



ADB-ASEAN Regional Road Safety Program

**Accident
Costing Report:**

AC 4



**The Cost of
Road Traffic
Accidents in
the Lao
People's
Democratic
Republic**



**Asian Development Bank-Association of Southeast
Asian Nations
Regional Road Safety Program**

**Accident Costing Report AC 4: Lao People's
Democratic Republic**

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ABBREVIATIONS

ADB	Asian Development Bank
Lao PDR	Lao People's Democratic Republic
RTA	road traffic accident
WHO	World Health Organization

NOTE

In this report, "\$" refers to US dollars.

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1 INTRODUCTION

1.1 General

Among transportation accidents, road traffic accidents (RTAs) generally receive less public attention than sea or air accidents, which occur less often. RTAs tend to be less dramatic because they contribute casualties in ones and twos. For this reason, the large-scale economic and social impact of road accidents may not be fully appreciated, but RTAs are a serious problem throughout the world.

Approximately 1 million people worldwide die annually as a result of RTAs, and up to

50 million are injured. While industrialized countries' accident totals are dropping significantly, the totals are rising in developing countries.

The global cost of road of accidents in developing and emerging nations is about \$70 billion each year. In recent years, the problem in developing countries has been highlighted by many organizations, including the Asian Development Bank (ADB), United Nations, World Bank, World Health Organization (WHO), and many other development partners. WHO predicts that RTAs will become the third leading cause of disability in developing countries (Table 1).

Table 1: Leading Diseases or Injuries Leading to Death or Disability (1998 and 2020)

Disease or Injury (1998)	Disease or Injury (2020)
1. Lower Respiratory Infections	1. Ischemic Heart Disease
2. HIV/AIDS	2. Unipolar Major Depression
3. Perinatal Conditions	3. Road Traffic Injuries
4. Diarrheal Diseases	4. Cerebrovascular Disease
5. Unipolar Major Depression	5. Chronic Obstructive Pulmonary Disease
6. Ischemic Heart Disease	6. Lower Respiratory Infections
7. Cerebrovascular Disease	7. Tuberculosis
8. Malaria	8. War
9. Road Traffic Injuries	9. Diarrheal Diseases
10. Chronic Obstructive Pulmonary Disease	10. HIV/AIDS

HIV/AIDS = human immunodeficiency virus/acquired immunodeficiency syndrome.

Source: World Health Organization.

1.2 In the Lao People's Democratic Republic Context

RTAs increased by almost 400% from 1990 to 2002 in the Lao People's Democratic Republic (PDR). During this period, the Government tried to cope with the increase by allocating funds, strengthening institutions, raising awareness, making and enforcing legislation, and cooperating and partnering with external development partners. Despite these efforts, RTA numbers are still a serious challenge. Factors contributing to RTAs are strong

economic growth, resulting in increased growth in the number of registered motor vehicles; rapid population growth; better road networks, resulting in increased speeds; and inconsistent adherence to traffic regulations, resulting from a lack of driver education and unlicensed foreign drivers.

Lao PDR fatality rates are high, compared with those of other Association of Southeast Asian Nations countries. For example, the Lao PDR fatality rate per 100,000 accidents is 16.6, while the Philippines and Singapore have rates

between 2.0 and 5.0. Unsafe travel, weak enforcement of legislation, limited public awareness of road safety issues, low numbers of professionals working on road safety issues, insufficient equipment and tools for road safety checking, insufficient road safety lessons in schools, and inadequate road safety databases all contribute to Lao PDR's high fatality rates. These rates affect the economy, quality of life, property, and society.

Estimating RTA costs is vital to understanding road safety issues and related economic losses. Lao PDR's current ability to estimate RTA costs could be improved. Property damage and fatalities calculations are based on victims' agreements only, and police officers act as judges for accidents. However, the cost can still be calculated for slight and serious injuries and deaths. This cost ranges from KN100,000 to KN20 million.

