

# A PERSPECTIVE OF ROAD DEVELOPMENT IN THE LEAST DEVELOPED COUNTRIES

– A view based on the research study in Cambodia –

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後発開発途上国であるカンボジア王国では、入国者の約9割が観光者であり観光業が国土の発展において重要な役割を担っている。2010年には、観光者が300万人に達すると見込まれるが、道路や上下水道をはじめとする社会基盤の不足、景観やゴミ処理などの環境問題への対応の遅れが懸念される。本稿では、整備が急務とされる道路を取り上げ、2006年11月に実施した視察に基づき、首都プノンペンおよびシェムリアップ等の現状を報告する。

## 1. INTRODUCTION

The urban population in Asia is estimated to have increased by 670 million by 2050. This increase is likely to bring rapid growth in urban infrastructure demands. Especially in Least Developed Countries (LDC) like Cambodia, the need for road development – a basic element of infrastructure – is deemed likely to increase as it plays a major role in “Poverty Reduction” and “Economic Growth”.

This paper presents a perspective of the present status of road facility conditions in LDC and issues associated with the topic of “Roads” as an entry point. Based on the analysis of the present conditions, the proper future course of development will be argued. The readers should be forewarned that the arguments presented in the paper are subjective and limited to the author’s experience and findings during the research study, in Cambodia.

## 2. OVERVIEW OF CAMBODIA

Cambodia is located in the Indo-China peninsula in Southeast Asia. The country is adjacent to Vietnam in the eastern side, Laos in the northern side, and Thailand in the western side. The total area of the country is approximately 180,000 km<sup>2</sup>, which is equivalent to a half of Japan and a third of Thailand, respectively.

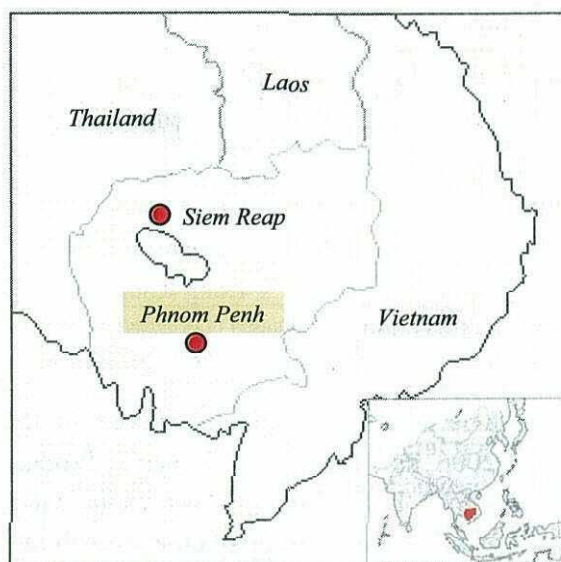


Fig.1 Location of Cambodia.

Table 1 Overview of Cambodia.

Area	181,035 sq.km (About 1/2 of Japan)
Population	14.163 Millions 0-14 (34%) 15-64 (62.4%) 65over (3.6%)
Density	78/km <sup>2</sup> (Japan:336/km <sup>2</sup> )
Official languages	Khmer95% French, English
Capital	Phnom Penh
Ethnic groups	Khmer 90%, Vietnamese 5%, Chinese 1%, other 4%
Religions	Buddhist 95%, other 5%

\*IMF, World Economic Outlook Database, 2006



**Table 2 Economy of Cambodia.**

GDP	7.2 Billions US\$
GDP per capita	513 US\$
Real economic growth rate	10.8%
GDP composition by sector	
agriculture	35.1%
industry	26.2%
services	38.6%
Trade - commodities	
Export - commodities	Garments/Textile Product Wood Furniture Natural rubber
Imports - commodities	Raw textiles Machinery Mineral fuels
Trade- Partners	
Export - partners	USA 50.8% Germany 6.5% UK 4.4%
Imports - partners	China 18.2% Vietnam 17.7% Hong Kong 16.8%

\*Annual Progress Report 2006, Ministry of Economic and Finance

\*\*The Central Intelligence Agency the-world-factbook 2007

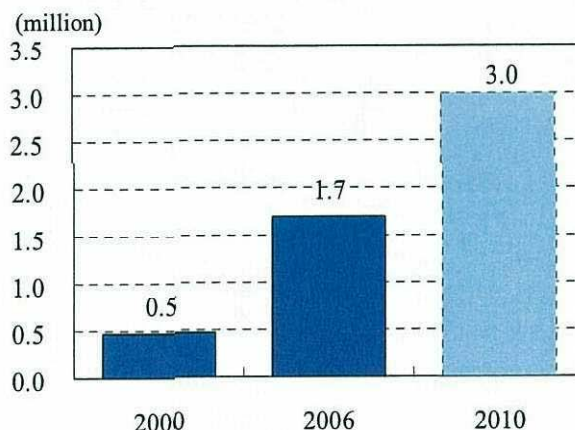
Cambodia is one of the poorest nations in the world. In 2006 its total Gross Domestic Product (GDP) was \$7.2 billion and, its per capita GDP amounted to \$513. The actual economic growth rate was 10.8% in 2006.

The main industries of Cambodia are agriculture, garments, construction and tourism.

Tourism is the most important industry for obtaining foreign currency and development of the country. It is said that approximately 90% of the visitors to Cambodia are tourist. The number of tourist has been increasing year by year (five (5) hundred thousand in 2000 to 1.7millions in 2006). However, the country embraces such issues including insufficient infrastructure for maintenance of the sightseeing spots, environmental problems, etc. The number of tourists in 2010 is expected to amount to three (3) million. However, the country does not have sufficient capacity to accept such number of tourist from the present status.



