



Marginalization of Farmers in Sustaining Their Livelihoods Due to the Development of Yogyakarta International Airport, Indonesia

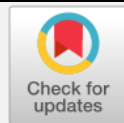
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ABSTRACT

The development of the Yogyakarta International Airport aims to push the community's economy. However, in practice, it faces failure. The land expansion needed for the airport operation has caused a loss of the source of income for the farmers nearby and the moving of their residences. Meanwhile, no working sites are accessible to the farmers where they are relocated. This study reveals the marginalization of farmers in maintaining their source of livelihood around the construction site of the Yogyakarta International Airport. This study uses interview methods, indirect observation, and document studies. The findings in this study are: the farmers experience marginalization in accessing work, land, and capital. They then experience uncertainty in income and loss of creativity as farmers. Therefore, the development of the airport has marginalized the farmers. This is an indicator of the failure of development goals. Therefore, a policy is needed to provide agricultural land for farmers to manage and get a source of livelihood.

Keywords: Farmers; International Airport Development; Livelihood Resilience; Marginalization; Post-Relocation

1. Introduction

The marginalization of farmers due to the development of international airports in developing countries, including Indonesia, still cannot be resolved comprehensively. One of the most prominent problems is land grabbing, which causes the community to be forcefully moved to a new place with compensation that does not suit their way of gaining a source of livelihood. Therefore, the farmers cannot obtain a stable source of income. This is the opposite of the goals of the international airport megaprojects, which aim to speed up economic growth, hence its rapid growth all across the globe (Bilotkach, 2015; Johnson, 2002; Seebauer & Winkler, 2020). However, the implementation causes marginalization instead (Bhattacharya-Mis & Lamond, 2014; Crittenden et al., 2003; Daly et al., 2017). In a case in Singur, India, the residents of the village face poverty since their land is industrialized, and they do not receive enough compensation to survive on the relocation site (Dey Biswas, 2019; Ghatak et al., 2013). In the case of massive-scale land acquisition in Uganda, the act did not benefit the Ugandan people due to the corrupt governance, so the people did not gain access to livelihood in their new place (Stickler, 2012).

Meanwhile, Ty et al. concluded in Vietnam that households impacted by the development are in a worse condition because of the land compensation they received, which caused unemployment at their relocation site (Ty et al., 2013). In the Indonesian case of the development of the Yogyakarta International Airport, the compensation received by the community is perceived as enough for them to maintain their source of livelihood at the site of relocation (Hakim, 2022). However, behind that is a group of farmers experiencing marginalization in the industrial sector caused by limited access to the source of livelihood at the relocation site (Purbawa, 2021).

Studies on the success of victims of the relocation of the construction of an international airport who managed to maintain their livelihoods in a new place are categorized into two. First, studies on communities that maximize their capacity as a group to obtain new livelihoods (Bao et al., 2022; Ismail et al., 2018; Napsiah et al., 2017; Seebauer & Winkler, 2020; Song et al., 2020). The results of this study indicate that community members are not unemployed because they have succeeded in maximizing the natural resources available in their area by maximizing their capacity and their groups' capacity to form new livelihoods. Second, communities obtain new livelihoods by adapting to the industrial sector in research (Gusmann & Hinkel, 2021; Najarian et al., 2017; Sina et al., 2019). The above studies show the success story of communities in surviving in new places, even though they have to change their livelihoods. Research on the marginalization of farmers due to airport development is still limited, especially in Indonesia, because airport development has accelerated in the last 10 years. This study focuses on the marginalization of farmers in the aviation industry area of Yogyakarta International Airport.

2. Literature Review

2.1. The Marginalization of Farmers in the Aviation Industry

The marginalization of farmers is a process of limiting (Lassiter et al., 2018) and excluding farmers from access to their initial occupation as farmers, which is caused by the shift in the function of their land, from for agricultural use to for the aviation industry (Suharyanto et al., 2021). The airport area has spawned an industrial economy that refers to economic growth, so agricultural land is no longer available. Meanwhile, the farmers with limited skills and knowledge cannot catch up with the acceleration of the growth of the industrial economy. This has become the opposite of the initial goal of industrial development, which aims to grow the economy, but on the other hand, it has marginalized farmers. Therefore, the project has been

rejected by the surrounding community. Crittenden et al. mentioned that achieving it is akin to a dream (Crittenden et al., 2003). This can be seen in the cases in Africa and South Asia, where the community rejects the development since it is seen as unprofitable to the farmers to the point of marginalization (Nabudere, 1997).

