



MASTER'S PROGRAMME IN URBAN MANAGEMENT AND DEVELOPMENT

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**THE APPLICATION OF PUBLIC PRIVATE PARTNERSHIP
IN FINANCIALLY NON-FEASIBLE PROJECT
Study Case: Tanjung Priok Access Toll Road Project, Indonesia**

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SUMMARY

Toll road development has been implemented in Indonesia since 1978 and currently about 659 km of toll road are operational. Main objectives of the development are to alleviate traffic congestion in urban area and to support regional growth. The government of Indonesia has strongly encouraged private sector financing to meet the demand-supply backlog for road infrastructure. In many cases, the low financial feasibility of toll road projects occur due to either overly high construction cost or low prediction on traffic volume which will automatically reduce profit or cost recovery of the operator.

The objective of this thesis is to analyze constraints faced in designing and implementing PPPs for financially non-feasible projects and to propose on what will be attractive to the private sector and also satisfies the government objectives. To achieve such objective, key research question is; what are the constraints and problems faced in designing financially non-feasible PPP projects? This main question is elaborated further in five sub-questions: (1) What are the key characteristics and enabling framework for PPP implementation in toll road development especially in the case of financially non-feasible project? (2) What has been done by government of Indonesia to implement PPP in Tanjung Priok Access Toll Road Development Project? (3) Does the current set up of PPPs in toll roads deal with the key issues faced in financially non-feasible project? (4) What conditions should be created in order to attract private sector participation in this project? and (5) What policy should be formulated for PPP implementation in similar cases for the future?

The study is a qualitative research with combined descriptive and exploratory methods. Instruments of the study include two elements; (i) compilation of primary data with in depth interview with the key respondents directly involved in the development of toll road and PPP (purposive sampling), and (ii) literature review and desk study (secondary data includes policy documents, reports and archival data).

The study finds that the provision of government support is needed in toll road development in Indonesia. Its presence is essential in ensuring the realization of toll road master plan in Indonesia of which contains considerable number of financially marginal and financially non-feasible projects. However current PPP schemes available within Indonesia's regulatory framework as well as their method of providing government support (which is capital grant) are basically conservative and needed to be improved in order to reduce risk towards government and creating value for money. In this case operating subsidy (or service payment method) gives better opportunity for the government to fulfill the purpose of providing government support while reducing fiscal risk and ensuring value for money by linking its payment into private sector performance.

Keywords: *Public Private Partnerships, Toll Road, Government Support, Financial Feasibility, Economic Feasibility*

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ABBREVIATIONS

<i>Abbreviations</i>	<i>English</i>
ADB	: Asian Development Bank
APBN	: National Budget
Bappenas	: Indonesian National Planning Agency
BOO	: Build-Own-Operate
BOOT	: Build-Own-Operate-Transfer
BOT	: Build Operate Transfer
BPJT	: Indonesian Toll Road Regulatory Body
BPS	: Central Bureau of Statistics
DB	: Design-Build
DBFM or DBFO/M	: Design-Build-Finance-Operate/Maintain
DBO	: Design-Build-Operate
DBOM	: Design-Build-Operate-Maintain
DBM	: Design-Build-Maintain
DED	: Detailed Engineering Design
DGH	: Directorate General of Highways, Ministry of Public Works
DKI Jakarta	: Special Capital City Jakarta
EIRR	: Economic Internal Rate of Return
FIRR	: Financial Internal Rate of Return
GDP	: Gross Domestic Product
GDP PPP	: Gross Domestic Product Purchasing Power Parity
GNP	: Gross National Product
GOI	: Government of Indonesia
GRDP	: Gross Regional Domestic Product
IMF	: International Monetary Fund
IRR	: Internal Rate of Return
ITS	: Intelligent Transport System
Jabotabek	: Jakarta, Bogor, Tangerang and Bekasi
Jabodetabek	: Jakarta-Bogor-Depok-Tangerang-Bekasi (Greater Jakarta)
Jagorawi	: Jakarta-Bogor-Ciawi Toll Road section
JBIC	: Japan Bank for International Cooperation
JETRO	: Japan External Trade Organization
JICA	: Japan International Cooperation Agency
JIUT	: Jakarta Intra Urban Toll Road
Jl.	: Street
JORR	: Jakarta Outer Ring Road
JORR II	: Jakarta Outer Outer Ring Road
KKPPI	: Policy Committee for Acceleration of Infrastructure Development
MoF	: Ministry of Finance
MPW	: Ministry of Public Works
NGO	: Nongovernmental Organization
NPM	: New Public Management
NPV	: Net Present Value
ODA	: Official Development Assistance
OECD	: Organization for Economic and Co-operation and Development
PFI	: Private Finance Initiative

PMU	: Project Management Unit
PIU	: Project Implementation Unit
PPIAF	: Public-Private Infrastructure Advisory Facility
PPP	: Public Private Partnerships
PT. Pelindo	: Indonesian Port Corporation (state owned company)
PT. Pertamina	: Indonesian Oil and Gas Corporation (state owned company)
RFP	: Request for Proposal
RMU	: Risk Management Unit
RoE	: Return of Equity
SIAP	: Strategic Investment Action Plan
SITRAMP	: Study on Integrated Transport Master Plan for Jabodetabek
STEP loan	: Special term for economic partnership loan
TgPA	: Tanjung Priok Access Toll Road Development Project
UNESCAP	: United Nations Economic and Social Commission for Asia and the Pacific
VFM	: Value for money
WB	: The World Bank

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CHAPTER 1

INTRODUCTION

This chapter provides the general information of the thesis. This information is important as it gives context to the problem discussed within the thesis and the case study. Several components are discussed within this chapter including background, problem statement, justification of the study, research objectives and questions, description of research area, scope and limitation of study and thesis structure.

1.1 Background

Jakarta is the capital city of Republic of Indonesia and it serves as the country's center for politics, economy, industry and trade activities. Being the largest city of Indonesia, it has an area of 750.28 km² and 8,489,910 inhabitants with density of 11,315.7 populations per km² (as of 2008). Internationally, it is counted as the 12th largest city in the world and its metropolitan area, called the *Jabodetabek* (Jakarta-Bogor-Depok-Tangerang-Bekasi), is settled by no less than 23 million people.

Infrastructure development has played a significant role in transforming Jakarta into a modern metropolitan city it is today. This particular sector had also been crucial in creating growth and reducing poverty in the three decades before 1997's Asian financial crisis. The occurrence of financial crisis led to a huge reduction in public expenditure for infrastructure development. At national level, it is estimated that there was about an 80% drop in budget allocation to infrastructure following the crisis, as the government had to optimize their financial resources. The impact of this circumstance can be seen in a subsequent deterioration of the quality and quantity of the national infrastructure and a drastic decrease in Indonesia's competitiveness compared to other countries.

During the post-crisis era, a major policy agenda to overcome budget shortage for infrastructure development was addressed by intensifying the establishment of Public-Private Partnerships (PPPs). Historically, Indonesia's experience in establishing PPPs for infrastructure development dated back from the early 1990s, with private investment mostly happened in strategic sectors such as electricity, telecommunication and transportation. For the current 2005-2009 development period, government has been offering PPPs in infrastructure provision to private sector, with a total project value of about US\$ 14.4 billion (*Bappenas, 2006*).

Related to road infrastructure development, the government of Indonesia has also been working hard to make PPPs successful in this sector. Development of toll roads has been initiated since 1978 with the completion of Jagorawi (Jakarta-Bogor-Ciawi) Toll Road Project and the government has strongly encouraged private sector financing to meet the demand-supply backlog for road infrastructure. Nowadays, the government of Indonesia gives high priority to fostering the development of toll roads, especially in more developed regions. The generally high traffic volume in these regions makes it possible for PPPs arrangement.

From a regulatory perspective, Road Act (Law No. 38/2004) provides opportunities for private sector participation. This regulation was later operationalized with the issuance of Government Regulation No. 15/2005 on Toll Roads. Along with other related regulations such as Presidential Regulation No. 67/2005 on Public-Private

Partnership in Public Infrastructure Provision, these regulations act as legal framework for establishing PPP in toll roads in Indonesia. At the project level, the government of Indonesia is currently endorsing several strategic toll road projects such as the Trans-Java Toll Road Project (around 1.000 km of toll road across Java Island), the Jakarta Outer Ring Road (JORR) II Project, the Suramadu (Surabaya-Madura) Bridge Project and Tanjung Priok Access Project.

1.2 Problem Statement

Despite various success stories regarding implementation of PPPs in toll road development in Indonesia, there are still a range of problems and issues which need to be addressed. One of the problems is related to PPP scheme arrangement for financially marginal (FIRR 5-15%) and financially non-feasible (FIRR<5%) toll road projects as most private investors are reluctant to participate in such project. In toll road development, the financial feasibility of PPP projects is mainly determined by these following factors (*World Bank, 2006 and Pennink, 2009*):

- The cost needed for initial investment and operation/maintenance
- Prediction of traffic volume of that particular toll road section
- The calculation of toll tariffs and the length of concession period granted by government to private operator based on regulation.
- Willingness and ability to pay on the part of the end user (or related to political aspects).

In many cases, the low financial feasibility of toll road projects occur due to either overly high construction cost or low prediction on traffic volume which will automatically reduce profit or cost recovery of the operator. In reality, sometimes toll tariff also being set up below cost recovery requirement due to political reasons.

The situation above often creates a dilemma for government since this kind of project may be feasible in economic term (EIRR>15%) and would provide substantial positive impact for the general public as well as on urban and regional development. Therefore even though it is of substantial interest for the government to assess the funds and the efficiencies of the private sector government support as well as a set of incentives is necessary to make projects attractive to the private sector and to reduce the perceived risks. Two types of government support exist in Indonesia's PPP policy, The Minister of Finance indicates as follow (*Sri Mulyani, 2006*):

- Direct support for projects that are justified on economic and social grounds but that will not be financially feasible without pre-agreed Government fixed contribution.
- Contingent¹ support or guarantees for certain types of risk that cannot be efficiently managed and mitigated by private investors and lenders. These types of risks might include such aspect as commercial and demand risks.

This research will focus on the application of PPP in Tanjung Priok Access Toll Road Development Project in Jakarta, Indonesia. The objective of this project is to provide better road infrastructure, in the form of a toll road, which will release traffic congestion and improve access between from major Industrial Estates in Bekasi and Karawang areas to the Tanjung Priok International Port.

The case study demonstrates several specific problems namely:

¹ Contingent support means government support that delivered in indirect way or only applicable when certain conditions are occurred. For example: fall of revenue below prediction.

- The Government seeks solution through the development of special toll road (around 12 km of length) as access to Tanjung Priok International Port.
- However, high projected construction cost reduce the financial feasibility of the project (around US\$ 566 million), constraining the establishment of a PPP.
- Therefore, the government is interested to design a special PPP scheme that is “well” designed in regulatory, institutional, financial terms and which comprises a well conceived, defined government support.

As illustration, Figure 1 shows the location of Tanjung Priok Access Project.

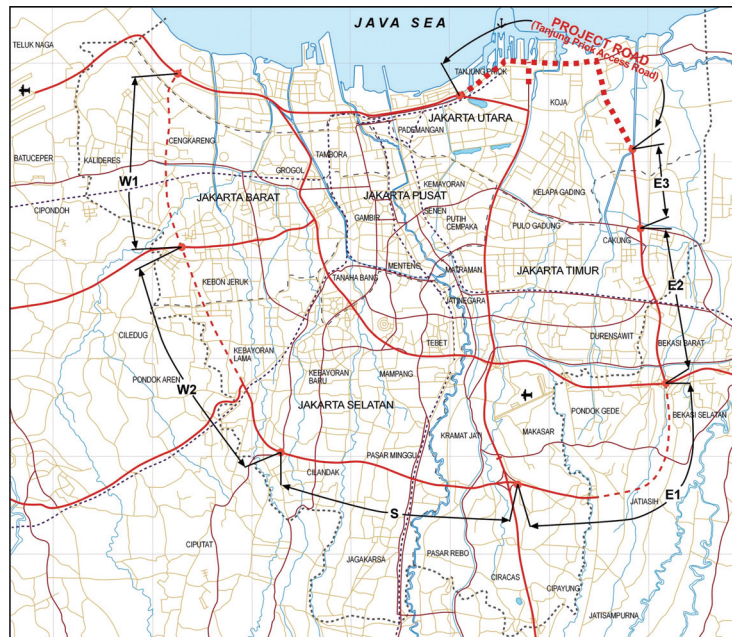


Figure 1 Location of Tanjung Priok Access Toll Road in Jakarta (Ministry of Public Works, 2008)

1.3 Justification of Study

This study is relevant because it deals with one of the most challenging problems faced by the government of Indonesia in promoting toll road development as a solution for Indonesia’s transportation problem. The necessity of developing special schemes² for financially non-feasible projects is closely related to the success of toll road development program since there are many proposed projects which share this characteristic. Therefore research should be conducted to identify problems and finding policy alternatives in this field for future’s implementation.

1.4 Research Objective and Questions

With regard to the need for road development (as well as other type of infrastructure) and the government’s limited fiscal capacity, it is very important to develop a special scheme of PPP which will allow private investors to participate in financially non-feasible projects. This leads to the formulation of research objective as stated below:

To analyze constraints faced in designing and implementing PPPs for financially non-feasible projects and to propose on what will be attractive to the private sector and also satisfies the governemnt objectives.

² In this context, scheme refers to the way of how a project is designed or arranged.

To achieve such objective, key research question was formulated as follows:

What are the constraints and problems faced in designing financially non-feasible PPP projects?

To answer the main research question above, 5 (five) sub-questions were formulated as follow:

- (1) *What are the key characteristics and enabling framework for PPP implementation in toll road development especially in the case of financially non-feasible project?*
- (2) *What has been done by government of Indonesia to implement PPP in Tanjung Priok Access Toll Road Development Project?*
- (3) *Does the current set up of PPPs in toll roads meet both the private sectors objective and, at the same, time meet public objective?*
- (4) *What conditions should be created in order to attract private sector participation in this project?*
- (5) *What policy should be formulated for PPP implementation in similar cases for the future?*

1.5 Description of Research Area

1.5.1 Indonesia

Indonesia, located in South East Asia, is a developing country with a total population of 222 million (*Central Statistics Bureau, 2006*). Currently it is the world's fourth most populous country with population of about 3.5 % of total world population. Geographically, the closest neighboring countries of Indonesia are Malaysia, East Timor and Papua New Guinea, all of which share land borders with the country. Other neighboring countries include Singapore, Brunei Darussalam, the Philippines and Australia.



Figure 2. Map of Indonesia

Indonesia's notable economic growth was marked with an annual average of 6.5% for 30 years (1966 to 1996) prior to the East Asian financial crisis in 1997. It was more than double the world's average of 3 % in the same period. This growth period, accompanied with relatively low inflation and improvements in social indicators, included a rise in life expectancy and a fall in poverty level. As an illustration, from 1966 to 1996 GDP per capita increased from US\$ 70 to US\$ 1,000 which contributed to the overall improvement of the domestic living standard (*Sadasivan, 2002*).

Indonesia was one of the countries the most impacted by the East Asian financial crisis in 1997. As a result, Indonesia's GDP contracted by 13.7% in 1998 and inflation reached high of 77%, about 24.9% of the population lived in absolute poverty. This economic downturn led to a political crisis which ended the reign of New Order regime and gave way to reform processes in socio-political as well as economic fields (Robinson, 2009).

Nowadays, however, the country has made a significant economic recovery. Average GDP real growth from 2003 to 2008 was at about 4.98%, despite the presence of global financial crisis and rise in oil prices (*The World Fact Book CIA, 2009*). The most important and prominent sector is the service sector as the economy's largest, which accounts for 45.3 % of GDP, followed by industry at 40.7 % and agriculture at 14.0 % (*UNESCAP, 2004*). Other indicators such as national development spending and poverty have both returned to pre-crisis levels. However, some issues remain as an impediment to further development, especially widespread corruption practices, lack of physical infrastructure and security threats related to terrorism activities. These issues hinder development efforts, especially in attracting more investments critical to Indonesia's longer term growth prospect.

1.5.2 Jakarta

The city of Jakarta is located on the northwestern coast of Java Island, at the mouth of the Ciliwung River, with coordinate of 6° 16' 0" S, 106° 48' 0" E. Jakarta serves as the capital while also being the largest city of Indonesia. It has an area of 750.28 km² and current population of 8,489,910 with density of 11,315.7/km² as of January 2008 (*Demographics and Civil Records Service of Jakarta Province, 2008*). It is recorded as the 12th largest city in the world and its metropolitan area, commonly called "Jabodetabek", contains about 23 million people.

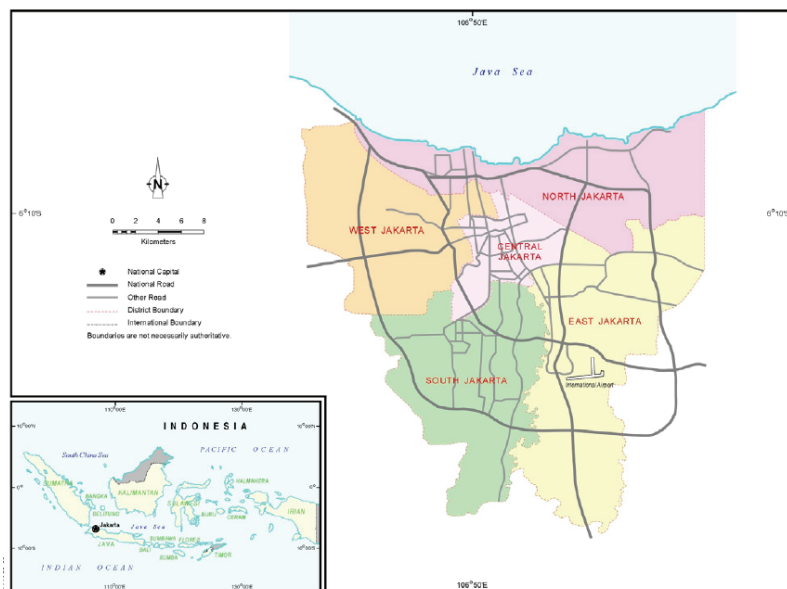


Figure 3. Map of Jakarta

Jakarta developed as a center of trade during the Dutch era and it continues to play an important role in domestic and international commerce. Its metropolitan area is Indonesia's largest economic center, attracting most of domestic and foreign investment, while government expenditures are also significant, given its status as the capital city. The combination of these factors had been critical in creating a spatial

concentration in Jakarta that made it the most populated city in Indonesia, a trend that has been increasing since the 1950s.

In 2007, Jakarta's share in the national economy was as high as 16.9% of Indonesia's GDP, making it the biggest contributor among other cities with no less than 60% of money circulating in Jakarta area alone. The nominal value of Jakarta's GDP in the same year was US\$ 98 billion while economic growth was 6.4% (higher than Indonesia's economic growth of 5.9%). In addition, the 2008 annual budget of Jakarta's provincial government was about US\$ 2.22 billion, the biggest provincial budget in Indonesia (*Ministry of Home Affairs, 2008*).

Major economic sectors consist of financial and business (30.87%), trade and tourism (21.57%) and manufacturing industry (17.39%), which allows Jakarta to be considered as a city with service orientation. Since the late 1980s, most investments in the manufacturing industry were directed to the hinterland of Jakarta or Bodetabek regions (Bogor-Depok-Tangerang-Bekasi) due to the growing density in the inner city area. This caused the escalation of the price of land as well as government's policy to prohibit certain industries from locating in Jakarta.

Despite the impressive statistics and description as mentioned above, during the last few years Jakarta's competitiveness was seriously troubled. Such issues as urban safety related to the rise of terrorism activities, horizontal conflicts among elements in the society due to immature democracy practices, severe traffic congestion and lack of sufficient urban infrastructures, as well as environmental degradation which reduced the quality of life have put the attractiveness of Jakarta at risk. While recent major positive development is the strong growth of tourism and Jakarta's role as a gateway to other regions in Indonesia.

1.6 Scope and Limitation of Study

The scope of this study is the implementation of PPP in financially non-feasible project especially by looking closer to toll road development in Indonesia, in particular Tanjung Priok Access project.

Several limitations of this research include:

- Time limitation, since this research is only conducted in 3 (three) months it may influence the overall quality and depth of the research to a certain extent.
- Budget limitation, since researcher is not provided with fieldwork budget by sponsor. To solve this problem, research assistant was hired during fieldwork period.
- Availability of data, since some of data probably can be considered as confidential it leads to reluctance of data sources and respondents to share such information. For example, the original feasibility study report could not be obtained during field work, therefore important project feasibility indicators, IRR and NPV, have to be calculated and analyzed using available data to estimate the real indicators value produced by feasibility study.

1.7 Thesis Structure

Chapter 1 is the introduction part includes the research's background, statement of problem, objectives, questions and conceptual framework.

Chapter 2 includes a literature review on the main topic of this study, namely Public Private Partnership (PPP). The chapter presents review on theories relevant to (PPP), toll road development, and financially non-feasible projects with regards to the

research questions and scope of the study. Regarding research question, this chapter relates to the first sub-question which explores and explains the key characteristics and enabling framework for PPP implementation for financially non-feasible toll road projects.

Chapter 3 presents the methodology used in the research, including research variables and indicators, sampling, list of respondents, and data collection.

Chapter 4 is the empirical part of the study presents findings and analysis within environmental management context from primary data collection conducted during fieldwork period. Regarding research question, this chapter relates to the second and third sub-questions which explores and explains the implementation of PPP in case study (Tanjung Priok Access Toll Road) and how the current set up meets both the private sector as well as public objectives.

Chapter 5 presents the conclusions, recommendations and direction for further research. This chapter also presents narration and description to answer the fourth and fifth sub-questions about conditions required to attract private participation and the need of policy formulation for future cases.

CHAPTER 2

LITERATURE REVIEW

This chapter deals with the theoretical and literature review of the study which provides tools for analyzing the other chapters especially the fourth and fifth chapters. There are four main components of this chapter: introduction to PPP concept, preparation of PPP, application of PPP in toll road development and theoretical framework as summary of this chapter.

2.1 Introduction to Public-Private Partnership

2.1.1 Definition

Understanding the concept of Public-Private Partnership (PPP) requires a clear definition. In general, PPP describes a government or public service which is funded and operated through a joint cooperation between government and private companies. One of the most well-known definitions of PPP is given by UK Commission on PPP as follow: *“a PPP is a risk-sharing relationship between the public and private sectors based upon a shared aspiration to bring about a desired public policy outcome”*. As comparison, according to The Canadian Council for Public-Private Partnerships, PPP can be defined as: *“a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards”*.

Both those definitions above imply the necessity of private sector to put their resources at risk as a form of investment in every PPP project in order to meet public needs. In practice, PPP covers a wide range of schemes that progressively make use of private sector's resources: capital, expertise, technology and so on. In addition, it is also related to risk and how risk can be mitigated by distributing it to the parties best able to cope with them. At one side, the traditional public procurement where parts of government's jobs are contracted out to private sector can be considered as a simple form of partnership. While at the other side, there are also other schemes which allow private sector to finance, design, build, operates and temporarily owns public assets.

Related to partnership, when a specific function of government is entirely transferred to private sector, in fact sold off, it is called “privatization”. In this case regulatory function remains under government responsibility. In United States the terms “privatization” and “partnership” usually are used interchangeably, while in most other countries privatization is considered as the most extreme form of partnership or simply a totally separate concept.

Based on above description we can see that PPP can be seen from many perspectives. Different perception about PPP will lead to different implementation and perception on how it should be done. For example, privatization may be regarded as a scheme of PPP by some while other may not think the same. Widening our perspective on different definitions and aspects of PPP is essential to learn more about this concept.

2.1.2 The Need for Public-Private Partnership in Development

In many parts of the world, especially in developing countries, countries are facing severe infrastructure backlog; these can be seen through: congested highways, bridges

in poor condition, the need for new hospitals and schools as well as water supply facilities. All of these problems create huge costs to society, ranging from lower economic productivity and reduced market competitiveness. For example, in India, around 95% of top executives think that infrastructure services are insufficient to support their business especially in longer term period (*KPMG and Economic Intelligence Unit, 2009*).

The trend to urbanization also puts pressure on many governments in the world to speed up urban infrastructure development program. For instance, in East Asia and Pacific region, urban population will increase up to 50 % of total population in 2025 with 500 million more people move into cities and urban areas (*World Development Indicator, 2004*). For this region alone, in 2006-2010, about US\$ 165 billion per year needs to be invested in major infrastructure such as electricity, telecommunication, highway, water and sanitation, etc. This amount is about 6.2 % of the GDP for this region, where about 4 % is for investment and 2.2 % is for maintenance (*Asian Development Bank Institute, 2007*). The importance of cities as engine of growth makes infrastructure development even more urgent in order to keep economic momentum to alleviate poverty and improve the wealth of society.

With typical limited budget availability, many more governments now are looking for private sector involvement in the financing, design, construction, and operation of infrastructure projects. PPP projects were first and implemented in the United Kingdom (UK) with the introduction of the Private Finance Initiative (PFI). Today, PPP projects represent around 10-13% of all infrastructure investment in the country. These projects cover various sectors, ranging from schools to defense facilities (*Deloitte, 2006*). Nowadays, all governments in the world are under tremendous pressure to solve the problems of infrastructure backlog. Initially only applied in limited scale, PPP has now developed into one of the most prominent alternative scheme to solve the infrastructure backlog.

Along with the current trend to New Public Management (NPM)³, PPP has been also viewed as an important instrument to improve efficiency of public services through a more developed institutional arrangement. The basic idea of PPP implies that in order to cope with the challenges of development, there is no organization which can single-handedly deal with all the problems that the government are currently facing. Consequently, private and public organizations need to create institutional arrangements which will allow participation from both sides. PPP is also important to change the traditional relationship of principal-agent in public sector contracting into principal-principal relationship in a win-win situation (*Christensen and Legreid, 2007*).

Despite of the trend towards PPP as an alternative development scheme, the idea of partnership in many countries remains at an early stage. In most cases, the governments are still dealing with such issues as formulating policy framework for partnership, institutional arrangements, creating market awareness, etc. However being late in adopting the idea of a PPP can also provide substantial benefit since lessons from other countries are available. While other countries with more maturity

³ *New Public Management (NPM)* is a new managerial approach developed in the public sector during the 1980s. Referring to OECD, two broad avenues within NPM approach are; (i) raise the production performance of public organizations, and (ii) make greater use of the private sector (van den Dool, 2005).

in handling PPP in infrastructure projects may start to use their accumulated knowledge and experiences to expand the use of PPP in other sectors.

As a method of public service provision, it is unlikely that PPP will ever completely replace traditional public procurement model of infrastructure development. It is simply because PPP can only be implemented in certain conditions and some sectors may be well adapted to PPP while some others may not as will be described in later section. However, it is obvious that PPPs offer several benefits to governments trying to solve infrastructure backlog problems as well as improving the efficiency of service delivery. Those benefits can be described as follow (*Deloitte, 2006*):

- PPP makes it possible to distribute the investment cost over the lifetime of the asset. This is different compared to the typical pay-as-you-go financing scheme of many infrastructure projects.
- In general, PPP projects have a relatively good reputation regarding delivery time and budget management.
- Through PPPs, government may reduce their risk by transferring certain risks to private sector. This in some schemes also provides incentives for proper maintenance of asset.
- PPP can improve the efficiency of infrastructure projects by reducing construction costs as well as overall lifecycle costs.
- Due to the nature of contractual agreement, PPPs may encourage stronger customer service orientation, through the presence of clear performance indicators within the contracts.
- Inline with the spirit of New Public Management, PPPs put more focus on outcome of the project rather than the delivery process itself. This will cultivate spirit of innovation and entrepreneurship in public service.

2.1.3 Scheme and Arrangement

PPP involves a contractual agreement made between government and private sector which open the opportunity for private sector participation in the establishment of public infrastructure projects. PPPs are widely used to develop new infrastructure as well as maintaining and upgrading existing ones. Many types of public infrastructure can be managed through PPP arrangements such as: school, hospitals, water supply, highways, even prison. Compared to more traditional public procurement schemes, under PPPs arrangement the private sector generally has wider responsibilities in all project phases as follow: planning, financing, design, construction, operation and maintenance. To improve its efficiency, both government and private sector need to share the risks of the project, with the consideration that every risk should be transferred to the party best able to control it.

There are wide ranges of PPP schemes, being used in many projects all over the world. These schemes refer to new facilities or construction activities. Some of the most common PPP schemes are described below (*The National Council for Public Private Partnerships*):

- **Design-Build (DB)**
Through this scheme, the government makes a contract with a private partner to design and build a facility based on standards as required by the government. As soon as the facility is ready, the government holds responsibility for its operation and maintenance. Basically ownership of the asset is still in government's hand. This scheme is also known as Build-Transfer (BT).

