INDONESIA

Impact Study on Transportation Projects in Jabotabek

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Third-party Evaluation Team
Hitoshi Ieda Professor University of Tokyo, School of Engineering, Department of Civil Engineering
Shoshi Mizokami Professor Kumamoto University, Faculty of Engineering, Department of Civil and Environmental Engineering
Tetsuo Kidokoro Associate Professor University of Tokyo, School of Engineering, Department of Urban Engineering
Seiji Iwakura Associate Professor Shibaura Institute of Technology, Faculty of Engineering, Department of Civil Engineering

1. Objectives

In 1981, JICA prepared the master plan based on the "Jakarta Metropolitan Railway Transportation Plan" and implemented the "Integrated Transport System Improvement Plan" in 1990 that placed buses as a "feeder service" for the railway. Moreover, since fiscal year of 2001, JICA has initiated an integrated transport master plan study of Jabotabek[1].

ODA loans have performed a significant role in the railway development of the Jabotabek Area with a noticeable population increase. Since the initiation of ODA loans, the number of projects has risen to 18, relating to the procurement of carriages; improvement of tracks; construction of communication facilities; electrification; carriage depots and maintenance factories; renovation of stations; automated signalization; double track modulation; and elevation of the Central Line etc. Thus, a large proportion of the funds procured for the Jabotabek area railway development projects are from ODA loans. It is believed that these ODA loan financed projects have made a large impact on the railway transportation and the socioeconomic activities of the local population and thus, the undertaking of impact evaluation is significant.

The primary objective of this evaluation is to assess the degree of achievement of project objectives in the master-plan resulting from 18 completed projects since 1977(Please refer to "Areas for Evaluation", "Summary of Projects for Evaluation"), and to undertake ex-post evaluations of those projects as per "DAC five criteria" (a)Relevance, b)Efficiency, c) Effectiveness, d) Impact and e) Sustainability), and to make recommendations for the improvement of the railway transport service, taking on-going integrated transport master plan study into consideration.

Jakarta Central Line

1 Jabotek is a composite name deriving from the initial letters of the city JAkarta, the BOgor prefecture, TAngerang prefecture and BEKasi prefecture and it is generically used to identify this region

2. Evaluation result

(1) From the Perspective of Relevance

1) The Relevance of the Fundamental Aims

The undertaking of urban development of large metropolitan zones, such as the Jabotabek Area, relying solely upon road transportation is impossible. The development of the commuter railway net-

Bekasi Line Commuting Scene

works is an important issue for a sound development policy. For this reason, this project with the aim of development of the commuter rail network can be said to have been highly relevant and farsighted from various perspectives, such as managing transportation, city development and environmental measures because increase in public transport role and alleviation of road transport was expected.

2) Strategic Relevance of Track-system Development

The aim of introduction of track-system into urban transportation should be highly evaluated. However, it is still premature to judge issues regarding whether, at the stage where there was no city rail transport, the development of a suburban network as in this project should have been prioritized or the development of a network in and around city center should have been prioritized.

3) Relevance from the Perspective of Poverty Alleviation

This project, through the utilization of individuals from the low-income groups, has increased employment opportunity in the city and the opportunity of housing with relatively cheap rent in the suburbs. For this reason, it is believed that it has a definite role in the enlargement of job opportunities and the improvement of living environment for the low-income groups. It can therefore be regarded as relevant from the perspective of poverty alleviation. On the other hand, it is difficult to verify in detail whether or not rail fares that are regulated at a low amount by the government have a connection with poverty relief.

4) Overall Consistency with the Metropolitan Development Plan

The overall Jabotabek railway planning can be said to be in line with the philosophy of decentralization of urban districts in the Jabotabek Metropolitan Development Plan (JMDP) prepared in the first half of the 1980's.

5) Consistency in Railway Development and Urban Planning

The Central Line of the city center is located slightly off the central axis of the developing city of Jakarta. For this reason, it is hard to say that the commuter demands along the line are extremely high. The utilization of the Central Line as a commuter route resulted from the consideration of a large number of factors such as the cost for wiring work modifications at Kota Station, and thus, from the view of commuter demand alone, there is a possibility that it was not necessarily a valid choice.

Bekasi Line The view in front of Jatinegara Station

6) The Absence of an Integrated City Transportation Planning

Normally, for suburban city railways to be able to produce adequate results, there is a need that an appropriate public transportation that supports the transfer within the city centre region and the planning for a feeder transport to suburban station should go together with development of the projects. For this to be realized, the comprehensive and effective city transportation masterplan that guarantees consistency between the Jabotabek Metropolitan Development Plan (JMDP) that has the function of land-use planning and individual railway network development was necessary. However, the Jabotabek Railway Project was undertaken without planning of the integrated goals.

