ANALYSIS OF TRAFFIC ACCIDENTS AND URGENT COUNTERMEASURES IN VIETNAM

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Abstract: In the past decade, the traffic accident situation in Vietnam has worsened. This paper gives a brief overview of the current traffic accident, the change in number of accidents for the last 11 years and accident cause analysis. Furthermore the urgent countermeasures and traffic action plan will be presented along with some general comments on the observed accident trends.

Key words: Traffic accident, Public transportation, and Safety measure.

1. INTRODUCTION

Nearly 1 million persons killed and over 10 million injured in traffic accidents each year, traffic safety is an issue of immense human proportion. Over 75 percent of these casualties occur in developing and transition countries.

At the national level, traffic accidents can result in annual losses of between 1% to 3% of Gross Domestic Product. The estimated annual cost for developing countries exceeds US$ 100 billion. This amounts to nearly double the total combined development assistance these countries receive every year from bi-lateral and multi-bilateral government organizations.

In recent years, the Vietnam Government recognizes that the cost of the accidents to the community is too high and a concerted effort is needed to tackle them. With the problems associated with the data collection the true traffic accident scale and the real cost may be higher than reported.

2. TRAFFIC ACCIDENT SITUATION

Over last 11 years the number of fatalities and injuries caused by traffic accidents have been increasing, but recently the rate of increasing has reduced.

The national traffic accident statistics included the road accidents, the railway accidents, the waterway accidents, and maritime accidents are based on the reported accidents of the National Traffic Safety Committee given in table 1 and figure 1.

Table 1. Traffic accidents in Vietnam from 1990 to 2000

Year	Accident		Fatalities		Injuries	
	Number of Accidents	Compared to the previous year (%)	Number of Fatalities	Compared to the previous year (%)	Number of Injuries	Compared to the previous year (%)
1990	6,110		2,268		4,956	
1991	7,382	+20.80	2,602	+ 14.72	7,114	+43.54
1992	9,470	+28.28	3,077	+18.25	10,048	+41.24
1993	11,582	+22.30	4,140	+34.54	11,854	+17.97
1994	13,760	+18.80	5,897	+42.42	14,174	+19.57
1995	15,999	+16.20	5,728	-2.87	17,167	+21.11
1996	19,638	+22.74	5,932	+3.56	21,781	+26.44
1997	19,998	+1.83	6,152	+3.70	22,071	+1.62
1998	20,753	+3.70	6,394	+3.90	22,989	+4.15
1999	21,538	+3.70	7,095	+10.96	24,179	+5.17
2000	23,327	+8,30	7,924	+11.70	25,693	+6.30

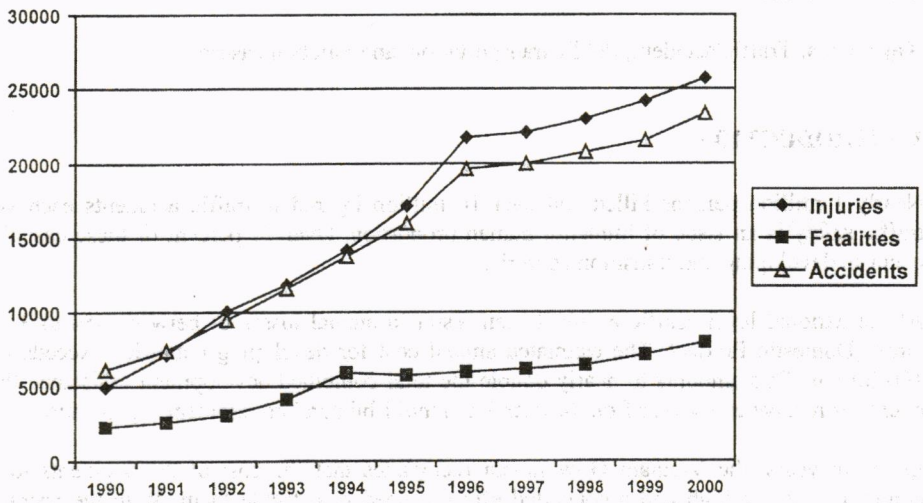

Figure 1. Change of traffic accidents

3. ACCIDENT ANALYSIS

The analysis of traffic accidents is an important field of research aimed not only at understanding the fact of traffic accidents and examining the factors which contribute to traffic accidents but also at setting education at goals for target groups and setting out basic policies at a national level for traffic safety.

