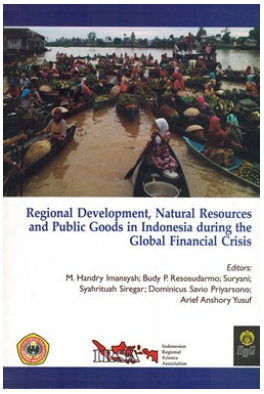
May 1, 2013

Regional Development, Natural Resources and Public Goods in Indonesia during the Global Financial Crisis



Release Date:	May 2013
Editor(s):	M. Handry Imansyah, Budy P. Resosudarmo, Suryani, Syahrituah Siregar, D.S. Priyarsono, Arief A. Yusuf
ISBN:	978-979-456-531-5
Publisher:	University of Indonesia Press (UI-Press)
Series:	IRSA Book Series on Regional Development No. 11
Price:	SOLD OUT

The general theme of this 11th IRSA Book is “Regional Development, Natural Resources and Public Goods in Indonesia during the Global Financial Crisis”. The main goal in choosing this general topic is to examine the dynamics of

regional development, exploitation of natural resources and attitudes toward public goods in Indonesia during and after the 2008/2009 global financial crisis. The book is divided into 5 parts: Global Financial Crisis, Regional Development, Poverty, Natural Resources and Public Goods

Table of Contents

11. Can REDD+ Work under the Dichotomy of Conservation and Economic Objectives?: A Preliminary Analysis from Indonesia, by **Ida Aju Pradnja Resosudarmo, Sofi Mardiah, Nugroho Adi Utomo** (*download*)

Part V. Public Goods

12. Water and Sanitation for Indonesian Children: Progress and Challenges?, by **Vita Febriany, Widjajanti Isdijoso and Nila Warda** (*download*)
13. Social Capital to Strengthen Collective Action in Environmental Protection: Preliminary Analysis in Indonesia, by **Alin Halimatussadiah, Budy P. Resosudarmo, Diah Widyawati** (*download*)

This entry was posted in Publications.

« 10th World Congress of the RSAI, Bangkok

Thesis Publication Grant – HDCA »

admin

View more posts from this author

Leave a Reply

Your email address will not be published. Required fields are marked *

Comment

Name *

Email *

Website

POST COMMENT

This site uses Akismet to reduce spam. Learn how your comment data is processed.

IRSA SECRETARIAT

IRSA Indonesia
Secretariat
co/ Dr. Arief Anshory Yusuf
Jl. Cimandiri No. 6
Bandung - 40115
West Java - INDONESIA

CONTACT US

- **Phone/Fax:** +62 22 420 4510
- **Email**: info@irsa-indonesia.org

Chapter 4
RE-STRENGTHENING THE ROLE OF RAILWAYS FOR INTER-REGIONAL TRANSPORTATION

Miming Miharja, Sheryta Arsallia

INTRODUCTION

Indonesia is an archipelagic country with an area of 9.8 million km^2 and a population of 237.56 million (Census 2010). With a high number of population and a growth rate of 1.49% per year, it is not surprising that the generation of trips in Indonesia is very high. It can be seen from the results of the National O-D survey in 2001 by the Department of Transportation, the figure shows 3.8 billion trips of passenger per year to travel between counties, which include the dimension of land, sea, and air. The same thing happened with the transportation of goods. The figure shows 2.4 billion tons per year for all three dimensions and at the level of inter-district (not including the internal district or city volume). An enormous amount is currently still dominated by land transportation to the percentage of 99% to 97% for passengers and goods (Land Transport Masterplan 2005-2025).

Those data prove that land transportation is the most dominant mode in Indonesia transportation compared to other transport modes, such as air transport and sea transport. Land transportation itself is divided into road transport and rail transport. Road transportation uses bus, *angkot*, *ojeg*, private cars, private motorcycle, and others. Meanwhile, rail transportation uses train. Nowadays, the modal split of road transportation, especially private cars and motorcycle, is very much higher compared to rail transportation. The results of the

Imansyah, M.H., B.P. Resosudarmo, Suryani, S. Siregar, D.S. Priyarsono and A.A. Yusuf (eds.) (2013), *Regional Development, Natural Resources and Public Goods in Indonesia during the Global Financial Crisis*. IRSA Book Series on Regional Development No. 11. Jakarta: UI Press.

National O-D survey in 2001 shows that road modes dominate about 80-90% of all trips in Java and Sumatra, while the train has only about 10.5% mode share in Java (Land Transport Masterplan, 2005-2025). Currently, the mode share of railway for passenger transport is only 7.3%. It is relatively much lower compared to road transport share which is 84.13%.