7) Consistency with the Development Planning of the Railway Station Vicinity.

For the sound and effective development of city railways, the promotion of city development projects around the main stations is essential. Even for the Jabotabek Railway, although the plan for the subcenter surrounding Manggrai Station is being planned, it has not been realized at the time of evaluation.

(2) From the Perspective of Efficiency

1) The meaning of utilizing existing railways (1)

It is believed that the utilization of existing railway sites, railway facilities and equipment, greatly contributed to raising project efficiency through saving construction costs. However, it is believed that consideration also should have been made as to whether it was possible for existing routes to be organically integrated with, for example, as a part of a newly developed route along Sudirman Avenue.

2) The meaning of utilizing existing railways (2)

The employment of operators and workforce of the existing long-distance railway organization is a factor that makes evaluation difficult. The use of an organization and workforce with experience in rail transportation has a rational aspect. However, at the same time it is also true that the thought-processes required in the railway management of long-distance transportation are not necessarily the same as those required for a metropolitan city railway. Therefore it is necessary to reinforce the staff training systems.

3) Progress of projects and prioritization

The functional development, for example of double track modulation and electrification had been planned for completion in 1992, but in fact it has been greatly delayed. The elevation[2] of the Central Line was delayed for 34 months, and the greatest delay in the procurement of resources and review in the mid-term plans etc[3]., was a delay of 87 months, making the 18 projects delayed for 32 months on the average. The development of the Tangerang Line and the Serpong Line has been further delayed. The improvement of Kampung Bandan Station that was assumed to be used for the "racket operation" and the electrification project of the Western Line, were greatly affected due to such delay and there was practically no realization of effects, greatly reducing the efficiency of investments.

2 Applies to "13 Jabotabek Area Railway Project Phase V" in the "Summary of Projects Subject to Evaluation".
3 Applies to "6 Jakarta Metropolitan Transportation System Project III" in the "Summary of Projects Subject to Evaluation".

4) From the perspective of investment period and focalization

The 25 years that has been spent for the implementation of projects have shown no small problems considering the social environment into which they were placed, the delayed manifestation of investment effects, and the burgeoning cost of interest. From the perspective of efficiency, it is believed that a strategic project management should have been required in such a way that, for investment effects to be produced substantially in the short term, there was a need to limit railway routes and areas, thereby to focus on short term investments and accumulate such investments on step by step basis.

(3) From the Perspective of Effects

1) The realization level of a high frequency commuter train operation

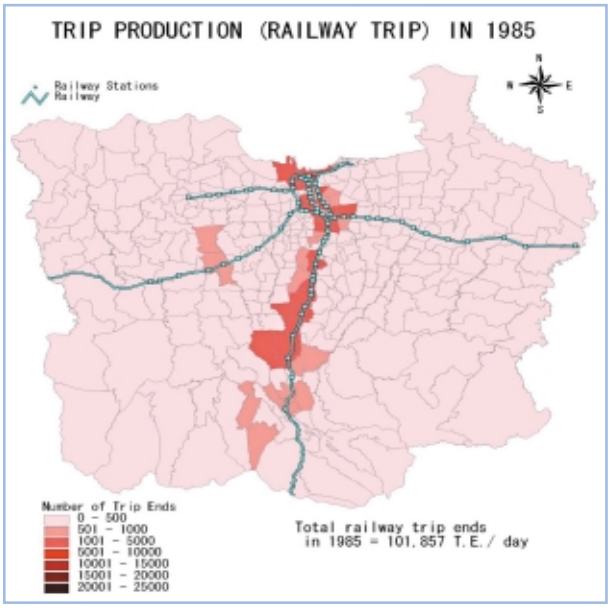
The number of trains operated on the Bogor Line in 2001 has increased by over 3 times compared with that in 1990, accounting for approximately 75% achievement rate compared to the target stipulated in the basic plans of 1985. As of 2001, the Bekasi Line has increased the number of trains by over twice compared with that of 1990 , and the steady strengthening of transportation ability can be valued. But at the same time, compared with the basic plan of 1985, the level of achievement has been stalled at around 70% .

