

Chapter 8

The Effects of Mega-Transportation Infrastructure Projects in the Jakarta–Bandung Corridor, Indonesia: Unraveling Displacement in Space and Time



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1 Introduction

During the Jokowi administration (2014–present), Indonesia has embarked on an unprecedented number of megaprojects compared to previous presidents. In 2015, President Jokowi unveiled his plans to liberalize foreign investment regulations and foster the development of modern and expansive transportation infrastructure networks through the implementation of mega-transportation infrastructure projects (MTIPs). The reason for these stems from the recognition that inadequate asset management and under-investment have led to a substantial deficit in transportation infrastructure, which hampers the country's economic growth (Ray & Ing, 2016). According to a report by the World Bank (2014), Indonesia's poor-quality infrastructure has contributed to a 1% loss of this growth since 2004.

Through the development of MTIPs, the government aims to bolster its global competitiveness by increasing connectivity both within and between cities and their transportation hubs. Project types vary, and include expressways, high-speed railways, seaports for logistics, and urban mass rapid transit. While the central government is the biggest investor in these MTIPs, private capital quickly flows into the construction sector to support project implementation. The consolidation of political power at the national level has helped the government gain political support for project proposals. In addition, a series of regulatory reforms in the land, housing,

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and finance sectors have significantly empowered the government to undertake such megaprojects (Dharma, 2016).

Poor management of the displacement effects caused by megaproject development appears to be a common issue in Indonesia, with a direct impact on the equitable distribution of benefits among city inhabitants. Delphine (2019) has shown that displacement has become a common practice both during project implementation and the post-development phase, resulting in a decline in the quality of the urban environment and the loss of employment opportunities for the urban poor. Davidson (2015) reported that the Trans-Java expressway project has resulted in the loss of productive agricultural lands and has had a detrimental impact on social cohesion, as affected neighborhoods were forcibly displaced. On one hand, megaprojects aim to broadly stimulate private business and boost the national economy. However, on the other hand, they inevitably lead to the destruction of natural landscapes and urban living environments. Unfortunately, displacement persists due to the less inclusive nature of Indonesian spatial planning processes, which often overlook the concerns and interests of the majority of the cities inhabitants (Delphine, 2019).

This chapter contextualizes the understanding of displacement by first viewing MTIP development as the state's attempt to expand the capacities of the "space of flows." Manuel Castells introduced the concept in (1989) to illustrate the role of advanced communication technology and transportation systems to make regions and cities productive and competitive at the national and international levels. Second, we argue that such development inherently involves displacement, resulting in asymmetrical (dis)advantages between stakeholders who navigate the "space of flows" while residing within the urban "space of places." Two MTIP cases from Indonesia are used to support our argument. Finally, the chapter ends with a discussion and conclusion that emphasizes the significance of displacement across space and time, and further widens the gaps in equality between urban populations.

2 The Interactive Effects of Mega-Transportation Infrastructure Projects

Around the globe, transportation infrastructure projects have become central to the new politics of distance. These projects aim to ease the flows of people, goods, money, energy, and information. Once the projects are finished, the infrastructures can facilitate the movement of people and goods with fewer restraints. Because of the smoother flows, the space for interaction shrinks and creates opportunities to accumulate wealth for those with the right know-how. The policy of MTIP development in Indonesia appears to follow this pattern (KPIP, 2016).

The "space of flows" is a concept that was formerly used to depict the individual use of electronic communications devices, such as mobile phones and desktop computers that mediate social interactions and virtual transactions (Castells, 1999). With a similar illustration, airports and trains function as physical buildings that

channel people's economic and social activities into a space of flows. These flows are purposeful and repetitive sequences of exchange and interaction between the physically disjointed positions of people. Globally, the "space of flows" incrementally reorganizes urban spaces for the optimal functioning of economic activities. This re-organization is possible by advancement in communications and transportation technologies. The development of transportation infrastructure networks that connect metropolises in Java (Indonesia) is based on this "space of flows" concept. The networks organize urban space as nodes for a broader scale of economic interaction.

However, most people still experience the so-called "space of places." In this space, people attach to the self-contained boundaries of physical contiguity (Castells, 1999). People tend to construct their lives around homes and neighborhoods that preserve the quality of place. (Castells, 1999) argued that the space of places is fragmented, localized, and powerless vis à vis the versatility of the space of flows. The only form of resistance available to localities is to deny land rights of overwhelming flows. Such a defense can be a tiring and long-term political struggle for the vulnerable communities whose land rights are being removed. Therefore, bypassing and marginalization are common when dealing with any project development that destabilizes people's living places. This chapter conceptualizes this destabilization as displacement, which is inherent in MTIP development.

