



Social risk assessment of land acquisition for the construction of the Sicincin-Padang toll road section, West Sumatra, Indonesia

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Abstract

The construction of toll roads in Indonesia aims to increase public welfare, but in reality, these projects have a relatively negative social effect on the neighborhood, particularly when it comes to land acquisition. One such land acquisition was for the Sicincin-Padang toll road in West Sumatra. The community is affected socially by land acquisition for the Sicincin-Padang toll road, including the loss of customary territory, modifications to social interaction, environmental issues, and conflicts between indigenous peoples. This research seeks to identify hypotheses regarding elements linked to social risks of land acquisition for toll road construction. The theory is being tested as the second goal. The research used a mixed method with a sequential exploratory type, which combines qualitative and quantitative methods, beginning with investigating issues directly from the community, then measuring the social risk index of land acquisition. The study's findings confirm the idea that social risk associated with land acquisition is linked to aspects of cultural norms, social interaction, asset transfers, and regulatory implementation. The index assessment findings show that each of these variables is connected to the social risk of land acquisition. The study's conclusion is that the four aforementioned factors must be used to evaluate the social risk index for purchasing property for toll roads. The study is novel in that it measures the social risk index for land acquisition for the Sicincin-Padang toll road while including a measure of customary land ownership in the asset transfer variable.

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Introduction

Toll road construction seeks to improve community mobility, cut travel times, increase area growth, and expand transportation lines (Andani et al., 2020; Kumari & Sharma, 2017; Mun, 2019; Rabello Quadros & Nassi, 2015; Suseno et al., 2015). The building of the trans-Sumatera Road is one such example. Every region on the island of Sumatra is now well connected thanks to the construction of this trans-Sumatera Road, which will subsequently boost local economies and regional growth. The trans-Sumatera Road, commonly known as the trans-Sumatera toll road, stretches from Aceh to Lampung. Construction of the toll road encountered challenges, including the introduction of economic, environmental, technical, and social dangers. One of the toll roads which has had problems, especially related to land acquisition, is Sicincin-Padang toll road.

Land acquisition for the development of the Padang-Sicincin toll road is significantly influenced by social issues. Land acquisition causes issues since it alters the way of life of the densely populated neighborhood surrounding the Sicincin-Padang toll road construction (Arifah & Putri, 2020). Since some individuals have to relocate due to homes and agricultural land being in the path of the toll road, these individuals have lost assets (land, homes), their livelihood, and other things. This has caused a change in the way that the community interacts (Debby, 2020; Urrahmi & Putri, 2020a). Even though a feasibility study on environmental risks related to land acquisition has been carried out, there have been few advantages for managing the social implications of land acquisition for impacted populations (Fahmi & Putri, 2022). This is also consistent with earlier research findings that the relevant parties did not adequately conduct the feasibility assessment while creating the planning document for the building of the toll road's Padang-Sicincin section (Dewi et al., 2020). Hence, in order to reduce these hazards in the future, a study or assessment of the social risks associated with land acquisition is required.

Research on the analysis of social risks due to infrastructure development has been carried out by previous researchers who explained the risks of changing patterns of community interaction (Cernea, 2004), erosion of the cultural values and customs of the affected community (Kampová, 2010; Tumimomor et al., 2014); unjust government policies (Turner, 2018). However, this was done qualitatively and has not contributed significantly to realizing effective infrastructure development for the

community. Other studies that have also been carried out are related to the socio-ecological analysis of infrastructure development such as the evaluation of development risks with private and government co-financing with a fuzzy system (Han et al., 2011); risk assessment with multi-criteria in terms of depreciation (Schetke & Haase, 2008) and provision of a database on the socio-environmental impact of infrastructure development (Lima et al., 2016). Furthermore, research related to the measurement of social risk of infrastructure development has also been carried out, including the social risk variables that have been studied on health and welfare; environmental quality; economic and welfare impacts; cultural impact; family and community impacts; institutional impact, and equity (Hassan, 2018); more related social dimensions of green land supply, population, structure and urban housing (Schetke & Haase, 2008). However, these studies have not included aspects of norms and culture, transfer of assets, and implementation of regulations, so these studies have not realized good infrastructure development.

