 times in Phnom Penh** and overall **has almost doubled**.

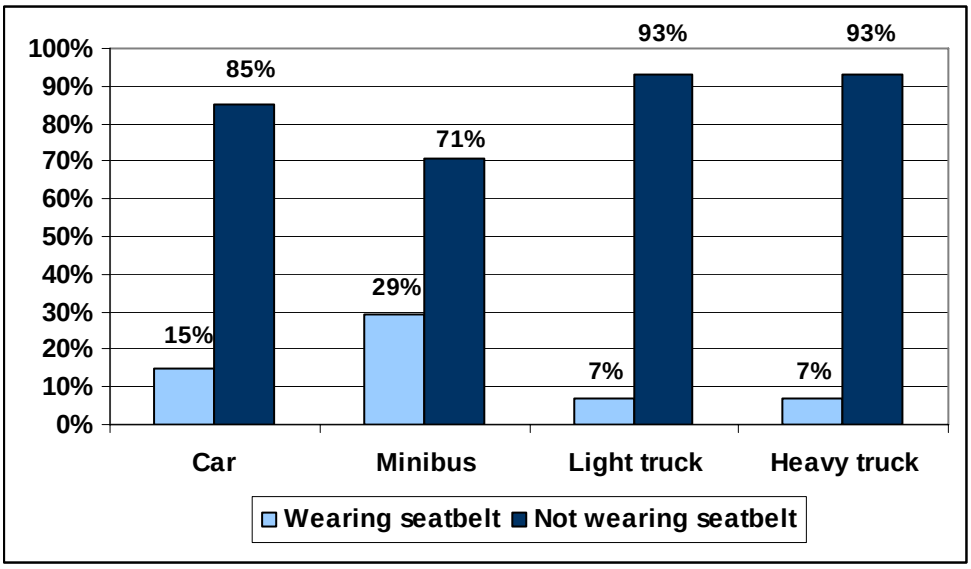
Figure 41: Number of motorcycle casualties wearing a helmet, 2006–2008



V.2.9 Seatbelt

Only 14% of 4-wheeler vehicles drivers injured in 2008 wore a seatbelt at the time of the crash. For all vehicles the percentage of drivers not wearing seatbelts was high. Minibus drivers were the most likely users of seatbelts.

Figure 42: Percentage of 4-wheeler driver wearing seatbelt – 2008



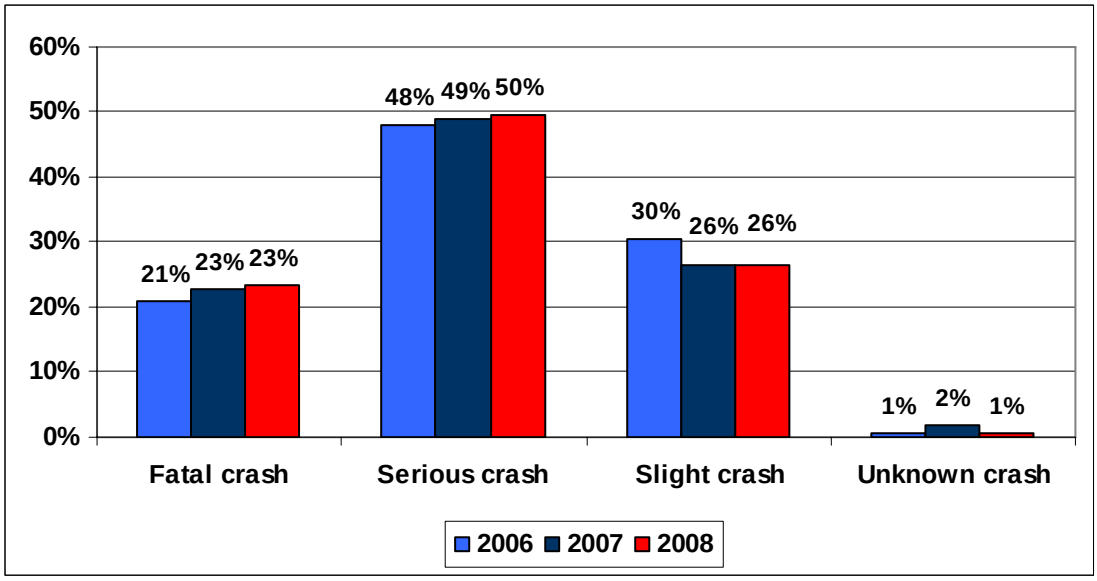
V.3 Crash Information

In 2008, **10,015 of road crashes**[17] were reported, an **increase of 11% over the previous year.** Number of vehicle involved **decreased of 2%.**

V.3.1 Severity of crash

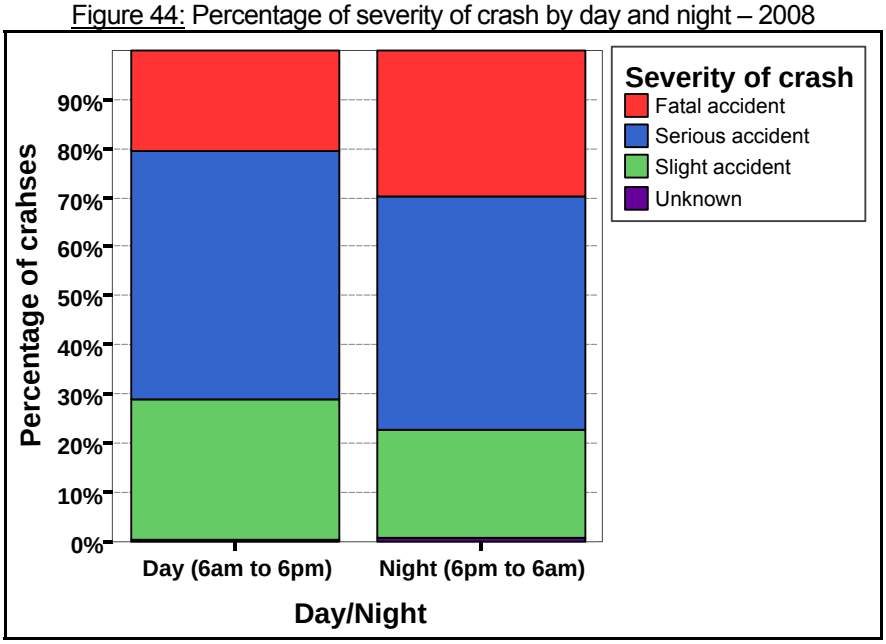
Four categories of severity were used on the data collection forms: fatal, serious, slight, and unknown crash. In 2008, serious crashes were **50%**, followed by **slight crash (26%)** and **fatal crash (23%)**. Percentages of fatal and serious crashes have been slightly increased since 2006.

Figure 43: Number of crashes by severity of crash, 2006–2008



69% of road crashes occurred during day time. The percentage of **fatal crashes** occurred during night time was higher than day time (30%, 20% respectively).

Figure 44: Percentage of severity of crash by day and night – 2008

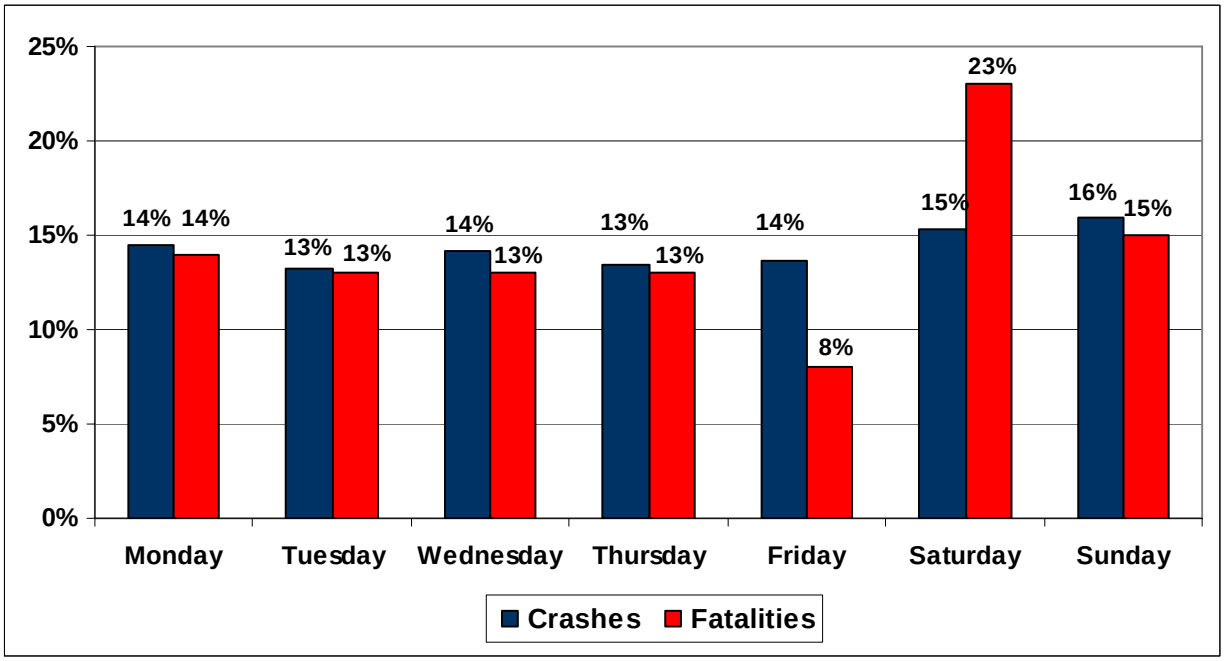


[17] The number of road crash is estimated based on data from both sources: traffic police and health facilities.

V.3.2 Day and month of crash

The peak percentages of crashes occurred on weekends, with most fatalities on Saturdays.

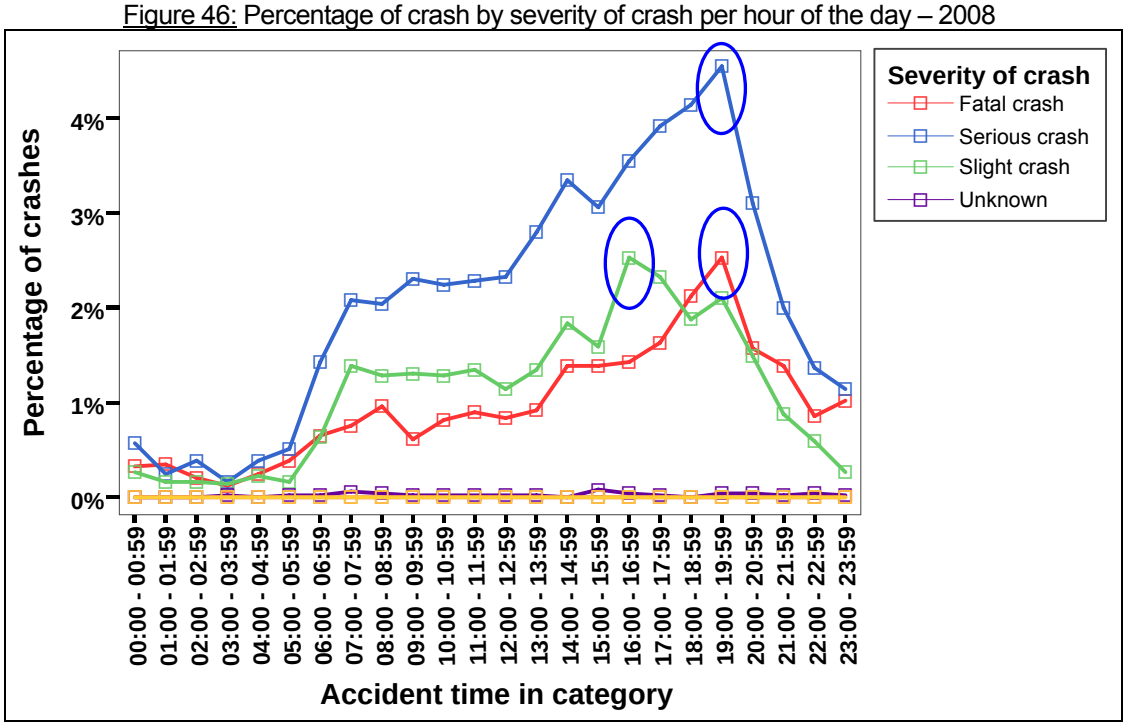
Figure 45: Percentage of crashes and fatalities by day of week – 2008



V.3.3 Time of crash

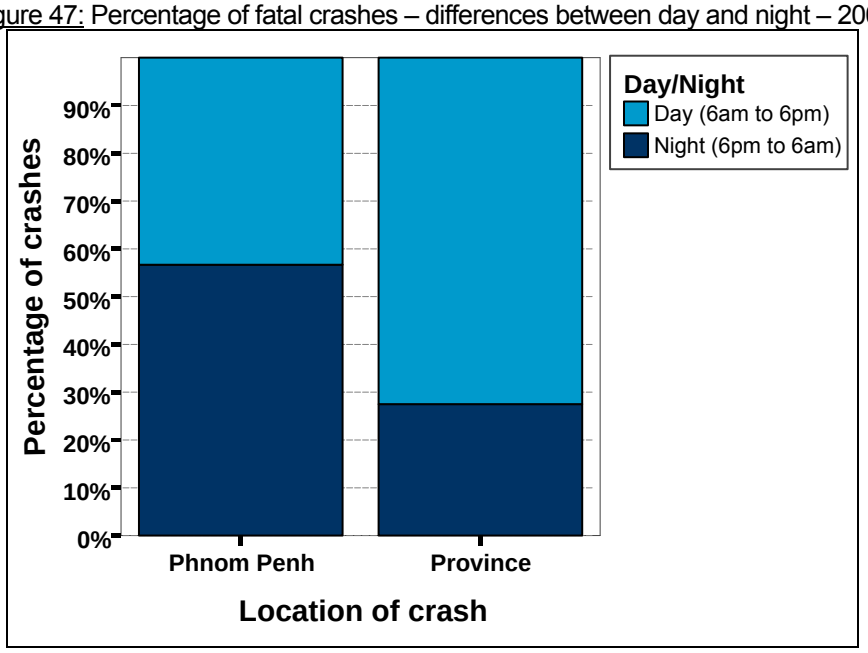
The peak of crash was observed between 5 pm and 6 pm during the week day, and between 7 pm and 8 pm during the weekend. The peak of serious and fatal crashes was occurred between 7 pm and 8 pm and slight crash was noticed between 4 pm and 5 pm.

Figure 46: Percentage of crash by severity of crash per hour of the day – 2008



A higher proportion of nighttime's fatal crashes occurred in Phnom Penh (**60%**, as compared to 35% in the rest of the country).

Figure 47: Percentage of fatal crashes – differences between day and night – 2008

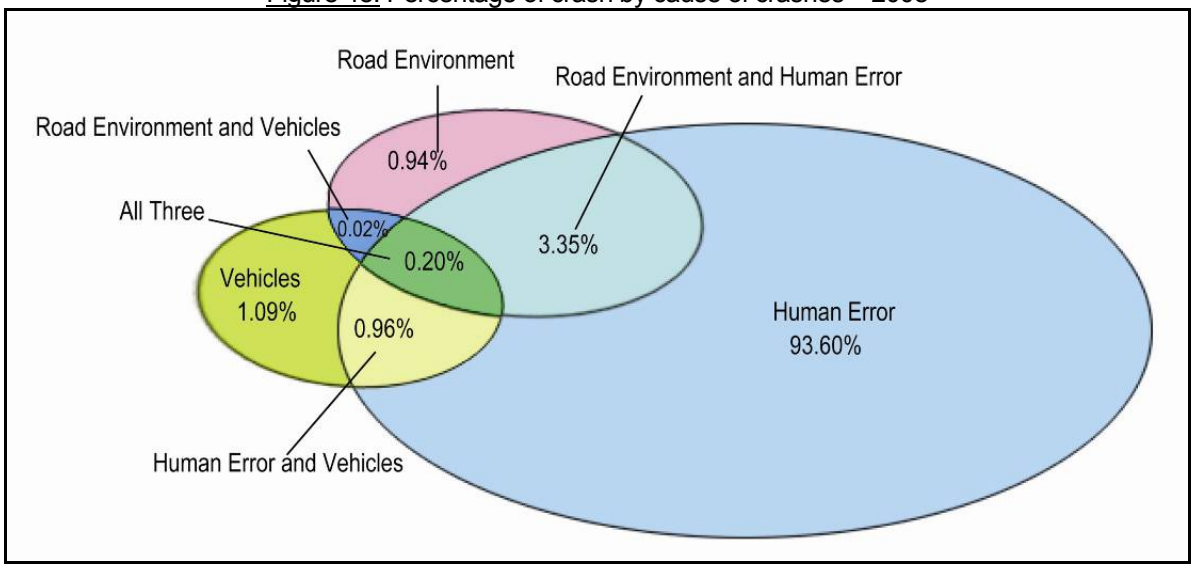


V.3.4 Causes of crash

Contributing factors are those which have directly contributed to the crash. Usually a road crash results from many causal factors. RCVIS divided causes into three categories: human error, road environment (road and weather conditions), and vehicle defects.

Human error alone was responsible for 93.60% of crashes, and in combination with the road environment, they accounted for 3.35% of road crashes. Human error in combination with vehicle defects **accounted for 0.96%** of road crashes.

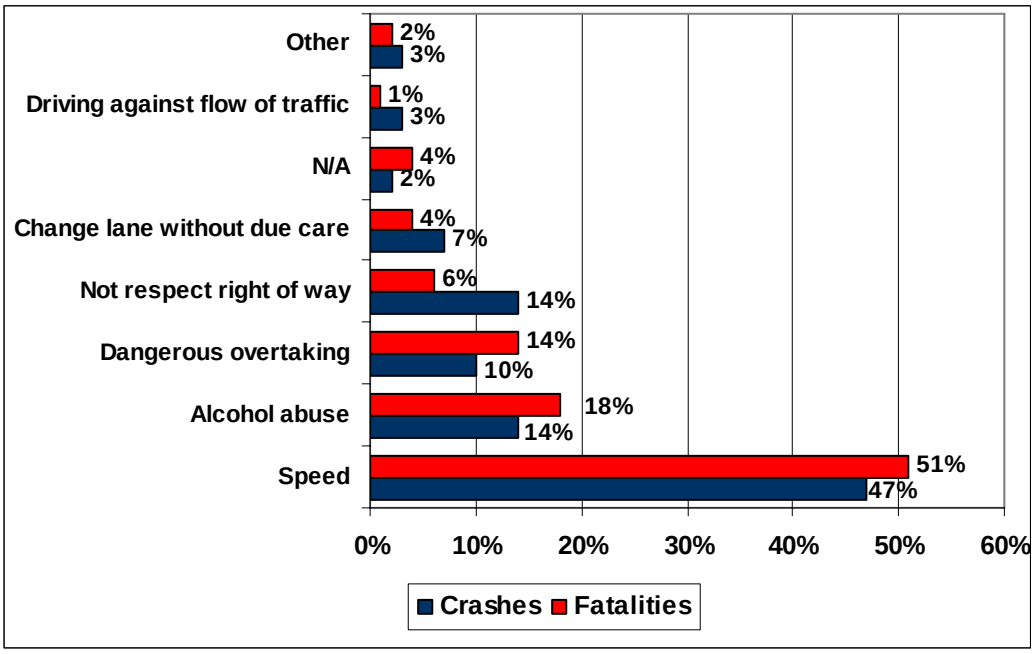
Figure 48: Percentage of crash by cause of crashes – 2008



V.3.4.1 Human error

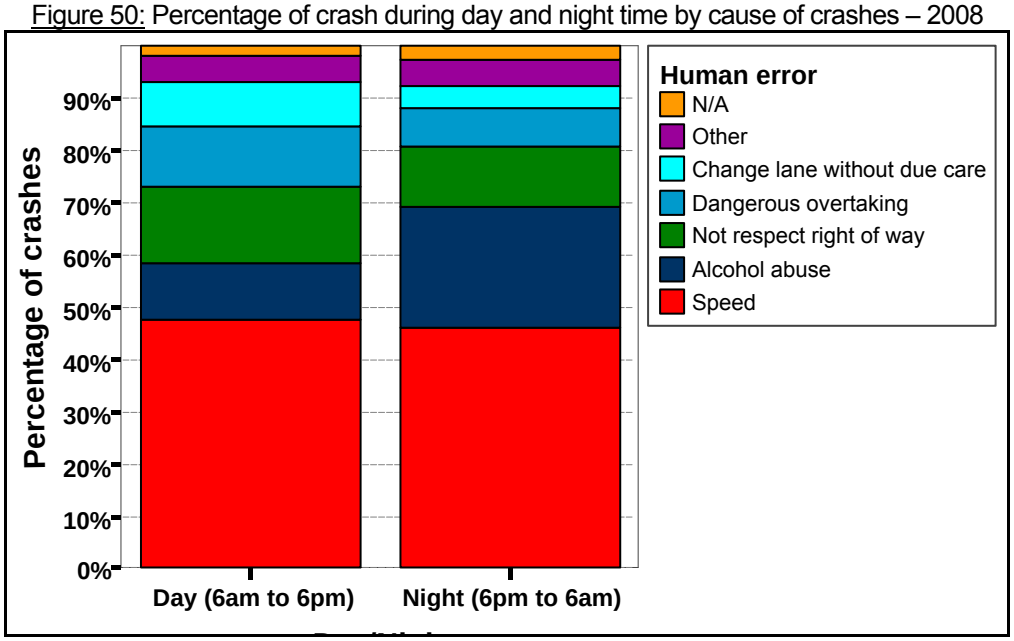
More than **50%** of fatalities were due to **speeding**, while another **18%** were caused by **alcohol abuse**. The percentages of fatalities for speed, alcohol abuse and dangerous overtaking were higher than percentages of crash, which demonstrates that a person has a higher risk of death in speed, alcohol abuse and dangerous overtaking than other kinds of human errors.