3 Displacement in a Competitive World

Literature on megaprojects has reported several deficiencies in MTIPs as creating displacement is common in such projects. For example, Flyvbjerg (2017) has highlighted shortcomings such as inaccurate impact predictions, limited scope and time horizon for assessing impacts, and insufficient organization and institutional integration of the environmental impact assessment (EIA) process within the overall project decision-making process. These issues generate interest in exploring how these inaccuracies affect powerless groups, particularly the displaced local communities and their living environments, where the tangible effects of transportation infrastructure projects are realized.

Gellert and Lynch (2003: 15–16) define megaprojects as "projects that transform landscapes rapidly, intentionally, and profoundly in obvious ways, and require coordinated applications of capital and state power." They broadly conceptualize megaprojects as inherently displacing and as ongoing dialectical processes in a temporal scale that can be differentiated into primary (direct) and secondary (indirect) displacement. Primary displacement is an integral part of megaprojects that is hard to escape, such as excavating soils and rocks for highway tunnels and evicting communities from neighborhoods along the site of a planned highway. Secondary displacement is the indirect consequence of development projects that is temporarily and spatially less immediate and results in path-dependent phenomena, such as loss of access to resources, unemployment, and psychosocial stresses. Moreover, this implies that

megaprojects are inevitably top-down and where the state and large capital enterprises are dominant players, while other stakeholders stand on the sidelines (Winch, 2017).

Globalization demands the flexible movement of people, capital, information, and goods and where cities must compete for the accumulation of capital. Cities in developing countries now try to leverage their global position by building MTIPs despite their lack of technical skills and managerial capabilities (Othman, 2013). Good internal and external connectivity allows these cities to extract natural resources and then process and export them as final products to global markets. There appears to be a common belief that the delivery of large-scale transportation infrastructure will instantly create new economic opportunities and flow-spaces that sustain economic growth (see Ray and Ing 2016 for the Indonesia Case). The landscape transformation for the development of the Trans-Java road network in Indonesia, for example, has meant that communities have lost their neighborhoods along with their long-established social capital (Suprayoga et al., 2020). The following section will explore how displacement occurs in two MTIP cases located in an essential economic corridor in Indonesia. Social protests and the depletion of the megaproject sites serve as indicators of the “losses” experienced in the “space of places,” which are overshadowed by the dominant influence of the “space of flows” in the Jakarta–Bandung corridor area.

4 The Tale of Two MTIPs

The Jakarta–Bandung corridor is the busiest region in Indonesia, hosting many business and industrial complexes. Many of the MTIPs in this area are specifically designed to boost national economic growth. Two notable projects in this region are the Jakarta–Bandung high-speed railway (HSR) and the Jakarta–Cikampek (Japek) elevated expressway.

4.1 *The Jakarta–Bandung High-Speed Railway (HSR)*

The HSR is a significant railway line with an estimated cost of USD 5.5 billion. It aims to reduce travel time between Jakarta and Bandung to approximately 40 min, covering a distance of 144.6 km (Fig. 1). In 2014, the Japan International Cooperation Agency (JICA) prepared a proposal and conducted the initial feasibility study for the project. China entered the scene in April 2015 with a counter offer after an intense lobbying effort. Subsequently, project implementation was entrusted to KCIC, a consortium consisting of Indonesian and Chinese companies. It is noteworthy that the project is being carried out until 2022 without a financial guarantee from the government. One of the primary concerns with the project is whether the high-speed railway investment should take place in this corridor or in another part of the country,

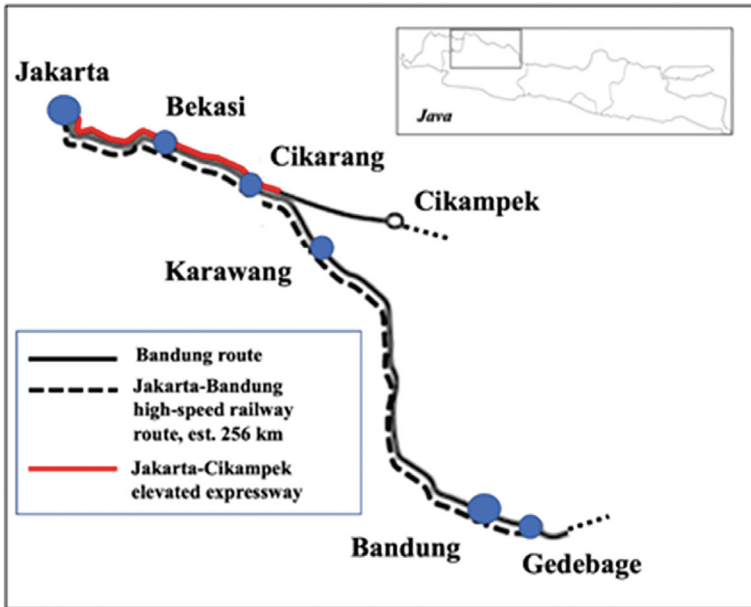


Fig. 1 The map of the Jakarta–Bandung corridor (*Source* Modified from Yachiyo Engineering & Japan International Consultants for Transportation, 2012)