The marginalization of farmers has caused the loss of their access to important sources of livelihood, such as rights to employment, capital, and rights to maintain local knowledge, which the growth of the industrialized economy has caused (Lassiter et al., 2018) expressed that the impact of marginalization is described as the weakening of the achievement of an individual and a group's source of livelihood due to a loss of authority over the source of livelihood. This is caused by low education, skill, gender, age, and social relations, which highly influence the accessibility process. Therefore, the farmers cannot maintain their source of livelihood as farmers, and they do other work except farming to survive. In this condition, they do not have stable employment and also do not gain opportunities to keep their skills as farmers due to the limitation in gaining agricultural land to be managed. The presence of aviation technology, despite being managed in detail to reduce the failure rate in improving the acceleration of economic growth, still fails to create policies, which a group of disadvantaged people experiences due to the development of the industry. Therefore, instead of prospering the community, the people around the area lose their occupations and the local knowledge that has become their routine to gain a source of livelihood. The failure of the development has to be perpetually and collectively remembered by the people, so every time an airport is developed, the people will reject it since they remember past failures.

The advancement of aviation technology, despite being meticulously managed to reduce failure rates in accelerating economic growth, still fails to create inclusive policies that address the needs of disadvantaged groups. Instead of promoting prosperity, these developments lead to the loss of occupations and local knowledge that farmers have relied on for their livelihoods. This failure perpetuates a collective memory among affected communities, which remember past failures and resist new airport development projects. Consequently, rejecting such projects has become a recurring phenomenon due to the long-lasting negative impacts of marginalization.

2.2. The Resilience of the Farmers' Livelihood

The concept of the resilience of a firm livelihood is a part of the concept of sustainable livelihood (Gaillard et al., 2009). Folke stated that a firm's livelihood can produce primary productivity, a natural resource base, and healthy social connection or welfare, creating opportunities for innovation and economic development (Folke, 2006). However, how far the resilience of livelihood goes is determined by the level of the resources accessible by individuals and their capability to self-regulate to participate in activities that produce income (Sanderson, 2012). Recovering the livelihood of a society impacted by technological disasters, which relocate the society from its old residences, has been acknowledged as a critical problem in the community of disaster practitioners. Through the economic lens, the community's livelihood is an important step in disaster recovery, contributing to sustainably building the community's resilience (Costanza et al., 2007; Tasnuva et al., 2023). However, providing a post-disaster livelihood program is a complex task (Joakim & Wismer, 2015), and it often faces failures (Daly et al., 2017). This is because livelihood resilience needs the community's capacity to find livelihood with factors such as the diversification of stronger livelihoods or the improvement of the pre-disaster condition (Alexander, 2010).

The effort of maintaining the source of livelihood is influenced by the individual/household, age, gender, and education level. Besides that, supporting social relations or the family in managing the neighborhood becomes a priority in gaining new employment (Crittenden et al., 2003). The resilience of livelihood is also influenced by the ability to access loans as capital to start a new business and the availability of agricultural land (Minamoto, 2010) alongside the cultural suitability from the support of the livelihood (Daly et al., 2017).

Despite these insights, the specific challenges displaced agricultural communities face, especially those transitioning to non-agricultural livelihoods, are underexplored in the literature. This gap is particularly pronounced in the context of large-scale infrastructure projects, such as airport development in developing countries. Previous studies (Bao et al., 2022; Sina et al., 2019) have focused on communities successfully adapting to new environments through access to resources or support systems. However, these studies often overlook communities that struggle to transition due to limited resources, low education, or lack of access to social capital.

2.3. The Development of the Yogyakarta International Airport

The development of the new Yogyakarta International Airport (YIA) is the implementation of the Presidential Decree through the Indonesian National Strategic Project Number 58 Year 2017 on the Implementation of National Strategic Projects. The program aims to support the growth of the aviation industry both on a national and international scale (Purbawa, 2021). The total land area acquired for the development of the Yogyakarta International Airport is 5,851,825 m² or 3,497 parcels of land. The project then impacts the residential and agricultural lands of the communities in five villages: Jangkaran Village, Sindutan Village, Palihan Village, Kebonrejo Village, and Glagah Village. The total amount of budget allocated by the government for the land acquisition is IDR 4.15 trillion (USD 296.5 million), so the impacted households will receive some amount of money as compensation for their land being acquired by the government (Utami et al., 2021).

