

PRIVATE TRANSPORT'S ROLE AND IT'S APPROPRIATE REPRESENTATION IN METROPOLITAN TRANSPORT DEVELOPMENT STRATEGY IN VIETNAM

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REVIEW ON THE CURRENT SITUATION OF PRIVATE TRANSPORT MEANS IN LARGE CITIES

In Vietnam's large cities (Ho Chi Minh City, Hanoi Danang, Haiphong) three kind of private transport means: have been popular and increasing in number of bicycles, motorbikes and cars. The short coming of public transport in these large cities is one of the major reasons for the increasing the number of private traffic means.

Take Hanoi as an example: the number of bicycle per 1,000 people has continuously shot up from 143 (1955) to 256 (1960), 344 (1965), 461 (1970), 458 (1975) and 450-500 (1980-1989). In recent five years, the number of motorbikes in operation has sharply gone up. In 1985, motorbikes accounted for about 7.5% the total number of private two-wheel traffic means, while the figure reached 32.5% in 1992. Thus, the number of motorbikes has averagely increased by 12.5% per year. Many cyclists have become motorbike owners. therefore, the number of bicycles has annually gone down by 10%. The development of Hanoi's private traffic means can be seen from data in table 1.

In Ho Chi Minh City, the total number of private two-wheel traffic means is over two millions vehicles, of which 600,000 were motorbikes (1991). Thus the rate of bicycles per 1,000 people was 450 and the figure was 200 in case of motorbikes. Motorbikes have accounted for 31% the total number of two wheel traffic means. The data on motorized transport means can be shown in Table 2.

Table 1. The development of private traffic means in Hanoi.

Year	Car	Motorbike	Bicycle
1970		9963	294750
1980	3400	56648	500000 (bicycle registration ends)
1985	4111	88914	
1990	8319	212303	
1991	9915	270605	
1992	10444	307657	
1993	16232	380917	

Source: Hanoi Traffic Police Division.

Table 2. The development of private traffic means in Ho Chi Minh City

Year	Car	Motorbike

1986	30738	306340
1988	39428	359456
1989	44336	361818
1990	48829	443737
1992	70900	599729

Source: Ho Chi Minh City Traffic Police Division

In 1989-1992, the number of motorbikes shot up in HCM City in line with the increasing tendency of the large cities. In this city, the average annual growth rate of motorbikes in the period of 1989-1992 had tripled in comparison with that of the period of 1986- 1988 (22% compared with 8.5%). In Danang and Haiphong, motorbikes account for about 25-30% total number of two-wheeled traffic means.

A small portion of the population can actually afford to buy cars. However, parking lots in residential places are limited. That is why the number of dwellers who own private cars is quite low. In Hanoi the number of private cars is 16,232 units (9/1993), accounting for 41% of the total number of private motorized traffic means.

From the above analysis, the situation can be summed up as follows:

- During the past years, attention has not been sufficiently paid to the strategy for urban transport means development. Therefore these means have developed randomly. In addition, planners and policy makers have not set forth an overall plan to restrict or promote the development of urban transport means.
- The continuously increasing number of motorbikes is causing serious environmental pollution in large cities. The quality of toxic smoke and noise from motorized transport means has exceeded the hygienic standard many times. This can be evidenced in Tables 3, 4 & 5.
- It is clear that environmental pollution and traffic jams can be reduced by restricting private motorized transport means, improving public transport and maintaining levels of bicycle usage. These are the most vital measures for the large cities of Vietnam.
- The fast growth of transport means, where the urban transport network planning and construction is too slow, results in overloaded situation for old streets and causes traffic accidents.
- On the basis of forecasts of Vietnam's average income growth rate per capita up to the year 2010 (US\$ 450/year/capita) it can be said that bikes will remain as one of the major traffic means in Vietnam's large cities in future.

In summary, an appropriate development of various transport means, especially when attention has been paid to transport network and technical infrastructure by the State, has not been fully in the development policy on private transport means.