The criteria for RTA cost calculation were included in a 1996 National Security Ministry report (No. 1095/96/ MI). No update has been published, and the rates are significantly lower than present real market costs. The criteria and

corresponding rates are slightly injured (KN100,000), seriously injured (KN500,000), and fatality (KN1 million). Box 1 provides other rates.

1.3 Objectives and Scope of Study

The objectives of this report are to offer an RTA cost estimate for Lao PDR and examine relevant information. The information will be mainly collected from traffic police, insurance companies, hospitals in Vientiane, and other organizations.

1.4 Outline of Report

The report's format was provided by ADB. The five main parts discuss the methodology of cost estimates and national cost estimates in Lao PDR. Chapter 1 gives general information on RTAs in the country and provides the objective and scope of the study. Chapter 2 considers the methodology used to conduct accident cost estimates. Chapter 3 discusses each cost component in more detail. Chapter 4 analyzes national accident costs. Chapter 5 summarizes the findings.

Box 1: Compensation Rates for Road Traffic Accident Injuries and Fatalities

The Ministry of Communication, Transport, Post and Construction has a rate for calculating RTA costs. This was issued in 1990 and has not been adjusted. The rates for injuries and fatalities are \$5 per slight injury, \$21 per medium injury, \$53 per severe injury, and \$126 per fatality.

These rates are no longer appropriate. Therefore, the calculation will be based on Assurances Generales du Laos calculations.

2 METHODOLOGY

2.1 Introduction

Several methods and techniques can be used for determining RTA cost. Babbie Ross & Silcock explain the differences between the willingness-to-pay method and the human capital method. The willingness-to-pay method is preferred in developed countries and is not appropriate for developing countries due to the need to complete complicated questionnaires and record complex data.

2.2 Available Methods

The Babbie Ross & Silcock text mentions that the human capital method was introduced in estimating the cost of RTAs in developing countries. Lao PDR adopts this method for this study.

Human Capital Method. The human capital method examines the national effects of RTAs. This method is used to identify costs related to loss of individual property and socioproperty, payment for treating injuries, payment for services provided by organizations involved, loss of time and income resulting from fatalities, effect of injuries on careers, and effects on victims' relatives. This method estimates five cost components: property damage, administration costs, output lost, costs for medical treatment, and human costs. After the related costs have been estimated, the national accident cost can be calculated.

Property damage refers to the loss of property, both private and government. Examples of property damage are damage to vehicles and roadside property and goods that results from an RTA. The cost of this type of damage may be small when one injury or death occurs, but the cost will increase with the number of accidents. Data for estimating property damage can be collected from insurance companies, automobile repair shops, vehicle owners, and fleet owners. Using these data

sources has advantages and disadvantages. Therefore, collecting data from different sources should improve accuracy.

Administration costs are the costs of (i) police and insurance company services related to accidents and (ii) court administration (in the event an accident results in a trial). These costs are low compared with other cost components, but they must be estimated. Data will include service fees and the number of accidents and can be collected from organizations involved.

Output lost calculates career-related losses of casualties. The entire loss of income per casualty category (slight or serious injury or fatality) is calculated. For slight injuries, only income lost is calculated. For serious injuries, income lost during hospital stays and rehabilitation is calculated, based on career. For fatalities, total income for entire productive lives is calculated, based on career. The income of a fatality will convert to a net present value, reflecting a real income in the present. Data can be collected from hospitals and/or national statistics centers, police departments, and organizations involved.

Cost for medical treatment refers to payment for treating casualty. Victims are classified as slightly or seriously injured or fatalities. The classification of victims will help accurately estimate the costs because treatment differs by category. Data can be collected from hospitals, insurance companies, and casualties.

Human cost estimates the value that compensates families affected by accidents. When accidents occur, they affect the families of victims. Accidents can destroy family structures, if a fatality is a household's head or a major income earner. Therefore, this cost calculates compensation for the pain, grief, and suffering of family members, in the hope that this will reduce family sorrow.