- **Design-Build-Maintain (DBM)**
This scheme is the same as Design-Build but the private sector is also responsible for the maintenance of the facility while the government is responsible for the operation. Asset is owned by government.
- **Design-Build-Operate (DBO)**
Through this scheme, the private partner is responsible for the design and construction of a public facility. Once the facility is prepared, the title for the new facility is given to the government, while the private partner is responsible for its operation for a certain period. Maintenance activity and asset ownership remain assume by government. This scheme is also known as Build-Transfer-Operate (BTO).
- **Design-Build-Operate-Maintain (DBOM)**
This scheme is a combination of design-build with the responsibility of private partner for the operation and maintenance of a public facility for a certain period. When the period ends, the operation is given back to the government as the owner of the asset. This scheme is also known as Build-Operate-Transfer (BOT).
- **Build-Own-Operate-Transfer (BOOT)**
Under this scheme, the government gives a private partner the right to finance, design, build and operate a facility for a certain period of time. The private sector also owns the assets for such period of time. By the time when the period ends, control of ownership, operation and maintenance, and capital investment of the facility is given back to the government.
- **Build-Own-Operate (BOO)**
The government gives a private partner the right to finance, design, build, operate and maintain a project. Under this scheme, the private partner is allowed to retain ownership of the project therefore they are not required to give back the facility.
- **Design-Build-Finance-Operate/Maintain (DBFO, DBFM or DBFO/M)**
Through this scheme, government gives a private partner the right to design, build, finance, operate and/or maintain a new public facility under a long-term lease. The private sector is allowed to own the asset for a period of time through lease system. When the lease term ends, the facility is given back to the government. As practiced in several countries, DBFO/M covers both BOO and BOOT schemes.

Aside of dealing with the development of new public infrastructures, PPP can also be implemented to manage existing services and facilities. In this context, there are several usual schemes as described below:

- **Service Contract**. The government contracts a private partner to provide services which previously being done by government. This is seen as a simple principle-agent relationship, the weakest form of PPPs.
- **Management Contract**. This contract is almost similar to service contract except that the private partner is responsible for all operation and maintenance activities of the facility.
- **Lease**. Through this scheme, government gives a private partner leasehold interest in an asset. Consequently, the private partner will be responsible for the operation and maintenance of the asset based on the terms of the lease.
- **Concession**. Through this scheme, government gives exclusive right to private partner for the operation and maintenance of an asset over a long period of time based on performance standards set by the government. The ownership of the

original asset remains in government hands, while the private partner retains ownership over any improvements made during the concession period.

- **Divestiture.** This scheme means partial or full asset transfer from government to private sector. In practice, by selling the asset, the government will also include certain conditions to make sure that the private partner will improve the asset and continuously serve the citizens. This scheme is also called privatization.

For better illustrating the position of every scheme based on the share of responsibility between government (public sector) and business (private sector), it can be described through the following figure.

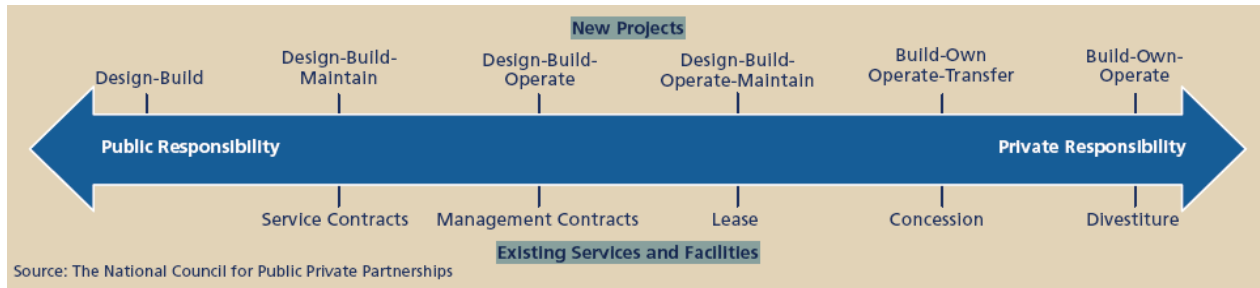


Figure 4. Spectrum of PPP Schemes Based on Responsibility
(Source: The National Council for Public Private Partnership)

From the figure above we can see a spectrum of PPP arrangement where private sector involvement gets higher and stronger to the right side of the figure. As illustration, on the extreme left, we can see that a project with design-build type can be considered as “pure” public procurement. Another example, a PPP project with management contract (O&M contract) can be considered as a “weak” PPP since it is more located on the left side of the figure. Analysis on PPP dimensions related to above PPP schemes is given in this table below.

Table 1. PPP Dimensions vs PPP Schemes
(Source: Pennink, 2009)

	Capital Investment	Operation and Maintenance	Ownership	Main Risk
Design-Build	Public	Public	Public	Public
Design-Build-Maintain	Public	Public and Private	Public	Public
Design-Build-Operate	Private	Public and Private	Public	Private
Design-Build-Operate-Maintain	Private	Private	Public	Private
Build-Own-Operate-Transfer	Private	Private	Public	Private
Build-Own-Operate	Private	Private	Private	Private
Design-Build-Finance-Operate/Maintain	Private	Private	Public	Private

From the table above we can see that different PPP schemes will have different characteristics based on PPP dimensions which include several aspects of capital investment, operation and maintenance, ownership and biggest risk. It shows how within spectrum of PPP these aspects are widely distributed among schemes with two

extremes where in each situation government (scheme: DB) and private sector (scheme: BOO) assume all responsibility and risk of the project.

Government should consider carefully the local capacity available to implement a particular PPP scheme. PPP projects with complicated financial arrangements and/or extensive contractual or monitoring requirements will need hiring and/or training of staff. This process has to be done in advance of the need. In general, it should be noted that different PPP schemes are more readily adapted to particular sectors or project types and have been used more extensively in these contexts. For example, in toll road development, most PPP projects being implemented are in the form of BOT contract. As an illustration of the implementation of PPP in Asia related to the composition of selected scheme, it can be seen on Figure 5 below.

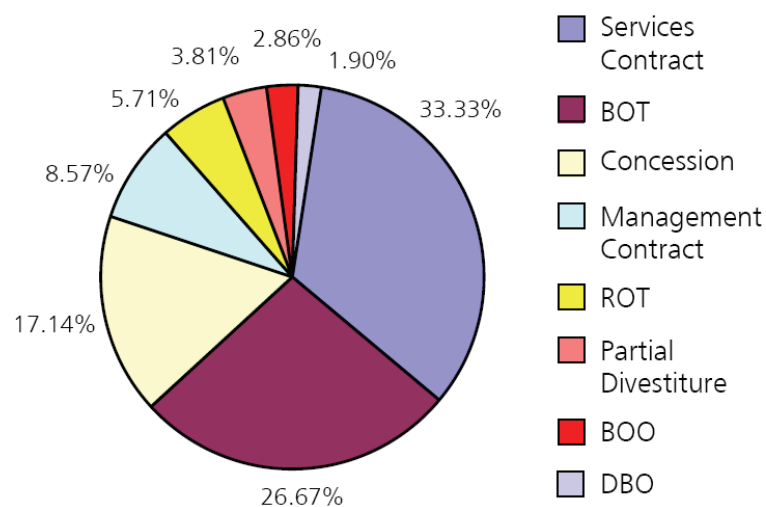


Figure 5. PPP Schemes in Asia Based on Contract Type
(Source: ADB, 2002)

2.1.4 General Framework for Successful Public-Private Partnership

As mentioned before, some public services are more suitable for PPPs than others. Although the market is argued to be more efficient in providing services, certain services require public intervention to deal with the following; (i) market imperfections, (ii) depending on the nature of the good, and (iii) in the cases of merit goods (Pennink, 2008). These are explained further in the following paragraphs.

The first condition where public intervention is required, as mentioned above, is market imperfections which may include:

- Natural monopoly in public service. Government needs to ensure minimizing the chance for monopoly by private sector.
- Investment scale. Large requirement of capital investment makes it difficult for the private sector to participate in a project.
- (Large) Externalities. Government needs to ensure that the negative externalities do not negatively influence society as a whole, in addition that positive externalities (i.e. health benefits from a project) do benefit society as a whole.
- Non-excludability. The citizens whom do not afford to pay the service should not be excluded.

- Price inelastic demand. Abuse of price by private sector should be avoided, especially when price fluctuation is not affecting the demand.
- Barriers to entry. This relates to a situation where private sector experience difficulty in entering the market while policy to eliminate the barrier will creates tremendous externalities.

The nature of good and service also determines when and what type of public intervention is necessary. Public goods, for instance, are often argued to be unsuitable for partnership. This is due to the characteristics of public goods which generally are non-rival and non-excludable, such as public road (especially in rural areas).

Meanwhile other goods like merit good require public intervention to ensure that they are provided effectively to the customer. Merit goods are goods that are intended for society as a whole that the government will ensure that the service is provided even if the end user cannot pay. Water and sometimes education are considered to be merit goods.

Important to note that in many cases certain portions of a service are more suitable for partnership. Services can be unbundled horizontally and vertically those parts that are suitable for partnership can be arranged as PPP projects and other parts that are unsuitable for partnership should remain under government's control. For example, in toll road, vertical unbundling of toll road development activity can be done with the result of these following components:

- Policy preparation
- Toll road network planning
- Feasibility study
- Design
- Construction
- Revenue (toll) collection
- Operation and maintenance

Based on the characteristics of each component we can decide which activities that can be arranged for partnership. In this case, those activities include design, construction, toll collection and operation and maintenance. On the contrary, other activities such as policy preparation, toll road network planning and feasibility study should be remained kept by government.

2.1.5 Challenges and Issues

Despite the wide range of benefit potential from PPPs application, there also several challenges and issues. Such challenges and issues require action to be taken into account throughout the stages of PPP market development. PPPs have been proven to be an effective infrastructure delivery scheme in various projects, however, there are remain some which failed to meet the objective. This is among others due to the following reasons:

- Poor setup. Initial designs of PPP which consist of policies, legislation and guidance strongly influence the output and outcome of the project. Failure is often caused by too many restrictions made by the government. Feasible deals between government and private sector sometimes fail to take place because there are so many restrictions, conditions and also expectations of risk transfer on the private partner and agencies involved. Another common mistake is to think that by PPP government can collect "free money" from the private sector or that PPPs will solve all problems that we have.

- Unclear project objectives. Sometimes the government has unclear objectives and the private partner does not have clear understanding about the purpose and outcomes of the project. As consequence, government may try to compensate this by creating rigid input specification.
- Over emphasis on the transaction. In many cases, the government may view PPP merely as financing instrument rather than a new paradigm of delivering public service. This situation ends up in low operational performance.
- Inaccurate assessment of project risk. One of the main differences among various PPP schemes is the level and nature of risk transferred to the private partner. In many cases, the government makes mistake by transferring demand risk, the demand for a particular infrastructure by the citizens, to the private partner even when they cannot influence demand factors.
- Low internal capacity. Despite the fact that the government is often supported by consultants, in reality many tasks cannot be outsourced, and since many officers do not have enough competencies to handle complex PPP project, problems occur during project implementation.
- Misunderstanding on value for money. Sometimes mistakes happen when the borrowing and tendering costs related to PPP are not sufficiently offset by efficiency it produces. This is caused by lack of understanding by government officers about the principles of value for money⁴ and how to measure it.
- Inadequate planning. Without understanding the nature of the market during planning stage, governments may produce more projects than bidders which will induce a non-competitive situation.

To develop PPP into higher maturity, the government should avoid the mistakes mentioned above. Taken into account lessons learned from various PPP projects, government may need to put attention on several points below to ensure success in PPP projects, as follow (*Deloitte, 2006*):

- Develop a clear framework for partnerships that puts adequate concern throughout all stages of project life-cycle. The framework should as well ensure a solid stream of potential projects. This measure is important to avoid problems caused by a poor PPP framework, unclear outcomes, low capacity of the government in managing the process and over emphasis on transaction.
- Having clear understanding of PPP schemes is vital in addressing more complex issues. This can help the governments in achieving a proper allocation of risk even in conditions where future needs are uncertain. Moreover, this will allow the government to tailor PPP projects in a more sophisticated way related to specific situations and infrastructure sectors.
- In addition to provide better infrastructure services at more efficient cost, governments can use PPP arrangements to unlock the value from undervalued and underutilized assets. This can be applied to certain assets such as land and buildings, and governments may use the collected funds to finance new infrastructure development.

⁴ *Value for money (VFM)* is defined as a concept associated with the economy, effectiveness and efficiency of a service, product or process, i.e. a comparison of the input costs against the value of the outputs and a qualitative and quantitative judgment over the manner in which the resources involved have been utilized and managed.

2.1.6 Life-Cycle Approach

To better implement PPP, thus meeting public needs, it is critically important to properly set financial terms within initial deal. In addition, there are also other factors which are equally critical in order to create a smooth process over its entire life cycle, such as: (1) pursuing acceptance from stakeholders involved, (2) managing and organizing the change process, (3) managing risk allocation correctly, (4) formatting the legislative and regulatory framework, and (5) analyzing the long-term effects of the project on the larger scale, for example, in the case of toll roads, its effects and impacts to the rest of the transportation network as a larger system.

This can be achieved by developing a holistic view on the infrastructure project's entire life cycle. A holistic life-cycle view helps the government to get better "buy in" from all parties involved in the project. It also serves as a framework to evaluate the appropriateness of the solution for the public over time. Without this, public officers will face difficulties in developing a plan to address key considerations that are needed to move beyond the transaction phase.

A life-cycle approach is needed to ensure the interest of public sector which retains ownership and ultimate responsibility for the asset over the life-cycle. While many experts put emphasis on the PPP transaction phase, a successful project depends heavily on several items as follow: a sound policy and legal framework, effective risk sharing, sophisticated procurement process, excellent project management and proper arrangement for concession phase. In addition, a life-cycle view provides governments with better comprehension on how decisions taken during different phases influence overall success of the project. For instance, project monitoring will be heavily determined by the level of risk being transferred to the private sector.

Therefore, in general, we can conclude that by applying life-cycle approach towards PPP project government will be able to identify all necessary requirement needed to present in any project. This approach will also useful to identify and mitigate any risk or problem which may occur in PPP implementation. Willingness to broaden our perspective and the capacity to assume life-cycle approach will be one important factor of success in PPP implementation.

Related to above description, there are three major phases for implementing infrastructure project under PPP schemes, as follow:

- Policy and planning stage. In this stage, governments decide whether a project needs to be managed under PPP schemes. Several activities involved in this phase are: defining goals and objectives, issuing major guidelines for PPP, developing the legal framework, designing a standard framework to drive down costs, establishing processes for receiving and qualifying candidate projects, outlining the role the PPP project will play in the larger infrastructure program, designing the procurement process, analyzing stakeholder interests, and communicating both internally and externally. A critical element of this phase is the establishment of the necessary legislative and regulatory framework to support the PPP program. Governments review the existing legal environment and ensure that it is suitable to support private investment. Governments may also establish a PPP unit at central level especially for the purpose of formulating policies and manage all the process. A vital function of the unit is to develop standard gateway review processes which should be passed by all PPP projects before any deal may take place. The objective is to deliver consolidated knowledge, standardized processes as well as best practices to each transaction and overall market.

- Transaction stage. In this stage, governments ensure that the tasks are implemented properly. Such action are also done during the construction and concession phase in order to make this approach successful. Some other things which are taken into account are: establishing clear and achievable performance standards; formulating financial incentives for good performance and penalties for poor performance; and determining the optimal level of risk to be transferred to the private partner. The focus is on establishing a competitive procurement which provides best possible outcome for governments while meeting the specific project requirements based on defined procurement rules. A vital feature of the transaction phase is the protection of public interests. In order to do so, government must identify the values that should be protected and how to maintain the integrity of these values. Accommodating this challenge also includes the effort to address several important issues: services accessibility, cost to citizens, fairness and equity, conflicts of interest, financial accountability, stability and quality.
- Construction and Concession stage. During this stage, construction and operation-maintenance take place. In most cases where the private partner operates the facility and the government engages in supervision. In this situation, although the issues in each activity are substantially different, the government needs to pay careful attention to all clauses within the contract and implement incentive methods to improve performance. A close partnership between the government and the private partner is needed in order to achieve public goals and project objectives. A main concern during this phase is how to set up effective governance for structuring the partnership. Government officers must carefully take control of project outcomes even though the private partners are the parties who directly handle service operations. It requires a proper combination of acting flexibly to accommodate dynamic change and controlling the performance of private partners. From this perspective, a successful partnership usually requires forum where all parties involved can meet to solve problems and settle conflicts. Success relies upon quick identification and solution to any friction. Joint governance structure therefore is needed to address strategy, management and organizational activities. From this point, the government will be able to establish a successful partnership through vision, setting agreement between public and private partners, anticipating problems and handling them properly.

Based on above description, the tasks per stage of a PPP during the entire project life-cycle are given in the Table 2 below.

Table 2. PPP Framework Based on Project Life-Cycle
(Source: Deloitte, 2006)

	Policy and Planning Phase	Transaction Phase	Construction and Concession Phase
Sequential Activities for Infrastructure Delivery	<ul style="list-style-type: none"> • Condition of infrastructure financial situation • Legislation/regulation • Leadership: policy and project management • Planning: environmental assessments and project opportunities • Communications: internal and external with major stakeholder groups 	<ul style="list-style-type: none"> • Transaction process • Shortlist qualified bidders • Risk transfer and value for money • Payment mechanism/performance • Request for proposal • Finalize project agreement • Preferred bidder selection and negotiations • Financial close 	<ul style="list-style-type: none"> • Transition to construction (e.g., design/build) • Construction and monitoring • Facility operation (contract and relationship management) • Evaluate whether promised benefits materialized • Maintenance: hard and soft service provision • Asset hand back
Key Activities	<ul style="list-style-type: none"> • Establish Objectives. • Evaluate Alternative Financing Structures. • Communicate the Benefits • Build Market Interest. 	<ul style="list-style-type: none"> • Establish a Realistic Time Frame. • Secure the Best Value for Money. • Establish Performance Standards. • Develop a Draft Project Agreement. • Establish Construction Governance. 	<ul style="list-style-type: none"> • Monitor Construction. • Monitor the Concession. • Establish the Concession • Governance Model.

Based on table above, we can see how application of life-cycle approach in PPP arrangement is proven to be useful in assessing all necessity requirements as well as anticipating problems which may emerge ahead. This life-cycle approach can be used as guidance and check list for government on how to prepare PPP projects in a comprehensive and holistic manner.

2.2 Preparing Public Private Partnership

There are several key areas which need to be addressed in order to prepare public-private partnership, as follow (ADB, 2007):

- legal, regulatory, and policy frameworks
- technical issues
- institutional and capacity building
- other commercial, financial and economic issues

2.2.1 Establishing Appropriate Legal, Regulatory, and Policy Frameworks

To deliver PPP projects requires a solid policy framework including specific laws and regulations. Analysis on legal setting will include the following; inventory of existing laws and regulations, contracts as well as other legal documents which related to PPP implementation and the required changes accordingly. Government must identify gaps where new legal instruments are needed. These legal instruments may relate directly to PPP (e.g. privatization laws, sector licensing) or to broader context of investment (e.g. labor laws, environmental laws, foreign exchange regulations). It is possible to change some laws to directly facilitate PPP projects, but some should be more general to be simply recognized and followed.

Accordingly, PPP structure has to be in line with the tax regime, concession rights, dispute resolution procedures, public service laws, labor laws and so on. In situation where change of laws is required in order to establish PPP, then a realistic timetable should be addressed to carry out this process. The legal set up should continue while PPP process is developed.

Related to above description, the regulatory framework that needs to be changed may include also price policy, customer service, operation and market structure. The expected PPP has to be compared with the existing regulatory environment. As such, any existing gaps related to capacity and regulation should be developed sufficiently or the PPP structure itself should be reformed. Filling these gaps may include the effort for the following:

- creating clear regulations and requirements of the operator
- developing actual regulatory institutions
- training policy makers
- developing clear procedures on how the regulator requests and receives information

The functions of each party involved in service supervision and regulation should be described and justified by assigned authorities.

2.2.2 Technical Preparation

The technical specifications of PPP proposal are described clearly within the terms of reference and the contract. The preliminary specifications are developed during preparation phase. The final technical specifications are then developed taking into consideration market response and project affordability.

The technical design is started by identifying expected coverage targets and service standards. Then government estimates the cost to deliver this service and optimum tariff for cost recovery. In this case, government has the options to (i) put these cost recovery tariffs in place, (ii) subsidize cost-recovery, or (iii) revisit the initial targets and service standards. Figure 6 illustrates the balance of service and costs as described by the World Bank and PPIAF (2006).

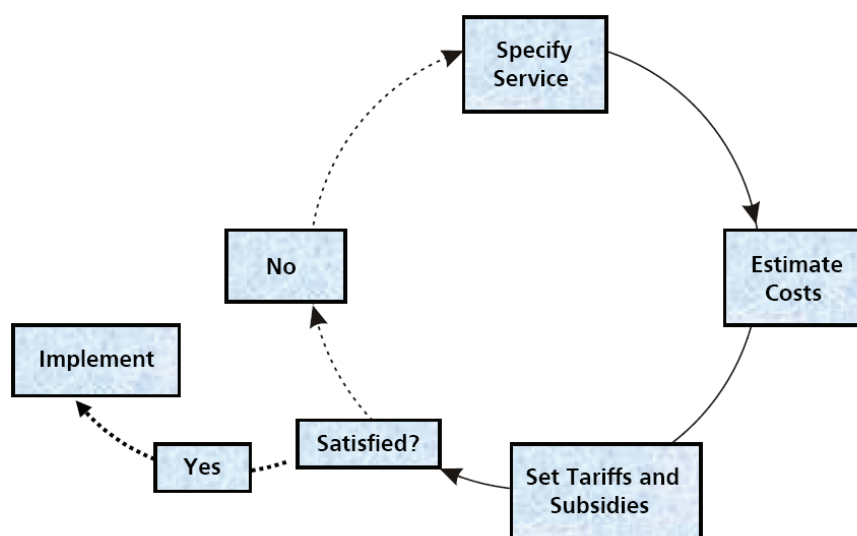


Figure 6. Balancing Service and Cost
(World Bank and PPIAF, 2006)

The technical preparation is based on a sector analysis and a road map, including demand analysis, asset inventory and investment analysis. Technical terms of reference need to achieve a balance between rigorous approach and flexibility at the same time. Technical specifications which are too detailed may prohibit a bidder from applying the most feasible solution. On the other way around, too flexible terms may lead to proposals that vary greatly from each other and difficult to evaluate. To deal with this problem it requires special strategy by focusing on the technical outputs rather than the inputs. This will allow the bidders to find out the most efficient way of achieving outputs. The technical terms of reference should enable potential investor to have clear understanding about the expected outputs, to measure required investment and to estimate results of the operating performance.

2.2.3 Institutional Structures and Capacity Building

One of the important elements of PPP process is how to restructure sector roles. The private partner is working on delivering a public service and the government becomes the regulator. Initially, most countries do not have sufficient institutions and capacity needed to handle the PPP process. Existing institutions must develop capacity in order to take on new roles and sometimes new institutions have to be formed. Several key institutional arrangements needed to support PPPs are as follow:

- a PPP unit
- a project implementation unit
- technical assistance

2.2.3.1. Public Private Partnership Unit

A PPP unit is needed to coordinate, control the quality, create accountability and provide information. This unit can be created as a new agency or within a certain ministry (e.g. finance ministry) which is considered effective to reform the sector. For private partners, this unit is important to provide transparent and consistent environment. For other stakeholders and the general public, this unit is vital especially to disseminate information and manage specific process.

This unit serves to ensure that all parties involved in PPP projects are working on mutual methodology and guidelines:

- identify and prioritize project
- improve competition
- due diligence
- transparent tendering process
- proper management of human resources and government assets
- ensure effectiveness in the use of government resources

PPP units generally focus on how to identify, develop and tender projects. Nevertheless, they increasingly focus on the supervision of signed contract. This includes how to establish a proper monitoring and reporting system.

Another concern is related to the structure and location of this unit. From this perspective, the unit should have sufficient authority and be led by a respected and competent executive. Furthermore, there is a growing support for government to establish this unit as a counterpart for project developers with remuneration system that is linked to successful transactions.

The unit does not necessarily have to be large. In reality, a large unit is contrary to the objective of PPP to improve efficiency. Usually, during its early days, the unit requires technical assistance from PPP experts. Another important concern is the links between the unit and the public agencies in concern such as the line ministries. PPP projects may be established at national and sub-national level therefore the proper location of PPP unit should be relevant to the market. It also has to be capable to coordinate with the line ministry which handles a PPP project especially the project implementation unit (PIU).

2.2.3.2. Project Implementation Unit

A Project Implementation Unit (PIU) is a vehicle for planning and implementing project(s). In most projects, PIU is a part of a line ministry, although it can also be a quasi-independent typed organization. Usually the government establishes a PIU for the purpose of supporting large capital investment project (typically donor-funded). In this case, the working period of a PIU is parallel to the project life cycle. The organizational structure and function of PIU depends on the requirements of the donor and the government agencies. They are also influenced by the type of project and the local context.

PIU also used as medium to allocate human resources to a particular project. It is staffed with public officers, with external resources or a combination of both. Some experts have questioned whether PIU are effective enough related to the effort for developing government's project management capacity especially when the staffs are recruited from outside. The main positive impact by having a PIU is the existence of an accountable managerial central point. PIU is responsible for the monitoring and reporting progress of the projects. It is also responsible for performing financial management and accounting as well as manages project procurement. Close and regular coordination is necessary to synergize the work of PIU and PPP unit.

2.2.4 Commercial, Financial and Economic Preparation

To design and prepare a PPP project, the government needs to create balance between level of service and tariff. In this case, it is important to create a package of services which can be accepted by the customers and able to support the asset. Critical for this purpose is the payment structure or revenues for the private partner. This may include subsidy from the government.

The preparation process at this stage includes these following items:

- Analysis on technical aspect to measure the service costs;
- Market and social research to determine willingness and ability to pay;
- Financial analysis and modeling to measure the correct cost recovery tariff needed to support operation and maintenance activities; and
- Consultation and trade-offs to establish transitional subsidies before achieving cost recovery or ongoing subsidies. However if the subsidies are not available then service coverage and target may need to be reduced.

The government should formulate a financial model which is flexible to accommodate a range of variables so it is possible for an iterative process to be developed between the financial model and the PPP arrangement. An important objective is how to make the facility financially sustainable through efficiency improvement and balance between income and expenses. The financial model is tool which can be used to help the government in achieving the right balance between affordable service, cost

recovery and investment. This model will be also very useful in prioritizing investments and gives input on who should provide the capital needed, which depends on the respective cost of capital. In some cases, the government is required to use a public sector comparator (PSC) model to test whether a PPP proposal offers value for money compared to the most efficient public provision. To prepare the transaction, three factors need to be considered are:

- financial sources
- the suitable design of tariff structure and level
- approach to designing and applying subsidies

2.2.4.1. Project Financing

In general, PPPs in infrastructure requires financing. Such projects require external funds which can be recovered over time from future revenue flow. These funds may come from the government and/or the private partner. Financing funds, both external and internal, have a cost, which impacts the project's economics. These in turn require tariffs which are affordable. Critical factor in project financing is the relationship between the cost of finance and perceived credit risk (which derived from technical, commercial, and other risks).

The cost of government funding is generally lower compared to that of a private partner. Consequently, arranging private financing for PPPs may increase the financial costs. Nevertheless, the efficiency gained from PPP should be higher than this additional cost thus resulted in net benefit for consumers. More over, public sector financing is generally more difficult to realize and this poses as one of the main drivers for PPP.

For the implementation of PPP contract, a specific project company needs to be established by the private partner. This company commonly called as special purpose vehicle (SPV). The company may be owned by a consortium or a single company. In most cases, the company owners will not finance all project requirements, instead the will provide a proportion as equity and the remainder acquired from financial institutions borrowing or place debt securities in the capital market.

The creditworthiness or "bankability" of a project depends on several factors. Some of which are within government control during the preparation phase, including commercially attractive project design and tariffs (shorter payback and, hence, financing periods) as well as strong off-take arrangements to reduce market/revenue risk (predictability of cash flows). These factors influence future cash flow (combined with the level of certainty and transparent regulation).

Generally, financing for infrastructure project has to face several challenges as follow:

- long-term debt maturities to match with project cash flows
- limitation of local currency debt financing availability to with match local currency revenue streams
- limitation of available equity leads to high degree of leverage
- no security (assurance) with exception for project assets available (non-recourse financing)

Furthermore, it is clear to state that project finance is very specialized and since it is dependent on the market situation, it is hard to predict the availability. Therefore, the private partners are required to seek credit enhancement in order to make project

financing possible and to have better borrowing rates. Those can be done through insurance or guarantee scheme which may include the following:

- partial credit guarantees attainable from the government or from a development finance institution.
- political risk guarantees attainable from insurers or development finance institutions against any situation where the government's commitment to the contractual agreements is default.

In order to state the amount of debt finance to sustain the project, the lenders must perform their own calculations related to project performance and cash flow. Such calculation may include: debt service cover ratios, loan life coverage ratios and project life coverage ratios. Project financing requires a thorough appraisal because it depends solely on project cash flows. Therefore lenders need to perform due diligence process to assure that project assumptions and risks are reasonable.

It is noteworthy that the bidders may not fully understand the project's financial prospects until the last stage of the contracting process. Therefore the bidders will have potential financiers lined up, but the final arrangements and risk allocations will only be arranged during the last phase when the contract is near certain. Up to this point, the lenders may impose their requirements on the project. This may lead up to a risky situation where the tender winner may fail to provide financing thus withdraw from the bidding. This underlines the importance and crucial role of financial resources and borrowing capacity assessment of potential bidders during prequalification. An efficient tool is to impose a bid bond or a deposit payment by the bidder that is forfeited in case the winning bidder withdraws.

2.2.4.2. Tariff Design

In a PPP project, the determined tariff needs to balance several objectives, as follow:

- stipulated service standard and associated costs
- willingness and ability to pay of customers
- resulting cost recovery
- return on investment for private partner
- the need for subsidy

The right combination of objectives must be determined through an iterative optimization process using the diagram as shown in figure 7.

