

# Community Perceptions on Environmental Impact Assessment in The Construction of the Toll Road between Solo and New Yogyakarta International Airport

## ABSTRACT

**Background and Objective:** The development of toll roads between Solo and New Yogyakarta International Airport is part of the government's endeavor to improve the accessibility, connectivity, and capacity of inter-regional transportation networks in order to considerably boost economic growth through increased regional links. The research will analyze at the socio-cultural circumstances, social conflict, public health, and community views and attitudes about toll road building. **Methods :** This study adopts a qualitative approach that includes in-depth interview observation procedures. Data analysis include identifying, classifying, and interpreting community viewpoints as perception. **Result:** The majority of respondents were men (53%), with the greatest degree of education being senior high school (59.50%), and the majority of their jobs were as private employees (42%), with an average salary of Rp. 3,195,000. The surrounding community is religious, with 84% of residents actively participating in Islamic studies in an environment of mutual cooperation (88.5%). Conflicts in society are settled amicably (99%). The people does not oppose toll road building (94%) because they feel it will have a positive impact on regional interests. Environmental impact analysis is carried out in a proportionate manner by incorporating the community through public engagement. Implementation of public consultation throughout ten time periods. The outcomes of public consultations are used as feedback, both supporting and critical. The selection of community leaders as technical team members oversees the execution of environmental impact management and monitoring. Changes in public views and attitudes about toll road development must be regulated and monitored to ensure that the public impression of toll roads remains favorable throughout construction..

Keywords: Community Perceptions, Public Consultation, Community Involvement, Solo-New Yogyakarta International Airport Toll Road, Environmental Impact Assessment,

## 1. INTRODUCTION

The Jogja-Solo Toll Road Project is a cooperation project between the government and business entities, as agreed upon by the Republic of Indonesia's The Ministry of Public Works and Housing through the signing of a Guarantee and Regress Agreement. The Jogjakarta-Solo Toll transportation project intends to improve the accessibility, connection, and capacity of Yogyakarta and Solo's interregional transportation networks. This effort is intended to significantly boost economic growth by improving regional connections. This effort is intended to significantly contribute to economic growth by enhancing connections across areas [1][2]. The development of the Jogja-Solo toll road has the potential to considerably boost regional connectivity and economic growth; yet, this effect is inextricably linked to a variety of challenges that people face. One of the issues that may occur is the socioeconomic impact, particularly on locals living near the development site. Problems with acquiring property for toll road development, which may result in population migration, can generate stress and uncertainty in people's lives [3]. The construction of the Jogja-Solo toll road has the potential to cause negative impacts, especially during the construction phase which causes noise disturbances, air pollution and traffic jams which can

disrupt the activities of local communities. Several locations along the construction of the Jogja-Solo Toll Road experienced traffic jams during construction, resulting in long travel times and making mobility difficult for local communities.[4].

Perceptions can be used to evaluate sociocultural changes among impacted people. If the public sees the development of a toll road as advantageous, they will respond positively, and vice versa. Increasing regional linkages has the potential to greatly enhance local communities' social and economic lives by accelerating transportation and facilitating access to numerous areas. If properly administered, the Jogja-Solo Toll Road has the ability to stimulate local economic growth and enhance the welfare of the surrounding community [5]. The building of the Jogja-Solo toll road has the potential to open up new investment possibilities and attract business people to the region. The provision of adequate infrastructure can entice major enterprises and small and medium businesses to operate in the region., so that it can create employment and raise local incomes. In a social setting, toll road connectivity may improve community relationships while also facilitating cultural exchange and social activities [6]. Toll road development, with proper planning, has the potential to be a driver for long-term economic growth and increased community welfare across the region. Public perception is the process by which people arrange and interpret their sensory experiences in order to provide meaning to their surroundings. Each person's view will vary based on their degree of experience, knowledge, maturity, and skill. Public perception is vital in assessing the effects of toll road development. Community engagement is one facet of judging the effectiveness of development through the perspectives provided by the community, particularly impacted communities.[7]

The promote a more complete research and expand the depth of the analysis of all consequences, toll road construction plans are divided into two sections: Yogyakarta Segment 1 (Sta. 35+600 - Sta. 61+600) and Yogyakarta Segment 2 (Sta. 61+600 - Sta. 96+592). Land cover characteristics change, particularly between urban and non-urban regions, which are a combination of peri-urban and rural[8]. Land cover in urban regions is dominated by medium to high density communities, trade services, and other public amenities. Meanwhile, non-urban regions will be dominated by low to medium density towns dotted with rice fields or plantations[9]. The Yogyakarta urban region (Yogyakarta City, Sleman Regency, and Bantul Regency) has evolved into a single urban area, making administrative borders less obvious. However, the presence of a ring road in Yogyakarta City appears to be a physical barrier separating urban and non-urban regions. To define urban and non-urban regions, the Yogyakarta West Ring Road will be employed as the physical border for segmenting toll roads in this study.

