

# COST ANALYSIS

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## ON ROAD CRASHES IN CAMBODIA 2009

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# AGENDA

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## Cost Analysis on Road Crashes in Cambodia 2009

- Methodology
- Data Sources
- Cost Components
  - Medical Costs
  - Lost Output Costs
  - Human Costs
  - Administrative Costs
  - Property Damage Costs
- Conclusion and Comments

# METHODOLOGY

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Identify proper research methodology

Collect primary and secondary data

Estimate individual components and compute overall cost

# METHODOLOGY (Cont.)

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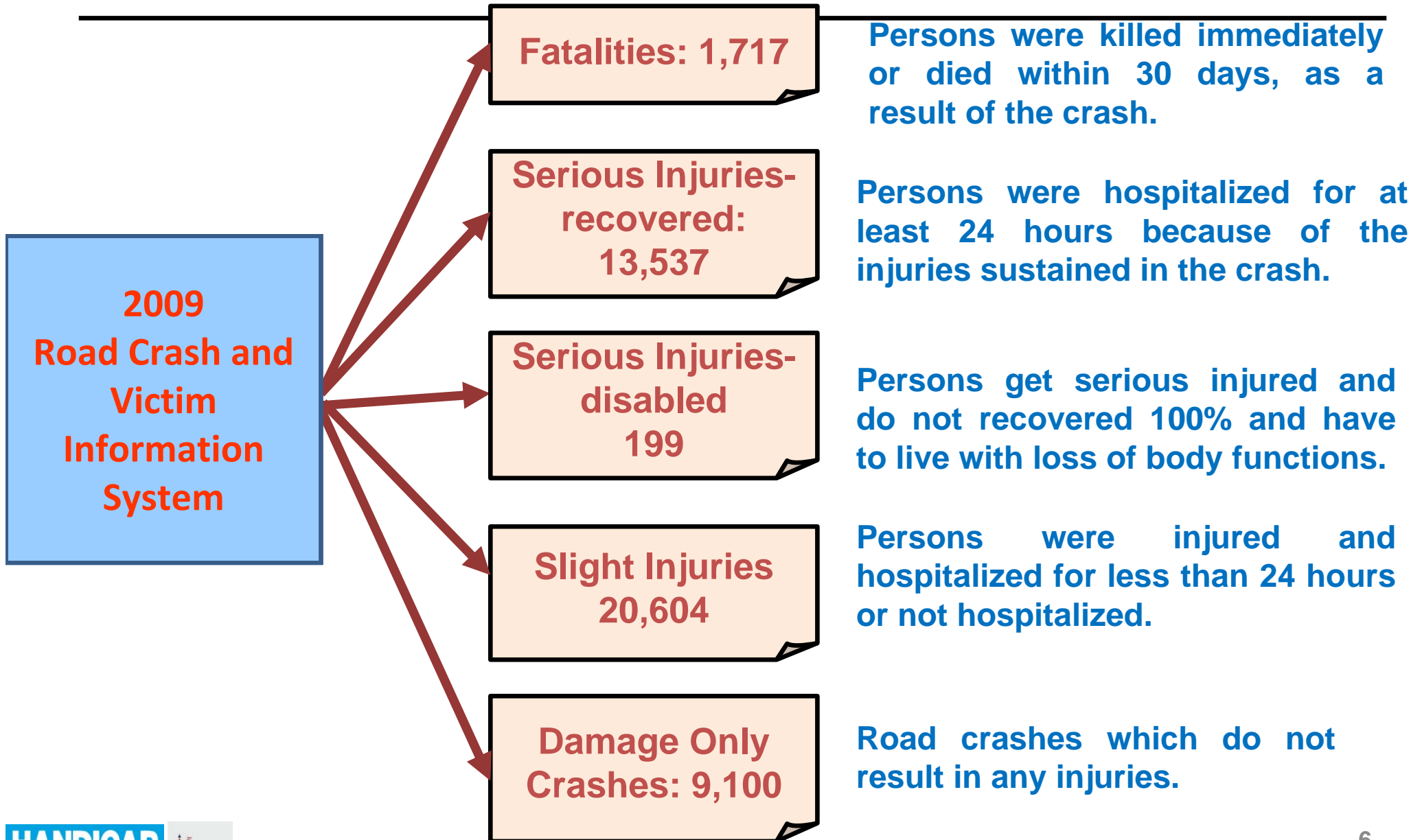
- Identify proper research method
  - Follow the guideline for estimating the cost of road crashes in developing countries-Human Capital Method
- Collect primary and secondary data
  - Conduct survey on victims of road crashes
  - Collect data need from all available source
- Estimate individual components and compute overall cost
  - Calculate the exist data to estimate the average cost for each cost components by injured severity of victims
  - Compute the overall cost by multiplying the unit cost with the number of casualties and crashes in 2009.

