

Chapter 5

Infrastructure Development in Indonesia

Haryo Aswicahyono

Centre for Strategic and International Studies

Deni Friawan

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Haryo Aswicahyono and Deni friawan

1. INTRODUCTION

Indonesia is the largest archipelagic country in the world and the world's fourth most populous country. The area, which covers around 1,919,440 square kilometers, consists of five main islands and about 30 small archipelagoes, totaling about 17,508 islands, with a population of over 234 million people. Java Island, which is home to about 70 percent of Indonesia, is the most densely populated area in Indonesia, with about 945 people per square kilometer. In contrast, the most densely populated Outer Islands have only 90 people or fewer per square kilometer.

After experiencing a severe economic crisis in 1997, the Indonesian economy has, in many ways, relatively recovered from the East Asia financial crisis. By 2006, the economy has grown at 6-6.5 percent per year while inflation has been kept at single digit. Indonesia's estimated Gross Domestic Product (GDP) for 2006 was around US\$ 364.5 billion, with a per capita GDP, PPP (constant international price US\$) of about US\$ 3,900 (World Development Indicator, 2007).

Low investment in the past several years after the economic crisis have been one of the important factors in explaining such low economic growth. Several studies have revealed that the inadequate infrastructure was a major obstacle to recovering the

investment climate, lowered business confidence and eventually limited growth.

In fact, the infrastructure condition in Indonesia has been in crisis in the last ten years. The road conditions are either severely congested or poorly maintained. Indonesia's teledensity still lags behind that of its neighbors. Electricity load shedding is also occurring in Java and Bali while severe power shortages are experienced in other main islands. The percentage of the population with access to piped water has actually fallen while water quality and regularity of service delivery are also declining.

This study attempts to: provide an assessment of the state of infrastructure development in Indonesia, outline some important issues and challenges in infrastructure development in Indonesia, and offer policy recommendations to address those issues and challenges.

The rest of this paper is organized as follows. Section 2 reveals the current status of infrastructure development in Indonesia. In this section, several major infrastructure indicators are shown to reveal the infrastructure's sectoral conditions and challenges. Moreover, this section also discusses the current policy status in infrastructure development in Indonesia. In Section 3, the infrastructure development plans in Indonesia are reviewed while Section 4 reveals several existing issues in infrastructure sector in Indonesia. Lastly, in Section 5, some potential policy recommendations are offered.

2. THE CURRENT STATUS OF INFRASTRUCTURE DEVELOPMENT IN INDONESIA: SECTORAL CONDITION AND CHALLENGES

2.1. Roads and railways

The access to road transport is deteriorating due to the insufficient facilities in the business districts and the lack of availability of road networks in the rural areas. At the national level, the growth of road network has not kept pace with the growth of the number of motor vehicles, creating severe traffic problems. Meanwhile, at the regional level (province, district, rural), the low network density as well as the unreliable and poor access to existing network has hindered the poverty reduction and growth in the isolated remote areas. The road quality is also uneven across country in Indonesia, ranging from relatively high condition of the national and provincial roads to poorly maintained sub-national roads.

Like in the road transport, the condition in the railways sector has also deteriorated in recent years, with available access only in Java and limited areas in Sumatra. The railways facilities are in poor condition. Many of the rails, bridges, signal and telecommunication system have exceeded their technical age limits. Compared to other transportation modes, the market share of railways in the transportation sector is very small.

2.2. Airports, sea-ports, and inland waterways

Although the air transportation in Indonesia, particularly the scheduled domestic air

transport, has recently significantly increased, the quality of air transportation facilities has lagged behind. Airports management in Indonesia has also remained below the required international standard of air transportation operation.

Generally, there are two kinds of ports in Indonesia, i.e: public ports and special ports. Public ports consist of commercial and non-commercial ports and are intended to provide service to the public. Most of the non-commercial ports, meanwhile, are designed to carry inter-island passengers and non-container cargoes.

Many non-commercial as well as commercial ports suffered loss recently although the commercial public ports, in particular, are defined by their ability to generate their own revenue. To cover their operational and maintenance cost, the government implements cross subsidy schemes among the commercial ports. Meanwhile, in the case of non-commercial ports, the government directly subsidizes these ports in order to ensure their public service role.

In Indonesia, as required by the Indonesian Shipping Law (UU.No.21/1992), the Indonesian Port Corporations (IPCs) have been granted authority to manage the operation of commercial ports. The IPCs are obligated to supply public services and generate revenues for the government. In order to maintain the financial sustainability of whole organizations and fulfill the obligation to the public, the IPCs are required to subsidize each other. Consequently, this environment creates a disincentive in advancing their performance. In addition, the monopoly power has aggravated the slow improvement.

Meanwhile, the tariff setting system is set by the IPCs, with evaluation from the Ministry of State-Owned Enterprises, Ministry of Transportation and Ministry of Finance, and approval from the Parliament. Such tariff setting mechanisms produced quite similar final tariffs across the IPCs' entire branch, especially for ports within the same IPC. However, these tariffs might not reflect efficiency because the lack of competition inside ports and the cross-subsidy system arranged by the government create a disincentive to improve IPC services.