The implementation of toll road construction necessitates community support, which is participatory by involving the community. This is an indicator of problems arising from toll road construction, and it serves as the foundation for the need for appropriate and sustainable environmental management and monitoring.[10]

This research attempts to identify the socio-cultural implications of the building of the Solo-Yogyakarta toll road (New International Yogyakarta International).

## **2. RESEARCH METHODS**

The site of the Solo-Yogyakarta toll road in the Special Region of Yogyakarta is intended to run through the administrative districts of Sleman, Bantul, and Kulon Progo Regencies, with a land acquisition area of 6,808,048 m<sup>2</sup> and a length of 60.9 kilometers. The toll road development will begin at Tamanmartani Village, Kapanewon Kalasan, Sleman Regency, and finish in Sindutan Village, Kapanewon Temon, Kulon Progo Regency. Figure 1 depicts the Toll Road Trace Overlay with the Spatial Structure Plan Map of the Transportation Network System for the Special Region of Yogyakarta. Figure 2 shows of Overlay Toll Road Trace with Map of Spatial Structure Plan of Transportation Network System for Yogyakarta Special Region

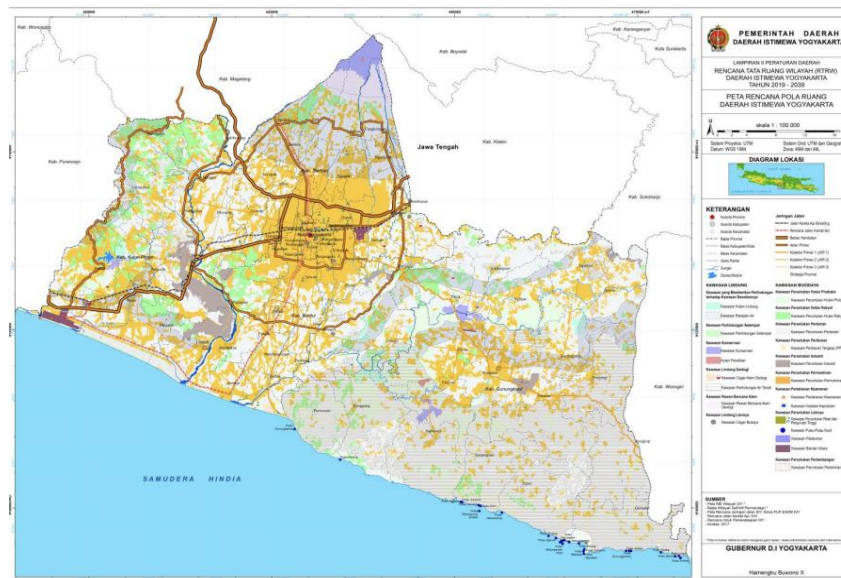


Fig 1. Overlay Toll Road Trace with Map of Spatial Structure Plan of Transportation Network System for Yogyakarta Special Region.

This study employs a qualitative research approach. Three techniques of data collection were used: (a) the library approach, which involved gathering diverse literature and secondary data linked to land acquisition, research findings, and village data; (b) the observation method, which involved visiting and observing everyday life and circumstances in the inhabitants' home surroundings; and (c) an in-depth interview strategy that involves asking informants a series of questions. The sample was deliberately chosen, using informants from the government and the community [5]. Data analysis involves identification, categorization, and interpretation, through the outcomes of public perception as a conclusion from the responses to the questions asked.[11]. survey which was conducted on 3 – 10 July 2023. Based on the survey results, several aspects of the the social and cultural conditions of society, social conflict due to toll road construction, public health component, changes in community perceptions and attitudes about at-grade and elevated toll road construction and community involvement results and evaluation to planned activities for the construction of the Solo - Yogyakarta - NYIA Kulon Progo Toll Road (STA. 35+600 - STA 96+592) can be described.

### 3. RESULTS AND DISCUSSION

Based on the findings of data gathering using a standardized questionnaire. This acquired data has already been checked to exclude any erroneous data that might compromise the outcomes of the study data analysis.

#### Description of the activity

The complexity of the development plan at the building stage is also taken into account in this study's segmentation process. An elevated toll road construction design will have a significantly different impact than toll road development with embankments or at grade [12]. Therefore, this segmentation will also take into account the type of construction that will be carried out later. Toll road construction which is dominated by elevated toll roads will be combined into a single segment, while plans for the construction of at-grade toll roads will be integrated into other segments. Yogyakarta Segment 1 (Sta. 35+600 - Sta. 61+600) is an urban region with dominant land cover in the form of medium- to high density residential

neighborhoods, trade services, and public amenities; however, there are a few tiny portions that remain rice fields and plantations. Aside from that, this section includes all toll road improvements with elevated (flyover) construction along the Yogyakarta City Ring Road, which is an urban region.[13] Meanwhile Yogyakarta Segment 2 (Sta. 61+600 - Sta. 96+592), starting from Sta. 61+600, has less dense land cover than segment 1 and is dominated by low to medium density residential areas and rice fields and gardens. This entire segment will be built with At Grade construction and passes through several cultural heritage sites. Apart from that, in this segment a rest and service area will also be built [14] Therefore, the study focuses on segment 1 and segment 2