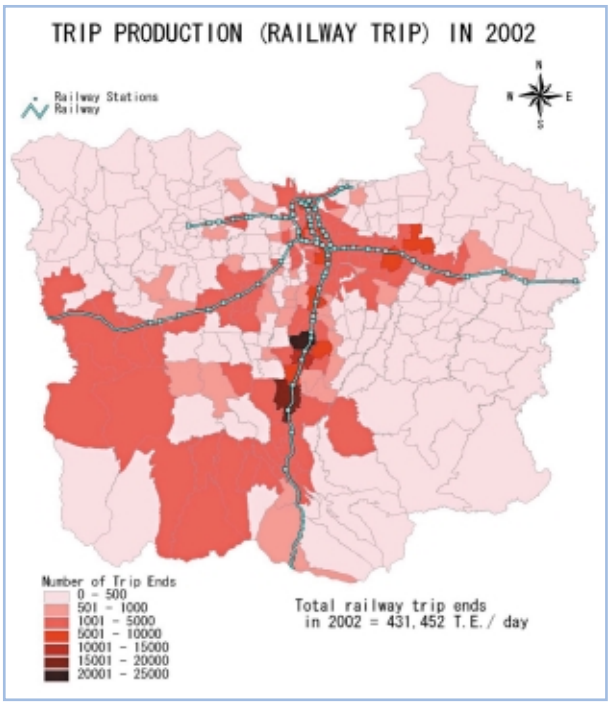
Inside Bogor Station

2) Evaluation of the commuter railway transportation record

Within the Jabotabek Railway Network, if the Bogor Line and Bekasi Line are assessed, both of which as city railways have high levels of development, the Bogor Line has approximately 80,000 passengers per day (single way), with approxi-

mately 85 train services per day (single way) and the Bekasi Line has approximately 30,000 passengers per day and approximately 30 train services per day (single way). As a means of comparison, regarding the all day demand and number of train operations (both as of 1999) of representative city railways of Japan, the Tokaido Line has 200,000 people/day (single way) and the number of train services is 206 trains per day (conversion to 8 car formation), the Keisei Dentetsu Line has 95,000 people and 200 services per day, while the Musashino Line has 86,000 people and 120 services per day. From such circumstances, the Bogor Line, Central Line and Bekasi Line, from the viewpoint of transportation volume as city railways, can be considered, at least, to be used appropriately and producing results. Moreover, the Eastern Line is also moderately operating services. However, the potential is only being partially realized.





3) The standards in service of commuter rail transportation

From the results of a social survey[4], the majority of inhabitants along these railways answered that the level of service has improved, for example, travel time, the punctuality, the frequency of services and safety. Therefore it can be considered that this project, which had within its target the improvement in services for commuters and the resulting modernization of rail transportation, has achieved certain results.

4) Issues regarding services, such as overcrowding within trains

The congestion levels during peak times on the Bogor Line, the Bekasi Line and the Central Line are too high, and it can only be said that the service levels are extremely low. The results of the social survey also show that requests for improvement in terms of alleviating the congestion in the economy class is the highest at 23%, and the requests are also applied to express trains at 18%. The main reasons for this are considered to be the situation that made it necessary for the limited capacity of railways to be shared with medium-long distance trains, the divergence from the targeted number of procured carriages (As of 2001, only 41% of the target could be achieved), and the poor-development of storage warehouses for rolling stocks. It can not be commented that the maintenance situation for rolling stocks and other standards in ser-

Passengers hanging onto the doors of a train

4 A questionnaire study was conducted on randomly selected inhabitants who lived along the railway lines, put together from a total of 600 valid answers.

vice are at a satisfactory level. Moreover, various strategies against dangerous activities from the perspective of commonsense, such as riding on the roof and clinging onto doors and windows, are being implemented.

5) The effects upon road traffic

Along the railway lines that were not financed by JBIC, such as the Tangerang Line and Serpong Line, although the highway network is relatively well maintained, the road traffic congestion is heavy. On the one hand, compared to the previous two lines, it is clear that the road congestion is smaller along the Depok Line and Bogor Line whose services were raised through JBIC finance. This is thought to have been due to the transportation capacity increase and the rise in service of both lines, which comparatively decreased the dependence on motor vehicles, suggesting the efficacy of this project from the overall viewpoint of city transportation. Moreover, the development of elevated railway has been appreciated at the local level, because they say that the elevation project has brought not only the direct effects of transport improvement but also the raising of image of the concerned region.