These problems, i.e., cross subsidy, monopoly power/lack of competition, and the poor mechanism of tariff setting, have resulted in inefficiency in the Indonesia ports, hampered the port users, and created a high cost economy

2.3. Telecommunication

Up to this moment, fixed and mobile telecommunication business in Indonesia is dominated by few large operators. The high growth in wireless and fixed-wireless services has significantly increased the access to telecommunication in Indonesia. This is partly caused by the decrease in mobile telecommunication tariffs, lower price of handset, seemingly unceasing advancement of cellular technology and major investments. However, the fixed-line services have grown slowly, particularly given fixed-wireless substitution.

The rapid expansion of Indonesia's telecommunication sector has resulted in a significant increase in the industry's revenues and Indonesia's teledensity, albeit still

lagging behind its regional neighbors. Furthermore, although telecoms infrastructure coverage has increased, the access has not been distributed equally across country. In 2005, while the penetration rate in Metropolitan Jakarta (Jabotabek) region was the highest, around two thirds of the villages, particularly in eastern Indonesia, still had no access to telecommunication network.

In the same vein, although the competition among internet service providers in terms of price, quality of service and network coverage, and growth in the WiFi has increased recently, the access to internet services has also still lagged behind, with dial-up being the dominant means of access and access to broadband (cable, DSL) still very small. This limited internet access is associated with the lack of fixed-line, the low dispersal of personal computers, the extremely high (monopolistic) price of leased lines and international bandwidth, and the narrow coverage and inadequate capacity or limited bandwidth of terrestrial backbone infrastructure, especially in Eastern Indonesia.

It is estimated that the access in telecommunication services will improve in the mediumterm and the services provided will be more varied. In addition, it is expected that the future will witness an increasing demand for mobile voice and data services. As the cost/minute of 3G technology becomes lower and improvement in its additional broadband capabilities increases, it is estimated that the 3G services will play an important role in improving the development of the telecommunication sector in Indonesia.

2.4. Electricity

The power sector in Indonesia is a monopoly market, with Perusahaan Listrik Negara (PLN—National Electricity Company) as the sole supplier of electricity to the public and business. Although some private electricity operators exist, they are only allowed to sell their electricity services to the public through PLN. To carry out its duty as single producer, PLN has two wholly-owned subsidiaries for electric generation. The first is Indonesia Power which is built for commercial mission. The second is Pembangkitan Jawa Bali (PJB), which is established for social mission. In addition, PLN has also created 6 Strategic Business Units (SBUs). One of these SBUs is used as a transmission company (P3B) while the rest are utilized as distribution companies. Other retail operations are carried by retail business units.

As the economy began to recover, the power demand has risen, especially since 2000. Available system capacity, however, has grown in a slower pace to meet this increasing demand, resulting in low reserves with some power shortages across the country. This condition has created a concern on the reliability of power supply in the shortterm as load-shedding and blackout are frequently occurring, particularly in the islands outside the Java-Bali system. Moreover, the fuel subsidy reduction has also induced some ‘captive power’ producers to revert to utilizing power from PLN, which will further raise PLN’s demand growth.

Meanwhile, the electricity access in Indonesia is still low, with wide disparities across provinces and those outside Java-Bali lagging behind. There are over 70 million people

in Indonesia, mostly the poor, who still do not have access to electricity. To attain 95 to 98 percent electrification rate just in Java-Bali, where expanding the electricity access will mainly be within the existing supply and distribution network, is estimated to need about 13-15 years. Thus, if PLN (or its successor) continues connections at the present pace, it is estimated that Indonesia's overall electrification rate will not meet 100 percent in the near future.

2.5. Water and sanitation

Basically, the structure for water supply and its distribution in Indonesia can be described in terms of three fundamental different types of provision. They are utility provision, self provision and alternative provision. In practice, a combination of two or three provisions could happen in one household. This is to fulfill the persisting needs for water and to get the most efficient provision at a particular time.

In Indonesia, water utilities are managed by local governments through their public companies called Perusahaan Daerah Air Minum (PDAM). There are 307 PDAMs throughout the country. Many of these companies are still under financial loans from central government because of the lack of investment for developing and advancing their businesses.

Water services in every urban area in Indonesia are in crisis at the moment. Currently, there are about 85 million people living in the service areas of the water utilities, 35 percent of which are served. This means that government is facing a larger challenge to create better and more adequate water services in the coming years.

In the same vein, sanitation service is much worse than water supply service. Up to now, sanitation services are not managed by any formal institutional structure at the national level. There is no ministry or department responsible for sanitation policy or designated to lead a national sanitation campaign. Basically, local governments are just doing an action-reaction policy which means to create action after reactions over unsatisfied sanitation service arise.

