

Land Acquisition Impact for The Yogyakarta-Bawen Toll Project on Food Security of the Community of Pakuden Village, Ngluwar, Magelang, Central Java

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doi: <https://doi.org/10.21467/proceedings.151.8>

ABSTRACT

Magelang Regency is one of the most affected areas by land acquisition due to the Yogyakarta-Bawen Toll Road construction project. One of the villages affected by land acquisition is Pakuden Village, Ngluwar District, Magelang Regency, Central Java. Two hundred thirty plots of community land, dominated by rice fields, must be converted due to the construction of a 75,82 km toll road that crosses two provinces (Yogyakarta Special Region to Central Java). The conversion of rice fields has both negative and positive impacts on the community, especially in the provision of agricultural land, which results in the loss of employment opportunities for farming and reduces food availability for the community. This study aims to describe the impact of land acquisition on the Yogyakarta-Bawen Toll Road project on the food security of the Pakuden Village, Ngluwar, Magelang, Central Java community. Data were collected using in-depth interviews with informants from the government and villagers affected by the acquisition of rice fields to support the construction of the Yogyakarta-Bawen Toll Road. Residents' land acquisition for the toll road project involves at least 90% of rice fields. The community of Pakuden Village responded positively to their agricultural land acquisition program for the toll road construction. This shows the low income of residents from the management of rice fields compared to the expected income from businesses in the non-agricultural sector due to the construction of the toll road. Agricultural land has a substantial and strategic role in increasing food security. The existence of the Yogyakarta-Bawen toll road construction project causes the projected availability of rice commodities to decline. However, it does not negatively impact food access and utilization as other aspects that affect food security do.

Keywords: Food Security, Land Conversion, Toll Road

1 Introduction

The Yogyakarta-Bawen Toll Road development project is one of the government's priority programs regulated by Presidential Regulation Number 58 of 2017, concerning Amendments to Presidential Regulation Number 3 of 2016, concerning the Acceleration of Implementation of National Strategic Projects. This toll road will pass through Bawen-Secang-Borobudur-Sleman Yogyakarta. Residents' land acquisition for the toll road project involves at least 90% of rice fields. Agricultural land, especially rice fields, is the most accessible land to convert into non-agricultural land because, as an agricultural country, the topology of villages in Indonesia is dominated by agricultural land compared to land in other sectors [1]. The conversion of rice fields to construct the toll road has positive and negative impacts on the community. The toll road construction project is expected to reduce traffic density and increase the development of the tourism sector in the Yogyakarta-Solo-Semarang (Joglosemar) area [2]. However, the project's existence resulted in the loss of employment opportunities for farming and reduced food



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Proceedings DOI: [10.21467/proceedings.151](https://doi.org/10.21467/proceedings.151); Series: AIJR Proceedings; ISSN: 2582-3922; ISBN: 978-81-961472-6-6

availability for the community. Agricultural land has a substantial and strategic role in increasing food security. The conversion of agricultural land is contrary to food security and sovereignty efforts. Higher prices can increase people's dependence on imported food products, especially rice commodities.

Magelang Regency is one of the areas most affected by land acquisition due to the construction of the Yogyakarta-Bawen toll road project. Forty-four villages from seven sub-districts in Magelang Regency have experienced land acquisition to realize one of the National Strategic Projects. One of the villages affected by land acquisition is Pakunden Village, Ngluwar District, Magelang Regency, Central Java. Geographically, Pakunden Village is located at 7° 39' 56.88" South Latitude and 110° 16'48.36" East Longitude with an area of 3.09 Km². This village is the second largest in Ngluwar District, with a population density of 1,296/ Km² [3]. The position of the village, which is on the border of Central Java-DIY, makes Pakunden Village adjacent to Sumberrejo Village (DIY) in the southern region. Then the western boundary is bordered by Karangtalun Village and the east is bordered by the north of Somokaton Village and Ngluwar Village [4]. There are 230 parcels of land for residents in Pakunden Village, dominated by rice fields, that must be converted due to the construction of the 75,82 km-long toll road.