Figure 49: Percentage of crash compare to fatalities by cause of crashes – 2008



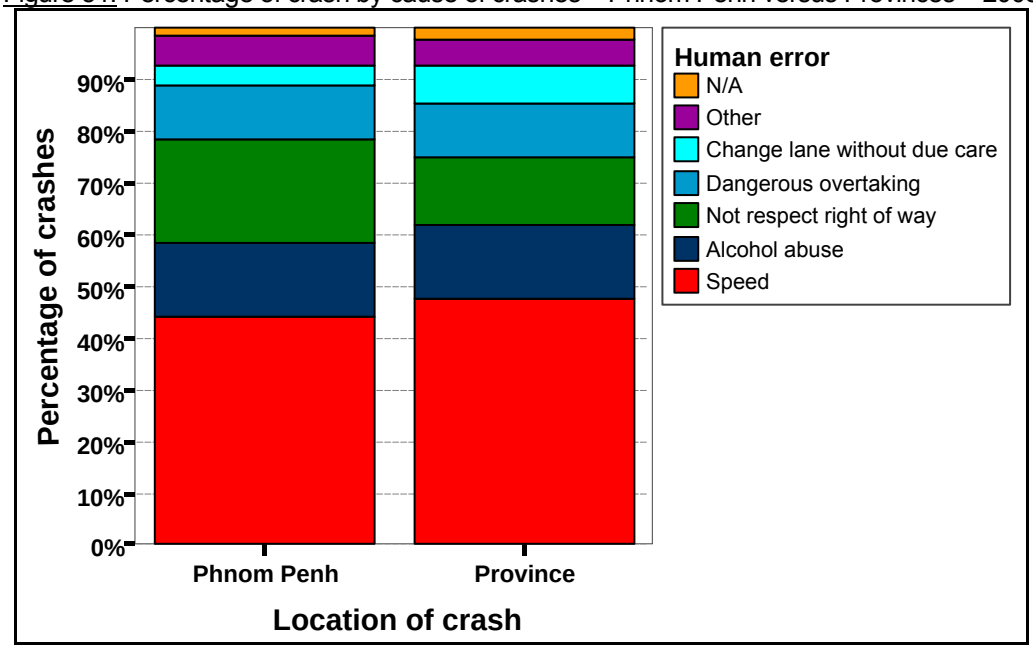
No significant differences between percentages of crashes caused by **speeding,** at night and during daytime, However, Alcohol abuse as a cause at night (20%), was double the daytime rate (10%). Not respecting right of way and dangerous overtaking were problems during day time.

Figure 50: Percentage of crash during day and night time by cause of crashes – 2008



Speeding was the main factor for causing crashes in both Phnom Penh and provinces. Crashes that were due to "not respect the right of way" shared more proportion in Phnom Penh than provinces, while crashes caused by "change lane without due care" were opposite.

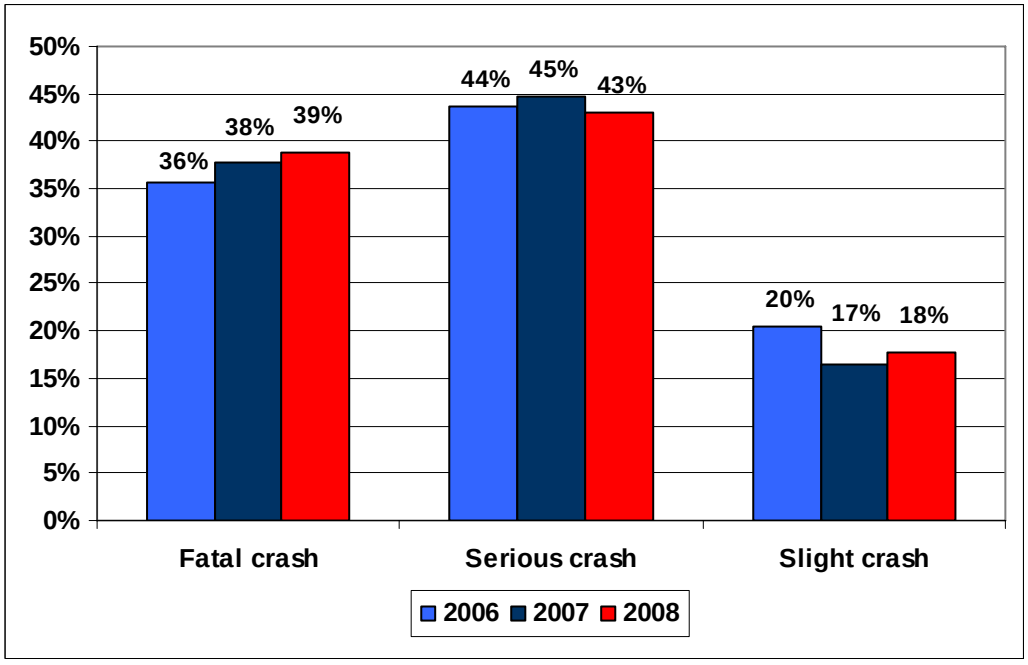
Figure 51: Percentage of crash by cause of crashes – Phnom Penh versus Provinces – 2008



V.3.5 Hit and Run

Hit and run incidents were crashes when the driver responsible intentionally escapes afterwards. In 2008, hit and run incidents represented 23% of total crashes, and **especially have been increasing among fatal crashes**.

Figure 52: Percentage of hit and run crash by severity of crash, 2006–2008



V.3.6 Type of collision

Motorbike-motorbike collisions represent 42.26% of crashes, followed by motorbike-4 wheeler collisions (17.54%), and motorbikes in single-vehicle crashes 8.66%.

Almost 35% of fatalities were killed in motorcycle and 4-wheeler collisions and other 19% in motorcycle-motorcycle collisions.

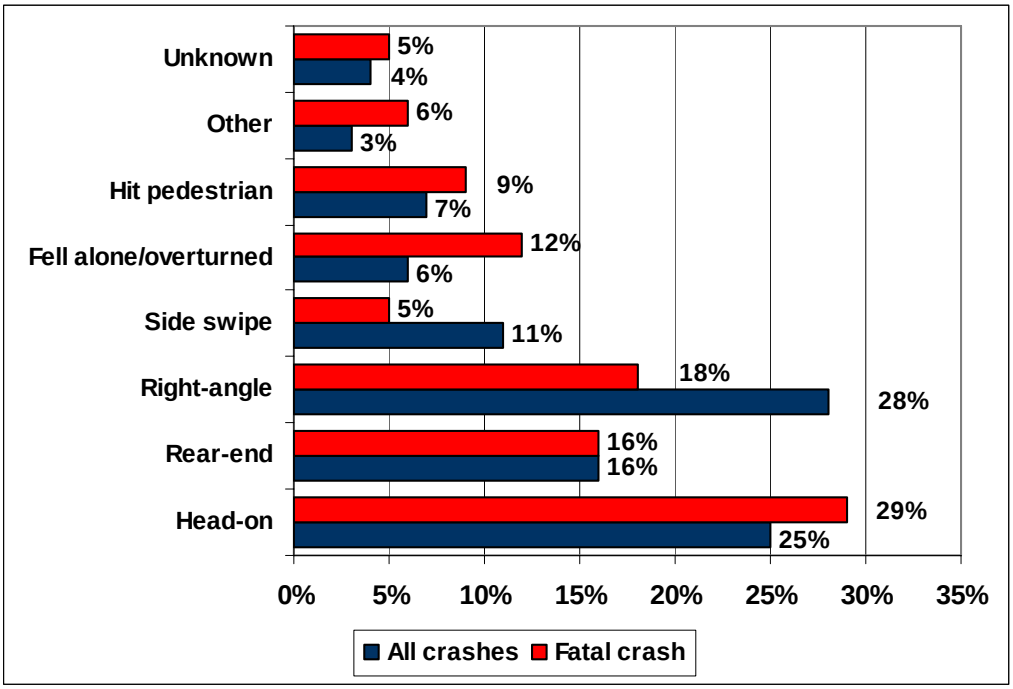
13% of fatalities were pedestrians. **More than half of them** (7.33% among 13.25%) **were killed by 4-wheeler**.

Figure 53: Percentage of fatalities by type of collisions – 2008

	Motorbike	4-wheeler	Agriculture vehicle	Bicycle	Tricycle	Remorque	Motor tricycle	Other	Total
Motorbike	18.99%								**18.99%**
4-wheeler	34.93%	3.82%							**38.75%**
Agriculture vehicle	1.54%	0.61%	0.37%						**2.52%**
Bicycle	2.71%	2.27%	0.12%	-					**5.10%**
Tricycle	-	-	-	-	-				**0.00%**
Remorque	1.05%	0.80%	-	-	-	-			**1.85%**
Motor tricycle	0.06%	0.12%	-	-	-	-	-		**0.18%**
Pedestrian	5.49%	7.33%	0.25%	0.06%	-	-	-	0.12%	**13.25%**
Stationary object	3.51%	0.98%	0.18%	-	-	0.06%	0.06%	0.25%	**5.04%**
Animal	0.74%	-	-	-	-	-	-	-	**0.74%**
Sigle vehicle collision	5.18%	5.49%	1.17%	-	-	0.18%	0.06%	0.12%	**12.20%**
Other	1.05%	0.12%	-	-	-	-	-	-	**1.17%**
Total	**75.25%**	**21.54%**	**2.09%**	**0.06%**	**0.00%**	**0.24%**	**0.12%**	**0.49%**	**100%**

Head-on crashes accounted for **25%** of the total crashes, but **29% of the fatal crashes**. **Single-vehicle collisions** accounted for **6%** of total crashes, but **12% of the fatal crashes**. **Right-angle crashes** contributed to **28%** of all crashes and **18% of the fatal crashes**.

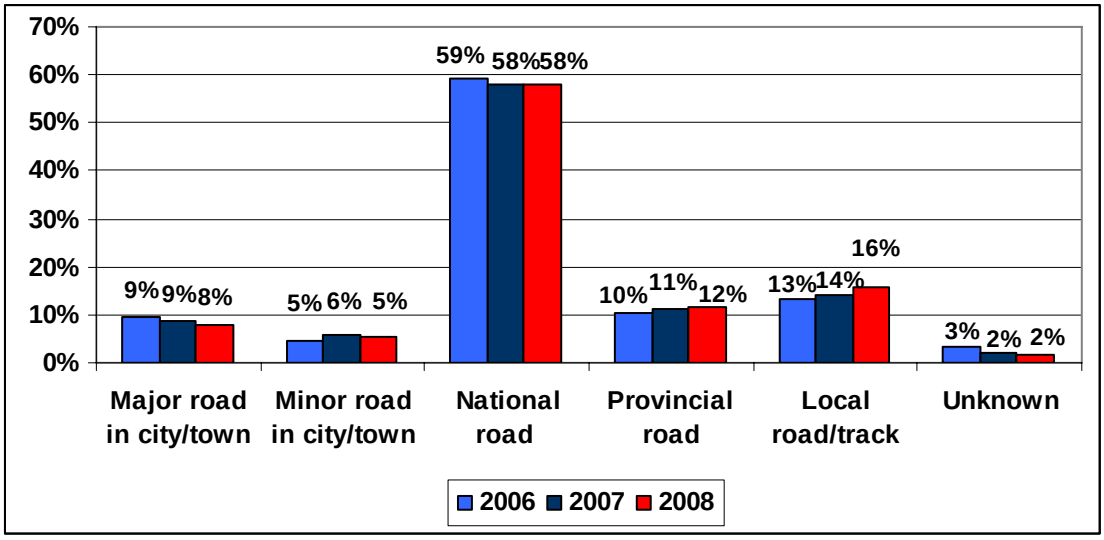
Figure 54: Percentage of crash by type of collision and severity of crash – 2008



V.3.7 Type of road

58% of crashes occurred on **national roads** in 2008, of which **27% were right-angle crashes**, 23% head-on, and 19% rear-end. The only increases were on local roads, tracks and provincial roads.

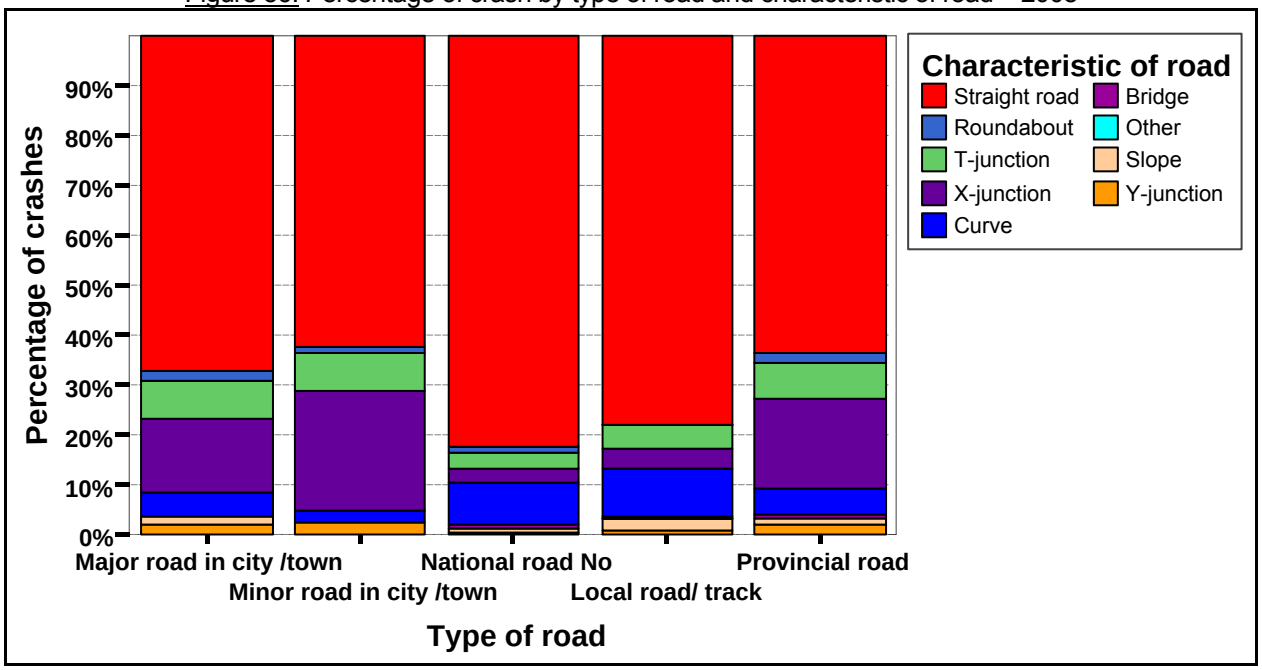
Figure 55: Percentage of crash by type of road, 2006–2008



V.3.8 Characteristic of road

77% of all crashes occurred on **straight roads**. The highest percentage of crashes at X-junctions was on minor roads in cities and towns. The percentage of fatalities at **X-junction** was higher on major roads in cities and towns, and **paved road** on national roads and provincial roads.

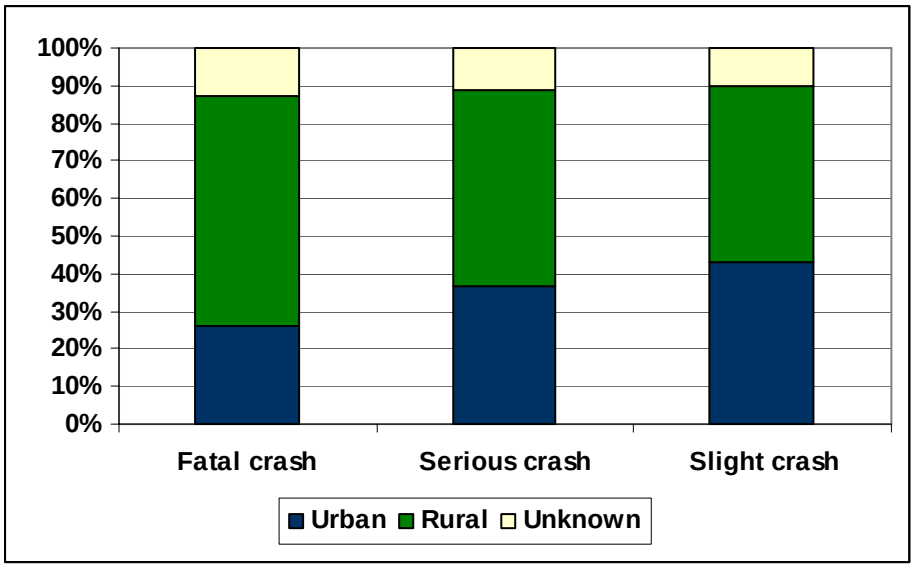
Figure 56: Percentage of crash by type of road and characteristic of road – 2008



V.3.9 Urban/rural area

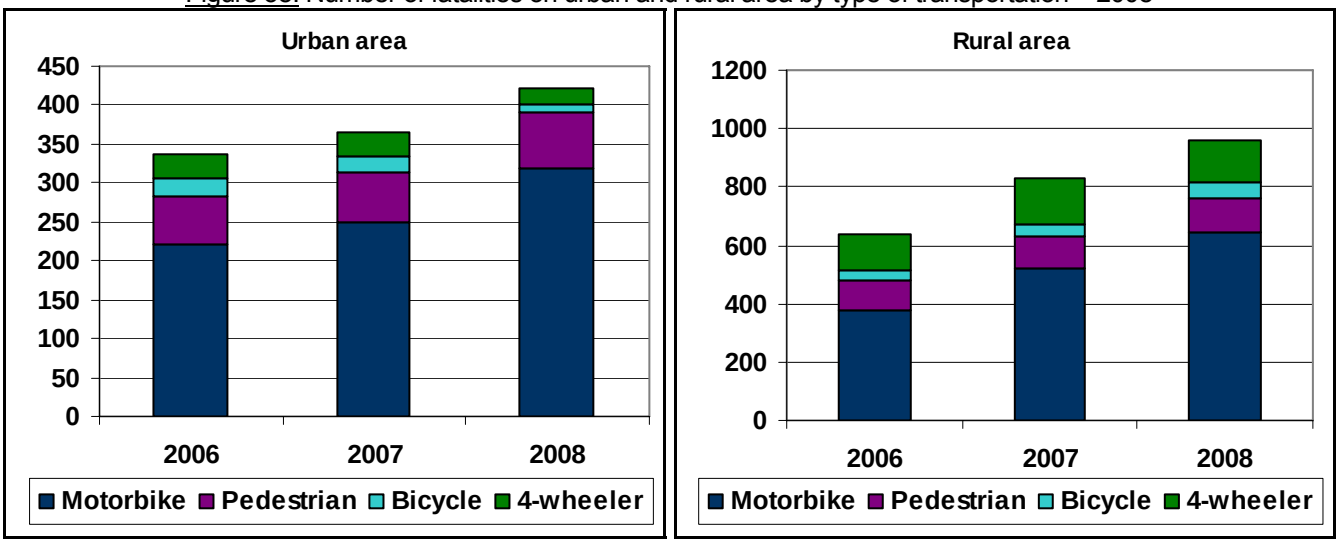
A rural area is an area excluding adjacent buildings, schools, markets, and population living along the road. **Around 60% of fatal crashes happened along rural roads.**

Figure 57: Percentage of crash by location and severity of crash – 2008



Since 2006, the number of fatalities in urban areas has increased by 25%. In 2008, motorcycle riders and pedestrians represented 89% of fatalities in urban areas. A decrease in fatalities for urban areas can be found among bicycle riders. The number of motorcycle fatalities increased by 28% from 2007 to 2008 and 40% since 2006.
In rural areas, the number of fatalities has increased by 49% since 2006. In 2008, the number of fatalities increased for almost all road users, except car riders which decreased by 9% from 2007 to 2008 and 12% since 2006.

Figure 58: Number of fatalities on urban and rural area by type of transportation – 2008



V. 4 Vehicle involved Information

During the year 2008, the total number of vehicles involved in road crashes was **21,305.**

V.4.1 Type of vehicle involved

Motorcycles were the vast majority (72%) of vehicles involved in a crash in 2008, followed by cars (12%) and bicycles (5%).