There are two categories of villagers impacted by the development of the Yogyakarta International Airport who receive compensation: the landowners and the land tenants who work the land (Hakim, 2022). The more prosperous landowners receive higher compensation than the tenants or those who do not own land. This is because the landowners have to let go of their ownership of the land alongside their rights to it, while those who do not own the land or those who rent it do not receive compensation since they do not hold ownership over the land (Suroso, 2018). There are 11,501 relocated people, who are mostly farmers. The government allocates a budget of IDR 4.15 trillion to compensate the landowners and tenants due to the land acquisition. Rijanta et al. revealed that the impacted villagers received, on average, IDR 3 to 4 billion as financial compensation for the land acquisition. This amount exceeds the local minimum wage, less than IDR 2 million/month. The compensation is almost nine times higher than the value of the aquaculture properties (Rijanta et al., 2019).

Although the compensation appears adequate, the allocation of these funds is not always effective in supporting sustainable livelihoods for the impacted communities. Many villagers, especially those who relied on farming, struggled to reinvest the compensation into productive activities. Some used the funds for immediate consumption needs or housing without generating new sources of income. The inability of the villagers to adapt their livelihoods highlights a gap in the development program, which focuses on infrastructure growth without adequately addressing the socio-economic realities of displaced populations.

In addition to compensation, the government and airport management provided training programs to diversify the livelihoods of the relocated villagers. These included training in entrepreneurship, auto repair, and security services (Dimitriou & Sartzetaki, 2022). However, access to these programs was limited, as participants had to meet specific selection criteria. For example, higher education levels were often a prerequisite for participation in the training, excluding many farmers who had lower educational attainment. Consequently, the majority of displaced farmers were unable to transition to non-agricultural jobs, leaving them economically vulnerable.

Moreover, the lack of post-relocation support, such as access to affordable land for farming or adequate social infrastructure, compounded the challenges faced by the relocated villagers. While the airport aims to accelerate economic growth and regional development, its implementation has neglected the long-term sustainability of the impacted communities. This discrepancy underscores the need for more inclusive development policies that consider the socio-economic conditions of all stakeholders, particularly those in vulnerable positions.

3. Research Methodology

The livelihood resilience of farmers relocated due to technological disasters is an important phenomenon that requires in-depth exploration. This study seeks to inform global perspectives on how airport developments, which aim to accelerate economic growth, often result in lost livelihoods for relocated communities. While relocated farmers may participate in relocation programs, they frequently find it challenging to secure livelihoods that align with their competencies and educational backgrounds in their new environments (Johnson, 2002).

3.1. Selection of Research Participants

Research participants were selected in two stages to ensure the representativeness and depth of the data collected. In the first stage, a survey was administered to 178 farmers who had been relocated due to the development of the Yogyakarta International Airport (YIA). This survey captured initial information on their conditions over seven years at the relocation site, focusing on their current occupations, experiences with employment, access to capital, and income sources. These findings were used to map patterns and identify key issues faced by the relocated farmers.

In the second stage, informants were purposively selected based on the survey results to explore their conditions more deeply. Eight informants were chosen using a purposive sampling method to represent diverse experiences. The selection criteria included gender, education level, age, and occupation. This approach ensured that the perspectives of both male and female farmers and those of formal officials were captured, reducing potential gender bias in the findings. Local formal officials, such as the Chief of the Neighborhood Association (Rukun Tetangga/RT) and the Chief of the Community Association (Rukun Warga/RW), facilitated the selection process. These officials were deemed knowledgeable about the socio-economic conditions of the community and capable of identifying informants who could provide relevant insights.

The final selection comprised eight tenant farmers (four male and four female) and two formal officials. Including both male and female farmers ensured that the study captured gender-specific challenges and strategies for maintaining livelihoods. The proposed informants were reconfirmed with all farmers affected by the YIA development through a workshop to validate the selection. This participatory approach enhanced the credibility of the selection process and ensured that the chosen informants represented the broader community.