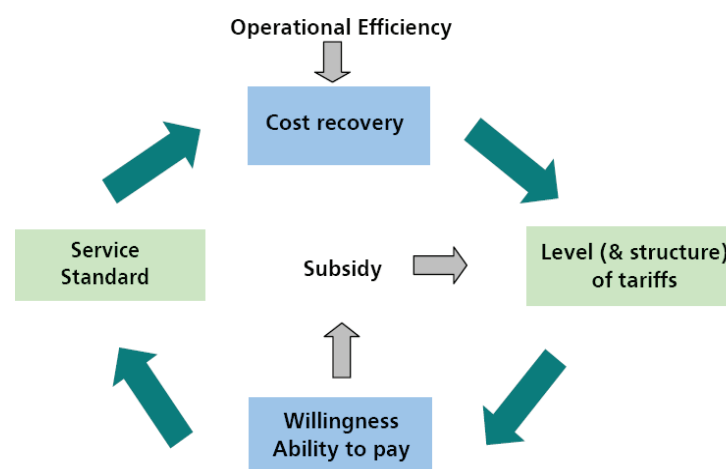


Figure 7. Tariff Design Process
(Source: Skilling and Janson, 2006)

Tariff design process becomes more complicated when using differentiated tariff structures (for example: unit price as a function of consumption to help low-income users) or using tariff adjustment mechanisms (for example: for input cost changes, exchange rate changes). It is important to hire competent specialists with sufficient experience for formulating the model and producing optimum result.

To design tariff properly there are several objectives which need to be taken into consideration:

- Cost recovery/return on investment. The balance between service standards (cost) and tariff (revenue) determines project feasibility. Looking further, the private partner has the opportunity to get high financial return by working efficiently both in investment and operation. In principle, a private investor will only become involved in a project if there is a good opportunity to make profit based on a predetermined set of service standard and tariff. In this case, the investor will use indicators to assess financial feasibility of project, the most commonly used are: internal rate of return (IRR) and return on equity (RoE). The private partner will make an assessment on the potential IRR of a project against its own cost of equity. It will be adjusted for the perceived risk of the project. A private partner may accept a lower IRR if some risks are reduced or mitigated by government intervention or vice versa. Revenue is considered sufficient if it is possible for the investor to maintain and improve the service and asset.
- Fairness and equity. To create fairness, tariff should reflect cost. Moreover, different customer segments should observe tariffs that reflect the costs of supplying them. For instance, customers in similar circumstances are given the same tariff while customers whose enjoy lower service quality should be charged a lower tariff. Nevertheless, certain special circumstances can be taken into account, i.e. when the service is a merit good or a project that would have high positive externalities for society as a whole. This is often the case in water and wastewater services and customer should be denied based on poverty. To solve this problem the government may apply specific subsidy or cross-subsidy within the tariff system.
- Simplicity and comprehensibility. The importance for being simple and comprehensive is related to the fact that the tariff should be easy to access and to understand both for the employees and customers. For instance, if the tariff is too complex then the customers may not understand how changes in service consumption may influence their bill. Nevertheless over simplification may give impact on lost incentives or reduced fairness.

It is important to balance these above objectives against each other. For example, the incentive objective may works against simplicity objective. It is due to the fact that from cost perspective it may make sense to have a very complex tariff structure. This can happen also with the objective of fairness. Therefore both government and private partner need to assure that certain fundamentals are in place such as: the definition of reasonable rate of return, valuation method of assets and whether it is allowed to have additional return. The initial tariff rates and tariff structure may be set up once all these factors are evaluated and proper risks allocation is determined and an adjustment is warranted afterward.

2.2.4.3 Tariff Adjustment

It is unrealistic to expect that a set of tariffs or a tariff structure will stay feasible over the entire life-cycle of project. Therefore it is important to set some practical rules for adjusting tariff, this includes defining:

- The reasons for price adjustment, such as changes in raw material prices, inflation and exchange rate fluctuation;
- Tariff adjustment mechanism such as cost plus and price cap regulation; and
- Frequency of tariff adjustment includes cost pass-through, tariff indexation, tariff resets, and extraordinary tariff adjustments.

Mechanism for tariff adjustment can be classified into two basic categories as discussed below:

- Cost-plus or rate of return mechanisms. This mechanism allows firms to pass operation expenses and capital costs of which includes after-tax return on investment. There is no adjustment in this system unless the operator applies to the regulatory authority and request a review and reset. In theory, this mechanism allows best match of prices and incurred costs. However incentives for efficient operation and development are weaker due to assured recovery of rate of return. Cost plus regulation has the potential to urge firms to inflate cost of operation rather than to increase their efficiency. However, from investment certainty point of view it has a main element which in turn may mitigate risks.
- Revenue or price-cap regulation. This option provides more direct incentive for efficiency. Revenue or price caps purposes to manage quantum of revenue over a certain period or a specific price. In this scheme, the firms are given leeway to increase income by improving the performance. This approach may provide stronger incentive to improve efficiency. It also reveals the true costs of providing services.

To choose the best approach to be taken needs thoroughly consideration based on many elements. These elements include availability of economic expertise, accounting and auditing system, investment requirement of a system, investment requirements and efficiency motivation. During early development stage, price cap will be the best option when regulatory capacity is still under development. During this period, prices can be set high enough to attract capital. Later during a more mature stage, cost plus mechanism is a better choice to attract large scale investment. In practice, many regulatory systems comprise of hybrid aspects of revenue or price-cap and cost-plus mechanisms in a tailored approach. The systems may also comprise of methodological approaches to sector-specific issues. Moreover, regulatory system format must consist detail analysis and consideration taking account of country, sector, industry and infrastructure capital investment profiles.

2.2.4.4 Subsidy Design

Government support (subsidies) is a potential tool to make a project more commercially feasible from private point of view. It is applicable even when the desired service and tariff levels combination does not result in sufficient cost recovery. Government support is only possible if the aggregate cost to the government under PPP (including subsidy) is lower than the cost to the government of operating the service fully under the public sector. It should also higher than the cost of not providing the service at the required service levels.

Government support (subsidies) can be applied in different forms, for example a ‘general’ support which applies to the overall project or a ‘specific’ support in which the subsidies are tied to service provision for low income consumers. Some government subsidies are designed in compliance to public service obligation or regulatory obligated or paid for, both directly or indirectly, by public sector transfer to beneficiaries.

The most common forms of cross-subsidies in practice are including subsidies from non-household to household customers, and subsidies from high-volume customers to low-volume customers, through rising block tariff structures. In many cases, the subsidy is already effectively in place before PPP although in some cases it may be a hidden subsidy. Different types of subsidies can be used to address different issues with available options. Those options are among others cash subsidies, including output-based aid, cheap capital, unremunerated bearing by the government of business risks, and in-kind grants and tax exemptions.

2.2.4.5 Inclusion of Local Partners

It is important, from the government’s perspective, to include local private and public partners in the PPP process to the maximum. Such inclusion can be achieved with various ways, include the following:

- Local private partners. Local private companies are often qualified for PPP partnership in infrastructure development, improvement or operation. Local private partners may be included in small to big scale projects ranging from service contracts to BPT. In general, local partners are more effective in smaller local projects, for example in projects which requires access to small towns and peri-urban areas. This demonstrates a viable market which is remote from the core infrastructure.

It is important for the government to previously establish a policy on local partner inclusion in order to regulate such local participation. The government should also ensure against unfair access to procurement officers, safeguard against corruption, and set appropriate evaluation criteria for enabling environment for competition and project quality assurance.

- Local subcontractors. In some cases where there are gaps for service provision, the role of small scale service providers becoming more prevalent. PPP partners must consider such local providers integration in the project both in medium or short term projects. This would prevent the PPP from displacing small scale providers until replacement services are available.
- Local government units. Joint venture arrangement often includes Municipal or other local public partners. This arrangement may serve as an effective way of bringing local government and stakeholders into corporate governance of the company. This transforms their role into one of ownership. However, conflict of interest is potential to emerge which needs to be mitigated against.

2.3 Toll Road Development

2.3.1 The Importance of Road and Infrastructure in General

There is a strong link between infrastructure provision and economic development. This is related to the characteristics of infrastructure itself, either as final service output for the consumers (e.g. power for refrigerator) or as an intermediate input into production process of other sectors (e.g. power for industry). In general, efficient

infrastructure provision may attract investments in other sectors and lack of it will create negative atmosphere for economic development.

It is widely known that in general there is a linear correlation between national income and infrastructure share in GDP. However, the share of some types of infrastructure will decline after some point. As an illustration, it can be viewed from Table 3.

Table 3. Infrastructure Shares in GDP (%)
(Source: World Bank, 1994)

Infra-structure Sector	Countries			
		Low income	Middle income	High income
Transport and communications		5.3	6.8	9.5
Gas, electricity and water		1.3	2.2	1.9

From the table above, we can see that at higher income level power and telecommunication become more elastic compare to other infrastructure. On the contrary, water and transport infrastructure are more elastic at lower income level.

There is a two-ways relationship between GDP growth and infrastructure provision, as explained by Hirschman (1958). Infrastructure needs may be induced by the growth in other sectors. For example, industry development will need the service of some relevant infrastructures such as highways, power and port. On the other side, sufficient provision of infrastructure will support new economic investments and industrial activities.

According to Hirschman, there is a strong relationship between what he called as “directly productive activity” and “social overhead capital” (which literally means infrastructure), and unbalanced growth between the two is essential for attracting new investment because economic growth takes place as a result of the presence of sufficient incentive to invest. In this case, infrastructure plays an important role in providing incentive for new investment and the ability of infrastructure for providing profit opportunities in other sectors is one of the major concerns in development policies.

Similar thought based on empirical study was given by Blejer and Khan (1984). They argued that there is a positive correlation between public investment and private investment. This concept later is widely recognized as the “crowding-in” effect of public investment.

2.3.2 Current Trends of Public Private Partnership in Road Development

There were an increased number of countries which apply PPP concept in road development during the early period of 1990s especially among developing countries. The trend escalated in the mid 1990s with about new committed investments valued at US\$ 10-12 billion per year and financial closure of 50-60 projects reached financial closure (see figure 2-5). However, due to the occurrence of economic crisis, this trend of PPP in roads was declining rapidly as also happened in other infrastructure sectors. In addition, there was also a growing pessimistic concern over the application of PPP for infrastructure development (Harris, 2003).

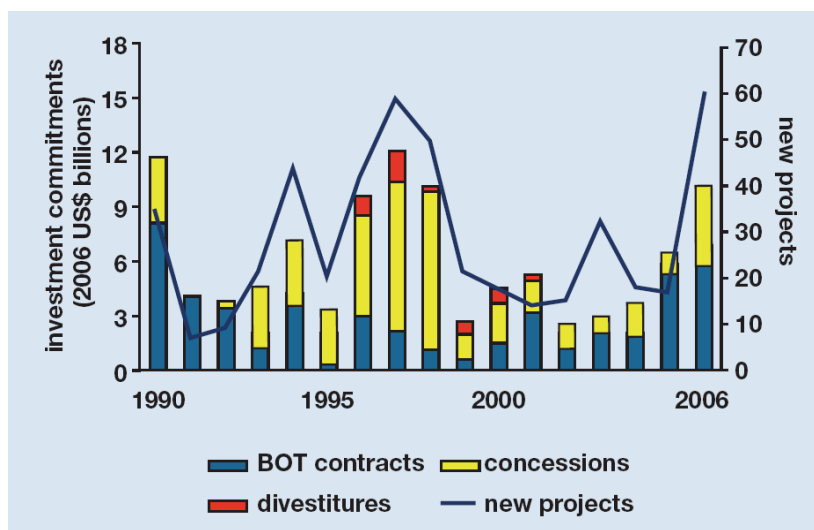


Figure 8. PPP in road development in developing countries, 1990–2006
(Source: Queiroz and Izaguirre, 2008)

The trend of PPP application in road development got another momentum by 2005–2006. In 2006, new committed investments reached US\$ 10 billion with about 60 projects. Road sub-sector had been among the most active infrastructure development sectors. Its growth exceeded 70 % in 2005 and it also grew by 50 % in 2006, which significantly contributed to the rapid development of transport sector (Queiroz and Izaguirre, 2008).

Policy maker’s interest in PPP application for road development is driven by the high amount of investment needed for keeping existing road networks in good condition. In addition, further capacity expansion is urgently needed despite of the limitation of public funding. If arranged well, PPP can deliver several benefits in road development, as follow:

- It gives higher financial efficiency. Mobilizing private capital to reduce burden on fiscal budget for road development and making fiscal space to finance public service provision in other sectors.
- It manages risks in a more sophisticated way. Giving private sector opportunity to manage road design and construction activities.
- It improves governance practice through better transparency and accountability by means of competitive bidding, disclosure policies and public reporting.

During the period of 2001–2006, about 62 % of PPP projects in road sector in developing countries are arranged in the form of BOT contract. In total they consist of 71 committed projects with value of US\$ 18 billion. As comparison, during 1990s, the same type of contract only represents about 39 % of all project investment.

Usually BOT projects are established in cities and urban areas to solve road congestion due to less uncertain traffic demand. Therefore, in such project, accurate traffic prediction is very important for project’s financial feasibility and this is technically correlated with road network planning undertaken by the government. Sometimes government support is also needed in order to make toll level stays affordable and sustainable. Failure may takes place when these issues are not taken into consideration as happened in Mexico and Hungary during the 1990s.

During 2001-2006, around 30 % of total committed investments are intended to expand or rehabilitate existing road networks. Compared to new road construction projects, these projects are generally less costly and allow for better quality of traffic forecasting. In addition, the application of toll adjustment policy helps to improve project's financial feasibility.

As happened in previous years, current global investments in PPP for road development are highly concentrated in several countries, with about 90 % of the activities are conducted in the top 10 countries. However, countries that made into the top 10 list for both periods are only Brazil, Chile, China, Indonesia, Malaysia and Mexico, with India and Indonesia mostly responsible for the strong revival of global toll road business in 2005-2006. All the most prominent countries usually conduct systematic promotion program in order to attract private investor.

The value of PPP project in road sub-sector are fluctuated ranging from US\$ 100 million up to US\$ 400 million (figure 2-6). While the number of projects managed to reach financial closure was peaked in 2006, at 60, which was about the same compare to the previous peak of 59 projects in 1997.

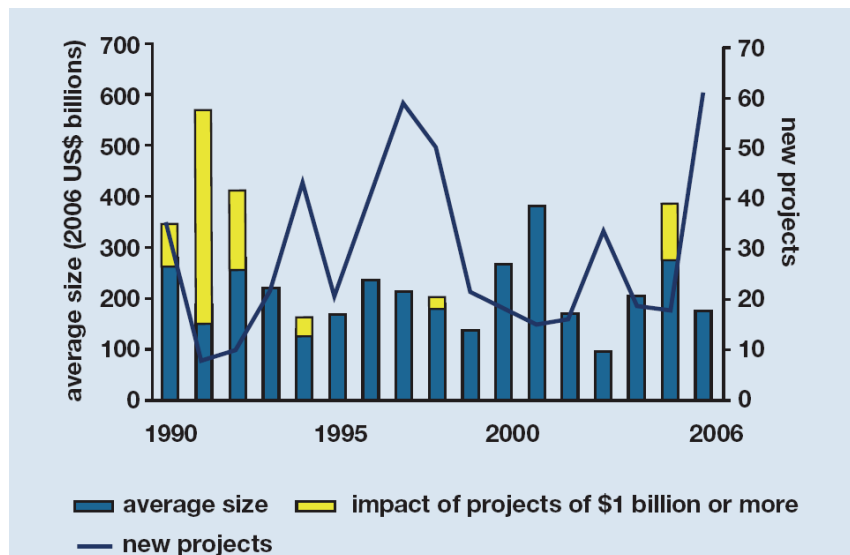


Figure 9. Average size of investment commitments to road projects with PPP in developing countries, 1990–2006
(Source: Queiroz and Izaguirre, 2008)

2.3.3 Government Support for Enhancing Public Private Participation in Toll Road Development

In general, based on observation, the presence of government support is becoming more and more important for establishing PPP in road sub-sector. If we look at most road projects in the 1990s, usually their revenue only came from toll collection. On the contrary, about 30 % of projects conducted in 2001-2006 were given government support.

In many cases, the way how government support is being delivered and its amount is limited to the extent of attracting private investor as well as to assure project's success. There are several methods of establishing government support for PPP project in road sub-sector, as explained below:

- **Shadow toll.** This type of support is given to the concessionaire based on traffic volume and its composition but not charged to road users. This method was

initially formulated in UK, specially intended to support Design-Build-Finance-Operate (DBFO) contracts for PPP in road development. Similarly, the same method is also applied in other countries such as Finland, Portugal and Mexico.

- Availability fee. This type of support is given to the concessionaire on the basis of road performance and not on traffic volume. Consequently, a potential risk of such method is overly designed road project since financial support from the government is not related to level of road use. In some countries, this method has been combined with toll collection as revenue sources.
- Capital grant/subsidy. This type of support is intended as subsidy for construction cost, as in some projects revenue from toll collection may not be sufficient to recover the whole cost for construction. Therefore, in order to increase project's attractiveness government needs to take measure to reduce construction cost of the private investor. This method has been implemented in several countries such as Colombia, India and Mexico. In these countries, the amount of subsidies was determined by means of competitive bidding among the interested private investors.
- Minimum traffic/revenue guarantees. Through this type of support, government provides payment to the private operator to compensate when traffic or toll collection does not reach a certain value.
- Other types of government support, for example partial risk guarantees. Currently World Bank offers this kind of support to governments through their guarantee facility.

Different types of government supports have different risk distribution between government and private investor. For example, in the case of actual toll and shadow toll, private investor bears traffic volume (demand) risk. However, this risk is lower within shadow toll support scheme as traffic volume is not affected by toll rate. On the other side, within availability payment scheme, government remains bear demand risk and private investor assumes construction risk as well as other risks related to road performance.

For the success of PPP project in road development, it is very important to create balance between affordability and sustainability of project with its attractiveness among private investors. In order to do so, government needs to estimate a minimum toll rate which largely depends on the construction cost and traffic volume prediction (*Queiroz, 2007*). Toll rate determination is usually politically sensitive, however in many cases it may also financially not viable. Therefore, in such circumstance, government support may be applied.

Due to the monopolistic nature of toll road business, ensuring good governance practices is highly critical in order to protect public's interest as well as making the best out of private sector participation. This will include several measures such as competitive bidding, transparency on public information and strict contract supervision. To ensure private partner operates as dictated by the contract, sometimes it is needed to establish special agency deals with the monitoring of concessionaire performance.

PPP contract in toll road business usually regulate several element of activities involved including construction, operation-maintenance and toll collection. Regarding road performance there are several indicators being used to monitor concessionaire such as roughness, skid resistance and road safety. Any failure to comply with these

indicators should be punished by mean of penalty even up to the extreme of contract termination.

In general, selection by the government based on competitive bidding process among interested investors is a norm in toll road business, however this does not exclude the possibility of private sector to propose new project to the government. This is typically called as “unsolicited proposal”. Such initiative sometimes may lead to controversy if the government does not treat the proposal in a transparent manner or if there is no competition with other proposals. Therefore, to avoid such conflict, some governments nowadays have applied a mechanism to incorporate unsolicited proposals into a transparent and competitive concession process (*Hodges and Dellacha, 2007*).

2.4 Theoretical Framework for Analysis

Based on overall description on theoretical and literature review, a theoretical framework can be developed which will be used as analysis tool in the next chapters. Basically there are four aspects of PPP implementation which need to be identified and analyzed within this study. These aspects include:

- Policy and regulatory framework
- Arrangement of PPP scheme
- Government support
- Project finance

For better understanding, these four aspects are described in the table below

Table 4. Theoretical Framework for Analysis

No	Aspect(s)	Description	Perceived quality
1	Policy and regulatory framework	How policy and regulation being established and contribute to the overall implementation of toll road projects	<ul style="list-style-type: none"> • Clear and coherent policy and regulation • Solid institutional arrangement
2	Arrangement of PPP scheme	How PPP project in toll road should be designed	<ul style="list-style-type: none"> • Suitability of PPP scheme to project situation and condition • Inclusion of PPP scheme within existing regulation
3	Government support	How to evaluate the necessity of government support and the way how it should be delivered to private sector	<ul style="list-style-type: none"> • Necessity of support • Efficient delivery and provision to private sector • Impact to fiscal security of government budget • Ensuring value for money
4	Project finance	How to provide financing source and mechanism to toll road project	<ul style="list-style-type: none"> • Accessibility • Affordability

By using these aspects above as analysis tool it is hoped that the result of the study will be conclusive and can be elaborated into sounds recommendation. In addition, it can also be used as well as the basis for further research.

CHAPTER III

METHODOLOGY

This chapter describes the method of how this research is carried out. It consist of research question, operationalisation/definition of variables, variables and indicators, research method and strategy, research population and sample, data collection, data quality, data analysis and research design.

3.1 Research Question

Main research question formulated for this research is:

What are the constraints and problems faced in designing financially non-feasible PPP projects?

To answer the main research question above, 5 (five) sub-questions are formulated as follow:

- (1) *What are the key characteristics and enabling framework for PPP implementation in toll road development especially in the case of financially non-feasible project?*
- (2) *What has been done by government of Indonesia to implement PPP in Tanjung Priok Access Toll Road Development Project?*
- (3) *Does the current set up of PPPs in toll roads meet both the private sectors objective and, at the same time, meet public objective?*
- (4) *What conditions should be created in order to attract private sector participation in this project?*
- (5) *What policy should be formulated for PPP implementation in similar cases for the future?*

3.2 Operationalisation/Definition of Variables

Operational definitions for several key concepts being discussed in this study are given in this following table.

Table 5. Operational Definition of Key Concepts

Variables	Operational Definition
Toll road	Roadway facilities financed by tolls (also “toll lane”) (VTPI, 2007)
Road toll	A fixed fee for driving on a particular road (VTPI, 2007)
Public Private Partnership (PPP)	According to The Canadian Council for Public-Private Partnerships, PPP can be defined as: “ <i>a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards</i> ”.
Economic feasibility	The ability of a proposed project to justify itself from economic point of view or from the perspective of society.
Financial feasibility	The ability of a proposed project to justify itself from financial point of view or from the perspective of investor.
Financially non-feasible project	A project which has high benefit in economic aspect but has low feasibility in terms of financial aspect.

3.3 Variables and Indicators

In conducting this research based on above analytical framework, it will be put into operation by using these following variables and indicators:

Table 6. Research Variable and Indicator

No	Sub-Question	Variable	Indicator	Data Sources
1	What are the key characteristics and enabling framework for PPP implementation in toll road development especially in the case of financially non-feasible project?	Policy and Planning	Policy and Regulatory Framework	Literature and experiences from other similar projects.
			PPP Scheme and Project Financing	
		Transaction	Investment Procedure	
			Selection of Operator	
		Construction and Concession	Construction	
			Concession	
2	What has been done by government of Indonesia to implement PPP in Tanjung Priok Access Toll Road Development Project?	Policy and Planning	Policy and Regulatory Framework	<ul style="list-style-type: none"> • Primary (interview) • Secondary (policy documents and reports) data. Source: Ministry of Public Works (Directorate General of Highways and BPJT).
			PPP Scheme and Project Financing	
		Transaction	Investment Procedure	
			Selection of Operator	
		Construction and Concession	Construction	
			Concession	
3	Does the current set up of PPPs in toll roads deal with the key issues faced in financially non-feasible project?	Policy and Planning	Policy and regulatory framework	Analysis and interview.
		Transaction	PPP scheme	
		Construction and Concession	Government support and project finance	
4	What conditions should be created in order to attract private sector participation in this project?	External environment	Policy related issues	Analysis and interview.
		Internal (project) environment	Cost recovery and business risk issues	
5	What policy should be formulated for future implementation in similar project?	Policy and Planning	Policy and regulatory framework	Analysis and interview.
		Transaction	PPP scheme	
		Construction and Concession	Government support and project finance	

3.4 Research Methods and Strategy

This research will be conducted as qualitative research with exploratory method. In its implementation, case study will be used as main research strategy since it focuses on contemporary event. Instruments of this research include:

- Literature review.
- Secondary data collection in the form of policy documents, project reports and other data.
- Primary data collection through in-depth interview with key actors who involve in the case study.

3.5 Research Population and Sample

Population of the research is stakeholders involved in toll road development comprising government institutions, private operator and the road users (community). Purposive (non probability) sampling technique was implemented to identify the competent and highly experienced key respondents with deep understanding and knowledge within the infrastructure, toll road development and the environment including the planning, policy making and implementing agencies. In general, number of respondents is about 15-20 persons of relevant expertise and positions.

3.6 Data Collection

Data sources of both primary data (interview and questionnaire) and secondary data (documents and project reports) will consist of the following:

- Government institutions, including: Ministry of Public Works, National Planning Agency, Ministry of Finance and Coordinating Ministry for Economic Affairs.
- Private investors, including: PT. Jasa Marga and Korea Expressway Corporation Ltd.
- Experts, including: PPP specialist and consultants in toll road development.

Table 7. List of Respondents Organization

No	Organization		No. of respondents
Government			
1.	Ministry of Public Works	Sub Directorate of Toll Road and Freeways Development	2
		Directorate of Freeway and Urban Road	1
		Sub Directorate of General Planning	1
		Directorate of Planning	1
		Project Unit of Tanjung Priok Access Road	2
		Indonesian Toll Road Authority	1
2.	National Planning Agency	Directorate of PPP	1
3.	Ministry of Finance	Risk Management Unit	1
4.	Coordinating Ministry for Economic Affairs	Risk Management Unit/PPITA	1
Private			
5.	PT Jasa Marga	National toll road investor	1
6.	PT Citra Marga Nusaphala Persada		1
6.	Korea Expressway Corporation Ltd.	Foreign toll road investor	1
Expert			
7.	Consultant	PPP specialists for toll road	2
Total			16

3.7 Data Quality

To control quality of data in this research, it will be done through these following measures:

- Reliability, will be achieved by developing unambiguous, clear and non-leading question. Collecting data from cross-sectoral respondents will be carried out by using purposive sampling method to ensure the right persons to provide reliable information.
- Validity, will be achieved by performing triangulation technique through the usage of 3 (three) different methods: literature review, secondary data analysis and primary data collection.

3.8 Data Analysis

As the data successfully collected, those will be analyzed to answer research question which can be described through this following logical framework:

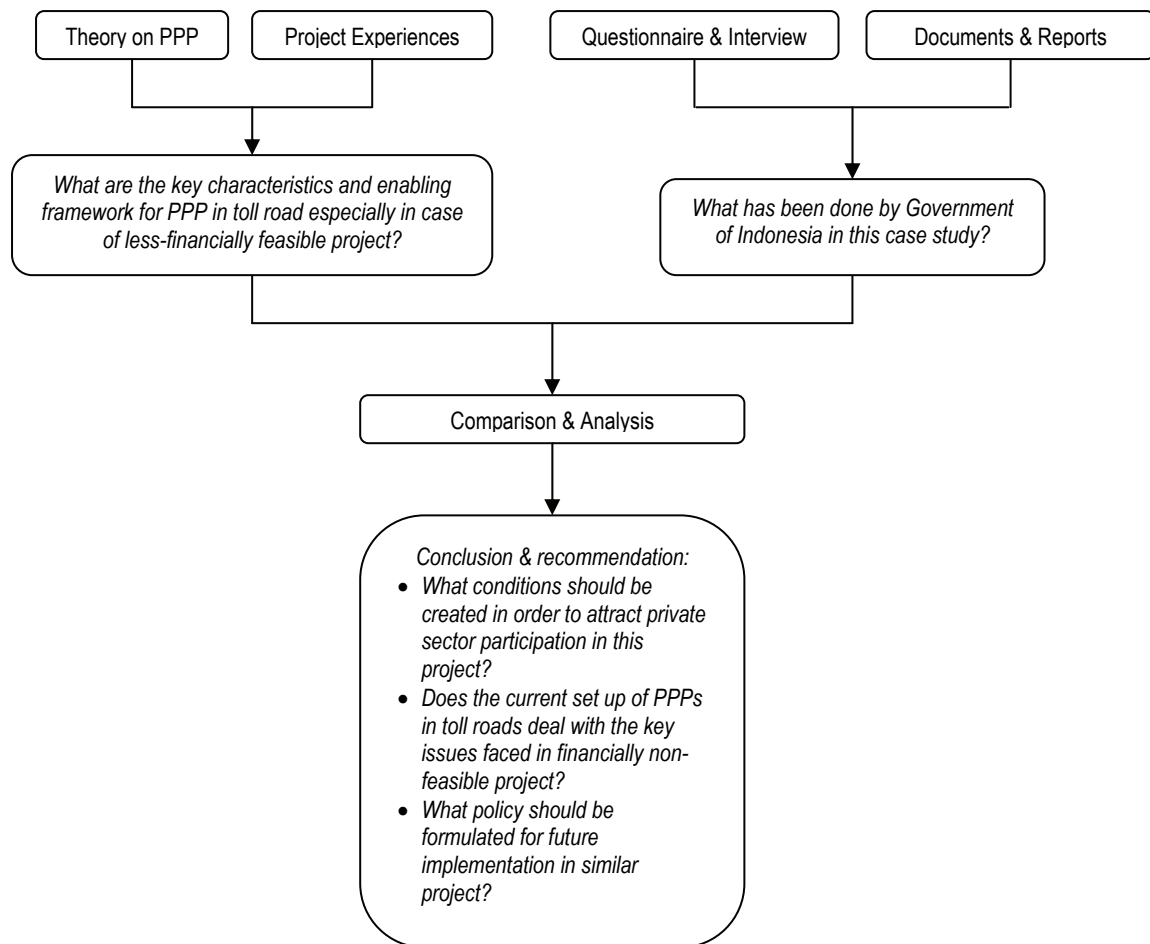


Figure 10. Analytical Framework of Research

3.9 Research Design

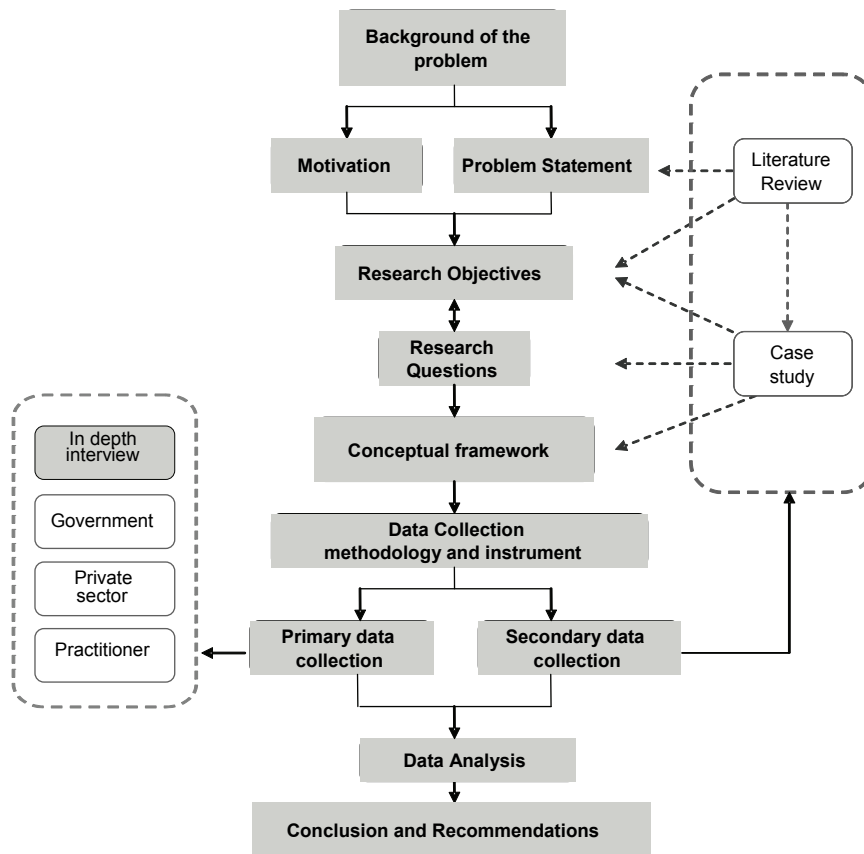


Figure 11. Research Design

CHAPTER IV

RESEARCH RESULT

This chapter describes the overall findings of the research about the general implementation of PPP for financially non-feasible toll road project in Indonesia and with more detail analysis on Tanjung Priok Access Project as a case study. The structure of this chapter consists of several elements of PPP arrangement as follow: (i) policy and planning, (ii) project implementation and (iii) private sector perception. Each part combines secondary data, interview result and observation to analyze the problem statement mentioned in the first chapter.

