

Metro Manila's Traffic Development and Japanese ODA

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1, Introduction

1-1, Background

Not only in the industrialized countries but also in the developing countries, transportation is central settlement for human life. Especially in the developing countries, transportation is a pressing need as a basic infrastructure for future effective economic and social development. Official Development Assistance (ODA) from developed countries and other multilateral development organizations is one of the main sources for developing countries to develop its basic infrastructure. Japan is the largest creditor of ODA in the world spending 9.44 billion dollars in 1996.

Japan is a main supporter for Asian countries' development. In 1996, Asian countries received 49.6 percent of total bilateral ODA including both grants and loans. The top five recipients, which is China, Indonesia, Thailand, India, and the Philippines, accounted for 41.7 percent of Japan's bilateral ODA in 1996.¹⁾ Infrastructure projects such as roads, dams, and coal-fired power plants are the largest recipients of Japanese bilateral assistance.²⁾ In 1996, transportation sector received 24.2 percent of total bilateral ODA, which includes 13.2 percent of grants and 32.0 percent of loans.

During the project planning process with the cooperation of the Japanese government, a careful environmental consideration is required from the early stages with a long-term perspective in order to accomplish as well-balanced development.³⁾ According to the *Environmental Guidelines for Infrastructure Projects* of Japan International Cooperation Agency (JICA), a series of environmental considerations, such as a preliminary environmental survey, an ini-

tial environmental examination (IEE), environmental impact assessment (EIA) and the design of environmental protection measures are taken place at each stage of project cycle.⁴⁾ However, as far as looking at some big cities in developing countries such as Bangkok, Beijing, Jakarta, and Manila, road construction seems to bring about further traffic demand, which causes to heavier traffic congestion and air pollution.

At the United Nations General Assembly Special Session on the environment and sustainable development (UNGASS) in New York, June 1997, the then Prime Minister of Japan, Ryutaro Hashimoto reported the results of environmental cooperation through ODA after United Nations Conference of Environment and Development (UNCED) and announced a comprehensive environmental cooperation policy for the future.⁵⁾ On this occasion, he announced the “Initiatives for Sustainable Development toward the 21st century (ISD),” which comprehensively shows Japan’s environmental ODA and other cooperation policy in the future.⁶⁾ However, there still exist some points that need further discussion for better reform with regard to environmental assessment procedure of Japanese ODA.

1-2, Purpose

What I wish to show in the series of paper is a suggestion regarding the environmental assessment procedure of Japan funding ODA and its alternative. Having Metro Manila’s transportation development case, first, I review *Metro Manila Urban Transportation Integration Study* (MMUTIS) for understanding the basic situation of Manila’s transportation and its problems. Second, I take a close look at the structure of Japanese ODA and environmental assessment procedure. I will discuss alternative evaluation of project feasibility using a case of cost benefit analysis of road construction project in the next paper.

As a conclusion, I suggest that a comprehensive Traffic Demand Management (TDM) be required for future Metro Manila’s transportation system. Traffic is heavily congested in Metro Manila. It is because car ownership increases followed by rapid population growth and also because traffic demand management system does not work well. The congestion brings about longer traffic time, which causes less time for production, air pollution and more traffic accidents. Bangkok, Jakarta and many other big cities in Southeast Asia could not solve congestion by extensive road construction. Now, it is quite clear that only expansion of road building is not enough to reduce the congestion. Tighter environmental assessment should be required by donor country because many local governments of the developing countries lack of sufficient expertise in traffic demand modeling or new transport planning techniques to make better decisions on how to improve or change their transportation systems.