Then studies related to land acquisition for infrastructure development, especially toll roads and their relationship to emerging social risks, have been carried out by other researchers, but not yet at the stage of measuring the social risk index of land acquisition. For example, land acquisition and its relation to land acquisition policy decision making (Dryzek, 2009; Fathurrahim & Djauhari, 2017; Heerink et al., 2007; Stiftel et al., 2006; Uyarra et al., 2020; Wirabrata & Surya, 2011); land acquisition for infrastructure development and the risks involved (Garvin, 2010; Grimsey & Lewis, 2002; Ke et al., 2010a; Ke, et al., 2010b; Yang et al., 2018), research on the legal implications of toll road property acquisition and community recompense (Isnaeni, 2020; Kusuma, 2017; Manurung et al., 2019; Mengie, 2021; Prasetya & Subekti, 2022; Rizky, 2021; Sari et al., 2019; Suhartoyo, 2021; Suntoro, 2019; Winarda et al., 2021). The previous study on the social risk assessment of land acquisition, however, did not go into great detail regarding the connection between the social hazards that develop and the security and comfort of the people impacted by the construction of the toll road.

This study explains how other factors directly affect the security and comfort of the people impacted by the land acquisition, such as culture and customs, human resources (Alomoto et al., 2021; Hassan, 2018; Rusim et al., 2019), and the forced transfer of assets (Cernea, 2004), can be used to assess social risks in land acquisition (Kampová, 2010). Additionally, after being aware of the pertinent characteristics, these variables can be statistically and descriptively tested by calculating the social risk index of land acquisition. Additionally, these variables

can be statistically and qualitatively verified by calculating the social risk index of land acquisition once the linked variables have been identified. So, this research is significant because it investigates social risk factors associated with land acquisition and afterwards serves as a variable to calculate the social risk index value of land acquisition for toll road construction. Also, this can lessen the social risk associated with purchasing land for a toll road.

Literature Review

Land for Roads

Control over land and how to handle it are sociological concepts related to land (Limbong, 2014). Land for road is a result of infrastructure growth, which has been controlled by regional and spatial planning. The public's interest is served by infrastructure development, which lowers transportation costs and increases employment opportunities. Road construction is still subject to all relevant legal restrictions and does not conflict with any other land use regulations (Limbong, 2017).

Land Acquisition

Land acquisition is any activity to obtain land by providing compensation to those who release or surrender land, buildings, plants, objects related to the revocation of rights to buildings (Limbong, 2017). Land procurement is the activity of providing land for development in the public interest by severing the legal relationship between the holder of land rights and their land rights by providing appropriate compensation (Arba, 2019). Risks associated with property acquisition include the following (Putri et al., 2021): (1) Financing risk, the land acquisition procedure starts with planning, preparation, execution, and outcomes delivery. Each of these steps will cost more to complete if they are not completed according to the predetermined timetable; (2) Environmental risk is sometimes caused by measuring and checking the position of land acquisition on community property that will be compensated. There will be heavy equipment activity, for example, which will impact the land's contours, air pollution, water pollution, and other factors, particularly if the land handover process has begun; and (3) Social risk, the social risk of land acquisition relates to the community's feeling of safety and comfort, particularly for those who will be directly impacted. Changes in local communities' norms and cultures, social interaction patterns, asset

losses, evictions that result in destitution, and other issues are among the social risks associated with land acquisition. Social risk is one of the four types of land acquisition risks mentioned above and has a propensity to be the most challenging to detect and directly experience by the affected community because it directly affects the norms, culture, sense of security, and comfort of the people. The social risk of land acquisition, and more specifically the social risk assessment of land acquisition, is the main topic of this research.

Social Risk Assessment

Risk is the chance of an event (adverse) that can be measured by the decision maker (Roeser et al., 2012). Risk management is a structured way of identifying, measuring, selecting and managing options in managing risk (Indraswari et al., 2018). The risk management system is also to calculate risk in order to find out whether the results of the risk identification are acceptable or not for a project (Indraswari et al., 2018).