As for the transportation of goods it only reaches ±0.6% of total national freight transport. The transportation of goods is dominated by sea transport amounting to 87% and by road transport 9%. Inadequate availability of railway facilities has caused the unpopularity of railway mode share. Railway history in Indonesia started in the Dutch colonial period. In 1864, the Dutch private company built the first railway line in Indonesia. The rail construction grew fast and it did not only concentrate in Java, but up to Sumatra and Sulawesi. Unfortunately, in the Japan colonial period, some tracks in Sulawesi, Sumatra, and several cross branches in Java were demolished. Rail lines that reached 6,811 km in 1939, had been reduced by about 900 km in 1950. Based on the data from the Railway Directorate in 2009, the length of rail located in Indonesia reaches 6,797 km, but only 4,675 km are in operation. Infrastructure is not only diminished, but also left untreated. The length of rail that had worn out and disabled in Java and Sumatra has reached 540 km and has not been replaced. Conditions of operated locomotive were very apprehensive. About 82% of existing locomotives in 2008 are aged between 16-30 years. These conditions affect the operation of railways in Indonesia, which lowers the competitiveness of rail with other transport modes.

A very clear difference occurs in the development of road transport in Indonesia. From the Central Statistics Agency (BPS), in 2006 the total length of roads in Indonesia is 393,794 km, whereas in the year 2010 is 487,314 km. It shows that there is an addition of 23.75% in this period. In addition, the length of operated toll road in Indonesia will increase by 950 km. It means that it will be 1,710 km

by the year of 2014, whereas until December 2011 the total length of operated highways is 760 km. Moreover, viewed from the increasing number of road vehicles, it is proven that the Indonesians idolize the road transport modes, especially for their daily movements. In 2010, there are 8,891,041 of passenger cars, 2,250,109 of busses, 4,687,789 of trucks, and 61,078,188 of motorcycles (BPS, 2010). Those numbers show that there are growth rates of 47.32% on passenger cars, 66.67% on the buses, 37.92% on the trucks, and 89.34% on the motorcycles compared to 2006.

From those facts, it seems that the government policy more pro-road infrastructure rather than rail infrastructure, either in the form of toll roads or non-toll roads constructions. The most obvious example is the competitiveness of both toll and railway in the Bandung-Jakarta trip. The existence of the Cipularang highway eventually shut down Parahyangan train route. The policy of Trans-Java toll road development also shows the government concern towards road transport. In addition, the fuel used by railway goods transport is a nonsubsidized-price fuel oil, while the truck goods transport obtains the subsidized-price of fuel oil. This resulted in the loss of PT KAI (*Kereta Api Indonesia*/Indonesian Railways) because many of their users move to the goods truck service.

In addition, the same trend can also be seen in the Government budgeting. In 2010, the government prepared IDR 16 trillion for the road sector, while the railways sector earns only IDR 3.7 trillion. Compared to the budget allocated for the previous year, the funds in 2012 for Railway Directorate have increased amounting to IDR 8.9 trillion. Yet this amount is lower compared to the funds allocated for Toll-Road Directorate, which was IDR 40.87 trillion. According to Transportation Society Indonesia (MTI), the funds provided by the Government are not sufficient to optimize the role of railways as the backbone of transportation in Indonesia.

This chapter reviews some railways policies in micro and macro

perspectives. Besides analyzing the railway policies, some policies in other land transportation modes which have influenced the condition of railway are also analyzed. The results of the analysis are expected to contribute to policies that affect the delays in the development of Indonesia railway, cost-efficiency and environment problems arising from the railway condition, and to the strategies that can promote railway systems in Indonesia.

RAILWAY NETWORK IN INDONESIA

The railway network in Indonesia is located in Java and Sumatra and operated along the railway with the total length of 4,675 km consisting of 1,348 km in Sumatra and 3,327 km in Java. In other words, 71.12% of the rail networks are still operating on the island of Java (see Table 1).

Table 1. Railway Network in Indonesia

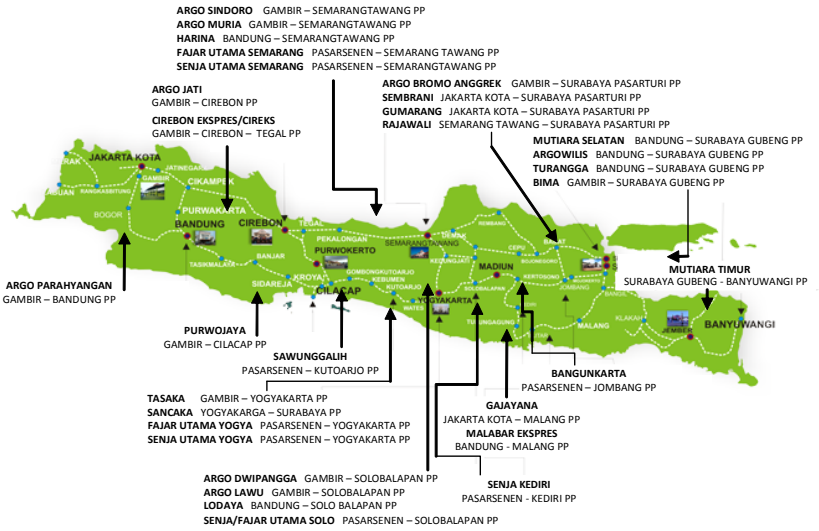
Railway Network that is currently in Java, Sumatra, and Madura: 6,797 km	Operated network: 4,675 km	Sumatra: 1,348 km	Main cross: 1,329 km Branch cross: 19 km	North Sumatra: 516 km West Sumatra: 169 km South Sumatra: 663 km
		Java: 3,327 km	Main cross: 2,966 km Branch cross: 361 km	West Java: 1,125 km Central Java: 1,130 km East Java: 1,072 km
	Unoperated network: 2,122 km	Sumatra: 512 km	North Sumatra: 428 km West Sumatra: 80 km South Sumatra: 4 km	West Java: 1,125 km Central Java: 1,130 km East Java and Madura: 615 km
		Java and Madura: 1,610 km		

Source: Suyono Dikun, 2010.