2, Transport and Traffic Situation of Metro Manila

2-1. Population

Metro Manila's population is growing rapidly. Since 1980, it grew from 6 million to 10 million, which means by 1.0% per year. The rate of growth in the adjoining area (Cavite, Laguna, Rizal, and Bulacan) is more rapid (cf; Figure 2-1-1). It grew by 5.6% over the same period. The city area is sprawling out to the north, south and east. It is projected that Metro Manila's population will increase to 11.3 million by year 2010, or an increment of 1.8 million in 15 years time.⁷⁾ In the adjoining areas, the population will expand to 11.4 million, or an increment of 6.5 million over the same period (cf; Graph 2-1-1).⁸⁾

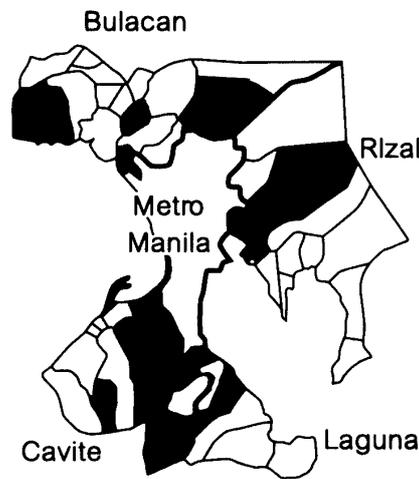
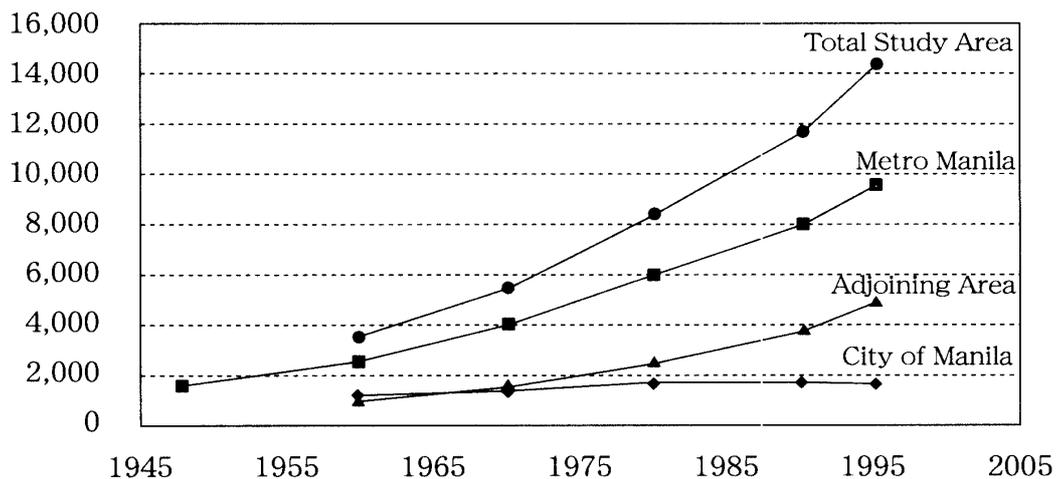


