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Agricultural Strategies of Young Farmers on Small-Scale Land in Sriharjo, Bantul

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Abstract: The agricultural situation in the Special Region of Yogyakarta is becoming increasingly concerning. The number of farmers is declining, and young people are showing less interest in agriculture. This has led to problems with production output and a food security crisis. A solution to these challenges is to empower youth to engage in farming. The aim of this study is to identify groups of young farmers and the efforts made to address current challenges. The unit of analysis in this study is youth groups involved in farming activities on limited land. The research was conducted with a youth farming group called Taruna Tani Hijaunya Cinta in Sriharjo Village, Bantul. A case study design was employed, using in-depth interviews conducted both in person and via telephone. The research was carried out from January to June 2022, with limited observations and interviews due to the COVID-19 pandemic. To supplement the data, document and photo collection from the farmer group was also conducted. Thematic analysis was used to analyze various data sources. The findings of this study indicate that the majority of the group's members are children of farmers aged 17-35, with educational backgrounds ranging from secondary school to university students. The results show that the use of technology in farming, the development of social media for marketing, and the creation of agro-tourism have enhanced the competitiveness of young people in the agricultural sector, created new business opportunities, and stimulated local economic growth. For long-term sustainability, it is recommended that the government and educational institutions strengthen training and education programs for youth to enable them to continue innovating and adapting to market changes.

Keywords: Limited Land Agriculture, Young Farmers, Youth

INTRODUCTION

According to the Central Bureau of Statistics (BPS), the percentage of informal workers in the agricultural sector experienced a decline from 2016 to 2019. However, in 2020, this percentage increased due to the impact of the COVID-19 pandemic. By 2021, the number of informal workers in agriculture decreased again.

Data from the Central Bureau of Statistics in 2016 indicated that informal agricultural workers comprised 88.59%, in 2017, this figure slightly declined to 88.50%, then further dropped to 88.35% in 2018 and 87.59% in 2019. In 2020, due to widespread layoffs during the pandemic, the number of agricultural workers increased to 88.57% (Central Bureau of Statistics, 2018). In 2021, this number declined again.

The number of young farmers is undergoing a crisis. National data shows that young people tend to choose three employment sectors: agriculture, manufacturing, and services. From 2019 to 2020, the service sector increased from 52.20% to 55.31%, while the agricultural sector rose from 18.43% to 20.62%. In the same period, the manufacturing sector saw a decrease from 26.37% to 24.08%. These changes were driven by the economic effects of the COVID-19 pandemic on workers (Pusat Sosial Ekonomi dan Kebijakan Pertanian, 2021).

The increase in the number of farmers during the pandemic did not resolve the farmer crisis. The decline in the number of farmers directly impacts food security, as food production by farmers is closely linked to a country's food security (I Ketut Surtha, n.d.). According to the Ministry of Agriculture, Yogyakarta Province ranked third in the Food Security Index (FSI) in 2021, with a score of 81.43. Despite having a strong FSI, the number of farmers in Yogyakarta remains concerning, with annual declines.

Agricultural census data show that in 2003, there were 574,920 agricultural households, which decreased to 495,781 households in 2013, representing a 13.77% decline. Further evidence from the 2018 Inter-Censal Agricultural Survey in Yogyakarta shows that there were 40,982 young farmers under 35, compared to a total of 615,377 farmers. This disparity highlights the significant gap between the number of young and older farmers.

One factor contributing to the decline in the number of farmers is the conversion of agricultural land (Ridwan, 2009). In Yogyakarta, agricultural land covered 94,462.82 hectares in 2018, but this decreased to 69,295.50 hectares in 2019, before rising to 95,575.99 hectares in 2020. The conversion of land for industrial development, property, and tourism is largely driven by the growing population of Yogyakarta each year (Central Bureau of Statistics, 2017-2020).