According to Flanagan (Indraswari et al., 2018), aspects related to efforts to reduce risk include: (1) accepting risk (Risk Retention), (2) reduce risk (Risk Reduction), (3) risk transfer (Risk Transfer), and (4) avoid risk (Risk Avoidance). These aspects can categorize the form of risk and its handling. Related to the focus of the research conducted, namely, social risk, aspects related to such can also be analyzed from the efforts to reduce risk proposed by Flanagan.

Social risk is a risk related to human security both individually and in a wider context (Cernea, 2004; Mares, 2003). Social risk is a consequence to the human population of any public or private action that changes the way they live, work, play, relate to one another, manage to meet their needs, and generally address them as members of society (Hassan, 2018). Basically, social risk arises because of the conflict between natural resources and economic development. Economic and environmental losses often have an impact on the social conditions of the community. However, if a development provides economic and environmental benefits, it is relatively not socially beneficial for the surrounding community.

The social risk variables of land acquisition for toll road building in this research are concentrated on aspects of asset transfer, social interaction, norms and culture, and regulation based on the explanations of social risks advanced by a number of experts (land acquisition). This aspect is thought to be pertinent to the study because social issues surrounding land acquisition for development are always connected to it as shown in [Table 1](#).

Table 1 Previous studies related to social risk analysis for toll road development variables

No	Risk Analysis	Criteria	Explanation
1	Social	Asset Transfer: Loss of land, guaranteed health and education services, loss of jobs	<ul style="list-style-type: none"> – Disrupted access to health services – Disrupted access to continuity of education – Changes in the pattern of agrarian livelihoods to industry – Community income
		Social interactions: Changing social patterns	<ul style="list-style-type: none"> – Family interaction patterns become individual – Community social life – Community social interaction—community disarticulation
		Norms and Culture: Eroded by social and cultural values of society	<ul style="list-style-type: none"> – The loss of social and cultural norms and values due to road construction that separates social interactions – The influence of globalization erodes the cultural values of local people
		Implementation of Regulations: Implementation of the Law on Land Acquisition for Development in the Public Interest	<ul style="list-style-type: none"> – Determination of compensation value – Participation of the affected community – Social benefits of land acquisition

Sources: Cernea (2004); Eguavoen and Tesfai (2012), Lance H Gunderson (2005), Ramady (2014), Turner (2018), Veal (2017)

Methodology

Design and Location of the Research

The research method used is a sequential exploratory mixed method approach, which combines qualitative and quantitative methods in the study in stages, with the first stage using qualitative methods and the second using quantitative methods. (Bungin, 2020; Sugiyono, 2017). The study was done between September 2021 and February 2022, a seven-month period. The study was carried out in Padang Pariaman Regency, West Sumatra, at the land acquisition location for the Sicincin-Padang toll road. The focus of the study is on the following villages whose land has been acquired for toll roads: Kasang; Sei Buluh Selatan; Sei Buluh Barat; Sei Buluh Utara; Buayan; Lubuk Alung; Sikabu; Balah Hilir; SIngguling; Pasi Laweh; Parit Malintang; Lubuk Pandan; Sicincin; Kapalo Hilalang.

Statistics Gathering Method

Answering the study objectives is the goal of this data collection. Finding a hypothesis regarding elements linked to the social risk of land acquisition for the Sicincin Padang toll road was the goal of the first study. The second study goal also involved testing the hypotheses generated by the first goal, which involved using the social risk index formula to calculate norms and cultural values, social interaction, asset transfers, and the implementation of regulations for the Sicincin-Padang toll road. The first study goal was reached using qualitative data, and the second goal was reached using quantitative data.