Table 1. List of Informants

Informant	Gender	Position	Age	Education
WR	Male	Chief of the Community Association	45	Bachelor's degree
WN	Male	Chief of the Neighborhood Association	57	Diploma
RF	Female	Farmer	55	Senior High School
DF	Female	Farmer	57	Senior High School
CR	Female	Farmer	63	Senior High School
ST	Female	Farmer	55	Junior High school
DE	Male	Farmer	56	Junior High school
WE	Male	Farmer	64	Junior High school
AB	Male	Farmer	56	Junior High school
SC	Male	Farmer	55	Junior High school

Source: Primary Data, 2023

The informants were chosen to reflect various demographic and socio-economic factors relevant to their capacity to maintain livelihoods in the relocation area. Including diverse educational backgrounds and occupational experiences highlights the challenges different groups face within the relocated community.

3.2. Method of Data Analysis

Data analysis was conducted using a structured qualitative approach to ensure comprehensive and credible results. The stages of analysis included:

- 1) Organizing Data: Categorizing and sorting the collected data to ensure coherence.
- 2) Reading and Recording Thoroughly: Reviewing the data, noting observations, and forming initial codes.
- 3) Describing Data Through Codes and Themes: Identifying and describing key themes related to farmers' experiences in maintaining livelihoods.
- 4) Classifying Data: Developing meaningful units of analysis by refining codes and themes.
- 5) Interpreting Data: Constructing a comprehensive narrative of the marginalization process and its implications based on the themes identified.
- 6) Presenting Evidence: Communicating findings through narratives, tables, and discussions, supported by relevant visuals (Creswell & Poth, 2018).

Data validity was enhanced through triangulation, combining interview insights, document analysis, and observations. Integrating multiple data sources ensured the reliability and depth of the findings, capturing the complexities of farmers' livelihood challenges in the post-relocation context.

4. Results and Discussion

4.1. Farmers and the Development of the Yogyakarta International Airport

The development of the Yogyakarta International Airport acquires a total land of 587.3 hectares. The airport can hold 24 million passengers each year. The airport even experienced an increase in passengers in 2023, with 4,307,742 passengers (Purbawa, 2021). The development and construction of the airport relocated 11,501 people in Yogyakarta. Both the old residential area and the relocation site are located in the Kulonprogo Regency, so geographically, there is no change in their residential city. The community members relocated after an agreement between PT Angkasa Pura, the local government, and the community members. The community members are compensated appropriately (Hakim, 2022). Based on the agreement, the community members left their old land and residences and now live in the relocation site (Setiowati et al., 2023). However, the community members who work as farmers are not given any land to farm on, which has become the base of their economy. They have not had stable employment in the relocation site for seven years. This has become a new problem since there is no guarantee of jobs that can be a source of livelihood (Edita, 2019).

The international airport has operated since 2021. Hotels and restaurants are also constructed around the airport area. However, there are 11,501 unemployed people around the airport area. The airport, which PT Angkasa Pura manages, has given entrepreneurship training to 41 men and women aged 30 to 60 villagers. Despite the training, not all the participants can become entrepreneurs due to the lack of capital. One of the female farmer informants has participated in the entrepreneurship training from the airport management, as she revealed below:

"I am one of the 41 participants in the entrepreneurship training held by PT Angkasa Pura, conducted in two days. The training was about the skills needed to become an entrepreneur around the airport area. However, capital and knowledge are also needed to have a business. Today, I don't work at all." (Informant WN, 57 years old, female, farmer)

Another employment option the airport management provides is to be a security force member. However, to join the force, they have to be selected first before undergoing the training. Therefore, those who are not selected are unable to join despite the existence of the vacancy. This is as revealed by a male informant:

"I have undergone a test to become a security officer. However, I was not selected since my education was only at the junior high school level, while my friend graduated from senior high school. So, those who are selected are those with a higher education level. For now, I don't have a job." (Informant SC, 55 years old)

Another thing is revealed by a female informant who said,

"The available vacancies around the airport area are tightly selected, even if they are only for cleaning services. This vacancy must be provided via a service company (Commanditaire Vennootschap, or CV in Indonesian), so the labor status is that of an outsourced laborer hired by the airport to work in the airport area. I don't work as an outsourced laborer since the schedule does not suit my daily activities." (Informant RF, 55 years old)

The explanation from the informants showed that the farmers cannot obtain employment. Despite the airport management's effort to provide a wide selection of vacancies outside and inside the airport, the community members cannot work in the non-agricultural sectors. This is not only caused by their inability to negotiate, but the farmers also do not possess the capabilities to be employed in the non-agricultural sectors. Therefore, the development of the airport has turned them into unemployment.