4.1 Policy and Planning

This sub-chapter describes the overall planning process of toll road development in Indonesia and its relevance with the case study. There are several sections being discussed as follow: regulatory framework, public-private partnership schemes and project finance, as well as analysis on the case study embedded in each part.

4.1.1 Regulatory Framework

From project life-cycle perspective, regulatory framework is a vital part of planning process. There are several subjects being discussed in this sub-chapter as follow: institutional arrangement, toll road policy and toll road planning.

4.1.1.1 Institutional Arrangement

In order to capture the overall policy and regulatory framework of toll road development in Indonesia it is important to understand about institutional arrangement by which public service on road infrastructure is being delivered. Based on Presidential Decree No. 103/2001 on Structure, Task and Function of Government Institution, Ministry of Public Works (refers as MPW hereafter) is the public institution being responsible for managing part of government duties in public works sector which mainly include several sub-sectors as follow: water resource, road, housing and settlement and spatial planning. In addition, MPW is also responsible for regulating and supervising national construction industry as well as establishing research activities to develop public works technologies.

Related to road infrastructure, the responsibility of MPW covers the overall management of road sub-sector which includes series of activities: planning, regulation, development/program implementation and supervision. In practice, this responsibility is run by Directorate General of Highways (refers as DGH hereafter) which deals with the construction, operation and maintenance of national road with total network length estimated about 34,628 km (as of 2007). Since the beginning of 2000s, all activities related to provincial and district roads have been decentralized to regional and local governments as mandated by Law No. 22/1999 on Regional Government. However, MPW remains involve in providing technical guidance and assistance to provincial and local governments in developing and managing provincial and local road networks.

To give deeper understanding on MPW organization, it can be viewed in Figure 12 below.

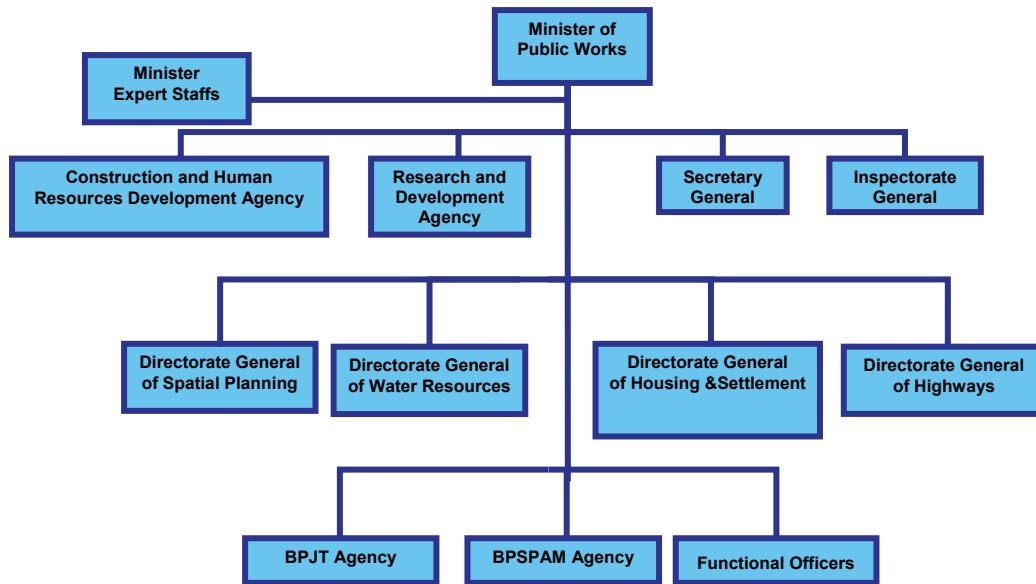


Figure 12. Organizational Structure of Ministry of Public Works
(Source: Ministry of Public Works)

Related to toll road development, the responsibility of MPW is shared between its two units: DGH and Badan Pengatur Jalan Tol/Toll Road Regulatory Body (hereafter refers as BPJT). From hierarchy point of view, both units possess similar organizational level of Echelon-1 unit. The latter unit was established in 2005 as part of policy reform process in toll road development activities as mandated by Law No. 38/2005 on Road and Government Regulation No. 15/2005 on Toll Road. This decision was intended to create more conducive business climate by separating the dual role of PT Jasa Marga which previously functioned as both regulator and operator in toll road development to become only operator.

As part of toll road policy reform, Law No. 38/2004 also highlights the involvement of private sector by stating that toll road development can be done or undertaken by state-owned enterprise, private sector, government or joint venture/operation between these actors. Another aspect of toll road policy reform is the arrangement of tariff where it is considered as bid parameter and have to be bound with the business plan and stated on concession agreement. Unlike the old road law, Law No.13/1980, the new road law states that Minister of Public Works has the authority to decide toll road tariff and its adjustment which will be reevaluated accordingly every two years based on consumer price index (CPI). Regarding land acquisition, government is responsible for executing land acquisition while private investor has to cover its cost. However, if necessary the government may provide land acquisition cost as well.

Based on Ministerial Regulation No. 295/PRT/M/2005 on Toll Road Regulatory Body, BPJT bears regulatory function as PPP unit of MPW for toll road development. This function includes several tasks as follow:

- Provide recommendation on initial tariff and its subsequent adjustments to the Minister of Public Works;
- Takeover toll road concession rights upon the end of concession period and recommend subsequent operations to the Minister of Public Works;
- Temporary takeover of concession rights for failed toll road project and arrange for new concession tender;

- Prepare toll road commercialization including financial feasibility analysis, feasibility study and preparation of environmental impact assessment;
- Procurement of toll road investment through open and transparent tender;
- Provide assistance in land acquisition in terms of ensuring fund availability from the commercial enterprise and to establish usage mechanism of fund;
- Monitor the implementation of construction planning and implementation as well as the operations and maintenance of toll-road by the commercial enterprise; and
- Supervise commercial enterprise on the fulfillment of all its obligations in the toll-road concession agreement and periodically report it to the Minister of Public Works.

To ensure excellent implementation of regulatory function in toll road development, the leadership of BPJT is assumed by a board with five members acting as representatives from all related stakeholders: appointed government officers from MPW and Ministry of Finance (hereafter refers as MoF), member of professional association and academic community. The chairman of BPJT is appointed by Minister of Public Works and always originated from within the ministry, while members from professional association and academic community are recruited through open selection arranged by MPW. Detailed overview on BPJT organization is shown by Figure 13.

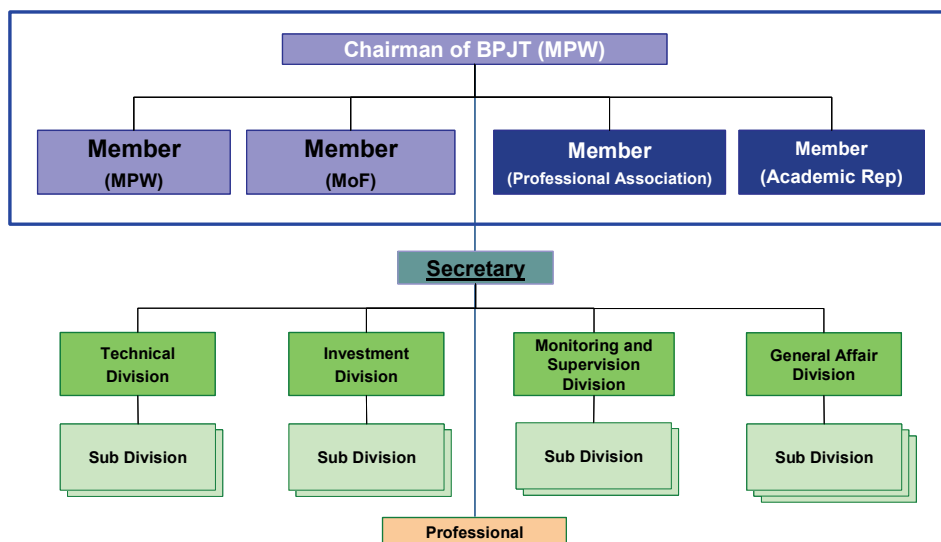


Figure 13. Organizational Structure of Badan Pengatur Jalan Tol (BPJT)
(Source: Ministry of Public Works, 2006)

On the other side, DGH roles in toll road development are mainly related to formulation of toll road development policy, toll road network planning, toll road section planning by means of pre-feasibility study, route designation, land acquisition and, in some cases, construction of toll road. Currently, in order to carry out tasks related to toll road development as mentioned previously, DGH establish special directorate namely the Directorate of Freeway and Urban Road. For better comprehension on DGH tasks and functions, its organizational structure can be seen in Figure 14.

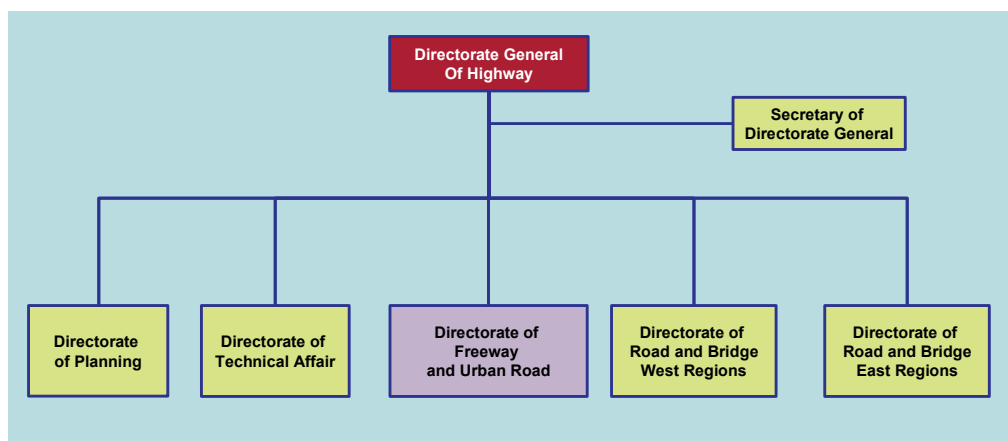


Figure 14. Organizational Structure of Directorate General of Highways
 (Source: Ministry of Public Works, 2006)

In reality, however, up to present there are still some debates among the officers at both DGH and BPJT about the exact limit between their tasks and functions. This disagreement sometimes may lead to operational inefficiency and in general pose as obstacle from institutional arrangement side. Therefore, in the future intensive coordination and cooperation between these two units are needed to smoothen all the process of toll road development as well as the need to improve regulation on the rules and tasks of both units.

In addition to DGH and BPJT roles, private sector roles cover several main elements of toll road development: design, construction, operation and maintenance. These are the common roles of private sector as similar to most other toll road markets anywhere in the world. Combined altogether, these roles form the relationship and cooperation patterns among government and private sector and it reflects the unbundling of toll road business in Indonesia into component of activities as well as its vertical integration as can be seen in Table 7 below.

Table 8. Toll Road Development Cycle
 (Source: Ministry of Public Works, 2006)

NO.	STAGE	OUTPUT	GOVERNMENT		ENTER-PRISE
			DGH	BPJT	
1	Policy	Toll road development policy	●		
2	General planning	Decree on Toll Road Network General Planning	● → □		
3	Toll road section planning based on Pre-Feasibility Study	Decree on toll road section planning	● → □		
4	Concession preparation	Financial Feasibility Study, Feasibility Study and Environmental Impact Assesment		●	
	a. Designation of Route		●		
	b. SP2LP (Letter of Approval for Route Designation)		●		
5	Investment Tender	Decision on concessionaire	□ ← ●	●	
6	Final Engineering Design (DED)		□ ← ●	●	●
7	Land Acquisition		●	●	●
8	Notice to Proceed			●	●
9	Construction		●	●	●
10	Operation and Maintenance	Decree on function-reliability, toll road operation, initial tariff and its adjustment	□ ← ●	●	●
11	Handback	Decree on subsequent operation	□ ← ●	●	●

● Process □ Ministerial Decree ○ Process (Monitoring/Facilitating) ◻ Process for Government initiative and legalization for private sector concessions

4.1.1.2 Toll Road Policy

Toll road development policy is an integral part of broader transportation policy which in practice is formulated by taken into account several aspects including general policies and priorities of national development which instituted within National Strategic Development Plan, both for medium (5 years) and long terms (25 years) periods, along with regional development considerations which is mainly intended to support local economic development as well as reducing regional disparities.

Based on government's strategic development plan, for the period of 2004-2009, there are three major priorities of development policy in Indonesia namely: creation of high quality economic growth (*pro-growth*), creation of employment (*pro-job*) and poverty alleviation (*pro-poor*). In-line with these priorities, toll road policy in Indonesia is intended to realize these following policy objectives:

- Supporting economic growth. Suffering from severe financial crisis in 1997, currently stable economic growth is a top priority of Indonesia's government. With problems such as poverty (17.7%) and unemployment (9.9%), both in 2006, infrastructure development is a necessary action for creating more economic opportunities and employment for the people. In 2008, it is estimated that in order to achieve 6.8 %of economic growth it requires 15.5% growth of investment. Road infrastructure development provides significant multiplier effect of 2.5-3.5 at national level which can stimulate economic growth. The contribution of toll road towards economic development is reflected in the growing traffic volume in major toll road sections over years as illustrated through Figure 15 below.

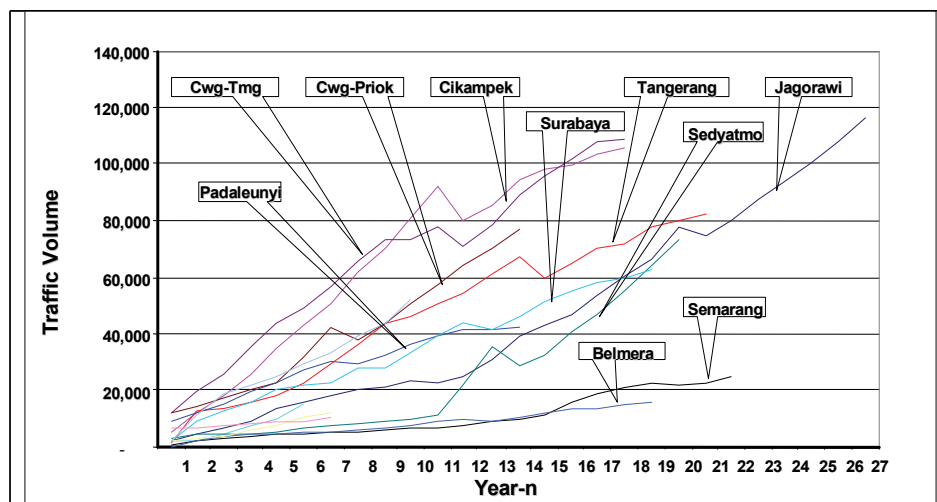


Figure 15. Growing Traffic Volume in Major Toll Road Sections
(Source: Ministry of Public Works, 2007)

- Improving regional interconnection. The geographical condition of Indonesia which consist of more than 17,000 separated islands across the country requires sophisticated infrastructure network to connect all regions. Beside important from economic point of view, the existence of transportation infrastructure is also critical to reduce development gap among regions as well as keeping national integration. With the relative exception of Java island, continuous provision of infrastructure stock is needed in other islands especially to catch up with the relatively more developed regions in Java. This need can be illustrated through

Figure 16, showing huge disparities among regions in Indonesia in terms of road infrastructure condition which indicated by accessibility and mobility index.

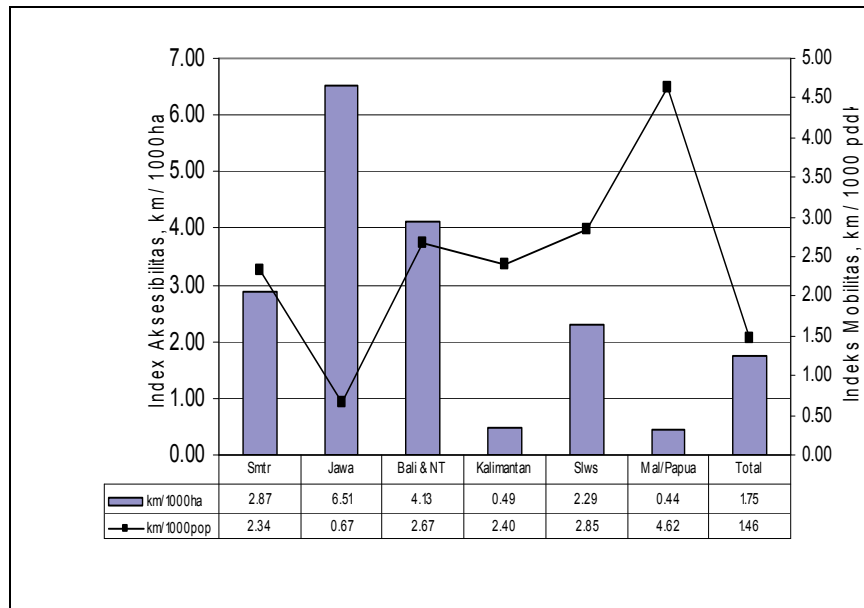


Figure 16. Accessibility and Mobility Index by Regions in Indonesia
(Source: Ministry of Public Works, 2007)

- Releasing congestion.** In the last few years, Indonesia has been suffering with increasing limitation of road capacity due to the growth of vehicle number and limited fiscal capacity for road network expansion. This resulted in the presence of severe traffic congestion especially in major cities such as Jakarta, Surabaya, Bandung and Medan. In 2005, the average travel speed over the entire national road network was only about 43.5 km/hr. However, in urban areas the average travel speed is significantly lower with about 30 km/hr in metropolitan cities and 35 km/hr in other cities. For Jakarta, in 2005, it is estimated that the average travel speed on its arterial road network at peak hour is about 23 km/hr as can be seen in detail in Figure 17.

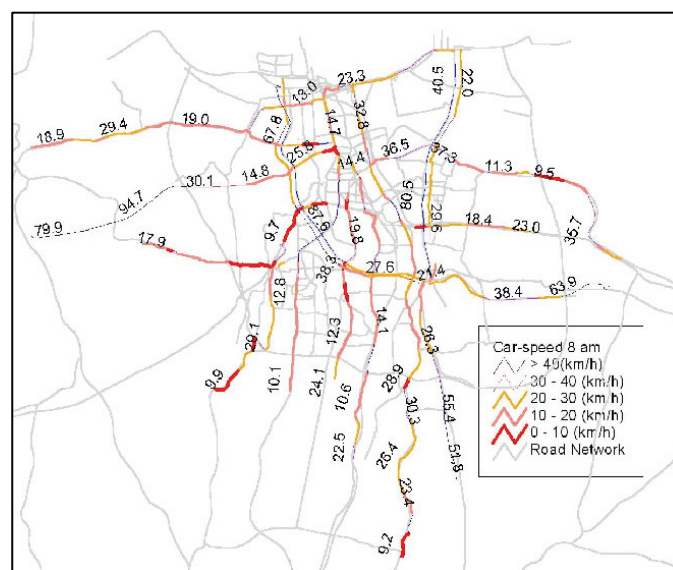


Figure 17. Travel Speed on Urban Road Network in Jakarta
(Source: Ministry of Public Works, 2007)

From the description above, we can see how toll road policy in Indonesia is strongly related to greater strategic environment. The accomplishment of toll road policy objectives will bring positive impact to economic development and overall quality of life of the society. The importance and urgency of toll road development require more efforts to be done by government and other related stakeholders.

4.1.1.3 Toll Road Planning

Subsequent to formulation of toll road policy, DGH is also responsible for the planning of toll road network. Currently, it is established through Ministerial Decree No. 369/KPTS/M/2005 on General Plan of National Road Network. To accommodate toll road planning this master plan document has been revised into Ministerial Decree No. 280/KPTS/M/2006 which substantially includes general plan for toll road since according to Law No. 38/2004 toll road is considered as part of national road network. In developing general plan of national road network, MPW also consider other related regulations especially Law No. 26/2007 on National Spatial Plan and the policies of Ministry of Transportation as addressed by National Transportation System document. Through this master plan document, MPW determine corridor and segment of national road which will be developed as toll road for certain period. During development period of 2004-2009, there are several corridors and activities which are regarded as high priorities as follow:

- Development of main trunk of Trans Java Toll Road as High Grade Highway connecting western and eastern tips of Java Island.
- Development of secondary and feeder road networks in Java Island, such as Ciawi-Sukabumi-Bandung and Cileunyi-Sumedang-Dawuan.
- Development of intra urban toll roads, mainly in Java Island including Jakarta metropolitan area (Jabodetabek), Bandung, Jogja-Solo-Semarang (Joglosemar) and Surabaya. The project being studied in this thesis – Tanjung Priok Access Toll Road – is included within this category.
- Possibilities of expanding toll road development to other islands outside Java especially in urban areas of Medan (North Sumatra), Palembang (South Sumatra) and Makassar (South Sulawesi).

In total, based on toll road master plan, there are about 2,234.85 km of toll road which will be developed across Indonesia with various scheme. Currently, the total length of toll road in operation is about 649.12 km. The detailed data about existing toll road sections in operation and plan for future toll road development is shown in Table 8.

Table 9. Status of Toll Road Development by Island
(Source: Ministry of Public Works, 2007)

ISLAND	TOLL ROAD IN OPERATION		TOLL ROAD PLAN	
	Section(s)	Length (Km)	Section(s)	Length (Km)
Java	21	600,37	46	1.616,95
Sumatra	1	42,70	8	552,80
Sulawesi	1	6,05	2	57,60
Bali	-	-	1	7,50
Total	23	649,12	57	2.234,85

Selection and prioritization of toll road sections included within master plan are conducted by means of pre-feasibility study which establish by DGH. Basically, this study seeks to evaluate the overall condition of a particular toll road section and its readiness to be offered to private sector. There are several criteria being used for this purpose, as follow:

- Economic feasibility. The objective of this criterion is to measure the net-benefit of a project to wider society as a whole. This is done by calculating Economic Internal Rate of Return (EIRR) mainly by comparing component of costs (design, construction, land acquisition, etc) and benefits (reduce in road user cost, time saving, economic growth, etc). In general, a toll road project is considered as economically feasible when it has EIRR more than 15%.
- Financial feasibility. In addition to economic feasibility, financial performance of project is also important since toll road development involves private investor. The financial feasibility is measured to assess the net-benefit of a project from the perspective of private investor. This is done by calculating Financial Internal Rate of Return (FIRR) mainly by comparing component of costs (design, construction, land acquisition, etc) and benefit (toll collection as main revenue of the investor). As a common rule in Indonesia, a toll road project is considered as financially feasible when it has FIRR more than 15%.
- Social and environmental feasibility. Since the establishment of a project must not give negative impact towards society, then an assessment of potential impact of the project should be carried out beforehand and must be consider as an integral part of project feasibility. This is done through a thorough environmental impact assessment study as regulated by Law No. 23/1997 on Environmental Management and Government Regulation No. 27/1999 on Environmental Impact Assessment. Project may be postponed if there are some concerns over its negative impact towards society and natural environment. In addition, other problems such as complex land acquisition may also reduce overall project feasibility.

Based on pre-feasibility study result, DGH establish screening process to categorize all road sections into two categories: non-toll road and toll road. Road sections which are not suitable to be arranged as toll road will be developed directly by DGH through public procurement and will be operated as public road. In this case all phases of road development – design, land acquisition, construction, operation and maintenance – are conducted by DGH. From functional point of view, these road sections consist of three functions of road: primary arterial, primary collector and national strategic road. All of them are under the legal status of national road.

Meanwhile, other road sections which are intended for toll road will be further categorized into toll road which should be developed by government, due to the need for government support, and the ones which will be directly offered to be developed by private sector. Subsequently, feasibility study will be done on these road sections. For the ones being developed by government, the process will be continued by land acquisition, detail design and construction, all conducted by DGH. Afterward it will be offered to private sector through competitive bidding process in the form of operation and maintenance contract by BPJT. While for road sections which can be constructed by private sector, after feasibility study conducted they will be offered to private sector and a selection process for concession will be arranged by BPJT. Soon afterward the process continues with land acquisition conducted by DGH in parallel with engineering design provided by private sector. This process continues with

construction and operation-maintenance conducted by private sector based on contractual agreement made with the government.

This basic development framework can be seen in detail through Figure 18 below.

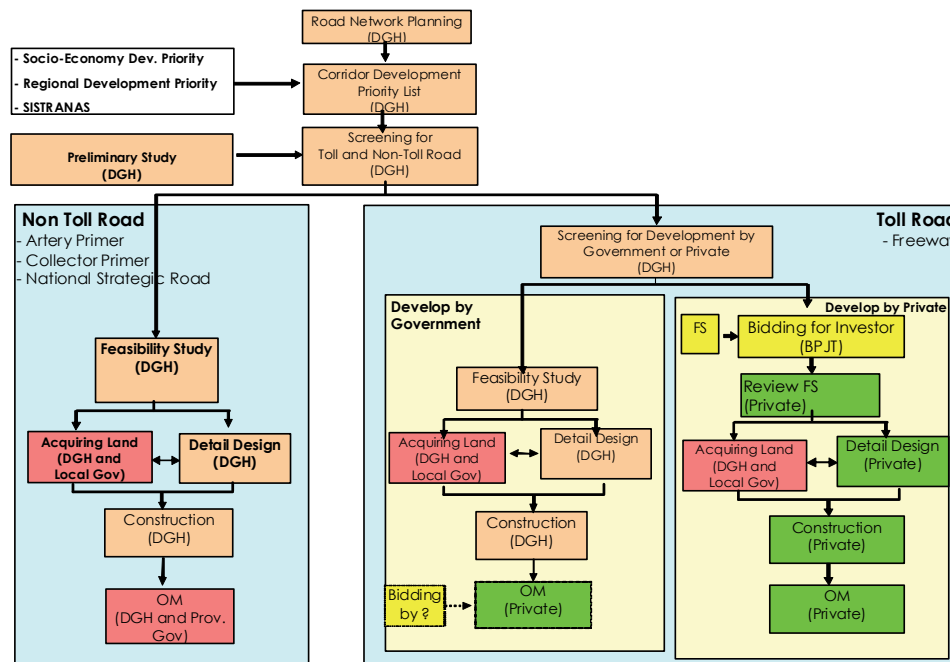


Figure 18. Toll Road Development Framework
 (Source: Ministry of Public Works, 2008)

Apart from the basic framework explained above, however, there is also another possibility of development mechanism whereby government and private sector conduct cooperation in toll road development by sharing project responsibilities between them. This will be discussed in detail within the next sub-chapter.