3 COST COMPONENTS

3.1 Introduction

RTAs throughout the Lao PDR have increased significantly in recent years. This increase is directly related to the increased number of vehicles (Table 2).

RTAs have led to a loss of human resources and property that have affected the country's economic growth. A recent RTA cost estimate did not show the same results as international systems. Road safety campaigns are not achieving their goal, and hence the public is not aware of RTA losses.

Table 2: Comparison of Increasing Number of Vehicles and Number of Accidents (1999–2000)

Item	1999	2000	2001	2002
Vehicles	187,041	200,756	220,491	252,508
Accidents	3,159	4,335	4,681	5,002

Sources: Ministry of Communication, Transport, Post and Construction and Traffic Police Department records.

This part of the report explains in more detail the five components of the human capital method for estimating RTA cost.

3.1 Damage to Property

Property damage can be broken down into three categories: vehicle damage, roadside property damage, and goods that were damaged after being carried by vehicles. Vehicle damage is most significant, as high values for the others are less important.

This report focuses on the cost of vehicle damage, due to a lack of roadside property and goods damage data.

Damaged property cost estimates can be obtained from Assurances Generales du Laos, an insurance company operating in the Lao PDR. Only 28,114 vehicles were registered for insurance nationwide. During 2003 the company paid about KN5.2 billion for 4,139 accident claims (Table 3). This is equal to about KN1.2 million per claim, which is the average vehicle damage cost per case. The calculation cuts out the cost for fatalities, which was equivalent to roughly KN1 million (\$100) per claim.

Table 3: Road Traffic Accident Compensation by Assurances Generales du Laos (2003)

Item	Amount	Cost (KN)
RTAs from Jan–Dec 2003	3,047 cases	5,152,891,394
Fatalities from RTAs	160 people	802,645,000

RTA = road traffic accident.
 Source: Assurances Generales du Laos.

To estimate the RTA cost with casualties for 2002-2003, the statistics in the appendix (Table A.1) are converted to the number of vehicles (Table 4) and casualties (Table 5) involved, by type.

Table 4: Average Number of Vehicles Involved in Each Accident Type
(2002–2003)

Item	Slight Damage	Medium Damage	Scrap	Total
Average Number of Vehicles Involved	1.29	0.4	0.02	1.71

Sources: Ministry of Communication, Transport, Post and Construction and Traffic Police Department records.

Table 5: Average Number of Casualties Involved per Type (2002–2003)

Item	Slightly Injured	Seriously Injured	Fatality	Total
Average Number of Casualties Involved	0.8	0.45	0.08	1.33

Sources: Ministry of Communication, Transport, Post and Construction and Traffic Police Department records.

The numbers of vehicles and casualties involved in each accident type seem to correlate. Therefore, it can be assumed that scrap accidents lead to fatalities, medium damage accidents lead to injuries, and slight damage accidents lead to property damage only. That being the case, the total vehicle damage cost for

one accident is assumed to be equal to almost KN1.7 million. Damage to roadside components is assumed to be 20% of total vehicle cost. Adding the two costs gives the total cost for property damage only. Table 6 shows the average cost of vehicle damage per casualty type.

Table 6: Average Cost of Vehicle Damage per Accident Type

Item	Damage Only	Slight Injury	Serious Injury	Fatal
Average Cost (KN)	2,029,363	2,536,704	4,509,696	25,367,038
Average Cost (\$)	202	253	450	2,536

Source: Lao PDR data.

Assurances Generales du Laos has five categories for drivers, passengers, and third parties. The compensation paid by this insurance company is shown in tables 7 and 8.

Table 7: Car Insurance for Drivers and Passengers (\$)

Type	Option 1	Option 2	Option 3	Option 4	Option 5
Fatal	210	420	1,000	1,500	1,800
Handicap	420	840	1,890	2,250	3,600
Medical Cost	45	75	78	100	225

Source: Assurances Generales du Laos.