One consequence of land conversion and the farmer crisis is a decline in rice production. Over the past decade, rice production losses averaged 1,835.93 tons per year, threatening food security in the Yogyakarta region (Prasada & Tia Alfina Rosa, 2018). Efforts to reduce the risk of a food crisis include government policies aimed at increasing the number of farmers. Policies have been designed to raise awareness among young people about agricultural development, as outlined in the Ministry of Agriculture Regulation No. 07/Permentan/OT/140/I/2013, which provides guidelines for youth involvement in agriculture. There is no denying the critical role of young people as agents of change in efforts aimed at social welfare (Suradi, 2019; Anwarudin et al., 2020). The regeneration of farmers by youth is essential for the sustainability of agriculture and food security in the future. According to Law No. 40 of 2009 on Youth, the term refers to individuals aged 16 to 30. Unfortunately, farming is often viewed negatively, being associated with poverty, dirt, and a lack of modernity.

However, the Taruna Tani group in Sriharjo Village, Imogiri Subdistrict, Bantul Regency presents a different perspective. Taruna Tani Hijaunya Cinta seeks to develop a

more advanced system than conventional farming, leading young people to view agricultural activities more positively. The main factor in farming is capital, both economic and social, which is managed by young farmers. Economic capital is one key factor that distinguishes them from the older generation. The funding provided to young people is managed collectively by institutions to support agricultural business development (Volkman et al., 2009).

Relationships with institutions can serve as social capital that youth should develop. Youth networks can also be utilized to support the growth of their agricultural enterprises (Anwarudin et al., 2020). The lack of economic capital can hinder farming activities, but material support can foster the development of youth farming businesses (Prayoga et al., 2020: 135).

Today's youth are more concerned with the quality of agricultural products, and as a result, they tend to avoid using chemicals in farming. One of the farming activities undertaken is organic vegetable cultivation (Hartati & Susanto, 2020). High-quality organic vegetables can sustain and increase buyer interest (Suswadi et al., 2021: 5). Farmers today need to shorten the marketing chain to better control both the market and prices (Adi Prayoga et al., 2020; Nurlaela et al., 2020). This approach allows farmers to engage more directly with consumers. Furthermore, providing better service and higher-quality products can influence consumer interest. A successful organic harvest can sustain and boost buyer interest (Suswadi et al., 2021).

The agricultural activities carried out by young people are exemplified by the farming initiatives of *Taruna Tani Hijaunya Cinta* in Imogiri, Bantul, a youth-managed farming enterprise. Various programs undertaken by this initiative prompted researchers to closely examine the strategies employed by *Taruna Tani Hijaunya Cinta* in managing limited land. To the best of the researchers' knowledge, studies on youth agricultural strategies remain limited. Furthermore, these agricultural activities were conducted during the COVID-19 pandemic.

According to N. L. T. Suparno et al. (2020) and Manevska-Tasevska et al. (2023), the adoption of digital technology by youth in Indonesia's agricultural sector has been highlighted. Although these studies demonstrate the positive impact of technology on productivity, they do not provide an in-depth discussion of the challenges young people face in implementing these strategies. Other studies, such as those by A. Y. Fitriani and M. F. Hidayah (2021) and Machmud, K. (2018), explain the role of education and training in improving agricultural skills among young people. Although these studies show that training can enhance skills, they do not offer an analysis of the practical application of these skills in farming. Based on previous research, there is a need to understand the strategies employed by youth in farming and to help formulate more effective recommendations for their empowerment. This study aims to complement previous research and contribute to

developing youth-managed agricultural enterprises by examining the strategies employed by young farmers in Kalurahan Sriharjo.

Regarding technological advancements in agriculture, modern technology adoption has been shown to enhance efficiency and productivity. For example, previous research by Smith et al. (2018) revealed that using data-driven agricultural applications increased crop yields by up to 30%, while this study found that youth utilizing information and communication technology successfully improved market access and diversified their businesses. This finding is supported by Torero, M., & von Braun, J. (2006), who stated that youth without access to modern technology are less likely to be interested in agriculture. Although advanced agricultural technology can improve productivity and efficiency, young people who feel left behind by these advances are more likely to leave the sector.

The differences in context and focus between previous studies and this research provide new insights into how technology can be integrated into youth empowerment strategies, while also highlighting the importance of adapting to the ongoing changes in the agricultural sector. From the perspective of modernization theory, the current era has brought changes in social and economic structures, including the transition from traditional to modern agriculture (Rostow, W. W., 1990). This shift can affect youth interest in agriculture, as they tend to seek employment that aligns more closely with modern values and urban lifestyles.