From above description it can be seen that the importance of feasibility study in the planning process of road in general and especially for toll road development. In some cases, failure in project implementation can be traced back to poor analysis of project feasibility. For example, as mentioned by Queiroz (2007), in most toll road projects the actual traffic volume in average is only about 87 % compared to traffic volume prediction generated by feasibility study. Such mistake may deliver fatal impact on a PPP project. Although in Indonesia sometimes this inaccuracy happens on the other way around with feasibility study give somewhat pessimistic traffic volume prediction. To improve the quality of toll road planning process it is necessary in the future to build capacity in assessing project feasibility.

4.1.1.4 Policy and Planning for Tanjung Priok Access Project

In general, road development policy in Jakarta region is intended to improve efficiency of transportation activities especially by increasing road capacity due to rapid economic development and growth of vehicle population. The latter currently is estimated at about 11 % per year. In practice, in line with this policy, many projects that being implemented or planned are in the form of ring road construction, tunnel/fly over construction at road intersection, road widening and toll road development. In addition, Intelligent Transport System (ITS) has also been introduced as an effort to improve traffic management, especially in toll road operation.

Tanjung Priok Access has been planned as part of toll road master plan in Jakarta metropolitan area according to Ministerial Decree No. 280/KPTS/M/2006. Based on this regulation there are five toll road sections which are going to be developed in Jakarta and its surrounding area up to 2014, as follow: Tanjung Priok Access, W1 Section of Jakarta Outer Ring Road (JORR), Kunciran-Serpong, Cinere-Cimanggis and Bogor Ring Road. This plan can be seen in Figure 19 below.

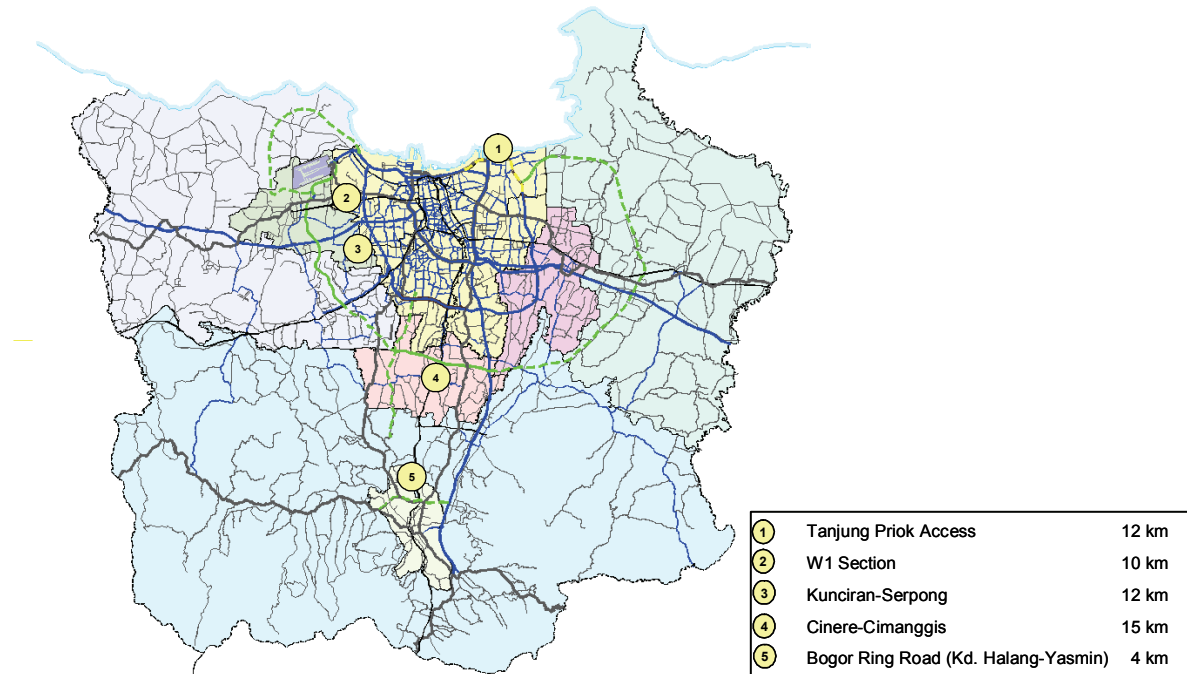


Figure 19. Toll Road Development Plan in Jabodetabek Region up to 2014
(Source: Ministry of Public Works, 2009)

Tanjung Priok Access project was initially proposed by PT Pelindo II (port authority) to MPW with the main objectives to release congestion on existing road section and to improve efficiency of good distribution in the port. In addition, this project will be also beneficial in strengthening national road network in Jakarta region as well as providing direct access from major industrial estates around Jakarta to the port and vice versa. Tanjung Priok Port itself is the biggest port in Indonesia and, as of 2007, it was ranked as the 23rd busiest port in the world in term of number of container being transported. Surely the performance of Tanjung Priok port significantly contributes to Indonesia's economic development and it is hoped that by the presence of this toll road section it will improve the overall performance and competitiveness of the port.

Current traffic around Tanjung Priok Port mostly consists of heavy vehicles. It is estimated that there are 9,456 trailer vehicles per day entering the port. About 63 % of them come from eastern part of Jakarta where several major industrial estates are located such as MM 2000, Lippo Cikarang and Jababeka. These industrial estates are dominated by Japanese and Korean large multinational companies – such as Sanyo, Samsung and LG – with focus on export oriented manufacturing business. The economic importance of this region can be explained by the fact that it contains more than 2,000 factories and contributes for 17 % of total national export which valued at US\$ 11 billion in 2006. In addition, there are about 4 million people working in this region.

Due to road congestion, the average logistic and freight transport from industrial estates area to the port currently is only about 1.5-2 round trip/day while they could actually make 3 round trip/day if only such congestion does not take place. The severity of congestion problem even leads to such extreme situation that several companies seriously consider of reducing or shutting down their business activities. In fact, during the last few years Indonesia has been facing tough competition from other fast growing Asian countries such as China, India, Thailand, Vietnam and Cambodia in attracting foreign investment. In some cases, decreasing competitiveness of Indonesia's investment climate has led to business relocation to these countries. This is consistent with the study conducted by JICA (2004), which concluded that severe congestion on access road to Tanjung Priok port is one of the factors that responsible for the stagnation of economic development in this region. Figure 20 below shows severe congestion on Cakung-Cilincing section, the existing access to Tanjung Priok Port. It shows how trailer vehicles heading to the port have to share space on the road with other smaller vehicles which is not ideal from the perspective of transport efficiency and road safety.



Figure 20. Congestion on Cakung-Cilincing Section
(Source: Ministry of Public Works, 2009)

The need for improving road access to the port is also underlined by the fact that by 2010 Ministry of Transportation will reduce the numbers of ports open to foreign vessels in Indonesia from 141 to only 25. When this policy is implemented, domestic vessels will deliver cargo and containers from local ports to international ports, such as Tanjung Priok, before they are transferred to foreign or larger vessels. Therefore government must prepare for this situation by providing adequate infrastructure.

The need for better road access between Tanjung Priok Port and industrial estates area in eastern Jakarta has been discussed by government of Indonesia and government of Japan for several years. Due to the high interest of Japan side considering the presence of many Japanese companies in these industrial estates and their dependence to Tanjung Priok Port for export and import activities, in 2005 government of Japan had formally requested to President of Indonesia about the need to improve road access to the port. This request later was elaborated through common policy agenda

between both governments which labeled Strategic Investment Action Plan (SIAP) which include the improvement of road access to Tanjung Priok Port along with other issues in different sectors.

Based on feasibility study conducted by a team of experts from Japanese Economic and Trade Organization (JETRO) in 2004, a general plan for Tanjung Priok Access project was arranged with total project cost of JP¥ 52.926 billion (US\$ 566.308 million). This project consists of engineering design, supervision and civil works for the development of Tanjung Priok Access as the main component and other additional components for improvement of existing infrastructures as follow: replacement of Koja Bridge, improvement of road and bridge at Cakung-Cilincing section and capacity expansion of Marunda access road and bridge.

As previously mentioned, Tanjung Priok Access is planned as toll road by government of Indonesia. It is potential in term of traffic volume. However, due to enormous construction cost it is difficult to get pure private sector involvement in this project without government support. Since fiscal capacity of government of Indonesia is limited, government of Japan provides soft loan for implementing this project. The loan is channeled through Japan Bank for International Cooperation/JBIC (currently merged into Japan International Cooperation Agency/JICA).

More detail descriptions on PPP arrangement, project finance and project implementation are included within the next sub-chapters.

4.1.2 Public-Private Partnership Scheme and Project Finance

In toll road development, successful partnership depends heavily on the PPP schemes which are implemented. The nature of infrastructure project which require a significant amount of capital expenditure also need to be accompanied with excellent project financing to assure its implementation. In addition, due to several factors several PPP projects may require support from government in order to make it attractive among private sector entities. This sub-chapter deals with these following subjects: PPP schemes applicable in toll road development in Indonesia including the establishment of government support and project finance especially by means of Official Development Assistance (ODA) loan.

4.1.2.1 Public-Private Partnership Scheme

Based on article 43 (2) Law No. 38/2004 and article 19-23 Government Regulation No. 15/2005, there are three schemes applicable for implementing PPP for toll road development in Indonesia. These schemes are mainly categorized based on economic feasibility (EIRR) and financial feasibility (FIRR) features of a given project as mentioned in the previous sub-chapter. The project schemes are as follow:

- **Build-Operate-Transfer (BOT).** This scheme is applied for a project with high economic and financial feasibility, where both of its EIRR and FIRR are more than 15 %. Under this scheme all elements of project – land acquisition, construction, operation and maintenance – are conducted by private sector since the project is able to generate sufficient revenue for the private operator to recover all project costs. Up to present, most of toll road concessions in Indonesia are arranged under this scheme.
- **Design-Build-Lease (DBL).** In addition to the previous schemes above, there is also a situation where the proposed project has high economic feasibility (EIRR more than 15%) but with marginal financial feasibility (FIRR between 5–15%). Since this type of project may be considered as risky by private sector, therefore

lower level of government support is needed to realize the project by creating joint operation between government and private sector based on this arrangement: land acquisition is conducted by government, construction works are shared between government and private sector, while operation-maintenance are conducted solely by private sector. However, there is no exact rule on how construction works should be divided between government and private sector. It means that there are actually many ways of doing it and in most cases it will be decided based on agreement between government and private sector. However, in Indonesia, the most common way is by dividing road segments into government portion and private sector portion. The rationale behind this rule is that government needs to take part in the project in order to make it possible to private sector to involve. This clause acts as one of the legal bases used for the establishment of government support in toll road development.

- **Design-Build-Operate (DBO).** This scheme is applied for a project with high economic feasibility (EIRR more than 15 %), yet it has low financial feasibility (FIRR below 5 %). It means that although the project gives reasonable economic benefit to society, it cannot give sufficient profit to private sector in order to recover their investment or financially non-feasible. For implementing this project, government conducts land acquisition and construction, while private sector runs operation and maintenance of the toll road. Similar to the previous scheme, this clause also suggest government support to private sector.

For better understanding, all of these toll road development schemes are illustrated through Figure 21 below.

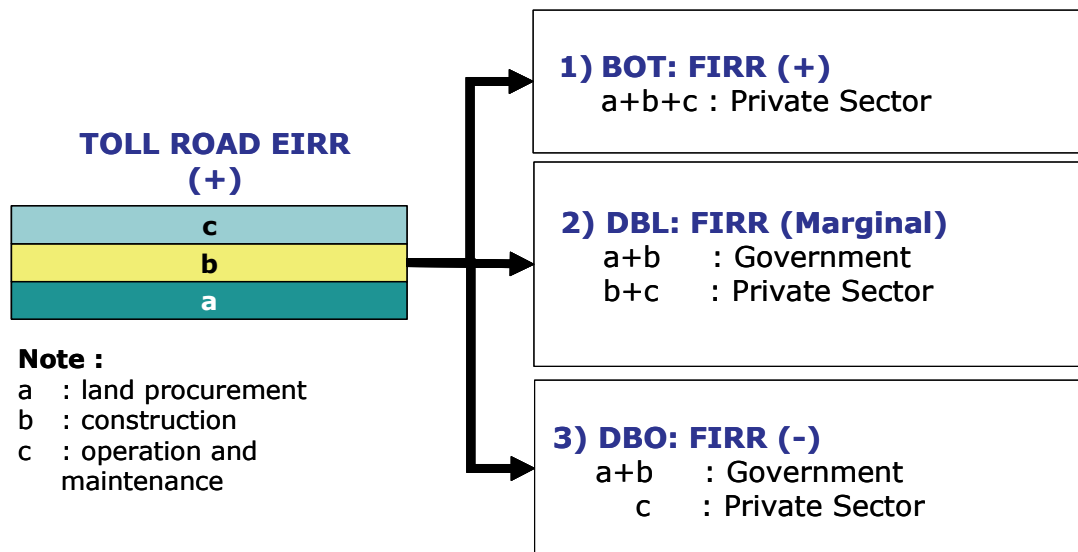


Figure 21. Toll Road Development Scheme in Indonesia
(Source: Ministry of Public Works, 2006)

If we compare these schemes above with PPP schemes described in theoretical chapter, we can see that actually they are basically similar. However, it should be noted that the third scheme included within this law (DBO) is can be also considered as Lease, where government gives right to private sector to run operation and maintenance of a certain asset and in exchange private sector must pay lease payment to government. Since the terminology of all schemes above was obtained from BPJT therefore all of them are kept accordingly to the original terms. In addition, we can conclude that the necessity of government support is acknowledged by toll road

regulations in Indonesia. Legally, the establishment of government support for PPP project is also accommodated by article 17 of Presidential Regulation No. 67/2005 on Public-Private Partnership in Infrastructure Development. According to this regulation, government support is intended to attract private sector involvement in infrastructure projects, especially related to a project that will not be taken by private sector due to its low profitability or high risk.

From economic point of view, government support can be considered as subsidy to private sector. Therefore it is basically different with equity participation. However, in practice it is difficult to recognize the difference between government support and equity participation.

Based on Presidential Regulation No. 67/2005, the establishment of government support should be minimized in any given PPP project. More importantly, financially viable project should not be provided with government support. Therefore, government support is only given to projects that are either financially non-feasible which needs fixed subsidy and financially viable but risky which can be mitigated through guarantee as contingent liabilities of government. Furthermore, these project characteristics can be expanded into criteria for providing government support as follow:

- The support complies with law and general regulatory framework in Indonesia.
- The proposed project has been selected as a priority within planning process of government of Indonesia and consistent with sector strategy.
- The private entity requesting support has been selected through a fair, transparent and competitive procurement process.
- The amount and level of support are in line with fiscal criteria of MoF.
- Other methods of support or measure will not be able to yield equivalent or higher socio-economic benefit.

In general, government support should confine to the early years of the project. This is the period where project cash flow is usually at its weakest. In the later years, especially when the private operator's profit is more than projected, the support should be repaid to the government. How much it should be paid back and when it should be done are subjects of negotiation between government and private sector. Therefore any type of support that may be offered in a project should be clearly defined during procurement stage and included within concession contract. However, it should be noted that the effort to minimize the amount of government support should be prioritized and it should be used as a criterion of bidding evaluation. A simple rule of limiting government support is that it should not exceed the net present value (NPV) of economic benefit obtained from the project.

According to MoF's policy, support can be given only after a comprehensive risk assessment and when it is certain that there is no other measure applicable to mitigate the risk. In addition, as mentioned above, any policy framework and guideline for supporting PPP project from the line ministries must be consistent with policy of MoF especially Ministerial Decree No. 38/PMK.01/2006 on Guideline for Risk Control and Management of Infrastructure Development. This decree regulates the establishment of government support to cover political, project performance and demand risks.

By developing financial model, government will be able to analyze the necessity and impact of various types of government support. The decision process on giving government support can be described as follow:

- Irrespective of project, government should avoid giving support without proper justification. Government also must ensure that support is the only way possible to implement the project. Therefore, they must have accurate estimation on the amount of support and have to minimize it.
- Government needs to evaluate the fiscal impact to government's budget of possible types of support. Assuming that all types of support are able to achieve project's objective, then government should look at the support which deliver highest value for money and is in line with government's fiscal framework. In Indonesia, the assessment of any government support proposal is done by three agencies: PPP unit at relevant line ministry (for instance, BPJT at MPW), PPP center at Policy Committee for Acceleration of Infrastructure Development (KKPPI) and Risk Management Unit (RMU) at MoF.
- Government will want to have a preferred option for support and it should be indicated within request for proposal (RFP) without specifying any magnitude of support. It should be stressed that one of the main criteria for bidding evaluation is how to minimize the support needed.

In reality, the necessity of support can be different for each project. This includes the amount and types of support. Based on Presidential Regulation No. 67/2005, there are several methods of giving government support as follow:

- Capital grant. Government supports private sector by providing financial capital or cost needed to realize the project. In practice, this support may cover full or partial project cost and given as grant.
- Minimum revenue guarantee. Government provides compensation to private sector when their actual revenue falls below revenue prediction in the feasibility study. Sometimes it is also called as demand guarantee.
- Full debt service guarantee. Government provides guarantee on the debt made by private investor to financial institution for realizing the project. By this measure it makes easier for the private investor to apply for credit in order to finance the project.
- Revenue right to other infrastructure facility. Government gives private investor with the right to collect revenue from other facility or infrastructure. This will provide the investor with additional source of revenue.
- Tax honeymoon/holiday. Government gives private investor the privilege for not paying their taxes for a certain period. This measure will increase the profitability of the project.
- Operating subsidy. Government provides annual payment during concession period to the private investor to help them in running the business. This payment can be done in fixed amount but also can be linked to the performance of private investor or to the actual demand of project service.

Related to toll road development, if we compare these methods to the ones that accommodated by Law No. 38/2004, we can see that the latter regulation basically only accommodate one type of support which is capital grant, where MPW gives support to private sector by means of full or partial road construction. Therefore, in general, the establishment of government support within toll road development in Indonesia for the time being still can be considered as conservative. This, at some extent, may be related to the overall paradigm and culture within MPW itself which up to this day has been largely dominated by the governance paradigm of providing direct infrastructure service to society rather than to work as enabler as embodied in the philosophy of PPP as well as New Public Management (NPM). In addition, from

human resources perspective, most MPW officers are hardcore engineers who are more familiar and comfortable with traditional technical approach towards infrastructure project.

It is estimated that the establishment of government support will be more and more necessary in the future since some portion of new toll road projects being offered to private sector are either financially non-feasible or financially marginal (or in other word, risky). For illustration, below is a list of estimated FIRR value for several new proposed toll road projects in Indonesia being exposed during Infrastructure Summit II in 2006, as shown in Table 9 below.

Table 10. Estimated FIRR for Several New Proposed Toll Road Projects
(Source: Ministry of Public Works, 2006)

No	Toll Road Section	Length (Km)	Estimated Land Cost (Rp Bill)	Estimated Investment cost (Rp Bill)	Estimated FIRR (%)
1	Pasirkoja-Soreang (Bandung)	15	120	520	15.66
2	Cileunyi-Sumedang	25	115	1,839	12.26
3	Semarang-Demak	25	40	2,950	15.50
4	Probolinggo-Banyuwangi	156	234.5	6,086	11.08
5	Cilegon-Bojanegara	10	125.5	920	12.08
6	Jogja-Solo	45	158	2,331	16.70
7	Sukabumi-Ciranjang	31	85.1	1,483	14.00
8	SS Waru-Tj Perak II (Surabaya)	23	163.3	750	14.00
9	Sumedang-Dawuan	33.5	170	2,465	11.12
10	Jogja-Bawen	104	520	4,900	n.a

From the table above we can see that several projects can be categorized as financially marginal, they are: Cileunyi-Sumedang, Probolinggo-Banyuwangi, Sukabumi-Ciranjang, SS Waru-Tanjung Perak II and Sumedang-Dawuan. In reality, as a result of Infrastructure Summit II some of these projects were not successful in attracting investor. Considering this situation and by taking into account PPP scheme arrangement for toll road project as regulated by Law No. 38/2004, government then should provide support for these projects. Therefore better policy and practice of government support will be highly important for the success of future PPPs in toll road development in Indonesia.

4.1.2.2 Project Finance

Project finance stands as one of the most important elements in PPP project since a project can only be realized through a solid financing arrangement. In Indonesia's toll road development context, there are basically three financing options based on project feasibility. In concept, these options are in line with three PPP schemes for toll road development based on Law No. 38/2004, as already mentioned in previous sub-chapters. Based on PPP study conducted by JICA (2009), these financing options can be described as follow:

- Build-Operate-Transfer (BOT) model for financially viable projects with 100 % of construction cost is financed by the private sector. In this model, the government pays 100 % of land cost and the private sector procures 100 % of construction cost which is financed by the equity capital and bank loans during construction. After the construction is completed, the private operator pays back investment from the toll revenue. The land cost may be paid back to the government as the land lease fee paid by the private operator during operation. The overall financing structure of BOT model is shown by Figure 22 below.

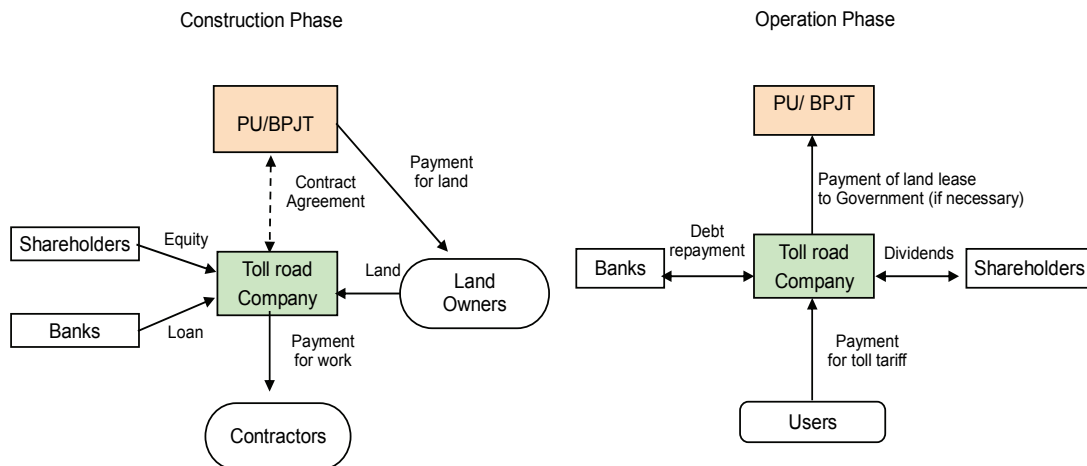


Figure 22. Financing Structure for BOT Model
(Source: JICA, 2009)

- Design-Build-Lease (DBL) model for marginally viable projects with government-private mixed financing or segment separation between government and private sector. This model consists of two components: the government work portion and the private work portion. The construction cost of the private work portion is financed by the equity capital and bank loans and that of the government work portion is financed by the government budget and ODA loan (in this case it assumed from Japan/JICA). The land cost for both work portions is funded by the government. After the construction is completed the whole road will be operated by the private operator under revenue sharing method. In this model, all investment costs will be repaid by the toll revenue shared by the private investor and the government.

The overall financing structure of DBL model is shown in Figure 23 below.

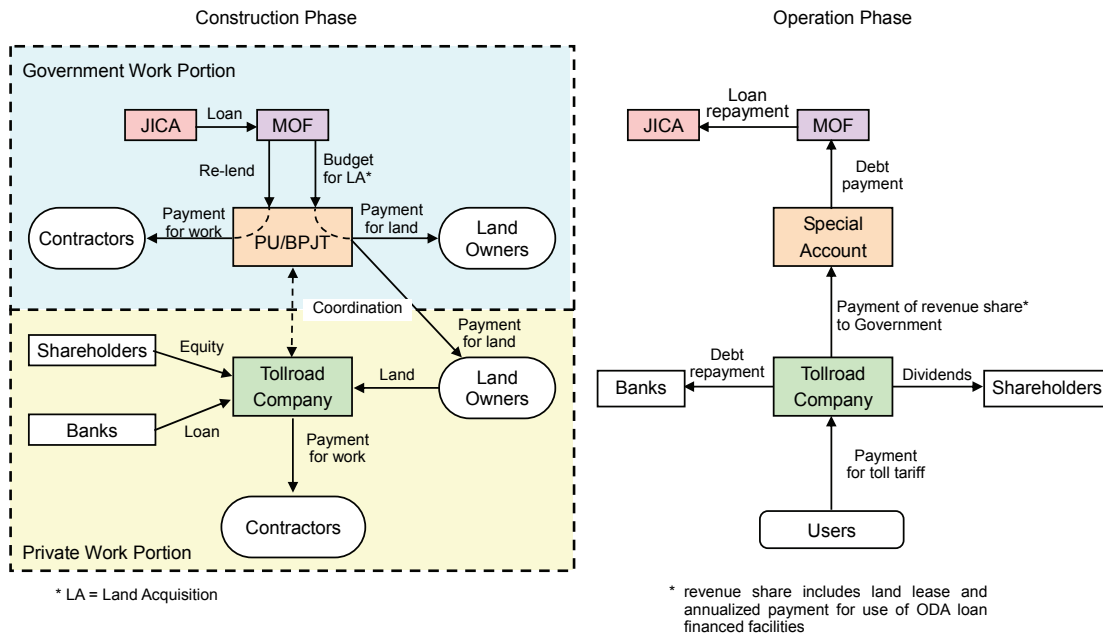


Figure 23. Financing Structure for DBL Model
(Source: JICA, 2009)

- Design-Build-Operate (DBO) model for non-feasible projects with construction works is done 100 % by government finance and operated by the private sector on lease basis. For implementing this model, government is planning to establish a special agency called Badan Layanan Umum (Public Service Body, hereafter refers as BLU) to receive lease payment from private sector, that is why this model also known as “New BLU” model. In this model, the construction cost will be financed by the ODA loan (in this case it assumed from Japan/JICA) and the government budget. After completion, the road will be managed by the private operator under lease method. The government will lease out the road facility to the private operator and the operator will pay lease to the BLU. The ODA loan and land cost would be repaid by this lease fee. The current BLU is working as a land acquisition support. In this model a new assignment of managing the lease fee will be arranged.

The overall financing structure of DBO model is shown in Figure 24 below.

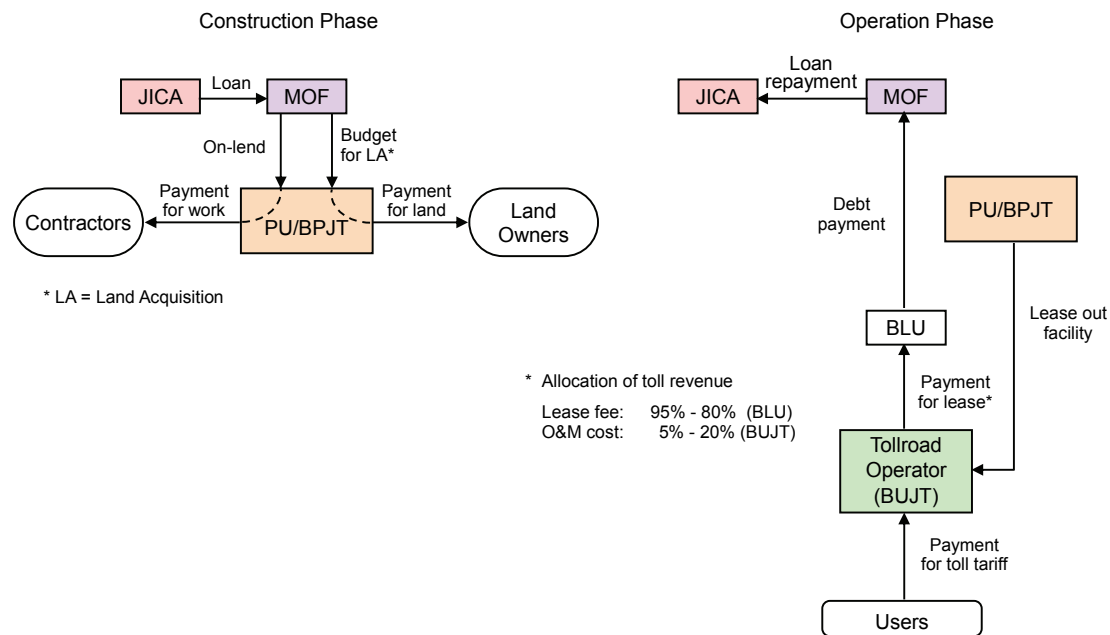


Figure 24. Financing Structure for DBO Model
(Source: JICA, 2009)

From these structures of project financing above we can conclude that one of the most important elements of the establishment of government support in toll road development is the arrangement of loan from Official Development Assistance (ODA) as source of project financing. The main reason for this measure is related to the limited fiscal capacity of government itself to provide support. In addition, generally capital market in Indonesia is not mature enough to provide alternative financing source for infrastructure development especially in the form of long term and low interest financing. In addition, interest rate from commercial bank in Indonesia (assumed at 14 %) is generally higher than in some other countries, making it relatively unsuitable for infrastructure development due to its high financial cost. On the other hand, foreign loans both from bilateral or multilateral sources are able to provide low interest financing making them preferable for long-term financing such as toll road project. For example, in Tanjung Priok Access project, Japanese Government (through JICA) provides loan to government of Indonesia for overall project implementation with interest rate of only 0.4% per year which is very low compare to interest rate of commercial bank.

