

**SOCIAL IMPACT OF RAILWAY PROJECT
A CASE STUDY OF MASS RAPID TRANSIT (MRT) JAKARTA, INDONESIA
DAMPAK SOSIAL PROYEK KERETA API
STUDI KASUS MASS RAPID TRANSIT (MRT) JAKARTA, INDONESIA**

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Diterima: 11 November 2014, Revisi 1: 1 Desember 2014, Revisi 2: 10 Desember 2014, Disetujui: 19 Desember 2014

ABSTRACT

Jakarta MRT system had been planned since the 1980's. Many constraints such as political, financial, as well as bureaucratic make the project delayed for a long time. When the plan scheduled to be implemented in a couple years ago, some protests arise. Communities and some interest group against. The fears of income decline and loss of livelihood become their main concerns which induce protests before the project really started. Based on this experience, this paper tries to reveal social impacts of transport development in case MRT Jakarta. Now the project construction is being carried out. Social impact as well as the project construction continues. This study investigate how social impact of railway project was happened. Literatures and documents analysis was used to analyze this study. The result of the study were the MRT Jakarta project inevitably have negative and positive impacts both for society and environment. But with the start of the project after a long delay, it gives hope to the community for better transportation. It is a positive impact before the project was completed. Community engagement in a meeting or discussion should more be emphasized in the process in order to minimize the conflicts of interest. Stakeholders, including communities, should involved earlier to anticipate and avoid the possible conflict.

Keywords: social impact, social change, Mass Rapid Transit (MRT), community engagement

ABSTRAK

Sistem MRT Jakarta telah direncanakan sejak 1980-an. Banyak hambatan seperti politik, sosial serta birokratis yang membuat proyek tersebut tertunda dalam waktu yang lama. Ketika rencana yang telah dijadwalkan akan diimplementasikan beberapa tahun yang lalu, beberapa protes muncul. Masyarakat dan beberapa kelompok menolak. Ketakutan penurunan pendapatan dan kehilangan tempat tinggal menjadi fokus utama yang mengundang protes sebelum proyek dimulai. Berdasarkan pengalaman tersebut, paper ini mencoba mengungkap dampak sosial dari pengembangan transportasi dalam hal ini MRT Jakarta. Saat ini proyek sedang berjalan. Dampak sosial sekaligus konstruksi terus berjalan. Penelitian ini menelaah bagaimana dampak sosial dari proyek kereta api terjadi. Analisis literatur dan dokumen terkait digunakan untuk menganalisis penelitian ini. Hasil dari penelitian ini adalah MRT Jakarta tidak dapat disangkal memberikan dampak negatif sekaligus positif bagi masyarakat maupun lingkungan. Akan tetapi, dengan permulaan proyek setelah ditunda dalam waktu yang lama, proyek ini memberikan harapan kepada masyarakat akan adanya transportasi yang lebih baik. Hal ini merupakan dampak positif dari proyek tersebut. Keterlibatan masyarakat dalam rapat atau diskusi sebaiknya lebih ditekankan dalam proses untuk meminimalkan konflik kepentingan. Para pemangku kepentingan, termasuk masyarakat, sebaiknya dilibatkan lebih awal untuk mengantisipasi dan mengurangi konflik yang mungkin muncul.

Kata kunci: dampak sosial, perubahan sosial, Mass Rapid Transit (MRT), keterlibatan masyarakat

INTRODUCTION

Congestion and air pollution often become major transportation issues especially in urban area. Trend to use private car in mobilization could increase the level of traffic and impact on congestion as well as air pollution. Public transport believed as one of solution for dealing with congestion because it can move people much more than private car. Fundamentally, constructing existing public transport systems in a city is needed for some aims: to reduce traffic congestion, to improve public transport, to serve the city centre better, to improve the environment, and to stimulate development (Mackett, 1998).

The concept of urban mass transportation was much proposed to make greater transportation in both quality and quantity. MRT (Mass Rapid Transit), according to its name, is a public transportation that is able to carry passenger in large quantities by rapid speed. The forms of MRT could be buses or railways. MRT in form of buses is also well known as BRT (Bus Rapid Transit). All forms of MRT should have own lane for keeping its speed. Bogota is an example of successfully implemented BRT. Most of European countries have been using concept of MRT for urban transport as well.

