



The Importance of Farmer Regeneration in the Future Modernization of Agriculture in Southeast Aceh District

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Abstract Southeast Aceh Regency has a huge potential to bring its agricultural sector to a better level in all aspects. However, several obstacles still hinder the sustainability of agriculture in our country. Therefore, it is imperative to reform agricultural products by using technology for yield and efficiency in agriculture. Young people are the most competent in modernizing technology nowadays. Agricultural regeneration related to agricultural product reform is important to involve the elderly and the younger generation in improving productivity. However, there are problems with farmer regeneration caused by various reasons in the southeast Aceh district. The purpose of this study is to determine how farmer regeneration can impact agricultural products and modernize agriculture going forward. A descriptive qualitative research method was used along with a literature review strategy. In addition, secondary data sources such as books, journals and other references, previous research were also used to support the research. The data analysis techniques used include data reduction, data presentation, and conclusion drawing. The results of this study are strategies aimed at parents and the younger generation of farmers must be carried out to encourage better regeneration of farmers. Regeneration of farmers to modernize agriculture can be done by providing agricultural education and training.

Keywords: Future, Farmer, Regeneration

1. INTRODUCTION

As an agricultural country, Indonesia has the ability to develop its agricultural industry to a more advanced level (Sari & Sari, 2022). However, there are still a number of obstacles facing Indonesia's agricultural industry, including international trade issues (Rambe & Aslami, 2022). In order to compete with other countries' agricultural products, trade in agricultural products needs to be reformed (Nasrun, 2021). Some efforts that can be made to reform agricultural products, namely legalizing product packaging, implementing digital marketing, empowering farmers through agricultural development, educating brands about agricultural products, and reviving the implementation of agricultural institutional empowerment (Setiawan, 2022) (Christyanto & Mayulu, 2021). Through these efforts, it means that farmers need creative thoughts that can support efforts to reform agricultural products for the welfare of farmers in Indonesia.

Agricultural product reform includes the introduction of new technologies that help increase productivity and efficiency in the agricultural sector (Arifin, 2005). One way to do this is to involve the younger generation to realize agricultural reform efforts. As the largest generation in the labor force, the younger generation is expected to have a significant influence on the future development of agriculture (Putri & Dewi, 2021). In addition, the use of technology in agriculture is more common among millennials, which can increase productivity

and efficiency (Rachmawati, 2020). Therefore, it is important to continue regenerating farmers in agriculture in order to continue creating food security in Indonesia.

To maintain food production and find or create new technologies in the agricultural industry, farmers must regenerate (Oktafiani et al., 2021). Farmer regeneration is the replacement of farmers from an unproductive age with younger and more productive farmers (Pamungkaslara & Rijanta, 2021). Farmer regeneration can help agricultural productivity and promote sustainable agriculture that can improve community food security (Manumono, 2022). Farmer regeneration can also overcome social and economic problems to improve living standards (Ramadhan & Rivaldo, 2022). In addition, farmer regeneration is useful for preserving agricultural culture and will continue to be passed on to the next generation (Hadinata, 2018). However, in order to realize the regeneration of farmers there are many challenges.

The main challenge is to create a sense of need among the younger generation for agriculture. However, the lack of interest of the younger generation to engage in the agricultural profession is one of the challenges in regenerating farmers (Mulyana et al., 2022). This thinking is related to the assumption that other fields are more economically promising than the farming profession (Mariati & Nugroho, 2022). The agricultural sector is also considered less competitive, which can lead to a higher risk of agricultural failure (Dwipradnyana, 2017). In addition, the lack of access to modern equipment and training can cause farmers to become less productive and eliminate other generations' interest in agriculture (Polan et al., 2021).

Farmer regeneration can also overcome food security conflicts in the future (Taufiqurrohman & Jayanti, 2022). The skills and cultural heritage of farmers are important to continue to be developed through farmer regeneration (Nurfalah, 2021). With the various problems experienced by farmers, the role of farmer regeneration is needed to intervene with various parties to support increased food security (Oktafiani et al., 2021). There are several factors that can affect the interest of farmer regeneration, namely economic, social, and technological environmental factors (Nurjanah, 2021). Low socio-economic conditions and a high level of education make the younger generation not interested in working in the agricultural sector (Afista et al., 2021). In addition, some people think that farming is a custom, not a profession (Nurfalah, 2021).