However, since bilateral loan can only be arranged between governments (G to G), it also stands as another consideration of the necessity of government support because only government can get loan with such low financial cost in order to realize the project. With government conducts road construction by using low interest loan, it reduces overall financial cost of the project which in turn enable private sector to participate in the later phase of the project through operation and maintenance contract. Most importantly, with this kind of arrangement it enables private operator to share a portion of their revenue in order to repay government's loan due to significant difference of financial costs between commercial loan and ODA loan.

As an illustration, based on Indonesia PPP Study conducted by JICA (2006), the difference between financial costs from different loan schemes can be described through the following example, a project with total cost of 1 and loan period of 20 years with alternative financing sources available: government's budget (interest rate

= 0 %), ODA loan (interest rate = 1%), government's bond (interest rate = 12%) and commercial loan (interest rate = 14%). All of them are being compared for loan period (=a) of ten and twenty years. It ends up with this following comparison of financial cost:

- Infrastructure provision by taxpayer's money
 $1.0 \times (1+0) = 1.0$ if a=10, and $= 1.0$ if a=20
- Infrastructure provision by ODA loan
 $1.0 \times (1+0.01) = 1.10$ if a=10, and $= 1.22$ if a=20
- Infrastructure provision by government bond
 $1.0 \times (1+0.12) = 3.11$ if a=10, and $= 9.65$ if a=20
- Infrastructure provision by private sector borrowing
 $1.0 \times (1+0.14) = 3.71$ if a=10, and $= 13.74$ if a=20

From the exercise above it can be seen that there is a huge difference between financial costs offered by ODA loan and commercial loan. Furthermore, it can be concluded that currently ODA loan can be considered as the best possible alternative of financial source when government's budget is unavailable. This makes the arrangement of ODA loan as an important element of infrastructure development in general and especially for establishing PPP in toll road, at least in Indonesia case.

The arrangement of development assistance from ODA itself is regulated by article 38 (4) Law No. 1/2004 on State Treasury and Government Regulation No. 2/2006 on Procedure for Management and Channeling of Foreign Loan and Grant. In principle, foreign loan and grant pose as an alternative financial source for achieving the objectives of National Development Strategic Plan. In addition, they are also used as a mean to close the deficit of government budget. In this study we will only discuss about foreign loan arrangement.

Foreign loan may take place either in the form of program loan or project loan. Program loan is borrowed fund which is used for financing many development activities as planned by government of Indonesia. On the other hand, project loan is used to finance a project or an activity which is previously agreed between government of Indonesia and donor. As regulated further by Ministerial Regulation No. PER. 005/M.PPN/06/2006 on Procedure for Planning, Proposal and Evaluation of Project Funded by Foreign Loan and Grant, there are several type of foreign loans, as follow:

- Soft loan. It is a loan which categorized as ODA loan or concessional loan, which given by a country or a multilateral institution and being used for economic development or social welfare improvement in recipient country and has grant component of at least 35%.
- Export credit facility. It is commercial loan which is given by financial institution or non-financial institution in exporting county which guaranteed by export credit insurance institution.
- Commercial loan. It is foreign loan of government which obtained with market condition without any guarantee from export credit insurance institution.
- Mixed Loan. It is combination between two or more elements of grant, soft loan, export credit facility and commercial loan.

In practice, these different loans may come from several sources as follow: bilateral sources (other countries), multilateral institutions (such as World Bank and Asian Development Bank) and international finance institutions especially for export credit facility and commercial loan. While government institutions which involve in the

planning and selection of ODA loan proposals are line ministries (for instance, MPW), Ministry of National Development Planning (Bappenas) and Ministry of Finance (MoF). The procedures for ODA loan arrangement is described in Figure 25 below.

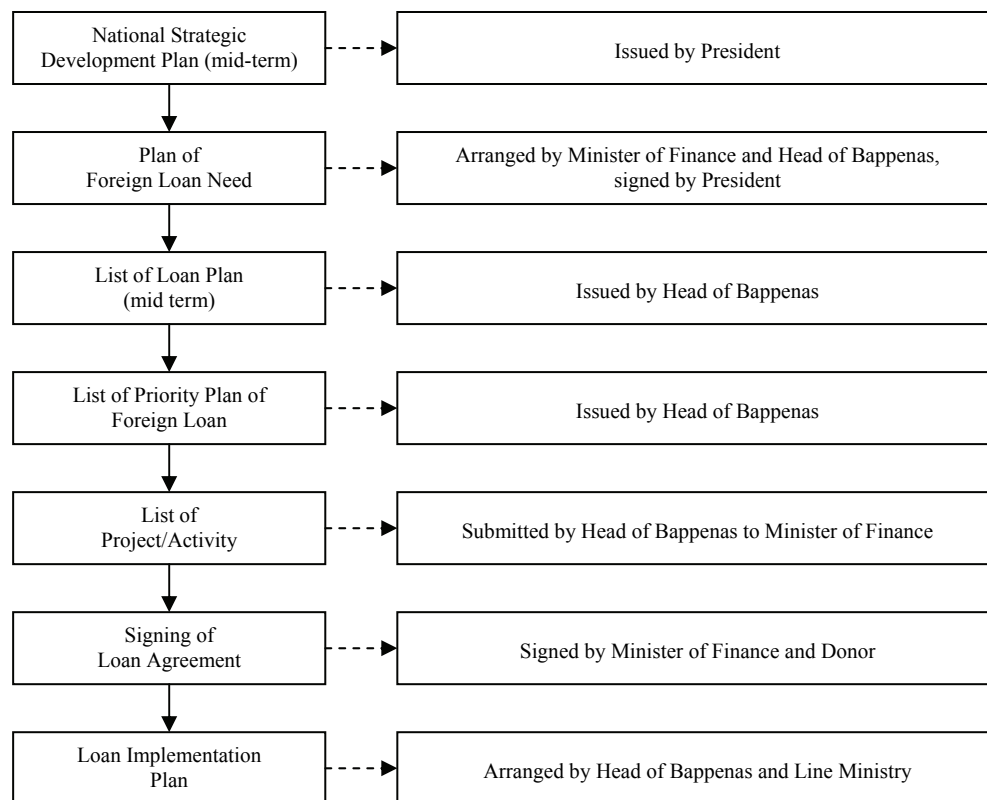


Figure 25. Foreign Loan Arrangement
 (Source: Ministerial Regulation No. PER. 005/M.PPN/06/2006)

In the National Strategic Development Plan 2004-2009, the general policy towards foreign loan is basically to reduce its portion within national budget. It is noteworthy that up to 1990s, development process of Indonesia had been largely supported by foreign loan. As a result, deficit in balance of payment rose from US\$ 610 million in 1980 to US\$ 7 billion in 1996. This was peaked when Asian financial crisis hit in 1997, Indonesia had to receive financial support from International Monetary Fund (IMF) with total value of US\$ 43 billion to save its national economy. Through careful debt payment planning, this loan package had been successfully settled by government of Indonesia in 2006. To manage its total national debt which estimated at about US\$ 147 billion in 2008, government of Indonesia has been working seriously especially by establishing tight selection process on new loan proposals. Furthermore, the establishment of foreign loan currently has been limited by the issuance of Law No. 17/2003 on State Finance which only allow 3 % national budget deficit from GDP. As a result of this policy, debt performance of Indonesia has been improving significantly especially if we look at several indicators such as government debt to GDP ratio and debt services to budget ratio as shown in Figure 26 below.

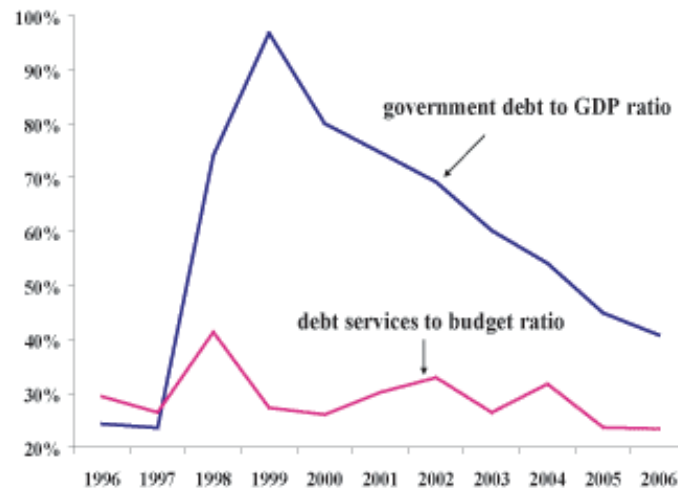


Figure 26. Debt Performance of Indonesia 1996-2006
(Source: www.worldbank.org)

This tight and careful approach toward foreign loan also gave impact to budget arrangement for development sectors in Indonesia as foreign loan is no longer be treated as an addition for budget allocation at line ministry level (on top) instead it is more considered as “supplementary portion”. Consequently, in general nowadays line ministry cannot expect to add their budget allocation through foreign loan. Furthermore, the overall process of loan proposal selection is also controlled tightly by Bappenas and MoF.

If we look at this situation from the perspective of ODA loan arrangement for financing toll road development, we can conclude that in the future the effectiveness of this financial source option may not be reliable to realize whole toll road master plan in time since the amount of loan that can be arranged is limited by state fiscal policy. Due to this situation, proper alternative for ODA loan should be identified immediately by government. This in turn will directly contribute to the growing maturity of PPP in Indonesia.

4.1.2.3 Public-Private Partnership Scheme and Project Finance Arrangement for Tanjung Priok Access Project

In general, based on feasibility study conducted by JETRO (2004), Tanjung Priok Access Project can be considered as financially non-feasible. Original data on project feasibility indicators cannot be shown here since the feasibility study document could not be obtained during field work. However based on estimation data of traffic volume for all sections of Tanjung Priok Access and total project cost of IDR 5.817 trillion obtained from MPW, the NPV and FIRR values of this project can be calculated with these following assumptions taken from Indonesia PPP study conducted by JICA (2009), as follow:

- Concession period = 30 years (2011-2040)
- Inflation rate = 7%
- The operation and maintenance cost is assumed at 5% of the toll revenue for annual routine operating cost and 15% of the toll revenue every 5 years for periodical maintenance cost.
- The initial toll rate for Type I (passenger car) in 2011 is IDR 650/km and assumed to be adjusted every 2 years using the inflation rates.
- Annual depreciation coefficient: 0.033 (30 years) for main construction work.

- Tax rate = 30%
- Commercial interest rate = 14%

Based on the calculation, the feasibility of this project is indicated by NPV = - 2.817 trillion (in IDR) and IRR = 8.72% (full calculation can be seen in Annex 3 and Annex 4). These indicators show that this project is financially non-feasible which in turn require government support. Although referring to its IRR value this project should be treated with partial construction by government (with criteria of IRR between 5-15%), however, government decided to give full construction support including land acquisition (based on government criteria should be given to project with IRR below 5%). This decision is not uncommon since in practice many projects with IRR below 5% are recommended to be developed as public road instead of toll road. This issue was also raised during field work by JICA road policy advisor at DGH which stated that the difference between treatment to financially marginal project and financially non-feasible project is somewhat unclear.

Based on government's decision to provide full land acquisition and construction support, therefore based on Law No. 38/2004 the PPP scheme that will be implemented in this project is DBO. In this case, after the toll road is constructed government will give operation and maintenance right to private sector which will have to pay lease in return. However more detail description on PPP scheme is not available at this moment since government currently is still focusing on the completion of road construction.

Related to PPP arrangement, based on interviews and discussions with several respondents, there are thoughts of other government support or PPP scheme which may suit this type of project. These thoughts are derived from the idea that traditional support model which currently being applied in Indonesia where government conducts land acquisition and construction work (either full or shared with private sector) is basically not ideal based on this following consideration:

- It creates fiscal security risk to government since they have to allocate large amount of capital cost for land acquisition and construction work prior to project operation (upfront).
- It does not stimulate private sector with enough incentive for creating value for money since they only conduct operation and maintenance on fixed infrastructure or facility being built by government.
- There is no correlation between payment of government support and private sector performance.

Another type of government support which actually can be applied is the principle of service payment where government provides fixed annual payment to private sector during operation and maintenance phase. As mentioned in previous sub-chapters, this approach actually is accommodated by Presidential Regulation No. 67/2005 in the form of "operating subsidy" however it is not included within Law No. 38/2004 as the legal base of toll road development. There are several benefits of this approach as follow:

- Government does not need to provide large capital cost prior to the project operation (upfront).
- The government support given to private sector is in the form of fixed annual payment which is easier to manage.
- Government does not need to provide additional payment in case there is occurrence of risk event (such as failure on road construction).

- Government will be able to provide incentive to private sector for creating value for money by linking support payment with operational and maintenance performance.

For better understanding, the difference between traditional government support model and service payment approach is shown in Figure 27 below.

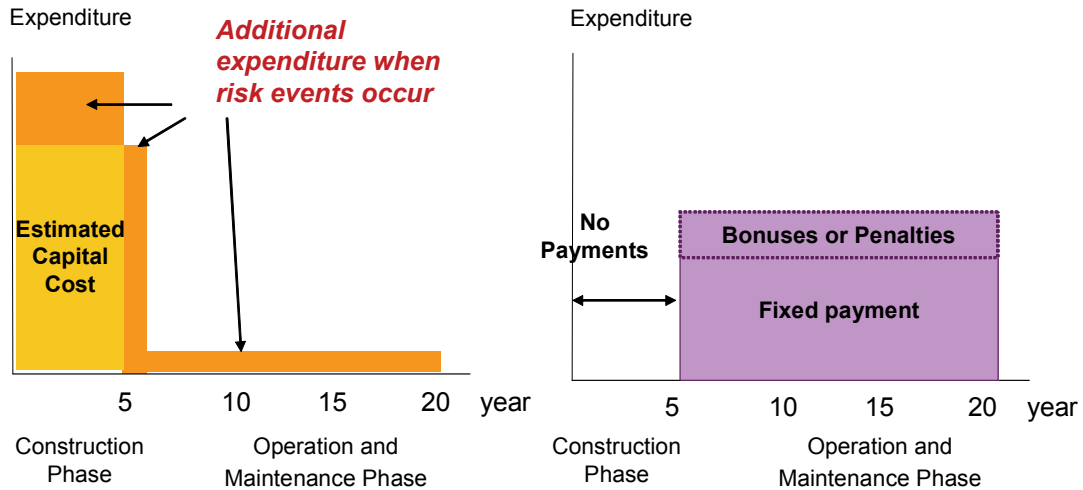


Figure 27. Traditional Government Support and Service Payment
(Source: Tsuneoka, 2009)

In practice, for seeking the ideal type of government support for toll road development in Indonesia, at least based on these two approaches, we can elaborate and combine them into six options of PPP scheme involving government support. They consist of these following schemes:

- **Option 1: Lease.** Government conducts land acquisition and construction work while private sector performs operation and maintenance. This option is already included within Law No 38/2004 and is planned to be implemented in Tanjung Priok Access project.

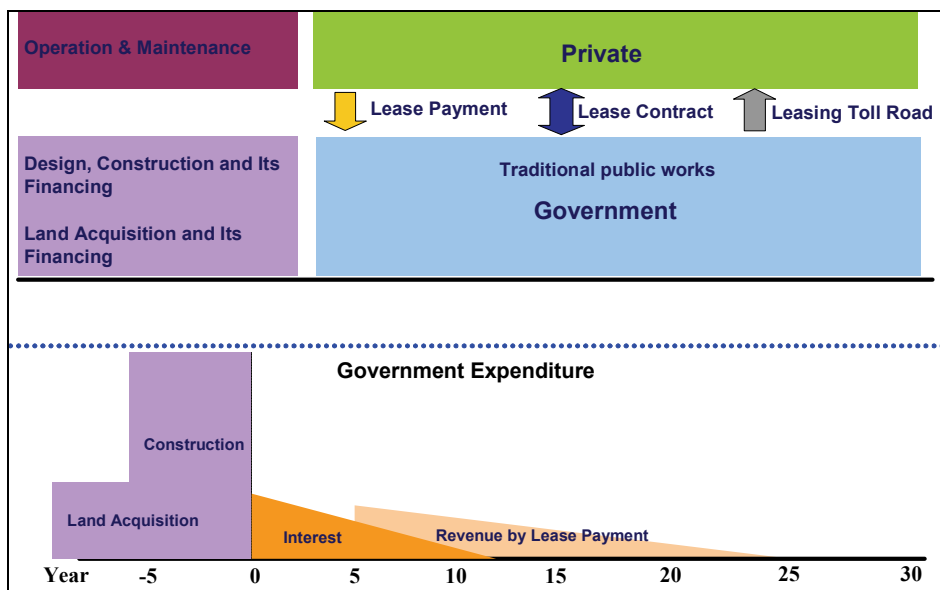


Figure 28. Construction by Government and O&M by Private Sector
(Source: JICA, 2009)

- Option 2: Segment Dividing. Government conducts land acquisition and share responsibility with private sector on construction work through segment dividing. Operation and maintenance is performed by private sector. This option is accommodated by Law No. 38/2004.

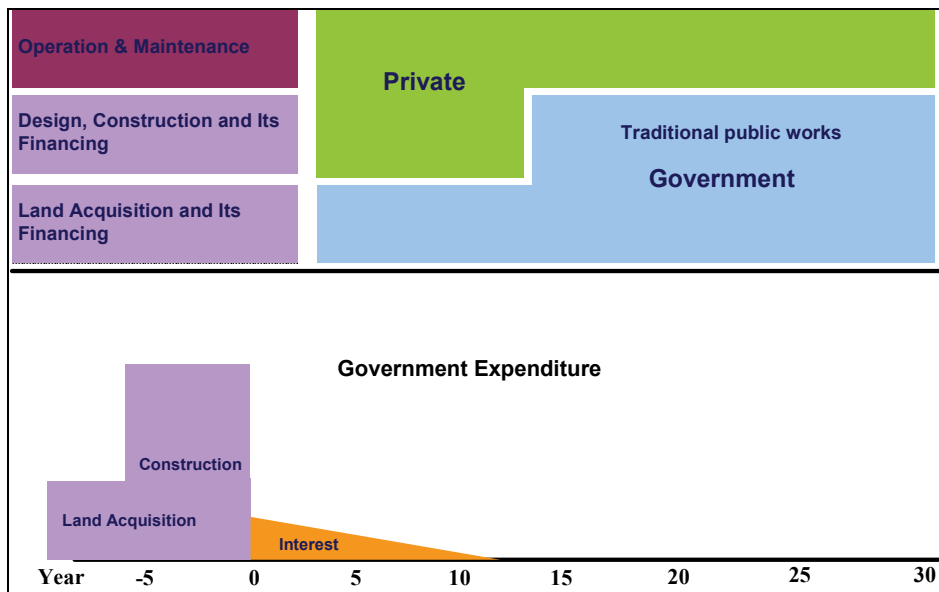


Figure 29. Segment Dividing
(Source: JICA, 2009)

- Option 3: Horizontal Dividing. Government conducts land acquisition and share responsibility with private sector on construction work. However, responsibility is shared based on type of construction work and not based on segment. Operation and maintenance is performed by private sector. This option is accommodated by Law No. 38/2004.

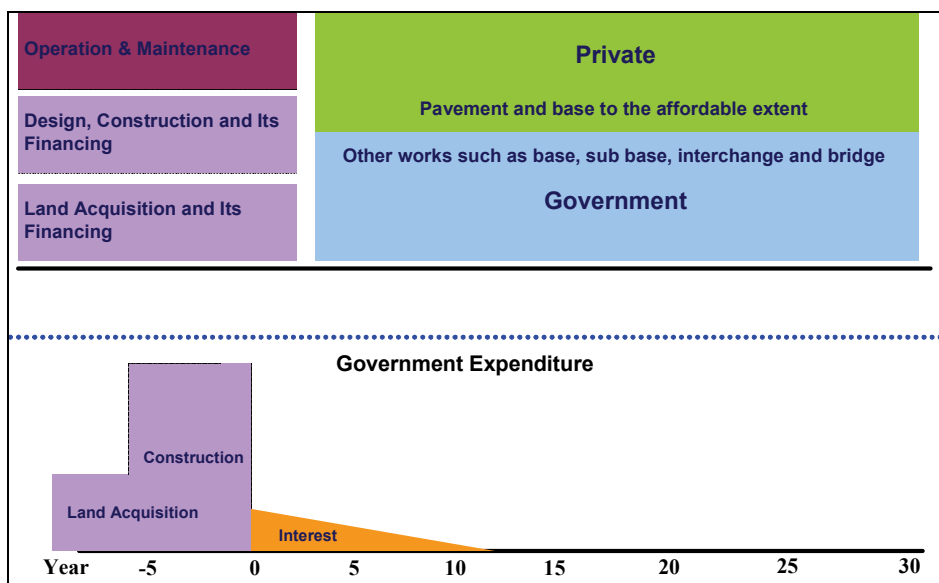


Figure 30. Horizontal Dividing
(Source: JICA, 2009)

- Option 4: Design-Build-Finance-Operate (DBFO) with Upfront Subsidy. Government conducts land acquisition and provides cash upfront subsidy to private sector which will perform whole construction, operation and maintenance activities. This option is not included within Law No. 38/2004.

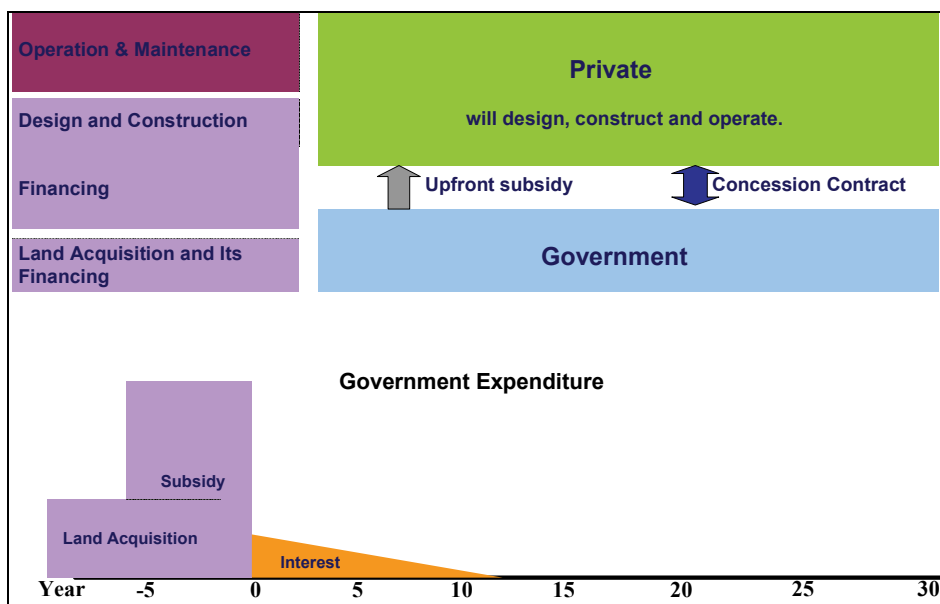


Figure 31. DBFO with Upfront Subsidy
(Source: JICA, 2009)

- Option 5: DBFO with Service Payment. Government conducts land acquisition and provides fixed annual payment to private sector which performs whole construction, operation and maintenance activities. This option is not included within Law No. 38/2004.

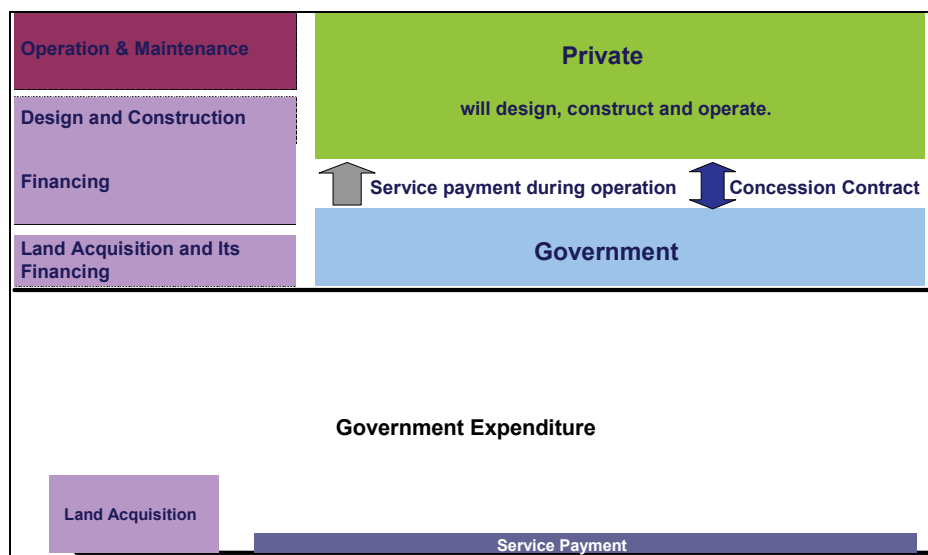


Figure 32. DBFO with Service Payment
(Source: JICA, 2009)

- Option 6: DBFO with Upfront Subsidy and Service Payment. Government conducts land acquisition and provides support to private sector in the form of combination between upfront subsidy and service payment. Private sector

performs the whole construction, operation and maintenance activities. This option is not included in Law No. 38/2004.

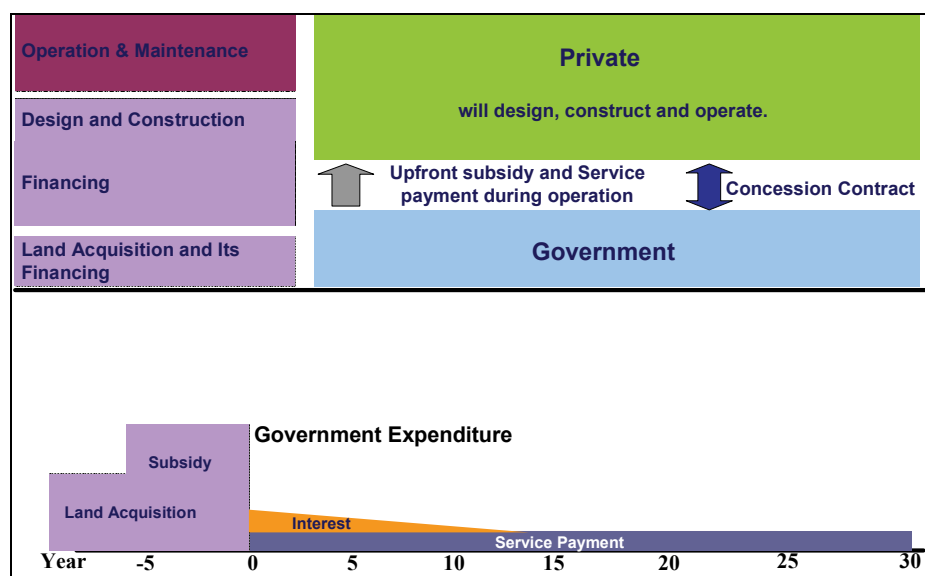


Figure 33. DBFO with Upfront Subsidy and Service Payment
(Source: JICA, 2009)

To seek for the most ideal option for providing government support among these six options, we can evaluate and compare them to each other. In order to do so, there are several criteria that can be used, as follow:

- **Public fund requirement.** This criterion depends on how much amount of public fund which needed to establish the support. In general, the less public fund needed the better the option. Therefore, options 1-4 are bad because they require large amount of government spending in the form of construction cost and subsidy prior to project operation. Options 5-6 are good in this criterion since they allow for fixed annual payment which may relieve government from large capital spending.
- **Private sector development.** This criterion depends on how far a particular option in providing incentive to private sector to perform well and creating value for money. Options 1-4 are bad because they tend to make private sector relies on government through traditional support and upfront subsidy before the private sector even perform. Option 5 is good because it stimulates private sector to work their best and can be used simultaneously with bonus and penalty instruments. Option 6 is fair since it is almost similar to option 5 but still requires upfront subsidy.
- **Legal and policy issues.** This criterion depends on the compatibility of a particular option with law and other regulation. Options 1-3 are good because they suit with both Law No. 38/2004 and Presidential Regulation No. 67/2005. While Option 4-6 are fair because although they are in line with Presidential Regulation No. 67/2005 however they are not yet adopted by Law No 38/2004.
- **Uncertainty in process.** This criterion depends on the complexity during implementation of a particular option. The less complex an option, it is better to be implemented. Option 1 is good since it is very simple in nature and the dominant position of government in the project. Options 2-3 are fair because they require more coordination and cooperation between government and private sector in dividing construction work portion. Options 4-6 are bad because they need more supervision and the role of government is more indirect.

Based on these criteria above we can make simple multi-criteria evaluation by using scoring system for every judgment (good = 3, fair = 2, bad = 1). As the end result, we can conclude normatively that option 5 is the best option for providing support in toll road development. This is shown in detail through Table 10 below.

Table 11. Evaluation of Government Support Scheme Option
(Source: Analysis and Interview)

	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Public fund requirement	1	1	1	1	3	3
Private sector development	1	1	1	1	3	2
Legal and policy issues	3	3	3	2	2	2
Uncertainty in process	3	2	2	1	1	1
Overall evaluation	2	1.75	1.75	1.25	2.25	2

From the table above we can conclude that, based on simple evaluation method, the ideal way for delivering government support is by using DBFO with service payment scheme (option 5). Since this scheme currently has not been accommodated by Law No. 38/2004 therefore in the future this law needs to be revised by adopting other approach of government support especially by the use of service payment. This is important to provide government with more flexibility in choosing the best scheme for toll road development especially in a situation where government support is needed.