The main purpose of this paper is to investigate the social impacts of the implementation of the project construction of MRT. Based on literature, the social impacts can be grouped into seven categories (see Vanclay, 2002); however, this study will focus on three groups of impacts: economic and material well-being and quality of living environment impacts which consider being relevant with the subject that can be affected by the new government project. This study investigate how social impact of railway project was happened.

THEORITICAL REVIEW

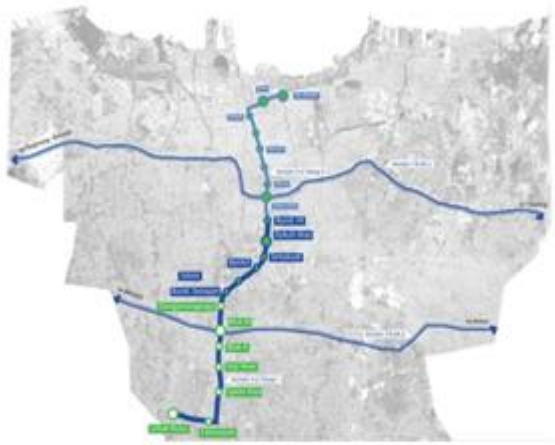
A. Plan of MRT Development in Jakarta

Public transports in Jakarta is currently consisting of busses, metromini (smaller busses), mikrolet (sized like regular cars), Bus Rapid Transit (BRT), and commuter railways. BRT

and commuter railways could be categorized to mass transportation. In fact, both of them still not sufficient to accommodate the transport demand which continue to increase. The lacks of capacity of public transport bring to crowded situation especially in peak hours. Moreover, the number of trips in Jakarta is not only movement inside the city, but also the movements of people from neighborhoods area such as Bogor, Depok, Tangerang, Bekasi. Indonesian Statistic Central Agency (2013) reported that the average number of commuter passenger approximately 500.000 in a day. Uncomfortable situation makes people reluctant to use public transport, especially for middle and high class. They prefer to use private vehicles, either motorcycle or car. It leads the situation of traffic congestion in Jakarta became worse. Therefore, MRT was necessary for improving public transport as well as an effort to reduce congestion.

Rail-based MRT in Jakarta (which named "MRT Jakarta") was planned from South (*Lebak Bulus*) to the North (*Kampung Bandan*). It is about 23,8 km. The construction will be carried out in 2 stages. Stage I will connect *Lebak Bulus* with *Bundaran HI* over 15.7 km railway with 13 stations (7 elevated stations and 6 underground stations) which is targeted to operate by 2018. Furthermore, stage II will continue from *Bundaran HI* to *Kampung Bandan* over 8.1 km railway, which construction will have been initiated before Stage I operate and it is targeted to be completed on 2020. Feasibility study for this stage has been completed, but the construction not conducted yet. The East-West Corridor is still on progress for feasibility study. It planned about 87 km. This paper only focuses on first South-North Corridor (*Lebak Bulus-Bundaran HI*) in which it is in period construction. Whilst, the construction of second South-North Corridor (*Bundaran HI-Kampung Bandan*) East-West Corridor was not discussed in this paper. Map of development plan for rail-based MRT in Jakarta can be seen in Figure 3.

The idea of building the MRT Jakarta was first



Source: website of MRT Jakarta

Figure 1. Plan of MRT Jakarta Network

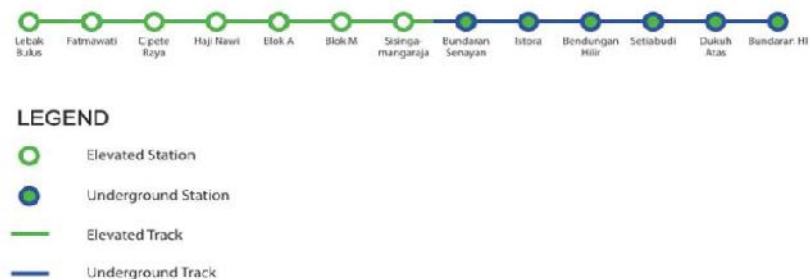
proposed in the 1980s. However, it was hampered when the economic crisis in 1997. It disturbed the plan and made it delayed. Moreover, in 1998 the Indonesian political situation is unstable because of the reform period.