Central Line (Mangga Besar elevated station)

6) Economic effects of the project

As a result of the cost benefit analysis (period of calculation 1975 ~ 2027), the EIRR (Economic Internal Rate of Return) was estimated at approximately 15% (The B/C (Benefit Cost Ratio) was 1.4 at a discount rate of 12%). It can be therefore evaluated as being beneficial in a broad sense of economic effect. Although within the results of the benefit measurements, include the time reduction benefits for railway users (public transport users) and benefits of the smooth-running of the road transport resulting from changing modes and elevation, the benefits such as the reduction of railroad crossing accidents due to elevation of the Central Line have not been included in the calculation. Therefore if such benefits are taken into account, it can be anticipated that the EIRR will be somewhat larger. Yet, as it was necessary to spend more time for the completion of the aforementioned project, it goes without saying that the effects of the project were lessened due to the delay in the manifestation of economic effects from the perspective of urban policy, transportation policy and railway operational management.

7) The characteristic of those who enjoyed benefits

Around 60% of the benefits that occurred were those received by road users through the reduction in road traffic overload, and the remaining 40% of benefits were enjoyed by railway users. Thus, it can be stated that this project brings about a larger proportion of benefits outside railways.

(4) Evaluation from the Perspective of Impact

1) Effect of Improving Air Pollution

The reduction rate of the six motor exhaust gases such as carbon dioxide, nitrogen oxide and particulate matter etc. is estimated to be as follows: carbon dioxide 2.49%, carbon monoxide 0.87%, hydrocarbon 0.95%, nitrogen oxide 4.15%, sulfur oxide 6.91% and particulate matter 5.06%. By looking at the data in terms of percentage, the reduction effect is not necessarily very large. This can be interpreted in the following manner: Although it is called Jabotabek Railway Network, if one looks at the whole area of the metropolitan area, its length (150km) is not at all large (a third of the area of Seoul, a tenths of the Kyoto/Hanshin City Zone). Reflecting this situation, naturally, its percentage share in the total transport journeys within the whole regional area is extremely limited. Consequently the overall volume of transfer from motor vehicles can be considered to be limited from the perspective of the car traffic volume of the whole city. Taking into consideration the potential that the demand for Jabotabek railways will substitute increasing demand of motor vehicles to be expected according to the future economic development, the value of Jabotabek railways cannot so easily be judged at this present time.

2) Enlarging the strata of users

The low-income group were the targets of the transportation plan at the initial planning stage, however it should be noted that in recent years, due to the operation of express trains, the introduction of middle to high-income individuals was also successfully achieved. This was effective use of transportation improvement investments and thus it can be inferred that PT.KAI (Indonesia Railway Company) has been recognizing the Jabotabek Railway to be one of its profit sources, and there appears effects of alleviation of traffic jams resulting from the switch from motor vehicle usage, which could not have occurred by low-income individuals, and the accompanying environmental improvements.

3) The Burden of Road Traffic at Ground Level Section

The elevation of the Central Line is making noticeable effects upon road transportation and the environment. However, concerns are being expressed over traffic jams and accidents at the railroad crossings of the ground level on Bogor and Bekasi Lines as train operations increase.

(5) From the Perspective of Sustainability

1) Financial situation of the project

The FIRR (Financial Internal Rate of Returen) between 1975 and 2022 for the Bogor Line is estimated to be 13.6%, while the figure is 1.3% for the Bekasi Line and negative for the other lines. Particularly, NPV of the Central Line, which is negative, accounts for a share of over 50% of the entire project's NPV, which is also negative. This is due to the large sum of investments into the elevation of the Central Line. This is a very important issue in terms of operational management, and immediate countermeasures are necessary. As stated before, 60% of the economic benefits were enjoyed by those other than rail users. Especially, most of beneficiaries from the elevation of Central Line are road transport users. If these are taken into consideration, it is clear that one should not expect too much of the tariff revenue as a source for financial profit, and it is necessary to come up with the countermeasure at the expense of the beneficiaries.

2) Marketing and maintaining tariff revenues

Tariff policies are essential in order to secure revenue. Although the user of express trains that has been operational from 1999 only accounts for around 5%, it occupies a 34% share of the overall fare revenue. This suggests that the marketing target of this project should not only be set for low-income earners. Although the trend of opportune and solid marketing can be seen as in the case of introduction of express trains, business consciousness in terms of maximization of revenue cannot be said to be totally adequate. Furthermore, it is difficult to say that effective measures are being undertaken against free riders, which is said to be occupied a 30% share of overall users in year 2000.