Figure 2-1-1: Metro Manila and adjoining area

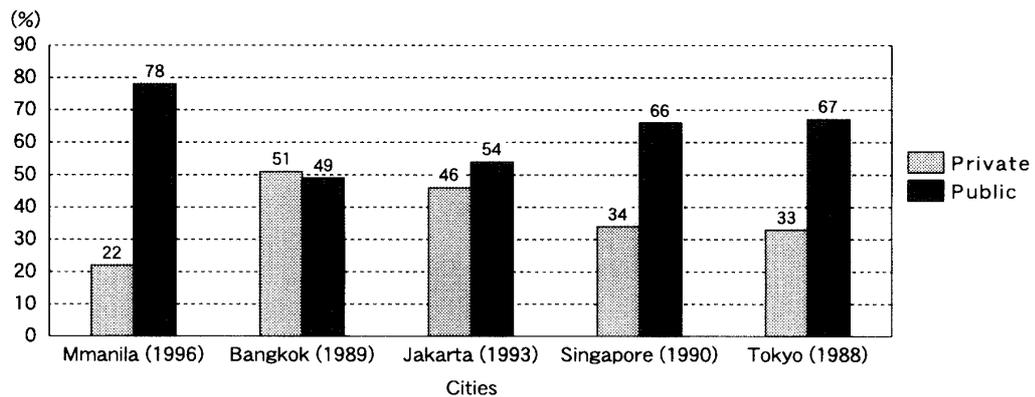


Graph 2-1-1: Population trend of Metro Manila

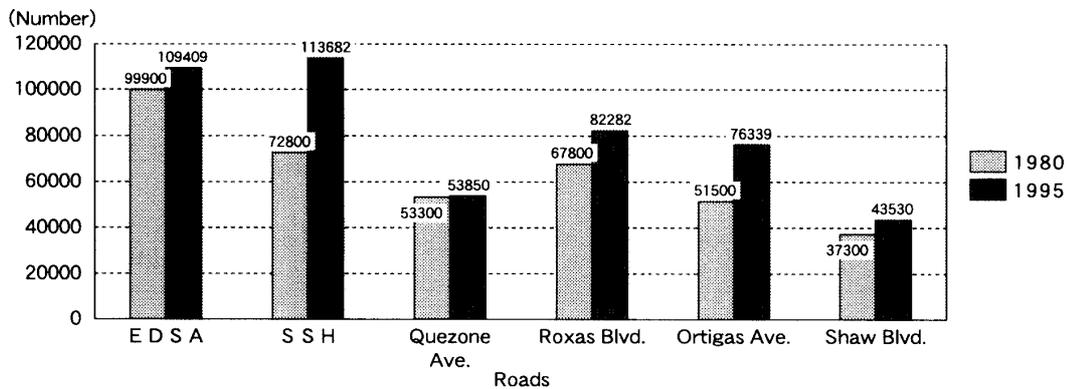
2-2. Transportation Demand

In the study area, which is Metro Manila plus the adjoining area, the number of motor-

ized trip has increased from 10.6 million to 24.6 million per day, including 17.5 million within the Metro Manila. Though public transportation use is still high at 78% of all trips in Metro Manila, the share of private car use has increased from 16% in 1980 to 19% in 1996, and that of taxis has jumped from 2% in 1980 to 6% in 1996 (cf; Graph 2-2-1).⁹⁾ The percentage of car-owning households has jumped from 10% in 1980 to 20% in 1996.¹⁰⁾ Epifanio de los Santos Avenue (EDSA) is the main radial corridors and the transportation increase is remarkable especially outside of EDSA (cf; Graph 2-2-2).



Graph 2-2-1 Modal Shares in Selected Asian Cities ¹¹⁾



Graph 2-2-2 Traffic Volume on Major Roads, 1980 and 1996 ¹²⁾

2-3. Public Transportation

The main public transportation modes are jeepney¹³⁾, tricycle¹⁴⁾, bus and taxi. The jeepney has been the most popular mode regardless of trip purpose since 1960's. Compared with 1983, travel time of passengers is getting longer. Average travel time of bus, jeepney and tricycle users inside the study area is at 79 minutes, 43 minutes and 17 minutes, respectively.¹⁵⁾ Also, average occupancy for those traffic modes have been increasing.

Relatively higher percentage of public transportation share does not mitigate traffic congestion in Metro Manila. Current jeepney's hop-in and hop-off system makes traffic con-

gestion heavier. Once a jeepney stops to pick passengers up, for example, all the other following traffics have to be stuck. In other words, since high percentage of public transportation use has already exists in Metro Manila and adjoining area, further increase of private transportation makes congestion situation worse.