**Fig.2 Angkor Wat (World Heritage).**



**Fig.3 The number of visitors into Cambodia.**

\*HP of Embassy of Japan in Cambodia

### 3. THE PRESENT STATUS OF THE ROADS

#### (1) Present Status of Roads in Urban area

As there is no public transportation in Phnom Penh, the local residents largely rely on motor-bikes for their travel. The small size of the motor-bikes allows for relatively smooth travel given the large numbers of vehicles, averting major traffic jams. It may seem



**Fig.4 Road condition in Phnom Penh**



that motor-bike is the most suitable mode of transportation for the road facility conditions and the current city size.

However, the city hold various problems such as traffic accidents, deterioration of the urban environment due to vehicle exhaust ( $\text{CO}_x$ ,  $\text{NO}_x$ , SPM). Pedestrian walkways in the urban areas are also in poor condition due to the heavy traffic of motor-bikes. Those residents who do not have motor-bikes are most likely either suffered from restrictions of their mobility or venture onto the dangerous motorways on foot.

Severe traffic problems are cropping up in the major cities of East Asia due to the rapid progress of motorization. Cambodia and other LDCs are expected to follow the same course, making it imperative that they take appropriate strategy and countermeasures based on the experiences gleaned in other countries. In the short term, it is very important to implement public transportation systems. It could be implemented at an accelerated pace to improve traffic safety and the environment. In the longer term, before rapid urbanization occurs, it will be vital to formulate an appropriate master plan advancing road network development, including belt highways.

Urban mobility is a key factor for the functioning the urban economy. For example, a reliable transport infrastructure is a decisive factor in attracting private and foreign investment. Only in urban agglomeration areas can economies of scale be achieved. Economic growth is capable for taking care of the lowest strata of the society. Therefore, if urbanization is executed successfully, it may lead to poverty reduction. Public transport will be a part of the solution for the urban transportation infrastructure in the future.



**Fig5 Traffic jams by motor-bikes on the Japanese bridge in Phnom Penh**



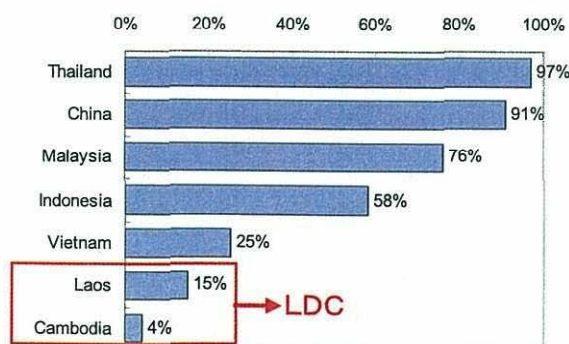
**Fig.6 Walking on the road in Monivong Blvd.**

## **(2) Present Status of Road in Regional area**

The issue of road development in regional area rests on how to achieve a balanced national development. Developing countries require rural development to effect decentralization from their capital cities, making the need extremely high for arterial highways as the underlying infrastructure.

In the case of Cambodia, Roads in regional area are truly underdeveloped. The roads heading from the capital city to the countryside were barely paved, and with no clear lane markings the streets were used by a mixture of cars, motorbikes, bicycles, and animals. On smaller pathways, dirt roads are the norm and caved-in areas are not uncommon. The figure on the right allows one to see the frail state of roads in the least developed countries (LDC).

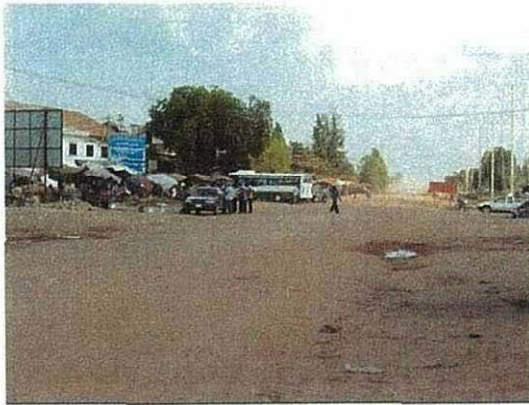
As the pace of motorization in rural regions is mild the demand for highways that connect these areas with cities is not high. However, proactive investment in highways is needed, as they are extremely important for rural economic growth, including international agricultural business development, tourism development, and to prime the pump for investments from overseas.



**Fig.7 Rate of Road pavement**

\*Connecting East Asia: A New Framework for Infrastructure, 2005





**Fig.8 Road condition of principal road in the suburbs of Siem Reap**

Road development with an eye toward regional integration with neighboring countries is also important for Cambodia.

#### 4. PERSPECTIVE OF ROAD DEVELOPMENT

The coming rapid economic growth in developing countries is anticipated to come with dramatic motorization. An effective road plan needs to be formulated to promote efficient urbanization while keeping traffic and environmental problems to a minimum. The important points to consider in carrying this out are the following.

- Formulate the master plan for urban transportation and roads that appropriately prepares for economic development
- Prioritize road investment that promotes efficient urbanization of metropolitan area
- Advance road improvements that promote multiple-core national development to attain a balanced national development. In so doing, consider road development that promotes interaction and cooperation with neighboring countries

#### 5. In Closing

The formulation of road and transportation plans for developing countries requires such consideration not only from an engineering perspective but also from a development economics perspective.

Highway and transportation engineers will be expected to have both roles of engineers and economists. In the other words, it is “Engineer-economists”.

I would like to be involved in road and transportation projects in developing countries as a road and transportation engineer. To do this I believe it will be essential to acquire familiarity with the field of development economics to become “Engineer-economists” and will take this up as a theme in my Continuing Professional development.

#### 謝 辞

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**Fig.9 Road condition in the Rural area of the suburbs of Phnom Penh .**



**Fig.10 Scenery of Refueling at the roadside.**