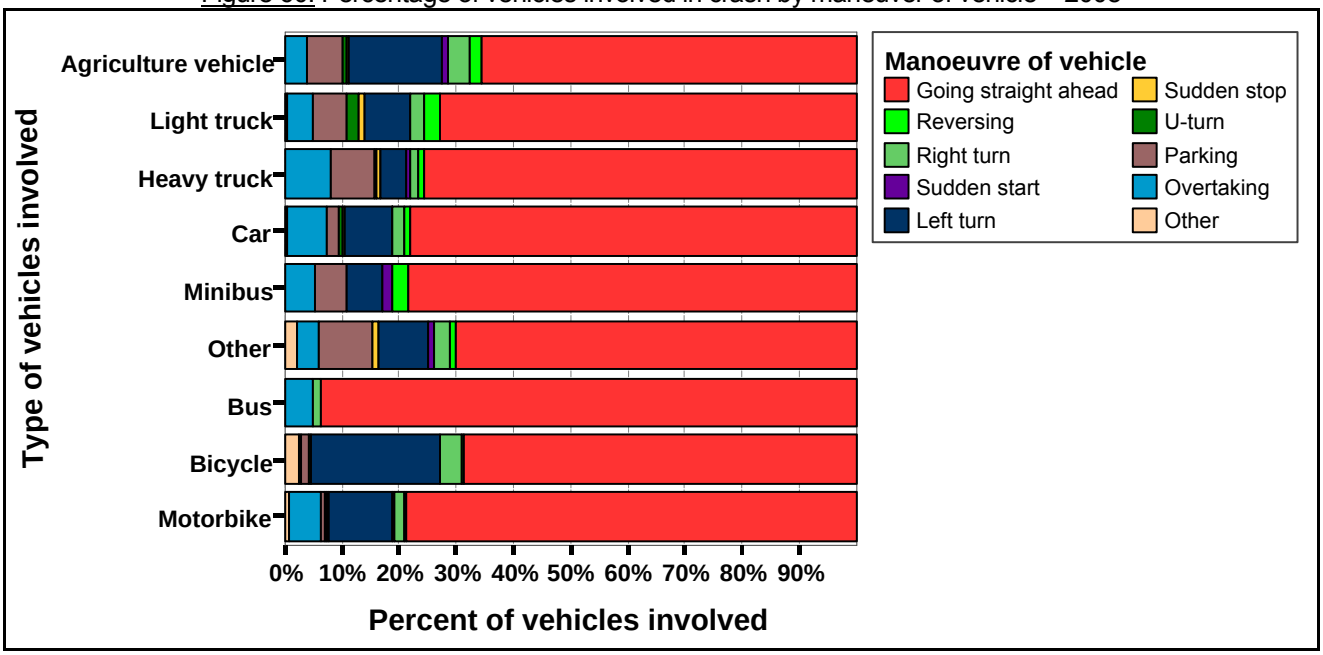
Figure 59: Number of vehicle involved in crash[18] – 2008

Type of vehicle involved	Data from traffic police only	Estimated data
Motorbike	6,616	15,378
Bicycle	444	991
Car	1,630	2,511
Minibus	126	168
Bus	77	89
Light truck	444	619
Heavy truck	543	719
Agriculture vehicle	217	307
Other	230	523
Total	**10,327**	**21,305**

V.4.2 Manoeuvre of vehicle

78% of vehicles involved in a crash occurred while going straight ahead, followed by left turn (11%) and overtaking (5%). The **percentage of left turn was much higher among bicycles**.

Figure 60: Percentage of vehicles involved in crash by maneuver of vehicle – 2008

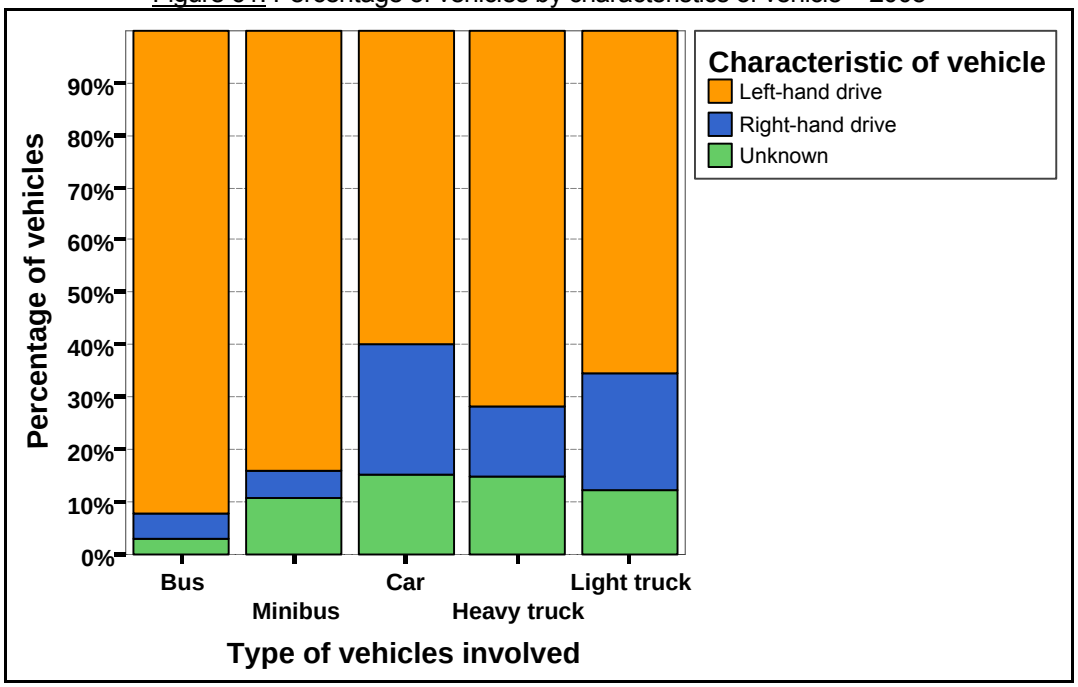


[18] It is an estimation on data from both sources: traffic police and health facilities

V.4.3 Characteristics of vehicle

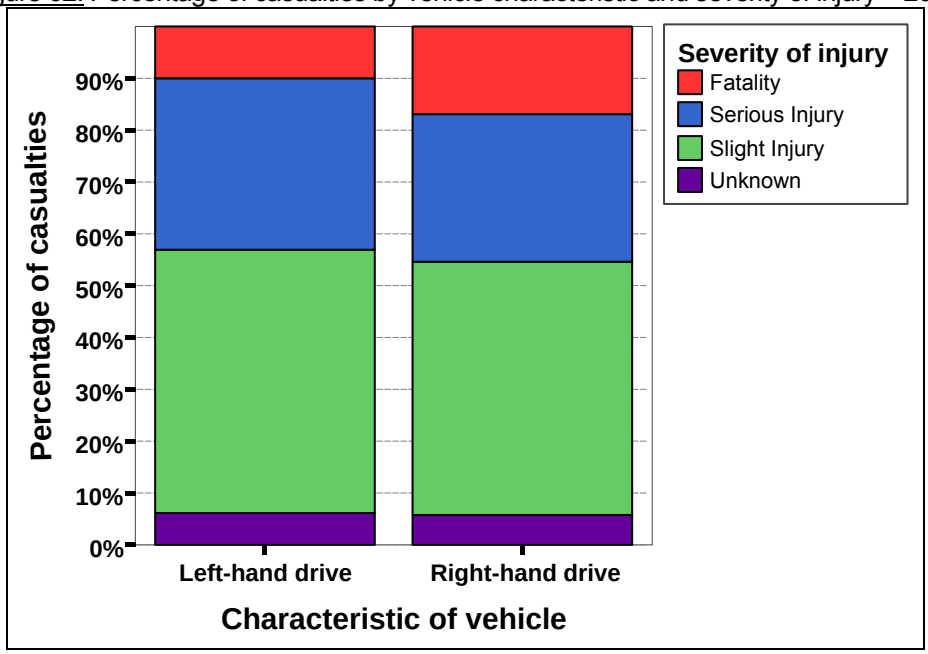
Totally, 63% of vehicles involved in crash were left-hand drive and **20% were right-hand drive.** The percentage of right-hand-drive vehicles was higher among car than other type of involved vehicle.

Figure 61: Percentage of vehicles by characteristics of vehicle – 2008



Percentage of fatality involved in right-hand drive vehicles was higher than in left-hand drive vehicles (18% vs 10%).

Figure 62: Percentage of casualties by vehicle characteristic and severity of injury – 2008



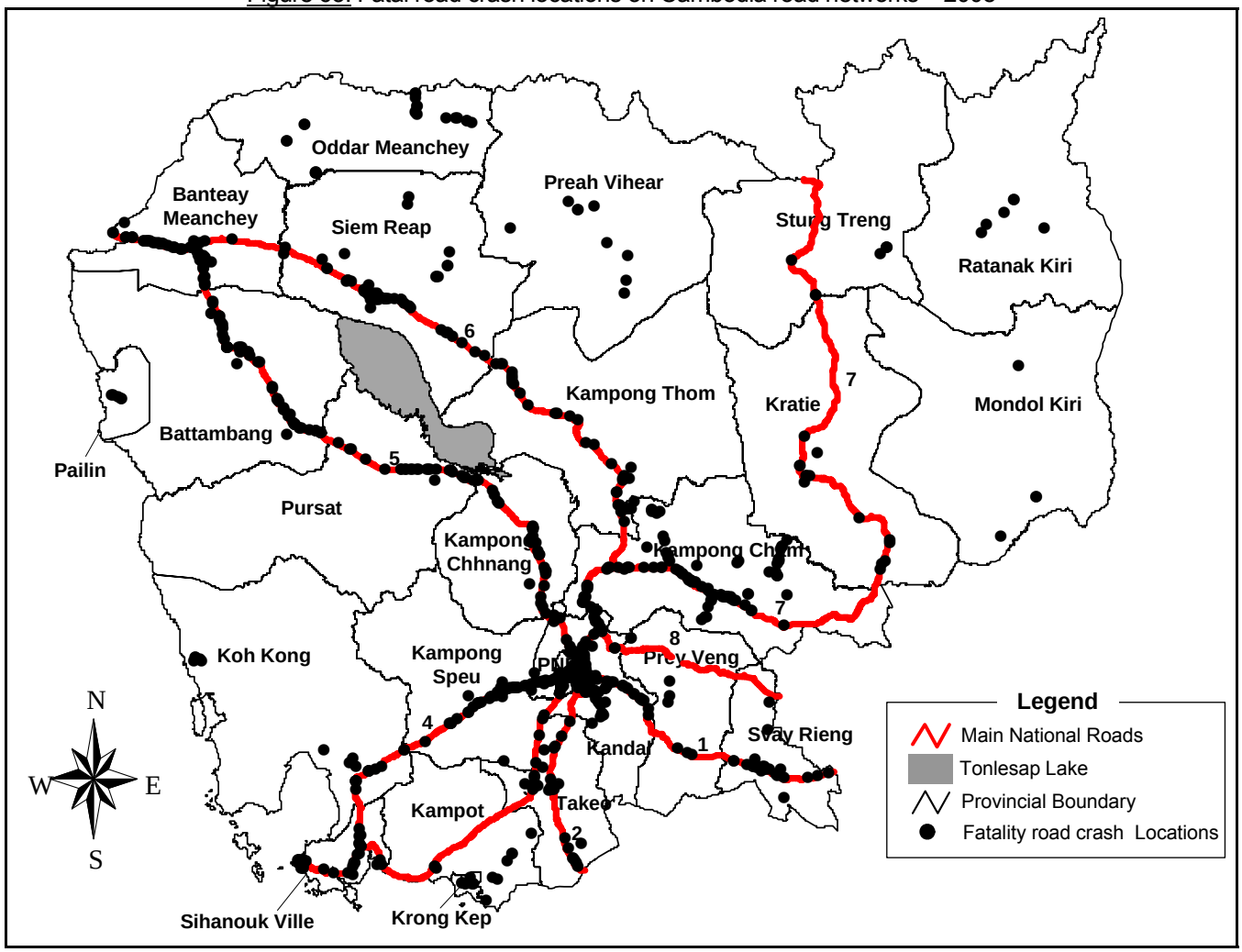
V.4.4 Black spot analysis

From July 2006, Handicap International Belgium and National Road Safety Committee decided to introduce Global Position System (GPS) devices to the traffic police in Phnom Penh and in provinces in the following year. The GPS coordinates allow us now to exactly locate crashes, using GIS data. On the medium term, this will enable RCVIS to identify on the Cambodian Road Network, the locations of crashes easily, quickly and accurately. The data has been used to identify the black spot of crashes and understand the nature of crash as well as priority actions to improve the physical condition or management of hazardous locations with a history of crashes involving death or serious injury, by implementing appropriate treatments at these locations.

Note: In Cambodia, there is no accepted definition of a 'black spot' yet. To be classified as black spots, sites are generally assessed in terms of their degree and number of crashes. The risk of a crash is not uniform throughout the road network. At certain locations the level of risk will be higher than the general level of risk in surrounding areas. Crashes will tend to be concentrated at these relatively high-risk locations. Locations which have an abnormally high number of crashes are described by the term 'black spot' locations. In this report, the term is used, to refer to sections of roads, not on a precise location such as a busy intersection[19].

The following map shows the road crashes on the Cambodia road network in 2008:

Figure 63: Fatal road crash locations on Cambodia road networks – 2008



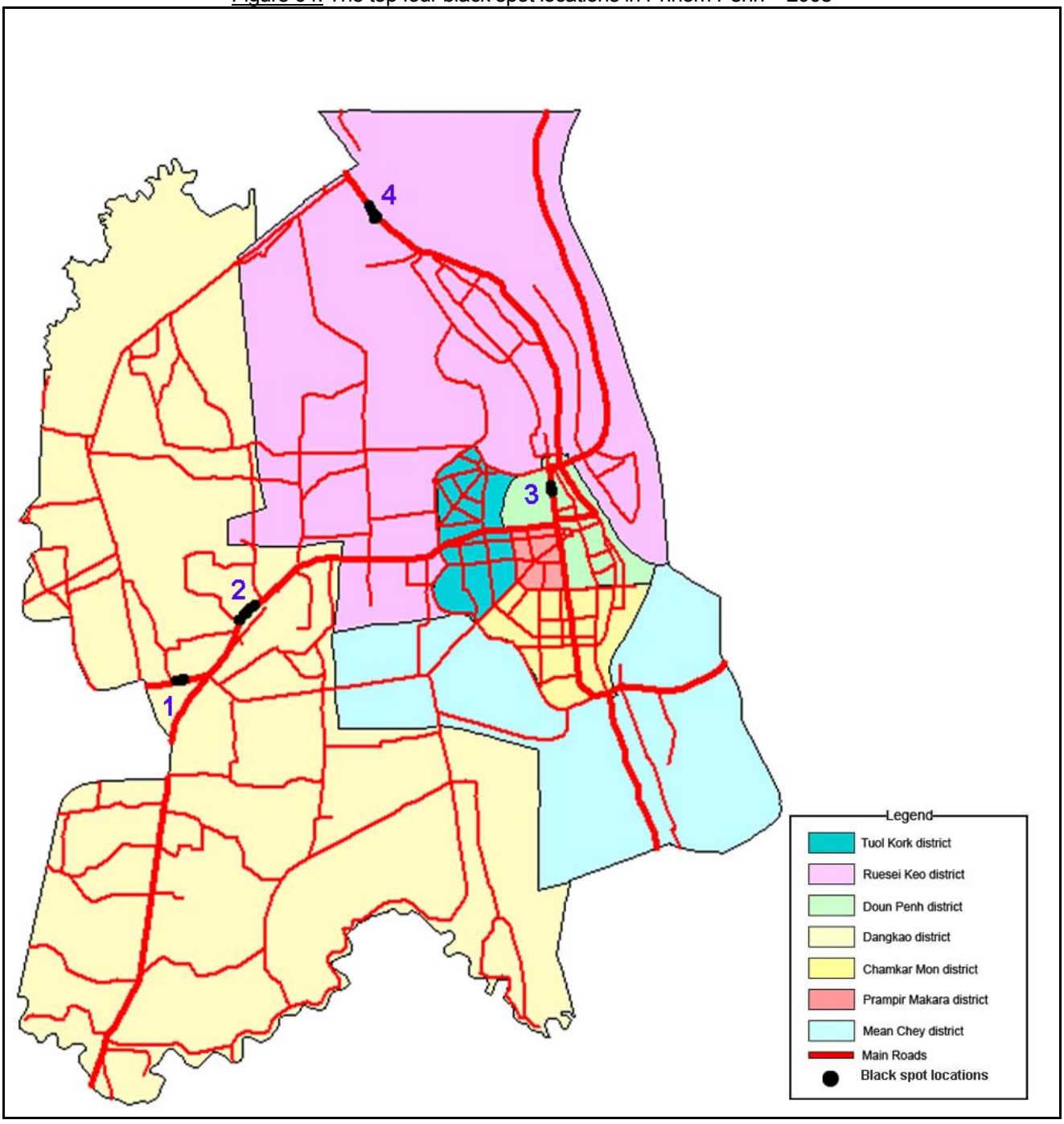
[19] Reference: Evaluation of the black spot program, Bureau of Transport and Communications Economics, Canberra May 1995

V.4.4.1 Phnom Penh

In Phnom Penh, the top four black spot locations leading fatalities and serious injuries have identified as following:

- **Location1:** Russian Blvd in Kbal Damrei village, Kakab commune, Dangkao district, Phnom Penh.
- **Location2:** National road 4, Prey Pring Cheung village, Chaom Chau commune, Dangkao district, Phnom Penh
- **Location3:** Monivong Blvd near Calemet hospital, Srah Chak commune, Doun Penh district, Phnom Penh.
- **Location4:** National road 5 in Lu village, Svay Pak commune, Ruessei Keo district, Phnom Penh.

Figure 64: The top four black spot locations in Phnom Penh – 2008



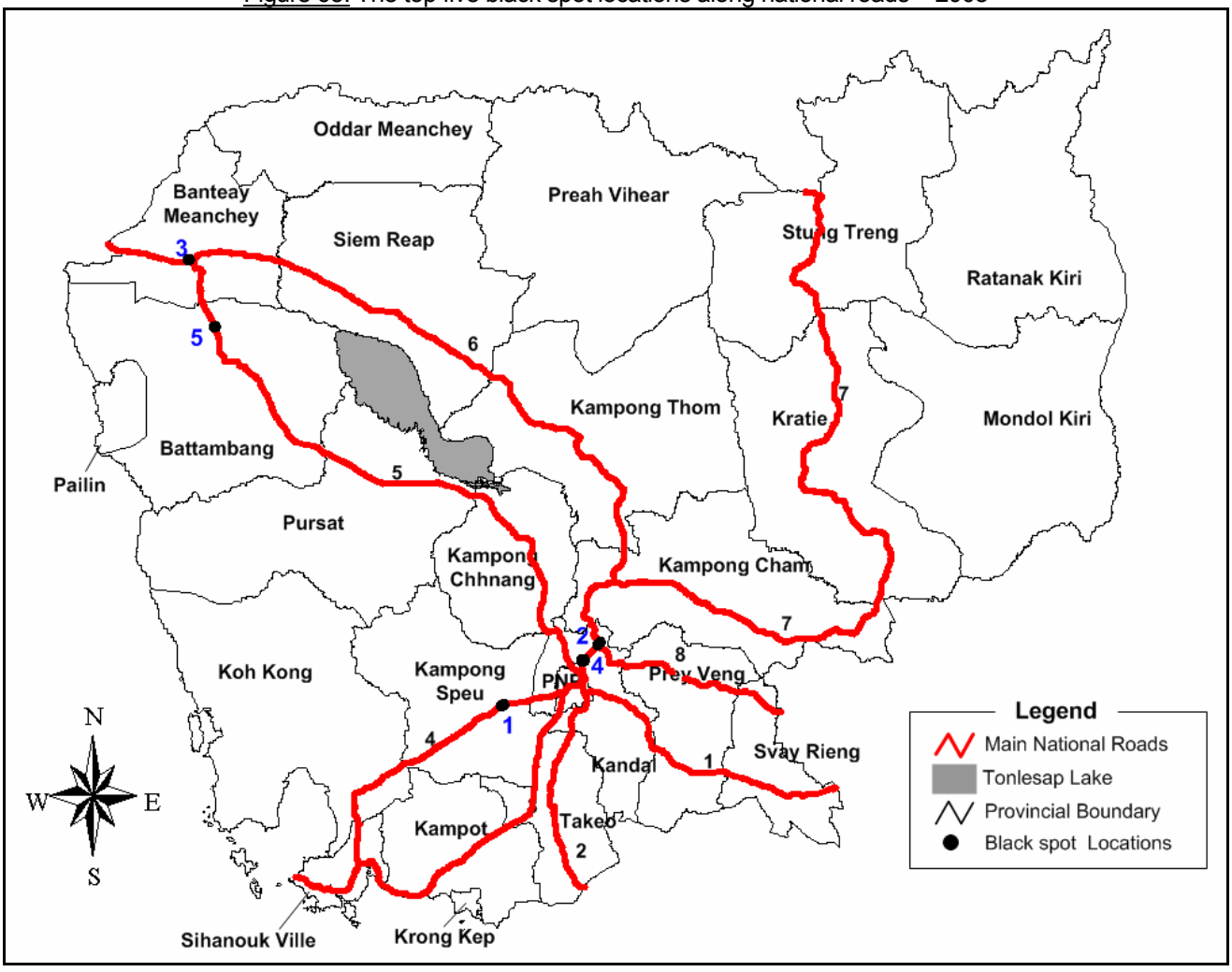
See more detail information on black spots in annex.