Table 8: Car Insurance for Third Parties (\$)

Type	Option 1	Option 2	Option 3	Option 4	Option 5
Fatal	300	400	500	3,500	10,000
Handicap	300	400	500	3,500	10,000
Medical Cost	180	190	200	210	250
Property Damage		500	800	1,750	5,000

Source: Assurances Generales du Laos.

3.3 Administration Costs

Administration costs mainly include police service cost, insurance cost, and court administration cost. These costs are less in value when compared with the other four cost components of the human capital method. An example given in the guidelines for the United Kingdom in 2000 shows an insurance administration cost of 2.8% and a police service cost of 0.6% of the total administration cost.

The administration cost for RTAs in Lao PDR will include police administration and a village fee for a negotiation document. After accidents, owners or relatives of owners must remove vehicles by

themselves and leave them at police stations, which is an insurance company cost.

When accidents result in slight injuries, owners of vehicles will negotiate among themselves. If they reach an agreement regarding compensation, the police will not get involved. When accidents result in serious injuries or fatalities, the police will intervene. In these cases, vehicle owners will be charged KN10,000–400,000. Insurance companies will charge KN100,000 per case. Therefore, the total administration cost can be as high as KN500,000 per case (\$50). Details are provided in Table 9.

Table 9: Administration Cost for One Accident (KN)

Item	Police	Insurance
Charge per Accident (Serious Injury or Fatality)	10,000–400,000	100,000
Total	≤500,000	

≤ = less than or equal to.

Source: Lao PDR data.

3.4 Medical Cost

Medical costs for accidents can be classified into three major cost categories: (i) emergency medical services for first aid, (ii) hospital costs that are the main payment of patients, and (iii) recovery costs that consist of treatment and prosthetics.

In Lao PDR, only data related to emergency medical services and hospital costs are available. Medical cost records from hospitals are very rare. Government hospitals sometimes lack medicine. Patients must therefore buy medicine from outside. For this reason, hospitals do not have exact costs for accident-related medicine costs, so this study will discuss only estimated hospital costs.

Emergency medical services are developing. Four major hospitals in Vientiane have one ambulance each, which operate within 20 kilometers of their respective hospitals. The ambulances will take patients to hospitals when victims call for help, and patients will be charged KN50,000 (\$5). The charge covers medical aid and labor and material costs. The hospital cost includes medical costs and the costs of computer scans, food, and beds. The payment depends on the condition of each patient. Seriously injured patients will pay more than slightly injured patients. The payment for fatalities and serious injuries is not different.

Seriously injured patients will stay in hospitals for an average of 2 weeks. Medicine will cost about KN2.5 million. Accommodations will cost about KN1 million. Should a special case need a computer scan, an extra KN700,000 will

be charged. The total cost of a serious injury will therefore range from KN3.5 million to KN4.2 million (\$350 to \$420). The cost for a slight injury will range from KN100,000 to KN500,000 (\$10 to 50). The cost of a fatality is based on an average cost that represents the time patients spend in hospitals prior to death, which is estimated at \$350 to 420, and a funeral cost of \$150, according to the Social Insurance Department (2000). The maximum total hospital and medical cost for each fatality is \$570 per case.

It should be noted that after checking out of hospitals, most seriously injured patients need 1 week to recover, and medicine is still necessary. Therefore, 5% of the in-hospital medicine cost should be added. When this is done, the total medical cost for a serious injury will be about KN4.4 million (roughly \$440). Medical cost details appear in Table 10.

Table 10: Summary of Medical Cost by Casualty

Item	Slightly Injured	Seriously Injured	Fatality
Medical Cost (KN)	500,000	4,410,000	5,700,000
Medical Cost (\$)	50	441	570

Source: Vientiane hospital estimates.

3.5 Lost Output

Accidents affect the health of victims and also their incomes and those of their families. Accidents often keep victims from performing work-related duties, which can deprive them and their families of income and lead to a loss of national productivity.