Young people often choose to leave the agricultural sector for reasons that are more complex than mere poverty. First, limited access to modern technology results in low productivity, leading them to perceive a lack of incentives to pursue farming. Moreover, agriculture is frequently seen as an unprestigious occupation, contributing to a social stigma that drives youth to seek opportunities in other sectors perceived as more promising (Naafs, S., & White, B., 2012). Inadequate infrastructure, such as poor road networks and insufficient markets, further complicates product marketing, exacerbating the challenges faced. Lastly, the lack of education and training in modern agricultural practices leaves young people feeling unprepared to tackle existing challenges, diminishing their interest in participating in the sector (Eagel, S., & Mena, J., 2020).

Youth empowerment strategies in agriculture are grounded in the theory of sustainable development, which emphasizes the importance of active youth participation in managing natural resources efficiently. Additionally, information and communication technology (ICT)-based approaches play a crucial role in enhancing young people's access to information and markets, enabling them to innovate and improve productivity. Finally, the development of soft skills through education and training is essential, as these skills help young people adapt to new challenges and assume leadership roles within agricultural communities.

Young people frequently choose to exit the agricultural sector due to various factors beyond poverty alone. One such factor is the lack of access to modern technology and information, which could boost productivity, causing them to view the sector as unviable. Furthermore, low financial returns (FAO, 2014) and the perception that agricultural work lacks prestige (Adger, W.N., 2003) drive many youth to shift toward sectors that are seen as more attractive and profitable. Infrastructure limitations, such as inadequate roads and markets, add to these challenges, reducing their interest in farming.

METHODS

The research method employed is qualitative, using a case study approach. The aim of this study is to provide an overview and conduct a more in-depth analysis of the farming strategies developed by the youth. The unit of analysis in this case study is a group of young people engaged in agricultural activities. The research location is Sriharjo Village, Imogiri Sub-district, Bantul Regency. This village was chosen based on considerations related to youth and agricultural issues.

Data collection was carried out through in-depth interviews, observations, digital material analysis, and document review (Creswell & Creswell, 2018). The selection of informants for the interviews was based on purposeful sampling techniques, mapping criteria by considering the members' activity levels over the past two years. Informants meeting these criteria were expected to assist the researcher in obtaining data, deepening information, and understanding their farming experiences (Seidman, 2006). The informants interviewed included three administrators and five members of the Taruna Tani Hijaunya Cinta group, aged between 16 and 45. Two of the informants were 45 years old, actively involved in the group’s agricultural activities, although technically not classified as youth. Unfortunately, the interviews were conducted using both direct and indirect methods (Nowell et al., 2017), due to the researcher's inability to visit the location caused by the surge in the COVID-19 pandemic and restricted access to the site.

The pandemic imposed limitations on the study, yet various methods were employed to collect data. Observations of activities were also conducted under constrained conditions, as several farming group activities were halted and the research site was closed due to the pandemic. To complement the data, the researcher analyzed several documents such as financial reports, the group's articles of association (AD/ART), profiles of the farming group, harvest reports, attendance records, and tractor rental reports. Additionally, photos and videos from Taruna Tani Hijaunya Cinta's social media platforms were collected.

The data analysis process was carried out using thematic analysis. The researcher applied thematic analysis techniques as the data analyzed included interview transcripts, document texts, social media profiles, and values derived during interviews. The data were analyzed concurrently with data collection and management (Saldana, 2011). First, the data were presented from various sources. Second, the presented data were coded using one or more words to summarize, filter, and condense the information. Third, the coded data were grouped according to thematic categories.

The researcher then interpreted the data to derive deeper meanings and understanding related to young farmers (Saldana, 2011). This interpretation aids in exploring potential and understanding the experiences of young individuals in farming (Given, 2008). To ensure data accuracy, checks were conducted to validate the research findings (Denzin & Lincoln, 2017). Accuracy was verified through triangulation of sources, time, and methods. The researcher conducted both in-person and telephone interviews, along with observations and field notes. The triangulation method was used due to social restrictions aimed at reducing the spread of COVID-19.