Pakunden Village is an agricultural village with the potential to develop 194.8 hectares, equivalent to 63% of the area. Pakunden Village also has the potential to become an Independent, Prosperous Village, especially in the agricultural sector. An independent village is a village that does not experience food security problems because the community has increased income and welfare. Threats and challenges to food security have occurred since Pakunden Village was included in the land use changes for constructing the Bawen-Yogyakarta Toll Road. Food security challenges can occur due to uneven food production, distribution, and consumption aspects of food quantity and quality, to food prices that tend to be irregular. Suppose an increase in food production does not accompany the Indonesian nation with positive population growth. In that case, it will have the opportunity to face problems in meeting the food needs of its population in the future. The need for food continues to increase along with the increase in population. In terms of fulfillment, not all food needs can be met due to increasingly limited production and distribution capacities. This causes food instability between national needs and fulfillment [5].

The Yogyakarta-Bawen toll road construction project requires land acquisition for residents, considering that some locations are not state-owned land. The land acquisition impacts the loss of community agricultural land used as a livelihood. As a result, it is feared that the project could spatially reduce the level of welfare of the farming community, especially concerning food security. Research on the impact of toll road construction on the community has been widely carried out but rarely has it been studied related to food security efforts. Therefore, this study aimed to examine the impact of agricultural land acquisition on food security in Pakunden Village, Ngluwar District, Magelang Regency.

2 Research Methodology

The research was conducted using qualitative methods, namely by revealing the various uniqueness found in individuals, groups, communities, and organizations in daily life in detail, in-depth, and can be scientifically justified [6]. This research is classified as field research because the research was carried out directly at Pakunden Village, Ngluwar District, Magelang Regency. Primary data sources are taken from the results of field data collection. Three methods carried out field data collection: interviews, observations, and document studies [7]. The interview uses a semi-structured interview type so that, in the process, topic development will be adequately improvised. The informants were selected by purposive sampling: the Head of Pakunden Village, the Chairman of the Gapoktan of Pakunden Village, the Head of the Pakunden Village Community Development Cadre, the Head of BUMDes Pakunden Village, and the Pakunden Village Community. Complete observation techniques were used to observe the target group and Pakunden Village.

Reviewing official Pakunden Village Government records served as the basis for the document study. Previous research publications and journals relevant to this study serve as secondary data sources.

3 Theory and Calculation

This study uses social impact theory according to Soekanto (2006), namely social impact or social impact can be influenced by causes and effects of development factors. The development process is expected to bring positive changes to education, the economy, the environment, and ecology. However, development can result in positive and negative causation [8]. The second theory used to analyze the results of this study is the theory of food security according to Law No. 18/2012 on food. This theory aligns with the definition of food security according to FAO. Food security is the condition of all people always having sufficient quantities of safe and nutritious food for a healthy and active life. According to FAO, food security has three pillars: availability, physical and economic affordability, and stability, which must be available and affordable at any time and place. If the three pillars of food security are met, the community can fulfill its food security [9]. Both theories are used to analyze the discussion in the study entitled "The Impact of Land Acquisition For The Yogyakarta-Bawen Toll Project On Food Security Of The Community Of Pakunden Village, Ngluwar, Magelang, Central Java".

4 Results and Discussion

Pakunden Village is geographically located at 7° 39' 56.88" South Latitude and 110° 16'48.36" East Longitude with an area of 3.09 Km². This village is the second largest in Ngluwar District, with a population density of 1,296/ Km² [3]. The map of Pakunden Village can be seen clearly in Figure 1. The boundaries of Pakunden Village. The position of the village, which is on the border of Central Java-DIY, makes Pakunden Village adjacent to Sumberrejo Village (DIY) in the southern region. Then the western boundary is bordered by Karangtalun Village, and the north of Somokaton Village and Ngluwar Village borders the east. The administrative area of Pakunden Village is divided into 9 Hamlets consisting of 35 RT. The nine hamlets are Gondangan Kidul, Gondangan Lor, Pakunden, Candi, Jetis, Mriyan, Tambakan, Klitak, and Guling [4]. As a village located in the lowlands with an altitude of + 360 meters above sea level, Pakunden Village is flowed by two main rivers, namely the Bunggu River (Batang) and the Krasak River, as other small rivers that have springs in Mount Merapi. The distribution of land in Pakunden Village, with an area of 188 Ha, is used for Fertile Agriculture, 8 Ha for Medium Agriculture, 5 Ha for Barren Agriculture, 15,440 Ha for River/Irrigation, and 91.38 Ha for other purposes (housing, cemeteries, places of worship, roads, and educational facilities).