Sanitation service is primarily provided by three groups: (a) utilities, (b) self provisioning from users, and (c) alternative service providers. Any city or village may have more than one type of these groups because of the different types of policy implemented by the local government. Moreover, local government financial capability will heavily influence the policy on sanitation service.

Currently, 73 percent of urban households are estimated to have on-site sanitation, mostly in the form of septic tanks. Unfortunately, many of these are not functioning effectively or are violating the conditions for healthy sanitation system.

Indonesia has one of the lowest rates of urban sewerage coverage in Asia. Only less than 10 cities have some form of network sewerage and these reach as few as 1.3 percent of the urban population or about 200,000 households. Due to the lack of formal (public or private) networks and infrastructure, household and small-scale operators provide the majority of service, including installation and removal.

3. RECENT INFRASTRUCTURE DEVELOPMENT INITIATIVES AND PLANS IN INDONESIA

Because the condition of infrastructure in Indonesia has been deteriorating since the financial crisis, the policy to improve infrastructure has been one of the priorities in the past few years. In order to revitalize the infrastructure conditions in Indonesia, the Government of Indonesia (GOI) has initiated some policy initiatives and plans for infrastructure development, including the introduction of several sectoral reform initiatives, the holding of infrastructure summits in 2005 and 2006, the launching of infrastructure packages, and the introduction of regulatory and institutional reforms meant to attract public-private partnership (PPP) in infrastructure.

Below is the detailed explanation of these policy measures.

3.1. Sectoral reform initiatives

Since the crisis, the GOI has taken a number of sectoral reform initiatives. In the electricity sector, the GOI issued a modern electricity law in 2002, prepared some implementing regulations, increased electricity tariffs, and established the Independent Power Producers.

In the oil and gas sector, the GOI passed a new oil and natural gas law to enhance downstream competition and market pricing. In the telecommunication sector, the GOI also adopted a new law in 1999 to encourage the competition in all market segments. Meanwhile, in the water sector, there has been significant progress in the

implementation of a debt work program for PDAMs.

Despite the importance of the reforms, however, the overall effect has been relatively limited. There are several reasons that hindered in making these reforms fully effective. First, the objectives of reforms are either not clear or not single, with no specification on what the main and secondary objectives are. Second, the supporting regulations and institutions are frequently unavailable, long delayed, or not carefully designed, resulting in ineffective reform or creating uncertainties. Third, the reform had to face some challenges and opposition from other institutions that have different ideological views and vested interests such as the incumbent SOE monopoly or local governments. Fourth, determining the appropriate pricing policies is always becoming a problem due to the conflict between ‘user pays’ principle and political reasons.

3.2. Medium Term Development Plan in infrastructure

Recently, the government has prepared the development plan for infrastructure in Indonesia for the period 2005-2009. The plan aims to improve the maintenance of water, transport, electricity, telecommunication, and housing facility; to optimize sources of infrastructure funding from national and local budgets as well as from the private sector. This plan comprises six main sectors: Water Resources, Transportation, Energy, Telecommunication, Housing and Electricity.

3.2.1. Water Resources

Government plans to complete the water infrastructure regulation according to the good

governance principles. This institutional reform should follow a principle of one integrated management and single consolidated planning to comprise a central as well as regional authority. Government also plans to provide and increase the water accommodation capacity used for clean water consumption and irrigation. Hence, the government also needs to seek ways to keep the sustainability of water resources.

3.2.2. Transportation

The government plans to improve the maintenance of transportation facilities, to develop the standard and quality of infrastructure, and to support the private sector participation in infrastructure provision and operation. In road network, government plans to increase the paved road network and toll roads and to support interregional transportation and distribution. In airport and sea port development, government plans to improve the management system and to implement the electronic data interchange system to all fields related to the port. It also plans to enhance the cooperation with international airlines and sea lines to ease the international mobility.

3.2.3. Energy

In energy, government focuses on seeking ways to preserve the energy sources and ensure their sustainability, tries to find sources of new alternative energy and ways of converting them into usable energy form for the people. Government also plans to reform the existing regulation to make it clearer and more comprehensive. Government likewise plans to be more active in attending international forums and to take a more significant role in the decision-making process on global energy issues.

3.2.4. Telecommunication

In telecommunications, government plans to focus on increasing the access to telecommunication services and on advancing the quality of infrastructure provision on telecom. National government also plans to develop a new form of cooperation involving the local government and private sector through Build, Operate and Transfer (BOT) schemes. In business competition, government plans to create a more competitive business environment by eliminating barriers to entry for new potential entrants. Finally, government also intends to complete and finalize the cyber law and other regulations related to freedom on information.

3.2.5. Housing

The government focuses on housing provision, particularly for the poor, and on schemes that affirm the security and tenure of land ownership.

3.2.6. Electricity

Government has set its priority to build a new power generator using local energy resources in order to provide more accessible electricity services, particularly for the people in remote areas. It also prepares a cross- subsidy mechanism in the electricity tariff for the poor people. Finally, the main challenges in the electricity sector are to increase the efficiency of the national electricity company and synchronize the central-local regulation in order to create a competitive investment climate.