Currently, all the trains in Java and Sumatra are operated by PT KAI (*Kereta Api Indonesia*/Indonesian Railways). They consist of passenger trains and cargo/goods trains. Passenger train service is divided into various types including Executives class, Business class,

Mixed class (Executive, Business, and Economy), air-conditioned Economy class, Economy class, Local class, and KRL (*Kereta Rel Listrik*/ Electric Train). In Java, passenger trains serve 31 routes (see Figure 1). Yet, these routes do not include the route of the Jakarta Line Commuter KRL.

Figure 1. Railway Network and Passenger Train Routes in Java



Source: www.kereta-api.co.id, 2012.

In addition to the passenger trains, PT KAI also operates a number of cargo/goods trains. In Java, the cargo trains are comprised of trains transporting sand cargo (no longer operating), Coal cargo (Cigading–Bekasi), Fuel cargo (Operation Region/DAOP V-Purwokerto, DAOP VI-Yogyakarta, and DAOP VIII-Surabaya), Cement cargo (Karangtalun-Lempuyangan/Solo/Brumbung PP and Karangtalun-Cirebon-Prujakan PP), Container cargo (Gedebage-TanjungPriok and TanjungPriok-Kalimas), Antaboga BKE (Jakarta Gudang-Surabaya), Parcel cargo (Jakarta Gudang-Surabaya Pasar Turi), BHP cargo (North Cross: Jakarta-Surabaya via Semarang, Central Crossing: Jakarta-

Surabaya via Purwokerto, Southern Cross: Cross Bandung-Surabaya/ Malang, and East: Surabaya-Banyuwangi), and Steel Coil cargo (Cilegon-Kalimas).

In Sumatra, passenger trains have served three routes in the North and four routes in the South (see Figure 2). Meanwhile, the cargo trains in Sumatra consist of trains transporting Fertilizer cargo in Palembang (no longer operating), Coal cargo (Tanjungenim–Palembang/Lampung), Fuel cargo (Kisaran-Medan and Kertapati-Lahat), Cement cargo (Indarung-Bukitputus PP and Tiga Gajah - Kertapati PP), CPO, KPO, and Latex cargo (plant-Belawan), and Pulp cargo (Muaraenim-Tarahan). With regard to the number of facilities which are still concentrated in Java, this chapter is therefore focused on railways in Java.

Figure 2. Railway Network and Passenger Train Routes in Sumatra

Source: SuyonoDikun, 2010, processed.

IMPACTS OF TRANSPORTATION POLICIES ON INDONESIAN RAILWAYS

To determine the impacts of the Government transportation policies on the condition of the railways in Indonesia, the authors conducted a review on some of the existing transportation policies as follows:

Railway Policies

Involving Private Sector in Railway Operation

Indonesia railway management structure has undergone many changes. With the previous structure, railway was concentrated on public service, but at this time PT KAI, as a single railway operator, is aimed also to gain profits. This management structure is reinforced by the amended Law on Railways No. 13/1996 into Law No. 23/2007 which explicitly provides opportunity for private sector and local governments to be involved in the implementation of constructing railways infrastructures. This is contained in Law on Railways No. 23/2007 Article 23: (1) The implementation of public railway infrastructure as mentioned in Article 18 may be conducted by business entities as an implementer, either individually or through collaboration; and, (2) In the absence of business entities that operate public railway infrastructure, the Government and Local Government may carry out rail infrastructure. The Article 23 clearly provides an opportunity for private sector to be involved in the operation of the railway infrastructure. The same condition is given with regard to the implemention of public railway facilities, as contained in Article 31 which includes procurement, operation, maintenance, concession facilities, and infrastructure.

As the opportunity to be involved in the railway operation is given to the private sector, it is clear that the future of the Indonesia railway is aimed to be profitable. Moreover, PT KAI will no longer

be the single railway operator, since the implementation of railway-related facilities and infrastructure is already open to the private sector. This is done to prevent PT KAI from monopolizing the railway business in the country. Hence, the railway Indonesia is expected to become more professional in serving the needs of the community. Hence, PT KAI is expected to be able to compete with the private sector by means of improving its services.

To open opportunity for the private sector to be involved in railway operation could mean one step ahead made by the Government. However, it does not mean that the Government can leave their responsibility on railway. The Law on Railway has been published five years ago, but no significant developments have occurred yet in the railway Indonesia. This is because there remain a number of issues—such as, the ineffective PSO (Public Service Obligation) system, the unaccountable IMO (Infrastructure Maintenance and Operation) and TAC (Track Access Charge) system, the separation of state assets and the assets of PT KAI, technical cooperation between the Government and the private sector in terms of railway funding, and et cetera—that need to be addressed in order to create a condusive investment condition for the private sector.