V.4.4.2 Outside Phnom Penh

In 2008, the top five black spot locations along national roads have been identified and ranged based on number of fatalities and crashes involved. Those 5 locations:

- **Location1:** National Road 4, Samnang village, Roka Thum commune, Chbar Mon district, Kampong Speu province.
- **Location2**: National Road 6A, Kao Roka village, Preaek Anhchanh commune, Mukh Kampoul district, Kandal province.
- **Location3:** National Road 5, Ou Ambel village, Ou Ambel commune, Serei Saophoan district, Banteay Meanchey province.
- **Location4:** National Road 6A, Bak Khaeng Leu village, Bak Khaeng commune, Mukh Kampoul district, Kandal province.
- **Location5:** National Road 5, Paoy Yong village, Tapong commune, Thma Koul district, Battambang Province.

Figure 65: The top five black spot locations along national roads – 2008



See more detail information on black spots in annex.

VI. Next step

Injury Surveillance System

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 issues[20]. In 2009, several workshops will be organized by the Ministry of Health, HIB and other interested stakeholders to **extend the data collection system set up for RCVIS to other types of injuries**, such as falls, drowning, and domestic violence.

Hand over the database management to stakeholders

RCVIS database is currently managed by HIB. To ensure its sustainability, the management of the system will be progressively handed over to designated staffs of the General Secretariat of the National Road Safety Committee (GSNRSC), Ministry of Interior (MoI) and Ministry of Health (MoH) in 2009. Appropriate training will be given in the beginning of 2009 and detailed guidelines and procedures will be provided by HIB to manage the database to the stakeholders.

[20] The Demographic and Health Survey performed in 2005 in Cambodia estimated that road traffic injuries represent 45.9% of injuries, followed by falls from tree/building (14.2%).

Appendix

Annex1: Evolution of data during the years[21]

	2007						2008					
Accident information	**Phnom Penh**		**Provinces**		**Country level**		**Phnom Penh**		**Provinces**		**Country level**	
Number of accidents	**1,267**		**7,727**		**8,994**		**1,202**		**8,813**		**10,015**	
Number of vehicle involved	**4,928**		**16,753**		**21,681**		**4,791**		**16,514**		**21,305**	
Percentage of vehicle involved												
Bicycle	4%	203	5%	810	5%	1,013	4%	186	5%	805	5%	991
Motorbike	80%	3,954	72%	12,045	74%	15,999	83%	3,852	70%	11,526	72%	15,378
Car	13%	619	11%	1,921	12%	2,540	10%	464	12%	2,047	12%	2,511
Minibus	0%	12	1%	241	1%	253	0%	2	1%	166	1%	168
Bus	0%	0	1%	128	1%	128	0%	0	1%	89	0%	89
Light truck	1%	51	3%	454	2%	505	1%	60	3%	559	3%	619
Heavy truck	1%	26	2%	369	2%	395	2%	116	4%	603	3%	719
Agriculture vehicle	0%	0	2%	318	1%	318	0%	0	2%	307	1%	307
Other	1%	63	3%	467	2%	530	2%	111	2%	412	2%	523
Day of accident												
Percentage of accidents occured during the weekend (from Friday 6 pm to Sunday midnight)	41%	519	35%	2,704	36%	3,224	43%	517	35%	3,085	36%	3,601
Time of accident												
Percentage of accidents occured during nighttime (from 6 pm to 5.59 am)	53%	672	29%	2,241	32%	2,912	57%	685	28%	2,468	31%	3,153
Peak(s) of accident	7pm-8pm		7pm-8pm		7pm-8pm		10pm-12pm		6pm-8pm		7pm-8pm	
Cause of accident												
Percentage of accidents occurred due to human error	**98%**	**1,242**	**96%**	**7,418**	**96%**	**8,660**	**99%**	**1,190**	**98%**	**8,637**	**98%**	**9,827**
High speed	45%	570	48%	3,709	48%	4,279	44%	529	48%	4,230	48%	4,759
Alcohol abuse	15%	190	15%	1,159	15%	1,349	14%	168	14%	1,234	14%	1,402
Non respect of rights of way rules	10%	127	13%	1,005	13%	1,131	20%	240	13%	1,146	14%	1,386
Dangerous overtaking	14%	177	9%	695	10%	873	10%	120	10%	881	10%	1,002
Changing lane without due care	5%	63	6%	464	6%	527	4%	48	8%	705	8%	753
Driving against flow of traffic	7%	89	2%	155	3%	243	4%	48	2%	176	2%	224
Other	2%	25	3%	232	3%	257	3%	36	3%	264	3%	300
Percentage of accidents due to vehicle defect	**1%**	**13**	**3%**	**232**	**3%**	**244**	**1%**	**12**	**2%**	**176**	**2%**	**188**
Percentage of accidents due to road conditions	**1%**	**13**	**5%**	**386**	**4%**	**399**	**0%**	**0**	**4%**	**353**	**4%**	**353**
Percentage of accidents due to weather conditions	**0%**	**0**	**2%**	**155**	**2%**	**155**	**1%**	**12**	**1%**	**88**	**1%**	**100**
Type of collision												
Head-on	22%	279	24%	1,854	24%	2,133	32%	385	25%	2,203	26%	2,588
Rear-end	10%	127	15%	1,159	14%	1,286	10%	120	16%	1,410	15%	1,530
Right-angle	23%	291	25%	1,932	25%	2,223	32%	385	27%	2,380	28%	2,764
Side-swipe	10%	127	11%	850	11%	977	5%	60	11%	969	10%	1,030
Fell alone	1%	13	7%	541	6%	554	1%	12	6%	529	5%	541
Hit pedestrain	8%	101	10%	773	10%	874	5%	60	7%	617	7%	677
Hit and Run accidents	23%	291	21%	1,623	20%	1,914	27%	325	22%	2,058	24%	2,382
Percentage of four-wheeled vehicles with												
Left-hand-drive	62%	439	58%	1,806	59%	2,245	72%	298	62%	1,486	63%	1,784
Right-hand-drive	10%	71	26%	809	23%	880	8%	31	22%	534	20%	566
Percentage of accidents occurred in urban areas	27%	342	34%	2,627	31%	2,969	27%	325	22%	1,939	23%	2,263
Type of road												
Percentage of accidents occurring on national roads	23%	291	64%	4,945	55%	5,237	21%	252	63%	5,552	58%	5,805
Percentage of accidents occuring on provincial roads	0%	0	13%	1,005	11%	1,005	0%	0	13%	1,146	11%	1,146
Percentage of accidents occuring on local/track roads	2%	26	16%	1,236	13%	1,263	1%	12	18%	1,586	16%	1,598
Percentage of accident occuring on paved roads	95%	1,257	75%	5,795	75%	7,052	98%	1,178	75%	6,610	78%	7,788
Characteristics by type of road												
Percentage of accidents occuring on straight roads	70%	887	76%	5,873	72%	6,759	73%	877	77%	6,786	77%	7,663
Percentage of accidents occuring on junctions (X, T, Y- junctions and roundabout)	26%	344	15%	1,159	16%	1,503	25%	301	14%	1,234	15%	1,534
Percentage of accidents occuring on curves	3%	40	8%	618	7%	658	1%	12	8%	705	7%	717

[21] The numbers of crashes and vehicles involved for 2007 and 2008 are estimated based on data from both sources: traffic police and health facilities.

	2007						2008					
Victim information	**Phnom Penh**		**Provinces**		**Country level**		**Phnom Penh**		**Provinces**		**Country level**	
Number of casualties	**6,395**		**21,008**		**27,403**		**6,137**		**19,659**		**25,796**	
Severity of injuries												
Percentage of deaths	5%	298	6%	1,247	6%	1,545	5%	297	7%	1,341	6%	1,638
Percentage of severely injured casualties (requiring chirurgical intervention of ICU)	23%	1,497	27%	5,653	26%	7,150	21%	1,312	30%	5,914	28%	7,226
Percentage of slight injury casualties	68%	4,314	63%	13,341	64%	17,655	70%	4,287	62%	11,698	62%	15,985
Percentage of gender												
Male	71%	4,563	73%	15,384	73%	19,947	73%	4,470	74%	14,468	73%	18,938
Female	28%	1,791	26%	5,516	27%	7,307	27%	1,640	26%	5,092	26%	6,732
Percentage of casualities' age												
0-4	3%	210	3%	618	3%	828	3%	203	3%	587	3%	790
5-9	5%	283	6%	1,114	5%	1,397	5%	278	5%	859	4%	1,137
10-14	3%	197	3%	668	3%	865	3%	194	3%	606	3%	800
15-19	10%	626	10%	2,108	10%	2,734	9%	556	11%	2,060	10%	2,616
20-24	21%	1,295	18%	3,647	18%	4,942	21%	1,281	18%	3,532	19%	4,813
25-29	30%	1,913	23%	4,772	24%	6,685	29%	1,775	24%	4,608	25%	6,383
30-34	7%	466	7%	1,505	7%	1,971	9%	514	7%	1,398	7%	1,912
35-39	6%	390	9%	1,851	8%	2,241	6%	376	8%	1,497	7%	1,873
40-44	5%	285	7%	1,352	6%	1,637	5%	272	6%	1,188	6%	1,460
>=45	10%	637	14%	3,073	14%	3,710	10%	602	15%	3,065	14%	3,667
Percentage of type of road user												
Drivers	57%	3,659	52%	10,997	53%	14,656	62%	3,785	56%	10,918	57%	14,703
Passengers	34%	2,157	38%	7,907	37%	10,064	30%	1,840	35%	6,941	34%	8,781
Pedestrains	8%	486	8%	1,636	8%	2,122	7%	437	8%	1,482	7%	1,919
Percentage of casualties by type of transport												
Motorbike riders	83%	5,310	72%	15,048	74%	20,358	84%	5,167	75%	14,712	77%	19,879
Car riders (under or equal 9 seat)	3%	181	7%	1,399	6%	1,580	3%	171	6%	1,151	5%	1,322
Bicycle riders	3%	193	5%	992	4%	1,185	4%	218	4%	824	4%	1,042
Percentage of casualties occupation												
Students	29%	1,867	20%	4,192	22%	6,059	34%	1,875	20%	3,721	22%	5,596
Farmers	3%	180	31%	6,460	24%	6,640	3%	147	34%	6,327	25%	6,474
Workers	25%	1,597	17%	3,523	19%	5,120	28%	1,562	18%	3,327	19%	4,889
House keepers	8%	485	5%	1,006	5%	1,491	7%	409	4%	810	5%	1,219
Vendors/small businesses owners	6%	390	5%	1,095	5%	1,485	8%	460	5%	919	5%	1,379
Childs	3%	212	3%	626	3%	838	4%	203	3%	592	3%	795
Motorbike taxis	4%	283	4%	777	4%	1,060	4%	221	3%	589	3%	810
Safety Measures												
Percentage of car/truck/bus drivers having a driving licence	58%	38	48%	175	50%	213	50%	29	46%	147	46%	176
Percentage of motorbike casualties wearing a helmet	5%	258	3%	427	3%	685	13%	684	4%	590	6%	1,274
Percentage of motorbike casualties suffering from cranial trauma	42%	1,704	37%	3,345	40%	5,049	43%	1,812	45%	3,465	44%	5,277
Time to transfer casualties to hospital												
Less than 10 minute after the accident	3%	152	3%	311	3%	463	4%	168	2%	190	3%	358
Between 10 and 30 minutes after the accident	45%	2,076	28%	3,148	33%	5,224	48%	2,269	23%	2,105	37%	4,374
Between 30 minutes and 1 hour after the accident	19%	891	15%	1,676	16%	2,567	18%	871	15%	1,332	16%	2,203
Between 1 hour and 2 hours after the accident	11%	508	16%	1,791	14%	2,299	13%	612	16%	1,395	13%	2,007
More than 2 hours after the accident	21%	967	39%	4,421	34%	5,388	17%	834	44%	3,994	31%	4,828
Ways to transfer casualties to hospital												
By ambulance	31%	1,525	21%	2,601	26%	4,126	29%	1,445	26%	2,627	27%	4,072
By their private transportation	62%	2,998	70%	8,640	74%	11,638	65%	3,221	64%	6,537	64%	9,758
Estimation of average cost of treatment	156 USD		99 USD		118 USD		167 USD		161 USD		163 USD	

Annex2: *Number of casualties reported at health facilities*

	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Total number of casualties reported by hospitals	**1,361**	**1,215**	**1,306**	**1,591**	**1,204**	**1,263**	**1,355**	**1,082**	**1,197**	**1,107**	**1,242**	**1,236**	**15,159**
Number of casualties reported at Banteay Mean Chey hospitals:	**11**	**19**	**16**	**16**	**1**	**4**	**1**	**5**	**19**	**1**	**5**	**2**	**100**
Malai health center	0	1	1	2	0	0	0	0	0	0	0	0	4
Mongkol Borei referral hospital	10	11	12	0	0	0	0	0	0	0	0	0	33
Ou Ampil health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Ou Chrov referral hospital	0	5	3	14	1	3	0	4	19	1	0	0	50
Phnom Leap health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Phnom Toch health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Russei Kraok II health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Srah Chik health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Serey Sophorn health center	1	2	0	0	0	1	1	1	0	0	5	2	13
Number of casualties reported at Battambang hospitals:	**77**	**56**	**66**	**77**	**79**	**57**	**69**	**73**	**42**	**56**	**39**	**34**	**725**
Battambang provincial hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Center	77	56	66	77	79	57	69	73	42	56	39	34	725
Number of casualties reported at Kampong Cham hospitals:	**156**	**173**	**180**	**196**	**117**	**143**	**156**	**70**	**46**	**85**	**100**	**135**	**1557**
Ampil Tapok health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Chamkar Leu referral hospital	18	17	16	14	18	15	6	13	3	14	14	23	171
Cheung Prey referral hospital	8	18	14	18	19	12	22	3	12	13	14	22	175
Chikor-Mong Riev health center	3	0	0	0	0	0	0	0	0	0	0	0	3
Chiro Pir health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Kampong Cham provincial hospital	33	39	43	42	14	26	38	20	0	9	34	16	314
Kau Sou Tapav health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Kor health center	0	0	0	3	0	0	0	0	0	0	0	0	3
Kro La health center	0	0	0	0	1	0	2	0	0	0	0	0	3
Kroch Chhmar referral hospital	1	0	0	0	1	0	0	0	0	0	0	3	5
Memot referral hospital	41	33	55	36	28	40	30	14	16	13	14	17	337
Ou Reang Ouv referral hospital	12	8	12	11	9	3	2	0	0	0	0	0	57
Ponhea Krek referral hospital	5	15	12	14	0	9	19	6	0	0	0	12	92
Prey Chhor referral hospital	4	4	4	10	6	3	6	2	0	4	5	4	52
Rokar Po Pram II health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Sla health center	0	0	0	0	0	0	0	0	4	6	0	0	10
Srae Spey health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Srey Santhor referral hospital	10	16	9	17	4	10	8	3	6	13	5	6	107
Tboung Kmum referral hospital	21	23	15	31	17	25	23	9	5	12	13	31	225
Thmar Totung health center	0	0	0	0	0	0	0	0	0	1	1	1	3
Thnol Kaeng health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Trapeang Preh health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of casualties reported at Kampong Chhnang hospitals:	**34**	**61**	**69**	**113**	**60**	**56**	**54**	**54**	**59**	**49**	**58**	**62**	**729**
Kampong Chhnang referral hospital	28	31	46	41	30	36	29	37	35	32	45	45	435
Kampong Tralach referral hospital	6	30	23	72	30	20	25	17	24	17	13	17	294
Number of casualties reported at Kampong Speu hospitals:	**3**	**14**	**35**	**37**	**26**	**30**	**35**	**31**	**14**	**14**	**0**	**0**	**239**
Angk Popel health center	0	0	0	0	0	0	3	0	0	0	0	0	3
Dom Khvit health center	0	0	0	0	2	0	0	0	0	0	0	0	2
Kampong Speu provincial hospital	0	7	35	26	24	26	30	31	14	14	0	0	207
Kong Pisei referral hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Odongk referral hospital	3	7	0	11	0	4	0	0	0	0	0	0	25
Pechr Muni health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Toul Sala Svay Chocheb health	0	0	0	0	0	0	2	0	0	0	0	0	2
Number of casualties reported at Kampong Thom hospitals:	**57**	**0**	**36**	**65**	**44**	**23**	**42**	**26**	**52**	**38**	**38**	**37**	**458**
Baray-Santuk referral hospital	22	0	7	15	11	12	13	6	27	13	14	10	150
Kampong Thom provincial hospital	26	0	22	40	29	8	25	15	21	20	21	23	250
Sra Yov health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Stoung health center	9	0	7	9	4	3	4	5	4	5	3	4	57
Tang Krasang health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Treal health center	0	0	0	1	0	0	0	0	0	0	0	0	1

	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Number of casualties reported at Kampot hospitals:	**56**	**61**	**15**	**25**	**32**	**44**	**49**	**33**	**29**	**37**	**21**	**33**	**435**
Angkor Chey referral hospital	11	15	10	11	10	9	19	8	8	6	3	3	113
Chhouk referral hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Kampong Trach referral hospital	0	13	5	0	6	12	0	0	0	0	0	0	36
Kampot referral hospital	45	33	0	14	16	23	30	25	21	31	18	30	286
Sdech Kong health center	0	0	0	0	0	0	0	0	0	0	0		0
Number of casualties reported at Kandal hospital:	**0**	**12**	**17**	**18**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**56**
Anlong Romiet health center	0	3	6	9	0	0	0	0	0	0	0	0	18
Boeng Kiang health center	0	9	11	0	0	0	0	0	0	0	0	0	20
Chey Chomnah provincial hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Dey Eth health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Koh Thom referral hospital	0	0	0	9	9	0	0	0	0	0	0	0	18
Ksach Kandal referral hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Preak Anh Chanh health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Prek Pnov health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Samrong Thom health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Ta Khmau health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Tom Nob Thom health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of casualties reported at Koh Kong hospitals:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Koh Kong referral hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Smach Mean Chey referral hospital	0	0	0	0	0	0	0	0	0	0	0		0
Number of casualties reported at Kratie hospitals:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Chhlong referral hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of casualties reported at Mondol Kiri hospitals:	**3**	**2**	**4**	**7**	**2**	**3**	**8**	**2**	**2**	**8**	**4**	**8**	**53**
Kaoh Nheaek referral hospital	0	0	0	2	0	1	5	0	0	3	1	5	17
Saen Monorom referral hospital	3	2	4	5	2	2	3	2	2	5	3	3	36
Number of casualties reported at Phnom Penh hospitals:	**689**	**638**	**642**	**789**	**716**	**737**	**757**	**702**	**786**	**650**	**742**	**786**	**8,634**
Calmette	274	218	212	340	331	267	318	284	337	275	334	347	3,537
Ket Mealea	0	0	0	0	0	0	0	0	0	0	0	0	0
Kossamak	88	86	91	103	63	93	74	69	58	66	73	87	951
Kunthabopha	40	41	44	32	34	35	21	25	29	25	28	22	376
National Pediatric	44	58	63	52	65	67	60	52	62	43	71	96	733
Sihanouk	85	78	63	93	67	73	63	46	48	73	72	51	812
Preah Bat Angduong	0	0	1	0	0	1	0	0	0	0	0	0	2
Bayon	75	106	100	99	76	68	104	100	103	93	94	100	1,118
Dusit	79	51	68	70	50	66	39	32	50	27	40	36	608
Vibol Sok	4	0	0	0	30	67	78	94	99	48	30	47	497
Number of casualties reported at Preah Vihear hospitals:	**19**	**23**	**30**	**18**	**3**	**8**	**4**	**8**	**6**	**13**	**15**	**10**	**157**
Cham Roeun helth center	0	0	0	0	0	0	0	0	0	0	0	0	0
Chhaeb health center	0	0	0	0	0	2	1	5	0	0	0	3	11
Choam Ksant referral hospital	6	3	6	6	0	0	0	0	0	7	10	5	43
Dabprammouy Makara health center	9	16	13	10	3	3	3	1	1	3	3	0	65
Kou Len health center	0	0	0	0	0	0	0	2	0	0	0	0	2
Phnom Dek health center	2	4	2	0	0	0	0	0	0	2	0	0	10
Rovieng health center	0	0	9	0	0	0	0	0	2	1	1	2	15
Sra Aem health center	2	0	0	2	0	3	0	0	3	0	0	0	10
Tbaeng Mean Chey health center	0	0	0	0	0	0	0	0	0	0	1	0	1
Number of casualties reported at Prey Veng hospitals:	**0**	**6**	**28**	**23**	**13**	**13**	**17**	**6**	**15**	**13**	**10**	**4**	**148**
Cheach health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Doun Koeng health center	0	0	0	0	0	0	0	0	0	0	0	0	0
Kamchay Mear referral hospital	0	1	0	0	0	0	0	0	0	0	0	0	1
Kampong Leav health center	0	0	12	3	7	3	7	3	1	2	1	2	41
Kampong Trabaek referral hospital	0	0	4	10	2	6	3	0	6	0	1	1	33
Mesang referral hospital	0	3	6	7	2	0	5	1	0	3	3	0	30
Neak Loeang referral hospital	0	0	6	2	1	2	1	1	3	5	0	0	21
Pea Reang referral hospital	0	0	0	1	1	2	1	1	5	3	3	0	17
Preah Sdach referral hospital	0	2	0	0	0	0	0	0	0	0	2	1	5
Seang Khveang health center	0	0	0	0	0	0	0	0	0	0	0	0	0