Issues with land acquisition are revealed by qualitative data, particularly in the social context revealed by interview findings. The research informants were from ministry public work and housing; National Land Agency, Local Government; PT Hutama Karya and the Appraisal Team. Quantitative data, meanwhile, came from survey questions given to study participants. 1740 individuals made up



Figure 1 Map of research sites along the Sicincin-Padang route

Sources: RiauPos.Co (2020)

the study’s population; they were the owners of the land parcels impacted by the Sicincin-Padang toll road. The sample in this study was determined by the Yamane. formula (Creswell, 2014), as follows (Equation (1) and Equation (2)):

$$n = \frac{N}{1+N(e)^2} \tag{1}$$

$$n = \frac{1740}{1+1740(0,05)^2} = 325,23 \tag{2}$$

Information: *n* = Number of samples; *N* = Total Population; *e* = Sampling error (5%)

The results of the calculation above indicate that there were 325 respondents. Because all respondents were treated equally as owners of land parcels when the toll road was being built, the method for selecting respondents was simple random sampling. (Bungin, 2020; Sugiyono, 2017). To test the hypothesis results regarding the social risks of land acquisition faced by affected communities, quantitative data was gathered.

Variables of Land Acquisition Social Risk Index

The following is a variable chart of the social risk assessment index for land acquisition for the Sicincin-Padang toll road:

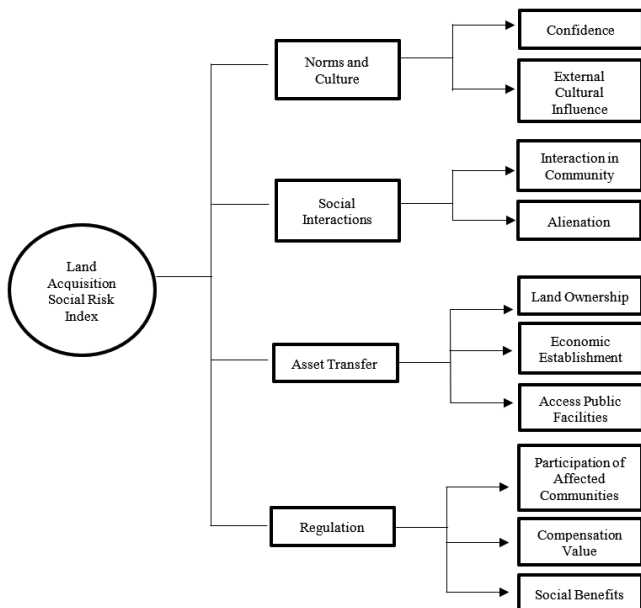


Figure 2 Components of the social risk assessment index for land acquisition

Source: Processed by Author (2022)

Measurement Scale

There are several steps to this index measurement. The standard social risk indicator was first put to the test by the researcher with practitioners and academic experts. Additionally, after being evaluated, the standard of evaluation is established using a Likert measure (Bungin, 2020; Sugiyono, 2017). The Likert scale is a rating system that ranges from very negative to very positive and can be expressed using the symbols 1 to 5 to indicate strong disagreement, disagreement, doubt, agreement, and complete agreement. The following social risk indicator formula for property acquisition illustrates it succinctly:

$$\text{The social risk index of land acquisition} = \frac{\text{average value}}{\text{maximum value}} \times \text{total respondent}$$

Data Analysis Technique

The qualitative data analysis method employed in this research is “Miles and Huberman” data analysis, which contends that qualitative data analysis activities should be carried out in real-time and without interruption until the data are fully saturated (Sugiyono, 2017).



Figure 3 Elements of the Miles and Huberman model’s data analysis

Descriptive statistics were used for quantitative data analysis, specifically to calculate the social risk score of land acquisition for the Sicincin—Padang toll road. This research will measure the social risk index for land acquisition for the construction of toll roads in West Sumatra. The social risk indicator and its percentage value are both measured using Microsoft Excel.

Results

The Aspects of The Social Risk Land Acquisition of Sicincin-Padang Toll Road

The Sicincin—Padang toll road social risk analysis research describes the factors that influence social risk in land acquisition and then evaluates social risk in land acquisition based on perceptions of the affected community. In order to determine the factors that influence the social risk of land acquisition, information was gathered from research informants, including representatives from the government, the private sector, and affected communities. These respondents are affected communities who own land that is given compensation for the construction of toll road.