as expressway tolls and rail links already exist here. Another controversy arises regarding the advancement of the project prior to the implementation phase, raising concerns about crucial planning processes, such as the integration of Environmental Impact Assessment (EIA) studies into spatial planning and ensuring the project’s consistency with local spatial plans. Unfortunately, these processes have been cut short because of the political imperative to complete the railway link (Ray & Ing, 2016).

In conjunction with the planned railway link, approximately 2500 buildings and 974 families are affected, requiring the conversion of approximately 800 ha of forest land, gardens, rice fields, and other agricultural land for the project sites and railway (Simbolon, 2016). These land-use changes necessitated the revision of local spatial plans in nine municipalities along the railway route. This indicates that, rather than complying with the existing spatial plan, the project influences and directs the spatial plan. This aligns with what Winch (2017) suggests regarding the top-down nature of megaproject planning, wherein government authorities often make decisions with minimal public engagement, taking full ownership and control of the development process.

However, the truncation of project planning has, in turn, raised concerns about the potential displacement effects resulting from the project’s implementation. For example, during the construction of tunnels and piers in Ciwidey, there has been an increase in the volume of soil disposed of from the excavations, affecting the

surrounding area (Nugraha, 2019). On another project site, the use of tunnel blasting methods by the project developer resulted in landslides and unanticipated geological changes. People have reported cracks on house walls and damage to housing structures within just a few days of the blasting activity. This example highlights the insufficient consideration given to the construction effects on the surrounding environment, which resonates with the argument put forth by Flyvbjerg et al. (2003) regarding the neglect of social and environmental impacts during the construction phase of most MTIPs.

According to the local spatial plans, some of the land allocated for the project should have been designated for agricultural use and preserved accordingly. However, the failure to do so has forced traditional farmers to give up their livelihoods without sufficient preparation for acquiring new skills and knowledge (Prasetiawan, 2016). Furthermore, the project poses a threat to the local area by depleting groundwater sources, as the railway and station occupy 1500 ha of land that is rich in groundwater (Simbolon, 2016). The operation of the HSR will significantly impact houses located within a distance of <20 m from the railway. These houses will experience elevated noise levels for an extended period once the HSR is operational. Land prices will also decrease as a consequence, resulting in financial losses for local land owners. This project exemplifies the dissonance between the country's aspirations for enhancing space flow capacity through investment and the ripple effect of displacement on the local space.

4.2 The Jakarta–Cikampek (Japek) Elevated Expressway

The Jakarta–Cikampek (Japek) elevated expressway is another significant project in the corridor, where some sections are side by side with Jakarta–Bandung HSR (Fig. 2). The national roads, particularly the arterial highways, account for <9.2% of the total road network but have a truly strategic function. Congestion on the arterial system slows the economy and increases costs for businesses and industries in the Northern Java region. The Japek expressway spans a length of 36.8 km and serves a vital section of the national road network, including a segment of the Trans-Asian Highway (AH2). The construction of the Japek expressway costs USD 1.12 billion and aimed to alleviate mobility constraints between Jakarta and Cikampek, which is densely populated with major industrial and housing estates. These constraints occurred because the expressway was unable to accommodate high-volume traffic. Prior to its completion, the travel speed in this segment of the expressway was relatively slow, with 51% of traffic moving at speeds below 40 km per hour (Ray & Ing, 2016). By adding four additional lanes above the existing right-of-way, the Japek expressway has improved its volume per capacity ratio (VCR) to deliver travel speeds of around 60 km per hour (Jasamarga, 2017).

During the construction phase, there was a substantial volume of daily traffic passing through the project site. Therefore, the developer applied a technology where flyover arms were strategically positioned parallel to the road below, effectively



Fig. 2 Jakarta–Bandung HSR and Japek expressway are located side by side in this corridor section (Source Detik, 2021)

managing the flow of traffic during the construction phase. The flyover arms were then rotated 90 degrees to avoid interference with traffic flows during the construction phase. However, despite the measures taken, congestion continued to burden the local environment and resulted in increased levels of dust and noise pollution. This was primarily due to the frequent mobilization of materials and equipment to the project site. The congestion was estimated to have cost approximately USD 83 million (Ronito, 2016). This observation aligns with the findings of Delphine (2019) regarding the unanticipated effects of megaprojects during the construction phase. In our case, these effects manifested as heavy congestion.