# DATA SOURCE

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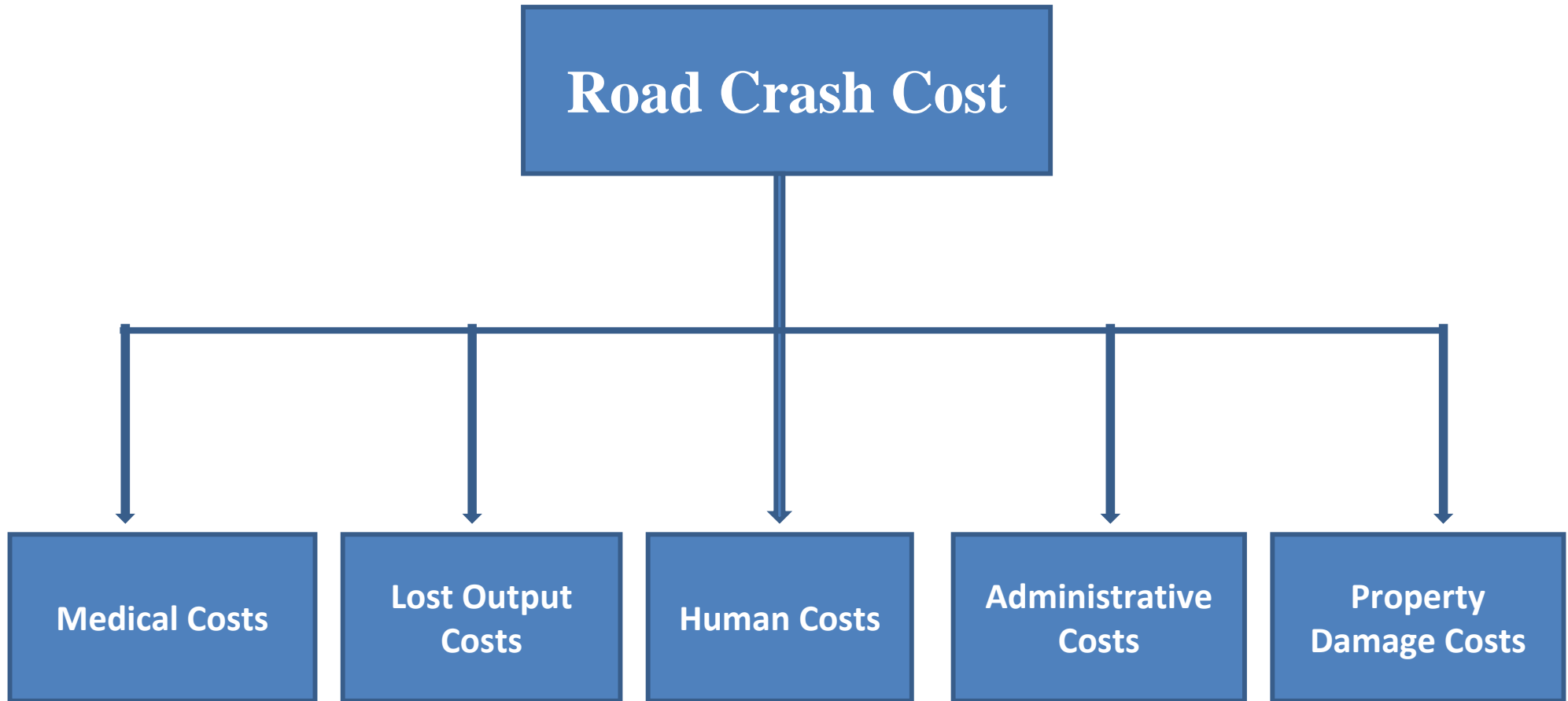
- **Primary source**
  - Survey on victims of road crashes in 2009
- **Secondary source**
  - Road Crash and Victim Information System 2009
  - Asian Development Bank Accident Costing Report 2003