The implementation of land acquisition in Indonesia has experienced relative obstacles, both economically, environmentally and socially. However, the risk that is most felt and has a long-lasting impact on society is the social risk. This also happened to the land acquisition for toll road construction initiated by the Indonesian government under the leadership of President Joko Widodo. People affected by land acquisition for toll road construction in Java, Papua and in Sumatra experienced various problems as a result of the land acquisition. On the island of Sumatra, the construction of the trans—Sumatra road is being carried out from the tip of Aceh to Lampung, and at every stage of land acquisition, there are problems with economic, environmental and social aspects (Ayu & Putri, 2021; Dewi et al., 2020; Sa'diyah, n.d.; Urrahmi & Putri, 2020b).

However, there are exceptions to the land acquisition process for the construction of toll roads in West Sumatra, which runs relatively slowly compared to other regions (Asih Retno Dewi et al., 2020; Fahmi & Putri, 2022; Urrahmi & Putri, 2020b). In West Sumatra, there are six toll road sections planned by the government from Padang to Pekanbaru, including the Padang-Sicincin section; Sicincin-Bukittinggi; Bukittinggi-Payakumbuh; Payakumbuh-Bakalan; Pangkalan-Bangkinang; Bangkinang-Pekanbaru. The length of the planned toll road is 256 km. Currently, the ongoing construction phase is the Sicincin-Padang section with a length of 36.6 km. The land acquisition work had not been completed in 2018 even though the target for completion of the construction was planned to be in 2020. Based on the results of research conducted, it is known that the delay in the land acquisition process for the construction of the Sicincin-Padang toll road section was caused by several

issues, including the issue of the affected community refusing the compensation value; administrative process for the acquisition of customary land; coordination among stakeholders involved; limited space for participation of affected communities (which is regulated by land acquisition regulations).

Several things happened as a result of the compensation value that was not agreed upon by the affected community, such as taking a relatively longer time for land acquisition; the emergence of disputes between the community members, and the community and stakeholders. The community considers that it has been harmed and there is no justice because they cannot defend their assets even though they do not agree with the value of the compensation (a consignment, rules or regulations depositing compensation money in court and allowing the state to take community land for the public interest) (Debby, 2020).

Furthermore, the affected communities explained that if they were given more space in the planning of land acquisition, the implementation of land acquisition could be carried out more quickly. However, the participation space for the community is only for socialization and public consultation and is relatively unable to provide opportunities for affected communities to change the value of compensation. Moreover, this is coupled with the people in West Sumatra who are very strong in holding customs and culture, especially regarding the habits of deliberation and consensus.

Assessment of Social Risk Index for Land Acquisition of Sicincin-Padang Toll Road

The calculation findings using the social risk index formula for land acquisition are used to determine the social risk index for land acquisition for the Sicincin-Padang toll road. The community norms and culture variables are generally known to have an average value of 4.10 and a percentage of 82.36 percent, which indicates that these variables offer relatively low social risks in the land acquisition for the Sicincin-Padang toll road. On the other hand, the asset transfer variable, with an average value of 2.52 and a percentage of 50.44 percent, is the variable that has the greatest capacity to increase social risk in the land acquisition for the Sicincin-Padang toll road. [Table 2](#) shows the findings of the assessment of these factors and indicators:

Table 2 Results of social risk measurement of land acquisition construction of the Sicincin-Padang section of the toll road