Related to project finance arrangement for Tanjung Priok Access, land acquisition of this project is financed by Provincial Government of Jakarta with total costs of IDR 891.8 billion (US\$ 89.6 million) for total area of 19.4 hectare. This excludes cost for relocation of existing utilities – such as buildings, water supply pipe and oil tanks owned by PT Pertamina – which is about IDR 692.8 billion (US\$ 69.6 million). For construction cost, JBIC (now JICA) provides loan to government of Indonesia through Special Term of Economic Partnership (STEP) loan with total value of JP¥ 52.926 billion (US\$ 566.308 million) and divided in two phases: IP-529 and IP-531. The arrangement and condition for this loan are as follow:

- Interest rate = 0,4% per annum
- Grace period = 10 years
- Payment period = 30 years
- Procurement method using International Competitive Bidding (ICB) as required by Loan Agreement.
- Other loan requirements:
 - Service provider must come from Japan (as lead firm). When Japanese firm form association with local firm, the share of Japanese firm must be more than 50%.
 - In the procurement of good and service, Japanese product component must be minimum 30% of total value.

- Japanese product component may be obtained from local product which produced by company with at least 10% of Japanese share.

The detail on loan arrangement for construction work is shown by Table 11 below.

Table 12. Loan Arrangement for Tanjung Priok Access Project
(Source: Ministry of Public Works, 2007)

	Phase I (JBIC-IP 529)	Phase II (JBIC-IP 531)
Effective date	28 July 2005	26 June 2006
Closing date	28 July 2012 (7 years)	26 July 2013 (7 years)
Total Allocation	JP¥ 26.306 Billion (IDR 2.104 Trillion) consist of: <ul style="list-style-type: none"> • Consultancy services for all TgPA sections DED • Consultancy services for E1 and E2 sections supervision • Construction cost for E1 and E2 sections 	JP¥ 26.620 Billion (IDR 2.129 Trillion) consist of: <ul style="list-style-type: none"> • Consultancy services for W1, W2 and NS supervision • Construction cost for W1, W2 and NS sections • ITS/TSS facilitations

From the detail arrangement of JBIC loan above, we can see that from financial point of view this can be considered as “soft loan”. Several conditions of the loan, such as interest rate as low as 0.4% per annum and long payment period of ten years should not put high burden on government side. The most important issue, therefore, is how to optimize the use of the loan to deliver excellent project result. Related to procurement of goods and services for the project, as happened in most ODA loan arrangements, government of Japan demands that the contract for this project is given to Japanese firm. This clause has been responded wisely by government of Indonesia as in Presidential Decree No. 80/2003 on Guidance for Public Procurement by Government Institution, it is stated that foreign contractor must cooperate with local contractor in order to operate in Indonesia. The application of this principle is described within the next sub-chapter.

4.2 Project Implementation

This sub-chapter deals with project implementation. It contains several aspect of implementation as follow: construction, investment procedure, selection of operator and concession. In a “normal” BOT project, implementation phase of project usually is started by selection of operator which influenced by investment procedure in a given regulatory framework. This is also known as the transaction element of PPP project. However, in Tanjung Priok Access project since it is established through government support where government fully conduct its construction, therefore construction phase takes place before selection of operator. Since this project is currently under construction then the section deals with investment procedure, selection of operator and concession are mainly based on existing regulations.

4.2.1 Construction

Construction site of the project is located in the northern part of Jakarta, around Tanjung Priok Port and in the vicinity of Jakarta Bay. The location of the project can be seen clearly in Figure 34 below.

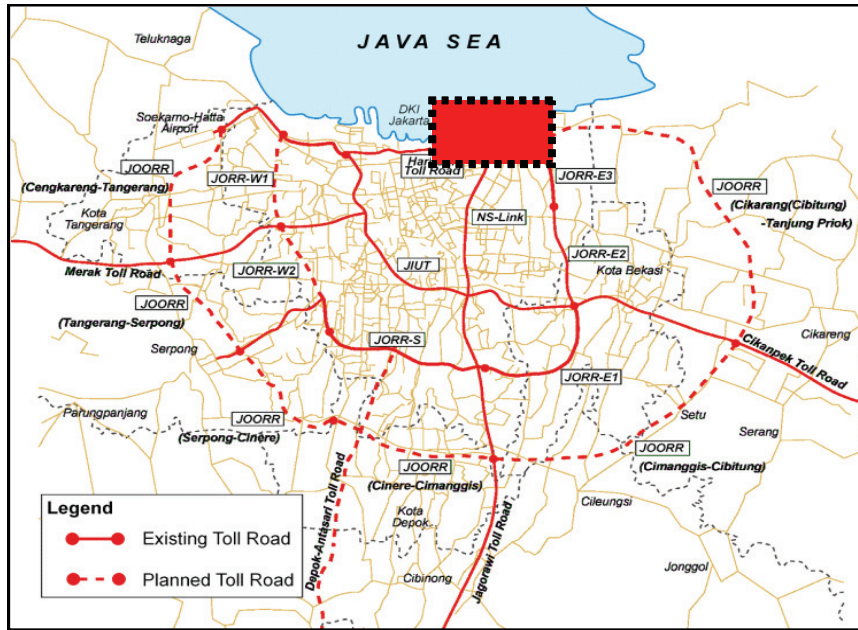


Figure 34. Tanjung Priok Access Project Construction Site
(Source: Ministry of Public Works, 2007)

Through competitive bidding process conducted by MPW, the contract for construction work in Tanjung Priok Access project is won by Sumitomo Mitsui Construction from Japan in collaboration with state owned construction company, PT Hutama Karya. The construction work is currently in progress and it was effectively started on March 30th 2009. The duty of contractors is to construct toll road of 6 lanes (two ways) with length of 12 km including on/off ramp, access to the port and interchange with Cibitung-Cilincing toll road section.

In general, the overall responsibility for the implementation of this project is within the authority of Director General of Highways. At technical level, this project is controlled by Directorate of Freeways and Urban Road which is responsible for guiding and supervising construction work. In this case, this directorate establishes Steering Team, Technical Team and Tanjung Priok Access Working Unit in order to ensure the successful implementation of the project. In addition, Directorate of Planning is assigned to arrange proper budget management for the project in addition to establishing counterpart unit to work closely with JBIC (or currently JICA) in the form of Project Management Unit (PMU). This unit monitors project implementation and take care of all the tasks related to JICA or donor side.

The overall organizational structure of the project is shown in Figure 35 below.

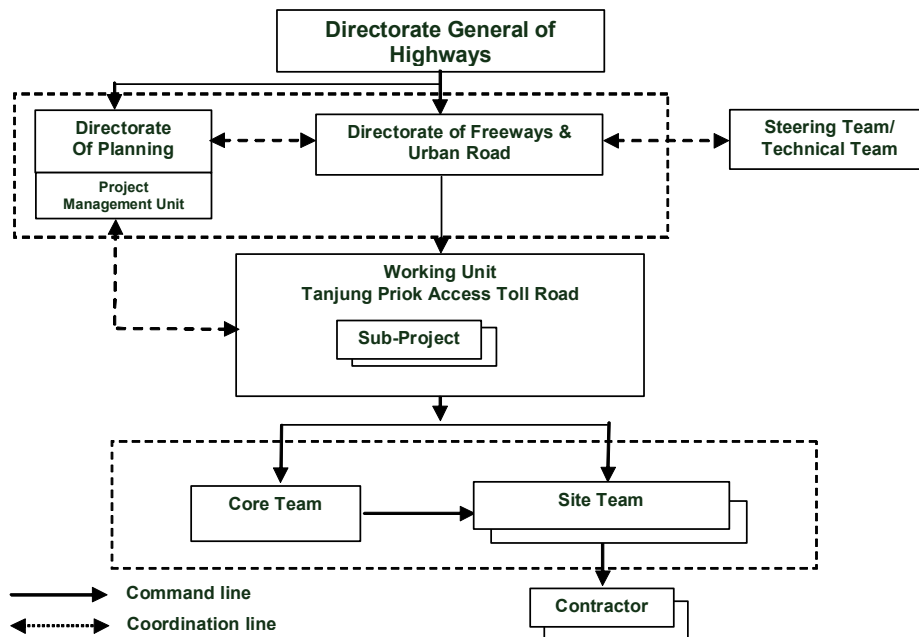


Figure 35. Organizational Structure of Tanjung Priok Access Project
(Source: Ministry of Public Works, 2007)

For the implementation of construction work, whole road alignment is divided into different sections as follow: E-1, E-2, W-1, W-2 and NS. This can be seen clearly in Figure 36 below.

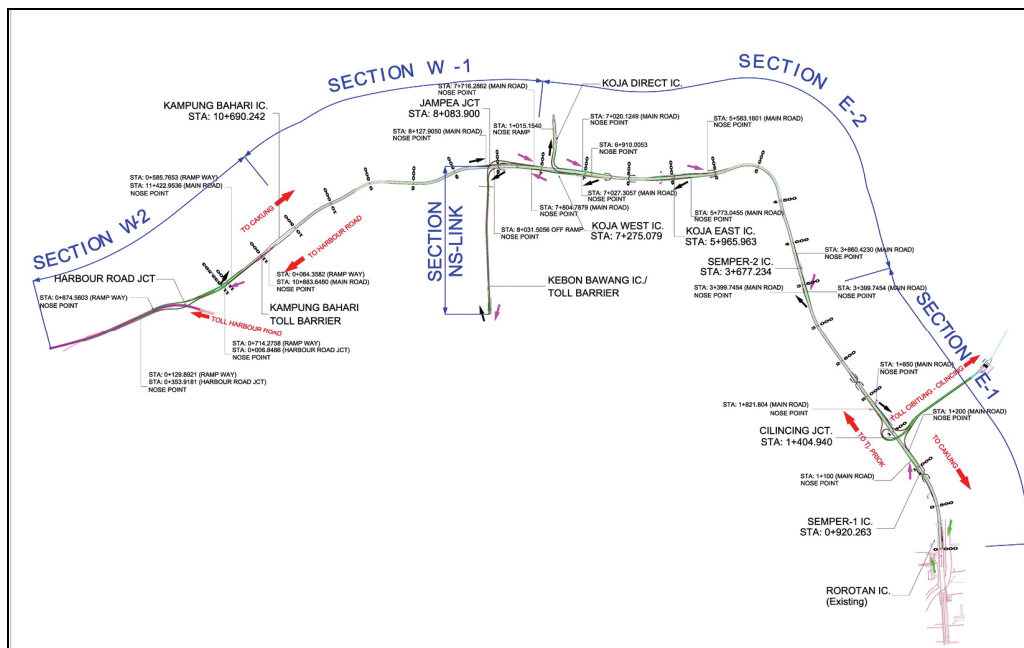
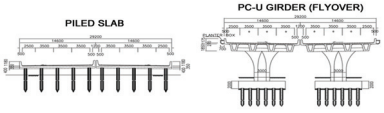
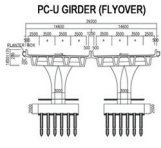
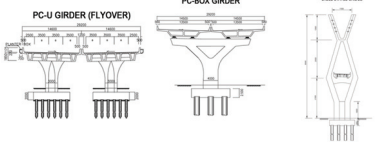
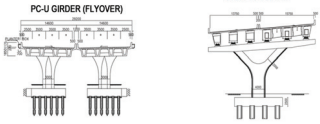


Figure 36. Sections of Tanjung Priok Access Project
(Source: Ministry of Public Works, 2009)

Related to type of construction, in this project contractors mainly use elevated highway construction since most alignment of road sections are located in densely populated areas. This is accommodated within Detail Engineering Design (DED) with the main objective to minimize land acquisition since it is feared to be complicated and time consuming. Furthermore, DED also accommodate many existing utilities

around project area and technical requirement of port operation. The detail of construction type can be seen in Table 12 below.

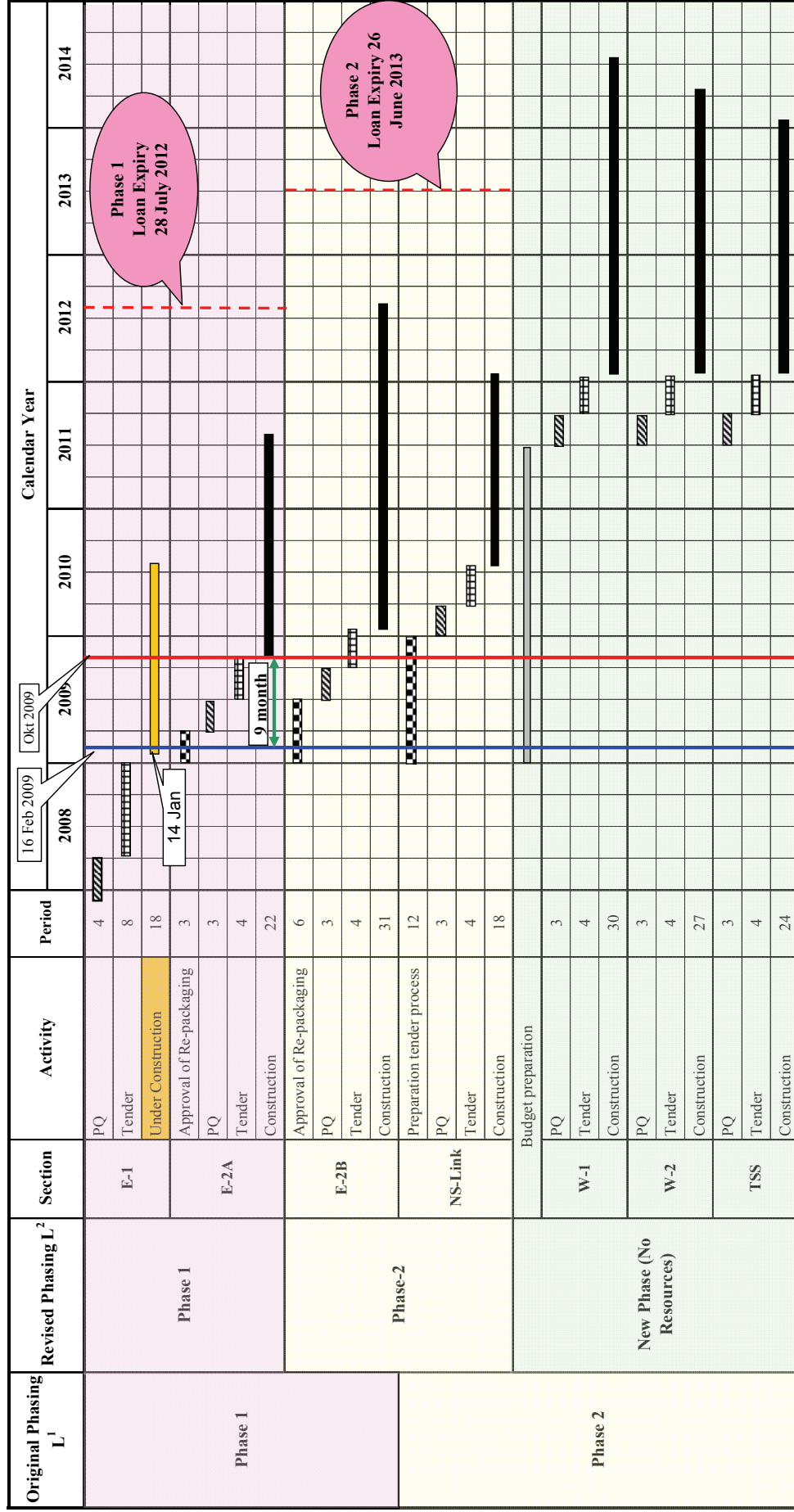
Table 13. Technical Data of Tanjung Priok Access Project
(Source: Ministry of Public Works, 2007)

SEGMENT	STRUCTURE TYPE	LENGTH	TYPICAL DRAWING
TgPA E1	Up Structure : PC U Girder, RC Slab Below Structure : Concrete Pier, PC Pile	3.4 Km	
TgPA E2	Up Structure : PC U Girder Below Structure : Concrete Pier, PC Pile	4.6 Km	
TgPA W	Up Structure : PC U Girder, PC Box Girder, Cable Stayed Bridge Below Structure : Concrete Pier, PC Pile	3.6 Km	
TgPA NS	Up Structure : PC U Girder, Steel Box Girder Below Structure : Concrete Pier, RC Pile	0.4 Km	

In general, technical aspect of toll road construction is regulated by Ministerial Regulation No. 353/KPTS/M/2001 on Technical Guidance for Construction and Maintenance of Toll Road. Based on this regulation, toll road should be constructed to meet several technical requirements. For example, it should be able to withstand 10 millions repetition of standard loading in 8.16 tones unit. The toll road itself should be geometrically designed for at least twenty years and pavement construction design period of at least ten years. In addition, design speed on toll road should be at least 120 km/hr for inter-urban toll road and 80 km/hr for urban toll road in flat region (vertical slope 0-2.9 %). While in the hilly and mountainous regions the design speed is 80-100 km/hr for inter-urban toll road and 60-80 km/hr for urban toll road.

From project management point of view, this project is should be completed at the latest July 28th 2012 (Phase 1, IP-529) and June 26th 2013 (Phase 2, IP-531). The complete schedule for this project is shown in Table 13 below.

Table 14. Project Schedule
 (Source: Ministry of Public Works, 2009)



For giving some illustrations on how this project will look like by the time of its completion, it can be seen through Figure 37, 38 and 39 showing different sections of Tanjung Priok Access.



Figure 37. Tanjung Priok Access E-2 Section
(Source: Ministry of Public Works, 2009)



Figure 38. Tanjung Priok Access E-2, W-1 and NS Sections
(Source: Ministry of Public Works, 2009)



Figure 39. Tanjung Priok Access W-1 and W-2 Sections
 (Source: Ministry of Public Works, 2009)

In line with the implementation of Tanjung Priok Access Project, government of Indonesia also conducts several improvement works on existing road infrastructures around Tanjung Priok Port using government budget. These works consist of:

- Replacement of bridge over Koja river at Yos Sudarso street. Type of treatment in this activity is adding the height of the bridge and replacement of both bridge sides with the length of 40 meters. Total cost of IDR 8.405 billion and already completed in 2007.
- Improvement of road and bridges at Cakung-Cilincing section with total length of 9 km. Type of treatment in this activity is widening from 2 lanes into 3 lanes on each side and adding the height of road surface. Total cost of IDR 58.179 billion and already completed in 2008.
- Widening of Marunda access road. The type of treatment conducted in this activity consist of: (1) road widening from 7 m into 14 m with length of 4 km, and (2) duplication of Buntu bridge from 7 m into 14 m with total length of 120 m and duplication of Blencong bridge from 7 m into 14 m with length of 120 m. Total cost of IDR 60 billion and already completed in 2008.

From the description above we can see that currently overall construction work is being carried out properly by MPW and its working units in order to meet project schedule. The interesting fact that the contract for construction work for this project is awarded to Japanese firm revealed a classic arrangement of ODA loan. However government of Indonesia has made concrete effort to maximize the benefit of this project to construction industry in Indonesia by creating rule where main contractor is required to cooperate with local firm. Beside important from economic point of view this measure is also necessary to ensure knowledge and technology transfer which can be useful in future projects. In addition, it also satisfies socio-political motives where local firms should not be left behind in the implementation of this project.

Government of Indonesia also put serious attention to maximize the establishment of this project by allocating national budget to improve existing road and bridge infrastructures located around the project. With this effort it is hoped that this project will deliver optimum benefit to road users as well as general public. Although counterpart funding actually is not required within the loan arrangement for this project, by allocating budget for supporting project implementation government has show their commitment to achieve excellent result.

4.2.2 Investment Procedure and Selection of Operator

Procedure for investment in toll road development in Indonesia is regulated by Government Regulation No. 15/2005 on Toll Road especially in article 55-62. For implementation, this regulation is further put into operation by Ministerial Regulation No. 27/PRT/M/2006 on Guideline for Procurement of Toll Road Investment.

According to these regulations, investment process in toll road is preceded by preparation stage where government conducts planning for toll road by putting a particular road section into toll road master plan based on development policy and sector strategy. The particular toll road section must be socialized among community especially those live around the upcoming project location. For project that needs government support, it requires approval from MoF.

This process followed by the establishment of pre-feasibility study, feasibility study and environmental impact assessment. As the result of these studies, government obtains information on social-economic analysis, traffic volume prediction, construction cost analysis, financial feasibility and recommendation on investment scheme. In addition, government also must take into account any recommendation on environmental impacts which may occur due to the project and measure to anticipate them. All of these then will be used as basic project information during procurement process or selection of operator.

The whole procurement process is managed by a committee established by BPJT with at least five members (number of member must be odd). Members of committee may be recruited from BPJT or other institutions if necessary. In addition, committee may form technical team to assist committee members. There are several criteria for being committee members: moral integrity and responsible in fulfilling duties, comprehension on general tasks of procurement committee and have no family relationship with the officer responsible for recruiting committee members.

In general, there are two phases involve in procurement process of toll road operator: prequalification and limited tender among selected candidates. Prior to the tender, all tender participants must go through a prequalification process where they will be evaluated based on their competency and qualification to participate in tender for toll road investment. This prequalification mainly focus on financial and technical capacities as well as experience of the participants. It is done in two steps: (1) evaluation on administrative documents and (2) evaluation on financial capacity and experience. The evaluation is done by all committee members and the result is based on average score gained from all members. The passing grade in prequalification process is determined by the committee however it should be at least 60%.

For establishing tender process, it needs at least three participants which successfully pass prequalification. If there are less than three participants manage to qualify, then the committee must invite additional participant to be selected through prequalification. If after this measure there is still no additional participant for tender process, the

committee may proceed to tender with approval from Minister of Public Works. When there is no participant at all qualify for tender committee must report to BPJT which in turn will report to Minister of Public Works about the prequalification criteria and the qualification of participants. If there is no investor interested to apply in the whole procurement process, committee must report to BPJT which in turn will report to Minister of Public Works on the necessity of policy review regarding that particular toll road section.

After prequalification, procurement committee must choose tender method which is going to be used. There are three options of tender method as follow:

- Method A. Scope of toll road investment has been decided beforehand by MPW which include: design, construction, land acquisition cost and concession period. In this case, interested investors will compete based on initial toll tariff. The lowest initial tariff will be proposed as bidding winner.
- Method B. Scope of toll road investment has been decided beforehand by MPW which include: design, construction, land acquisition cost, initial toll tariff and concession period. In this case, interested investors will compete based on support required from the government. The lowest government support will be proposed as bidding winner. This method is used for projects which categorized as financially marginal and non-feasible.
- Method C. Tender participants submit proposal which contain investment value, concession period and initial toll tariff based on their estimation. In this case, the interested investors will be evaluated based on cost soundness, construction plan, initial toll tariff and concession period. The tender participant with higher score will be proposed as winner.

The method used in procurement process is determined by procurement committee prior to the process based on feasibility study done by BPJT and must be approved by Minister of Public Works. Special for Method B, BPJT must get approval from MoF during preparation stage. Finally, the method that will be used should be informed to all tender participants and included within tender document.

Based on the result of tender process, committee must propose one participant to BPJT which in turn will report to Minister of Public Works for the legalization of tender result. Then, if there is no objection from other participants, Minister of Public Works may legalize the result and award the concession to the tender winner (as described in next sub-chapter). Subsequently, selected operator will prepare for further stage of project implementation (land acquisition, construction and so on).

The whole procedures for investment and selection of toll road operator are illustrated by Figure 40 below.

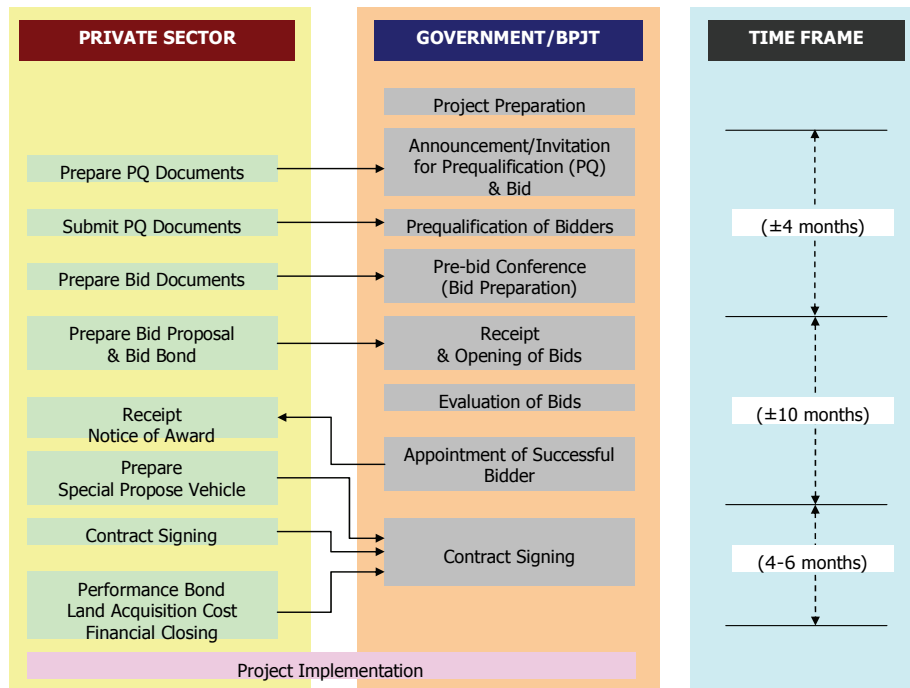


Figure 40. Toll Road Investment and Procurement Procedure
(Source: Ministry of Public Works, 2006)

From the description above we can see how investment process and selection of operator is being regulated in Indonesia. In general, policy and regulation in public procurement has been improving significantly in Indonesia in the last few years. In this case, there are at least two factors identified as key characteristics of good selection process: transparency and competitiveness. Transparency means that everybody or every company has the same opportunity and right to apply for government project. Meanwhile competitiveness implies the importance of competition to provide the best possible goods and services for the public. This is especially important in PPP application since one of the objectives of PPP is to create value for money which can only be achieved through competitive selection process conducted by government to pick the right partner among private sector.

4.2.3 Concession

Toll road concession is established based on Toll Road Concession Agreement (Indonesian: Perjanjian Pengusahaan Jalan Tol/PPJT). This document is signed together between Minister of Public Works (on behalf of government of Indonesia) and private operator. Based on Government Regulation No. 15/2005, this agreement at least contains these following points:

- Scope of investment;
- Concession period;
- Initial tariff and formula for tariff adjustment;
- Right and obligation, including risk which should be bear by each party based on efficient and proportional risk distribution principle;
- Change on concession period;
- Service performance standard and procedure for handling complaint from society;
- Settlement of dispute;
- Contract termination;

- Toll road supporting asset;
- Law system applied within concession agreement (Indonesian law system); and
- Force majeure.

In addition to these points above, concession agreement must clearly regulate transfer of toll road and/or its facilities by the end of concession period. This will include these following points:

- Condition of toll road and/or facilities which are going to be transferred;
- Procedure of transfer;
- Requirement that toll road and its facilities must be free from all guarantee or burden at any form by the time they are transferred to government;
- Requirement that toll road and its facilities must be free from all charge from third party and private operator will liberate government from all charge that may occur.

Related to toll tariff, it should be calculated based on ability to pay of road user, benefit from vehicle operating cost and investment feasibility. Benefit from vehicle operating cost is calculated based on the difference between vehicle operating cost and time value of using toll road compare to using existing public road as alternative. Investment feasibility is calculated based on accurate estimation of all costs during concession period which will enable private operator to gain sufficient profit in order to recover their investment. Toll tariff is determined by Minister of Public Works.

Adjustment of toll tariff is done every two years by BPJT based on existing toll tariff which adjusted to inflation with this formula: $\text{new tariff} = \text{existing tariff} (1 + \text{inflation})$. BPJT will recommend new tariff to Minister of Public Works which in turn will legalize its application.

In general, during concession period there are several activities that will be done by private operator as follow: toll collection, toll road operation, temporary closure of toll road, transfer of asset by the end of concession period and other business activities which in line with the objective of toll road development, such as the development of rest areas. Everything is done based on technical and administrative regulations issued by government especially Ministerial Regulation No. 392/PRT/M/2005 on Minimum Service Standard of Toll Road. This regulation includes several aspect of toll road performance as follow: road condition, average travel speed, accessibility, mobility, safety, rescue unit and support unit.

Another important aspect within concession period is supervision of the implementation of concession agreement itself. This is done to create order within regulation, management and investment practices of toll road development. In this case, there are two types of supervision: general supervision and toll road investment supervision. General supervision includes supervision on toll road management, toll road network development, function and benefit of toll road network as well as performance of toll road network. This type of supervision is conducted by Minister of Public Works. Meanwhile toll road investment supervision is established to assure that private operator performs accordingly to concession agreement. This type of supervision is conducted by BPJT.

When concession period ends, BPJT takes over road asset and recommend further operation scheme to Minister of Public Works. In this case, the road can be declared as public road but also can be kept as toll road with the consideration of limited fiscal capacity of government to operate and maintain the road or due to the need to expand its capacity and service as toll road.

Currently, one of the most important issues regarding concession arrangement for PPP in Indonesia is the capacity and skill of government officer to engage in contract or legal drafting. Since this process usually requires a long and comprehensive negotiation among government and private sector, it is urgent to equipped relevant government officers with good understanding on legal aspect of project and other soft skills such as negotiation techniques. It should be understood that during this negotiation process public interest is at stake and considering the length of PPP infrastructure project which usually last for more than ten years any decision made on PPP contract arrangement will surely bring great impact towards society. On the other hand government must also aware of the need of private sector to gain reasonable financial added value this will also give impact on how government should behave in such situation. Especially at technical government institutions, such as MPW, the need for officers which capable of handling contract negotiation and legal arrangement for PPP is already felt for quite some time. If we look deeper at this phenomenon, basically this reflects the shift towards the new role of government in infrastructure provision as enabler rather than as direct provider.

