

Farmer Regeneration Through Family Farming Succession In Indonesia: Driving Factors, Challenges, And Strategies

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ABSTRACT

This study aims to analyze and provide a descriptive overview of the farmer regeneration process through family farming succession. This study employed a systematic literature review following the PRISMA guidelines. The literature used in this study comprised scientific articles published in journals between 2015 and 2024. These articles were retrieved from Google Scholar and ProQuest databases using the keywords “farmer regeneration,” “farm succession,” “family farming,” and “farmer households” in both English and Indonesian. A total of 1284 publications were identified through keyword searches and 13 articles were included in the review. The results of the literature review shows that farm succession within farming families is influenced by various driving factors and challenges. To address these challenges, effective succession strategies include family socialization, mentoring programs, vocational education, youth entrepreneurship programs, and extension and training activities. Increasing the role of farmer groups in sharing information and experiences is also essential to support the sustainability of farming. Given the urgency and limited research on farm succession within farming families, further research is needed, especially studies that specifically identify strategies to enhance farm succession within farming families. Additionally, comparative studies between farm succession in different regions or countries could be conducted to understand the differences in driving factors and challenges. This could include comparisons between areas with high and low urbanization levels, as well as between different regions in Indonesia with varying cultural, social, and economic backgrounds.

Keywords : family socialization; farmer households; systematic literature review; youth entrepreneurship

INTRODUCTION

Research Background

Agriculture is crucial for global economies, playing a vital role in ensuring food security, providing employment, income, and overall economic development (Pawlak & Kołodziejczak, 2020). As the primary source of food for the global population, agriculture not only guarantees food availability but also significantly contributes to poverty reduction and rural development (Omodero, 2021). In developing countries, where a large proportion of the population relies on agriculture for their livelihoods, it is a major driver of economic growth and social stability.

Agriculture is also a major source of global employment, particularly in low- and middle-income countries where a significant proportion of the workforce is engaged in agricultural activities (Christiaensen et al., 2021). In many developing countries, farming is not only a source of income but also a way of life, deeply rooted in cultural traditions and practices. The sector provides livelihoods for millions of smallholder farmers, often operating at subsistence levels, highlighting its importance in poverty alleviation and rural development. Moreover, agriculture plays a crucial role in driving economic growth and development by contributing to GDP and export earnings (Seok & Moon, 2021).

Indonesia, classified as an agrarian country, has a population largely dependent on agriculture. However, despite the sector's significance in the lives of most Indonesians, there is a mismatch between its importance and the regeneration of its workforce (Nugraha & Muslim, 2021). Agricultural regeneration can occur through inheritance from parents to children or through the transition of farms to new entrants without family ties (Anwarudin et al., 2020). Nevertheless, there is a growing concern regarding the declining interest of farmers' children in pursuing agricultural careers, often opting for non-agricultural jobs, which could lead to a decrease in agricultural workforce regeneration (Ibrahim et al., 2023). Moreover, the general lack of interest among young people in agricultural work is a major barrier to workforce regeneration in the sector (Yulianto et al., 2022).

Farmer regeneration is crucial for the sustainability of the agricultural sector for several reasons. The renewal of the agricultural workforce with younger generations is essential to ensure the adoption of new practices that can enhance productivity and agricultural sustainability, as well as improve technical capabilities and production efficiency (Zhang et al., 2020). Moreover, farmer regeneration can help address the issue of an aging agricultural workforce, which can negatively impact agricultural production. The declining interest of younger generations, particularly among farmer households, in agricultural careers highlights the need for in-depth research into the factors driving these trends, as well as the challenges and strategies to address regeneration issues within farming households.

Research Objectives

This study aims to analyze and provide a descriptive overview of the farmer regeneration process through family farming succession. The specific research questions are as follows:

1. What are the driving factors of farmer regeneration within farming families?
2. What are the challenges faced in the process of farmer regeneration through family farming succession in Indonesia?
3. What are the alternative strategies for promoting farmer regeneration through family farming succession in Indonesia?

Research Benefits

This research is expected to serve as a valuable source of information providing a comprehensive overview of the dynamics of farmer regeneration within Indonesian farming families. Additionally, this study can be used as a reference for further research on this topic.