	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Number of casualties reported at Pursat hospitals:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Bakan referral hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of casualties reported at Rattanak Kiri provincial hospital	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Number of casualties reported at Siem Reap hospitals:	**140**	**10**	**110**	**103**	**19**	**88**	**101**	**20**	**79**	**95**	**109**	**101**	**975**
Kralanh referral hospital	9	10	0	10	3	2	6	3	8	6	4	6	67
Puok health center	13	0	12	4	9	19	13	9	12	11	16	27	145
Siem Reap provincial hospital	95	0	96	89	7	67	76	0	59	77	89	65	720
Sot Nikum referral hospital	23	0	2	0	0	0	6	8	0	1	0	3	43
Number of casualties reported at Preah Sihanouk referral hospital	**0**	**0**	**5**	**7**	**6**	**0**	**6**	**0**	**0**	**7**	**13**	**0**	**44**
Number of casualties reported at Stung Treng referral hospital	**16**	**53**	**20**	**20**	**8**	**16**	**5**	**7**	**5**	**4**	**20**	**0**	**174**
Number of casualties reported at Svay Rieng hospitals:	**8**	**31**	**12**	**13**	**9**	**7**	**3**	**0**	**0**	**0**	**0**	**0**	**83**
Chi Phu referral hospital	5	25	6	13	9	7	3	0	0	0	0	0	68
Romeas Haek referral hospital	3	6	6	0	0	0	0	0	0	0	0	0	15
Svay Rieng referral hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of casualties reported at Takeo hospitals:	**43**	**43**	**2**	**55**	**27**	**20**	**38**	**30**	**37**	**27**	**57**	**17**	**396**
Doun Keo provincial hospital	43	43	2	55	27	20	38	30	37	27	57	17	396
Kirivong referral hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of casualties reported at Otdar Mean Chey hospitals:	**47**	**10**	**12**	**9**	**31**	**14**	**10**	**15**	**5**	**10**	**9**	**7**	**179**
Anlong Veng health center	47	10	12	9	31	14	10	15	5	10	9	7	179
Otdar Mean Chey provincial hospital	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of casualties reported at Kep referral hospital	**2**	**3**	**7**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**17**

Annex3: *Number of casualties reported at traffic police districts*

Total number of casualties reported by traffic police	**40,648**	**40,861**	**40,542**	**41,113**	**40,419**	**40,431**	**40,588**	**40,365**	**40,702**	**40,492**	**40,679**	**40,748**	**10,637**
Number of casualties reported in Banteay Mean Chey province	**46**	**47**	**40**	**81**	**43**	**36**	**35**	**43**	**68**	**51**	**47**	**80**	**617**
Malai district	0	0	0	5	0	0	0	0	0	0	0	1	6
Mongkol Borei district	3	6	4	7	3	2	2	1	11	5	2	6	52
Ou Chrov district	15	9	7	21	9	8	1	5	21	30	15	28	169
Phnom Srok district	2	1	0	3	0	1	0	0	4	0	0	0	11
Preah Netr Preah district	2	1	4	3	2	1	6	1	2	3	5	0	30
Serei Saophoan district	24	16	23	35	25	24	23	33	30	13	24	34	304
Svay Chek district	0	13	2	7	4	0	3	3	0	0	1	2	35
Thma Puok district	0	1	0	0	0	0	0	0	0	0	0	9	10
Number of casualties reported in Battambang province	**112**	**102**	**81**	**120**	**63**	**61**	**64**	**49**	**80**	**49**	**71**	**90**	**942**
Aek Phnom district	1	2	0	0	0	0	0	0	0	0	4	2	9
Banan district	21	0	8	5	4	4	5	4	4	8	4	0	67
Battambang district	35	34	12	29	23	12	12	13	18	14	19	32	253
Bavel district	0	0	0	0	0	0	0	0	0	0	0	0	0
Kamrieng district	3	0	0	0	0	0	0	0	0	0	0	0	3
Moung Ruessei district	12	6	19	18	16	9	7	5	27	13	6	11	149
Phnom Proek district	0	0	0	4	0	8	2	11	1	0	4	5	35
Ratanak Mondol district	0	0	0	0	0	0	2	0	0	0	1	3	6
Samlot district	0	0	0	2	0	0	0	0	0	0	0	0	2
Sampov Loun district	3	6	0	0	0	4	0	1	4	0	0	10	28
Sangkae district	31	38	29	37	10	7	26	11	17	9	27	15	257
Thmor Koul district	6	16	13	25	10	17	10	4	9	5	6	12	133
Number of casualties reported in Kampong Cham province	**100**	**121**	**73**	**133**	**58**	**82**	**88**	**51**	**118**	**65**	**68**	**74**	**1031**
Batheay district	5	25	0	7	1	5	0	0	1	3	4	2	53
Chamkar Leu district	18	21	7	16	8	8	15	12	11	2	7	10	135
Cheung Prey district	4	11	3	24	0	0	1	4	7	11	5	4	74
Dambae district	9	0	12	19	16	6	3	16	4	19	4	2	110
Kampong Cham district	18	16	3	4	1	4	3	1	3	8	4	5	70
Kampong Siem district	11	0	5	11	1	6	0	0	25	2	2	0	63
Kang Meas district	0	0	0	2	0	0	0	0	0	0	3	0	5
Koh Sotin district	0	0	0	0	0	4	1	0	1	0	0	0	6
Krouch Chhmar district	3	1	1	1	1	1	0	0	3	4	0	0	15
Memot district	6	4	14	6	16	22	12	1	10	4	11	11	117
Ou Reang Ov district	6	6	9	4	2	3	0	4	3	1	12	5	55
Ponhea Kraek district	1	1	1	0	2	3	7	2	11	2	2	0	32
Prey Chhor district	9	10	14	11	4	7	3	5	20	0	0	12	95
Srei Santhor district	3	0	1	6	1	7	1	2	15	3	0	4	43
Stueng Trang district	1	2	0	0	2	0	0	0	2	2	2	0	11
Tboung Khmum district	6	24	3	22	3	6	42	4	2	4	12	19	147
Number of casualties reported in Kampong Chhnang province	**30**	**27**	**28**	**58**	**17**	**7**	**16**	**26**	**36**	**24**	**4**	**27**	**300**
Baribour district	6	3	7	2	0	0	2	2	4	3	1	9	39
Kampong Chhnang district	5	16	3	14	5	0	4	7	12	7	1	6	80
Kampong Leaeng district	0	0	1	0	0	0	0	0	0	0	0	0	1
Kampong Tralach district	6	0	5	19	2	4	2	7	1	2	0	8	56
Rolea B'ier district	9	5	7	3	10	1	3	6	10	10	2	2	68
Sameakki Mean Chey district	1	0	3	13	0	0	2	0	3	2	0	0	24
Tuek Phos	3	3	2	7	0	2	3	4	6	0	0	2	32
Number of casualties reported in	**39635**	**39758**	**39685**	**39778**	**39722**	**39696**	**39807**	**39750**	**39803**	**39795**	**39901**	**39901**	**255**
Aoral district	0	0	0	0	0	0	0	0	0	0	0	0	0
Basedth district	1	0	0	0	0	0	0	0	0	0	0	0	1
Chbar Mon district	21	2	3	21	5	10	0	4	6	13	10	4	99
Kong Pisei district	0	0	0	1	0	0	0	0	0	0	0	1	2
Odongk district	0	0	0	4	0	0	0	0	0	0	0	0	4
Phnum Sruoch district	9	18	4	6	7	2	16	3	0	5	2	4	76
Samraong Tong district	3	8	13	2	4	7	3	13	5	0	11	0	69
Thpong district	0	0	0	0	0	0	3	0	1	0	0	0	4

	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Number of casualties reported in Kampong Thom province	**63**	**76**	**60**	**59**	**34**	**15**	**32**	**18**	**21**	**12**	**22**	**40**	**452**
Baray district	31	5	5	12	4	3	4	4	4	2	1	9	84
Kampong Svay district	5	12	9	0	9	3	4	4	4	3	0	8	61
Prasat Balangk district	0	7	1	0	0	0	0	0	2	0	0	0	10
Prasat Sambour district	3	12	11	4	2	0	0	0	2	0	0	3	37
Sandan district	0	4	0	0	3	0	0	0	0	0	0	0	7
Santuk district	7	11	27	21	5	5	5	3	2	1	9	2	98
Stoung district	13	10	5	19	5	4	9	6	3	4	2	2	82
Stueng Saen district	4	15	2	3	6	0	10	1	4	2	10	16	73
Number of casualties reported in Kampot province	**11**	**47**	**16**	**41**	**32**	**21**	**43**	**14**	**26**	**13**	**38**	**12**	**314**
Angkor Chey district	0	5	1	2	2	3	0	0	0	0	0	0	13
Banteay Meas district	0	18	4	3	0	7	4	2	0	0	12	0	50
Chhouk district	3	0	0	0	0	0	0	0	0	0	8	0	11
Chum Kiri district	0	0	0	0	0	0	0	0	0	0	0	0	0
Dang Tong district	0	1	0	4	4	0	2	1	4	1	6	1	24
Kampong Bay district	4	7	5	9	6	6	8	2	2	2	1	5	57
Kampong Trach district	1	7	0	12	19	3	11	6	5	0	5	3	72
Kampot district	3	9	6	11	1	2	18	3	15	7	6	1	82
Unknown	0	0	0	0	0	0	0	0	0	3	0	2	5
Number of casualties reported in Kandal province	**104**	**105**	**85**	**144**	**88**	**96**	**93**	**66**	**91**	**87**	**116**	**106**	**1,181**
Angk Snuol district	42	36	17	39	18	36	25	4	29	38	25	41	350
Kandal Stueng district	14	6	8	15	14	6	17	10	0	7	19	19	135
Kaoh Thum district	0	10	3	6	1	5	3	0	1	0	0	0	29
Khsach Kandal district	13	7	0	6	11	0	9	7	0	0	0	0	53
Kien Svay district	11	16	27	23	27	10	10	14	15	14	27	15	209
Leuk Daek district	0	0	0	0	0	0	2	0	0	0	0	0	2
Mukh Kampul district	14	11	9	13	4	8	4	4	13	0	17	10	107
Ponhea Leu district	7	5	8	9	2	3	1	0	0	2	3	0	40
S'ang district	0	8	7	18	7	10	5	19	17	9	10	15	125
Ta Khmau district	3	6	6	15	4	18	17	8	16	17	15	6	131
Number of casualties reported in Koh Kong province	**34**	**16**	**10**	**51**	**16**	**17**	**12**	**31**	**15**	**24**	**25**	**26**	**277**
Botum Sakor district	0	5	3	13	3	3	3	0	2	1	1	0	34
Kampong Seila district	4	0	0	11	1	0	2	0	6	2	7	12	45
Koh Kong district	0	0	0	0	0	0	0	0	0	8	3	0	11
Mondol Seima district	4	3	1	0	3	0	0	0	1	0	0	1	13
Smach Mean Chey district	17	1	6	9	3	9	2	28	2	6	10	9	102
Srae Ambel district	9	7	0	18	6	5	4	3	4	7	4	4	71
Unknown	0	0	0	0	0	0	1	0	0	0	0	0	1
Number of casualties reported in Kratie province	**28**	**33**	**45**	**68**	**20**	**15**	**33**	**29**	**17**	**29**	**28**	**53**	**398**
Chhloung district	6	3	7	11	6	0	0	0	0	6	0	4	43
Kracheh district	19	20	24	40	10	8	7	14	14	15	22	26	219
Preaek Prasab district	0	0	8	6	0	0	0	0	0	2	0	0	16
Sambour district	2	2	3	1	1	6	11	15	2	3	2	10	58
Snuol district	1	8	3	10	3	0	15	0	1	3	4	13	61
Unknown	0	0	0	0	0	1	0	0	0	0	0	0	1
Number of casualties reported in Mondol Kiri province	**11**	**17**	**20**	**8**	**0**	**3**	**6**	**0**	**2**	**9**	**5**	**10**	**91**
Kaev Seima district	4	4	0	0	0	0	0	0	0	0	1	0	9
Kaoh Nhaek district	0	3	6	6	0	0	0	0	0	0	1	2	18
Ou Reang district	2	0	0	0	0	0	2	0	0	0	0	0	4
Pechr Chenda district	5	6	0	2	0	0	2	0	0	2	1	0	18
Saen Monorom district	0	4	14	0	0	3	2	0	2	7	2	8	42
Number of casualties reported in Phnom Penh city	**78**	**119**	**111**	**131**	**85**	**109**	**87**	**76**	**103**	**85**	**87**	**85**	**1,156**
Chamkar Mon district	12	14	15	9	9	18	13	5	18	1	12	9	135
Dang Koa district	22	17	38	36	23	19	29	28	18	12	11	25	278
Doun Penh district	19	38	21	18	12	13	13	20	11	15	18	18	216
Mean Chey district	6	4	18	10	12	9	12	8	15	18	13	4	129
Prampir Makara district	5	5	9	9	4	9	6	2	6	8	4	8	75
Russei Keo district	11	31	7	41	24	36	12	10	29	24	20	16	261
Toul Kok district	3	10	3	8	1	5	2	3	6	7	5	3	56
Unknown	0	0	0	0	0	0	0	0	0	0	4	2	6

	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Number of casualties reported in Preah Vihear province	**16**	**15**	**18**	**13**	**14**	**20**	**20**	**16**	**6**	**16**	**19**	**23**	**196**
Chey Saen district	0	0	0	0	0	0	0	0	1	0	1	0	2
Chhaeb district	0	0	0	0	0	0	0	0	0	0	0	0	0
Choam Khsant district	0	1	0	0	4	2	0	0	0	0	0	3	10
Kulaen district	9	6	0	6	5	1	14	2	2	0	6	6	57
Rovieng district	4	0	7	1	1	1	4	0	1	11	3	0	33
Sangkom Thmei district	0	0	0	0	0	0	0	1	0	0	0	3	4
Tbaeng Mean Chey district	3	8	11	6	4	16	2	13	2	5	9	11	90
Number of casualties reported in Prey Veng pronvince	**28**	**49**	**18**	**33**	**19**	**19**	**43**	**32**	**34**	**20**	**7**	**16**	**318**
Ba Phnom district	2	1	0	0	0	3	0	2	0	0	0	0	8
Kamchay Mear district	0	0	0	0	0	0	1	0	0	0	0	1	2
Kampong Leav district	0	8	2	0	0	2	11	0	0	7	0	0	30
Kampong Trabaek district	7	3	5	8	7	5	5	4	15	3	3	2	67
Kanhchriech district	1	0	0	0	0	0	0	0	3	0	0	0	4
Me sang district	2	0	1	1	0	0	1	1	0	2	2	0	10
Pea Reang district	3	3	3	10	2	0	2	2	2	1	0	0	28
Peam Chor district	1	2	2	2	1	1	1	0	0	0	0	0	10
Peam Ro district	4	25	0	4	4	0	9	5	5	2	0	3	61
Preah Sdach district	7	7	3	2	0	7	7	5	4	4	2	5	53
Prey Vaeng district	1	0	0	3	5	1	6	11	5	1	0	5	38
Sithor Kandal district	0	0	2	3	0	0	0	2	0	0	0	0	7
Number of casualties reported in Pursat province	**29**	**25**	**11**	**20**	**18**	**23**	**33**	**8**	**15**	**32**	**12**	**24**	**250**
Bakan district	3	4	6	3	2	2	18	4	4	9	6	18	79
Kandieng district	0	3	1	0	4	0	0	1	1	1	0	0	11
Krakor district	21	4	4	17	12	21	14	3	10	15	3	6	130
Phmun Kravanh district	0	6	0	0	0	0	0	0	0	5	0	0	11
Sampov Meas district	5	8	0	0	0	0	1	0	0	2	3	0	19
Veal Veng district	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of casualties reported in Ratanak Kiri province	**0**	**12**	**10**	**21**	**10**	**19**	**5**	**12**	**13**	**6**	**13**	**11**	**132**
Angdoung Meas district	0	0	0	0	0	0	0	0	2	0	0	0	2
Ban Lung district	0	12	8	8	6	5	1	8	4	5	7	0	64
Bar Kaev district	0	0	0	0	0	4	0	4	0	0	2	0	10
Koun Mom district	0	0	0	3	0	2	2	0	2	0	2	0	11
Lum Phat district	0	0	2	3	0	0	0	0	0	1	2	7	15
Ou Chum district	0	0	0	7	1	0	2	0	3	0	0	4	17
Ou Ya Dav district	0	0	0	0	3	4	0	0	0	0	0	0	7
Ta Veaeng district	0	0	0	0	0	0	0	0	0	0	0	0	0
Veun Sai district	0	0	0	0	0	4	0	0	2	0	0	0	6
Number of casualties reported in Siem Reap province	**110**	**52**	**85**	**34**	**43**	**51**	**51**	**40**	**66**	**48**	**71**	**48**	**699**
Angkor Chum district	2	0	0	0	0	0	0	0	0	0	0	0	2
Angkor Thum district	0	0	0	0	0	0	0	0	0	0	0	0	0
Banteay Srei district	0	1	0	2	0	0	0	0	0	0	0	0	3
Chi Kraeng district	8	0	0	0	4	8	0	4	8	6	6	6	50
Kralanh district	10	0	11	6	2	3	0	0	0	0	0	0	32
Prasat Bakong district	20	2	12	5	0	6	8	0	28	14	16	10	121
Puok district	11	12	6	1	6	3	10	1	4	4	16	2	76
Siem Reap district	47	23	54	17	24	31	33	35	26	18	30	28	366
Soutr Nikom district	0	0	0	3	7	0	0	0	0	0	3	0	13
Srei Snam district	0	0	0	0	0	0	0	0	0	0	0	0	0
Svay Leu district	8	14	2	0	0	0	0	0	0	6	0	0	30
Varin district	4	0	0	0	0	0	0	0	0	0	0	2	6
Number of casualties reported in Preah Sihanouk province	**40**	**29**	**23**	**39**	**20**	**11**	**26**	**21**	**36**	**27**	**25**	**22**	**319**
Mitta Pheap district	30	20	5	18	11	3	18	17	28	17	9	17	193
Prey Nob district	7	9	18	17	9	8	8	4	8	10	16	5	119
Stueng Hav district	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	3	0	0	4	0	0	0	0	0	0	0	0	7
Number of casualties reported in Stung Treng province	**21**	**45**	**19**	**5**	**20**	**19**	**15**	**2**	**21**	**8**	**21**	**28**	**224**
Sesan district	2	4	10	0	3	2	8	2	0	0	10	2	43
Siem Bouk district	0	0	1	0	0	2	0	0	3	3	1	0	10
Stueng Traeng district	19	41	8	5	17	15	7	0	18	5	10	26	171
Thala Barivat district	0	0	0	0	0	0	0	0	0	0	0	0	0

	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Number of casualties reported in Svay Rieng province	**59**	**55**	**60**	**116**	**31**	**31**	**29**	**12**	**23**	**25**	**26**	**17**	**484**
Chan Trea district	5	0	5	6	2	12	2	0	1	2	4	3	42
Kompong Ro district	4	8	2	9	0	0	2	0	0	0	3	2	30
Romeas Haek distirct	7	6	5	21	3	0	6	3	4	0	0	5	60
Rumduol distirct	0	0	4	0	0	0	0	0	0	0	1	0	5
Svay Chrum district	11	14	17	44	8	4	2	2	3	13	5	2	125
Svay Rieng district	7	11	22	17	4	6	3	3	13	0	7	0	93
Svay Teab district	25	16	5	19	14	9	14	4	2	10	6	5	129
Number of casualties reported in Takeo province	**34**	**49**	**32**	**74**	**23**	**34**	**24**	**32**	**63**	**35**	**44**	**33**	**477**
Angkor Borei district	0	0	0	0	0	0	0	0	0	0	2	0	2
Bati district	5	10	0	0	0	1	3	5	5	3	0	12	44
Borei Cholsar district	0	0	0	0	0	0	0	0	0	0	0	0	0
Doun Keo district	0	8	7	20	1	8	1	8	10	7	12	5	87
Kaoh Andaet distrcit	2	3	3	0	3	0	0	0	0	4	0	4	19
Kiri Vong district	4	6	7	7	3	0	4	4	9	7	13	10	74
Prey Kabbas district	0	0	0	5	0	1	0	0	0	0	0	0	6
Somraong district	0	0	4	9	3	3	0	5	0	0	0	0	24
Tram Kak district	9	14	1	20	10	9	13	4	17	5	12	0	114
Treang district	14	8	10	13	3	12	3	6	22	9	5	2	107
Number of casualties reported in Odor Mean Chey province	**32**	**52**	**25**	**65**	**35**	**35**	**1**	**13**	**27**	**23**	**23**	**12**	**343**
Anglong Veng district	12	9	6	7	15	4	0	5	7	6	10	3	84
Banteay Ampil district	1	2	8	7	1	0	0	0	2	3	1	0	25
Chong Kal district	2	13	1	10	1	4	0	0	7	0	0	4	42
Samraong district	7	18	7	10	4	16	0	4	2	14	12	0	94
Trapeang Prasat district	10	7	3	31	14	11	1	4	9	0	0	5	95
Unknown	0	3	0	0	0	0	0	0	0	0	0	0	3
Number of casualties reported in Kaeb province	**10**	**0**	**0**	**0**	**4**	**2**	**9**	**3**	**5**	**5**	**2**	**1**	**41**
Damnak Changaeur district	3	0	0	0	2	2	1	0	3	1	0	1	13
Kaeb distict	7	0	0	0	2	0	8	3	2	4	2	0	28
Number of casualties reported in Pailin province	**17**	**10**	**12**	**21**	**4**	**9**	**16**	**21**	**13**	**4**	**4**	**9**	**140**
Pailin district	17	8	9	11	4	9	13	10	11	3	4	2	101
Sala Krau district	0	0	3	10	0	0	3	11	2	0	0	6	35
Unknown	0	2	0	0	0	0	0	0	0	1	0	1	4