The primary limitation of this research is the small number of informants, which may affect the generalizability and representativeness of the data. Additionally, limited access to the field due to the pandemic hindered direct interactions with farmers, reducing the depth of the interviews. To address these limitations, the researcher utilized online interviews and relevant secondary data collection, while optimizing triangulation techniques to ensure the validity and reliability of the findings.

RESULTS AND DISCUSSION

Land Management by the Taruna Tani Hijaunya Cinta Group

Farmers from earlier generations used traditional tools in conventional agriculture, whereas the current generation employs more advanced tools, referred to as modern agriculture. The tools used by the youth in farming differ from those used by their elders, and these tools were obtained through institutional assistance. One of the tools provided is a four-wheeled tractor, which is utilized to manage the land of the Taruna Tani Hijaunya Cinta group and is also rented out to assist in cultivating the land of local residents.

Taruna Tani Hijaunya Cinta manages the land using two methods. However, the land area is insufficient to support a sustainable farming enterprise, as it currently measures less than 100 square meters. Despite the limited land area, the youth farming group continues their agricultural activities with specific strategies. First, they manage the land using both conventional and modern methods, cultivating rice and onions on the available land. Second, they employ the Nutrient Film Technique (NFT) hydroponic method in a greenhouse adjacent to the conventional farmland. The greenhouse was

provided through assistance and support from the Faculty of Agricultural Technology at Gadjah Mada University (UGM).

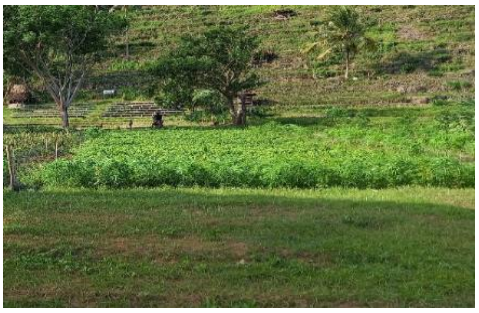

Figure 1. Conventional Farmland
Source: Researcher Documentation, 2022

Figure 2. *Green House*
Source: Researcher Documentation, 2022

This greenhouse is part of a community service program by the Faculty of Agricultural Technology (FTP) at Gadjah Mada University (UGM). From the beginning, the program received guidance from both lecturers and students in practicing hydroponic farming methods. This cultivation method has become a flagship program because it has almost never failed during harvests. Initially, the youth farming group, *Taruna Tani*, was given the opportunity to visit several successful agricultural and livestock farms to learn. Following these visits, *Taruna Tani* collaborated with UGM students to develop various agricultural and livestock activities. Based on recommendations from FTP UGM and the training provided, the hydroponic greenhouse was established. As explained by Anton:

> "They also taught us hydroponics. After the exhibition, we went to Sidoarum. We gained knowledge from Sidoarum and then took action. We were motivated because of Rifa'i, a UGM student. They synchronized the Sidoarum program with UGM's. After that, we worked on the land, which was only 6x6 meters." (Interview, October 20, 2021)

The use of hydroponic methods represents modern agriculture, where plants are grown using non-soil media. This method is more profitable and efficient compared to conventional farming. Hydroponic cultivation is relatively easy, as it only requires a water source and the necessary tools. Successful harvests depend on the flow of water and the nutrients dissolved in it. The equipment, maintenance, and operation are also easy to monitor. This was further explained by Alber, a member of Taruna Tani Hijaunya Cinta:

> "The hydroponic tools use PVC pipes. Hydroponics, in my opinion, is not difficult, as long as you check it regularly. You need to constantly monitor the water." (Interview, June 5, 2022)

In addition to the different methods, other resources such as fertilizers also differ. Fertilizer is a crucial resource for farming. Conventional farmers tend to use chemical-based fertilizers, which can damage the natural environment. Moreover, chemical fertilizers are more expensive than non-chemical or organic fertilizers. The youth farming group also adopts the use of organic fertilizers. Modern farmers tend to avoid synthetic fertilizers and instead use fertilizers derived from animal waste (Prayoga, 2020; Zamroni, 2010).