Estimated lost output is classified into three casualty categories: fatalities, serious injuries, and slight injuries. Data used for estimates include wage rate and average age at death. Since wage rates vary among population segments in society, gross domestic product per capita

will be applied when calculating lost output.

Statistics from Vientiane traffic police show that most accidents involve victims between the ages of 15 and 30 (Table A.2). These statistics, however, do not provide exact ages of fatalities. Therefore, this study assumes that the Vientiane statistical averages will be representative of the whole country. In line with this, the average age of accident fatalities among accident victims between the ages of 15 and 30 is 24 years, while the age of retirement is 60 years.

Seriously injured victims will lose 35 days of work, of which 14 days will be spent in

the hospital, 7 days will be spent at home, and 14 days will be spent learning a new career. Slightly injured victims will lose 7 days of work. Gross domestic product per capita for 2003 is \$330.00. When converted to a daily wage, this equals about \$0.90. For the seriously injured, victims might be permanently disabled or not be able to return to their previous jobs for many years, but they are assumed to be doing some work. Therefore, estimates put lost output at 30% of the output lost per fatality.

Estimated lost output must be equal to net present value because this cost component requires knowledge of the value of the lost output of a fatality over the course of what would have been the

remaining years of productive life. A discount rate used for calculating net present value of lost output is 12% because this rate is applied to many projects in Lao PDR.

While the lost output estimate per casualty must convert to net present value, for injuries that result in lost output of 1 month or less, the calculation of net present value is not appropriate because the discount rate is set for 1 year of lost output. Therefore, the net present value of lost output for slight injuries is not considered. Lost output by casualty type is summarized in Table 11.

Estimated lost output for a typical casualty will follow the formula in Box 2.

Table 11: Summary of Lost Output by Casualty Type

Item	Casualty Type		
	Fatal	Serious Injury	Slight Injury
Lost Output	\$3,033.00	\$909.00	\$6.33
Ratio	479	143	1

Source: Lao PDR data.

Box 2: Formula for Estimating Lost Output

Fatality lost output = $\sum_0^n \frac{W}{(1+r)^n}$

Where $\Sigma =$ _____
 W = average yearly wage of fatality (\$330)
 r = discount rate (12%)
 n = 36 years (year of retirement [60] — average of death age from road accidents [24])

Serious injury lost output = [number of days in hospitals + number of days at home recovering X average wage] + [number of days of career X average wage]

Slight injury lost output = number of days in hospital or visiting medical facilities X average wage

Source: Lao PDR data.

3.6 Human Cost

The human cost will be a component of pain, grief, and suffering. Experts (Peter Bacon & Associates 1999) have shown that victims and their family members suffer from psychological deterioration following accidents. Cost-benefit analysis in many countries usually includes a social cost component. A national value of pain, grief, and suffering is often included to reflect society's and individuals' aversion to death. The cost associated with pain, grief, and suffering is, by virtue of this characteristic, rather subjective. The associated cost covers the physical and mental suffering of victims and the suffering of their relatives and friends. To compensate for the social loss resulting from road accidents when estimating accident cost, the human cost that accounts for pain, grief, and suffering is usually added to the total accident costs for each accident severity type. To determine the associated pain, grief, and suffering cost resulting from road accidents, this study adopts the proportion of total accident costs method, as recommended by Assurances Generales

du Laos and traffic police who witness victims' agreements. The mental suffering treatment will range from \$40 for slight injuries to \$500 for medium injuries and \$800 or more for serious injuries or fatalities. The mental suffering treatment will include the costs of a *baci* (___) ceremony, funeral, and food for victims' children and parents or others. The recommendation by Assurances Generales du Laos and traffic police for cost calculation will be as follows:

- (i) 40% of total costs for a fatal accident,
- (ii) 60% of total costs for a serious injury accident, and
- (iii) 10% of total costs for a slight injury accident.