Passengers not going through ticket gates

3) Maintenance and railway operational management

There have been incidents and accidents, the decrease in operational rate of rolling stocks, and the rise in the incidence of train service delays due to the lack of rolling stock parts and poor maintenance. Moreover, the blocked railway sections cannot be preserved due to the theft of signal parts such as coils and thus it has also become a factor in


A workshop lined with parts, of which the dates of manufacture are unknown.

decreasing transportation volume. For the project's sustainability and the ability to become independent, it can only be said that there are many problematic issues.

(4) Training of engineers

The privatized PT.KAI cut its full-time staff by 30%, as part of cost reduction from the period between1980 to 1998. Although operational management efficiency by rationalization is important, it may lead to the fall in operation and maintenance service levels and the rise in accidents if the numbers of engineers are reduced. A careful handling for the preservation of engineering standards, including the bolstering of human resource development of engineers, is necessary.

3. Issues and Recommendations for Securing Sustainability

(1) Aiming for Further Improvements in this Project

1) Improvements in railway operation patterns

As it has been often pointed out previously, the following are desired: a) The detachment of commuter trains from medium to long-distance railway on the Central Line. b) The implementation of rotary operations. However, these are only on the premise that the PT.KAI, as a privatized company, has a high awareness of business management, and it is believed that support from the Ministry of Communication and local governments is important.

2) Bolstering maintenance systems

Increasing reliability of railway operation, through the capacity building of maintenance, is a matter of great urgency. It is necessary to take sufficient care, so that the management rationalization accompanying privatization does not cause shortage of engineers leading to poor maintenance.

3) Support relating to maintenance matters

It is also believed that assistance from JBIC for maintenance equipment and parts is important. However, there are concerns that an endless supply of maintenance costs decreases the self-help effort incentives of recipient countries, and becomes obstacle to their independent development. Therefore, in this situation, there needs to be a rational and clear-cut rule and moderation.

4) Bolstering human resource development

For the sustainability of this project as well as the enhancement of independent development, the reevaluation of the education program should be undertaken rapidly and, in addition to the skill-training of general railway operations, excellent engineers and staffs with high caliber should be trained.

5) Capacity building in Marketing and Tariff strategy

Express trains are succeeding in finding out potential demand, however compared with express trains with the noticeable vacant seats during the same time-slot, there are numerous cases for the economy trains that passengers are left behind at stations. It is thought that one of the factors that leads to such problems is that the fares of express trains compared with that of the economy trains are extremely expensive by about 6 times, and that supply and demand is not being balanced. There is surely room for the revision in the operation ratio of express trains to economy trains during congestion periods and tariff levels.

Commuters (left) and express passenger (right) on the Bekasi Line,Jatinegara Station

6) Bolstering inner city public transportation

The bolstering of public transport services in the city center area is crucial even in terms of the overall transportation of Jakarta's entire metropolitan area and the Jabotabek Railway Project. The further development of inner city transportation can indeed be said to be an "Achilles" heel that affects the magnitude of the socio-economic effect of the Jabotabek railway in the entire city transportation.

Specifically, not only the promotion of the MRT (Mass Rapid Transit) system project, but also adequate cooperation adjustments with such inner city transportation policies, or the shuttle bus cooperation in the operational regions can be suggested. A strategic and serious assessment is strongly sought by looking back at the basics of integrated city transportation, without persisting fruitlessly on existing plans or policies relating to the Jabotabek Railway Project.

7) Promotion of developing the vicinities around station points

Moreover, the development and enlargement of the station square facility and city development projects such as the development of station vicinity commerce and the improvement of station facilities etc. are expected to greatly contribute to uncovering potential capacity of the project. Regarding the latter, active participation by railway operators is considered to be significant.

8) Bolstering feeder transportation to stations

The establishment of "Park & Ride" facilities at stations and the creation of a bus route centered on the station is desired. The inadequacy in the division of roles and agreement among the concerned organizations, such as the Ministry of Communication, local governments and PT.KAI, can be raised as one of the causes behind this issue. In future, the establishment of rules that stipulates the division of roles and operational regulation among concerned organizations is desired.

9) Promotion of housing development along the railway lines

In regard to housing development, the private housing development that targets railway commuters can partly be seen in Depok City, etc. With the increasing convenience of access through the development of access routes to railway stations and other developments such as bus terminal facilities and "Park & Ride" facilities, it is important to uncover the demand for housing development alongside the railway.

PT.KAI Headquarters

10) The establishment of stronghold development participation schemes for rail operators.