Based on the national traffic accident statistics in 2000 (See Table 2), the cause of traffic accident will be analysed.

Table 2. Traffic accident in Vietnam in 2000

Year	Accident		Fatalities		Injuries	
	Number of Accidents	Compared to 1999 (%)	Number of Fatalities	Compared to 1999 (%)	Number of Injuries	Compared to 1999 (%)
Road	22,486	+8.5	7,500	+12.4	25,400	+6.2
Railway	336	-9.6	151	-7.9	213	+7.0
Inland Waterway	385	+21.8	261	+4.4	67	+11.7
Maritime	120	+2.6	12	+9.0	13	+3.8
Total	**23,327**	**+8.3**	**7,924**	**+11.7**	**25,693**	**+6.3**

3.1. Road

- Causes of Road Accident (12,253 accidents analyzed):

+ Road user error: 9,163 Accidents (74.8 %)
  - ❖ Overspeeding: 4,633 Accidents (37.8 %)
  - ❖ Dangerous Overtaking: 2,866 Accidents (23.4 %)
  - ❖ Drink driving: 784 Accidents (6.4%)
  - ❖ Without observation: 630 Accidents (5.1 %)
  - ❖ Pedestrian: 250 Accidents (2 %)

+ Unsafe vehicle: 215 Accidents (1.8 %)
+ Bridges and Roads: 14 Accidents (0.1 %)
+ Other: 2,867 Accidents (23.4 %)

- Persons causing accidents: (12,165 accidents analyzed):

+ Automobile driver: 3,307 Accidents (27.1 %)
+ Motorcycle driver: 7,851 Accidents (64.5 %)
+ Other: 1,007 Accidents (8.5 %)

- Places of accidents: (12,165 accidents analyzed):

+ National roads: 6,344 Accidents (51.2 %)
+ Provincial roads: 2,853 Accidents (23 %)
+ Urban and Town roads: 2,128 Accidents (17.2 %)
+ Other: 1,051 Accidents (8.5 %)

3.2. Railway

Cause of Railway accidents (336 accidents analyzed):
- Violating railway gabarit: 317 Accidents (94.3 %)
- Violating railway rules and regulation: 9 Accidents (2.6 %)
- Unsafe Rolling stock: 10 Accidents (2.9 %)

3.3. Inland waterway

Cause of Inland waterway accidents (385 accidents analyzed):

- Dangerous overtaking:	131 Accidents (34 %)
- Unsafe passage:	48 Accidents (12.4 %)
- Overweight:	62 Accidents (16.1%)
- Unsafe technique:	37 Accidents (9.6 %)
- Drink driving:	9 Accidents (2.3 %)
- Nonlicence driving:	9 Accidents (2.3 %)
- Natural calamity:	3 Accidents (0.08 %)
- Other:	85 Accidents (22.1%)
- Unknown:	1 Accident (0.02 %)

3.4 Maritime

Cause of maritime accidents (93 accidents analyzed):

- Afoul	49 Accidents (41%)
- Crash	16 Accidents (13%)
- Maritime Risk	28 Accidents (23.3%)

4. TRAFFIC SAFETY COUNTERMESURES

4.1 Accident data system

In order to have sufficient database to study and develop good solutions, it needs to co-ordinate closely all ministries and agencies concerned; and:

- ❖ The accident report form must be improved and detail sufficiently the various causes of traffic accidents;
- ❖ A computer linkage must be setup between related agencies;
- ❖ Annual traffic accident statistics should be published.

4.2 Road safety engineering

Develop, upgrade and improve the road infrastructure, including road signal system, rescue equipment, facilities for the safety of vulnerable road users, equipment for communications and emergency vehicles. Prevent the building of houses along two sides of road, apply the traffic calming measures to slow down traffic vehicle running through residential areas, build rescue roads, setup service areas along the road, improve bridge inspection and develop appropriate solutions for road and railway crossings.