3.3. Infrastructure Summits I and II

While the institution and regulation remained weak, the GOI initiated several attempts to encourage investment in the infrastructure sector. The first government initiative was the holding of an Infrastructure Summit to attract private investment participation and to recover the low rate of private investment experienced since the crisis. In this summit, the private investors were formally offered 91 infrastructure projects valued at more than US\$ 22 billion.

While this summit achieved great enthusiasm (oversubscribed) from domestic and foreign investors, the final result in terms of actual commitments was very disappointing. By the end of 2006, there were only six winning bidders announced and only one project has begun construction. It seems that the Coordinating Minister did not have a clear strategy regarding the 14 required regulations, risk guarantees, and pricing policies.

Given the lack of progress on the private- public partnership (PPP) attained in the first infrastructure summit, the GOI held a second infrastructure summit in November 2006 and resized back its list of critical infrastructure projects to 10 ‘model projects’ worth approximately US\$4.5 billion .

3.4. Infrastructure packages

In 2005, the GOI introduced infrastructure packages that consisted of action plans and deliverables to create a policy framework that included: (1), inter sectoral (cross

cutting) policy reform; (2), sectoral and corporation policy reform to create a competitive climate in infrastructure provision; (3), regulation to eliminate the monopolistic activities and to protect society and investor interest; and (4), task allocation for the minister/governor/head of the agency functioning as the policy maker and the SOEs as operator. The preparation of the packages involved technical departments of the National Planning Agency, Coordinating Ministry for the Economy and the National Land Agency.

This infrastructure package includes plans for continued progress on public- private partnerships, including a risk- sharing framework, improved coordination mechanisms and progress on sectoral issues in anticipation of an Infrastructure Summit.

To eliminate discriminatory practices and to separate policy-making, regulatory, and operational responsibilities, the government also introduced another “Infrastructure Policy Package” in February 2006. The packages reported 50 policy outputs (laws, regulations, policy papers, and reviews) achieved in 2005 and further expected 153 additional policy outputs to be achieved in 2006. Three remaining policies are to be implemented in the first quarter of 2007.

The infrastructure policy in 2006 covers four main areas: (1) cross-sectoral strategic policy framework; (2) sectoral policy; (3) regional government role; and (4) infrastructure project transactions. One of the crucial areas in infrastructure is its cross-sectoral issues, particularly related to the financing issues. Through these policy packages, the government aims to finalize the policy framework and regulation in

transferring the fund from capital market or non-bank financial institution to the allocation of infrastructure projects that financially qualified.

In 2007, the government issued a presidential instruction as a continuation of the policy packages in 2005 and 2006. The policy packages aim to accelerate the programs for the Development of the Real Sector and Empower Micro, Small and Medium Enterprises to help increase the growth of the Indonesian economy. Unfortunately, up to this date, only two out of 41 action plans have been successfully carried out as of June 2007. One of the implemented action plans is the acceleration of land provision for public interest aimed toward settling the land dispute for infrastructure provision faster. Another implemented action plan is the revision of the government regulation on task allocation of local and central government in infrastructure provision. Meanwhile, revision of the transportation law is still being discussed at the parliament.

3.5. Regulatory and institutional reform for PPP scheme

The government has taken significant measures in 2005-2006 to improve the environment for private sector participation in infrastructure. In November 2005, the government passed Presidential Regulation no. 67/2005 (Cooperation between the Government and Private Entities in the Provision of Infrastructure) which revoked the previous Public-Private Partnership (PPP) Law. PP no 67/2000 aims at reducing information asymmetries so that the technical and financial capabilities of the bidders can be more accurately measured and the technical and economic merits as well as the financial risks of projects can be clarified.

The new regulation provided for a transparent and accountable basis for PPP in infrastructure and required that the procurement of PPP concessions is done on a competitive and transparent basis. It requires government entities to observe due diligence and focus on the aspect of fiscal sustainability. One of the key provisions of the new PPP regulation deals with risk management. It sets out the general principle that project risks will be allocated between the government and investors on a case-by-case basis. The government would thus not provide blanket guarantees in order to avoid the moral hazard risk on the investor's side.

In May 2006, the government passed Ministry of Finance (MoF) Regulation no. 38/PMK/2006 on the Technical Directives for Controlling and Managing Risks of Infrastructure Development. Under this regulation, compensation may be granted by the government for three types of project risk: political risk, project performance risk, and demand risk.

In October 2005, the government established the Committee for the Management of Risks of Infrastructure Provision to help the Committee on Policy for the Acceleration of Infrastructure Development (KKPPI) in evaluating the case for the government to share project risks after fulfilling the affordability and transparency criteria. Related to the provision on government support to private infrastructure, the government plans to launch the Infrastructure Guarantee Fund by mid- 2007 to provide necessary financing to cover government guarantees that have been approved by the MoF.