4.2. The Marginalization of Farmers

The marginalization of farmers can be categorized into three. First, there is marginalization of access to employment outside the agricultural sector. Second, the marginalization of access to land for female farmers who are not given any access since women are perceived as unable to manage farming land until harvest because they are weak and do not own modern farming tools such as tractors, which male farmers mostly own. Third, there is marginalization of access to capital. The informants elaborate on the three forms of marginalization in **Table 2**.

Table 2. Marginalization of Farmers

Informant	Gender	Education	Marginalization Details	Category
RF (55 years old)	Female	Senior High School	Unable to obtain capital from banks due to being deemed incapable of repaying installments	Marginalization in Access to Capital
DF (57 years old)	Female	Senior High School	Unable to access land unless through family or acquaintances who own it	Marginalization in Access to Land
CR (63 years old)	Female	Senior High School	Not trusted to manage land due to gender and age	Marginalization in Access to Land
ST (55 years old)	Female	Junior High School	Unable to secure capital due to unstable employment, leading to being deemed incapable of repaying installments	Marginalization in Access to Capital
DE (56 years old)	Male	Junior High School	Unable to work at the airport due to lack of skills	Marginalization in Access to Employment
WE (64 years old)	Male	Junior High School	Does not meet airport management's requirements due to age, education, and skills. Has not participated in training programs like English or auto shop courses offered by PT Angkasa Pura.	Marginalization in Access to Employment
AB (56 years old)	Male	Junior High School	Not trusted by financial institutions due to lack of stable employment	Marginalization in Access to Capital

Informant	Gender	Education	Marginalization Details	Category
SC (55 years old)	Male	Junior High School	Unable to access land as none is owned by relatives or acquaintances	Marginalization in Access to Land

Source: Primary Data 2023

Table 2 shows that male and female farmers experience marginalization in access to land, capital, and employment in the airport. Female farmers specifically are marginalized due to stereotypes that female farmers are weak and unable to tend land, also due to their old age. Moreover, the male farmers are also marginalized because they do not have stable employment monthly, they are also old, and they have no social relations that can give them access to land. Meanwhile, to access the job vacancies provided by the airport, the farmers do not have the education and skill level required by PT Angkasa Pura. PT Angkasa Pura required the laborers to finish senior high school level education while the farmers only have junior high school level education.

Therefore, although new job opportunities are available around the airport area, the farmers are unable to access them due to their reliance on agriculture as their primary livelihood. This limitation is further exacerbated by their low levels of education, advanced age, and restricted social networks outside the agricultural sector. These factors have intensified their marginalization, as evident in their struggles to transition from agriculture to other available sources of livelihood. Consequently, the development of the Yogyakarta International Airport has significantly marginalized the farmers.

4.3. The Impacts of Marginalization

4.3.1. Economic Uncertainty

The livelihood of the relocated villagers is agriculture, which their forefathers and foremothers manage. The income from the farms has helped them survive. However, after the relocation, they can no longer find land to be farmed on. Therefore, the villagers no longer have their source of livelihood, as elaborated in **Table 3**.

Table 3. Perception of Economic Certainty/Uncertainty Among Villagers in Their New Location

Informant	Occupation	Perception of Economic Certainty/Uncertainty	Assessment
RF (55 years old)	Farmer	“What we call a certain income doesn’t exist, but there is something to survive on. We can use the compensation money for our old land and house.”	Uncertain
DF (57 years old)	Farmer	“There are sources of livelihood everywhere. However, I can’t find it yet, so my income is now uncertain.”	Uncertain
CR (63 years old)	Farmer	“No economic certainty since the only available employment near the airport area is by doing business. However, it needs a huge capital, and I don’t have it.”	Uncertain

Informant	Occupation	Perception of Economic Certainty/Uncertainty	Assessment
ST (55 years old)	Farmer	"There is no source of income, so I have to find it again, and until today, I haven't found it yet."	Uncertain
DE (56 years old)	Farmer	"I haven't worked in a long time and am currently unemployed."	Uncertain
WE (64 years old)	Farmer	"I work whatever I can do, and the wage I receive is uncertain. It was better in the agricultural sector and during the harvest season."	Uncertain
AB (56 years old)	Farmer	"There are many things here, but I am uncertain what kind of job I can do since I am only a farmer."	Uncertain
SC (55 years old)	Farmer	"I want to open my own business, but my house is too small. So I just became a motorcycle taxi driver."	Uncertain

Source: Primary Data, 2023.