In 2002, City Government revived the proposal but it agreed by National Government and Japan International Cooperation Agency (JICA), as finance partners and lender, in 2006. First phase was the corridor between *Lebak Bulus* until *Dukuh Atas* but based on further study, it extended until *Bundaran HI*. It because of high demand passenger and minimal construction impact. Briefly, the summary and details of MRT Jakarta shown in table 1.

Table 1. The summary of MRT Jakarta scheme

	South - North Corridor Total Length : 23.3 Km		East - West Corridor Total Length : 87 Km
	1 st Phase Lebak Bulus - Bundaran HI	2 nd Phase Bundaran HI - Kampung Bandan	
Length of track	15.2 Km (9.2 Km elevated, 6 Km underground)	8.1 Km	In Pre-Feasibility Study
Station	13 (7 elevated, 6 Km underground)	+7 undergrounds between Bundaran HI - Kota, +1 at grade (Kampung Bandan)	
Travel Time	30 minutes	22.5 minutes (Lebak Bulus - Kampung Bandan : 52.5 minutes)	
Distance between station	0.5 - 2.0 Km	0.8 - 2.4 Km	
Headway	5 minutes (2016)	5 minutes (2018)	
Target passenger/ day	412,700 (2020/ after 3 years operation)	629,900 (2037)	
	With traffic Demand Management (TDM) and Transit Oriented Development (TOD)	With Traffic Demand Management (TDM) and Transit Oriented Development (TOD)	
Operation Target	2016	2018	2024 - 2027

1st Corridor of MRT Jakarta Scheme
Lebak Bulus - Bundaran HI



Source: website of PT. MRT Jakarta

B. Social Impact

It was a common that a project should have a Social Impact Assessment (SIA) as a requirement for regulatory approval. However, recently the focus on SIA is broader. Vanclay (2003) described SIA as “the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions”. It more about managing social issue, not solely a formal document for project approval.

Development activities always associated with the surrounding areas as well as community. MRT Jakarta is a development project aimed for improving quantity as well as quality of public transport in Jakarta. Because the project is attempted for providing benefit for public, then the implementation should consider social dimension as well. The possible social impact should taken into account.

Vanclay (2002) made distinctions between social impacts and social changes. Actually, the discussion in this paper focus on the social impacts of a government project in urban public transport, but it is necessary to understand this distinction as a theoretical background. Social impact more refers to a feeling or experience of human either in form of physical or perceptual. In other hand, social change is about a direct result arising from a development activity or project.

Further, (Vanclay, 2002) categorize social change processes in seven general groups:

1. **Demographic processes**, e.g. in-migration, presence of newcomers, presence of seasonal residents, presence of weekenders, presence of tourists and day-trippers, resettlement, displacement and dispossession, rural-to-urban migration, urban-to-rural migration.
2. **Economic processes**, e.g. conversion and diversification of economic activities, impoverishment, inflation, currency exchange fluctuation (devaluation), concentration of economic activity, economic globalization.
3. **Geographical processes**, e.g. conversion and diversification of land use, urban sprawl, urbanization, gentrification, enhanced transportation and rural accessibility, physical splintering.
4. **Institutional and legal processes**, e.g. institutional globalisation and centralisation, decentralisation, privatization.
5. **Emancipation and empowerment processes**, e.g. democratisation, marginalization and exclusion, capacity building.
6. **Socio-cultural processes**, e.g. social globalization, segregation, social disintegration, cultural differentiation.
7. **Other processes**.