Realizing the fact that many infrastructure projects involving the private sector have been stalled due to land acquisition delays, the government passed a regulation providing for the mechanism in acquiring land and the compensation to be given to owners of land needed for infrastructure development. The government also proposed to set up a land acquisition fund to be established as part of the State Budget. This fund would be used to compensate owners of land needed for infrastructure projects.

Despite the progress, a number of challenges to achieving major infrastructure investments with the support of the private sector remain to be solved such as the realignment of government functions to fully support the new PPP regime and the development of domestic capital markets to mobilize long-term domestic infrastructure funding sources. Overall, the government seems to depart from an ad hoc approach toward a more strategic vision and planning in infrastructure development.

4. IMPORTANT ISSUES IN INFRASTRUCTURE DEVELOPMENT IN INDONESIA: CROSS SECTORAL ISSUES

In addition to sectoral solutions, comprehensive cross- sectoral solutions are also needed to improve the infrastructure condition in Indonesia. These cross- sectoral issues are related to institutional problems, financing problems, pricing problems, and competition, corporatization and privatization problems. The next sections give a detailed discussion of these issues.

4.1. Institutional issues

Institutional settings in Indonesia have changed dramatically due to the decentralization process which was launched in 2001. As a result, an exceptionally broad range of functions were shifted from the central to local government. Under the laws, all public service delivery functions, except defense, foreign affairs, monetary and fiscal policies, trade affairs and legal system, have been devolved to the local governments.

In theory, decentralization can deliver efficiency gains since local government is supposed to better understand the needs of local demands (allocative efficiency) and be able to deliver them at lower costs (productive efficiency) by using local resources. In practice, however, these gains depend on the effective coordination among tiers of government (regional coordination) and accountability mechanisms.

Several unfinished items in Indonesia's decentralization agenda are unfortunately very much related to the above conditions. First, assignment of government functions remained unclear. Second, minimum standards of service for obligatory functions are still being formulated. And third, the new intergovernmental fiscal system has several shortcomings, to wit: (1) the system is highly unequal since inequalities of the past system were compounded by those resulting from natural resource sharing, (2) because the local revenue generation capacity of regional governments is relatively small¹, almost all regions remain highly dependent on central government transfers, thereby limiting local accountability and increasing fiscal risks to the central government, and (3) due to lack of strong revenue sources, some regions are imposing taxes and

¹ Around 90 percent of regional government spending financed through central government transfers.

levies that are inconsistent with prevailing laws and regulations. All these shortcomings have left many regions with very limited funds available for infrastructure provision after meeting their wage bills.

Despite the fact that the Government of Indonesia has clarified the unclear assignment of government functions with government regulation, the regulation still creates uncertainty as to which level of government is responsible for the provision of various services. The situation is exacerbated by the fact that some decentralization implementing regulations are inconsistent with others as well as with existing national sector regulations.

By transferring the bulk of functions and/or financial resources to the lowest tiers of local government (rural districts/kotas and kabupatens), decentralization in Indonesia has largely reduced the functions of middle-tier levels of government (provincial government). Provincial governments in Indonesia lack the hierarchical authority over rural districts and this lack of regional coordination already causes inefficiency in service provision. The missing middle-tier levels of government can jeopardize the benefits of decentralization in the presence of economies of scale or spillover benefits in infrastructure service provision².

At the national level, integration of planning and coordination of implementation poses great challenges since decentralization was launched. The power of Bappenas and the

² George E. Peterson and Elisa Mizzini, “Decentralizing Basic Infrastructure Services”

Coordinating Ministry of Economic Affairs, which used to play a key role in inter-agency coordination, has now been significantly diffused to the local government and the MoF³. As a result, no institution is responsible for strategic vision and planning.

To respond to the increased need for effective inter-agency coordination, the KKPPI was established to fulfill the coordinating role among line ministries. The KKPPI recommended the establishment of several sector-specific committees, all of which are meant to create an ideal institutional arrangement for a PPP framework.

However, as briefly mentioned above, in many sectors, these functions have not been fully unbundled⁴ in order to phase out the monopoly of SOEs in the provision of infrastructure services in these sectors. In some cases, line ministries still have policy making as well as regulatory responsibilities. In certain sectors, regulatory bodies are still performing the contracting function. In cases where regulatory bodies have been formed, they are still not perceived to be functionally independent.

While it is too early to measure overall impacts of decentralization on infrastructure performance in Indonesia, the World Bank (2003)⁵ has expressed concerns that

³ The 2003 State Finance Law The 2003 essentially shifted the national planning model—practiced during the New Order Government to medium-term expenditure framework model that emphasizes annual agency work programs and budgets not requiring Bappenas’s approval.

⁴ While in fact the Government has enacted new laws for toll roads, water supply and sanitation, the draft laws for ports, airports and railroads have been submitted to the parliament

⁵ World Bank, “Indonesia: Selected Fiscal Issues in a New Era”, Report 25437-IND, Washington DC, 2003

maintenance of some existing infrastructure projects has suffered a downturn due to unclear assignment of government functions and shortcomings in the intergovernmental fiscal transfer.