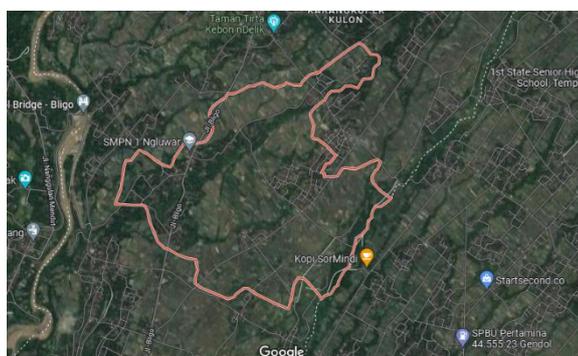


Figure 1: Pakunden Village Boundaries [1]

One thousand one hundred eighty-three (1.183) families live in Pakunden Village. The total population consists of 1,963 men and 2,043 women. The most densely populated hamlet is Dusun Pakunden, as well as being the center of village administration. Based on SNI 03-1733-2004 Ministry of PUPR, villages with

a population <150 people/ha can be categorized as villages with low population density [8]. The majority religion is Islam at 99.58%, Catholic at 0.4%, and Hinduism at 0.02%. Most of the population in Pakunden Village makes a living as farm laborers, farmers, and in the private sector. When viewed from the last education of its citizens, as many as 3% are undergraduate and diploma college graduates, 29% are high school graduates, 16% have graduated from junior high school, 23% have graduated from elementary school, and 29% have not attended school. With wet and dry agricultural terrain, Pakunden Village has the potential for agricultural development. The agricultural land in Pakunden Village is 216 hectares or 70% of the area. In Pakunden Village, food crops such as rice, vegetables, fruits, corn, and tobacco are grown. This sector is also a food security effort carried out by the village. Food security is the achievement of food sector resilience with the condition that each individual/household food is fulfilled from food production. This is reflected in the region's availability of sufficient, quantity, quality, safe, equitable, and affordable food [10].

Pakunden Village has eight farmer groups, namely Peasants Utomo (Dusun Jetis), Farmers Rahayu (Dusun Pura), Farmers Unggul (Dusun Mriyan), Sido Mukti 1 (Dusun Klitak), Sido Mukti 2 (Dusun Tambakan), Sido Makmur (Dusun Guling). Sido Rahayu (Dusun Gondangan) and Tani Rahayu (Dusun Tambakan) [4]. The number of members of the eight farmer groups is 297. The data shows that 26.8% of the total population are farmers. As a program to support food security in Pakunden Village, the Water User Farmers Association (P3A) was also formed. Based on the PUPR Ministerial Regulation Number 4 of 2021, the Water User Farmers Association is an irrigation management institution that serves as a forum for water user farmers in an area or village as a local irrigation management institution. Through P3A, the community in Pakunden Village is provided with skills in planning and implementing a sound irrigation system. Therefore, the community has food independence and can develop the family's potential, motivation, and economic conditions.

The food security development component comprises three main subsystems: availability, access, and utilization. Food availability includes safety and usefulness according to nutritional value and sufficient quantities for everyone in the country. Food availability is obtained from domestic natural production, imports, food reserves, and food assistance. Food availability must meet food needs defined as the number of calories for an active and healthy life [11]. Pakunden village does not have a village barn, so the community depends on rice harvests. The average first harvest in Pakunden Village is around 6-7 quintals, while the second is around 4-5 quintals. If the total area of rice fields is 194.8 ha, the potential harvest can reach 1,363.6 quintals for the first and 974 quintals for the second harvest. In addition, Pakunden Village also has several food commodities besides rice, namely pulses and fruits. With the Bawen-Yogyakarta toll road project, agricultural land has decreased due to land conversion. The area of land that will be converted is 252 lots, including rice fields, fields, and yards. Changes in land use certainly cause a decrease in land for rice production. The harvest potential, which was initially quite potentially decreased. One of these mega-projects also led to the shift of work functions from farmers to other non-agricultural workers. The participation of farmers is considered very important in managing community food security.