Variable Social Risk	Indicator	Statement	Score	Percentage	Score Average	Percentage Average
Norms and Culture	Belief in Norms	Belief that ulayat land is an asset as well as identity as a Minangkabau tribe	4.36	87.14	4.10	82,36
		Belief that the authority to manage ulayat land must be in accordance with the Minangkabau customary system which is represented by the tribal chief/ <i>ninik mamak/ mamak kepala waris</i>	4	80		
	Outside Cultural Influence	The process of land acquisition on ulayat lands must harmonize state law with Minangkabau customary law	4	79.94		
		The distribution of compensation for customary land must be based on the provisions of Minangkabau customary law	4.06	81.11		
Social interactions	Interaction in Community	Joint management of the compensation process for land acquisition for the construction of toll roads to the government	4.08	81.54	3.71	74,18
	Alienation	The community continues to interact and carry out activities (social; economic; customary) with community groups in the old place before being moved due to land acquisition	3.34	66.83		
Asset Transfer	Land Ownership	There is still private and customary land ownership for agricultural activities and buildings for housing even though compensation for land acquisition has been carried out	2.92	58.46	2.52	50,44
		Not moving to another location even though all private or communal land has become the object of land acquisition for development	2.45	49.05		
	Economic Establishment	Still having a job and income in agriculture even though do not own land for agricultural activities	2.92	58.34		
		Keep having a permanent job and not being unemployed even though you don't have land and expertise other than in agriculture	2.94	58.83		
	Access Public Facilities	Allowed to access toll roads for free	2.30	45.91		
		It's faster and easier to get to educational facilities after there is a toll road	2.08	41.66		
		It's faster and easier to get to a health facility after there is a toll road	2.04	40.86		
Regulation Implementation	Compensation Value	Participate in active discussions and take part in making decisions with parties involved in each stage of toll road land acquisition (planning; preparation; implementation; delivery of results)	3.27	65.48	2.89	57,82
		Belief that the compensation value for land acquisition is fair and realistic	3.91	78.22		
	Society participation	There is an opportunity to have an opinion and participate with the government in deciding the value of compensation for land acquisition for the construction of toll roads	3.26	65.29		
		The Government and Investors make written agreements with affected communities as the basis for land acquisition planning regulations for toll road construction	3.06	61.17		

Table 2 Continued

Variable Social Risk	Indicator	Statement	Score	Percentage	Score Average	Percentage Average
	Social Benefits	The government and investors prioritize affected communities to get jobs from toll road construction	2.26	45.17		
		The Government and Investors prioritize humanitarian assistance, education and health facilities to affected communities	2.26	45.29		
		The government and investors guarantee environmental sustainability and periodic repairs of pollution after land acquisition for toll road construction being carried out for affected communities	2.21	44.18		

It is possible to classify the degree of social risk for land acquisition for the Sicincin-Padang toll road based on the findings of the assessment of the social risk index. This classification is based on the Likert scale (Sugiyono, 2017). Values of 1–2.5 are considered to be high risk, values of 2.5–3.5 are considered to be moderate risk, and values of 3.5–5 are considered to be low risk. From [Table 2](#), it is shown “the low risk” is the category assigned by the variable norms and culture; and social interaction variable. This means that the belief and application of the prevailing norms and culture in the affected community is relatively not too affected by the implementation of land acquisition for the construction of the toll road in the Sicincin-Padang section, and it does not pose a broad social risk. Although there are problems in terms of who has the right or not to get compensation for customary land, this problem can be solved by distributing proportional compensation to all members of the clan from the owner of the customary land.

Furthermore, the social interaction variable of the community has an average value of 3.71. This explains that community social interaction still occurs and is well established despite the existence of land acquisition activities for the construction of toll roads in the Sicincin-Padang section. This is described from the results of

interviews conducted with affected communities, that the affected communities continue to communicate and visit each other with their relatives because most of the customary lands compensated by the government are uncultivated land and are far from settlements and some are agricultural areas (rice fields), and this relatively does not pose a high social risk.

The score and percentage of asset transfer is “the high risk” category. The last variable as the regulation implementation is “the medium risk category”. Most of the land affected by the construction of this toll road is communal land and agricultural land, which also affects the ownership and sustainability of the community in earning a living. Regarding land ownership, the affected community stated that their customary land was reduced even though it was compensated by the government at a reasonable price, but this did not eliminate the fact that their land had been lost and this would threaten the sustainability of the lives of their descendants in the future. The agricultural area is the same, and although there is still land that can be cultivated for agriculture, the efforts they make are more than just cultivating the existing agricultural land. The loss of agricultural area for the community is quite impactful. This is in accordance with [Figure 2](#), that the agricultural area is affected by the toll road route.

**Figure 4** Trace of the toll road passing agricultural land

Source: PT Hutama Karya documentation (2021)

From the regulation implementation aspect described, the thing that categorized this variable as “medium risk” is because if there are people who do not agree with the value of compensation, then the construction of toll roads can still be carried out by the government, and compensation for the community is entrusted to the court, the reason is that this has been regulated by regulations.