# DATA SOURCE (Cont.)



# COST COMPONENTS

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# **COST COMPONENTS:**

## **MEDICAL COSTS**

- First aid
- Immediate hospital treatment
- Intensive care
- Room charges
- Medication and Diagnosis
- In-patient medical care
- Surgeon/specialist services
- Nursing care
- Special aids
- Funeral cost
- Rehabilitation

### **Medical Cost per victim**

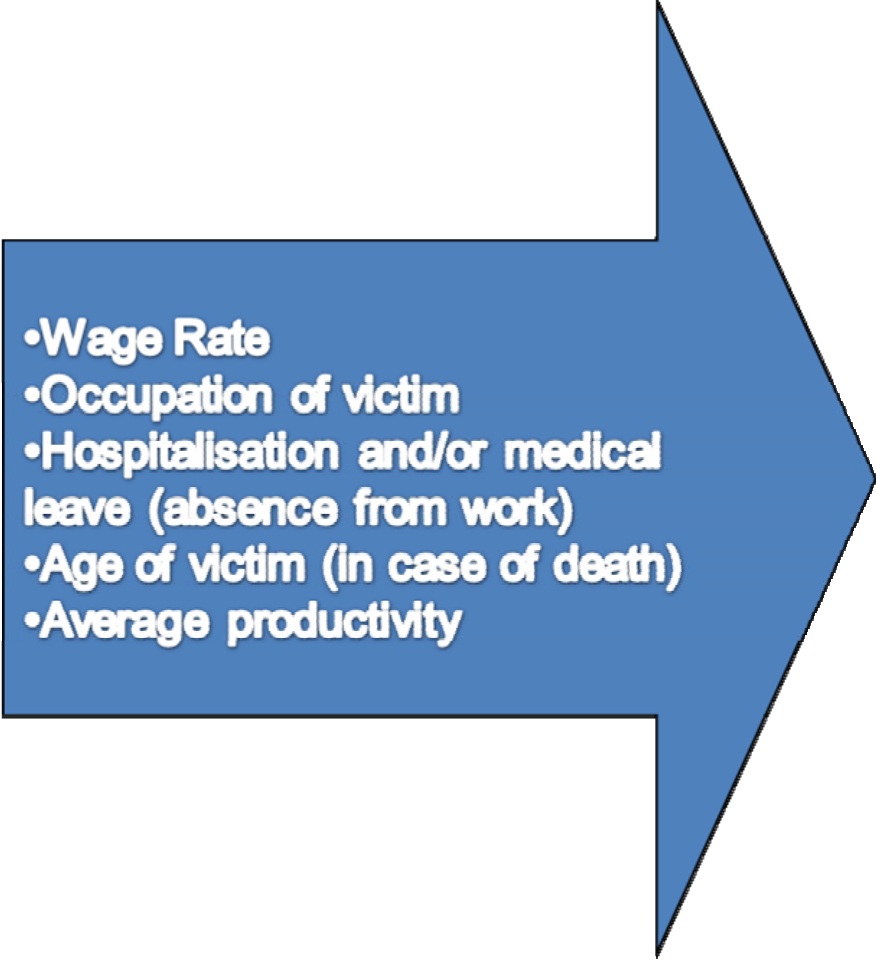
- **FATALITY : \$1,506**
- **SERIOUS INJURY-RECOVERED : \$977**
- **SERIOUS INJURY-DISABLED: \$3,011**
- **SLIGHT INJURY: \$86**



# COST COMPONENTS:

## Lost Output COSTS

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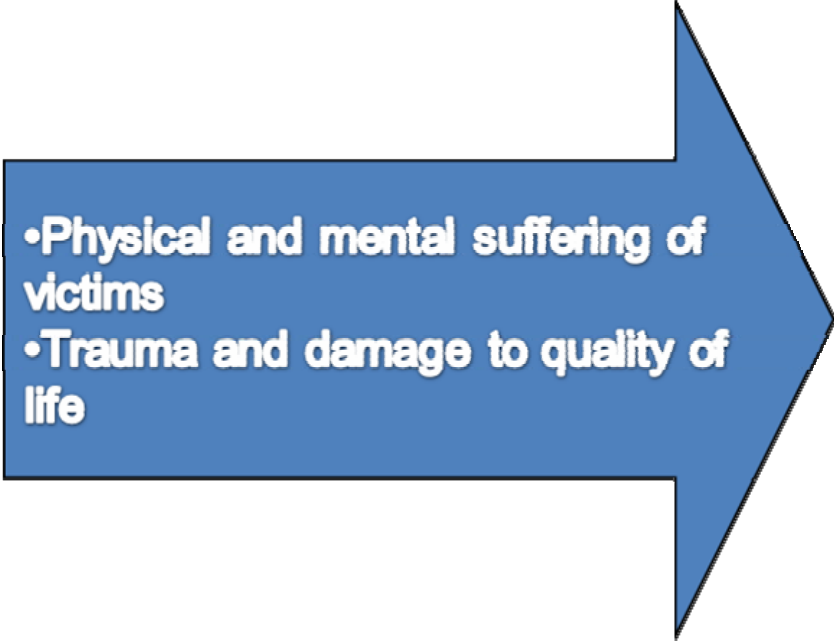
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- Wage Rate
  - Occupation of victim
  - Hospitalisation and/or medical leave (absence from work)
  - Age of victim (in case of death)
  - Average productivity