Due to the percentages of total costs, the cost of pain, grief, and suffering, or the human cost, for each casualty is estimated at about KN10.1 million (roughly \$1,100) for fatalities, about KN2.7 million (roughly \$270) for seriously injured victims, and about KN253,000 (roughly \$25) for slightly injured victims.

4 NATIONAL ACCIDENT COSTS

4.1 Introduction

Estimated RTA costs in Lao PDR were also computed by the Department of Transport for 2001 and 2002. These calculations were based on property damage only accidents. The record showed that the

RTA cost in 2002 (about KN2.0 million per case) increased from that in 2001 (about KN1.7 million per case). This cost might be very low if motorcycles were not included, because motorcycles seem to be involved in many accidents. Moreover, the cost calculation was based on a low 1996 rate, which is no longer appropriate. The number and cost of RTAs in 2001 and 2002 are shown in Table 12.

Table 12: Number and Cost of Road Traffic Accidents (2001 and 2002)

Provinces	2001		September 2002	
	RTA	Cost	RTA	Cost
Vientiane	2,540	3,057,532,200	2,205	2,654,275,000
Phongsaly	35	189,053,476	31	112,874,500
Oudomxai	35	155,000,000	85	107,695,000
Luangnamtha	49	231,100,000	85	569,462,000
Bokeo	90	164,340,000	41	8,580,750
Xayabouli	45	47,619,200	99	298,240,000
Luangprabang	115	213,550,000	148	383,432,400
Hoiphanh	42	70,350,000	74	89,077,709
Xiengkhouang	111	1064,000,000	96	186,000,000
Vientiane	172	1,003,895,000	75	90,281,462
Bolikhamxai	126	223,710,000	146	706,087,000
Khammoune	220	340,117,750	199	495,556,000
Savanakhet	807	424,000,000	48	380,800,000
Salavanh	201	588,430,000	24	359,500,000
Champasack	36	117,793,000	494	1,439,619,840
Xekong	37	365,000,000	34	96,500,000
Attapeu	9	16,000,000	50	70,400,000
Special Zone	11	50,000,000		
Total	4,681	8,321,490,626	3,934	8,048,381,661

RTA = road traffic accident.

Source: Department of Transportation, Ministry of Communication, Transport, Post and Construction.

Estimating the national cost of RTAs by accumulating the five main cost components (human capital method) is possible. These components are property damage only, administration cost, cost of medical treatment, cost of lost output, and human cost. Therefore, this study will

use the human capital method to calculate national accident cost, as already calculated for each cost in previous sections.

4.2 Computation of National Cost

In previous sections, cost components were estimated completely. This section

will estimate in greater detail the national cost. The human capital method calculates

cost components in two main categories: casualties and property. Casualty cost includes the cost of medical treatment; cost of lost output; and human cost, which is calculated according to casualty type (i.e., fatality, serious injury, and slight injury). While property cost consists of property damage cost, that is

calculated according to casualty type, and administration cost, that is calculated per accident. The average cost of accidents per case is listed in Table 13. Table 14 examines the national cost of RTAs in 2003.

Table 13: Average Cost of Accident (per case)

Cost Component	Fatality	Serious Injury	Slight Injury	Property Damage Only
Per Casualty				
Medical Cost	570	441	50	
Lost Output	3,033	909	6.33	
Human Cost	1,014	270	25	
Subtotal	4,617	1,620	81.33	
Per Case of Accident				
Property Damage	2,536	450	253	202
Administration Cost	50	50	50	50
Subtotal	2,586	500	303	252
Total	7,203	2,120	385	252

Source: Lao PDR data.

Table 14: National Cost of Road Accidents (2003)

Accident Type	Accidents	Average Cost (\$)	Total Cost (\$)
Fatal	415	7,203	2,989,245
Serious Injury	2,251	2,120	4,772,120
Slight Injury	3,980	385	1,532,300
Subtotal	6,646		
Property Damage Only	8,559	252	2,156,868
Total			11,450,533

Sources: Ministry of Communication, Transport, Post and Construction and Traffic Police Department records.