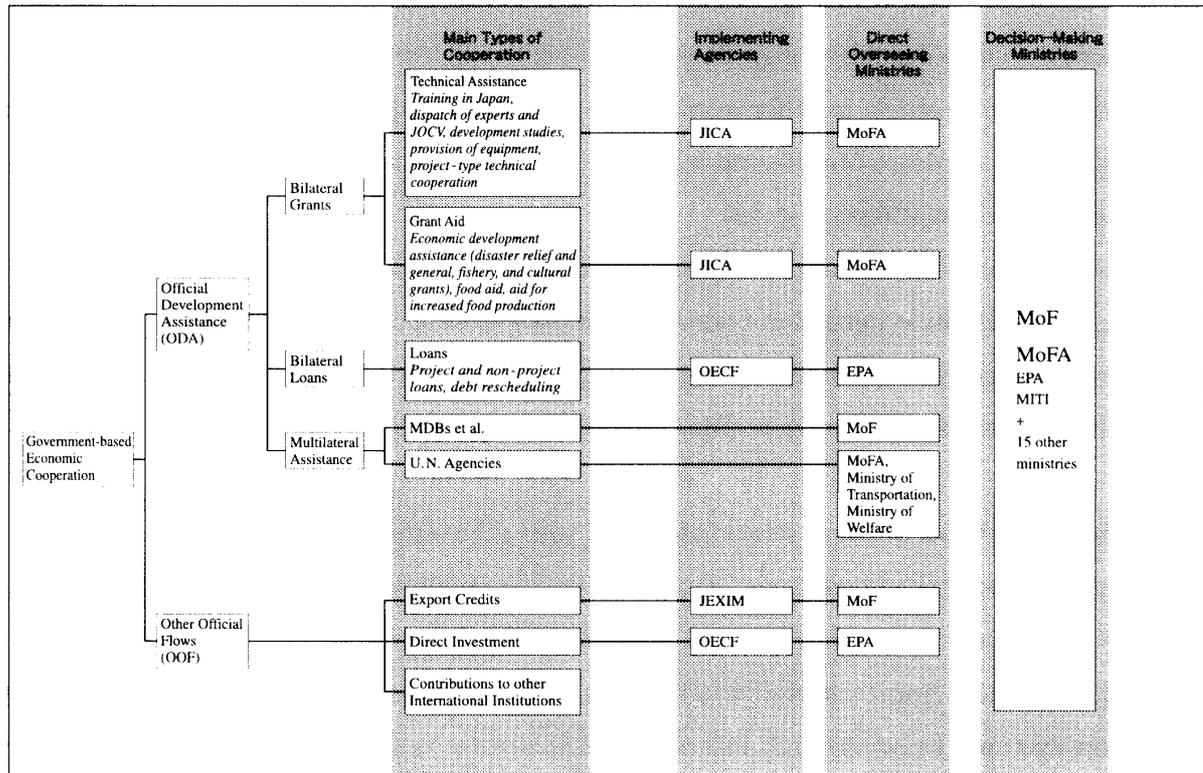
Having rapid increase of population, it is no doubt that the least transportation infrastructure construction is needed outside of the Metro Manila. However, it seems to be clear that the road capacity has already been saturated within Metro Manila. Road congestion will not be mitigated without effective traffic demand management.

3, Japanese ODA -structure, sustainability, and strategy-

Japan is one of the biggest contributors of development assistance for many developing countries. In the year ending March 1996, Japan remained the world's top source of ODA, disbursing \$14.7 billion. Approximately \$10.5 billion of it was bilateral assistance. The remaining \$4.2 billion was channeled through international institutions such as the multilateral development banks and United Nations agencies.¹⁶⁾ The Philippines is the fifth biggest recipient of Japanese bilateral ODA in 1995. Yen loans accounted for 39 percent of Japan's bilateral ODA in 1995. About 28 percent is for bilateral grants and 33 percent is for technical assistance. Transportation sector is 18.8% of such funds.