Table 3 shows that the villagers stated the economic uncertainty at the relocation site. They cannot start an agricultural business since there is no land to farm. They do not have enough capital to diversify their livelihood in the industrial sector, such as entrepreneurship. Therefore, the villagers use the front lawn of their house in the relocation site to build chicken coops and plant vegetables for their household's needs. This effort is made to fulfill their consumption needs, not for sale. Hence, the farmers lost their source of income at the relocation site.

4.3.2. The Weakening of the Farmers' Creativity

Without economic certainty, the villagers no longer have the creativity to farm in their new place. They plant vegetables not to supply the market but to use the empty plot of land in their neighborhood instead. This will be elaborated in **Table 4** below.

Table 4. Weakening of Agricultural Creativity Among Farmers

Informant	Occupation	Description of Creativity Loss	Category
RF (55 years old)	Farmer	Relies on friends to farm on their land, indicating a loss of autonomy in managing their resources.	Loss of Sense of Ownership
DF (57 years old)	Farmer	Previously tended crops based on weather needs but no longer does so due to the absence of plants.	Loss of Agricultural Knowledge
CR (63 years old)	Farmer	Lost knowledge about proper fertilization timing due to the absence of agricultural activity.	Loss of Agricultural Knowledge
ST (55 years old)	Farmer	No longer uses tractors or other tools for fertilization before planting.	Loss of Agricultural Knowledge
DE (56 years old)	Farmer	It requires the landowner's permission to plant crops and share revenue, reducing independence.	Dependency on Landowners

Informant	Occupation	Description of Creativity Loss	Category
WE (64 years old)	Farmer	Has no crops to harvest or sell, leading to a loss of knowledge about managing harvest cycles.	Loss of Agricultural Knowledge
AB (56 years old)	Farmer	Cannot borrow seeds or seedlings from other farmers, affecting the continuity of farming practices.	Loss of Agricultural Knowledge
SC (55 years old)	Farmer	Tends a relative's land with inconsistent results, leading to a lack of stable income.	Loss of Stable Income

Source: Primary Data, 2023

Table 4 shows that the informants' creativity in agriculture can no longer be preserved since they have no land to tend independently. They have to share the revenue of their work with the landowner because the land they use does not belong to them. This revenue-sharing was unfamiliar to them since they used to tend their land. Besides that, the knowledge of the agricultural system they managed has been lost since there is no land to apply the knowledge in their new place. Therefore, relocating the villagers has diminished the creativity of the farmers, who have few choices due to the limited access to land.

5. Discussion

The development of the Yogyakarta International Airport has marginalized farmers from access to employment, land, and capital. The farmers now have no certain income and have lost their agricultural creativity. This is the opposite of the Ministry Regulation that the airports will accelerate economic growth and open up access to the economy (Republik Indonesia, 2017), which is not proven true since the farmers are unable to access the available employment around the airport area, while the farming area does no longer exist. Therefore, the farmers have been marginalized by the development of the Yogyakarta International Airport.

The villagers' low capacity to enter the industrial sector is because they are not prepared for changes in their livelihood. Farming has been practiced for generations and has become a stable source of livelihood, making them not want to shift to the industrial sector (Zhu et al., 2021). The industrial sector is difficult for them since it requires a high level of skills and knowledge they do not previously own. Therefore, workshops and training, such as the entrepreneurship training provided by PT Angkasapura, which aims to prepare the participants to be entrepreneurs (PT Angkasa Pura, 2016), do not benefit the participants. The development of the airport does not give equal access to the impacted villagers (Leng et al., 2021).

The villagers' incapability to maintain their source of livelihood is due to the fact that they cannot join the available workforce around the industrial airport area. The low education level and the owned skills, alongside the absence of capital, have caused them to be barred from access to resources available around the airport area, as stated by Percoco, who showed that the public investment does not impact the growth in the industrial countries (Percoco, 2010). Based on the data from 75 metropolitan areas in the United States of America, there is no correlation between aerial traffic and the absorption of local laborers in the aviation industry (Percoco, 2010). A similar thing happened in the development of the Yogyakarta International Airport, which aimed to accelerate economic growth, threatened the villagers' economy instead and created a marginalization of farmers (Edita, 2019; Gidley et al., 2010; Graham & Aurigi, 1997).