To fulfill food security, the Pakunden Village Government also seeks food assistance provided to village communities. One of the assistance that has been received is assistance from the Ministry of Social Affairs in the form of Non-Cash Food Aid. This assistance accommodates the nutritional needs needed by the community during the Covid-19 pandemic. The Village Government also provides essential food assistance for residents self-isolating at home due to Covid-19. Farm laborers only own the rice barns in Pakunden Village, which makes the community generally depend on necessities sold by traders or obtained in the market. In the aspect of access to food sources is defined as the ability of all households and individuals to use their available resources to obtain sufficient food so that their nutritional needs can be obtained through

food production, purchases, or food donations. Access to households and individuals consists of economic, physical, and social access. Economic access depends on income, employment opportunities, and prices. Physical access concerns the region's remoteness (distribution vehicles and infrastructure), while social access concerns food preferences [11].

Table 1: Occupation of Pakunden Village Community

No	Occupation	Total	Description
1	Public Officer	39	
2	Police/Army	10	
3	Pensionary	26	
4	Farmer	186	Majority
5	Private Sector	494	Majority
6	Entrepreneur	65	
7	Farmer Worker	922	Majority
8	Carpenter	9	
9	Others	144	

As shown in Table 1, most jobs in Pakunden Village are in the agricultural sector, so economic access is sufficient. However, the farmers in Pakunden Village have not yet achieved their welfare. Observations show that there is an imbalance in prices from farmers by intermediaries. The Head of Pakunden Village said that of the many farmers in Pakunden Village, the intermediaries benefited more from agricultural products.

Table 2: Food Preferences of the Pakunden Village Community

No	Sub-Village	Rice	Non-Rice
1	Gondangan Kidul	334	
2	Gondangan Lor	383	
3	Candi	394	1
4	Jetis	462	
5	Mriyan	407	
6	Tambakan	306	
7	Klitak	515	2
8	Guling	671	
9	Pakunden	434	4

From the social aspect, as shown in Table 2, most of the community's food is rice, that makes the dependence on the availability of rice is relatively high. However, some residents in Pakunden Village still need to consume rice. To meet the protein needs of its residents, Pakunden Village has developed Tempe Koro UKM, which has a nutritional content not inferior to soybeans. Koro Benguk tempeh still needs to be widely produced, so Koro Benguk tempeh is less popular than soybean tempeh. The nutritional value per 100 grams of koro benguk tempeh, especially its protein of 10.2 grams, is still low compared to the protein of soybean tempeh of 18.5 grams per 100 grams. In addition, the organoleptic quality (taste, color, and texture) of koro benguk tempeh was lower than that of soybean tempeh. Koro Benguk tempeh is black and less tender than soybean tempeh. Therefore, there is a need for innovation in the manufacture of koro benguk tempeh to add nutritional value and improve the sensory properties of koro benguk tempe itself [12].

Furthermore, from the physical aspect, infrastructure, such as roads to distribute food sources in Pakunden Village, is excellent and well-organized. The village location is on the connecting district road network between Magelang and Jogjakarta regencies. Therefore, food distribution is guaranteed even though the traffic is not as heavy as on the provincial and national roads in Magelang Regency. Food absorption is the use of food for a healthy life, which includes energy and nutritional needs, water, and environmental health. The effectiveness of food absorption depends on household or personal knowledge, sanitation, and water availability, health facilities and services, as well as nutrition counseling and childcare [11]. In addition, the condition of the physical aspect of Pakunden Village can support community food security.