4.2. Financing issues

Fiscal space for infrastructure has been very limited in the last few years due to government's fiscal consolidation. Hence, significant infrastructure backlogs have emerged. Since 1997-98, public spending has declined and private investment has virtually been halted due to weaknesses in the investment climate. Conversely, the government is aiming to increase infrastructure investment spending from 20.5 percent of GDP (recorded in 2005) to 28.4 percent of GDP within five years (medium term) to achieve the goal of accelerating the annual GDP growth to 6.6 percent, considered to be the sustainable growth rate to boost job creation in Indonesia.

Therefore, the key challenge for the government is to invite domestic and foreign private sector investments as well as official development assistance to fill the financing gap. Currently, the World Bank estimated that only 20-25 percent of total investments (not limited to infrastructure sector) were contributed by private sector in Indonesia. The government attempts to stimulate private investment through a series of policy, institutional and regulatory reforms.

To attract private sector participation is a difficult task because it requires a number of enabling factors like creating proper incentive frameworks to encourage further private investment and empowering the judicial system and capital markets to bring better

corporate governance. In addition to these, the decentralization program launched in 2001 has created uncertainty about inter-jurisdictional responsibilities (see part 4.1. above).

4.3. Pricing issues

In the infrastructure sector, tariff is usually controlled by the government. This intervention usually takes the form of tariff control. There are many reasons for this tariff control. First, the government is frequently reluctant to increase tariffs to a level required for cost recovery although they may want to secure a certain level of service. Second, providing government subsidies to make up the difference may be banned by fiscal constraints. Third, vested interests of the groups who benefit from a lower price may also hinder government from raising the price.

An adequate tariff level is an important factor for sustaining infrastructure services because it is needed to maintain the financial feasibility of the providers of infrastructure services. In turn, this is important so that the providers are able to sustain the quality of the infrastructure services delivery to the consumer at the most efficient manner. Consequently, the service providers are required to be able to recover their cost. A service provider can attain cost recovery through three ways, namely: through user charges by charging those who use the service, through general tax revenues or through international donor funds. The cost recovery charges can be coursed through the consumers (via user charges) and domestic or international tax payers (via subsidies).

In order to secure the financial feasibility of infrastructure services, the implementation of the “user pays” principle that requires the consumer or tax payers to pay at the minimum tariff for operation and maintenance is crucially needed. If this principle fails to be applied, it is possible that the service providers will reduce their maintenance and/or expansion, which will eventually lead to low access and deteriorating service quality. Since the user charges are a main source of infrastructure financing, the failure of government to set the cost-reflective tariff, particularly during high inflation period, will produce underinvestment, thereby leading to a deteriorating infrastructure performance.

Authority to set tariffs is typically vested with the President and is entirely discretionary while sector departments commonly combine the roles of policy-maker, regulator and shareholder representative. The GOI has long been maintaining the level of tariff below the level needed to cover the maintenance cost or support new investment. Meanwhile, the sharp depreciation of the Rupiah in 1997-98 and the subsequent increase in inflation raised the cost structure of infrastructure services. Although there have been several attempts to adjust the tariff, the tariff adjustments have often been either too little or postponed. Fear of social unrest and its political consequences have prevented the GOI to bring tariff up to its recovery cost level.

Consequently, as explained above, since the crisis, the public investment in infrastructure in Indonesia has declined and the quality of infrastructure services has deteriorated, with the water and electricity sectors being in the most troubled situation. The current low tariff, especially in PDAM and PLN, is not only inadequate to fund

operational and maintenance costs but also undermines the financial position. This eventually restricts the financing of the network expansion.

Meanwhile, the private sector will not be interested in providing infrastructure services unless it can be confident that its revenues will exceed its costs. In order to mobilize investments from the private sector, the GOI has been forced to deal with the sensitive issues of tariff. However, tariff increases will often be opposed by many consumers. As a consequence and due to political reasons, the GOI is usually reluctant to increase the tariff, either by prices scheduled or tariff postponed. It has subsequently led to concerns among existing and potential investors regarding government's commitment toward financial feasibility in infrastructure. Subsequently, this leads to a low level of private investment in infrastructure, and thus, to further deterioration of the access to and quality of infrastructure services.

While maintaining below-cost tariff is originally aimed to protect the poor people, it is actually not the appropriate policy. Ironically, the low tariff has resulted in poor access to infrastructure facilities and in low quality of the infrastructure services. Eventually, it is the poor people, who are in need of proper infrastructure to help reduce poverty, who suffer from these inadequacies. To make the poor people have a chance to benefit from infrastructure services, the GOI may provide well-targeted and financially sustainable subsidies for the poor.

4.4. Competition, corporatization, and privatization issues

Vertical and horizontal integrated state monopolies under ministerial control are usually found in the case of network utilities. Due to the economic as well as social importance of infrastructure and the fear of abuse of private monopoly, the government could not fully trust the market mechanism to control these services.