Modern farmers also adopt the use of information technology (IT) and social media (Susilowati, 2016). This represents a new system that contrasts with conventional farmers. IT and social media usage have a significant impact, particularly on young modern farmers, in marketing agricultural products (Unay-Gailhard & Simoes, 2022). *Taruna Tani Hijaunya Cinta* uses social media platforms such as Instagram, YouTube, WhatsApp, and Facebook to promote and sell their products. Additionally, they market their produce at the Sriharjo tourist area, which is located on their land.

The use of social media is not only for promotion but also to reduce reliance on middlemen in the selling process. Conventional farmers tend to rely on middlemen (Suswadi et al., 2021). Another strategy to bypass middlemen includes developing tourist sites with vegetable market programs. This vegetable market is part of ecotourism development and shortens the sales chain. Visitors can enjoy tourism, take photos, and pick vegetables themselves. With these new programs, the youth farming group is able to advance their farming practices beyond those of conventional farmers.

What distinguishes *Taruna Tani Hijaunya Cinta* from other conventional farmers is the compensation system. Wage issues are frequently encountered by conventional farmers due to an equal distribution of yields. The previous agricultural profit-sharing system was disadvantageous to tenant farmers (Hamyana, 2017). Modern farmers are becoming more aware of farmer incentives and welfare. *Taruna Tani Hijaunya Cinta* provides incentives for young people who participate in farming activities. This is evident through the use of attendance records to monitor member participation. Although the incentives are modest, this approach offers a solution to the inequities of conventional farming systems. As explained by Anton and Sumiran:

> "Profits are really determined by the land. If the land is small, the profits are small. Profit is guaranteed, but not a lot." (Interview, January 31, 2022)

> "Incomes have decreased. Earnings have declined. I personally don't mind, but for the *Taruna Tani*, it's an issue. Revenues have dropped, miss. In the past, vegetable sales were booming, but now they aren't." (Interview, June 5, 2022)

One of the main challenges in modern farming today is the decreasing number of farmers, as many young people are not interested in participating in agricultural

activities, and many elders still adhere to conventional methods. Young people today are more inclined to pursue careers outside of farming due to the complexity of the job market, rising education levels, and a lack of interest in modern agricultural systems. As a result, only 27 young individuals in one village have joined *Taruna Tani Hijaunya Cinta*. Therefore, *Taruna Tani* strives to continue innovating to attract more young people.

The youth involved in farming today tend to grow more than two agricultural commodities, while conventional farmers typically focus on only one or two. This is because the younger generation is eager to implement new systems and experiment with diverse agricultural practices. Unfortunately, managing more than two commodities has its challenges. One major issue is the lack of human resources, which hinders the optimal development of farming efforts.

Another challenge faced by young farmers is the lack of their own land for cultivation. So far, the land used by *Taruna Tani* belongs to the village. Initially, this village land was managed in collaboration with FTP UGM, which later established *Taruna Tani Hijaunya Cinta* and tasked the group with managing the land. Anton elaborates on the issue of land ownership:

"So, the land belongs to the village government, but there was an agreement between UGM and the local residents through the village government. After that, *Taruna Tani* had no land of its own and was asked to use the land. Mr. Sigit from FTP UGM requested that we work on the land. Regarding the greenhouse development, we weren't aware of it at first. It was between the residents and UGM, facilitated through the village government. We just occupied the land and were asked to manage it. The greenhouse is over 10x6 meters in size. Later, it was expanded. We received additional capital, and the greenhouse remained. We have access to about 2,000–3,000 square meters of land." (Interview, January 31, 2022)

In 2021, the area surrounding *Taruna Tani*'s land became a popular destination for visitors. One of the main attractions was the natural environment and the ecotourism initiatives developed by *Taruna Tani*. This provided an opportunity for the village government to begin constructing a tourist area near the land, based on a local government policy for tourism development in the 2019–2025 period. This development impacted the *Taruna Tani*'s agricultural land, as the western section was designated for a food court for vendors and visitors. This significantly affected agricultural management, and *Taruna Tani* had no recourse because they were only leasing the land and, therefore, could not resist the eviction or reduction of their land area. Anton and Partilah expressed regret over this policy, which reduced the available farming space and negatively impacted their agricultural efforts.