Hence, the development is always rejected by the surrounding community due to the marginalization of farmers (Nabudere, 1997). The development of the Yogyakarta International Airport has given entrepreneurship training to 41 villagers (PT. Angkasapura, 2016). However, not all villagers can feel the result of the training due to their limited capacity. Not only is capital limited, but they also cannot run a business since they have been pursuing farming and agriculture as a source of livelihood. Therefore, the development has marginalized the villagers (Song et al., 2020).

The findings of this research are different from the previous findings (Bao et al., 2022; Ismail et al., 2018; Seebauer & Winkler, 2020; Sina et al., 2019; Song et al., 2020), which show that the relocated people experience difficulties in maintaining their livelihood, however at the relocation site, they manage to adapt to manage the available resources in the area so they can have a sustainable source of livelihood. Hence, the development of the industry is accepted by the people, even more so with the appropriate compensation for the land acquisition. They can use the compensation as a starting capital at the relocation site. The proper infrastructures and structures support the resilience of the livelihood. Besides, the initial finances, age, and social relations become important aspects of maintaining livelihood in the new place (Sina et al., 2019).

Relocating people is not only about moving the old residences to a new one by providing some facilities but also paying attention to the sustainability of the people's livelihoods in the new place. Not all relocated villagers can adapt themselves to access the available resources in the new place, and it is even more difficult if the available industrial sector requires several capacities for administrative criteria or terms to enter the industry and employment. The villagers do not own the capacities because, before the move, they were not motivated to change their livelihood from farming, which they had been doing for a long time. Therefore, there needs to be policies that accommodate the needs of the villagers who cannot enter the industrial sector. They need to be provided land to tend so their livelihood as farmers can be maintained and they do not experience the loss of creativity and the marginalization at the relocation site since there is a sustainable source of livelihood.

6. Conclusion

The goal of the development of the airport is to push for the acceleration of economic growth. However, in practice, it faces failure. The findings of this research show that the marginalization of farmers takes place both for accessing employment in the industrial sector and accessing land & capital. It resulted in the loss of the source of livelihood and agricultural creativity.

The incapability of the farmers to maintain their livelihood is because the industrial sector needs formal work requirements such as education level, expertise, and skills, as well as issues on gender, which have contributed to weakening the farmers. Therefore, despite employment, as stated by the Ministerial Regulation, which states that aviation may accelerate the economy, farmers are still marginalized. This research has contributed by showing the other side of the success of the relocation program of the development of the Yogyakarta International Airport.

This study contributes to knowledge in several ways. First, it contributes to the development of literature on farmers and airport development, namely, (1) enriching the understanding of the conditions of farmers due to airport development, (2) providing empirical data on the forms of farmer marginalization, (3) identifying the impact of farmer marginalization. Second, these findings provide valuable references for policymakers to consider the conditions of farmers when deciding to implement airport development. This study also offers insights for academics and observers interested in development issues.

Although this study is valuable, the complexity of the development of the aviation industry, which must take over the function of residents' land from agriculture to the industrial sector, has given rise to various new problems for farmers. The process of marginalization is often unavoidable, even though appropriate compensation has been given. However, sources of livelihood are a priority because it is not easy for farmers to change the skills they have long mastered into new skills, namely in the non-agricultural sector. Even though the non-agricultural job market is wide, they cannot access it due to limited funds, knowledge, and skills. Moreover, the level of education, work experience, and age no longer support entering the industrial sector, making them increasingly marginalized. This research is still limited to conventional farmers who manage the agricultural sector traditionally, so little innovation and creativity can be done. Therefore, further research is needed with several developments. First, the scope of research should be expanded, namely to young farmers with the ability and expertise in the agricultural sector plus their basic education from agriculture, so that it is hoped that they can make agricultural innovations and easily adapt to the industrial environment. Second, the cultural aspects that influence farmers' motivation to be independent affect farmers' access to participation in the industrial sector. Based on this recommendation, an understanding of development that encourages accelerated economic growth will be obtained.

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The authors have declared no potential conflicts of interest concerning this article's research, authorship, and/or publication.

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