Moreover, the Indonesian Constitution states that the State has the authority to control every productive activity that affects the lives of the general public. This statement was long interpreted to mean that the public sector has exclusive right to provide the infrastructure services. The State-owned enterprises (SOEs) have been granted extensive monopoly power by law; thereupon, the provision for economic regulation has been given little attention.

Consequently, the government agency usually has been granted full control over every aspect of a utility. Nevertheless, lack of competition and regular political intervention have caused low productivity, declining fixed facilities and equipment, poor service quality, revenue shortage and inadequate investment so that in the end, these lead to infrastructure deficit and hinder economic growth.

These conditions have induced the government to invite private participation in enhancing the efficiency, promoting innovation, and improving the service quality. Private entities are believed to be superior in terms of financial, technical, and managerial resources over state agencies in the rapidly changing markets and

technologies of network utilities. However, a series of financial crises, corporate scandals, and electricity blackouts have required more comprehensive institutional reform, involving a combination of competitive restructuring, corporatization, privatization as well as regulation. In this wide-ranging reform, harmonizing the role of private and public sectors is an essential part of every infrastructure reform program.

As a result, inefficient, unresponsive, corrupt and heavily dependent on government for their financing have become common characteristics among many state-owned enterprises. Since sector departments have often considered the SOEs as under their authority, SOEs have often been exploited by them in terms of budget support and jobs for the senior staff.

To enhance the SOEs' performance, the GOI has, since the early 1980s, attempted to commercialize, corporatize, and privatize the organization and operation of public infrastructure. The reforms have also been advanced in the form of unbundling some national and regional monopolies,

Moreover, to support the reform, the GOI has also divided the responsibilities for sector policy formulation, regulation and SOE ownership. This has eventually led to the establishment of a Ministry of State Enterprise (MOSE). As a consequence, the sector ministries' ownership on SOEs or their shareholder functions was transferred to the MOSE. This change, to some extent, has improved the corporate governance as well as corporate cultures in SOEs.

5. POLICY IMPLICATION

5.1. Sectoral recommendation

5.1.1. Roads and railways

In order to ensure the sufficient maintenance and extension of road networks, the central government can arrange and provide fiscal incentives to provinces and district government. This can be made, for instance, by setting a prerequisite on sufficient maintenance level within regional governments for central government co-financing of provincial and district roads network.

The GOI should build appropriate project parameters consisting of procedural arrangement for land acquisition, toll-rate escalation, and specific project risks. These clear project parameters are required to prevent the conflict over the form and level of government support that hindered private participation in the development of toll-road network

The PSO system, particularly in form of low tariff, in railways sector has burdened the financial condition of PT Kereta Api Indonesia (PT KAI). In order to tackle this problem, the government should either proportionally reduce public sector obligation (PSO) required by the government or sufficiently cover the cost of PT KAI in providing PSO services.

5.1.2. Airports, sea-ports, and inland waterways

Like in other infrastructure sectors, privatization in the ports sector has been implemented gradually and partially. The privatization in the ports sector has been applied particularly in ports with high domestic and international trade activities and only imposed to several services.

This privatization scheme should be extended further to the other services provided at the ports. In addition, this kind of privatization should not be only applied to a provider that has good financial condition but also to those that could enhance the competitiveness of the port, utilize modern management and technology, and guarantee the transfer of knowledge to domestic providers. A direct joint arrangement and management between local government and private sector, which is derived from the public-private-partnership framework, may become an alternative form of privatization scheme for the improvement of ports services in Indonesia.

In addition, the government should also consider to proportionally reduce public sector obligation (PSO) required by the government and to abolish the cross-subsidy scheme obligation among IPCs.

5.1.3. Telecommunication

While the private investors may be unwilling to invest in remote and sparsely populated regions, the government should take the responsibility to provide the needed infrastructure. This can be done under the universal service obligation (USO) scheme.

Under this scheme, telecommunication companies will be invited to submit bids for village telecommunication projects and the company that asked for the least subsidy principle will get the project. In order to prevent poor quality and low access of telecommunication services, the government is required to arrange the criteria of technology that has be fulfilled by the bidder and the criteria regarding the proportion of households that should get access to telecommunication service in each village.

5.1.4. Electricity

While the vast amount required to meet the growth of electricity demand will remain to be carried out by the government, the fundamental principles of least-cost expansion should still be followed. In the case of fuel-mix decision, for example, in order to lead the fuel-mix decision to be based on its actual economic costs, the GOI is suggested to eliminate the distortion created by the current subsidies for oil and the different pricing for export and domestic gas.

The current tariffs should also be adjusted upwards and their structure should be reviewed to meet the actual cost of electricity delivery since the current subsidies are very inefficient as they lead to an unnecessary electricity consumption that tend to benefit the rich people. Moreover, the GOI should also abolish the on going government transfer to recompense for the difference between increased fuel prices and unchanged tariff revenue of the PLN. Furthermore, the GOI should also develop an appropriate plan for an orderly transition since the political cost and economic impact of dramatic changes in the domestic price are very high. Lastly, the subsidies should be allocated

for the network expansion instead of for consumption, and a different approach for every area should also be created as the PLN's cost varies for each region.