4.3 Private Sector Perception

This sub-chapter deals with the overall perception of private sector towards opportunity to invest in toll road development. There are two important issues: macro-environment issues related to general business climate and cost recovery issues in toll road business.

Successful toll road development, especially through PPP arrangement, is heavily influenced by general business and investment climate as well as the effectiveness of regulations related to toll road. All of these contribute to the general perception of private sector towards toll road business itself. Government should aware of this perception in order to capture market condition and therefore they will be able to set the right policy to promote toll road investment as good business opportunity among private sector.

The application of PPP in development process in general surely requires new perspective and paradigm of government roles. As already mentioned in previous sub-chapter the traditional approach of infrastructure development through direct provision by government must be changed gradually into a more indirect role of government by providing policy and regulation as well as opening wide opportunity for private sector in public service activities. In this case, government must seriously consider private sector participation and provide the right incentive.

Related to general perception of private sector regarding business climate in Indonesia, it can be reviewed from Investment Climate Study/ICS (2003). The study pointed out several aspects of investment climate which require serious attention from the government. These are obtained from assessments at firm level and cross-country comparison. They emphasize the urgency to improve investment climate in Indonesia. Several points acquired from firm-level assessments are as follow:

- Business is severely disrupted by key factors such as macroeconomic instability, uncertainty in economic policies and regulations and the presence of corruption.
- Generally access to formal financing still pose as a problem, especially for medium firm.

- Labor regulations put burden on firm operations, for example related to hiring and minimum wages.
- At regional and local level, fundamental problems create lack of investment and productivity. Generally firms located in Jakarta have to deal with more corruption, while firms in other smaller cities suffer with regulatory constraints
- Negative effect of decentralization is felt by firms in the form of more uncertainty in regulations as well as increasing corruption level.

Meanwhile, several key points acquired from the cross-country comparison are as follow:

- There are many firms in Indonesia which suffer difficulty in their operations due to investment climate as compared to other neighboring countries. The most prominent problem is related to overall uncertainty.
- In Indonesia, it takes longer and costlier procedures to start up and close a business. This actually reflects low quality of overall governance.
- Tax administration creates problem to business even though actually tax rate in Indonesia is quite similar to other neighboring countries.
- Financial cost is relatively high and this makes financing from bank is somewhat unaffordable especially for small and medium enterprise.
- Labor regulations are not competitive and pose as constraint for attracting investment.

Related to above description, in toll road development involvement of private sector is considered as one of the most important factors contributing to the realization of infrastructure development policies in the future. This is due to the classic fiscal capacity limitation of government which made it difficult for them to allocate sufficient budget for infrastructure development. In the case of Indonesia, for 2005-2009 it was estimated that government needs about US\$ 30 billion annually to develop infrastructure to realize economic growth target of 6–8%. However, as exposed during Infrastructure Summit I in 2005, fiscal capacity of government is only capable of providing 17% of that amount. Therefore the other 83% has to be financed by the private sector or through international financing sources. This is shown in Figure 41 below.

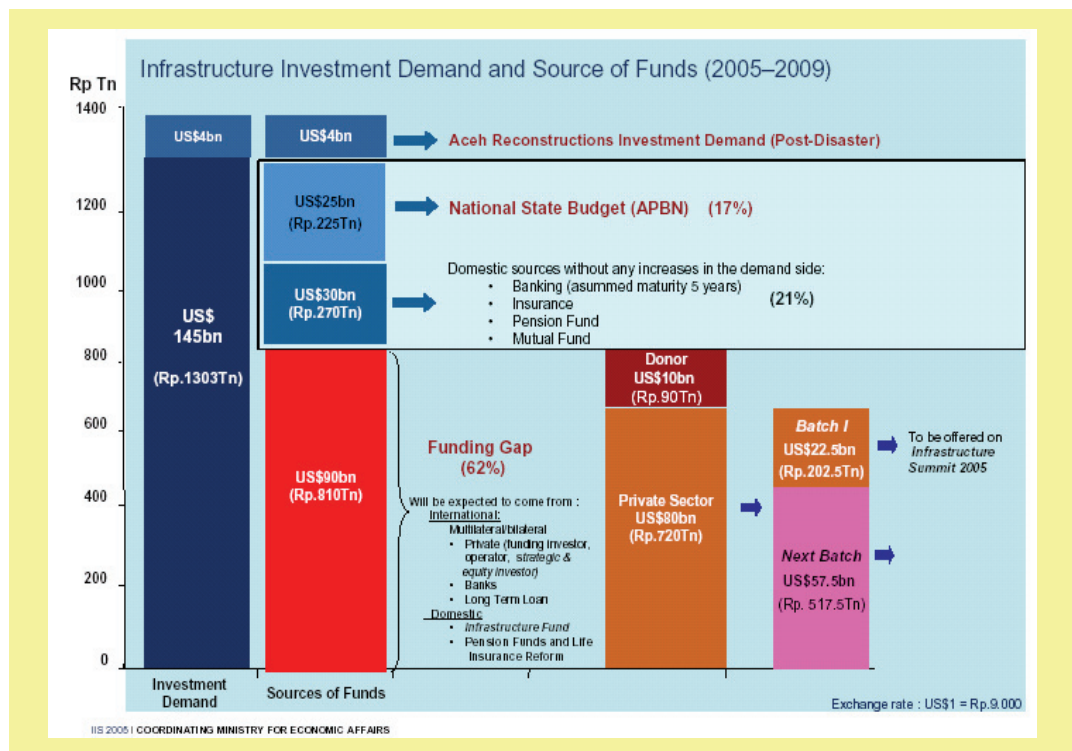


Figure 41. Infrastructure Investment Demand and Source of Funds 2005-2009
 (Source: Ministry of Public Works, 2006)

From the table above we can see how important private sector involvement in infrastructure development in Indonesia. This trend will escalate in the future as PPP will likely be the mainstream of government's infrastructure policy.

There are actually several problems related to private sector participation in toll road development which need to be seriously taken into consideration by government of Indonesia, as follow:

- Limited government capacity to manage PPP projects. In general, capable and skilled human resource in handling PPP is still very limited in Indonesia both in public and private sector. From the government side this leads to weak policy and regulation. While in private sector side it leads to business inefficiency which reduces value for money. Currently, capable officers in PPP are unevenly distributed throughout government institutions therefore knowledge transfer among government institutions as well as from other countries is needed in order to reduce this knowledge and skill gap.
- Limited government funds to support toll road projects with marginal financial feasibility. As previously mentioned, although government of Indonesia is aware of the importance and the necessity of government support, in general they lack sufficient fiscal capacity to provide such support to private sector at project level. One of the most important sources of fiscal support currently is ODA loan which, unfortunately, is likely to be unreliable in the future since one of the priorities of government nowadays is to reduce dependency on foreign loan. Therefore concrete measure need to be taken to solve this either by utilizing other sources of finance (such as pension fund) or using PPP scheme which will minimize the necessity of government support (such as service payment approach rather than upfront subsidy or construction by government).

- Land procurement mechanism for public interest has been unable to completely address land acquisition issues. Land acquisition still poses as major obstacle for toll road development. In many cases, it may increase investment cost simply delay project implementation Although government already issues Presidential Regulation No. 36/2005, its implementation has not been satisfactory. Concrete measure is needed in order to improve its effectiveness in supporting toll road development.
- Lack of long term investment financial institution (investment banking). Currently the availability of commercial loan to finance toll road development is hampered by the high interest rate which is more related to macroeconomic condition. This leads to more dependency of government to low-interest rate financial source such as ODA loan. However in the future, government must seriously consider to developing special institutions which can provide long term financial service for infrastructure development such as by developing Indonesia Infrastructure Fund. It will be better to arrange the current fund allocated for government support to be used to develop better institution and system of government support provision in the future.

CHAPTER V

CONCLUSION AND RECOMMENDATION

This chapter describes the conclusion and recommendation of this thesis especially based on theoretical overview and research result. Conclusion being made on several research areas identified before as key ingredients of the thesis as follow: policy and regulatory framework, PPP scheme, government support and project finance. Subsequently these conclusions are followed by recommendations on the same points about the actions needed to improve things in the future for developing toll road in Indonesia. In addition, direction for future related researches is given as a contribution to develop more sophisticated body of knowledge on private sector participation in toll road development in Indonesia, especially related to government support provision for financially non-feasible projects.

5.1 Conclusion

As mentioned above, based on overall efforts which have been taken in order to achieve research objectives within this study, there are four areas which need to be highlighted as the foundation of how PPP should be implemented for toll road development especially in the case of financially non-feasible project as described by the use of Tanjung Priok Access project as case study. These four areas consist of policy and regulatory framework, PPP scheme arrangement, government support and project finance. Each of them will be explained through the following description below.

Policy and regulatory framework

Policy and regulatory framework are essential for the success of PPP in toll road development. They contribute to the success of PPP projects by providing the general environment conducive for its implementation. There are three factors of policy and regulatory framework in toll road development: institutional arrangement, toll road policy and toll road planning.

Institutional arrangement for toll road development in Indonesia has been arranged by the establishment of two units within MPW which assigned to manage the overall cycle of toll road development. First, DGH which deals mainly with policy formulation and planning process of toll road development. Second, BPJT which mainly deals with the arrangement and contracting of PPP for each toll road section. Successful toll road development largely depends on how the functions of these two units can be carried out in a synergic manner. Any inconsistent action among these two units will bring negative impact on general investment climate, as happen at certain extent in practice. In short, institutions responsible for managing toll road development should be designed carefully with regard to the regulatory need of the particular activities. Subsequently these institutions should also be entitled with well designed functions and tasks which match with and support the tasks and functions of other related institutions. The establishment of BPJT as PPP unit within MPW organization should be appreciated as an effort to improve overall practice of toll road development as well as to concentrate resources for that purpose.

Toll road policies in Indonesia are influenced by and contribute to higher level development policies. The current policies are intended to support economic growth,

improving regional interconnection and releasing congestion in urban areas. The coherent structure of policy and its relationship with other related policies is fundamental for its application. On the other hand, the policy itself should be directed toward clear goals and objectives. In this case, what has been done in formulating toll road policies in Indonesia is quite clear and rigid to support concrete implementation although in some situation it is still constrained either by resource limitation or low capacity of policy implementation.

In Indonesia, toll road planning is an important part of overall toll road provision cycle. Through this step, toll road sections are prepared for further PPP arrangement. The result of toll road planning in the form of master plan and recommendation for each different toll road section is influential for the success of toll road projects. Therefore a sophisticated toll road planning system is important in preparing PPP projects in toll road. This influenced by both the existence of solid planning system itself and capable human resource to run such system.

PPP scheme arrangement

The arrangement of PPP schemes is an important part of project design. Since the performance of a PPP project is mostly about finding the right balance between public and private interest, therefore the project should be carefully designed to create value for money and with regard to the dimensions of PPP as follow: capital investment, operation and maintenance, risk distribution and project ownership.

There are many PPP schemes available to be used in toll road development ranging from the weakest form of PPP such as Design-Build (DB) up to the most advance one like Design-Build-Finance-Maintain-Operate (DBFO). However, based on Law No. 38/2004 on Road, there are three schemes which can be applied in Indonesia for developing toll road as follow: (1) Build-Operate-Transfer (BOT) scheme for economically and financially feasible project with private sector finance whole activities in a certain concession period before later transferring back the asset to government, (2) Design-Build-Lease (DBL) scheme for financially marginal project with government and private sector share responsibility in road construction and private sector run operation-maintenance activities, and (3) Design-Build-Operate (DBO) scheme for financially non-feasible project with government conduct construction and private sector holds the right to conduct operation-maintenance activities in return for lease payment to the government.

In general, by the inclusion of these schemes above in Law No.38/2004 it creates clarity and certainty in terms of how project should be designed and arranged as PPP. However, it is also a fact that the presence of these schemes is actually quite limited in order to give sufficient option to the government in designing toll road PPP project since there are other potential schemes which can be accommodated by the law to achieve successful PPP especially DBFO as mentioned above. In this case, old culture and paradigm among MPW officers which seem to prefer traditional direct provision approach towards infrastructure development is a major obstacle.

Government support

The necessity of government support is a fact within toll road development realm in Indonesia. On one side, we should consider the strategic importance of road infrastructure in development which leads to the urgency of putting high priority on road development. Economic growth target of 6-8% set up by government is unlikely able to be realized without sufficient infrastructure development, especially road. On

the other side, we should be aware of the fact that government fiscal capacity is limited to realize this purpose. Therefore toll road development stands as alternative for public provision of road infrastructure.

Although ideally PPP is applied in a project that is both economically and financially feasible, however, there are cases where toll road projects being offered to private sector are categorized as financially marginal and financially non-feasible. Since profit is the main interest of private sector they will not be interested in such projects, as can be seen in many cases where unattractive projects are left without any investor interested. Therefore the logical consequence of this situation is that government must provide support to the private sector in order to make these projects attractive to them. Without this support government target of accomplishing mega projects such as Trans-Java Toll Road and Tanjung Priok Access will likely be failed since many of the sections are not financially feasible. Government support is also applied in other countries and being recognized as one of the instrument needed for toll road development. However its application should be carefully considered especially in relation to: (1) its impact on state fiscal security and (2) the necessity to give the right incentive to private sector for creating value for money.

Related to previous conclusion on PPP scheme arrangement, based on Law No. 38/2004, the provision of government support in Indonesia is implemented by means of capital grant in two schemes: DBL and DBO. This is actually quite limited compare to the schemes provided by Presidential Regulation No. 67/2005 which consist of capital grant, minimum revenue guarantee, full debt service guarantee, revenue right to other infrastructure facility, tax honeymoon/holiday and operating subsidy. In this case the use of capital grant to provide government support can be seen as vulnerable from two directions: (1) it creates fiscal insecurity for the government due to the need for huge budget spending prior to project operation, and (2) it does not provide enough incentive to private sector for creating value for money. This is especially obvious if we compare capital grant with operating subsidy (or service payment). However, at least up to present, the use of capital grant can be considered as beneficiary from these following angles: (1) it is simple in nature therefore easy to manage, and (2) it is suitable with the existing regulatory framework. Simple evaluation method on six combination schemes based on capital grant and operating subsidy (service payment) results in the preference for operating subsidy in the form of DBFO with service payment based on four criteria: (1) public fund requirement, (2) private sector development, (3) legal and policy issues and (4) uncertainty in process.

Related to fiscal capacity of government, the application of capital grant also creates more dependency on ODA loan because of two reasons: (1) government does not have enough budget to provide government support therefore they have to seek for ODA loan in order to realize the project, and (2) low interest rate of ODA loan makes it interesting and competitive as an alternative for long term investment. Although sounds logical at a glance, the establishment of ODA loan cannot be seen as an ideal source of project financing in the long run since it contradicts government policy of limiting and controlling foreign loans and financial dependency to other countries.

Project finance

The success of a PPP project is highly influenced by whether a fine project financing activities can be arranged for that particular project. Since most private operator will not use their own fund to finance all project activities, project financing will be one of the key success factors to a project.

One of the most important criteria for choosing the right type of project financing is its financial cost. To gain economic and financial efficiency it is important to use financial source with the lowest financial cost. There are at least four types of financial source with different level of financial cost among them: government's budget, ODA loan, government's bond and commercial bank. In theory, government's budget posses the lowest financial cost, however, its availability is often in doubt considering government's fiscal limitation. In Indonesia, due to similar problem government choose to use ODA loan to finance toll road project which need government support since this type of loan delivers project financing with relatively low financial cost (about 0.4% for JBIC/JICA loan).

Financial cost is so important that it can influence overall project financial feasibility. Therefore finding a financial source with low financial cost is very important for PPP project. Current situation in Indonesia, however, has not been able to provide low-cost project financing through commercial bank. This is actually more related to macroeconomic issues since interest rate is the reflection of overall risk rating of a country. More effort is needed to ensure that private sector in Indonesia has sufficient opportunity and access toward low-cost project financing.

5.2 Recommendation

Based on above conclusion, this study produces several recommendations as included in the following description below.

Policy and regulatory framework

The effectiveness and efficiency of toll road development should be improved by the presence of solid policy and regulatory framework. Related to institutional arrangement, although the current organizational structure within MPW can be considered as sufficient for the time being, however considering asymmetric functions between DGH and BPJT that occasionally occur in their operation it requires MPW to revise or at least sharpening the distinction between the tasks and functions of these two units. Even though in general the tasks and function between DGH and BPJT are already distinguished within existing regulations, however at operational level it should be made clearer for example by the use of socialization or workshop.

The implementation of toll road policy and planning should be improved by means of making closer coordination with other related policies or institutions. In addition, capacity building in preparing PPP project is highly crucial in Indonesia (for example capacity and skill to prepare FS report for PPP project). This can be done by establishing more education and training programs either internally or externally.

PPP scheme arrangement

The current PPP schemes available for toll road development in Indonesia are generally limited to three schemes of BOT, DBL and DBO within Law No. 38/2004. This situation should be changed by allowing other scheme of PPP to be adopted especially the more advance ones such as DBFO. This will provide more option to government on how to arrange PPP in toll road development and also more added value since this complex scheme in theory will bring greater efficiency at project level.

Government support

For the time being and probably also in the future, the need for government support is inevitable for developing toll road in Indonesia. Based on this fact, better arrangement should be done for providing support to private sector. The existing type of support in form of capital grant at least should be accompanied with other type of support especially operating subsidy (service payment). Furthermore, this change should be instituted within Law No 38/2004 by adopting other types of government supports as included within Presidential Regulation No. 67/2005 which beside consist of capital grant and operating subsidy, is also consist of minimum revenue guarantee, full debt service guarantee, revenue right to other infrastructure facility, tax honeymoon/holiday.

Following above point, better policy and regulation should be made in order to improve government support application in toll road development. It is urgent to synchronize Law No. 38/2004 and Presidential Regulation No. 67/2005 in order to make these two regulations more applicable as guideline for toll road development. More importantly, both should accommodate more various government support schemes which can be used based on many project situation in Indonesia.

Other measure to minimize the need for government support can be done by evaluating several factors which influence project feasibility. For example, it can be done by tight control on these following project components: design and construction cost (minimized through application of DBFO scheme), land acquisition (minimized through application of better land pricing system for infrastructure development which use current value of land as basis for determining land price), creating high enough toll rate to make cost recovery possible (not popular politically) and any other possible measure.

Project finance

To improve investment climate in Indonesia, government should seek for policy for lowering interest rate which will result in more competitive financial cost. This is important for business in general, but especially for toll road as a type of investment which last for quite long period. Direct solution for this problem can be achieved by creating financial source with low interest rate and long term investment scheme which basically can be designed upon insurance and pension fund. It will be better if government budget for giving support is used for creating infrastructure fund rather than to be used as construction cost.

5.3 Direction for Further Research

Recommended further research on this topic may focus on several areas around implementation of PPP in toll road development projects as follow:

- Evaluation of the roles of policy and regulation to create conducive investment climate in toll road development, especially related to the presence of financially marginal and financially non-feasible project.
- Evaluation of support scheme by the use of financial modeling to obtain concrete knowledge and information on how each available scheme performs in financial terms and how support can be minimized in any situation.
- Identification and arrangement of type of financial sources which can provide accessible and affordable project financing.

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ANNEX 1

LIST OF KEY RESPONDENTS

No	Name	Position	Organization
Government			
1	Herry Trisaputra Zuna	Head of Sub Directorate Toll Road and Highways Development	MPW
2	Max Antameng	Head of Sub Directorate General Planning	MPW
3	Dedy Gunawan	Toll Road Policy Analyst	MPW
4	Nonviani Mawardi	Head of PMU JICA	MPW
5	Singgih Karyawan	Project Manager, Tanjung Priok Access Road Project	MPW
6	Sena I. Soerono	Policy Analyst on PPP in infrastructure	Bappenas
7	Efi Novara	PMU PPITA	CMEA
8	Nobuyuki Tsuneoka	Road Policy Advisor	JICA
Private Sector			
9	Park Chul Bae	Senior Manager	KEC (Persero)
10	Truly Nawangsasi	Manager	PT JM (Persero)
Experts			
11	Nobuhiro Mori	Expert	JICA consultant
12	Geert Engelsman	Expert	Rebel Group

ANNEX 2

LIST OF QUESTIONS FOR INTERVIEW

Government

1. How is the current progress of toll road development in Indonesia?
2. What are the policy agenda of toll road development in Indonesia?
3. What are the policies regarding specific subjects as follows: (i) Policy and planning; (ii) Transaction; and (iii) Construction and concession
4. What are the policies regarding financially non-feasible project?
5. What are the policies regarding government support?
6. What are the strategies and efforts of the government to make financially non-feasible projects become more market friendly?
7. How are the plan and arrangement for Tanjung Priok Access Toll Road Project?

Private Sector

1. What is the general perception towards investment climate in Indonesia?
2. What are the opportunities in toll road investment?
3. What are the problems in PPP in toll road related to these specific subjects: (i) Policy and planning; (ii) Transaction; and (iii) Construction and concession
4. What is the perception towards investment opportunities in a financially non-feasible project such as Tanjung Priok Access Road?
5. What kind of policy changes required in order to invest in such project?

PPP Experts

1. What is the general perception towards current progress of toll road development in Indonesia?
2. What are the opportunities and problem for future investment, related to these specific subjects: (i) Policy and planning; (ii) Transaction; and (iii) Construction and concession
3. What is the perception towards investment opportunities in a financially non-feasible project such as Tanjung Priok Access Road?
4. What kind of government support should be given to the private investor to make the project more attractive? What are the weaknesses of the current scheme?
5. What kind of policy changes needed for developing financially non-feasible projects in the future?

Interviews were done during field work using open-ended questions. These lists only include main questions which were used to initiate discussion with respondents within interview. In practice, interviews conducted during field work were developed into prolonged discussion with respective respondents.

ANNEX 3

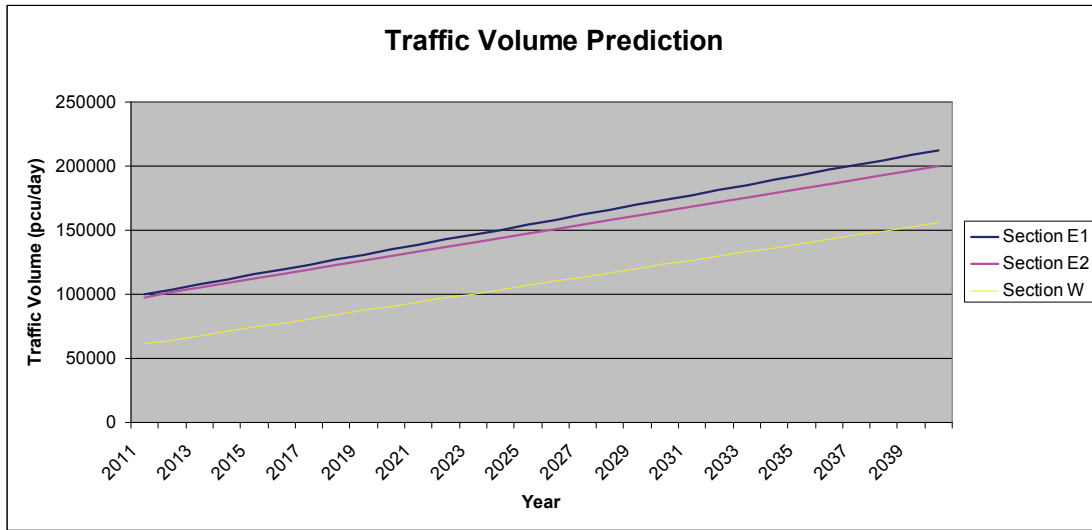
TRAFFIC VOLUME PREDICTION (PCU/DAY) IN TANJUNG PRIOK ACCESS PROJECT

a. Traffic volume prediction table

Section	Year															
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Tanjung Priok Access E1	0	99800	103689	107578	111467	115356	119244	123133	127022	130911	134800	138689	142578	146467	150356	154244
Tanjung Priok Access E2	0	97800	101333	104867	108400	111933	115467	119000	122533	126067	129600	133133	136667	140200	143733	147267
Tanjung Priok Access W	0	61200	64467	67733	71000	74267	77533	80800	84067	87333	90600	93867	97133	100400	103667	106933

Section	Year														
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Tanjung Priok Access E1	158133	162022	165911	169800	173689	177578	181467	185356	189244	193133	197022	200911	204800	208689	212578
Tanjung Priok Access E2	150800	154333	157867	161400	164933	168467	172000	175533	179067	182600	186133	189667	193200	196733	200267
Tanjung Priok Access W	110200	113467	116733	120000	123267	126533	129800	133067	136333	139600	142867	146133	149400	152667	155933

b. Traffic volume prediction graph



ANNEX 4

NPV & IRR CALCULATION OF TANJUNG PRIOK ACCES PROJECT

a. NPV and IRR Table (1/3)

Project Cash Flow (x IDR million)	2010	2011	2012	2013	2014	2015	2016	2017	2018
Land acquisition cost	891,800.00								
Relocation of utilities cost	692,800.00								
Design, construction and supervision cost	4,233,000.00								
Annual operation and maintenance cost (+inflation)	0.00	12,638.18	13,154.41	15,651.51	16,242.54	19,272.76	19,949.42	23,614.82	24,389.53
Periodic maintenance cost (+inflation)	0.00	0.00	0.00	0.00	0.00	57,818.27	0.00	0.00	0.00
Toll revenue E1 (+ inflation), length (km) = 3.40	0.00	84,958.94	88,269.52	104,850.06	108,640.34	128,721.82	133,061.32	157,310.19	162,278.48
Toll revenue E2 (+ inflation), length (km) = 4.60	0.00	112,640.95	116,710.46	138,280.99	142,940.17	168,986.50	174,320.80	205,687.12	211,794.36
Toll revenue W (+ inflation), length (km) = 3.60	0.00	55,163.72	58,108.19	69,899.19	73,270.31	87,746.78	91,606.38	109,298.99	113,717.85
Depreciation	0.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00
Operation profit before tax	0.00	240,125.44	249,933.77	297,378.73	308,608.29	308,364.08	379,039.07	448,681.49	463,401.15
Taxable income	0.00	99,025.44	108,833.77	156,278.73	167,508.29	167,264.08	237,939.07	307,581.49	322,301.15
Tax	0.00	29,707.63	32,650.13	46,883.62	50,252.49	50,179.22	71,381.72	92,274.45	96,690.34
Operation profit after tax	0.00	69,317.81	76,183.64	109,395.11	117,255.80	117,084.86	166,557.35	215,307.04	225,610.80
Depreciation add-back	0.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00
Operating Cash Flow (CF1)	0.00	210,417.81	217,283.64	250,495.11	258,355.80	258,184.86	307,657.35	356,407.04	366,710.80
Capital Cash Flow (CF2)	-5,817,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Cash Flow	-5,817,600.00	210,417.81	217,283.64	250,495.11	258,355.80	258,184.86	307,657.35	356,407.04	366,710.80
NPV (per year)	-5,817,600.00	184,577.02	167,192.70	169,077.06	152,967.37	134,093.12	140,164.55	142,433.56	128,553.79
Total NPV	-2,817,710.18								

Legend	Revenue
	Expenditure

c. NPV and IRR Table (3/3)

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	88,858.56	90,856.19	106,308.35	108,595.45	126,949.43	129,567.93	151,340.24	154,338.16	180,134.07	183,566.39
	0.00	0.00	0.00	0.00	380,848.29	0.00	0.00	0.00	0.00	550,699.16
	584,982.30	597,793.20	699,080.63	713,747.83	833,962.37	850,754.84	993,254.93	1,012,480.63	1,181,200.59	1,203,212.10
	750,839.31	766,587.03	895,695.05	913,724.62	1,066,765.36	1,087,407.40	1,268,605.82	1,292,238.89	1,506,541.82	1,533,599.33
	441,349.50	452,743.66	531,391.40	544,436.58	638,260.87	653,196.29	764,944.01	782,043.58	914,938.99	934,516.28
	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00
	1,688,312.55	1,726,267.70	2,019,858.73	2,063,313.57	2,031,190.87	2,461,790.61	2,875,464.51	2,932,424.95	3,422,547.33	2,937,062.17
	1,547,212.55	1,585,167.70	1,878,758.73	1,922,213.57	1,890,090.87	2,320,690.61	2,734,364.51	2,791,324.95	3,281,447.33	2,795,962.17
	464,163.77	475,550.31	563,627.62	576,664.07	567,027.26	696,207.18	820,309.35	837,397.48	984,434.20	838,788.65
	1,083,048.79	1,109,617.39	1,315,131.11	1,345,549.50	1,323,063.61	1,624,483.43	1,914,055.16	1,953,927.46	2,297,013.13	1,957,173.52
	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00	141,100.00
	1,224,148.79	1,250,717.39	1,456,231.11	1,486,649.50	1,464,163.61	1,765,583.43	2,055,155.16	2,095,027.46	2,438,113.13	2,098,273.52
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1,224,148.79	1,250,717.39	1,456,231.11	1,486,649.50	1,464,163.61	1,765,583.43	2,055,155.16	2,095,027.46	2,438,113.13	2,098,273.52
	78,132.61	70,024.89	71,518.55	64,046.02	55,330.98	58,527.79	59,760.42	53,438.45	54,552.31	41,182.87

	Revenue
	Expenditure

d. NPV and IRR Graph