Provision of Railway Infrastructure

As many as 90% of rail accidents occur due to train derailment and rolled. However, as indicated by the data, the main problem is attributed to the outdated railway technology. In the electric rail (*Kereta Rel Listrik*/KRL) of Depok, for instance some different components from rails, pads, carriages, locomotives, to signal equipments have been found non-uniformed. This is because the components were procured from eight different countries, for example some rail wagons from Japan and Germany, lathes from France, and locomotives from the United States. Those widely varied components of railway have

led to treatment difficulties, because not all of the exciting components specification are in accordance with the requirements and conditions of the rail network in Indonesia (INFID Research Team 2008).

The inability of PT KAI to determine appropriate and uniform components in order to facilitate railway technology treatments is due to the fact that the infrastructure and facilities provision is under the authority of the Department of Transportation. Although Law No. 23/2007 has mentioned, the procurement and maintenance of railway are the responsibility of the operator, in this case PT KAI, yet in reality this is mostly done by the Government through the Ministry of Transportation. According to the Government, this condition cannot be avoided because most of the railway infrastructure financing comes from foreign debt and the use of railway components derived from creditor countries (INFID Researcher Team 2008). For example, in 2004 Department of Transportation has imported 40 electric train wagons (*Kereta Rel Listrik*/KRL) from Germany. They are imported as a condition to be fulfilled by the Government of Indonesia to get the debt from Germany to finance infrastructure development and improvement of railway transportation facilities in the Greater Jakarta (*Kompas*, 30 October 2003).

Ineffective Public Service Obligation (PSO)

Since the change of Perumka to PT KAI at the end of 1998, the term PSO has beenapplied. Based on the joint decision between the Minister of Transport, Minister of Finance and National Planning Agency in 1999, the PSO for passenger rail transportation of economy class is subsidized by the Government. These subsidies are calculated based on the difference between the cost incurred for the operation of railway transportation in accordance with criteria and standards of efficient public services with passenger rail transportation costs which are set by the Government.

The PSO in the form of subsidies to the economy class of service is explicitly stated in Law No. 23/2007Article 153: (1) For the economy-class service, in terms of transportation tariff set by the Government or Regional Government as referred to in Article 152 paragraph (2a) is lower than the calculated tariff by the Railway Facilities Operator guidelines of railway infrastructure usage fee which set by the Government, the difference becomes the responsibility for the Government or the Local Government in the form of public service obligations (PSO).

At first, there is no problem in subsidizing the economy class train. However, the decision to increase the economy class tariff that has been delayed and postponed has disrupted the finance of PT KAI. The mechanism and preparation of PSO that is given to the economy class often detrimented PT KAI (Samosir 2012). This is indicated by the delayed PSO contracts which were executed in the mid of second quarter. In addition, the PSO calculation formula still use the formula which has been set out in the SKB of three Ministers in 1999 with some changes according to the Minister Regulation (*Peraturan Pemerintah*/PM) No. 34/2011 on Procedures and Determination of Tariff Calculation of Transport of Goods and People, published by the Ministry of Railway Transportation (Samosir 2012).

However, the implementation of these calculations has led to some problems because the guidelines only set the basic components tariffs in general. The procedure for the calculation is written in Article 9. Calculation of tariffs for the passenger railway transport as referred to in Article 6 is based on the following principles: Cost per unit is the cost of passenger kilometers which is obtained from the total cost of railway operation with load factor of 70%.

So far, the government provides subsidy by the use of occupancy rate which is 70%. For instance, PSO in economy class for KRL in Greater Jakarta is calculated by the difference of government determined-tariff reduced by the PT KAI proposed-tariff. Furthermore,

that difference is multiplied by the number of passenger carriage capacity of KRL with occupancy rate of 70%. But in reality, passengers of the KRL Economy class, especially during peak hours (morning and afternoon) exceed the available capacity and therefore the rest of them are obliged to sit on the roof of the train wagon. In granting PSO, it is not clear which passengers are eligible to receive the subsidy. Thus, even high-salaried passengers could gain access to get on KRL economy class and enjoy the subsidy.

Inaccountability of Track Access Charge(TAC) and The Infrastructure Maintenance and Operation (IMO) Systems

Since the era of the previous governments, the constructions of railway infrastructure and facilities have been handled by the Government themselves. Nonetheless, with the shift of some part of the Government assets to PT KAI, some of the infrastructure such as stations and some of the facilities, such as locomotives, carriages, etc. have been submitted to the PT KAI. In accordance with the principles of government asset management (Direktorat Pengelolaan Barang Milik/Kekayaan Negara, PBM/KN), the railway infrastructure, such as rail, signals, bridges, tunnels and etc. shall be maintained regularly and well operated in order to avoid any possible problems and disorders.

The provision is written in Law No. 23/2007 Section 154: (1) If the Railways Facilities Operator uses the railway infrastructure owned or operated by the Railways Infrastructure Operator, Railway Facilities Operator has to pay for the use of railway infrastructure; and, (2) The fee of railway infrastructure usage as mentioned in Paragraph (1) is calculated based on the guidelines of railway infrastructure usage fee set by the Government.