Continue with social impact, Vanclay (2002) made seven general categorization of social impacts. These are:

- a. **Health and well-being**, e.g. death of self or family member, death in the community, nutrition (adequacy, security and quality of food supply), actual health and fertility, perceived health and fertility, mental health and subjective wellbeing, aspirations for the future for self and children, autonomy (individual independence or self-reliance), feelings in relation to the project, annoyance, dissatisfaction (failure to deliver promised benefits), experience of moral outrage.
- b. **Quality of the living environment**, e.g. environmental amenity value, perceived quality of the living and work environments (dust; noise; risk; odour; vibration; artificial light; safety), actual quality of the living and work environment, disruption to daily living practices, leisure and recreation opportunities and facilities, aesthetic quality (visual impact; outlook; vistas; shadowing), perception of the physi-

cal quality of housing, actual physical quality of housing, perception of the social quality of housing, availability of housing facilities, adequacy of physical infrastructure, adequacy of social infrastructure, perception of personal safety and fear of crime, actual personal safety and hazard exposure, actual crime and violence.

- c. **Economic impacts**, e.g. workload, standard of living, economic prosperity and resilience, income, property values, status and type of employment, experience of being unemployed, level of unemployment in the community, loss of employment options, replacement costs of environmental functions, economic dependency, disruption of local economy, burden of national debt.
- d. **Cultural impacts**, e.g. change in cultural values, cultural affrontage, cultural integrity, experience of being culturally marginalised, profanisation of culture, loss of local language or dialect, loss of natural and cultural heritage
- e. **Family and community impact**, e.g. alterations in family structure, changes to sexual relations, obligations to living elders, obligations to ancestors, family violence, disruption of social networks, changed demographic structure of the community, community identification and connection, perceived and actual community cohesion, social differentiation and inequity, social tension and violence.
- f. **Institutional, political and equity impacts**, e.g. workload on government organisation, integrity of government agencies, loss of tenure, loss of subsidiarity, violation of human rights, participation in decision making, access to legal procedures and to legal advice, impact equity.
- g. **Gender relations**, e.g. women's physical integrity and autonomy, gender

division of productive labour, gender division of household labour, gender division of reproductive labour, gender based control over; and access to; resources, personal autonomy of women, political emancipation of women.

Both social change and social impact grouping would be used to help analysis of social impact in case MRT Jakarta.

METHODOLOGY

A. Study Area

Jakarta, Indonesian capital city, grouped into five city administrative areas and one district administrative area. They are the administrative city of Central Jakarta, North Jakarta, West Jakarta, South Jakarta, East Jakarta, and the Thousand Islands administrative district. In the north, Jakarta bordered by the Java Sea. In the south and east are Depok City, Bogor District, Bekasi City, and Bekasi District. In the west are Tangerang City and Tangerang District. The growth of Jakarta spread to the neighborhoods areas. Therefore, they were grouped into an agglomeration region called Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi). Nevertheless, their administration still separated each other's. There is no regional administration officially.

Jakarta has role as the administration city as well as business city. There are a lot of activities supporting its role. It generates urbanization thereby increasing the rate of population growth. The population in Jakarta was recorded 10,09 million inhabitant with an area ² (BPS-Statistics of DKI Jakarta Province, 2013). Imbalance between population and land area result in densely populated region.

For high density area like Jakarta, the needs for mass transportation become important because it move people in higher quantity more than private car. The shifting from private car to mass transport is expected can reduce the number of private car use. Consequently, the

level of traffic congestion could be diminished.



source: <http://sistercities.lacity.org/html/19.htm>

Figure 2. Maps of Study Location



source: <https://www.google.com/maps>

Figure 3. Jakarta and the neighborhoods area

B. Data Collection and Analysis

The main idea of this research is to investigate how social impact of railway project was happened. To achieve it, the method would be used is document analysis. It is carried out by using relevant document to gain knowledge for analysis. The sources could be used comprises literatures, books, research reports, government reports, relevant publications, etc. Many kinds of reports and other publications provided informations about current conditions. However, it also possible that it contained informations in the past.

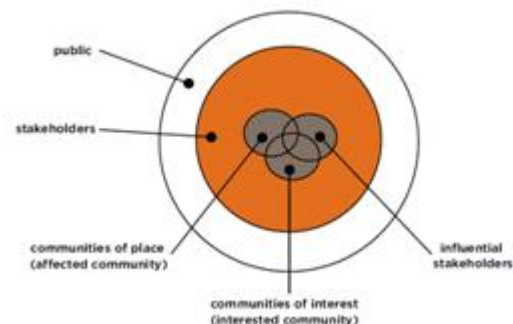
This research is interpreted as a qualitative research because it aimed to obtain as much

information to be basis on lesson learned. Data collection for empirical cases is also carried out through secondary data sources. Data analysis is conducted by enriching the information Data could be collected from many kinds of sources.