METHODS

This study employed a systematic literature review following the PRISMA guidelines. The review process involved four main stages: identification, screening, eligibility, and inclusion. The literature used in this study comprised scientific articles published in journals between

2015 and 2024. These articles were retrieved from Google Scholar and ProQuest databases using the keywords “farmer regeneration,” “farm succession,” “family farming,” and “farmer households” in both English and Indonesian. The selection of these databases was based on the limited availability of international publications specifically focusing on Indonesia, with most

relevant studies being found in national Indonesian journals. A total of 1284 publications were identified through keyword searches. Subsequently, the four stages of the PRISMA guidelines were applied to identify eligible articles for inclusion in this study. The complete article inclusion process based on PRISMA guidelines is presented in Figure 1.

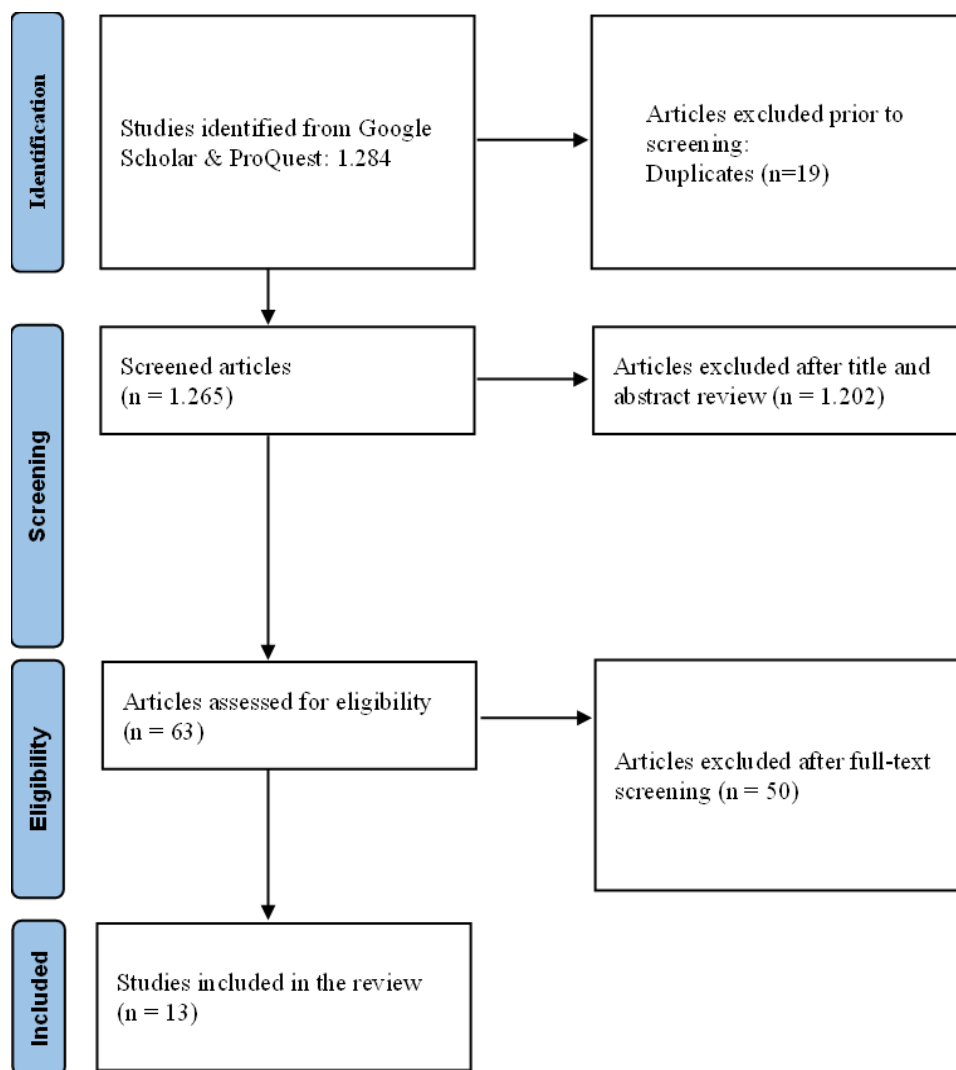


Figure 1. Articles Inclusion Process

RESULTS AND DISCUSSION

Studies Overview

A literature review was conducted on 13 publications discussing farmer regeneration

within farming families, with a focus on research conducted in Indonesia. Details of the articles included in this review, including titles, authors, year of publication and research locations, are presented in Table 1.