Infrastructure Maintenance and Operations (IMO) system deals with the cost that is determined by the Government for the maintenance and operation of rail infrastructure owned by the

Government to be charged to the railway operator, in this case, PT KAI. In addition, PT KAI is obliged to pay Track Access Charge (TAC), the fees charged to railway operators for using the country's infrastructure (roads, rails, signals, etc.). Therefore, the implementation of maintenance and operation work of the railway infrastructure is always stated in the contract of the IMO and TAC in the year specified.

Nonetheless, the application of IMO has not reached the optimum results in accordance with its purpose. The IMO that should basically be implemented by the Government through the Ministry of Transportation is in fact left to PT KAI to handle. In addition, the TAC was not subjected to the PT KAI (nett-off). This situation also raises its own problems because the calculation method of IMO is not transparent and is difficult to be justified. Until 2010, the IMO is conducted between Directorate of Railway and PT KAI. Since 2005, the IMO is calculated in the same way as the TAC, although in reality there is no financial transaction in the maintenance and operation of the Government assets.

Tabel 2. The TAC and IMO of PT KAI in Year 2000-2010

Year	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
IMO	316	489	589	567	569	624	746	824	859	910	1175
TAC	512	608	693	609	522	624	746	824	859	910	1175

Source: PT KAI, 2011

Prolonged settlement of IMO problem has resulted in the failed signing of PT KAI on the IMO contract in 2011. Thus, PT KAI implemented the treatment and maintenance based on their own priorities and budget. This failure has resulted in a backlog condition in which the longer the backlog condition the poorer the infrastructure maintenance and operation of government assests will be. As a result, it may even cause some worse damages and accidents on rail transport. The impact of the unavailability IMO funds can be identified

by railway accident in Petarukan Station, Pemalang, due to the interfered signal infrastructure. This issue was widely raised by international media. The New York Times (3 October 2010) concluded that accidents are common in the Indonesian transportation system, where more than a decade of under-investment it has resulted in creaking infrastructure. The Wall Street Journal (4 October 2010) mentions the crash underscored the country's continuing problems with inadequate-and-sometimes unsafe-transportation networks.

Other Transportation Modes-Related Policies

Government Investment

In railways operation, the Government's role as an investor is very important, because the Government as the owner of railway infrastructure is responsible for the IMO to be charged to the railway operator, namely PT KAI. In addition to these obligations, the railway condition needs enormous expense to catch up its development. Even the assistance of the private sector is expected to help the railway financing, it is estimated that within the next 10 years the role of private investment will only reach 10-20% of overall investment. Thus, the Government still has to bear 80-90% of investment needs and require to have a political commitment to develop the national railway (INFID Research Team 2008).

The Government's low investment in Indonesia railway can be seen from the Government budget in the highway sector in 2010 which reached IDR 16 trillion, while the budget allocated to the railways sector was only IDR 3.7 trillion. Although the funds obtained by Directorate Railways in 2012 have increased compared to the previous year, namely to IDR 8.9 trillion, the budgetn allocated for the Directorate of Toll-Road is greater, namely IDR 40.87 trillion.

Subsidized Fuel Oil for Road Transport Mode of Goods

Users of goods trains are now shifting to another land transport modes, such as trucks and containers. This condition occurs because of PT KAI is still using nonsubsidized-price fuel for the goods train, which is IDR 9,500. In addition, trucks and containers are allowed to use subsidized-price fuel at a price of IDR 4,300. As a result, the cost of using goods train service is more expensive compared to the trucks service. While a goods train can carry 30 to 60 containers in one trip, then it can reduce the number of containers and trucks on the road by 30-60.

In addition, the use of trucks and containers is one of the main causes of road damages. For example, the road along Pantura (*Pantai Utara*/North Coast of Java) has been severely damaged as it is most frequently travelled by heavy trucks. Besides, trucks also contribute to traffic congestion due to their low speed. Even worse, they generate an extremely high emission. Consummers preference to use the services offered by overland vehicles has led PT KAI to lose more than IDR 350 billion per year. The latter has to bear the use of non-subsidized fuel.

The causes of these conditions may stem from the Presidential Regulation (*Peraturan Presiden*/PerPres) No. 9/2006 on The Retail Price of Fuel Oil in The State. In this document, it is written that the subsidized premium fuel at the price of IDR 4,500 and Solar Oil IDR 4,300 can be consumed by: all forms of land transportation (motor vehicles, trains) which are used for public transport and, river, lake, and crossing transport (*Angkutan Sungai, Danau dan Penyeberangan*/ ASDP). In this case, goods train is not considered a public transport because of its function to transport goods as a variety of industrial purposes. However, inequality occurred because goods trucks and contrainers are allowed to purchase subsidized-price fuel.

Increasing Number of Private Vehicles

Currently, it has no doubt that private vehicle is the most flexible mode of transportation. This is mainly due to the easy way of obtaining the vehicle, the driving license, and fuel at an affordable price. This popular mode also has the ability to perform door to door movement of people and goods. Traffic conditions in major cities in Indonesia have been already saturated with the significant increasing number of private vehicles. This resulted in a longer travel time even for private vehicle. However, people still prefer to use it because of its flexibility. This condition could be solved, should there be a sufficient availability of public transportation.