### **Respondent Profile**

Interviews were performed with 200 randomly selected respondents from community groups in the impacted regions as part of the socioeconomic environmental impact assessment study[15]. The respondent is domiciled in Kapanewon Kalasan (Tamanmartani, Selomartani, Tirtomartani and Purwomartani subdistricts), Kapanewon Prambanan (Bokoharjo subdistrict), Kapanewon Depok (Maguwoharjo, Condongcatur and Caturtunggal subdistricts), Kapanewon Ngaglik (Sariharjo subdistrict), Kapanewon Mlati (Sinduadi, Sendangadi, Tlogoadi and Tirtoadi subdistricts) , Kapanewon Gamping (Trihanggo, Nogotirto, Banyuraden, Ambarketawang, Balecatur subdistricts), Kapanewon Godean (Sidoarum, Sidomulyo, Sidokarto subdistricts) Kapanewon Moyudan (Sumberrahayu subdistrict), Kapanewon Sedayu (Argomulyo subdistrict, Argosari), Kapanewon Sentolo (Banguncipto subdistrict, Kaliagung) , Kapanewon Nanggulan (Donomulyo Village), Kapanewon Wates (Wates Village), Kapanewon Kokap (Hargomulyo Village, Hargorejo), Kapanewon Pengasih (Compassionate Village, Sendangsari, Karang Sari), Kapanewon Temon (Kulur Village, Kaligintung, Temon Wetan, Temon Kulon, Palihan , Janten, Karangwuluh, Sindutan, Kebonrejo).According to the interview results, the majority of respondents are male (53%), with the remaining female (47%).

Respondents' current educational stratification; in general, respondents have a suitable degree of education. This may be observed in the latest level of schooling that the majority completed: senior high school with a percentage of 59.50%, there were even respondents who had completed education from diploma to bachelor's degree with a percentage of 22%; the rest were respondents with the most recent level of education being junior high school with a percentage of 14.50%, and respondents with a final education level of elementary school with a percentage of 4%. With this degree of schooling, the respondent's literacy is quite high. Therefore, people with this degree of literacy find it simpler to acquire and interpret information..

### **Livelihoods and Income**

Livelihoods also reflect the social situations of society. Livelihood is represented in the sort of employment held by the responder, as well as the money earned from that job. The respondents' employment descriptions are rather diverse, with private sector employees and housewives dominating. However, when it comes to the proportion of each form of job, respondents are led by private employees (42%), followed by housewives (24%), casual daily workers (11.50%), dealers (6%), government servants (11%), entrepreneurs (5%), and military (0.5%). The respondents' income ranges between Rp. 1,250,000 to Rp. 6,500,000, with an average of Rp. 3,195,000. The Yogyakarta regional minimum wage is IDR 2,324,775.50

[16], This demonstrates that the average income of responders remains above average.

### **The Social and Cultural Conditions of Society**

Aside from education, livelihood, and income, a description of the existence of social institutions in the community is also relevant since it illustrates how the community's social processes occur at the study area. This is evidenced by the prevalence of community activities and examples of peace culture in society.

The culture of peace is also the community's local knowledge when confronted with rising societal forces that might lead to conflict and even dissolution. The social and religious activities of the community around the research area are dominated by recitation activities (84%), village clean-up (46%), and earth alms (4%)[17]. This might indicate that the inhabitants in the Toll Road Construction region are religiously inclined. Meanwhile, the community cleans the village. Village cleaning by the community is rather unusual because this activity is normally carried out on special days. Similarly, mutual cooperation activities continue to exist in society, despite the fact that 88.5% of mutual cooperation activities are accidental (unscheduled), with 11.5% carried out consistently. This might indicate that socio-cultural activities in the research area are still continuing well [18]

### **Social conflict due to toll road construction**

According to interview data, the degree of conflict in the lives of communities around the Solo - Yogyakarta – New Yogyakarta International Airport KulonProgo Toll Road Development Plan region (STA. 35+600 - STA. 96+592) happens infrequently (76%), and never (24%). As a result, it is possible to infer that the community around the Solo - Yogyakarta - NYIA Kulon Progo Toll Road Development Plan (STA. 35+600 - STA. 96+592) is cohesive and harmonious. The community has local wisdom related to problem solving models so as to create an atmosphere of social order. This makes the people in the study area have a good culture of peace, thus showing the characteristics of an integrative society. Communities in the study region opt to handle conflicts via discourse (99%), whereas 1% are resolved legally. This type of behavior demonstrates local wisdom in addressing social conflict in society. Yogyakarta society's culture largely supports the notion of kinship, ensuring that problems do not escalate into confrontations and can be handled via discourse and consensus.