Table 1. Studies Included In The Review

No	Title	Author	Research Location
1.	<i>Faktor beralihnya tenaga kerja anak petani ke sektor non-pertanian di desa Treman kecamatan Kauditan kabupaten Minahasa Utara</i>	Wehantouw et al. (2018)	North Minahasa District, North Sulawesi
2.	Succession models on smallholder dairy farms in Indonesia	Firman et al. (2018)	Bandung District, West Java
3.	Succession decisions in Indonesia family dairy farm business	Firman et al. (2019)	Bandung District, West Java
4.	Interest to continue farming among agricultural students who is a child of a farmer	Ayu & Naully (2020)	Indonesia (in general)
5.	<i>Problematika, pola, dan strategi petani dalam mempersiapkan regenerasi di Daerah Istimewa Yogyakarta</i>	Wati et al. (2021)	Sleman District, Kulon Progo District, Gunung Kidul District, Special Region of Yogyakarta
6.	<i>Bertani Atau Tidak Bertani? Jalan Karier Anak Petani</i>	Putri & Maylani (2022)	Indonesia (not specified)
7.	The Succession Patterns of Agricultural Lands in the Special Region of Yogyakarta Province, Indonesia	Maulida & Wati (2022)	Sleman District, Kulon Progo District, Gunung Kidul District, Special Region of Yogyakarta
8.	<i>Analisis Minat Anak Petani Padi menjadi Petani di Desa Pasemah Air Keruh Sumatera Selatan</i>	Yamin et al. (2023)	Empat Lawang District, South Sumatra
9.	<i>Dinamika Regenerasi Petani Muda Di Kabupaten Karanganyar</i>	Swastika et al. (2023)	Karanganyar District, Central Java
10.	<i>Faktor-Faktor yang Memengaruhi Regenerasi Petani Gula Kelapa di Kecamatan Cilongok Kabupaten Banyumas (Studi Kasus Kelompok Tani Nira Cikal Mas)</i>	Rahmawati et al. (2023)	Banyumas District, Central Java
11.	<i>Minat anak petani terhadap pekerjaan di sektor pertanian</i>	Ibrahim et al. (2023)	Mojokerto District, East Java
12.	<i>Persepsi Dan Minat Generasi Muda Untuk Melanjutkan Usahatani Sayuran Orang Tua Mereka Di Kelurahan Landasan Ulin Utara Kecamatan Liang Anggang Kota Banjarbaru</i>	Octaviani et al. (2024)	Banjarbaru City, South Kalimantan
13.	Regeneration of Rural Rice Farmers in Central Java Province	Ani et al. (2024)	Grobogan District, Sukoharjo District, Central Java

Source: Author's Own Elaboration (2024)

Table 1 reveals that while farmer regeneration is a pressing issue in Indonesia, there is a dearth of research specifically focusing on the children of farmers. Studies centered on these individuals would provide a more accurate depiction of how young people's behaviors and inclinations towards continuing family farming directly influence the regeneration process compared to studies on those without an agricultural family background. Young individuals without a familial connection to agriculture often face multiple barriers that deter them from entering this sector. Young people without a farming heritage often lack the necessary economic and managerial capabilities to independently initiate farming, making it less likely for them to enter the agricultural sector due to limited resources (Mutua et al., 2017). In contrast, the children of farmers possess the resources to support their involvement in agriculture (Etim & Thompson, 2020; Zhu et al., 2021).

Based on Table 1, research on farmer regeneration within farming families has been

conducted in only a limited number of regions across Indonesian provinces. While studies have been carried out in provinces such as North Sulawesi, West Java, Yogyakarta, South Sumatra, Central Java, East Java, and South Kalimantan, these have often been concentrated in few specific districts or cities. Consequently, many other agricultural centers in Indonesia remain unexplored. For instance, in North Sulawesi, not only Minahasa Utara district has a significant number of farming families, but other regions such as Tomohon City and South Minahasa district are also agricultural centers in the province. Although some research has examined children of farmers nationwide, region-specific studies are still necessary. This is because a small sample size may not adequately represent the children of farmers in a particular region, given the large population of farming families in Indonesia.

Furthermore, three main themes were identified in this review: driving factors, challenges, and strategies. A detailed overview of these themes is presented in Table 2.