It would also be helpful for both urban development and railway management, if cooperation existed between PT.KAI, the railway operators, who are land owners (although a part of railway sites are the property of the Ministry of Communication), with private developers with the know-how and ability to procure funds, and they jointly undertook urban development projects in the land area of station vicinities and arrange internal mechanisms that would allow them to enjoy the development profits in return for the investment of railways.

11) Fund arrangements for two level crossing and station front square

As long as the development of commuter rail routes is designed to contribute to the development in not only the autonomous areas along the railway but also the entire metropolitan area, it is necessary for the central government to construct institutional frameworks including, but not limited to, budget measures regarding related infrastructures such as two level crossing and development of station squares. At that time it would also be an effective policy to treat a portion of fuel tax as specialized revenue for projects associated with road transportation.

Furthermore, for the implementing similar types of urban public transportation projects, the execution of the following are desired: ex-ante evaluation concerning utilization of existing railroads at the start of new projects; introduction of pilot investments (implementing pilot project and appraising the management capacity of the executing organization); supervision of stepwise investments (long-term and large-scale projects should be implemented in stages, so that the effects of projects are revealed at an early stage, and consideration can be made about subsequent investments after viewing results); the expansion of the marketing target

(placing within its scope not only low-income earners but also medium to high-income earners); diversification of goal management indicators (besides the frequency of services, the level of overcrowding, and length of over-crowding section, will also be introduced as indicators); institutional security of coordination function among associated departments (apart from more careful assessments between related organizations, tangible results of the coordination should be treated as necessary conditions for the continuation of projects); development of the integrated transport master-plan; bolstering urban planning systems (prevent inefficient,not environment friendly and ill-ordered expansion of urban land); government counterpart initiatives; and compilation of city transportation data.

The View of JBIC

1. JBIC View 1

3. (1) Aiming for further improvements in this project.
6) Bolstering inner city public transportation.

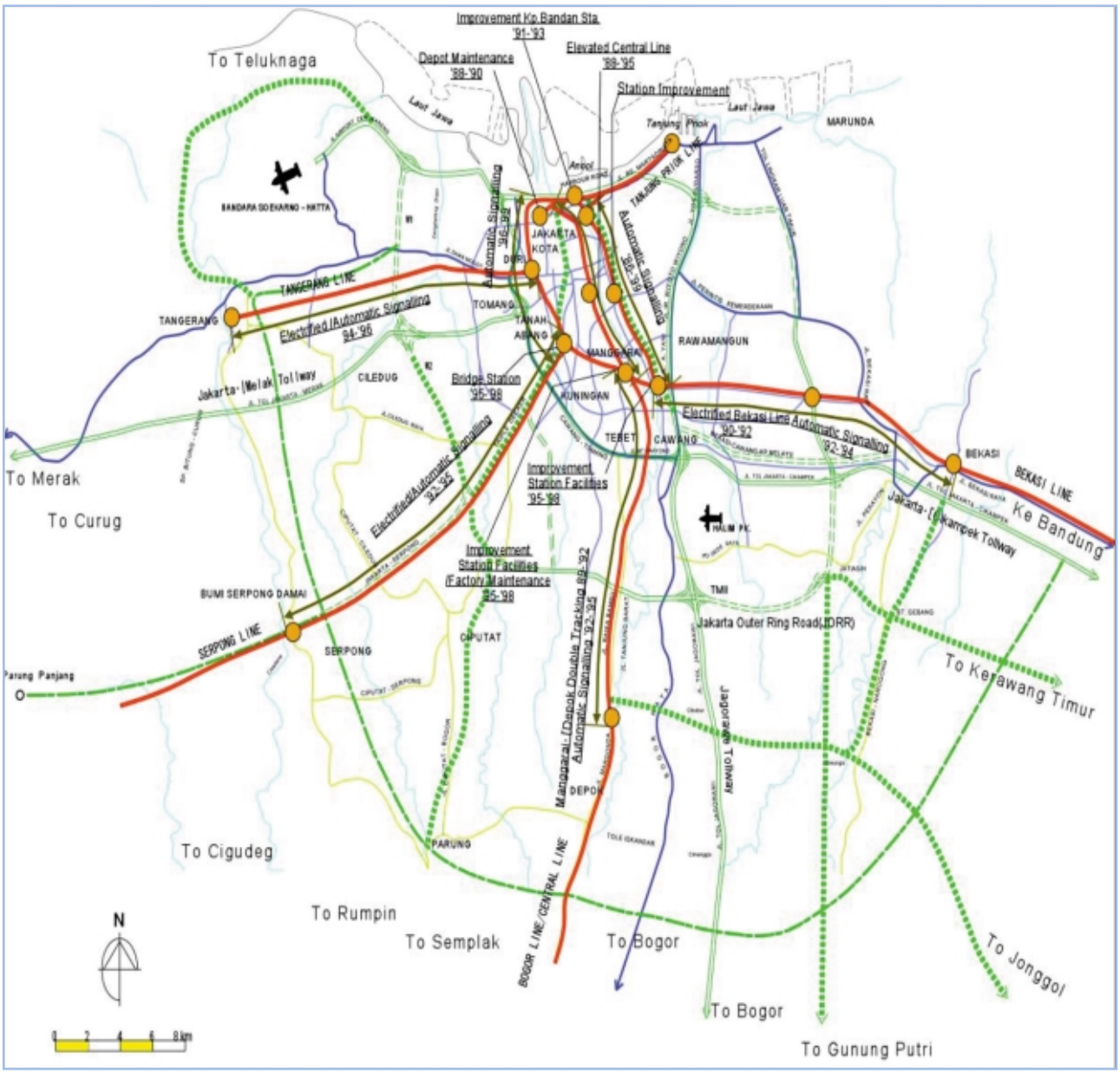
JBIC considers it necessary to establish the strategy by looking back at the basis of integrated city transportation in the long-term. From the short-term perspective, JBIC consider that the highest priority issue is, given the present situation of the Indonesian government, bolstering the maintenance system of existing lines and the accompanying transportation capacity strengthening.