Discussion

Land acquisition for the building of the toll road is currently being carried out for the Sicincin-Padang stretch in West Sumatra. Four phases make up the process of acquiring land: planning, getting ready, doing it, and delivering the results (Limbong, 2017). Before building a toll road, one of the steps that must be completed is land acquisition, in order to guarantee that there is land available (Putri et al., 2021). Social comfort and safety within the society are connected to social risk (especially the affected community) (Rusim et al., 2019). According to this research, social factors such as cultural norms, social interactions, asset transfers, and the enforcement of laws all play a role in the social risk of land acquisition for the Sicincin-Padang toll road.

Social risk is also a risk that is difficult to predict and even becomes the most threatening risk and has a long impact on society (Emerton & Snyder, 2018). The social risk of land acquisition tends to be related to the norms and culture of the community in the location of the land acquisition, such as communal land tenure rights which have implications for the recipient of compensation for the land (Rusim et al., 2019). This also happened to the land acquisition for the construction of toll roads in West Sumatra, the ownership of communal land which involved many parties influenced the administration of administrative procedures and the recipients of compensation for the land acquisition. Sometimes disputes and conflicts also arise within the clan or community that owns the ulayat land. These disputes are between families within the same lineage or within the same tribe, even between women (*bundo kundang*) and men (*niniak mamak*). Furthermore, related to the emergence of disputes within the clan or customary owners, such was also revealed in previous research on land acquisition in Sub-Saharan Africa, customary land ownership between men and women (Whitehead & Tsikata, 2003). It is anticipated that parties who mediate, such as indigenous peoples’ organizations, local government, and others, will be able to play a role as

a bridge in resolving conflicts that arise in the community for the issues that occurred in the land acquisition of the Sicincin-Padang section (Ding, 2007) because these disagreements can occasionally result from a failure to comprehend legal requirements and a dialogue breakdown between the parties.

Then, the social interaction of the community is another aspect related to land acquisition and the social risks posed. Land acquisition for infrastructure development has relatively changed the lives of the affected communities. When related to previous research, one of the aspects that is most affected by land acquisition is the social interaction of the community, society as a social being cannot be separated from the interaction and relationships between human beings in their community. Land acquisition sometimes changes these conditions due to forced displacement from one place to another (Cernea, 2004; Cernea & Schmidt-Soltau, 2006; Eguavoen & Tesfai, 2012; Patel & Mandhyan, 2014; Sapkota, 2000), or some of these communities have become isolated from their former environment (Cernea, 2004; Kampová, 2010). Related to the research conducted, this aspect of social interaction is quite influential on the people affected by land acquisition in West Sumatra, but the impact is not too high and leaving the community far separated from their community. This happens because in West Sumatra ulayat land is land that can be used by all members of the clan, both for the benefit of housing and for earning a living, and other social functions, so even though one or several plots of communal land are affected by toll road construction and have been compensated by the government, there are still other customary lands that can be utilized. The exceptions are people who are not part of the ulayat owners or are not the original Minangkabau tribe who do not own customary land, such as in one of the villages (*nagari*) there named *Nagari Buayan Lubuk Alung*, where the community comes from the South Tapanuli area, North Sumatra, which has been hereditary since the Dutch colonization settled there. This is proof that the people in West Sumatra are very supportive of the government’s program to build toll roads even though some of them will be separated by distance and the interaction between one community, and another is relatively changing even though it does not make them isolated.

Aspects of asset transfer are also social risks that arise from land acquisition for the construction of toll roads in West Sumatra. Based on the data in [Table 1](#) and [Diagram 1](#), it can be seen that land ownership, economic stability and access to public facilities are

problems for affected communities, as evidenced by the value of social risk which is categorized as moderate to high risk (Figure 2). This explains that although land acquisition regulated by the government provides a fair compensation value, it does not eliminate the fact that the affected people have lost their assets (land) and this affects their economic stability, because in general the people there have a livelihood in agriculture (Cernea, 2004; Kampová, 2010); the affected community cannot refuse to surrender their land because of the regulations governing the value of compensation, and if the community does not agree with the value, construction will still be carried out and the compensation money will be deposited in court (Djanggih & Salle, 2017; Halafah et al., 2020; Marlijanto, 2010; Pratiwi, 2016; Tawas, 2013). It is clear from the explanation above that, despite some opposition, there is the worth of compensating for land (Debby, 2020; Miftah Urrahmi et al., 2020). Nevertheless, the impacted areas continue to be compliant and back the government's plan to construct toll roads in West Sumatra (Putri et al., 2022).