Private vehicle is one of the major contributors to congestion, air pollution, fuel waste, respiratory diseases, and others. However, negative externalities are not accompanied by disincentive charged to users. In Jakarta there is a 3-in-1policy at certain times and lanes which are expected to suppress the level of congestion. However, in reality this is less effective because there are people who can be paid to increase the number of passengers in each car. This policy needs to be reconsidered and the Government should adopt policies in some developed countries which are effective to limit the private vehicle use, such as ERP (Electronic Road Pricing), limited age of vehicle ownership, and high parking fee in the downtown. Thus, it can be concluded that it is the existing policy on other land transport modes that have given impact on the decreasing number of rail users.

NEGATIVE IMPACTS OF THE RAILWAY DECLINE

Before the development in road infrastructure, rail is a superior mode of transportation. These conditions vary largely with the current conditions that make road transport modes, especially private vehicles, the most favoured choice to perform movement in Indonesia. These conditions led to unfavourable problems of traffic. In Jakarta,

congestion is a daily phenomenon. Survey in 2007 showed that in some main roads, 40% driving-time is a moving-time. The remainder, 60%, is the stoping-time (*Kompas* 2009). Causes of congestion are often attributed to the lack of road length.

Yet many studies have shown that increasing road capacity without disincentives for private vehicle users will potentially increase the rate of traffic growth. This phenomenon is commonly known as induced demand. This phenomenon can simply proven by the construction of new roads, underpass, or flyover in the city. At first, congestion can be reduced, but in a few months later this will be followed by the emergence of a higher volume of traffic. Several studies in developed countries show that the elasticity of travel demand to road capacity increase ranges between 0 and 1.

Thus, every time the road capacity increases by 1%, then it will also increase travel demand. In the long term, this can even exceed 1%. Nowadays, the number of road construction projects in Indonesia continues to grow, especially highways, which is followed by an increase in the number of private vehicles. This indicates that the induced demand has been formed. Congestion will certainly result in a number of serious problems, such as environmental, health, social, and economic problems. Wastage due to inefficient use of fuel is a very complex problem. Losses due to traffic congestion in Jakarta are estimated to reach IDR 9 trillion per year (Prasetyo 2004). Those costs are incurred for vehicle operating costs due to wasted fuel-consumed during the traffic jam. Some 47% of the population spends about 20% of their income for transportation costs and 16% of them spend about 30%. This could lead to the increasing number of poverty due to higher transportation costs and not all people can meet their needs of movement.

In addition, the higher the level of traffic congestion, the higher the wastage of the fuel will be. Moreover, referring to the current policy of fuel subsidy, it also leads to the futility of government

subsidies. Furthermore, time wasted, air pollution and noise, as well as increased levels of stress, can be detrimental to public health. Approximately 80% of air pollution in Jakarta is caused by vehicle exhaust emissions. The cost for healthcare caused by air pollution in Jakarta is IDR 100-450 million per year.

The problems of congestion are not only faced by Jakarta, but also some metropolitan cities and big cities such as Bandung and Yogyakarta. The congestion cost in Bandung has reached IDR 2-3 trillion per year (Tamin 2006). In addition, the emergence of respiratory diseases (ISPA) has increased health care costs. Moreover, congestion problems can affect the distribution of goods and business mobility. By accumulating the congestion losses from a number of cities in Indonesia, which is a mega city (Jakarta), 5 metropolitan cities (Bandung, Surabaya, Medan, Makassar and Semarang) and 20 big cities, it can be seen that Indonesia has lost IDR 26.5 trillion per year. This amount is 3 times bigger than the Government loan to the World Bank, which reached USD 0.9 billion or approximately IDR 9 trillion. Compared to the IDR 5 trillion budget allocated to the transport sector and the IDR 5 trillion to the road sector, the total budget is only one third of the cost of congestion that occurs.

STRATEGIES TO RE-STRENGTH THE ROLE OF RAILWAY

Here are some strategies that can be considered to re-strengthen the role of railways in Indonesia.

Support to The Financing of Private Sector

Separation of Infrastructure and Facilities Assets

Separation of railway infrastructure and facilities management is necessary to transform PT KAI to be strong and independent. To achieve this target, a change in the monopolistic railway operator to

multi-operator is needed to create competition between operators. In the transformation process, the government has an important role as the facilitator because most of the railways' existing assets are identified as the state assets. The separation of railway infrastructure and facilities is expected to encourage the emergence of private sector to operate Indonesia railway (multi-operator).

The Law on Railway also states that an institution which operates railway infrastructure is needed. Therefore, the Government needs to share the infrastructure maintenance and development tasks to other operators. Those tasks which are currently done by the Department of Transportation and PT KAI must be shared with other operators. While the task of testing and inspection of railway infrastructure and facilities must be conducted by regulatory agencies. This policy change is intended to provide a fair opportunity for private enterprise to deal with railway business (Dikun 2010).

The Private Sector Financing Scheme

Governments (central and local) need to encourage private contributions in the organization of the railways through a condition conducive to investment. Forms of government support can be realized through efforts able to eliminate investment barriers by means of regulatory and licensing mechanism in order to create a investment condition in the railway sector. In addition, private sector financing schemes on the railways should to be well defined.