### **Community assistance for establishing the location for the Solo-Yogyakarta-New Yogyakarta International Airport Kulon Progo Toll Road.**

Based on the findings of public consultation in the context of choosing the location, residents impacted by the project are obliged to express their acceptance or rejection of the project to be executed. The results of observations and interviews conducted in 26 subdistricts in 10 Kapanewon along Yogyakarta Segment 2 showed that there was no emergence of self-help groups or community associations formed informally by affected residents to support or reject the Solo-Yogyakarta-NYIA Toll Road construction plan, Kulon Progo. These actions yielded the following information:

Table 1. Community support for toll road construction

No.	Location	Number of Fields	Agree	%	Neutral	%	Reject	%
1	Sleman	1617 m2	1552 m2	96%	65	4%	0	0%
2	Bantul	663 m2	630 m2	95%	33	5%	0	0%
3	Kulon Progo	3335 m2	3102 m2	93%	233	7%	0	0%
Total		5615 m2	5284 m2	94%	331	6%	0	0%

Table 1 reveals that there is no objection to the construction of the Solo-Yogyakarta-NYIA Kulon Progo Toll Road (94% approve). Several causes or reasons for not having signed a land purchase agreement include the land still being in ownership dispute, a dispute over heirs, still being controlled by another party (as bank collateral), or the land owner not being present because they live outside the city.

Potential disputes, related to the results of public discussions during location determination, and proposed opinions. Responses to public consultations regarding the Environmental Impact Study, as well as the process of procuring property for public use in other areas, indicate a conflict of community approval/rejection of the Toll Road. construction does not occur. The approach to society prioritizes a family approach to reach consensus. Changes in Social Conflict during land provision activities were concluded as a negative impact[19]

## **Public Health Component**

**Water Availability:** Water availability is part of the social life of the community, because it is a source for the sustainability of the social life of the community. Water is a basic need for people to bathe and wash the toilet. However, because water is not only an economic object, but also a social object, water also has social value, and even in certain communities water has spiritual value[20]. In this study, the use of water for people's daily lives is water as a social object, because so far people in rural areas have used dug wells as their source of clean water, so they do not pay water tax. Water availability can be an important issue when there is disruption due to a project. Drilled wells are the main source of water for the community to fulfill 61% of their water needs, and dug wells account for 26% and the remaining 13% comes from mineral water sources in gallons. The large number of people who use drilled wells as a source of clean water means that there is no shortage of water during the dry season

**Environmental Sanitation:** Sanitation is one of the factors that can cause changes in a person's health status. Poor sanitation can be seen at a glance from the waste produced without further management. Poor sanitation will cause various health and comfort problems. The resulting impacts can last for a long period of time[20].

Based on data obtained from the Sleman Regency Statistics Agency, it is known that the average household with access to adequate sanitation during 2015 - 2020 was 94.53%. The following is detailed data on households with access to adequate sanitation in Sleman Regency between 2015 and 2020.

Based on statistics from the Bantul Regency Central Statistics Agency, the average number of houses with adequate sanitation between 2015 and 2020 was 94.23%. Based on data collected from the Kulon Progo Regency statistical office, it is known that the average number of households that had access to proper sanitation during 2015 – 2020 was 81.11%.

The maximum incidence rate for respiratory illnesses in Sleman Regency was 18% in 2019, with the lowest being 7% in 2022. The average prevalence rate during the previous four years was 7%. Meanwhile, the highest incidence rate for respiratory illnesses in Bantul Regency was 11% in 2019, with the lowest at 2% in 2022. The average prevalence rate over the last five years was 7%, with the highest incidence rate of respiratory illnesses in Kulon Progo Regency in 2018 at 18% and the lowest in 2021 at 1%. The preceding five-year average prevalence rate was 11 percent. to calculate the predicted disease prevalence rate during toll road construction, specifically in 2023, a comparison will be made between the average disease prevalence at the study location and the estimated calculation after adding the Total Suspended Particulate parameter at the study location. The initiative is expected to raise the prevalence of acute respiratory tract infections by 23-70% in all study areas, with Kulon Progo Regency experiencing the greatest rise. In 2023, the incidence of acute respiratory illnesses caused by toll road building operations is 9 per 100 persons in the Sleman and Bantul Regencies and 20 per 100 residents in the Kulon Progo Regency region. The estimated results of the increase in the prevalence of acute respiratory infections with the project in the study area have a higher value when compared with the prevalence of acute respiratory infections in Yogyakarta Province, namely 6.9 per 100 population, Riskesdas standard [21]. Therefore, during toll road construction, the impact of decreasing air quality needs special attention so that the increase in the prevalence of acute respiratory infections can be reduced.

### **Changes in Community Perceptions and Attitudes about at-grade toll road construction**

The sociological survey results reveal that, in general, respondents are unconcerned with the Solo-Yogyakarta Toll Road construction plan. Respondents tend to favor the building of the Solo-Yogyakarta Toll Road (STA. 35+600 - STA. 96+592) because they believe it will have a good rather than negative impact. This is demonstrated by 67% of respondents who believe toll road building has had a favorable influence on regional interests. Meanwhile, just 4% of respondents believed toll road development would have a negative impact, with the remaining 29% indifferent.

Future environmental tone without the project: It is believed that the community's views and attitudes toward the toll road construction plan area would remain unchanged as long as the plan is not changed and construction activities do not begin.