2. JBIC View 2

3. (1) Aiming for further improvements in this project.
1) ~ 11)

From the perspective of increasing the sustainability of projects including the aforementioned recommendations, JBIC considers that the methods for securing funds that would strengthen the operation and maintenance system such as increasing the tariffs of the economy class that have been set too low should be considered on the Indonesian side.

Areas for Evaluation



N.B. The red line indicates the Jabotabek Area Railway

Summary of Projects under Evaluation

(Produced by JBIC)

1, 2 Diesel Railcars Project

- Project Outline: Introduction of diesel cars (24 carriages) into the inter-city transportation of Western Java, aiming for the increase in rail transportation capacity.
- Loan Amount/Disbursed Amount: ¥1,798 million/¥1,797 million
- Exchange Note: July 1972
- Loan Agreement: December 1974, October 1975
- Terms and Conditions: Interest rate 3.0%p.a., Repayment period 25 years (7 years Grace Period)
- Final Disbursement Date: June 1976, October 1976

3, 4 Electric Railcars Project

- Project Outline: Introduction of trains (20 carriages) into the city environs transportation of Jakarta, aiming for the increase in rail transportation capacity.
- Loan Amount/Disbursed Amount: ¥1,543 million/¥1,541 million
- Exchange Note: July1969, June 1970
- Loan Agreement: December 1974, October 1975
- Terms and Conditions: Interest rate 3.5%p.a., Repayment period 20 years (7 years Grace Period)
- Final Disbursement Date: June 1976, October 1976

5 Jakarta Metropolitan Transportation System Project II

- Project Outline: Procurement of diesel cars (16 carriages including spare parts), commutator, communications/crossings/preservation equipment.
- Loan Amount/Disbursed Amount: ¥2,604 million/¥2,450 million
- Exchange Note: August 1977
- Loan Agreement: December 1977
- Terms and Conditions: Interest rate 3.0%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: December 1984

6 Jakarta Metropolitan Transportation System Project III

- Project Outline: Procurement of trains (24 carriages), crossing safety facilities, communication facilities, track materials and engineering service.
- Loan Amount/Disbursed Amount: ¥4,305 million/¥4,278 million
- Exchange Note: December 1978
- Loan Agreement: August 1979
- Terms and Conditions: Interest rate 2.75%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: August 1988

7 Jakarta Metropolitan Transportation System Project IV-1

- Project Outline: Procurement of trains (20 carriages), crossing safety facilities, communication facilities and materials for tracks.
- Loan Amount/Disbursed Amount: ¥3,751 million/¥3,281 million
- Exchange Note: November 1979
- Loan Agreement: August 1980
- Terms and Conditions: Interest rate 2.5%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: August 1988

8 Jakarta Metropolitan Transportation System Project IV-2

- Project Outline: Trains (16 carriages), electrification of Western line, development of railway routes, (substation, crossing safety facilities, communication facilities, materials for tracks, station and fence).
- Loan Amount/Disbursed Amount : ¥5,836 million/¥4,947 million
- Exchange Note: December 1980
- Loan Agreement: March 1981
- Terms and Conditions: Interest rate 2.5%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: September 1988