Annex4: Percentage of crashes by type of transport

	Motorbike	4-wheeler	Agriculture vehicle	Bicycle	Tricycle	Remorque	Motor tricycle	Other	Total
Motorbike	42.26%								**42.26%**
4-wheeler	17.54%	2.79%							**20.33%**
Agriculture vehicle	0.99%	0.54%	0.05%						**1.58%**
Bicycle	4.77%	0.81%	0.04%	0.15%					**5.77%**
Tricycle	0.02%	-	-	-	-				**0.02%**
Remorque	1.01%	0.43%	-	0.03%	-	-			**1.47%**
Motor tricycle	0.48%	0.18%	-	0.01%	-	-	0.02%		**0.69%**
Pedestrian	7.80%	1.93%	0.09%	0.09%	-	0.05%	0.07%	0.04%	**10.07%**
Stationary object	1.30%	0.69%	0.10%	0.02%	-	0.06%	0.01%	-	**2.18%**
Animal	1.82%	0.05%	-	0.02%	-	0.02%	0.02%	-	**1.93%**
Sigle vehicle collision	8.66%	3.12%	0.64%	0.27%	0.01%	0.20%	0.10%	0.03%	**13.02%**
Other	0.38%	0.13%	-	0.03%	0.01%	0.02%	-	0.02%	**0.59%**
Total	**87.03%**	**10.67%**	**0.92%**	**0.61%**	**0.02%**	**0.35%**	**0.21%**	**0.09%**	**100%**

***Annex5:** Number of fatalities by age category and type of transportation – 2008*

Age	Motorbikes	Pedestrians	Bicycles	Cars	Buses	Minibuses	Light trucks	Heavy trucks	Other	Unknown	Sub-total
0 - 4	19	19	1	3	1	0	0	1	3	0	47
5 - 9	12	35	4	3	0	1	0	0	2	0	57
10 - 14	8	9	3	4	0	1	2	0	2	0	29
15 - 19	90	8	2	4	0	1	5	2	7	0	119
20 - 24	212	12	9	14	1	1	7	5	7	1	269
25 - 29	294	15	9	27	0	1	7	9	14	0	376
30 - 34	87	6	0	11	1	0	6	5	4	0	120
35 - 39	101	14	4	12	0	1	3	0	3	0	138
40 - 44	79	8	7	13	0	0	3	0	4	0	114
45 - 49	68	16	3	5	0	2	1	0	8	0	103
50 - 54	35	8	4	2	0	0	3	0	3	0	55
>=55	84	49	25	15	0	0	1	0	6	0	180
Unknown	18	8	0	2	0	1	1	1	0	0	31
Total	**1,107**	**207**	**71**	**115**	**3**	**9**	**39**	**23**	**63**	**1**	**1,638**

***Annex6:** Number of serious injuries by age category and type of transportation – 2008*

Age	Motorbike	Pedestrians	Bicycles	Cars	Bus	Minibus	Light truck	Heavy truck	Other	Unknown	Sub-total
0 - 4	64	73	2	11	0	1	2	2	6	2	163
5 - 9	82	125	45	8	1	2	1	3	5	0	272
10 - 14	96	23	55	10	0	2	2	1	7	0	196
15 - 19	564	27	30	32	0	1	9	3	22	4	692
20 - 24	1,138	42	26	62	0	9	20	7	27	5	1,336
25 - 29	1,565	55	24	89	0	10	33	19	34	4	1,833
30 - 34	433	19	10	37	1	1	10	7	17	3	538
35 - 39	459	16	11	32	0	3	8	6	15	1	551
40 - 44	316	31	11	23	0	0	5	10	14	2	412
45 - 49	311	20	11	24	1	0	8	2	16	0	393
50 - 54	188	23	8	18	0	3	4	1	4	0	249
>=55	331	78	36	28	0	3	8	1	11	1	497
Unknown	53	5	3	12	1	7	9	1	3	0	94
Total	**5,600**	**537**	**272**	**386**	**4**	**42**	**119**	**63**	**181**	**22**	**7,226**

***Annex7:** Number of slight injuries by age category and type of transportation – 2008*

Age	Motorbike	Pedestrians	Bicycles	Cars	Bus	Minibus	Light truck	Heavy truck	Other	Unknown	Sub-total
0 - 4	238	263	30	17	0	2	7	2	6	2	567
5 - 9	272	274	156	31	1	2	11	1	23	3	774
10 - 14	321	78	103	14	1	1	8	0	27	1	554
15 - 19	1,457	45	80	52	3	6	17	4	45	5	1,714
20 - 24	2,638	91	55	105	0	19	40	12	81	12	3,053
25 - 29	3,395	84	58	172	6	36	57	31	94	19	3,952
30 - 34	979	36	16	78	1	4	20	11	36	8	1,189
35 - 39	876	33	18	87	0	8	29	13	38	5	1,107
40 - 44	696	28	26	50	2	6	26	6	25	4	869
45 - 49	567	39	34	39	2	9	14	1	35	1	741
50 - 54	348	43	21	25	1	6	4	1	16	4	469
>=55	576	104	64	42	3	2	7	1	39	2	840
Unknown	126	9	4	10	0	1	2	3	1	0	156
Total	**12,489**	**1,127**	**665**	**722**	**20**	**102**	**242**	**86**	**466**	**66**	**15,985**

***Note:** 947 casualties can not be identified the severity of injury.*

***Annex8:** Number of casualties by gender and age category, and severity of injuries – 2008*

Age	Fatalties				Serious Injuries				Slight Injuries			
	Male	Female	Unknown	Sub-total	Male	Female	Unknown	Sub-total	Male	Female	Unknown	Sub-total
0 - 4	24	23	0	47	105	58	0	163	343	224	0	567
5 - 9	37	20	0	57	162	108	2	272	467	307	0	774
10 - 14	20	9	0	29	123	73	0	196	356	197	1	554
15 - 19	89	30	0	119	494	196	2	692	1,148	559	7	1,714
20 - 24	230	39	0	269	1,039	295	2	1,336	2,233	813	7	3,053
25 - 29	323	53	0	376	1,507	323	3	1,833	3,127	818	7	3,952
30 - 34	108	12	0	120	436	101	1	538	939	245	5	1,189
35 - 39	111	27	0	138	436	114	1	551	861	242	4	1,107
40 - 44	90	24	0	114	316	95	1	412	628	238	3	869
45 - 49	78	25	0	103	281	111	1	393	526	215	0	741
50 - 54	33	21	1	55	154	94	1	249	289	178	2	469
>=55	114	65	1	180	317	179	1	497	519	318	3	840
Unknown	22	5	4	31	60	21	13	94	98	35	23	156
Total	**1,279**	**353**	**6**	**1,638**	**5,430**	**1,768**	**28**	**7,226**	**11,534**	**4,389**	**62**	**15,985**

***Annex9:** Number of crashes and casualties by gender and severity of injuries in all provinces – 2008*

Provinces	Crashes	Fatalties				Seriuos injuries				Slight injuries			
		Male	Female	Unknown	Total	Male	Female	Unknown	Total	Male	Female	Unknown	Total
Banteay Mean Chey	545	68	24	0	92	205	79	0	284	317	136	1	454
Battambang	925	65	19	0	84	310	82	4	396	660	248	2	910
Kampong Cham	914	147	52	0	199	493	193	2	688	1,480	608	8	2,096
Kampong Chhnang	336	37	14	0	51	139	56	1	196	583	240	2	825
Kampong Speu	196	61	13	1	75	214	81	2	297	287	107	3	397
Kampong Thom	430	49	13	0	62	212	67	0	279	469	201	1	671
Kampot	248	18	6	0	24	188	46	0	234	396	124	2	522
Kandal	1,212	181	42	0	223	649	186	2	837	1,222	395	8	1,625
Kep	48	8	0	1	9	17	5	0	22	45	17	0	62
Koh Kong	238	32	16	0	48	75	20	1	96	144	52	2	198
Kratie	366	35	10	0	45	171	64	0	235	174	54	0	228
Mondol Kiri	77	9	1	0	10	25	10	0	35	79	21	0	100
Oddar Meanchey	304	20	10	0	30	144	48	6	198	213	65	4	282
Pailin	139	5	2	0	7	45	11	0	56	71	20	0	91
Phnom Penh	1,175	243	52	2	297	1,012	296	5	1,313	3,028	1,250	15	4,293
Preah Sihanouk	260	45	6	1	52	139	26	0	165	168	54	0	222
Preah Vihear	187	15	1	0	16	62	23	0	85	213	44	1	258
Prey Vneg	323	39	17	0	56	162	51	0	213	276	109	2	387
Pursat	236	30	11	1	42	103	42	0	145	126	51	0	177
Ratanak Kiri	108	15	4	0	19	43	12	0	55	57	11	0	68
Siem Reap	654	66	10	0	76	614	225	2	841	552	194	7	753
Stung Treng	213	7	2	0	9	70	30	2	102	196	86	0	282
Svay Rieng	402	34	13	0	47	97	47	0	144	297	118	2	417
Takeo	439	49	15	0	64	238	67	1	306	469	179	2	650
Unknown	38	1	0	0	1	3	1	0	4	12	5	0	17
Total	**10,015**	**1,279**	**353**	**6**	**1,638**	**5,430**	**1,768**	**28**	**7,226**	**11,534**	**4,389**	**62**	**15,985**

***Note:** 947 casualties can not be identified the severity of injury.*

***Annex10:** Number of casualties by types of transports and severity of injuries in all provinces – 2008*

Provinces	Fatalities					Serious injuries					Slight Injuries				
	Pedestrian	Driver	Passenger	Unknonwn	Total	Pedestrian	Driver	Passenger	Unknonwn	Total	Pedestrian	Driver	Passenger	Unknonwn	Total
Banteay MeanChey	18	51	23	0	92	24	157	101	2	284	31	208	211	4	454
Battambang	17	42	25	0	84	47	237	111	1	396	80	545	282	3	910
Kampong Cham	20	108	71	0	199	55	364	263	6	688	153	1,005	933	5	2,096
Kampong Chhnang	12	34	5	0	51	16	124	55	1	196	53	486	252	34	825
Kampong Speu	7	42	24	2	75	16	154	124	3	297	26	186	164	21	397
Kampong Thom	10	35	17	0	62	27	148	101	3	279	62	348	257	4	671
Kampot	8	10	6	0	24	19	150	63	2	234	32	318	172	0	522
Kandal	31	127	63	2	223	77	487	268	5	837	140	892	575	18	1,625
Kep	0	5	4	0	9	0	14	8	0	22	6	39	17	1	63
Koh Kong	1	19	28	0	48	4	56	36	0	96	9	114	74	0	197
Kratie	5	27	13	0	45	31	131	73	0	235	12	131	85	0	228
Mondol Kiri	0	6	4	0	10	1	21	13	0	35	12	68	15	5	100
Oddar MeanChey	3	13	14	0	30	9	117	42	30	198	12	198	61	11	282
Pailin	1	6	0	0	7	6	34	16	0	56	13	52	26	0	91
Phnom Penh	19	197	80	1	297	99	823	375	16	1,313	310	2,599	1,334	50	4,293
Preah Sihanouk	5	27	20	0	52	11	91	63	0	165	7	116	98	1	222
Preah Vihear	1	10	5	0	16	9	42	33	1	85	18	160	80	0	258
Prey Veng	11	32	12	1	56	20	132	59	2	213	38	198	147	4	387
Pursat	12	20	10	0	42	9	69	65	2	145	5	82	88	2	177
Rotanak Kiri	0	10	9	0	19	1	37	17	0	55	0	43	21	4	68
Siem Reap	7	42	27	0	76	20	549	267	5	841	20	471	255	7	753
Stung Treng	4	3	2	0	9	1	54	47	0	102	13	167	101	1	282
Svay Rieng	6	34	7	0	47	9	92	43	1	145	16	253	147	1	417
Takeo	9	31	24	0	64	25	176	104	0	305	59	307	283	1	650
Unknown	0	1	0	0	1	1	1	2	0	4	0	6	8	3	17
Total	**207**	**932**	**493**	**6**	**1,638**	**537**	**4,260**	**2,349**	**80**	**7,226**	**1,127**	**8,992**	**5,686**	**180**	**15,985**

***Note:** 947 casualties can not be identified the severity of injury.*

***Annex11:** Number of fatalities in provinces by month 2008*

Provinces	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Banteay MeanChey	7	5	5	8	5	5	4	5	17	7	6	18	92
Battambang	8	7	6	7	6	2	8	1	8	3	13	15	84
Kampong Cham	18	22	20	32	10	11	15	7	24	10	20	10	199
Kampong Chhnang	6	6	6	7	4	0	2	4	4	4	3	5	51
Kampong Speu	7	12	10	5	8	4	2	9	4	1	11	2	75
Kampong Thom	5	6	5	10	6	1	5	1	10	5	3	5	62
Kampot	2	3	2	0	1	4	3	1	3	2	0	3	24
Kandal	20	15	18	31	17	11	24	14	19	13	14	27	223
Kep	0	0	0	0	3	0	3	0	2	0	0	1	9
Koh Kong	2	1	0	13	2	4	4	2	3	7	0	10	48
Kratie	3	8	5	5	0	4	4	0	3	3	1	9	45
Mondol Kiri	2	3	3	0	0	0	0	0	0	0	1	1	10
Oddar MeanChey	6	7	6	4	0	3	0	0	0	4	0	0	30
Pailin	2	1	0	1	0	0	2	1	0	0	0	0	7
Phnom Penh	20	32	20	36	26	34	33	13	20	16	32	15	297
Preah Sihanouk	10	3	2	5	4	2	4	7	1	5	3	6	52
Preah Vihear	1	3	4	2	0	1	0	0	0	3	1	1	16
Prey Veng	7	8	6	2	1	4	7	5	3	5	2	6	56
Pursat	6	4	0	4	5	2	3	1	2	6	4	5	42
Rotanak Kiri	0	0	0	3	3	3	0	4	1	0	2	3	19
Siem Reap	8	8	7	4	7	6	3	4	4	8	7	10	76
Stung Treng	1	2	1	0	0	0	1	0	1	0	3	0	9
Svay Rieng	5	1	7	10	4	1	3	5	2	1	6	2	47
Takeo	5	6	6	6	7	7	6	4	3	4	8	2	64
Unknown	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	**151**	**163**	**139**	**195**	**119**	**109**	**136**	**88**	**135**	**107**	**140**	**156**	**1,638**

***Annex12:** Number of Serious injuries in provinces by months – 2008*

Provinces	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Banteay MeanChey	24	27	25	33	22	20	18	17	33	10	25	30	284
Battambang	54	42	35	31	38	22	41	33	24	29	17	30	396
Kampong Cham	57	56	62	103	56	68	63	25	47	40	56	55	688
Kampong Chhnang	16	7	13	22	22	6	14	10	28	27	13	18	196
Kampong Speu	39	29	20	45	23	19	28	21	17	21	16	19	297
Kampong Thom	29	30	22	37	23	18	29	11	17	18	23	22	279
Kampot	23	32	5	28	19	17	24	10	21	11	25	19	234
Kandal	76	74	64	77	61	71	59	64	76	56	70	89	837
Kep	6	3	0	0	3	1	2	0	2	3	1	1	22
Koh Kong	7	4	5	8	11	3	1	15	8	9	20	5	96
Kratie	16	18	33	33	20	2	25	29	11	17	11	20	235
Mondol Kiri	3	6	8	2	0	1	4	0	2	3	2	4	35
Oddar MeanChey	37	10	14	18	34	25	1	16	10	15	11	7	198
Pailin	7	2	3	10	2	4	5	6	7	3	3	4	56
Phnom Penh	96	96	111	131	116	130	104	83	104	106	105	131	1,313
Preah Sihanouk	26	13	10	25	8	3	18	9	20	9	13	11	165
Preah Vihear	8	13	11	3	9	5	6	4	4	7	5	10	85
Prey Veng	13	19	18	25	20	20	25	11	25	18	7	12	213
Pursat	12	14	15	8	11	16	14	13	8	14	11	9	145
Rotanak Kiri	0	2	0	11	6	7	4	3	5	3	8	6	55
Siem Reap	123	17	99	90	26	78	106	23	65	60	82	72	841
Stung Treng	11	20	7	9	4	8	8	6	7	1	14	7	102
Svay Rieng	17	13	13	27	6	15	11	5	8	8	8	13	144
Takeo	25	35	11	31	31	17	29	21	21	25	38	22	306
Unknown	3	0	0	0	0	0	0	0	1	0	0	0	4
Total	**728**	**582**	**604**	**807**	**571**	**576**	**639**	**435**	**571**	**513**	**584**	**616**	**7,226**

***Annex13:** Number of slight injuries in provinces by months – 2008*

Provinces	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	Total
Banteay MeanChey	35	43	28	64	35	26	29	35	48	39	33	39	454
Battambang	102	84	77	130	71	63	59	64	76	53	64	67	910
Kampong Cham	207	234	187	246	141	182	208	109	140	134	130	178	2,096
Kampong Chhnang	45	77	75	147	61	40	59	63	70	54	64	70	825
Kampong Speu	24	27	36	62	54	30	42	47	23	7	17	28	397
Kampong Thom	86	51	78	86	63	27	54	43	56	34	35	58	671
Kampot	46	81	28	41	50	44	69	39	30	26	39	29	522
Kandal	145	136	137	188	98	134	129	119	150	109	167	113	1,625
Kep	11	0	8	3	3	3	7	4	5	8	4	6	62
Koh Kong	27	20	9	42	12	13	12	18	7	14	9	15	198
Kratie	16	13	25	35	13	14	15	15	19	10	21	32	228
Mondol Kiri	8	10	14	13	2	6	10	2	2	12	6	15	100
Oddar MeanChey	32	39	14	50	29	20	8	13	24	18	23	12	282
Pailin	11	8	11	11	3	6	10	15	6	1	3	6	91
Phnom Penh	345	335	318	306	311	374	362	365	389	400	383	405	4,293
Preah Sihanouk	12	23	18	33	20	7	15	9	23	24	28	10	222
Preah Vihear	27	20	32	29	10	22	19	20	6	20	29	24	258
Prey Veng	19	45	46	46	36	26	44	34	38	20	24	9	387
Pursat	16	17	8	15	23	14	22	9	15	21	3	14	177
Rotanak Kiri	0	10	14	9	1	9	1	7	7	3	5	2	68
Siem Reap	109	42	89	45	36	49	49	33	75	67	87	72	753
Stung Treng	24	74	27	15	24	28	11	3	19	10	27	20	282
Svay Rieng	50	74	57	101	31	29	21	6	14	18	13	3	417
Takeo	48	58	37	104	38	54	43	49	87	46	47	39	650
Unknown	4	0	0	0	4	4	0	2	1	0	0	2	17
Total	**1,449**	**1,521**	**1,373**	**1,821**	**1,169**	**1,224**	**1,298**	**1,123**	**1,330**	**1,148**	**1,261**	**1,268**	**15,985**

***Note:** 947 casualties can not be identified the severity of injury.*

***Annex14:** Number of fatalities by human error and type of transportation – 2008*

Human Error	Motorbikes	Pedestrians	Bicycles	Cars	Buses	Minibuses	Light trucks	Heavy trucks	Other	Unknown	Total
Speed	537	128	37	63	1	4	14	11	22	1	**818**
Alcohol abuse	210	25	9	20	0	2	0	2	16	0	**284**
Not respect right of way	72	11	6	8	2	0	0	1	1	0	**101**
Dangerous overtaking	170	6	3	10	0	0	14	4	9	0	**216**
Change lane without due care	40	11	6	1	0	0	1	1	5	0	**65**
Other	35	12	4	3	0	1	3	0	1	0	**59**
N/A	25	8	2	8	0	1	5	1	6	0	**56**
Unknown	18	6	4	2	0	1	2	3	3	0	**39**
Total	**1,107**	**207**	**71**	**115**	**3**	**9**	**39**	**23**	**63**	**1**	**1,638**