RESULT AND ANALYSIS

A. Stakeholder Analysis

Before discuss social impact of MRT Jakarta, it is better to know stakeholders involved in this project. 'Stakeholders' had been a familiar term in the theories and practices. There are many definitions about stakeholders and most of them refer to relevant parties which have interests and affected by a specific issue. Dare et. al. (2011) defined stakeholders as "those who have an interest in a particular decision, including those people who can influence a decision and those affected by it". The term 'stakeholder', 'the public', 'the community' have close relationship (Figure 4). The public refer to people in general. The community refer to people within a specific location, or with a specific interest. Stakeholders analysis is used to identify and analyze all parties related to a particular issue. Stakeholders analysis recently considered as an important thing because the nature of world that increasingly interconnected (Bryson, 2004). For example congestion as a transportation issue, it is also associated with other fields such as environment, social, human health, well-being etc.



source: Dare et. al, 2011

Figure 4. Relationship between public, stakeholders,

Jakarta MRT project is a rail-based mass transportation project aimed for improving both quantity and quality of public transport in Jakarta. It involved many stakeholders either directly or indirectly. The project was funded by the Central Government and the Provincial Government of DKI Jakarta. It was supported by the Japanese Government through the Japan International Cooperation Agency (JICA) in the form of loans. They have role in decision making. Meanwhile, a Regional Owned Enterprises (ROEs) called PT MRT Jakarta has responsibilities to construct, manage, and operate the future Jakarta MRT system. The three governments as funder and PT MRT Jakarta include stakeholders.

People who live along planned route (*Lebak Bulus-Bundaran HI*) include communities of place (affected community). There are seven administrative area namely Lebak Bulus, Fatmawati, Cipete, Haji Nawi, Blok A, Blok M dan Sisingamangaraja. Those will be directly affected by the construction. Communities of interest (interested community) in this case comprises residents of Jakarta and surrounding area that will be user of Jakarta MRT, society associations as well as NGOs that have concern about transportation. In addition, business associations could include to interested community because they have opportunities to expand bussiness in new stations. Influential stakeholders in this case are the existing public transport actors in Jakarta. Either direct or indirect, their businesses will be affected by the presence of MRT Jakarta. Another stakeholder who has an important role is media. The media's provide and deliver information about progress of project and relevant issues to the public. The information could be basis of public supervision. It is used to oversee the execution of project.

B. Social Impact of The Project

After going through a long process, it was approximately 24 years from the first plan, the construction of Jakarta MRT officially

began on 2 May 2013. Approximately Although the project sounded great for dealing with the lack of public transport services in Jakarta, it still gain an opposition actually. Residents along Fatmawati streets, one of area crossed by planned route, protest about the construction design in their area. It would be built in elevated rail instead of subway. They stated that many potential negative impacts if it is built in elevated way. Among these are business continuity considerations of local residents and also the social environment. In addition, environmental issues such as diminishing of trees as well as demolition of cultural heritage also included in reasons for protest. They would like MRT built in underground in order to their land use has not changed. They held a demonstration as an act of their protest (Figure 5). The demonstrators also questioned about the EIA study which is announced had been done. They claimed that the study is not a representation of existing condition because it is out of date.



source: Rudi, 2013

Figure 5. Protests from Local Residents



source: Widiyanto, 2013

Figure 6. Protests from Local Residents

Other rallies took place in the west end of construction area. Based on the plan, it is preparing to demolish a sport stadium and a bus terminal. Bus crew, the merchant, shop owners, street vendors reject the terminal closure because it is a place in which they earn their living (Figure 7). Meanwhile, the refusal from football fans club also arise because they considered the stadium as a historical building.