"Back then, the land was wide, extending to the parking lot and stalls. Over time, it was taken over by the village, as they requested it. So, the land has gradually diminished. They say it will be evicted again soon." (Interview with Partilah, February 22, 2022)

Another consequence of the land reduction was the disappointment among the youth toward the village government. The smaller land area directly affected production output and incentive income. Albert and Defik expressed their frustration and despair regarding the shrinking land. Albert stated, "We'll probably have to relocate soon." (Interview, June 5, 2022). Defik echoed this sentiment, saying, "I'm losing motivation, miss. What else is there to work on? If they're willing to throw away the greenhouse, then why bother?" (Interview, June 5, 2022).

In reality, the area had been bustling with tourists, drawn to the natural scenery and the agricultural activities of *Taruna Tani Hijaunya Cinta*. Over the past three years, the group had not only focused on farming but also developed agro-tourism. Evicting and reducing the agricultural land is not seen as a viable solution for tourism development. The young farmers hope that the management of tourism will not lead to the displacement of agricultural land, as it holds more potential than the construction of a food court. Both Agus and Albert stressed that tourism development should not necessitate eviction, as the agro-tourism initiatives created by *Taruna Tani* were the primary attraction.

> "It definitely affects us. The land is small now. If they build more structures, there will be less space to plant vegetables. We could use the land to expand tourism, not just farming. We also have a mission to develop tourism in this area." (Interview with Agus, June 5, 2022)

> "My opinion is that if the land is reduced further, it's a shame. Like the hydroponics area, if it's evicted, it would be unfortunate. It could become a tourism attraction on its own, drawing visitors. Not just for selfie tourism, but also educational tourism. Hopefully, they won't evict too much. We'll probably have to relocate soon." (Interview with Albert, June 5, 2022)

The interviews above highlight that reducing the size of agricultural land is not a viable solution for tourism development. Instead, tourism can be supported by agro-tourism initiatives managed by young farmers. Infrastructure development can be implemented without consuming the available land.

Young people often choose to leave the agricultural sector for reasons far more complex than mere poverty. Firstly, the lack of access to modern technology results in low productivity, leading them to feel that there are no incentives to engage in farming. Additionally, the agricultural sector is often perceived as an unprestigious profession, contributing to a social stigma that pushes young people to seek opportunities in other

sectors perceived as more promising. Insufficient infrastructure, such as inadequate roads and markets, further complicates the marketing of agricultural products, creating additional frustration. Lastly, the lack of education and training in modern farming practices makes them feel unprepared to face the challenges, thus diminishing their interest in participating in this sector.

The Strategic Role of Youth in Revitalizing Agricultural Enterprises

Taruna Tani was established by the youth in Kalurahan Sriharjo, represented by two individuals from each hamlet. The criteria for membership include young people aged 16-35 years; however, many older members, including Mrs. Rismiasih, also actively participate to support the activities. Many of the younger members are unable to attend training sessions due to school or university commitments, leading women aged 40-45 to substitute for them. The first training session organized by UGM was attended by these women, who learned about hydroponics, and their involvement has continued, even though it was initially unintended.

Taruna Tani's activities face challenges regarding member attendance, as the number of participants often fluctuates. Anton mentioned that although there are many members, they are often absent due to academic and work obligations. This issue was also highlighted by Partilah and Agus, who emphasized that the involvement of young members is frequently hindered by other responsibilities. Academic and work commitments are key factors contributing to the inconsistent participation of members, adding complexity to the management of agricultural activities in the village.

Youth involvement in Taruna Tani has encountered various challenges, leading to inconsistent attendance. Anton noted that despite having a large number of members, they are often absent. Partilah and Agus similarly pointed out that member participation varies significantly. Academic and work obligations prevent young people from being actively involved in the activities, compounded by a lack of motivation to engage in social initiatives. Taruna Tani's activities are not always regularly scheduled, and typically occur only on specific holidays, although some activities, such as harvesting, can be done on weekends.