In the 2005-2025 Master Plan of Railways, the Government and private partnership scheme (PPP, Public Private Partnership) is the most appropriate alternative to the implementation of public railway infrastructure. It is because in addition to requiring a large investment in a relatively long term, it also needs the Government involvement, especially related to the provision of public transport. Some models of the PPP scheme which can be used as an alternative are: Design

Bid Build, Private Contract, Design Build, Build-Operate Transfer (BOT), Long-Term Lease Agreement, the Design Build Finance Operate (DBFO), or Build-Own-Operate (BOO).

Procurement of Railway Facilities

Most of the railway components are imported, starting from the locomotive engines, rails, signaling equipments, to train carriages. Indonesia is not only dependent on the technology of other countries, but also becomes a country that accepts the disposal of used goods. In 2006, the Department of Transportation imported 40 or 160 sets of Japan KRL used-carriages. After a year earlier, PT KAI also imported 16 units of them (*Kompas*, 14 Maret & 12 Januari 2006).

Actually, Indonesia has a state-owned enterprise which has the competence and capacity to provide the facilities and infrastructure of railways, namely PT INKA. The product excellence of PT INKA had already achieved international acclaim with their products exported to Malaysia, Thailand, Australia, and Bangladesh.

Both the Department of Transportation and PT KAI state that it is cheaper to buy used-trains from Japan rather than buying them from PT INKA. According to Akhmad Sujadi, Head of Public Relations Division of Greater Jakarta, the average price of KRL from Japan is between IDR 800 million to 1 billion per carriage, while the price of a new one is IDR 10 billion per carriage. Those prices are not included with postage costs. While, the price offered by PT INKA is about IDR 11.523 billion per carriage (INFID Researcher Team 2008). In this case, the production of PT INKA (PT Industri Kereta Api) is still competitive. Moreover, the maintenance and treatment of old and used-trains can be costly.

Through the provision of railways by PT INKA, the multiplier effect of production activities may contribute greatly to the national economy. To produce railways facilities in Indonesia can indeed provide job opportunities and help boost the national economy.

Improvements to An Effective PSO (Public Service Obligation) System

The profit-oriented PT KAI actually may not be a problem, as long as the PSO are effectively given to the right people who really need them. Providing subsidies to passengers who deserve subsidized can be done by the Special Subsidy Card aimed for students, workers, pensioners, and the poor. To get subsidies there are some specific requirements that must be met by the passengers such as ID cards, student card, pensioners card, certificate of poverty, and certificate of salary. This method will allow the right targeted subsidy compared with the calculation of occupancy rate (Samosir 2012). Each station has to check subsidized and non-subsidized tickets electronically. Based on these data, it can be determined the right amount olf the real subsidy to be granted to PT KAI.

Improvements to An Accountable System of IMO and TAC

Funding for the maintenance, treatment, and development of railway infrastructure and facilities belonging to the Government or also called the IMO should be charged to the government. In 2011, there is an absence of the IMO contract. Thus, there is no fund available to maintain, treat, and develop the railway facilities and infrastructure. In addition, fee for the use of railway infrastructure or TAC must be charged to PT KAI as the user of the Government assets. However, the TAC is not allowed by the net-off with IMO. It should be charged based on the principle of the pricing theory (Samosir 2012). To support the accountable IMO and TAC systems, in the 2005–2025 Master Plan of National Railways, there is a major programme which is aimed to establish an institution dealing with the IMO, TAC, and PSO management.

Equity between Goods Transport Modes: The Road and The Rail

As a result of the ineffective fuel subsidy, PT KAI has experienced some losses. The railway goods subject to the price of industrial fuel oil, while the pickup trucks as its competitors are allowed to use the subsidized-price fuel oil. This condition has caused the cost of using trains to transport goods to be much higher than using trucks.

In December 2011 the employees of PT KAI sue the Government for allowing goods trains to use subsidized-price fuel. Since then, it has been decided that goods trains are allowed to use subsidized-price fuel of IDR 4,500 after the revision of Presidential Regulation No. 9/2006. This policy is a good start to change the goods transport from road to rail. In addition to the incentives in the railway use, there should be policies which apply disincentives to goods truck usage, such as road maintenance cost, congestion cost, pollution costs, and others.

Multimodal Public Transport

To compete with private vehicles which facilitate door to door movement of goods and people, there is a solution called an integrated system of public transport (multimode). This system combines the inter-modal public transport properly, efficiently and effectively so that people can quickly, cheaply, and conveniently move from between each public transport modes. Then, the system can be developed on the basis of Transit Oriented Development (TOD). This concept aims to create efficiencies that can be derived from the trip: the railway station or bus stop with a high frequency as the center, mixed land use, walkable transit stops, compact structure buildings, and so forth. Station as a transportation node that becomes a gathering place for people in the city centre is potential to become a center of business activity and will also improve the image of the railways and can be a source of new revenue that can be used for railway development. The need to develop the railways does not apply only to the major

infrastructure (stations), but also to other supporting infrastructure, particularly in order to improve access to the station andgive a sense of comfort to the railway users. This concept is already listed in the 2005-2025 Master Plan of National Railways. In addition, as stated in the Local Regulation Planning (*Rancangan Peraturan Daerah*/Raperda) the 2010–2030 RTRW (Rencana Tata Ruang Wilayah, *Regional Spatial Plan*) –it has been planned that in Jakarta there would be some TOD centers.