In respect of the income per capita and national economic revenue, the best way is to promote public passenger transport in connection with non-motorized transport means (bikes) and the development of cars and motorbikes should be restricted

Table 3. Air pollution level along Nguyen Trai street (Hanoi) compare with the standard (by Ministry of Health)

Emission	Air pollution (times)
CO	1.56 - 1.67

NO ₂	2.52 - 2.92
Air-borne dust	5.58
Lead dust	6 - 14
Dust on the road	43.4 - 61.4

Source : Centre of Environment - Hanoi Civil Engineering University

Table 4. Noise pollution in HO Chi Minh City (1985)

Traffic Means	Noise level (dB)		Foreign noise criteria (dB)
	L med	L Max	
Lorry	82	92	84-92
Bus	82	92	85-92
Car	73	76	84
Motor-Cyclo*	85	95	84
Motorcycle	82	89	84
	75	88	82-86

* Motor-cyclo is a kind of three wheel bicycle installed motor.

Source: National Project 28.01.04.04 - 1985

Clearly, Vietnam's large cities have fallen into a situation of serious traffic noise pollution. It is an urgent task to restrict the private motorised transport means (motorbikes and cars).

Table 5. Noise level in Hanoi (1988)

Measuring time	Noise level (db)
Morning average (rush hour)	83.2
Afternoon average (rush hour)	82.1
Average for all the day	82.7

Source: Centre of Environment - Hanoi Engineering University

Relationship of urban scale and transport means selection

City scale is one of the most important planning factors affecting transport means selection. According to urban planners, travel time from residential area to working place should not exceed 30 minutes (including the time walking to public bus stations).

To meet this target, maximum travel distances for each transport means, on the basis of average travel speed, can be seen in table 6.

Table 6. Maximum travel distances for every kind of traffic means

Traffic mean	Average speed (km/h)	Max. travel distance (km)
Bicycle	12	6
Motorcycle	35	17.5
Car	30	15
Bus	30	10

Average travel distances from centre to the farthest area from the inner city are stated in Table 7.

It is clear that in traffic operations of large cities (class I and II) private transport means (bikes, motorbikes and cars) should be appropriately combined with public transport, i.e. bikes for short distances ($L < 6$ km) and motorized transport means for long distances ($L > 6$ km). For cities of class III, IV and V, the travel distance shorter than 5 km, therefore bikes should remain a key transport means.

Table 7. Average travel radius by size of cities

Urban class	Population	Average travel radius (km)
I & II	>350,000	5 - 10
III & IV	30,000 - 350,000	3 - 5
V	4,000 - 30,000	1 - 3

Proposals on appropriate portion of private transport means in large cities up to the year 2010.

On the basis of the above analysis, in selection of the appropriate representation for each private transport means or Vietnam's large cities, up to the year 2010, the following mark-given method can be applied for evaluation as stated in table 8:

Table 8. Development priority of private traffic means chosen by mark-given method

Main factor	Public Transport	Car	Motorcycle	Bicycle
Income	3	1	2	3
Implementing traffic rule	4	3	2	1

Air environmental Protection	3	1	1	4
Avoiding noise pollution	2	1	1	4
road safety	4	2	1	3
Occupying road surface	4	1	2	3
Requirement of vehicle park	4	1	3	4
Urban size (class I & II)	3	3	3	2
Total	27	13	15	24

Note of mark: 4 - Good, 3 - Fair, 2 - Average, 1 - bad

Source: Project KC.11.06.03, draft - National Institute for Urban and Rural Planning - 1994

We can now come to a conclusion in transport development strategy for Vietnam's large cities, up to the year 2010, public transport should meet 40% passenger transportation demand in urban area.

The remaining 60% will be met by other transport means, of which:

bicycles 30%, motorbikes 20%, cars 5% and others 5% (lamberts, taxis, three-wheel 'cyclo', walking, etc.)

These are feasible representation which can be implemented by government and private sectors to reduce traffic jams in large cities and protect the urban environment in future.

Main References

1. "Improving and Upgrading the Quality of Urban Transport Means for Large Cities of Vietnam - Project KC.11.06.03" (draft) - Luu Duc Hai - National Institute for Urban and Rural Planning - Hanoi, 1994.
2. "The Outline of National Urban Development Strategy of Vietnam (to the year 2005) - Project KC.111.01" - Dr. lee Hong Kong - National Institute for Urban and Rural Planning.