The existence of the Yogyakarta-Bawen toll road construction project, which requires the land acquisition of the Pakunden Village community, involves 133 families divided into three hamlets, namely Candi Hamlet, Mriyan Hamlet, and Guling Hamlet. Most of them are rice fields and are inherited from their parents. Many residents whose land was affected by the project have given up and responded positively. This is inseparable from the local government's role and good public communication. Residents looked compact and enthusiastic in welcoming the toll road construction project, as evidenced by the participation of residents in all stages, starting from the public consultation stage, which began in early 2022. At the end of 2022, the stage of deliberation on land acquisition price determination was reached. Physical development is planned to begin in early 2023. The Pakunden Village Government continues to provide support in the form of administrative services, as well as moral support for residents who need these services. The existence of a toll road construction project that passes through Pakunden Village will affect changes in the economic, social, and cultural conditions of the community. In line with this, development changes society's composition and pattern, stimulating the layers of society. With technology, economic growth will be more rapid [13].

The impact of the construction of the Yogyakarta-Bawen toll road poses several new challenges. First, the acquisition of agricultural land reduced agricultural land, especially rice fields owned by the community. The government has begun to provide education to prepare yards as an effort to maintain community food security. Development in rural areas will impact the life of the village community itself. After the toll road construction, some villagers can no longer farm because their land has been affected by the land acquisition project. As a result, villagers had to change their professions to become farm laborers in other villages to survive. However, residents are still optimistic that the toll road construction will improve the family's economy. Residents whose agricultural lands were evicted prefer to use the money from land acquisition to meet their living needs and become other business capital rather than buying rice fields elsewhere.

5 Conclusions

The Yogyakarta-Bawen toll road construction project impacts the acquisition of 230 parcels of land belonging to residents of Pakunden Village, Ngluwar, Magelang, Central Java. 90% is agricultural land, predicted to affect the decline in the food availability aspect of the community's rice commodity. However, the project's existence did not affect people's access to food sources, and the use of food did not have a negative impact. The village government has collaborated with experts to develop a food security strategy for the Pakunden Village community. Assistance is carried out to strengthen existing programs by using yard land as a family food barn. Expert assistance is also carried out by utilizing the potential of local wisdom in Pakunden Village as an agricultural, independent, prosperous village.

The livelihood status of the residents of Pakunden Village has no significant impact on the Yogyakarta-Bawen toll road construction project. Most of the residents' livelihoods are agricultural laborers. However, residents claim to be ready and optimistic to start a business in line with the changing economic situation caused by the existence of the toll road. The impact of changing residents' livelihoods affected by the

construction of the Yogyakarta-Bawen toll road in Pakunden Village has yet to be seen because the physical construction has not started. Residents have been well educated to use land change money to buy new land or as business capital to welcome market opportunities due to the toll road project. The results showed that land acquisition for the construction of the Yogyakarta-Bawen Toll Road could reduce the projected availability of rice commodities. However, related food access and utilization do not have a negative impact, so that food security can be realized.

6 Declarations

6.1 Study Limitations

Research data is limited to November 2022, when the land acquisition process in Pakunden Village for the construction of the Yogyakarta-Bawen Toll Road is still at the deliberation stage for land acquisition pricing. At the same time, the physical development process is planned to begin in early 2023.

6.2 Acknowledgments

The author thanks Mr. Sujadi, head of Pakunden Village, for the precious discussions about Pakunden Village. The authors also thank the Institute for Research and Community Service UGM - Yogyakarta for the funding provided to produce the community service program and this article.

6.3 Funding Source

This research was funded by Institute for Research and Community Service UGM – Yogyakarta through the 2022 village development grant program, number: 458/UN1/DPM/YANMAS/PM/2022.

6.4 Publisher's Note

AIJR remains neutral with regard to jurisdictional claims in published map and institutional affiliations.

How to Cite

Armawi *et al.* (2023). Land Acquisition Impact for The Yogyakarta- Bawen Toll Project on Food Security of the Community of Pakunden Village, Ngluwar, Magelang, Central Java. *AIJR Proceedings*,54-60. <https://doi.org/10.21467/proceedings.151.8>

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