Meanwhile, predictions of the future environmental tone associated with the project, particularly the at-grade toll road building activities, have been expected to result in effects in the form of 1). Increased noise 2). The usage of heavy machinery causes increased vibration. The development of these repercussions can have an additional impact on changes in community perceptions and attitudes toward planned activities.

The findings of the sociological study show that respondents prefer the neutral choice (up to 60%). Then, it was dominated by respondents who indicated that at-grade toll road construction activities had no effect on the public's views and attitudes (32%), while the balance stated that at-grade toll road construction activities affected the public's unfavorable perceptions and attitudes (8%). Based on this, it can be argued that selecting the neutral option indicates that people have not yet made a decision and are expected to be oriented toward at-grade toll road building operations, which will result in changes in people's views and unfavorable attitudes. As a result, it is possible to conclude that at-grade toll road construction operations will have a detrimental influence on community views and attitudes in the range of 8 to 60%..

With the risk that neutral respondents may flip around and conclude that at-grade toll road building operations will have a detrimental impact on community attitudes and perceptions. The influence of at-grade toll road construction operations on development projects can be harmful in terms of community views and attitudes, resulting in the emergence of counterproductive difficulties. If not managed effectively, these effects can build up.

### **Changes in Community Perceptions and Attitudes about Elevated toll road construction**

The impact of changes in public views and attitudes toward elevated toll road building operations is the cumulative effect of increased noise, vibration, and groundwater quality degradation.

The findings of the sociological poll show that 59% of respondents choose the neutral choice. Then, it was dominated by respondents who indicated that elevated toll road building activities had no effect on public views and attitudes (34%), while the remainder stated that elevated toll road construction activities had a 7% negative impact on public perceptions and attitudes. Respondents with a neutral opinion were more likely to oppose toll road building. As a result, it is reasonable to conclude that respondents who claimed that the building of elevated toll roads had a negative impact were 7% (respondents who refused), which might rise to 66% if 59% of indifferent respondents changed their mind and rejected.

Based on the information presented above, it is possible to conclude that the building of elevated toll roads will result in changes in people's negative impressions and attitudes. Changes in public views and attitudes as a result of increased toll road building operations have a magnitude of 7 - 66%, indicating a negative influence.

### **Community Involvement Results And Evaluation**

Law no. 11/2020 concerning Job Creation Article 26 Paragraph 2) specifies that the compilation of Amdal papers is carried out by consulting communities directly impacted by company plans and/or actions. The preparation of Amdal documents is carried out by involving communities within the boundaries of the Amdal study area, consisting of communities that will benefit and communities that will suffer losses, communities that are directly affected, communities that have an interest in business plans and/or activities, and non-governmental organizations (NGOs) that have previously been proven to have provided guidance and assistance to directly impacted communities [22]. Community engagement is carried out proportionally, and the involvement of other groups outside the immediately impacted communities is carried out by the government through the Due Diligence Team depending on the province[23]. As an implementation of Minister of the Environment Regulation Number 17 of 2012 concerning Guidelines for Community

Involvement in the Analysis Process Regarding Environmental Impacts and Environmental Permits, a socialization activity regarding the planned EIA preparation activities was held for the public[24]

This activity aims to offer the community with insight and information from associated parties, particularly people who will be affected by planned actions, environmental observers, and other interested parties. This socializing activity covers the activity's goals, objectives, and uses, as well as the potential outcomes. The socialization of the EIA preparation plan not only provides the community with more information about planned activities, but it also allows the initiator to obtain information about field conditions or suggestions for opinions and responses from the community, such as problems that arise as a result of the project's existence, as well as community suggestions and hopes.

Socialization of activity plans in the context of involving the community in the preparation of EIA Documents and providing recommendations on environmental suitability as a basis for issuing Environmental Permit decisions is accomplished in three ways: through media announcements, the creation and installation of X-Banners, and public consultation. Implementation is carried out employing methods Public consultation is carried out through face-to-face interviews, conducted by enumerators. The respondents questioned included village authorities, community leaders, and community representatives, as well as environmental observers from possibly affected villages..

The EIA Documents for the Construction of the Solo - Yogyakarta Toll Road were prepared in line with Republic of Indonesia Government Regulation Number 22 of 2021 on Environmental Protection and Management. According to Article 27 paragraph (1), preparation occurs in stages[25]Article 28 paragraph (1) states that community groups are involved in preparing Amdal documents, therefore the Person in Charge of the Business must involve communities directly affected through the publication of business plans and public consultations.