***Annex15:** Number of serious injuries by human error and type of transportation – 2008*

Human Error	Motorbikes	Pedestrians	Bicycles	Cars	Buses	Minibuses	Light trucks	Heavy trucks	Other	Unknown	Total
Speed	2,873	303	144	207	4	28	62	46	91	9	**3,767**
Alcohol abuse	769	42	14	61	0	6	13	0	14	1	**920**
Not respect right of way	517	50	29	16	0	0	0	3	13	3	**631**
Dangerous overtaking	626	25	27	47	0	4	7	6	17	2	**761**
Change lane without due care	238	30	17	5	0	0	1	1	6	1	**299**
Other	249	29	14	19	0	0	2	3	16	2	**334**
N/A	129	9	9	18	0	3	23	1	14	0	**206**
Unknown	199	49	18	13	0	1	11	3	10	4	**308**
Total	**5,600**	**537**	**272**	**386**	**4**	**42**	**119**	**63**	**181**	**22**	**7,226**

***Note:** 947 casualties can not be identified the severity of injury.*

Annex16: ***Number of slight injuries by human error and type of transportation – 2008***

Human Error	Motorbikes	Pedestrians	Bicycles	Cars	Buses	Minibuses	Light trucks	Heavy trucks	Other	Unknown	Total
Speed	5,917	423	257	422	12	65	120	52	202	32	**7,502**
Alcohol abuse	1,845	109	62	75	0	14	20	3	55	9	**2,192**
Not respect right of way	1,123	76	51	52	4	5	9	3	32	0	**1,355**
Dangerous overtaking	1,486	46	79	71	3	6	34	17	67	12	**1,821**
Change lane without due care	624	60	48	5	1	0	0	1	32	2	**773**
Other	673	56	50	35	0	2	12	4	23	2	**857**
N/A	372	43	26	39	0	10	40	3	30	2	**565**
Unknown	449	314	92	23	0	0	7	3	25	7	**920**
Total	**12,489**	**1,127**	**665**	**722**	**20**	**102**	**242**	**86**	**466**	**66**	**15,985**

Note: *947 casualties can not be identified the severity of injury.*

***Annex17:* First location of black spot site in Phnom Penh – 2008**

Location1: Russian Blvd, Kbal Damrei village, Kakab commune, Dangkao district, Phnom Penh															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit &Run	Gender	Age	Road user	Type of transport	Collided with
937563	13-Jun-08	17:50 PM	Alcohol abuse	2	0	0	1	Fatal accident	Side swipe	Unknwon	Male	33	Driver	Motorbike	Motorbike
937565	14-Jun-08	22:00 PM	Alcohol abuse	2	1	1	1	Fatal accident	Head-on	Yes	Male	32	Passenger	Motorbike	Pick-Up
											Male	24	Driver	Motorbike	Pick-Up
											Male	22	Passenger	Motorbike	Pick-Up
937972	10-Jul-08	21:20 PM	Dangerous overtaking	2	0	2	1	Fatal accident	Head-on	Yes	Male	23	Driver	Motorbike	Car (private)
											Female	23	Passenger	Motorbike	Car (private)
											Female	19	Passenger	Motorbike	Car (private)
937975	13-Jul-08	17:30 PM	Speed	2	0	1	0	Seriuos accident	Side swipe	Unknwon	Female	54	Driver	Bicycle	Car (Taxi)
939651	13-Nov-08	19:00 PM	Dangerous overtaking	2	0	2	0	Serious accident	Right angle	Yes	Male	23	Driver	Motorbike	Car (private)
											Female	20	Passenger	Motorbike	Car (private)
940556	22-Dec-08	20:30 PM	Speed	2	0	1	1	Fatal accident	Head-on	Yes	Male	22	Driver	Motorbike	Car(Private)
											Male	24	Passenger	Motorbike	Car(Private)
940559	26-Dec-08	18:30 PM	Dangerous overtaking	2	0	2	0	Serious accident	Right angle	No	Male	38	Driver	Motorbike	Car(Taxi)
											Male	25	Passenger	Motorbike	Car(Taxi)
940560	31-Dec-08	23:30 PM	Alcohol abuse	2	0	2	0	Seriuos accident	Rear end	No	Male	26	Driver	Motorbike	Car(Taxi)
											Male	23	Passenger	Motorbike	Car(Taxi)
940561	31-Dec-08	22:30 PM	Speed	2	0	1	1	Fatal accident	Head-on	Yes	Male	27	Driver	Motorbike	Car(Private)
											Male	25	Passenger	Motorbike	Car(Private)

***Annex18:* Second location of black spot site in Phnom Penh – 2008**

Location2: Natioanl Road 4, Prey Pring Cheung village, Chaom Chau commune, Dangkao district, Phnom Penh															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit & Run	Gender	Age	Road User	Type of transport	Collided with
936489	09-Apr-08	20:40 PM	Change lane without care	2	2	1	1	Fatal accident	Right angle	Unknown	Male	39	Passenger	Motorbike	Motorbike
											Male	26	Driver	Motorbike	Motorbike
											Male	5	Passenger	Motorbike	Motorbike
											Female	37	Driver	Motorbike	Motorbike
937338	27-Apr-08	21:00 PM	Speed	2	0	1	1	Fatal accident	Side swipe	Unknown	Male	44	Driver	Motorbike	Motorbike
											Female	35	Driver	Motorbike	Motorbike
937923	25-Jun-08	19:20 PM	Alcohol abuse	2	0	1	1	Fatal accident	Right-angle	No	Male	27	Driver	Motorbike	Heavy truck
											Male	23	Passenger	Motorbike	Heavy truck
937976	19-Jul-08	21:30 PM	Speed	2	1	0	1	Fatal accident	Rear end	Yes	Female	24	Passenger	Motorbike	Car(Private)
											Male	23	Driver	Motorbike	Car(Private)
939096	08-Sep-08	03:30 AM	Speed	2	0	0	1	Fatal accident	Right-angle	Yes	Male	31	Driver	Motorbike	Pick-Up
939097	07-Sep-08	11:40 AM	Speed	2	2	1	0	Serious accident	Right-angle	Unknown	Male	23	Driver	Motorbike	Car(Private)
											Female	23	Passenger	Motorbike	Car(Private)
											Female	26	Passenger	Motorbike	Car(Private)
939099	06-Sep-08	19:45 PM	Alcohol abuse	2	1	2	0	Serious accident	Right-angle	Unknown	Male	27	Driver	Motor tricycle	Motorbike
											Male	25	Driver	Motorbike	Motor tricycle
											Male	29	Passenger	Motorbike	Motor tricycle
939181	11-Oct-08	16:15 PM	Speed	1	0	3	0	Serious accident	Hit pedestrian	No	Female	18	Pedestrian	Pedestrian	Motorbike
											Female	20	Pedestrian	Pedestrian	Motorbike
											Male	41	Driver	Motorbike	Pedestrian

Annex19: ***Third location of black spot site in Phnom Penh – 2008***

Location3: Monivong Blvd , Srah Chak commune, Doun Penh district, Phnom Penh															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit & Run	Gender	Age	Road User	Type of transport	Collided with
935343	20-Feb-08	23:00 PM	Driving gainst flow of traffic	2	0	0	1	Serious accident	Side swipe	No	Male	52	Driver	Motorbike	Motorbike
											Male	23	Driver	Motorbike	Motorbike
											Male	28	Passenger	Motorbike	Motorbike
											Male	31	Passenger	Motorbike	Motorbike
935854	23-Feb-08	21:00 PM	Not respect right of way	2	2	1	0	Serious accident	Right-angle	No	Male	29	Driver	Motorbike	Motorbike
											Male	27	Driver	Motorbike	Motorbike
											Male	35	Passenger	Motorbike	Motorbike
939066	21-Sep-08		Not respect right of way	2	1	1	0	Serious accident	Right-angle	No	Male	18	Driver	Motorbike	Motorbike
											Male	50	Driver	Motorbike	Motorbike
939163	19-Oct-08	21:30 PM	Dangerous overtaking	2	0	1	1	Fatal accident	Head-on	No	Male	19	Driver	Motorbike	Car(Private)
											Male	18	Passenger	Motorbike	Car(Private)
939597	21-Sep-08	20:30 PM	Not respect right of way	2	2	2	0	Serious accident	Right-angle	No	Male	18	Driver	Motorbike	Motorbike
											Male	50	Driver	Motorbike	Motorbike
											Male	28	Driver	Motorbike	Motorbike
											Male	20	Driver	Motorbike	Motorbike

Annex20: ***Fourth location of black spot site in Phnom Penh – 2008***

Location4: Natioanl Road 5, Lu village, Svay Pak commune, Ruessei Keo district, Phnom Penh															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit & Run	Gender	Age	Road User	Type of transport	Collided with
937423	5/16/2008	21:00 PM	Alcohol abuse	2	2	1	0	Serious accident	Rear end	No	Male	50	Driver	Motorbike	Car(Private)
											Female	48	Passenger	Motorbike	Car(Private)
											Male	12	Passenger	Motorbike	Car(Private)
937570	6/14/2008	19:30 PM	Speed	2	1	0	1	Fatal accident	Right-angle	No	Male	53	Driver	Motorbike	Motorbike
											Male	21	Driver	Motorbike	Motorbike
937956	7/13/2008	19:00 PM	Speed	2	1	0	0	Serious accident	Right-angle	No	Female	22	Passenger	Motorbike	Car(Private)
938366	7/13/2008	20:10 PM	Speed	2	0	1	0	Serious accident	Right-angle	No	Male	24	Driver	Motorbike	Car(Private)
939164	10/19/2008	14:05 PM	Speed	1	2	1	0	Serious accident	Hit pedestrian	No	Male	24	Passenger	Motorbike	Pedestrian
											Male	22	Passenger	Motorbike	Pedestrian
											Male	21	Driver	Motorbike	Pedestrian
939993	10/31/2008	16:30 PM	Not respect right of way	2	1	1	0	Serious accident	Right-angle	No	Male	17	Driver	Motorbike	Car(Private)
											Male	17	Passenger	Motorbike	Car(Private)
940545	12/28/2008	13:00 PM	Speed	1	0	2	0	Serious accident	Hit pedestrian	Yes	Female	23	Pedestrian	Pedestrian	Motorbike
											Female	21	Pedestrian	Pedestrian	Motorbike

***Annex21:* First location of black spot site outside Phnom Penh – 2008**

Location1: Natioanl Road 4, Samnang village, Roka Thum commune, Chbar Mon district, Kampong Speu province															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit & Run	Gender	Age	Road User	Type of transport	Collided with
935245	25-Jan-08	15:55 PM	Speed	1	0	2	2	Fatal accident	Hit pedestrain	No	Male	1	Pedestrian	Pedestrian	Motorbike
											Female	38	Pedestrian	Pedestrian	Motorbike
											Male	20	Passenger	Motorbike	Pedestrian
											Male	22	Driver	Motorbike	Pedestrian
936890	11-Apr-08	18:00 PM	Change lane without due	2	1	2	0	Serious injury	Rear end	Unknown	Male	23	Driver	Motorbike	Light truck
											Male	22	Passenger	Motorbike	Light truck
											Male	22	Passenger	Motorbike	Light truck
936897	14-Apr-08	19:00 PM	Change lane without due	2	1	4	0	Serious injury	Right-angle	No	Male	41	Driver	Motorbike	Motorbike
											Female	7	Passenger	Motorbike	Motorbike
											Male	22	Driver	Motorbike	Motorbike
											Female	36	Passenger	Motorbike	Motorbike
											Male	24	Passenger	Motorbike	Motorbike
937357	1-May-08	21:10 PM	Dangerous overtaking	2	1	1	0	Serious injury	Head-on	No	Male	22	Driver	Car(Private)	Car(Private)
											Male	21	Driver	Car(Private)	Car(Private)
938637	27-Aug-08	22:05 PM	Speed	2	0	1	0	Serious injury	Rear end	No	Male	28	Driver	Motorbike	Motorbike
939897	3-Nov-08	14:10 PM	Dangerous overtaking	2	0	0	2	Fatal injury	Head-on	No	Male		Driver	Motorbike	Car(Private)
											Male		Passenger	Motorbike	Car(Private)
939900	20-Nov-08	1:00 AM	Driving against flow of traffic	2	0	0	2	Fatal injury	Head-on	Yes	Male	28	Driver	Motorbike	Heavy truck
											Male		Passenger	Motorbike	Heavy truck
940196	12-Dec-08	14:30 PM	Speed	2	0	2	0	Serious injury	Head-on	Yes	Male	17	Driver	Motorbike	Minibus
											Male	17	Passenger	Motorbike	Minibus

***Annex22:* Second location of black spot site outside Phnom Penh – 2008**

Location2: Natioanl Road 6A, Kao Roka village, Preaek Anhchanh commune, Mukh Kampoul district, Kandal province															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit & Run	Gender	Age	Road User	Type of transport	Collided with
935302	22-Jan-08	12:50 PM	Brake failure	3	0	1	1	Fatal accident	Rear end	Yes	Male	36	Driver	Motorbike	Car(Taxi)
											Male	66	Passenger	Motorbike	Car(Taxi)
936568	14-Apr-08	17:40 PM	Speed	2	1	1	0	Serious accident	Right-angle	No	Female	19	Passenger	Motorbike	Car(Private)
											Male	23	Driver	Motorbike	Car(Private)
936571	17-Apr-08	7:50 AM	Not respect right of way	2	2	1	0	Serious accident	Right-angle	No	Male	24	Passenger	Motorbike	Car(Private)
											Male	39	Passenger	Car(Private)	Motorbike
											Male	29	Driver	Motorbike	Car(Private)
936572	18-Apr-08	12:10 PM	Dangerous Overtaking	2	0	2	2	Fatal accident	Head-on	No	Female	3	Passenger	Motorbike	Car(Taxi)
											Male	16	Driver	Motorbike	Car(Taxi)
											Male	24	Passenger	Motorbike	Car(Taxi)
											Female	22	Passenger	Motorbike	Car(Taxi)
936573	20-Apr-08	8:30 AM	Dangerous Overtaking	2	1	1	0	Serious accident	Side swipe	No	Male	28	Passenger	Pick-Up	Light truck
											Male	26	Passenger	Pick-Up	Light truck
939032	17-Sep-08	15:30 PM	Speed	2	0	3	1	Fatal accident	Head-on	No	Male	18	Driver	Motorbike	Heavy truck
											Female	4	Passenger	Motorbike	Heavy truck
											Female	28	Passenger	Motorbike	Heavy truck
											Female	56	Passenger	Motorbike	Heavy truck
939036	28-Sep-08	11:40 AM	Speed	2	0	4	0	Serious accident	Head-on	Unknown	Male	30	Passenger	Car(Private)	Car(Private)
											Male	35	Driver	Car(Private)	Car(Private)
											Male	27	Passenger	Car(Private)	Car(Private)
											Male	19	Passenger	Car(Private)	Car(Private)

Annex23: Third location of black spot site outside Phnom Penh – 2008

Location3: Natioanl Road 5, Ou Ambel village, Ou Ambel commune, Serei Saophoan district, Banteay Meanchey province															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit & Run	Gender	Age	Road User	Type of transport	Collided with
936008	5-Mar-08	19:30 PM	Change lane without due care	2	1	1	0	Serious accident	Head-on	No	Male	60	Driver	Motorbike	Motorbike
											Male	18	Driver	Motorbike	Motorbike
937180	1-May-08	18:30 PM	Speed	2	2	0	0	Slight accident	Right-angle	No	Male	23	Driver	Motorbike	Car(Private)
											Male	18	Passenger	Motorbike	Car(Private)
937671	9-Jun-08	16:20 PM	Dangerous overtaking	2	2	1	0	Serious accident	Unknown	No	Male	27	Passenger	Motorbike	Agriculture vehicle
											Male	21	Driver	Motorbike	Agriculture vehicle
											Male	21	Passenger	Motorbike	Agriculture vehicle
937673	11-Jun-08	16:30 PM	Dangerous overtaking	2	3	0	0	Slight accident	Side swipe	No	Male	25	Driver	Motorbike	Motorbike
											Male	25	Passenger	Motorbike	Motorbike
											Male	51	Driver	Motorbike	Motorbike
938181	24-Jul-08	8:00 AM	Change lane without due care	2	2	0	0	Slight accident	Right-angle	No	Male	38	Driver	Motorbike	Motorbike
											Male	56	Driver	Motorbike	Motorbike
938685	1-Sep-08	15:50 PM	Change lane without due care	2	1	0	1	Fatal accident	Right-angle	No	Male	70	Driver	Motorbike	Motorbike
											Male	19	Driver	Motorbike	Motorbike
939476	8-Oct-08	7:20 AM	Dangerous overtaking	2	2	1	0	Serious accident	Side swipe	No	Male	12	Passenger	Motorbike	Motorbike
											Male	47	Driver	Motorbike	Motorbike
											Male	21	Driver	Motorbike	Motorbike
939480	20-Oct-08	6:45 AM	Dangerous overtaking	2	0	1	0	Serious accident	Side swipe	No	Female	12	Driver	Bicycle	Motorbike
939482	23-Oct-08	19:10 PM	Other	2	1	0	0	Slight accident	Rear end	Unknown	Male	63	Driver	Motorbike	Light truck
939484	25-Oct-08	11:00 AM	Speed	1	1	0	0	Slight accident	Hit pedestrian	No	Male	9	Pedestrian	Pedestrian	Motorbike
939805	11-Nov-08	18:20 PM	Speed	2	0	1	0	Serious accident	Hit parked vehicle	No	Male	18	Driver	Motorbike	Light truck
939819	7-Nov-08	14:15 PM	Change lane without due care	2	0	2	0	Serious accident	Head-on	No	Female	20	Driver	Motorbike	Motorbike
											Male	21	Driver	Motorbike	Motorbike
939820	12-Nov-08	14:50 PM	Dangerous overtaking	2	1	1	0	Serious accident	Head-on	Yes	Male	49	Driver	Motorbike	Motorbike
											Female	24	Passenger	Motorbike	Motorbike
939824	25-Nov-08	12:00 PM	Change lane without due care	2	2	1	0	Serious accident	Right-angle	No	Female	66	Passenger	Motorbike	Motorbike
											Female	33	Driver	Motorbike	Motorbike
											Male	19	Driver	Motorbike	Motorbike
939825	27-Nov-08	14:00 PM	Change lane without due care	2	1	0	0	Slight accident	Right-angle	Yes	Male	18	Driver	Motorbike	Car(Private)
940239	25-Dec-08	18:30 PM	Speed	2	1	2	0	Serious accident	Right-angle	No	Female	18	Passenger	Motorbike	Motorbike
											Male	24	Driver	Motorbike	Motorbike
											Female	24	Driver	Motorbike	Motorbike
940497	3-Dec-08	9:30 AM	Not respect right of way	2	2	0	0	Slight accident	Right-angle	No	Male	58	Driver	Motorbike	Motorbike
											Male	18	Driver	Motorbike	Motorbike
940499	6-Dec-08	14:15 PM	Dangerous overtaking	2	1	1	2	Fatal accident	Head-on	Yes	Male	19	Passenger	Motorbike	Motorbike
											Male	55	Driver	Motorbike	Motorbike
											Male	22	Driver	Motorbike	Motorbike
											Male	19	Passenger	Motorbike	Motorbike

Annex24: ***Fourth location of black spot site outside Phnom Penh – 2008***

Location4: Natioanl Road 6A, Bak Khaeng Leu village, Bak Khaeng commune, Mukh Kampoul district, Kandal province															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit & Run	Gender	Age	Road User	Type of transport	Collided with
935306	27-Jan-08	14:00 PM	Speed	2	2	1	0	Serious accident	Side swipe	No	Male	64	Driver	Motorbike	Motorbike
											Male	39	Passenger	Motorbike	Motorbike
											Male	42	Driver	Motorbike	Motorbike
936218	9-Mar-08	18:00 PM	Dangerous overtaking	2	0	2	0	Serious accident	Head-on	No	Male	24	Driver	Motorbike	Motorbike
											Male	30	Driver	Motorbike	Motorbike
936222	30-Mar-08	22:45 PM	Speed	2	0	1	0	Serious accident	Right-angle	Yes	Male		Passenger	Car(Private)	Heavy truck
937437	30-May-08	17:10 PM	Speed	1	0	0	1	Fatal accident	Hit pedestrian	No	Male	49	Pedestrian	Pedestrian	Heavy truck
937597	10-Jun-08	16:30 PM	Dangerous overtaking	2	0	1	0	Serious accident	Head-on	Yes	Male	44	Driver	Motorbike	Heavy truck
938013	1-Jul-08	19:30 PM	Rain	2	0	0	2	Fatal accident	Right-angle	No	Female	29	Passenger	Motorbike	Car(Taxi)
											Male	32	Driver	Motorbike	Car(Taxi)
939031	13-Sep-08	19:10: PM	Speed	2	0	1	0	Serious accident	Hit parked vehicle	No	Female	26	Passenger	Remorque	Pick-Up
939702	10-Nov-08	4:30 AM	Other	2	3	0	0	Slight accident	Rear end	Yes	Male	27	Passenger	Light truck	Car(Private)
											Male	27	Passenger	Light truck	Car(Private)
											Male	27	Driver	Light truck	Car(Private)

Annex25: ***Fifth location of black spot site outside Phnom Penh – 2008***

Location5: National Road 5, Paoy Yong village, Tapong commune, Thma Koul district, Battambang Province															
Serial No	Date	Time	Casuse of accident	# of Vehicle involved	# of slight injuries	# of serious injuries	# of Death	Severity of accident	Type of collision	Hit & Run	Gender	Age	Road User	Type of transport	Collided with
935717	1-Feb-08	11:40 AM	Speed	2	4	0	0	Slight accident	Right-angle	No	Male	42	Driver	Motorbike	Motorbike
											Female	18	Passenger	Motorbike	Motorbike
											Female	16	Passenger	Motorbike	Motorbike
											Male	26	Driver	Motorbike	Motorbike
936752	4-Apr-08	13:15 PM	Alcohol	2	0	1	0	Serious accident	Head-on	Yes	Male	48	Driver	Motorbike	Car(Private)
937163	15-May-08	6:50 AM	Change lane without due care	2	2	0	0	Slight accidnet	Side swipe	UnKnown	Male	75	Driver	Bicycle	Motorbike
											Male	20	Driver	Motorbike	Bicycle
937720	6-Jun-08	8:00 AM	Change lane without due care	2	2	0	0	Slight accident	Right-angle	No	Male	57	Driver	Motorbike	Car(Taxi)
											Female	50	Passenger	Motorbike	Car(Taxi)
937728	26-Jun-08	7:45 AM	Speed	2	2	0	0	Slight accident	Right-angle	No	Female	17	Driver	Motorbike	Bicycle
											Male	23	Driver	Bicycle	Motorbike
938190	24-Jul-08	11:00 AM	Speed	2	3	0	0	Serious accident	Unkonwn	UnKnown	Male	46	Driver	Motorbike	Motorbike
											Female	18	Passenger	Motorbike	Motorbike
											Female	50	Driver	Motorbike	Motorbike
940328	6-Dec-08	17:33 PM	Dangerous overtaking	2	0	0	1	Fatal accident	Head-on	Yes	Male	35	Driver	Motorbike	Heavy truck

Annex26: *Data collection forms*

Two different data collection forms are being used: the hospital data collection form, using the casualty as point of entry, and the traffic police data collection form, using the crash as entry point. Duplicate entries are checked using the name of the casualty, the date and time of crash as well as the location.