5.1.5. Water and sanitation

Decentralization has granted the sub-national government greater access to additional financial resources for infrastructure. This should provide local governments the chance to improve the maintenance of and investment spending for infrastructure. However, as the local governments take the central role in the improvement of infrastructure, including that of water and sanitation services, there should be actions to upgrade their capacities in order to match this responsibility. In this case, the central government can take a significant role in coordinating a national strategy and offering incentives for local governments.

In addition, a mechanism of fiscal incentives that rewards sub-national officers for the improvement in reforming their PDAMs and that gives a stronger signal regarding the national importance of water and sanitation should be developed by the central government. Initially, the incentive scheme should be focused on improving the financial position and operational performance of PDAMs. As the PDAM performance advances, the central incentive scheme could shift to extending the household network connection.

To support these schemes, the central government should continuously force the PDAM to provide reliable data. Furthermore, in order to improve the PDAM, its audited

accounts and physical indicators should be made available publicly through the internet so that they can be used for policy analysis and increased public awareness. The timely provision of these data by local governments can also be used as a prerequisite for involvement in the national incentives schemes.

5.2. Cross-cutting recommendations

5.2.1. Institution

Creating a sound and clear regulation is a necessary requirement to attract private sector involvement in infrastructure development programs since it can introduce economic efficiency, encourage innovation and provide incentives for the expansion of the infrastructure network. In addition, establishing a credible and independent regulatory institution is also important. In order to do so, the GOI is expected to grant the regulator with separate legal power, provide sufficient funding for the regulated industry and secure their positions through fixed-term tenure.

While decentralization has significantly altered the ways in which Indonesia is governed, further actions are needed to achieve the decentralization's ultimate goals. The GOI should reevaluate its role and the organization of each sectoral ministry as well as reorganize the arrangements for policy coordination and strategic planning. Moreover, the GOI should also (a) create a clear definition of the responsibilities of each level of government, (b) advance the financial transfer mechanism, (c) promote effective inter-sub- national cooperation, (d) upgrade the capacity of sub- national institutions, and (e) avoid imposition of improper taxes and levies.

5.2.2. Financing

To attract private investment in Indonesia, the GOI should establish a mechanism for defining and determining the various investment risks and develop a methodology to help decide which projects are suitable to carry out. During the development stage of the methodology, the MoF should be involved in order to ensure that the investment project is financially feasible and that appropriate measures to address potential risks are in place.

In the meantime, while it takes time to mobilize private sector investment, the GOI should also give larger attention to increasing public sector investment so that Indonesia's immediate infrastructure needs can be attained. Because of the vast amount of investment needed to develop infrastructure facilities, the private sector should be involved to carry the financing burden. However, due to the large amounts of money needed in infrastructure development, the private sector can not be expected to immediately prepare such projects. Thus, increased public sector investment is urgently needed to meet the immediate infrastructure needs.

The GOI should also provide substantial support to the private investment. This is important because even where private investment is able to be mobilized, most private infrastructure investment will require government support, including the land acquisition, operational or capital subsidies, or risk guarantee. However, when the government support is given, it is also important to make sure that the resources are utilized effectively and the risks are shared properly between government and private

investors.

Parallel to increasing the volume of infrastructure investment, the government should also enhance the effectiveness and efficiency of its spending. This can be done by creating a better public management. While the GOI has established a committee of government ministers -- the KKPPPI -- in 2005, this institution should be directed to lead the improvement of policy framework for increasing investments in the sector.

The GOI should take further action to deal with corruption in public infrastructure projects. As suggested by Olken (2006), these efforts can be in the form of advanced risk-focusing of physical audits, increased transparency of the procurement process, sharper sanctions for firms and officials found guilty of corruption, and revised staff incentives.

5.2.3. Pricing

It is important to implement a carefully planned set of tariff reforms. The need for tariff reform should be clearly articulated to consumers in terms of the social consequences and distributional impacts. The new set of tariffs should follow the “user pay” principle.

5.2.4. Competition, corporatization and privatization

The government policies to promote competition, corporatization, and privatization of infrastructure have produced considerable progress in the performance of SOEs in infrastructure. Therefore, these efforts should continuously be consolidated and

extended.

The GOI should direct the market segmentation in the transportation sector in accordance with every transportation mode of competitiveness. The GOI should make sure that it does not protect a transportation mode that is not efficient. The privatization scheme is a useful means of improving enterprise performance but infrastructure reforms in this regard need to be carefully designed and implemented. The objectives of privatization should be clearly defined and then articulated to consumers in an effort to 'socialize' the reform measures. It is also desirable that any restructuring and rehabilitation needed to enable more effective competition along with adequate regulatory arrangements be instituted prior to privatizing SOEs.