Table 2. Drivers, Challenges, and Strategies for Farmer Regeneration

Drivers		Challenges		Strategies	
1.	Profitability of cultivated agricultural commodities (Maulida & Wati, 2022; Ayu & Naully, 2019; Ibrahim et al., 2023; Wati et al., 2021).	1.	Broader educational and career opportunities outside of agriculture (Maulida & Wati, 2022; Yamin et al., 2023).	1.	Conducting family socialization (Maulida & Wati, 2022; Ibrahim et al., 2023; Yamin et al., 2023).
2.	Ownership status and condition of family farmlands (Maulida & Wati, 2022; Ibrahim et al., 2023; Yamin et al., 2023).	2.	Gender inequality in land distribution (Maulida & Wati, 2022).	2.	Providing mentorship programs for farm succession (Maulida & Wati, 2022).
3.	Development of agrotourism (Maulida & Wati, 2022).	3.	Low personal willingness due to negative perceptions of agricultural work (Maulida & Wati, 2022; Firman et al., 2019; Ibrahim et al., 2023; Wati et al., 2021; Wehantouw et al., 2018; Swastika et al., 2023; Yamin et al., 2023).	3.	Implementing programs for young entrepreneurs (Maulida & Wati, 2022).
4.	Support from parents and the surrounding community (Firman et al., 2018; Ani et al., 2024; Rahmawati et al., 2023; Swastika et al., 2023).	4.	Land use change (Maulida & Wati, 2022; Wati et al., 2021; Wehantouw et al., 2018).	4.	Recognizing and rewarding high-achieving young farmers (Maulida & Wati, 2022; Wati et al., 2021).
5.	Parents' experience as farmers (Ayu & Naully, 2019; Ibrahim et al., 2023).	5.	Climate uncertainty (Maulida & Wati, 2022; Octaviani et al., 2024; Wati et al., 2021).	5.	Providing access to vocational or higher education related to agriculture (Maulida & Wati, 2022; Yamin et al., 2023).
6.	Age of the farmer's children (Ayu & Naully, 2019; Rahmawati et al., 2023).	6.	Price and market uncertainty (Maulida & Wati, 2022).	6.	Offering agricultural insurance and subsidies (Maulida & Wati, 2022).
7.	Education in agriculture (Ayu & Naully, 2019).	7.	Limited funds and capital (Maulida & Wati, 2022; Wati et al., 2021).	7.	Involving children in family farming activities (Firman et al., 2018).
8.	Assignment of responsibilities and participation in family farming activities (Ani et al., 2024; Octaviani et al., 2024; Ibrahim et al., 2023; Wati et al., 2021; Swastika et al., 2023).	8.	Lack of socialization from parents to children (Maulida & Wati, 2022; Ibrahim et al., 2023).	8.	Providing parental assistance in the farm ownership transfer process (Firman et al., 2018).
9.	Government support through financial institutions, fertilizer subsidy policies, and extension services (Ani et al., 2024).	9.	Insufficient government support (Maulida & Wati, 2022; Rahmawati et al., 2023).	9.	Conducting extension and training programs for young farmers (Ayu & Naully, 2019; Ibrahim et al., 2023; Wati et al., 2021; Yamin et al., 2023).
10.	Positive perception of agricultural work (Octaviani et al., 2024).	10.	Development of the tourism sector (Maulida & Wati, 2022; Wati et al., 2021).	10.	Strengthening the role of farmer groups (Ani et al., 2024).
11.	Influence of other young generations (Octaviani et al., 2024; Wati et al., 2021).	11.	Limited land area and agricultural resources (Firman et al., 2018; Ibrahim et al., 2023).	11.	Facilitating information exchange with experienced farmers (Wati et al., 2021).
12.	Fulfillment of needs (Wati et al., 2021).	12.	Limited access to agricultural education (Ayu & Naully, 2019).	12.	Providing easily accessible financial institutions for young farmers (Yamin et al., 2023).
13.	Limitations in continuing education (Wati et al., 2021).	13.	Inability to manage farm businesses for children of farmers (Ani et al., 2024; Wehantouw et al., 2018; Swastika et al., 2023).	13.	Improving agricultural infrastructure (Yamin et al., 2023).
14.	Ease of access to market information (Wati et al., 2021).	14.	Low income and lack of incentives in agricultural work (Octaviani et al., 2024; Ibrahim et al., 2023; Wehantouw et al., 2018).	14.	Adopting agricultural technologies (Yamin et al., 2023).
15.	Implementation of agricultural technology (Yamin et al., 2023).	15.	Occupational risks (Rahmawati et al., 2023).		
		16.	Prohibition and parental desire for children to work in other sectors with higher social status (Swastika et al., 2023; Yamin et al., 2023).		
		17.	Negative perceptions from others (Putri & Maylani, 2022).		