Hospital data collection form

Developed for MoI MoI MPWT

Hospital Road Traffic Casualty Form

Supported by WHO HANDICAP INTERNATIONAL

Serial No. _____

PART 1 - INTERVIEW INFORMATION

Hospital/OD name:..... Interviewer name: ..... Date: ____/____/____

PART 2 - CASUALTY INFORMATION

1. Name: _____ **2. Gender:** ☐ Male ☐ Female **3. Age:** _____ **4. Residence:** ☐ Province /town of accident ☐ Foreigner ☐ Other province/Town ☐ Unknown

5. Occupation: ☐ Child ☐ Student ☐ Worker ☐ Vendor/small business ☐ Motor taxi driver ☐ Car taxi driver ☐ House keeping/ Servant ☐ Farmer ☐ Fisherman ☐ Tourist/ Expatriate ☐ Teacher ☐ Police ☐ Soldier ☐ Other government employee ☐ Unemployed ☐ Other:..... ☐ Unknown

6. Date of arrival at hospital: ____/____/____ **7. Time of arrival at hospital (use 24-hour clock):** _____:_____

8. Type of road user: ☐ Pedestrian ☐ Driver ☐ Passenger

9. Type of transport: ☐ Motorbike ☐ Bicycle ☐ Pedestrian ☐ Motor tricycle ☐ Tricycle ☐ Remorque ☐ Car (taxi) ☐ Car (private) ☐ Pick-up ☐ Minibus ☐ Bus ☐ Light truck ☐ Heavy truck ☐ Other:.....

10. Wearing a helmet/ seatbelt? ☐ Yes ☐ No ☐ N/A ☐ Unknown **11. Having driving license?** ☐ Yes ☐ No ☐ N/A ☐ Unknown

12. Substance use: **Alcohol:** ☐ Yes/Suspected ☐ No ☐ Unknown **Drugs:** ☐ Yes/Suspected ☐ No ☐ Unknown

13. Nature of injuries:
Trauma ☐ Cranial ____/15 ☐ Facial ☐ Thorax ☐ Abdominal ☐ Cervical or dorsal
Fracture ☐ UE ☐ LE ☐ Pelvis
Wounds/Cuts ☐ UE ☐ LE ☐ Pelvis
Narrative description: diagnoses - disability

14. Severity of injuries: ☐ No injury ☐ Superficial (minor cuts, bruises) ☐ Severe (required surgery or ICU) ☐ Moderate (fracture, sutures)

15. Medical treatment cost estimation(In $):.....

16. Is casualty insured? ☐ Yes ☐ No ☐ Unknown

17. Hospital discharge: ☐ Fully treated and sent home ☐ Sent home but disabled for life **(17.A)** ☐ Died on the accident scene ☐ Died at the hospital ☐ Admitted or referred to other hospital ☐ Patient requests to leave for other clinic/traditional healer ☐ Patient die at home ☐ Patient will die at home ☐ Unknown

17.A If disabled for life, what kind of disability?: ☐ Seeing ☐ Hearing ☐ Learning ☐ Moving **(17.B)** ☐ Feeling ☐ Psychological ☐ Other.....

17.B If moving difficult, what kind of moving? ☐ Limitation/deformity ☐ Paralysis ☐ Amputation(leg) ☐ Amputation(arm) ☐ Other.....

18. How did the casualty travel to hospital: ☐ SAMU/Ambulance ☐ Alone ☐ Family/Relative ☐ Unknown

PART 3 - ACCIDENT INFORMATION

1. Date of accident: ____/____/____ **2. Time of accident (use 24-hour clock): .....: .....**

3. Place of accident : Street name:..... Village:..... Commune/Sangkat:..... District:..... Province/Town: .....
Detailed location (intersection or landmark): .....

4. Road type: ☐ Straight road ☐ Roundabout ☐ Curve ☐ X-junction ☐ T-junction ☐ Y-junction ☐ Bridge ☐ Slope ☐ Other:.....
☐ National road No. ..... ☐ Provincial road No:..... ☐ Km No (use decimal):..... ☐ Major road in city ☐ Minor road in city ☐ Local road/ track ☐ Other: .....
☐ Paved ☐ Unpaved ☐ Construction site ☐ Unknown

5. Did accident happened in an urban area? ☐ Yes ☐ No

6. Cause of accident:

6.a-Human error:
☐ Speed
☐ Not respect traffic lights
☐ Not respect right of way
☐ Driving against flow of traffic
☐ Not respect traffic signs
☐ Dangerous overtaking
☐ Using mobile phone
☐ Wrong use of high beam
☐ Alcohol abuse
☐ Drug abuse
☐ Change lane without due care
☐ Fatigue or illness
☐ Other:.....

7.b-Road condition:
☐ Potholes
☐ Dirt/Sand/Gravel
☐ Dust
☐ Animal on the road
☐ Object on the road
☐ Other:.....

7.c- Weather condition:
☐ Rain
☐ Cloudy/mist
☐ Wet road
☐ Other:.....

7.d- Vehicle defect:
☐ Brake failure
☐ Tire blow out
☐ Steering wheel failure
☐ Headlight failure
☐ Load falling off
☐ Other:.....

7. Accident circumstance: - How many vehicles were involved in the accident? ..... - How many people were involved in the accident? ..... - How many people were injured in the accident? ..... - How many people died in the accident? .....

8. Pedestrian/Casualty's vehicle collided with: ☐ Motorbike ☐ Bicycle ☐ Pedestrian ☐ Motor tricycle ☐ Tricycle ☐ Remorque ☐ Car (taxi) ☐ Car (private) ☐ Pick-up ☐ Minibus ☐ Bus ☐ Light truck ☐ Heavy truck ☐ Stationary object ☐ Fell alone ☐ Animal ☐ Other .....

9. Attendance of police: ☐ Yes ☐ No

Traffic police data collection form

Developed for MoI MoI MPWT

Traffic Police Accident and Casualty Form

Supported by WHO BTC CTB HANDICAP INTERNATIONAL

Serial No. ____

PART 1 - INTERVIEW INFORMATION

Province:..... | Traffic police unit:..... | Interviewer name and signature: ..... | Date: ____

PART 2 - ACCIDENT INFORMATION

1. Date of accident (DD,MM,YY): ____ | **2. Time of accident (use 24-hour clock):** .....: .....

3. Severity of accident : ☐ Fatal injury ☐ Serious injury ☐ Slight injury ☐ Damage only

4. Place of accident : Street name:..... Village:..... Commune/Sangkat:..... District:..... Province/Town: .....
Detailed location (intersection or landmark): .....
GPS coordinates (optional): ..... - .....

5. Road type: ☐ Straight road ☐ Roundabout ☐ Curve ☐ X-junction ☐ T-junction ☐ Y-junction ☐ Bridge ☐ Slope ☐ Other:.....
☐ National road No. ..... ☐ Provincial road No:..... ☐ Km No (use decimal):..... ☐ Major road in city ☐ Minor road in city ☐ Local road/ track ☐ Other: .....
☐ Paved ☐ Unpaved ☐ Construction site ☐ Unknown

6. Did accident happened in an urban area? ☐ Yes ☐ No

7. Cause of accident:

7.a-Human error:		7.b-Road condition:	7.c- Weather condition:	7.d- Vehicle defect:
☐ Speed	☐ Using mobile phone	☐ Potholes	☐ Rain	☐ Brake failure
☐ Not respect traffic lights	☐ Wrong use of high beam	☐ Dirt/Sand/Gravel	☐ Cloudy/mist	☐ Tire blow out
☐ Not respect right of way	☐ Alcohol abuse	☐ Dust	☐ Wet road	☐ Steering wheel failure
☐ Driving against flow of traffic	☐ Drug abuse	☐ Animal on the road	☐ Other:.....	☐ Headlight failure
☐ Not respect traffic signs	☐ Change lane without due care	☐ Object on the road		☐ Load falling off
☐ Dangerous overtaking	☐ Fatigue or illness	☐ Other:.....		☐ Other:.....
	☐ Other:.....			

8. Collision type: ☐ Head-on ☐ Rear end ☐ Right-angle ☐ Side swipe ☐ Overturned ☐ Fell alone (for two-wheelers)
☐ Hit object on the road ☐ Hit object off road ☐ Hit parked vehicle ☐ Hit pedestrian ☐ Hit animal ☐ Other.....

9. Hit and run: ☐ Yes ☐ No

10. Vehicles involved:	**Vehicle 1**	**Vehicle 2**	**Vehicle 3**	**Vehicle 4**
	☐ Motorbike ☐ Pick-up ☐ Bicycle ☐ Minibus ☐ Motor tricycle ☐ Bus ☐ Tricycle ☐ Light truck ☐ Motor remorque ☐ Heavy truck ☐ Car (taxi) ☐ Other:..... ☐ Car (private)	☐ Motorbike ☐ Pick-up ☐ Bicycle ☐ Minibus ☐ Motor tricycle ☐ Bus ☐ Tricycle ☐ Light truck ☐ Motor remorque ☐ Heavy truck ☐ Car (taxi) ☐ Other:..... ☐ Car (private)	☐ Motorbike ☐ Pick-up ☐ Bicycle ☐ Minibus ☐ Motor tricycle ☐ Bus ☐ Tricycle ☐ Light truck ☐ Motor remorque ☐ Heavy truck ☐ Car (taxi) ☐ Other:..... ☐ Car (private)	☐ Motorbike ☐ Pick-up ☐ Bicycle ☐ Minibus ☐ Motor tricycle ☐ Bus ☐ Tricycle ☐ Light truck ☐ Motor remorque ☐ Heavy truck ☐ Car (taxi) ☐ Other:..... ☐ Car (private)
11. Vehicle registration number:	.....	.....	.....	.....
12. Vehicle manoeuvre:	☐ Going straight ahead ☐ Reversing ☐ Right turn ☐ Sudden start ☐ Left turn ☐ Sudden stop ☐ U-turn ☐ Parking ☐ Overtaking ☐ Other	☐ Going straight ahead ☐ Reversing ☐ Right turn ☐ Sudden start ☐ Left turn ☐ Sudden stop ☐ U-turn ☐ Parking ☐ Overtaking ☐ Other	☐ Going straight ahead ☐ Reversing ☐ Right turn ☐ Sudden start ☐ Left turn ☐ Sudden stop ☐ U-turn ☐ Parking ☐ Overtaking ☐ Other	☐ Going straight ahead ☐ Reversing ☐ Right turn ☐ Sudden start ☐ Left turn ☐ Sudden stop ☐ U-turn ☐ Parking ☐ Overtaking ☐ Other
13. Vehicle traveling from:	..... To	..... To	..... To	..... To .....
14. Vehicle characteristics:	☐ Left- hand-drive ☐ Righ-hand drive	☐ Left- hand-drive ☐ Righ-hand drive	☐ Left- hand-drive ☐ Righ-hand drive	☐ Left- hand-drive ☐ Righ-hand drive
15. Importance of damage:	☐ Heavy ☐ Slightly ☐ No damage	☐ Heavy ☐ Slightly ☐ No damage	☐ Heavy ☐ Slightly ☐ No damage	☐ Heavy ☐ Slightly ☐ No damage
16. Estimation of damage cost (in US$):	.....	.....	.....	.....
17. Are vehicles insured?	☐ Yes ☐ No ☐ Unknown	☐ Yes ☐ No ☐ Unknown	☐ Yes ☐ No ☐ Unknown	☐ Yes ☐ No ☐ Unknown

18. Brief accident description (be as precise as possible):

PLEASE FILL IN THE CASUALTY INFORMATION ON THE BACK OF THIS PAGE

PART 3: DRIVER AND/OR CASUALTY INFORMATION

DRIVER/CASUALTY 1

1. Name: .....
2. Gender: ☐ Male ☐ Female
3. Age: .....
4. Likely at fault? ☐ Yes ☐ No
5. Residence: ☐ Province of accident ☐ Other province ☐ Foreigner ☐ Unknown
6. Occupation: ☐ Child ☐ Student ☐ Worker ☐ Vendor/small business ☐ Motor taxi driver ☐ Car taxi driver ☐ House keeping/ Servant ☐ Farmer ☐ Fisherman ☐ Tourist/ Expatriate ☐ Teacher ☐ Police ☐ Soldier ☐ Other government employee ☐ Unemployed ☐ Other:..... ☐ Unknown
7. Type of road user: ☐ Pedestrian ☐ Driver ☐ Passenger
8. Type of transport: ☐ Vehicle number:..... ☐ Pedestrian
9. Wearing a helmet/seat belt: ☐ Yes ☐ No ☐ N/A ☐ Unknown
10. Having driving license: ☐ Yes ☐ No ☐ N/A ☐ Unknown
11. Substance use: Alcohol: ☐ Yes/Suspected ☐ No ☐ Unknown Drugs: ☐ Yes/Suspected ☐ No ☐ Unknown
12. Severity of injuries: ☐ No apparent injury ☐ Superficial injury (e.g. bruises. Minor cuts) ☐ Moderate (fracture, sutures) ☐ Severe (requires surgery or ICU) ☐ Died on the accident site
13. Was the casuality transferred to hospital ? ☐ Yes ☐ No If yes, to which hospital/OD? .....

DRIVER/CASUALTY 2

1. Name: .....
2. Gender: ☐ Male ☐ Female
3. Age: .....
4. Likely at fault? ☐ Yes ☐ No
5. Residence: ☐ Province of accident ☐ Other province ☐ Foreigner ☐ Unknown
6. Occupation: ☐ Child ☐ Student ☐ Worker ☐ Vendor/small business ☐ Motor taxi driver ☐ Car taxi driver ☐ House keeping/ Servant ☐ Farmer ☐ Fisherman ☐ Tourist/ Expatriate ☐ Teacher ☐ Police ☐ Soldier ☐ Other government employee ☐ Unemployed ☐ Other:..... ☐ Unknown
7. Type of road user: ☐ Pedestrian ☐ Driver ☐ Passenger
8. Type of transport: ☐ Vehicle number:..... ☐ Pedestrian
9. Wearing a helmet/seat belt: ☐ Yes ☐ No ☐ N/A ☐ Unknown
10. Having driving license: ☐ Yes ☐ No ☐ N/A ☐ Unknown
11. Substance use: Alcohol: ☐ Yes/Suspected ☐ No ☐ Unknown Drugs: ☐ Yes/Suspected ☐ No ☐ Unknown
12. Severity of injuries: ☐ No apparent injury ☐ Superficial injury (e.g. bruises. Minor cuts) ☐ Moderate (fracture, sutures) ☐ Severe (requires surgery or ICU) ☐ Died on the accident site
13. Was the casuality transferred to hospital ? ☐ Yes ☐ No

DRIVER/CASUALTY 3

1. Name: .....
2. Gender: ☐ Male ☐ Female
3. Age: .....
4. Likely at fault? ☐ Yes ☐ No
5. Residence: ☐ Province of accident ☐ Other province ☐ Foreigner ☐ Unknown
6. Occupation: ☐ Child ☐ Student ☐ Worker ☐ Vendor/small business ☐ Motor taxi driver ☐ Car taxi driver ☐ House keeping/ Servant ☐ Farmer ☐ Fisherman ☐ Tourist/ Expatriate ☐ Teacher ☐ Police ☐ Soldier ☐ Other government employee ☐ Unemployed ☐ Other:..... ☐ Unknown
7. Type of road user: ☐ Pedestrian ☐ Driver ☐ Passenger
8. Type of transport: ☐ Vehicle number:..... ☐ Pedestrian
9. Wearing a helmet/seat belt: ☐ Yes ☐ No ☐ N/A ☐ Unknown
10. Having driving license: ☐ Yes ☐ No ☐ N/A ☐ Unknown
11. Substance use: Alcohol: ☐ Yes/Suspected ☐ No ☐ Unknown Drugs: ☐ Yes/Suspected ☐ No ☐ Unknown
12. Severity of injuries: ☐ No apparent injury ☐ Superficial injury (e.g. bruises. Minor cuts) ☐ Moderate (fracture, sutures) ☐ Severe (requires surgery or ICU) ☐ Died on the accident site
13. Was the casuality transferred to hospital ? ☐ Yes ☐ No

DRIVER/CASUALTY 4

1. Name: .....
2. Gender: ☐ Male ☐ Female
3. Age: .....
4. Likely at fault? ☐ Yes ☐ No
5. Residence: ☐ Province of accident ☐ Other province ☐ Foreigner ☐ Unknown
6. Occupation: ☐ Child ☐ Student ☐ Worker ☐ Vendor/small business ☐ Motor taxi driver ☐ Car taxi driver ☐ House keeping/ Servant ☐ Farmer ☐ Fisherman ☐ Tourist/ Expatriate ☐ Teacher ☐ Police ☐ Soldier ☐ Other government employee ☐ Unemployed ☐ Other:..... ☐ Unknown
7. Type of road user: ☐ Pedestrian ☐ Driver ☐ Passenger
8. Type of transport: ☐ Vehicle number:..... ☐ Pedestrian
9. Wearing a helmet/seat belt: ☐ Yes ☐ No ☐ N/A ☐ Unknown
10. Having driving license: ☐ Yes ☐ No ☐ N/A ☐ Unknown
11. Substance use: Alcohol: ☐ Yes/Suspected ☐ No ☐ Unknown Drugs: ☐ Yes/Suspected ☐ No ☐ Unknown
12. Severity of injuries: ☐ No apparent injury ☐ Superficial injury (e.g. bruises. Minor cuts) ☐ Moderate (fracture, sutures) ☐ Severe (requires surgery or ICU) ☐ Died on the accident site
13. Was the casuality transferred to hospital ? ☐ Yes ☐ No

Annex27. Feedback form

Please send back this form to the following address:
- By mail: Handicap International – Road Safety Program Manager – #18, Street 400 – Phnom Penh
- By fax: +855 (0)23/216 270

➢ Name of organization: ……

➢ Type of organization:

□ NGO
□ International Organization
□ Ministry
□ Private company
□ Other (please specify): ……..

➢ Sector(s) of activity:

□ Health
□ Education
□ Transport
□ Environment
□ Disability and Rehabilitation
□ Child welfare/rights
□ Rural & Livelihood Development
□ Press-media
□ Research Institute
□ Other (please specify): …….

➢ Name of respondent: ……
Position: ……..
Email address: ……...
Postal address: ……...
Phone number: ……

➢ Quality of report:

How would you rate this annual report? (please tick the corresponding box)

	Excellent	Good	Average	Poor	Please elaborate
Report presentation					……..
Quality of the data provided					……..
Quantity of the data provided					……..
Pertinence of the short analysis provided					……..

Would you like to receive this report by?

□ Hard copy □ Electronic mail copy □ Floppy Disk/CD copy

➢ Which additional information would you like to appear in this report? (please specify)
……
……

➢ How do you use this report?
……
……

➢ Additional comment
……
……

Contacts

Further analysis and **additional information** is available on request. Please do not hesitate to contact one of the following persons:

- **For general road safety information and additional analysis/customized reports:**

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- **For information regarding the National Road Safety Action Plan**

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Director General of Transports & Director of Land Transport Department
Permanent Member of National Road Safety Committee
Secretary General of General Secretariat of National Road Safety Committee
Ministry of Public Works and Transport
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- **For information regarding the national traffic law enforcement**

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Handicap International Belgium

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