CONCLUSION

The results of the National O-D (Origin-Destination) survey in 2001 shows that road modes dominated about 80-90% of all trips in Java and Sumatra, while the train has only about 10.5% mode share in Java (Land Transport Masterplan for 2005-2025). Currently, the mode share of railway for passenger transport is only 7.3%. It is relatively much lower compared to road transport share which is 84.13%. As for the transportation of goods it only reaches ±0.6% of total national freight transport. The transportation of goods is dominated by sea transport amounting to 87% and road transport amounting to 9% (Railways Strategic Plan 2010-2014). Those facts show that people rely more on road transport modes rather than railway.

There are some policies on railway and other related transport modes which are affecting the condition of railway transport. The railway policies are about providing private sector an opportunity to be involved in railway business in which the investment condition is not yet condusive, provision of railway infrastructures and facilities still depends on the imported ones, the Public Service Obligation (PSO) remains ineffective, and the Track Access Charge (TAC) and the Infrastructure Maintenance and Operation (IMO) are not accountable.

In addition, the policies of other related transport mode are about the Government investment which is much more supporting the

road transport sector rather than the railway sector, the use of subsidized-price fuel oil for road goods transport and unsubsidized-price fuel oil for goods train, and the increasing number of private vehicle use which contribute to the traffic congestion and road damage.

To cope with such policies-affected conditions requires some correct strategies The strategies that are expected to contribute to the re-strengthen the role of railway transport in Indonesia may include among others: (1) supporting the private sector financing through the separation of infrastructure and facilities assets management; (2) creating the financing scheme for the private sector; (3) procuring railway facilities and infrastructure from PT INKA; (4) making the PSO system effective by ensuring that the subsidy is given to the right target through the effective ticketing system; (5) making the TAC and IMO system accountable; (6) creating equity between road goods transport and train goods transport from the allowance of subsidized-price fuel oil use; and, (7) planning a multimodal public transport system.

REFERENCE

Dikun, Suyono. 2010. *Perkereta-apian Indonesia Ke Depan.* Naskah Antara Menuju Rencana Induk Perkeretaapian Nasional, Indonesia Infrastructure Initiative-Australian Indonesia Partnership, Jakarta.

Direktorat Jenderal Perhubungan Darat. 2005. *Masterplan Transportasi Darat 2005-2025.* Departemen Perhubungan, Jakarta.

Direktorat Jenderal Perhubungan Darat. 2010. *Perhubungan Darat Dalam Angka 2010.* Departemen Perhubungan, Jakarta.

Direktorat Jenderal Perkeretaapian. 2010. *Rencana Induk Perkeretaapian Nasional 2010– 2030.* Departemen Perhubungan, Jakarta.

Direktorat Jenderat Perkeretaapian. 2010. *Rencana Strategis Perkeretaapian 2010–2014.* Direktorat Perhubungan, Jakarta.

Dunn, William N. 1981. *Public Policy Analysis.* Englewood Cliffs: Pearson Prentice Hall.

Kementrian Perhubungan. 2009. *Buku Informasi Transportasi 2009.* Departemen Perhubungan, Jakarta.

Kementrian Perhubungan. 2010. *Buku 1: Statistik Perhubungan 2010.* DepartemenPerhubungan, Jakarta.

Nikmah, Siti K. and Wijiyati, S. Valentina. 2008.' Proyek Efisiensi Perkeretaapian.' Working Paper 1, International NGO Forum on Indonesian Development (INFID), Jakarta.

Peraturan Menteri No. 32 Tahun 2011 tentang Tata Cara Perawatan Prasarana Kereta Api.

Peraturan Menteri No. 34 Tahun 2011 tentang Tata Cara Perhitungan dan Penetapan Tarif Angkutan Barang dan Orang dengan Kereta Api.

Peraturan Menteri No. 43 Tahun 2011 tentang Rencana Induk Perkeretaapian Nasional.

Peraturan Menteri No. 91 Tahun 2011 tentang Penyelenggaraan Perkeretaapian Khusus.

Peraturan Pemerintah No. 18 Tahun 1998 tentang Pengalihan Bentuk Perusahaan Umum (Perum) Kereta Api Menjadi Perusahaan Perseroan (Persero).

Peraturan Pemerintah No. 56 Tahun 2009 tentang Penyelenggaraan Perkeretaapian.

Peraturan Pemerintah No. 72 Tahun 2009 tentang Lalu Lintas dan Angkutan Kereta Api.

Peraturan Presiden No. 9 Tahun 2006 tentang Harga Jual Eceran Bahan Bakar Minyak dalam Negeri.

Samosir, Agunan. 2012. *ProspekPerkeretaapian: PSO-IMO-TAC-BMN-PSL.* Kementrian Keuangan, Jakarta.

Undang-Undang No. 23 Tahun 2007 tentang Perkeretaapian.

Undang-Undang No.19 Tahun 2003 tentang Badan Usaha Milik Negara.