9 Jabotabek Railway Modernization Project Phase I

- Project Outline: Procurement of rails, crossing facilities, trains (12 carriages), and engineering service.
- Loan Amount/Disbursed Amount: ¥5,524 million/¥4,354 million
- Exchange of Notes: January 1982
- Loan Agreement: May 1982
- Terms and Conditions: Interest rate 3.0%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: May 1989

10 Jabotabek Railway Modernization Project Phase II

- Project Outline: Renovations of carriage depots and factories, procurement of trains (4 carriages), and engineering service.
- Loan Amount/Disbursed Amount: ¥6,631 million/¥4,850 million
- Exchange Note: April 1983
- Loan Agreement: September 1983
- Terms and Conditions: Interest rate 3.0%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: September 1991

11 Jabotabek Railway Modernization Project Phase III

- Project Outline: Procurement of trains (4 carriages) and diesel car (28 carriages).
- Loan Amount/Disbursed Amount: ¥5,203 million/¥3,737 million
- Exchange Note: September 1983
- Loan Agreement: June 1984
- Terms and Conditions: Interest rate 3.5%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: June 1989

12 Jabotabek Railway Modernization Project Phase IV

- Project Outline: Signaling improvements (between Manggarai and Bogor on the Central line 44.9km), double track construction (Between Manggarai and Depok on the Central line 22.8 km), detailed design of the two level crossingof Manggarai station, and project management service.
- Loan Amount/Disbursed Amount: ¥9,331 million/¥9,140 million
- Exchange Note: December 1985
- Loan Agreement: December 1985
- Terms and Conditions: Interest rate 3.5%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: December 1994

13 Jabotabek Railway Modernization Project Phase V

- Project Outline: Electrification of the Bekasi line (14.8 km), improvement of the region around Kamppom and Bandan stations (The looping of the Western and Eastern lines), procurement of trains (Central line 8 carriages), new station and bridge construction, temporary line construction and signaling improvements.
- Loan Amount/Disbursed Amount: ¥27,661 million / ¥25,254 million
- Exchange Note: September 1986
- Loan Agreement: March 1987
- Terms and Conditions: Interest rate 3.5%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: September 1995

14 Jabotabek Railway Modernization Project Phase VI

- Project Outline: Construction of section A (4,050m) out of elevated bridge (whole length 8,650m) of the northern end (on the side of Jakarta and Kota station), electrification and track construction, consulting service.
- Loan Amount/Disbursed Amount: ¥13,565 million / ¥11,375 million
- Exchange Note: December 1987
- Loan Agreement: December 1987
- Terms and Conditions: Interest rate 3.0%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: December 1993

15 Jabotabek Railway Modernization Project Phase VII

- Project Outline: Elevated bridge construction, track construction and consulting service.
- Loan Amount/Disbursed Amount: ¥10,381 million/¥9,673 million
- Exchange Note: December 1989
- Loan Agreement: December 1989
- Terms and Conditions: Interest rate 2. 5%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: December 1994

16 Jabotabek Railway Modernization Project Phase VIII

- Project Outline: Enlarging and raising the platforms of 4 stations (Manggarai, Jatinegara, Pasar Sunen and Tanah Abang), improvement construction of footbridges, procurement of trains (24 carriages), project management service and supplying training machinery and materials.
- Loan Amount/Disbursed Amount: ¥7,400 million/¥6,415 million
- Exchange Note: September 1991
- Loan Agreement: September 1991
- Terms and Conditions: Interest rate 2.6%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: October 1999

17 Jabotabek Railway Modernization Project Phase IX

- Project Outline: Automatic signalization of the Eastern line and Western line, train operation supervision system, procurement of trains (24 carriages), consulting service.
- Loan Amount/Disbursed Amount: ¥15,347 million/¥9,907 million
- Exchange Note: September 1992
- Loan Agreement: October 1992
- Terms and Conditions: Interest rate 2.6%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: November 2001

18 Depok Depot Construction Project

- Project Outline: Construction of train/carriage maintenance and storage depot in the environs of Jakarta, and consulting service.
- Loan Amount/Disbursed Amount: ¥9,223 million/ not completed
- Exchange Note: January 1998
- Loan Agreement: January 1998
- Terms and Conditions: Interest rate 2.7%p.a., Repayment period 30 years (10 years Grace Period)
- Final Disbursement Date: not completed