Source: Author's Own Elaboration (2024)

Table 2 indicates that in the process of agricultural regeneration, there are various factors that both encourage and discourage children's interest and willingness to continue family farming. The results also show that the drivers and barriers to regeneration vary, influenced by both social and economic factors. Additionally, alternative strategies to promote farmer regeneration within farming families have been identified in some literature, although only 7 out of 13 studies proposed specific strategies. This suggests a lack of research on developing strategies to promote farmer regeneration through family farming succession in Indonesia,

highlighting the need for further studies in this area.

Driving Factors

Table 2 indicates that various driving factors influence farmer regeneration, with profitability of cultivated agricultural commodities (Maulida & Wati, 2022; Ayu & Naully, 2019; Ibrahim et al., 2023; Wati et al., 2021), ownership status and condition of family farmlands (Maulida & Wati, 2022; Ibrahim et al., 2023; Yamin et al., 2023), support from parents and the surrounding community (Firman et al., 2018; Ani et al., 2024; Rahmawati et al., 2023; Swastika et al., 2023),

and assignment of responsibilities and participation in family farming activities (Ani et al., 2024; Octaviani et al., 2024; Ibrahim et al., 2023; Wati et al., 2021; Swastika et al., 2023) identified as the most prevalent.

Profitability of agricultural commodities is one of the primary drivers of farmer regeneration within families. This factor is closely linked to how the profits generated from cultivated commodities can attract younger generations to continue the family farming business. Commodities with high market value and the ability to provide adequate income tend to be more appealing to the children of farmers to continue the family farming business (Leavy & Hossain, 2014). A stable and sufficient income from farming can enhance the attractiveness of the agricultural sector as a career choice, especially among young people who may be considering other sectors perceived as more promising. Profitability considerations also involve perceptions of the stability of commodity prices, as significant price fluctuations often pose significant challenges for farmers, especially smallholders. Market price uncertainty makes the agricultural sector less attractive to young people due to the potential risk of losses. However, if the cultivated commodities have a stable market and relatively non-fluctuating prices, this can increase the interest of farmers' children to continue the business.

Clear land ownership and productive land play a significant role in attracting younger generations to continue family farming. Legitimate land ownership provides a sense of security for farming families, which in turn can encourage farmers' children to continue the farming business (Firdaus et al., 2023). Families that own their land tend to be more economically stable, making their children more likely to be involved in agriculture. This ownership guarantees the sustainability of the farming business, ensuring that young people do not have to worry about potential land loss or ownership conflicts. Furthermore, land condition plays a crucial role in determining the sustainability of family farming. Fertile and well-managed land tends to yield higher and more stable harvests, making it more attractive to farmers' children.

Conversely, degraded or unproductive land can reduce young people's interest in farming, as it is perceived as less profitable.

Parental and social support play a crucial role in farm succession within families. Parents have a central role in determining children's interests and career choices, including in the agricultural sector (Nandi et al., 2022). When parents demonstrate a positive attitude towards farming and communicate the benefits and potential of farming, children tend to be more open to continuing the business. Additionally, support from the surrounding environment (outside the family) can provide farmers' children with a sense of identity and pride in the agricultural profession, which is an important driver of farm succession.

Parents with extensive experience in agriculture possess in-depth knowledge and skills related to farming practices, land management, and cultivation techniques (Thomas et al., 2020). This knowledge transfer is crucial in preparing children to continue the family farming business. Parental experience also helps children understand the challenges faced in agriculture, such as climate change, price fluctuations, and pest problems. With this knowledge, farmers' children are better equipped to overcome obstacles and identify opportunities that may not be apparent to outsiders. Additionally, the success of parents in managing their farms often inspires children to continue and even expand the business with new innovations. Parental experience provides a strong foundation for farmer regeneration, as children feel they have a solid base from which to continue the family farming business.