The calculation of the national cost of RTAs is based on Department of Transport and traffic police department records. Some information was not included (e.g., information from hospitals and victims' agreements and that related to deaths after hospital treatment and treatment in hospitals in Thailand).

Therefore, Table 15 will provide an estimate that includes information that is not recorded by the Ministry of

Communication, Transport, Post and Construction and the Traffic Police Department. The estimate is based on information recorded by main hospitals in Vientiane (Table A.3), police report surveys conducted by Handicap International, and discussions with organizations involved, based on the *Guidelines for Estimating the Cost of Road Crashes in Developing Countries* (Babtie Ross & Silcock 2003).

Therefore, fatal crashes will increase by 40% over Ministry of Communication, Transport, Post and Construction and Traffic Police Department records, because an additional 20% of victims died in hospitals and an additional 20% died at home. Serious and slight injuries will be three times the number shown in Table 14

because only one third of these accidents were recorded. Property damage only accidents will be five times the number shown in Table 14, based on the rate of ADB guidelines for Lao PDR.

Table 15: Adjusted National Cost of Road Accidents (2003)

Accident Type	Accidents	Average Cost (\$)	Total Cost (\$)
Fatal	581	7,203	4,184,943
Serious Injury	6,753	2,120	14,316,360
Slight Injury	11,940	385	4,596,900
Subtotal	19,274		
Property Damage Only	96,370	252	24,285,240
Total			47,383,443

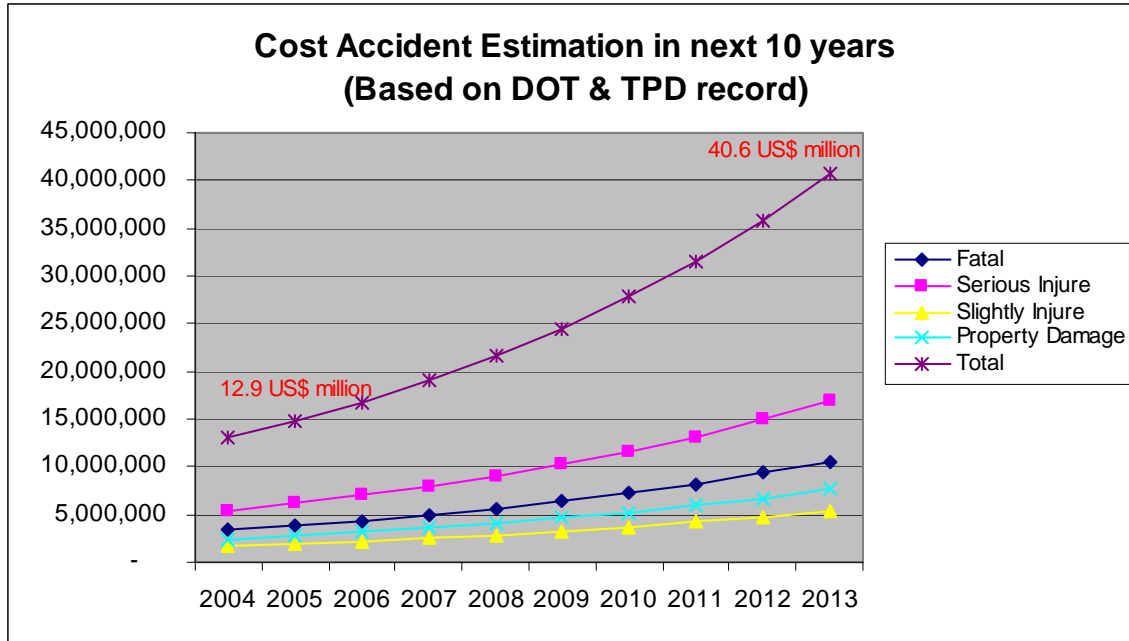
Sources: Department of Transport, hospital, and Traffic Police Department records and estimates of unrecorded information.