In the past, work division in farming activities was organized with a regular duty roster to facilitate coordination among members. In hydroponics, daily monitoring is necessary to ensure a successful harvest. However, due to the limited number of participants, activities often become inefficient, involving only a small group of people. This limitation has resulted in challenges in maintaining consistency and continuity in Taruna Tani’s operations.

Conventional farming, also known as traditional agriculture, refers to a system that employs traditional tools such as buffalo for plowing fields, hoes, and the use of

chemical fertilizers to accelerate crop yields. With rapid technological advancements, this system has been largely abandoned. Modern agriculture is faster, more advanced, and continually evolving, with technological developments driving significant changes in farming systems, now referred to as modern agriculture.

In line with changes in agricultural systems, the youth are striving to take an active role in the field. They are formulating solutions, thinking critically to solve problems, and engaging in creative actions to develop agricultural resources further. The role of young people in agriculture is highly strategic, as it significantly contributes to the advancement of modern farming.

The changes in land conditions in front of the Sriharjo landmark between 2017 and 2021 reveal a significant reduction in the area managed by Taruna Tani, which initially covered nearly 2000 m². The development of tourism infrastructure, including the construction of pavilions, shops, and parking lots, has led to a decrease in arable land, negatively affecting production yields and the income of its members. Disappointment with the village government's decisions has arisen among Taruna Tani members, who feel pessimistic about the future of their program. Albert and Anton, two informants, expressed concerns that their greenhouse might eventually be evicted, reflecting dissatisfaction and uncertainty regarding the organization's future.

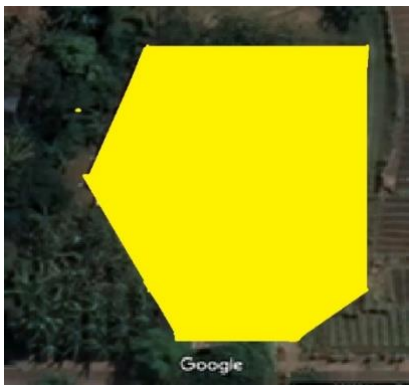

Figure 3. Agricultural Land Area in 2019
Source: *Google Maps and researcher's data, 2022*

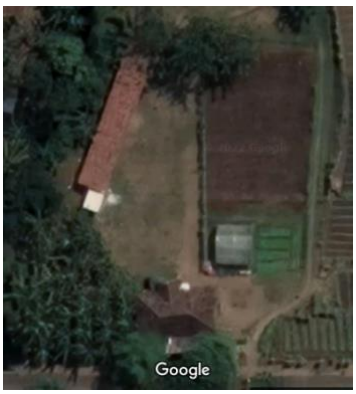

Figure 4. Condition of the Land After Eviction
Source: *Google Maps and researcher's data, 2022*

The first group activity was participating in an exhibition at Grha Sabha UGM. This event provided Taruna Tani the opportunity to demonstrate the active involvement of youth in agricultural activities. Following the exhibition, Taruna Tani conducted a comparative study visit to Sido Arum to explore various agricultural and livestock practices. Subsequently, they independently managed a greenhouse project under the guidance of the Faculty of Agricultural Engineering (FTP) UGM, utilizing available land. The second activity involved the cultivation of vegetable seedlings, including tomatoes, chilies, and several other vegetables. In addition to seedling cultivation,

integrated activities were conducted with the cultivation of horticultural crops such as water spinach, mustard greens, quick-harvest spinach, cutting spinach, eggplant, and chilies. Taruna Tani Hijaunya Cinta also engaged in banana cultivation for commercial trading. Besides agriculture, livestock activities were also undertaken, including the breeding of sheep, chickens, maggots, and catfish.

Figure 5. Hydroponic Land in the Greenhouse
Source: *Researcher's Documentation, 2022*

Chickens were raised for both meat and egg production, with the eggs sold to support livestock activities. Chicken manure was used as fertilizer for Taruna Tani's crops or sold as a commodity. In addition, ornamental koi fish were bred and sold. Agricultural education tourism (edutourism) was also conducted with the aim of educating the public by offering educational packages such as vegetable planting, harvesting, and animal feeding activities. The final initiative involved the utilization of modern agricultural equipment through a rental system.