Assigning responsibilities in agricultural activities to children allows them to practice the skills and knowledge required to manage a farm. Farmers' children who are actively involved in agricultural activities from a young age are more likely to have a deep understanding of the agricultural process, from land preparation to planting and harvesting (Kimaro et al., 2015). This involvement allows them to develop managerial and technical skills that will be useful when taking over the family farm in the future. Assigning responsibilities in farming also helps build a sense of ownership and commitment to the family farming business. When children feel that

they play a significant role in the success of the farm, they are more likely to develop an emotional connection to farming and feel responsible for maintaining and continuing the business.

Challenges

Low personal willingness to engage in the agricultural sector is often caused by negative perceptions of work in this sector (Ridha & Wahyu, 2017). Negative perceptions of agricultural work often revolve around the view that it is a less prestigious, arduous, and less profitable job (Jones et al., 2017). The agricultural sector is often seen as a job with low social status and inadequate income compared to other sectors.

Land use change is a challenge that directly impacts the availability and sustainability of agricultural land (Wehantouw et al., 2018). The demand for land for housing and infrastructure is increasing with rapid population growth and urbanization. This conversion results in productive agricultural land being transformed into non-agricultural areas, reducing the amount of land available for agricultural activities.

Climate change and extreme weather fluctuations can affect agricultural production and the sustainability of farming (Aurora, 2019). This uncertainty impacts land planning and management, as well as the motivation of young people to continue to be involved in the agricultural sector (Octaviani et al., 2024). Climate uncertainty leads to instability in agricultural yields. For example, unexpected droughts or floods can damage crops and reduce harvests, increasing financial risks for farmers. Climate fluctuations can also affect soil quality, disrupt planting cycles, and increase the prevalence of plant diseases. The risks associated with climate fluctuations make the agricultural sector less attractive compared to other sectors that are considered more stable. Farmers' children who see this uncertainty may feel less motivated to continue the family farm and may prefer careers in sectors that offer greater stability and security.

The limited availability of relevant educational institutions and training programs hinders farmers' children from acquiring the

necessary knowledge and skills (Ayu & Naully, 2019). The absence of adequate education makes farm succession becomes difficult as children do not acquire the skills needed to manage a farming business effectively. Without sufficient training and experience, farmers' children may lack the managerial skills required to efficiently manage the family farm.

Low farmer incomes are a major issue often faced in the agricultural sector. In addition to low incomes, the lack of incentives is also a significant problem (Wehantouw et al., 2018). Incentives such as subsidies, government assistance, and incentive programs for agricultural innovation and technology can help increase incomes and the attractiveness of the agricultural sector. Low incomes and the lack of incentives can have a direct impact on farm succession. Younger generations, who often seek careers with better income prospects and more attractive benefits, may not be interested in continuing the family farm. Agricultural jobs that do not offer adequate income potential or attractive incentives tend to make farmers' children seek opportunities in other, more promising sectors.

Strategies

To support farm succession within farming families, various strategies can be implemented to address challenges and facilitate the transition of younger generations into the agricultural sector. One important approach is family socialization (Widiyanti et al., 2020), where open communication about the values of agriculture, opportunities, and challenges can help increase younger generations' understanding of and interest in the family farm. Effective socialization can create a greater awareness and commitment among farmers' children to continue the family business, making them better prepared to face challenges and seize opportunities (Yamin et al., 2023).

Additionally, the provision of mentors for farm succession programs can play a key role in farm regeneration (Valliant et al., 2019). Experienced mentors can provide the necessary guidance and support for young farmers to understand the technical and managerial aspects of farming, and to address problems they may

encounter. This program can accelerate the transfer of knowledge and skills from the older to the younger generation, and assist in developing effective strategies for farming success. Parental assistance in the farm ownership transfer process is also important to ensure a smooth transition and the sustainability of the farm. Parents can provide guidance on the administrative and technical aspects of the transfer, and ensure that the younger generation has access to the necessary resources and support to manage the farm effectively. In achieving this, involving children in the family farm from an early age can provide firsthand experience and a better understanding of the operations and challenges of farming. Active participation in farming activities can build practical skills and their interest in the family business, as well as create a sense of responsibility and attachment to the farm that will be inherited (Jansuwan & Zander, 2021b).