source: Nurcahyani, 2014

Figure 7. Protests Against Bus Terminal Closure

1. Economic and material well-being impacts
The protests emerging are forms of residents expression for potential impact possibly they felt after the construction. Elevated railway design indeed will use more space than underground design. The consequence for residents in Fatmawati is possibilities of income decline. It because most of them derive their main income from sales business in their shops. Actually, the government has offered compensation or relocation. However, until the project construction began it still not reached agreement. According to Vanclay (2002), it include economic impact that "relate to the wealth and prosperity of individuals and the community as a whole". Social change in form of conversion of land use (geographical process) will be exist because of elevated railway design. Land use for housing and shops (business) will change into transport infrastructure and facilities. Indeed it will threat their livelihood if there is no mutually solution negotiated. So does the Lebak Bulus terminal closure. It also triggers economic impact. Likely disruptions of local economy as well as income decline of resi-

dents become one of challenge for this project.

2. Quality of the living environment impact

Development of MRT Jakarta in elevated way eliminates space for trees along road in planned route. It negatively impact related to environment. However, relocation was prepared as compensation form. The existence of MRT would likely bring to greater quality of the living environment because in the future, when the project has been done, it is expected could attract private user to use MRT. Consequently, level of congestion becomes lower and air pollution from transportation reduced. In addition, MRT system will be built is rail-based which well known as environment friendly transport.

3. Social impact due to construction project

The process of construction which still carried out, inevitably have adverse impact for community. The presence of heavy equipment for project construction disrupted the traffic. Some of roads temporary forbidden be passed for continuity running of the project. It made the congestion worse, moreover the project site is located in vulnerable areas for congestion. Dust, noise, and risk safety also must be perceived by communities as effect of project construction. According to classification of social impacts (Vanclay, 2002), communities face health and wellbeing impacts as well as quality of living environment.

Process of construction likewise disturbed the operational of TransJakarta, Bus Rapid Transit (BRT) system. Some of bus stop also has to be closed due to the project. Some of them closed temporary during the project took place, but some other closed permanently because located in line with MRT Jakarta route.

CONCLUSION

The oppositions of MRT Jakarta project are evidence of conflict of interest. As discussed in stakeholder analysis, there are some stakeholders with different role in this project. They have their

own interest. The challenge of incorporating their diverse interests as all may have a vital role to play in the governance. It need to highlight that governance not same with government. If government refers to formal institution or state, governance much broader with involving non-state actor (Rhodes, 2007). Therefore, community engagement is significant in governance process. Actually, in implementation, MRT Jakarta project has tried involve community in the process. Some meetings among stakeholders had been held to discuss problem that exist. The interest of communities to participate in the meeting is great. Unfortunately, the discussions often not achieve agreement. Regarding with the elevated design, it is difficult to revise a plan because of lack of time as well as budget. Both of them indeed frequently become problem especially in developing countries where development still much needed in limited budget. Meanwhile, communities ask a change in plan. The mismatch and conflict arising leads to conclusion that it was too late involving community. Stakeholders, including communities, should involve earlier to anticipate and avoid possible conflict.

In mitigation hierarchy (João, 2011), if it is not possible to make changes to the project or plan to avoid negative effects, there are still some other mitigation. They are 'reduce'; 'repair'; 'compensate in kind', 'compensate by other mean'. In MRT Jakarta project, mitigation in form of 'avoid' not possible to carried out. One of mitigation could be used is compensate in kind. Loss of trees as an adversely effect of MRT project construction could be compensated with trees planting in other space. In addition, traffic disturbances during project construction can be tackle through compensate by other mean. The form is providing information about bottleneck area due to project construction. The information is delivered through media such as radio, television, newspaper, as well as internet. With the information, people could choose alternative road to keep away from congestion. The preparation of alternative road also need taken into account.

Finally, MRT Jakarta project inevitably have negative impact both for society and environment. But with the start of the project after a long delay, it gives hope to the community for better transportation. It is a positive impact before the project was completed.

ACKNOWLEDGMENT

I would like present my great thanks and appreciations to Prof. Frank Vanclay for giving me the ideas and lecture about social impact. Also thanks for Dr. Heru Purboyo for the comments in writing this paper.

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