Road safety audit is a formal procedure assessing the accident potential for the new roads as well as upgraded and improved road projects. Road safety Audit should be considered as a strategic part of road traffic safety activities. There should be an official legal document to make safety Audit compulsory for every project.

4.3 Traffic law enforcement

Strengthen the traffic safety law enforcement activities; consider them as very important measures, especially when the knowledge of the people is as limited as it is now. Improve the capability, as well as skill and morality of the enforcement force, to ensure that all the illegal behavior of the road users will be fined strictly without negative actions of the policemen. Modern equipment will be provided for this force, especially speed-guns, alcohol sensors, cameras and communication equipment.

4.4 Traffic safety education and publicity

- Improve the peoples understanding of the laws, make the people believe in the necessity and the benefit of obeying the laws. Make people respect the law, respect the habit of following the law and having the right attitude and disrespect for illegal actions.
- Define the traffic safety education curriculum for the community and school, especially at primary schools.
- Strengthen various activities of education and publicity such as organising workshops, seminars, traffic law contests, using mass media for publicity, setting up traffic safety campaigns, rewarding the individuals, the sectors and the locals that implement traffic safety well.

4.5 Drive training and testing

- Review the standards of training schools and school system. Rebuild the training programme to assure quality and economy.

- Improve the quality of drive testing and the national certificate. Limit the negative factors in driver testing. Improve the driver's morality and skills.

- Strengthening the morality education for drivers, fine strictly the drivers who violate the traffic law, reward the drivers that drive well with safety and good morality.

- Strengthening the publicity for safe helmets when driving in urban. Car drivers have to wear seat-belts when driving on the highway.

4.6 Vehicle inspection

- The technical standards for operating vehicles, maximum operating time for each type of vehicle will be soon published (10 years for passenger cars, 15 years for lorries and motorcycles). Revise the safety technical standards to comply with ASEAN.

- Define the allowed size for passenger cars and correspondingly limit and then ban goods put on the roof of vehicles.

- Setting up a safety inspection station system for vehicles. Recently, there are more than 70 of such safety inspection stations, of which about 30% are mechanized. The objective is that by the year 2000 all of the rest will be mechanized. Implement the periodical safety inspection every 6 months or 12 months depending on each type and quintile of vehicle. Upgrade the knowledge, specification, skill and morality of the inspectors.

4.7 Emergency medical services

- Build up the emergency station system, priority should be given to routes that have traffic accident potential.

- Organize traffic accident emergency training courses for traffic police and traffic inspectors.

❖ Build up the traffic accident emergency information system.

4.8 Traffic safety research

❖ A review of traffic safety related research studies should be undertaken. Academic and research institues as well as medical centers and hospitals and schools should be surveyed to identify previous road safety related research and their potential for conducting future research projects.

❖ The research programme will cover:
- Assessment of traffic accident situation;
- Investigation into key issues; and
- Effectiveness of countermeasures undertaken.

5. CONCLUSION

The causes of accidents are stated as:
- Without a driver's, vehicle or vessel license;
- Transporting goods and passengers illegally;
- Travelling over speed limit;
- Overtaking carelessly;
- Stopping or parking in the wrong position;
- Traffic infrastructure does not meet the requirements of the traffic;
- Construction works do not meet the technical and safety standards;
- Vehicle, Rolling stock and vessel do not meet the requirement of safety.

A new national traffic safety action plan is now in progress focusing on following topics:
- Accident data system;
- Safety engineering;
- Traffic law enforcement;
- Coordination safety activities;
- Traffic safety education and publicity;
- Driver training and testing;
- Vehicle, rolling stock and vessel inspections;
- Emergency medical services; and
- Traffic safety research.

Unless urgent action is taken, it is projected that the number of deaths, injuries and disabilities due to road, railway and waterway crashes will increase in line with the growth in vehicles, rolling stock and vessel.

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