Providing access to vocational or higher education related to agriculture is key to preparing young farmers with the knowledge and skills needed to succeed in the sector (Maïga et al., 2020; Maulida & Wati, 2022). Relevant education can help them understand the latest technologies, cultivation techniques, and farm management, making them better prepared to face challenges and seize opportunities in the agricultural sector.

Implementing programs for young entrepreneurs is also crucial (Maulida & Wati, 2022). These programs can provide training, mentoring, and access to the resources needed to start and manage farming businesses (Galvão et al., 2020; Jansuwan & Zander, 2021a). By providing strong initial support, young farmers can become more confident and prepared to face the challenges associated with farming, while developing innovations that can improve the efficiency and sustainability of their businesses (Bailey et al., 2014). Additionally, recognizing the achievements of young farmers through youth entrepreneurship programs is an effective strategy to motivate the younger generation and encourage them to continue innovating and excelling in the agricultural sector (Wati et al., 2021). This recognition can be in the form of awards, certificates, or publications about their achievements. By recognizing and celebrating the

achievements of young farmers, society can demonstrate that success in agriculture is attainable and valued, thus increasing the sector's appeal to the next generation.

Providing extension services and training for farmers' children can enhance their skills and knowledge in various aspects of agriculture (Ayu & Naully, 2019). These extension programs can include training on cultivation techniques, business management, marketing, and the use of the latest technology. By receiving the right training, young farmers can develop the skills needed to address challenges in the agricultural sector (Adeyanju et al., 2021).

Increasing the role of farmer groups can also support farm succession by providing a platform for sharing information, experiences, and resources (Ani et al., 2024). Farmer groups can serve as a support and collaboration network (Bizikova et al., 2020), where young farmers can learn from the experiences of seasoned farmers, and receive support and guidance in managing their farms (Wati et al., 2021). Organizing information exchange with experienced farmers can provide valuable insights and best practices in farming (Kumar et al., 2020; Mendes et al., 2024). This information exchange can help young farmers overcome the challenges they face and adopt techniques and strategies that have proven effective. By facilitating communication and collaboration between young and experienced farmers, the agricultural sector can become more dynamic and innovative.

Providing accessible financial institutions for young farmers can help young farmers obtain the capital needed to start or expand their farming businesses (Balezentis et al., 2020; Brooks et al., 2013). Access to financial institutions that provide loans, subsidies, or other financial support can make it easier for young farmers to overcome capital and investment constraints (Balana & Oyeyemi, 2022), and increase their chances of succeeding in farming. Additionally, governments can offer agricultural insurance and subsidies to provide financial protection for young farmers and reduce the risks associated with farming. Insurance can protect farmers from losses due to natural disasters, price fluctuations, or health problems, while subsidies can help cover

production and investment costs. With adequate financial support, young farmers can focus more on developing their farming businesses without having to worry about significant financial risks.

Improving agricultural infrastructure, such as roads, irrigation systems, and storage facilities, is crucial (Huang et al., 2021; Magaouda et al., 2020). Good infrastructure can increase operational efficiency, reduce production costs, and improve market access (Palei, 2015). With adequate infrastructure, young farmers can more easily manage their farms and address challenges related to production and distribution. In addition to infrastructure improvements, adopting technology in cultivation processes is important for increasing productivity and sustainability (Caffaro et al., 2020). The latest technologies, such as automated irrigation systems, soil sensors, and agricultural management applications, can help young farmers manage their farms more efficiently and effectively.

CONCLUSION AND RECOMMENDATIONS

Conclusion

Based on the discussion, it can be concluded that farm succession within farming families is influenced by various driving factors and challenges. To address these challenges, effective succession strategies include family socialization, mentoring programs, vocational education, youth entrepreneurship programs, and extension and training activities. Increasing the role of farmer groups in sharing information and experiences is also essential to support the sustainability of farming. With a comprehensive approach, sustainable farm succession within families is expected to be realized.

Recommendations

Given the urgency and limited research on farm succession within farming families, further research is needed, especially studies that specifically identify strategies to enhance farm succession within farming families. Additionally, comparative studies between farm succession in different regions or countries could be conducted to understand the differences in driving factors

and challenges. This could include comparisons between areas with high and low urbanization levels, as well as between different regions in Indonesia with varying cultural, social, and economic backgrounds.

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