Activities On June 20, 2023, the newspaper Kedaulatan Rakyat published announcements of company plans and activities related to the EIA research. Aside from employing daily mass media, announcements of business intentions and/or activities were carried out by posting posters and banners in 15 Kapanewon in the administrative territory of Sleman Regency. Bantul and Kulon Progo were affected[26]

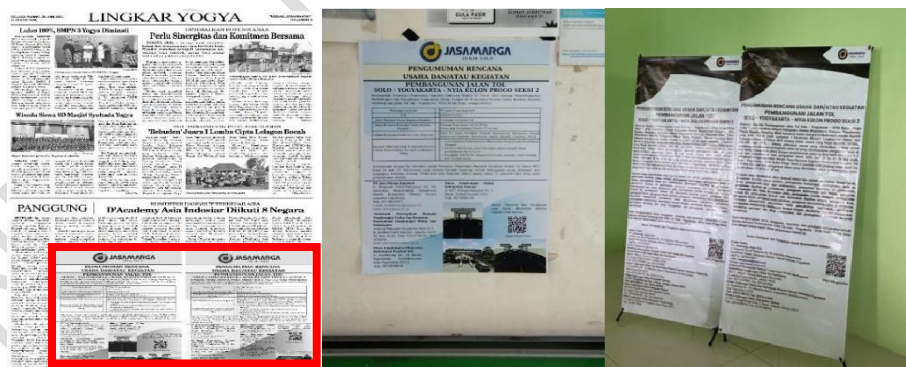


Fig 2. Announcement of Business Plans and Activities in the daily public media Kedaulatan Rakyat (left), poster on Kapanewon Notice Board (center), and X Banner Announcement at Kapanewon Office (right)

The EIA study area for the Solo - Yogyakarta Toll Road Development (STA. 35+600 - STA. 96+592) includes fifteen Kapanewons: Kalasan, Prambanan, Depok, Ngaglik, Gamping, Mlati. Godean, Moyudan, Sedayu, Sentolo, Nanggulan, Wates, Kokap, Pengasih, and Temon. The following are the specific administrative areas of the community that have been directly affected.

Tabel2. Areas Impacted by Toll Road Construction

Regency	Subdistrict	District	Regency	Subdistrict	District			
Sleman	Kalasan	Tamanmartani	Bantul	Sedayu	Argomulyo			
		Selomartani			Argosari			
		Prambanan	Tirtomartani	Kulon Progo	Sentolo	Banguncto		
			Purwomartani			Kaliagung		
	Depok		Bokoharjo			Nanggulan	Donomulyo	
			Maguwoharjo				Wates	
		Condongcatur	Kokap			Hargomulyo		
	Caturtunggal	Hargorejo						
	Ngaglik	Sariharjo	Pengasih			Pengasih		
	Mlati	Sinduadi				Sendangsari		
		Sendangadi				Karangsari		
		Tlogoadi				Kulur		
		Tirtoadi	Kaligintung					
	Gamping	Trihanggo	Temon			Temon	Temon Wetan	
		Nogotirto					Temon Kulon	
		Banyuraden					Kebonrejo	
		Ambarketawang					Janten	
	Godean	Balecatur					Palihan	
		Sidoarum					Karangwuluh	
		Sidomulyo					Sindutan	
		Sidokarto						
	Moyudan	Sumberrahayu						

### Implementation of Public Consultation

Given the high number of administrative districts immediately affected, it is recommended that the public consultation invitation be divided into ten time periods, with the intention that the event would be interactive or two-way discussion[27]. The public consultation will take place on June 20-23, 2023, with the following details:

1. Day/Date: Tuesday/20 June 2023, time: 08:00 WIB, Place: Kapanewon Gamping Meeting Room. Area coverage: Kapanewon Gamping area (Trihanggo, Nogotirto, Banyuraden, Ambarketawang and Balecatur sub-districts)
2. Day/Date: Tuesday/20 June 2023, time 13:00 WIB, Place: Kapanewon Depok Meeting Room. Area Coverage: Kapanewon Depok area (Maguwoharjo, Condongcatur and Caturtunggal sub-districts) Kapanewon Ngaglik (Sariharjo sub-district)
3. Day/Date Tuesday/ 2023, Time: 13:00 WIB, Place: Kapanewon Pengasih Office Meeting Room. Area coverage: Kapanewon Pengasih area (Karahen Pengasih, Sendangsari, and Karangsari), Kapanewon Kokap (Kalurahan Hargomulyo and Hargorejo), and Kapanewon Wates (Kalurahan Wates).
4. Day/Date: Wednesday/21 June 2023, time: 08:00 WIB, Place: Kapanewon Mlati Meeting Room. Area Coverage: Kapanewon Mlati Area (Sinduadi, Sendangadi, Tlogoadi, and Tirtoadi Districts)
5. Day/Date: Wednesday/21 June 2023, time: 08:00 WIB, Place: Banguncto Village Office Meeting Room. Area Coverage: Kapanewon Sentolo Region (Banguncto and Kaliagung Districts) and Kapanewon Nanggulan (Donomulyo District)
6. Day/Date: Wednesday/21 June 2023, time: 13:00 WIB, Place: Kapanewon Kalasan Meeting Room. Area Coverage: Kapanewon Kalasan area (Tamanmartani, Selomartani, Tirtomartani and Purwomartani subdistricts) Kapanewon Prambanan (Bokoharjo subdistrict)