3-1, Basic Structure of Japanese ODA

Japanese ODA system is complex. Nineteen ministries and agencies such as Ministry of Finance (MOF), Ministry of Foreign Affairs (MOFA), Ministry of International Trade and Industry (MITI), Environment Protection Agency (EPA), and fifteen other ministries are the main actors¹⁷⁾. In addition, two organization, JICA and Overseas Economic Cooperation Fund (OECF) implement bilateral ODA, and also Japan Export-Import Bank (JEXIM) provides public funds for development. (OECF and JEXIM were unified as Japan Bank for International Cooperation (JBIC) in 1999.) They, especially the nineteen ministries, are characterized as the independent and competitive attitude. Due to the fact that bureaucracy known as "tatewari gyousei" (vertically splintered administration), the independent activities of those organizations without unified authority have made it difficult for recipient countries and NGOs to watch at environmental assessment process carefully and to understand the strategy of Japanese ODA (cf; Figure 3-1-1). For example, the Philippines had to hold with 75 ODA study missions from 11 Japanese ministries between 1991 and 1993.¹⁸⁾



Source: Overseas Economic Cooperation Fund, Japan, Annual Report 1996, Pacific-Asia Resource Center, AMPO, Japan-Asia Quarterly Review, Vol. 21, No. 4.

Figure 3-1-1 Basic Flow of Japanese ODA¹⁹⁾

3-2, Pre-Project Assessment of Social and Environmental Impact

JICA and JBIC are two major organizations to implement bilateral ODA. JICA manages technical cooperation and grants, whereas, JBIC is responsible for ODA loans. JICA also takes major responsibility of pre-project assessment for bilateral assistance. JICA requires development surveys before it decides grant aids / loans to identify the projects and to develop the plans through detailed analysis of methods and financial planning. The surveys are basically classified in Master Plan Study, Feasibility Study, and Detailed Design Survey.

<Master Plan Study>

A survey for a region or sector is conducted at an early stage. This is the study for preparing the basic plans for various development projects.²⁰⁾ As far as transportation development project in Metro Manila concerned, MMUTIS is the newest examination of development potential in the transportation sector.

<Feasibility Study >

The study for evaluating the possibility, adequacy, and investment efficiency of a

project.²¹⁾ A feasibility study (F/S) aims to analyze the technical, economic and financial viability of a specific project and make recommendations. F/S is the core of JICA's development studies. The study report provides the government of the host country with the information needed to decide whether or not to implement the project.²²⁾

< Detailed Design Survey >

This is a detailed design of actual construction of a project following the F/S. In the detailed design study stage, the basic project's strategy will not be changed. Social and environmental impact has to be evaluated before this stage. So, it is not the prospect purpose to explore this area in this paper.

Before master plan, preliminary environmental survey is conducted. Through this survey, the necessity of IEE will be decided. IEE is undertaken in the stage of master plan study to determine the environmental impacts that may be created by the particular project. It is based on existing data, easily accessible information relating to the particular project, and comments and judgements of specialists who are familiar with the environmental impacts of past similar projects.²³⁾ Therefore, IEE is short period and low cost examination.

EIA is, on the other hand, carried out in the feasibility study stage to study, forecast, and evaluate the environmental impacts of a development project. EIA is judged by a detailed environmental examination and to propose the establishment of an environmental protection standard and measures for avoiding or alleviating environmental impacts (cf; Figure 3-2-1).²⁴⁾

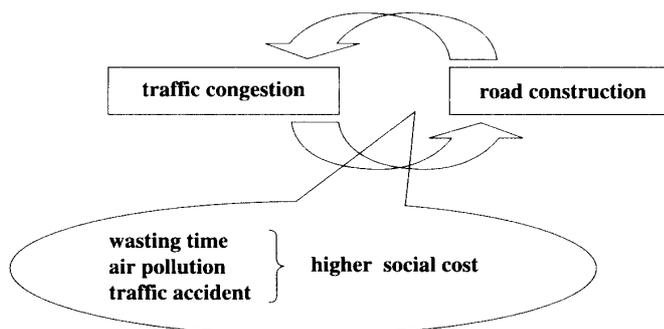
Feasibility study is the most important survey for accounting economic and social impact of a project. Nevertheless, many feasibility studies are nowadays conducted under assumptions that benefit of road construction will be higher than its cost because road will keep generating a huge amount of benefit for long period by making transportation smooth. However, it is also true that new road construction brings about new traffic. It is a cost of road construction, which should be calculated at a feasibility study stage. (cf; Figure 3-2-2)