The implementation of land acquisition regulations for the development of public interests that have been regulated by the Government of Indonesia (Law of the Republic of Indonesia Number 2 of 2012) also does not fully guarantee the implementation of land acquisition without social risk. Precisely, based on the results of the research conducted, one of the problems that occurred in the land acquisition for the construction of the Sicincin-Padang toll road section in West Sumatra was due to the value of compensation, which was considered unfair and tended to be rejected by the affected community, like the compensation land price for location 1, which was less than the current market price, and the majority of the compensation value was refused; however, for location 2, the land price followed the current market price (Fahmi & Putri, 2022). So, even though it was rejected by the affected community and there were demonstrations by the community to the government, the value of the compensation did not change on the grounds that the regulations stipulated this (Urrahmi & Putri, 2019). Furthermore, it can also be explained that there is no room for affected communities to participate in determining the compensation value which exists, and such communities are only allowed to discuss forms of compensation and changes in road alignment. Also, the affected community cannot refuse land acquisition to be carried out on their land or other land, on the pretext that the land acquisition is for the development of the public interest in accordance with the provisions of the land acquisition legislation.

The social risk in terms of implementing this regulation arises because the decision-making process on land acquisition policies in Indonesia tends to be top-down. This top-down decision-making process is dominated by policy makers (government) and relatively few involve the community (Ismail et al., 2019; Rustiadi et al., 2018).

A bottom-up approach to land acquisition can offer chances for participation by impacted communities at every stage of the process. From the planning stage to the completion stage, the community is involved. At the planning stage, the impacted community can offer suggestions on the locations of toll road construction (to reduce locations that are on productive land, communal land, settlements, and others); the value of land compensation; the sustainability of the nearby community; and the environmental impact). Planning for the acquisition of land for the construction of toll roads can reduce social risks if it gives affected communities more chances to engage in decision-making (O'Faircheallaigh, 2010). A high degree of community participation is when they agree on the discussions held with the government as partners in implementing development, which is in line with the concept of participation advanced by Arnstein that community participation is synonymous with community power (Arnstein, 1969, 2019; Lahunduitang & Fela Warouw, 2013). When affected communities who own land are actively involved in land acquisition planning, community participation has been realized, and this also proves that democratic principles are applied to every decision making for social justice-oriented infrastructure development, which is also called communicative planning (Steele, 2020).

Conclusion

It is crucial to conduct a social risk evaluation before purchasing land in West Sumatra, Indonesia, to build the Sicincin-Padang toll road. This is because the assessment can lower the community's social risk associated with land acquisition, and it also provides a guarantee that the building of the toll road will proceed in accordance with the predetermined timeline. This research demonstrates how a number of factors, including social interaction, cultural norms, asset transfers, and the implementation of regulations, affect the social risk of toll road land acquisition. Furthermore, it is known that the social risk index number for land acquisition varies for each variable based on the social risk index formula for land acquisition. Asset transfer, particularly those pertaining to traditional land ownership, the sustainability

of livelihoods, and access to public amenities, is the factor that has the greatest correlation with the occurrence of social risks while other factors are grouped below that. Indicators, such as customary land ownership, can be added to the asset transfer variable based on the findings of the index evaluation. Based on the study findings, it is known that the acquisition of land for private or corporate ownership is governed differently than ulayat land because in Indonesia, customary law is recognized and is subject to state law. In order to ensure compliance with applicable customary law, all legal issues relating to land acquisition for customary ownership must be coordinated.

Recommendation

In order to minimize any possible social risks, it is advised that the social risk index assessment be incorporated into the land acquisition planning. Future research on social risk index evaluation can be conducted using various variables and formulas to further our understanding of the social risks associated with land acquisition and to be applied empirically.

Conflict of Interest

The authors declare that there is no conflict of interest.

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