7. Day/Date: Thursday/22 June 2023, Time: 08:00 WIB, Place: Room. Kapanewon Sedayu Meeting. Area Coverage: Kapanewon Sedayu Area (Argomulyo and Argosari Districts)
8. Day/Date: Thursday/22 June 2023. Time: 13:00 WIB. Venue: Kapanewon Godean Meeting Room. Area Coverage: Kapanewon Godean area (Sidoarum, Sidomulyo and Sidokarto sub-districts) and Kapanewon Moyudan (Sumberrahayu sub-district)
9. Day/Date: Friday/23 June 2023, Time: 08:00 WIB, Place: Kapanewon Temon Office Meeting Room. Area Coverage: KapanewonTemon Area (Klurahan, Kaligintung, Temon Wetan, and Temon Kulon Districts)
10. Day/Date: Friday/23 June 2023, Time: 13:00 WIB, Place: Meeting Room Kapanewon Temon Office. Area Coverage: Kapanewon Temon Area (Kebonrejo, Janten Karangwuluh, and Sindutan Districts)

Public consultation was conducted with connected stakeholders, including Panewu, Village Head, military sub-district command, Sector Police Chief, and the impacted community. Public consultations are held in person to allow for two-way communication. The following is documentation of the public consultation activities that were carried out.



Fig 3 Implementation of Public Consultation

Opinions and Responses received during the announcement and public consultation are summarized as follows:

#### **Option to Support Toll Road construction**

Based on the results of public consultation activities conducted on June 20-21, 2023, there are several inputs that are the hopes of the community around the Solo - Yogyakarta Toll Road Development Plan area (New Yogyakarta International Airport Kulon Progo), which have been summarized briefly, including the following:

Table 2. Community Suggestions and Responses

No.	Community Suggestions and Responses	Response from PT. Jasamarga Jogja Solo (Toll Road Implementation)
1	Local communities are expected to get outreach and support on land purchases and toll road development.	PT. Jasamarga Jogja Solo is committed to aiding the land acquisition process by ensuring that compensation steps and details are implemented in compliance with Government Regulation 39 of 2023, Implementation of Land Acquisition for Development in the Public Interest.
2	It is expected that there would be an economic impact on company owners affected by the toll road development.	Providing compensation can accommodate emotional losses, loss of work and loss of business including changing professions, compensation for waiting periods, loss of remaining land, and other physical damage in accordance with Government Regulation 39 of 2023 concerning Implementation of Land Acquisition for Development in the Public Interest.
3	It is hoped that solutions or traffic engineering will be developed to reduce traffic congestion.	PT. Jasamarga Jogja Solo prepared the EIA traffic document, which covers traffic management and engineering during the toll road construction and operation phases. The Andalalin report gained technical recommendations from the relevant agencies.
4	It is hoped that agricultural land will not be shifted to other purposes, and that agriculture will continue to exist.	The route's location is determined by the Governor of the Special Region of Yogyakarta's Decree Number: 206/KEP/2020 concerning the Determination of the Location for the Construction of the Solo-Yogyakarta Toll Road in Yogyakarta, so that the Governor of Yogyakarta coordinates the use of agricultural land. The impact of employing agricultural land as a project location is defined as the impact of changes in agricultural productivity..
5	It is desired that toll road building plans may be communicated in a transparent, unambiguous, and timely manner.	Project socialization has commenced since the end of 2022, and a Land Acquisition Planning Document was in place when the EIA report was performed.
6	It is hoped that there would be no disturbance to irrigation channels.	PT. Jasamarga Jogja Solo has collaborated with various agencies and regional partners to span the project site with irrigation canals. Bridges or box culverts will be built into all irrigation channels, with dimensions computed using the findings of this coordination.
7	It is envisaged that locals would be employed as toll road workers.	PT. Jasamarga Jogja Solo will favor workers from the local area while adhering to qualification standards and conventional recruiting processes.
8	It is intended that the community would have access to the route around the toll road.	PT. Jasamarga Jogja Solo is committed to providing road access that is cut off by toll roads by adhering to the requirement that the shortest distance between crossings be 300 meters. If two access roads are separated by less than 300 meters, they will be joined to create a connected access road.
9	Hopefully, cultural heritage places will not be affected.	PT. Jasamarga Jogja Solo has coordinated with the Cultural Heritage Expert Team regarding potential cultural heritage sites that will be disturbed due to the construction of the toll road.

		Design and construction methods will be consulted on to prevent disturbance of the cultural heritage site.
10	It is intended that micro, small, and medium-sized enterprises can continue to function.	PT. Jasamarga Jogja Solo berencana akan menyediakan Tempat Istirahat dan Pelayanan (TIP) atau Rest Area di wilayah Gamping dan Kaliagung. Pada rest area tersebut akan disediakan tempat bagi UMKM.
11	It is hoped that the area under the toll road would be appropriately monitored and controlled.	Basically, the place beneath the toll road is sterile. PT. Jasamarga shall conduct oversight in line with its jurisdiction. Aside from that, the public may aid by reporting any disruptive activities using the communication channels given throughout the toll road's operating stage
12	It is hoped that the contractor would follow the guidelines given within the EIA document.	PT. Jasamarga Jogja Solo will incorporate environmental management and monitoring strategies within the contractor's work contract requirements.