4.3 10-Year Forecast for National Accident Cost

The RTA rate in Lao PDR is high, at 13.5% per year, and the accident cost is also high, compared with gross domestic product. The cost based on Ministry of Communication, Transport, Post and Construction and Traffic Police Department records was about \$11.4 million in 2003. The cost based on Department of Transport, hospital, and Traffic Police Department records and estimates of unrecorded information was about \$47.4 million in 2003. This cost shows great losses in terms of money, property, and lives, and it will continue to

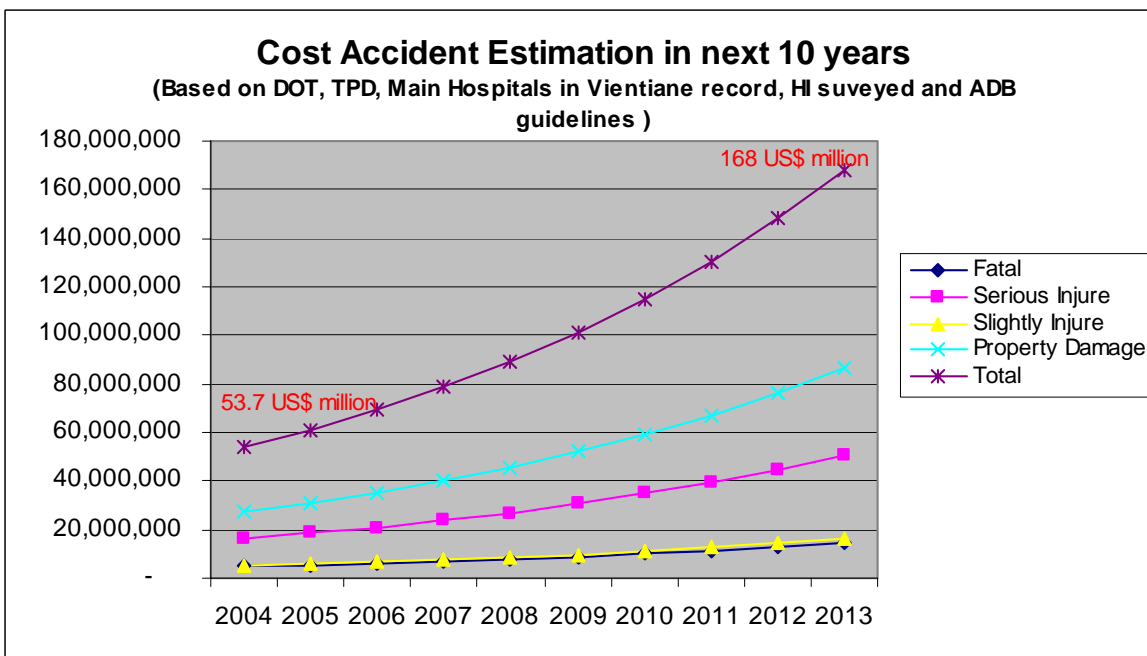
rise if the Government cannot cope with road safety-related problems. The forecast for the next 10 years shows that RTAs will cause huge monetary losses. The cost based on Ministry of Communication, Transport, Post and Construction and Traffic Police Department Records is nearly \$41.0 million in 2013. The cost based on Department of Transport, hospital, and Traffic Police Department records and estimates of unrecorded information is nearly \$168.0 million in 2013. If the Government copes with RTA issues, this amount of money will not be lost. Cost estimates for the next 10 years are shown in figures 1 and 2.

Figure 1: Cost of Accident Estimation in Next 10 Years



Sources: Ministry of Communication, Transport, Post and Construction and Traffic Police Department.

Figure 2: Cost Estimation in Next 10 Years



Source: Asian Development Bank; Handicap International; hospitals; Ministry of Communication, Transport, Post and Construction; and Traffic Police Department.