Figure 3-2-1
Project Implementation Stages and Corresponding Environmental Consideration Stages by JICA

Project Implementation Stages			Environmental Consideration Stages
Preparatory Study			Preliminary Environmental Study
Full-Scale Study	Master Plan Study	Feasibility Study	Initial Environmental Examination (IEE)
	Feasibility Study		Environmental impact Assessment (EIA)

Source: Environmental Guidelines for Infrastructure Projects, XI Transportation Development, Japan International Cooperation Agency, Sep. 1992

Figure3-2-2: Basic structure of congestion



3-3, Environmental Policy Strategy of Japanese ODA

Although still include some inefficiency and complexity, Japanese ODA is gradually paying attention to the environmental aspects. Setting forth the “Initiatives for Sustainable Development toward the 21st Century”, Japan is trying to show its concern to the global environmental issue. As said in *Japan’s ODA Summary in 1997*, many of the problems of air and water pollution and waste in developing countries resemble that of what Japan faced in the past.²⁵⁾ Japan has plenty of experience and, therefore, potential to help developing countries develop sustainably. One good example of Japanese positive environmental policy strategy is the “Special Interest Rates on ODA Loans for Environmental Projects”. Since 1995, Japan has been granting ODA loans for environmental projects at interest rates 0.2% lower than loans for ordinary projects in order to encourage efforts to tackle environmental problems in developing countries.²⁶⁾

However, due to the lack of unified authority over policies and cooperation with non-government sector, Japanese ODA is still lack of sufficient environmental assessment process. Under current system, feasibility study is undertaken assuming the benefit of road construction is higher than its cost. Most of the time, the studies are carried out by some private consultants and are accepted by the organisations without further discussion. Although many those officials are struggling to change situation better with consideration for environmental degradation, they are usually short of time to do so. Non-government organization should be incorporated into the assessment process so that decision can be made with more neutrality. Also, sufficient environmental experts have to be kept in a project team. Japanese government has to take into account the concrete assessment process through project planning and implementation.

Notes

- 1) [1]pp3
- 2) [1]pp5
- 3) [2]pp4
- 4) [2]pp5
- 5) [3](<http://www.mofa.go.jp/policy/oda/summary/1997/04.html>)
- 6) [3](<http://www.mofa.go.jp/policy/oda/summary/1997/04.html>)
- 7) [4]pp6
- 8) [4]pp6
- 9) [4]pp8
- 10) [4]pp13
- 11) Source: [4]
- 12) [4]pp11
- 13) Jeepney is a type of mini-bus remodeled by jeep. It is the most popular mode of transportation in the Philippines because of its cheap fare and the convenience afforded to passengers to board and alight almost anyway they want. ([5])
- 14) Tricycle is a motorcycle with a sidecar. This is very convenient for passengers on short distance trip and feeder trips between residential areas and arterial roads. In Metro Manila, the operation of tricycle is restricted partly because they cause traffic congestion. ([5])
- 15) [4]pp14
- 16) [1]pp2
- 17) The number of ministries and agencies are reduced by the central government reform after 6 January, 2001
- 18) [1]pp7
- 19) The number of ministries and agencies are reduced and some names of ministries and agencies are changed by the central government reform after 6 January, 2001
- 20) [2]ppiv
- 21) [2]ppiv

- 22) [2]ppiv
- 23) [2]ppiv
- 24) [2]ppiv
- 25) [3](<http://www.mofa.go.jp/policy/oda/summary/1997/07.html>)
- 26) [3](<http://www.mofa.go.jp/policy/oda/summary/1997/07.html>)

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- [6] *Braden R. Allenby, Industrial Ecology: Policy Framework and Implementation*, New Jersey: Prentice-Hall, 1999
- [7] George D. Esguerra, *Balanced Urban Transport Development: Opportunities for Metro Manila*