### Options Concerns over toll road construction

Based on the results of public consultation activities held on June 20-21, 2023, there are several inputs that are of concern to the community in the area of the Solo - Yogyakarta Toll Road Development Plan (New Yogyakarta International Airport Kulon Progo), which have been briefly summarized below:

- a. Concerns about the interruption of public amenities such as cemeteries, mosques, schools, waste processing installation pipes, drinking water pipes, power, street lighting, irrigation channels, access roads, and other public facilities due to toll road construction.
- b. Concerns about flooding during toll road building, particularly during wet seasons;
- c. Concerns about the possibility of landslides on riverbanks affected by toll road development.
- d. Concerns about environmental problems such as dust and grime.
- e. Concerns concerning noise generation along the construction area, as well as the appearance of vibrations that might cause harm to people's homes near the building site.

### Election of Community Representatives.

During the public consultation session, community members were chosen to participate in the assessment of the Amdal Study. The following are the findings of the selection of community members who will be participating in the assessment of the Environmental Impact Analysis Document, the Environmental Management Plan, and the Environmental Monitoring Plan[28]

Table 3 . Election of Community Representatives

No	Name	Address
1	Sayin Muryani	District Pelemsari, Bokoharjo, Prambanan
2	Mujiyana	District Cupuwatu, Purwomartani, Kalasan
3	Bima Saputra	District Tegalrejo, Tamanmartani, Kalasan
4	Pratoyo Ilyas	District Pondok, Selomartani, Kalasan
5	Saptati Andarini	District Dogongan, Tirtomartani, Kalasan
6	Danang T	District Sambego, Maguwoharjo, Depok

7	Arif Hudoyo	District Nandan, Sariharjo, Ngaglik
8	Yunarto	District Manggung, Caturtunggal, Depok
9	H. Sunarto	District Mancasan Kidul, Condongcatur, Depok
10	M. Baro'i	District Mlangi Sawahan, Nogotirto, Gamping
11	Agus Saputra	District Bawangan, Banyuraden, Gamping
12	Husin Suprianto	District Ponowaren, Nogotirto, Gamping
13	M. Rachmad P.P.	District Salakan, Trihanggo, Gamping
14	Rudy K	District Pasekan Kidul, Balecatur, Gamping
15	Nurbatin Kuncoro	District Pogung Lor, Sinduadi, Mlati
16	Joko Narwanto	District Mraen, Sendangadi, Mlati
17	Karyono	District Tegalsari, Tlogoadi, Mlati
18	Daryanto, S.Pt.	District Sidoarum, Godean
19	Raditya Agus Mahardika	District Sidomulyo, Godean
20	Sujatmiko	District Sidokarto, Godean
21	Iswanto	District Sumberrahayu, Moyudan,
22	Tri Purwoko	District Argomulyo, Sedayu
23	Fahri	District Argosari, Sedayu
24	Sumardi	District Kaliagung, Sentolo
25	Ikhsan Sugiharto	District Banguncto, Sentolo
26	Kardono	District Banguncto, Sentolo
27	Teguh Sumaryanto	District Donomulyo, Nanggulan
28	Jemirin	District Pengasih, Kapanewon Pengasih
29	Lilik Purnama	District Sendangsari, Kapanewon Pengasih
30	Ari Wibowo	District Karangasari, Kapanewon Pengasih
31	Syaiful Zuhri	District Hargomulyo, Kapanewon Kokap
32	Ahmad Syafrudin	District Hargorejo, Kapanewon Kokap
33	Saliyan	District Wates, Kapanewon Wates
34	Wasiat Dwi Santoso	District Kebonrojo, Kapanewon Temon
35	Sumarno	District Janten, Kapanewon Temon
36	Widjianto Edi Purnomo	District Palihan, Kapanewon Temon
37	Rohmadi	District Karangwuluh, Kapanewon Temon
38	Sri Yohanes	District Sindutan, Kapanewon Temon
39	Djanu Indrianto	District Kulur, Kapanewon Temon
40	Muh. Dwi Putranto	District Kaligintung, Kapanewon Temon
41	Yohanes Sulistyawan	District Temon Wetan, Kapanewon Temon
42	Yoshua Alex Prabawa	District Temon Kulon, Kapanewon Temon

#### 4. CONCLUSION

Community engagement is essential in the compilation of environmental impact assessment documents for the Solo New Yogyakarta International Airport toll road, as well as in the implementation of environmental management and monitoring.

Local communities must get socialization and assistance throughout the construction operations of the Solo New Yogyakarta International Airport toll road.

Community socio-cultural conditions, social conflicts, public health components, changes in community perceptions and attitudes toward toll road construction, as well as the outcomes and evaluation of community involvement, must all be managed and monitored to ensure that the community's perception of toll road construction is positive.

#### DATA AVAILABILITY

The paper and associated information files provide all necessary data. This research will assist researchers in determining important regions of the impact of the planned building of the Solo-New Yogyakarta International Airport toll road.

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