Since it opened in 2019, the Japek expressway has facilitated the daily traffic flow of 437,000 vehicles (Warsono, 2019). However, the spatial plans of the surrounding municipalities were not adequately prepared to fully harness the benefits of the additional lane capacities. As a result, there has been a concentration of new property development around the expressway gates, leading to an increase in land value in the surrounding area (Darmoyono, 2019). This development, comprising offices, houses, and apartments, primarily caters to daily commuters who work in Jakarta, a distance of 30–50 km away. Following this development, enclaved and gated neighborhoods with integrated facilities have emerged, resulting in the segregation of the local inhabitants (see Silver, 2008). Moreover, the conversion of preserved agricultural lands into other land uses has forced local inhabitants to change their occupations. This highlights the failure of the top-down approach to MTIPs in addressing the interconnections between multiple sectors, such as agriculture and equitable civic welfare (see Suprayoga et al., 2020). As a consequence, the implementation of this expressway raises critical questions regarding the actual benefits it brings to the local residents.

5 Unraveling Displacement Across Space and Time

The two cases show that displacement has become an inevitable consequence of the practices employed to realize the country's goal of enhancing competitiveness through the widespread development of MTIPs. Global actors, notably financial institutions and global firms, have major interests and roles in this development (Shatkin, 2019). Enhancing the capacity of "spaces of flows," such as uncongested highways and high-speed trains, can be a means to facilitate the creation of a functionally interconnected global economic system. MTIPs have become central to this practice. However, in the process of expanding the capacity of the "space of flows," most MTIPs tend to adhere to top-down initiatives and minimal public engagement. This dynamic creates conflicts between the initiators of the MTIPs and those who are under-represented in planning and execution processes. Our cases illustrate how MTIPs can lead to struggles for local inhabitants in safeguarding their neighborhoods, surroundings, and local economies. Farmers were expelled from their rice fields, and communities lost their social histories and communal interactions. These outcomes underscore the insufficiency of a sole focus on technical matters and highlight the need to establish relationships between sectors and consider the long-term effects of MTIPs.

The cases presented here represent some of the most prominent MTIPs that Indonesia has pursued in the past decade. While there exists a strategic narrative framework for these projects at the national level, detailed local strategies to cope with the risks and benefits are missing. One of the problems stems from weak top-level leadership, which has resulted in poor project implementation as various agencies and government levels operate without proper coordination (Ray & Ing, 2016). The integration of local spatial plans into project development plans is limited, reflecting a political gap in terms of access to the decision-making process. While a revised spatial plan may have been made available, it is worth noting that the new plan solely justifies the implementation of MTIPs without adequately addressing other important considerations or potential impacts. Therefore, there remains a lack of sufficient instruments for the public to assess and effectively mitigate the displacing effects that occur across both space and time. In other word, our argument emphasizes the need to create opportunities for greater public involvement, which enable multi-directional communication and foster reflection among stakeholders. This approach would result in a more legitimate alignment between the projects and spatial plans. By ensuring proper application and minimizing unintended impacts of the projects, we can achieve a more harmonious and effective integration of MTIPs with the existing spatial plans.

These cases illustrate that displacement cannot be viewed as a local phenomenon per se but is rather a more complex web of local to global interactions. Displacement spans space and time and so requires careful assessments regarding who benefits from MTIPs. In many countries, EIAs are mandatory instruments designed to mitigate and prevent significant social and environmental harm for city residents. However, the narrow scope and time horizon often associated with EIAs may result in the oversight

of adverse socio-environmental risks over an extended period and the spatial interactions among them. Furthermore, the post-auditing of project impacts is predominantly absent, rendering formal instruments inadequate in mitigating the interrelated effects of projects (Flyvbjerg et al., 2003). The limited participation of inhabitant contributes to the degradation of place-spaces, as evident in the cases of local displacement. Imbalanced power relations further exacerbate this issue, resulting in a counterproductive planning process where those most affected are unable to exert control over their environment.

6 Conclusion

This chapter has shown that MTIPs inherently result in displacement, and the distribution of positive benefits across space and time is often incompatible. Proper planning should focus on the integration of comprehensive considerations of long-term impacts into formal planning instruments, aiming to minimize the risks faced by the displaced. Within an interconnected web of social actors, the role of “space of flows” plays a significant role in a nation’s economic growth and advancement. However, it is crucial to ensure that this progress does not come at the expense of the well-being and development of the “space of places.” Our coherent take-away from this discussion is that a more inclusive planning process is necessary to generate positive benefits for local inhabitants and reduce economic inequalities among urban populations. As the number of MTIPs continues to grow in emerging economies, the issue of equal distribution of their benefits in space and time emerges as an important topic for future research.

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