Youth play a crucial role in advancing agricultural practices beyond the conventional methods employed by their parents. To support these roles, higher education, fast access to information (Susilowati, 2016), and the ease of building connections are essential. These three elements are expected to contribute to solving agricultural issues.

However, the rapid growth of information access and the development of agricultural technology has not been without challenges. Taruna Tani Hijaunya Cinta has faced obstacles such as: 1) Limited tools and materials, 2) Shrinking land area, and 3) Insufficient infrastructure. These three issues have posed challenges and barriers to their agricultural efforts. Although their farming practices have become more modern, the traditional agricultural values passed down by their elders must be preserved.

Tools, techniques, and methods can be replaced, but existing social values must be upheld. The process of revitalizing these values—revitalization—means reinvigorating,

reviving, and re-instilling the values held by the youth. The key values to preserve are cooperation, mutual assistance, and helping one another.

To maximize the revitalization of agriculture, it is essential to maintain these values. Upholding these principles can enhance food security in rural areas. A supporting factor is the adoption of organic farming practices. Organic farming, which avoids the use of chemical fertilizers, is a value adapted for sustainable agriculture. Therefore, the presence of Taruna Tani Hijaunya Cinta brings significant benefits to the community.

The way to preserve these agricultural values is by joining Taruna Tani Hijaunya Cinta. The farming activities serve not only as a platform for youth to engage in agricultural practices but also as a space to learn and uphold traditional values.

CONCLUSIONS

Based on the findings of this research, it can be concluded that Taruna Tani Hijaunya Cinta is a farming group composed of young people. The existence of Taruna Tani Hijaunya Cinta is expected to support the regeneration of future farmers. Therefore, Taruna Tani has developed strategies to continue agricultural activities. Through modern agricultural systems, Taruna Tani seeks to enhance the potential, tools, and agricultural outputs. The strategies implemented for agricultural development include the introduction of new programs and the modernization of agricultural equipment. However, several challenges are encountered in the process, such as inadequate infrastructure, limited land availability, and insufficient human resources.

RECOMMENDATIONS

Based on the conclusions and findings of this study, it is recommended that Taruna Tani Hijaunya Cinta develop several strategies to address the challenges faced and to strengthen the sustainability of agricultural activities. First, enhancing infrastructure should be a priority, in collaboration with the village government and relevant stakeholders to secure support for providing adequate facilities. Second, to address land limitations, Taruna Tani could consider developing vertical farming or hydroponic systems that utilize space efficiently. Third, it is crucial to improve human resource capacity through training and workshops, ensuring that members acquire better knowledge and skills in modern agriculture. Lastly, innovative and collaborative programs with the local community can enhance support and community engagement, thereby ensuring the sustainability of Taruna Tani.

For future researchers, several actions are suggested to deepen the understanding of Taruna Tani Hijaunya Cinta and the challenges it faces. First, conduct longitudinal studies to monitor changes in strategies and agricultural outcomes over time, which can provide a more comprehensive picture of the sustainability of this group. Second, focus

on analyzing the social and economic impacts of Taruna Tani's activities on the local community, including how they can contribute to farmer regeneration and community empowerment.

Third, further explore modern agricultural technologies that can be adopted by this group and research ways to enhance accessibility to tools and resources. Finally, involve Taruna Tani members in the research process as active participants to gain firsthand perspectives on the challenges and solutions they encounter, making the research findings more relevant and applicable.

Suggestions for future researchers investigating young farmers include: 1) conducting both qualitative and quantitative studies related to agricultural strategies; 2) exploring youth strategies for achieving food security; and 3) developing agricultural initiatives through e-commerce innovations.

Recommendations for the government include actively supporting youth agricultural initiatives through cross-sector collaboration involving academia and corporate entities. The government should work with academia to implement community service programs, research initiatives, and other collaborations to advance agriculture among youth. Academics need to develop techniques, methods, and ideas for mentoring youth. There is a need for support, education, and training programs for young people. Additionally, the development of agricultural enterprises requires economic and social capital provided through cross-sector collaboration.

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