### Lost Output Costs per victim

- FATALITY : \$21,989
- SERIOUS INJURY-RECOVERED : \$639
- SERIOUS INJURY-DISABLED: \$31,868
- SLIGHT INJURY: \$40

# COST COMPONENTS: HUMAN COSTS

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- Physical and mental suffering of victims
  - Trauma and damage to quality of life

## Human Costs per victim

- **FATALITY : \$7,864**
- **SERIOUS INJURY-RECOVERED : \$3,869**
- **SERIOUS INJURY-DISABLED: \$24,601**
- **SLIGHT INJURY: \$131**

Source: Transportation Research Laboratory, 2003 and researcher's estimation  
Human cost per casualty is 28% of total source for fatal casualty, 50% for serious injury-recovered, 60% for serious injury disabled, and 8% for slight injury

# **COST COMPONENTS:**

## **ADMINISTRATIVE COSTS**

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### **Administrative Costs per crash**

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- **Police enforcement**
  - **Police accident investigation**
  - **Ambulance & fire services**
  - **Legal / Court service**

- **FATALITY : \$3,018**
- **SERIOUS INJURY-RECOVERED : \$2,263**
- **SERIOUS INJURY-DISABLED: \$2,263**
- **SLIGHT INJURY: \$754**
- **NO INJURY CRASHES: \$377**

**Source: ADB Accident costing report 2003**

**The 2009 costs were computed based on an inflation rate of 1.51% per annum on general expenditure (between 2003 and 2009)**

# COST COMPONENTS: PROPERTY DAMAGE COSTS

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- Vehicle repair/replacement
  - Public infrastructure repairs/replacement

## Property Damage Costs per crash

- FATALITY : \$1,572
- SERIOUS INJURY-RECOVERED : \$3,858
- SERIOUS INJURY-DISABLED: \$3,858
- SLIGHT INJURY: \$757
- NO INJURY CRASHES: \$352

Source: ADB Accident costing report 2003  
The 2009 costs were computed based on an inflation rate of 1.51%  
per annum on general expenditure (between 2003 and 2009)

# OVERALL COST

COST ELEMENT CRASH TYPE	COST (USD) PER VICTIM			COST (USD) PER CRASH		Total (USD) per crash/casualty
	Medica l costs	Lost output	Human costs	Administrative costs	Property Damage costs	
Fatal	1,506	21,989	7,864	3,018	1,572	35,949
Serious Injury- recovered	977	639	3,869	2,263	3,858	11,606
Serious Injury- disabled	3,011	31,868	24,601	2,263	3,858	65,601
Slight Injury	86	40	131	754	757	1,768
Damage Only	0	~ 0	0	377	352	729
<b>Aggregate</b>						<b>\$247.71 million</b>

# CONCLUSION AND COMMENTS

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## ❑ **Crash Cost is rapidly increasing**

➤ Based on 2009 figures the cost of road crashes has significantly increased from \$116 million in 2003 to \$248 million in 2009.

## ❑ **Research Efforts are needed**

➤ Reducing the number of fatal crashes will result in huge economic saving.

➤ Only around \$1 million has been spent per year for road safety activities.

➤ Government and other road safety stakeholder should invest more in road safety activities, especially the research activities.

## ❑ **Usefulness of the research result**

➤ Press-conference in 2010 – covered more than 20 medias

➤ Important reference for the National Road Safety Action Plan 2011-2020 development

➤ Be the baseline for the 10-year action plan implementation

# Contact

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