Through the explanation above, the author is interested in discussing the importance of farmer regeneration in influencing welfare in the agricultural sector and food security, especially in southeast Aceh district. To maintain welfare and food security in an era full of high competitiveness, new thinking is needed. New thinking includes agricultural reform into

agricultural modernization. Agricultural modernization is considered to be possible if the younger generation is involved. Therefore, this research also wants to see why farmer regeneration is related to agricultural modernization so that it can realize food security in southeast Aceh district.

2. LITERATURE REVIEW

Agricultural modernization is a critical step in ensuring food security and rural development, particularly in regions with high agricultural potential such as Southeast Aceh. According to Arifin (2005), modernization in agriculture involves the adoption of advanced technologies to improve efficiency and productivity. This includes the use of superior seeds, appropriate fertilizers, mechanized tools, and digital platforms to support the agricultural process (Yudha et al., 2023).

A key factor in realizing modernization is **farmer regeneration**, defined as the process of replacing aging farmers with younger, more productive individuals (Pamungkaslara & Rijanta, 2021). Regeneration is essential not only to maintain food production but also to preserve local agricultural culture and adapt to changing technological and market conditions (Hadinata, 2018; Oktafiani et al., 2021).

However, **several challenges** hinder the regeneration of farmers in Indonesia. One major obstacle is the **low interest among youth** in pursuing careers in agriculture due to perceived low income and social status associated with farming (Mulyana et al., 2022; Mariati & Nugroho, 2022). Leavy & Smith (2010) emphasize that agriculture is often stereotyped as a profession linked to poverty and rural backwardness. Furthermore, societal norms often view agriculture as a male-dominated sector, marginalizing women's roles in agricultural decision-making (Brandth, 2002).

The **educational background of farming communities** also plays a significant role. Data shows that the majority of agricultural workers in rural areas have only completed primary education or less, which limits their capacity to adopt and manage new technologies (Pranadji & Hardono, 2015). This educational gap contributes to the lack of innovation and modernization in rural farming.

Despite these obstacles, several studies highlight that the **younger generation has a strong potential** to transform agriculture. Millennials are more receptive to digital tools, capable of innovation, and open to agribusiness ventures (Putri & Dewi, 2021; Dewi & Nurjannah, 2022). With adequate access to education, training, land, and market opportunities,

young farmers can drive sustainable transformation in the agricultural sector (Anwarudin et al., 2018; Kompas.id, 2023).

According to the World Bank (2024), boosting agricultural productivity in Indonesia requires investment in human capital and innovation. Regeneration efforts must therefore be aligned with policy support, vocational training, infrastructure development, and agrarian reform to provide opportunities for youth involvement in farming (Subejo & Daryanto, 2017).

In conclusion, farmer regeneration is a foundational pillar in the journey toward **agricultural modernization**. It connects traditional farming knowledge with modern techniques, increases productivity, enhances food security, and contributes to the socioeconomic well-being of rural communities.

3. RESEARCH METHODS

Qualitative descriptive technique is a method used in data collection in providing a detailed explanation of the actual phenomenon or event (Sugiyono, 2015). This method is used in natural object conditions, where the researcher is the main instrument, triangulation (combination) is used in data collection techniques, inductive data analysis emphasizes meaning rather than generalization (Sugiyono, 2015).

4. RESULTS AND DISCUSSION

Southeast Aceh district farmers face educational barriers in their regeneration process, which is consistent with data showing that the population working in the agricultural sector has lower education levels than the national labor force average. More than 75% of agricultural workers have a primary school education or less, and only 0.39% have a higher education (Kedaulatanpangan.org, 2015). In addition, family parameters such as number of children, age of children, and family size influence young farmers' decision to switch from farming to non-agriculture (Pranadji & Hardono, 2015). Furthermore, barriers to farmer regeneration are often related to societal prejudices. The farming profession is associated with at least two significant stereotypes. First, agriculture is considered a male domain, with men dominating land ownership and women contributing little in terms of land management and agricultural product sales techniques (Brandth, 2002). The second stereotype is that agriculture is associated with poverty, with farming seen as an occupation that does not provide welfare and economic stability as it is commonly associated with rural living conditions (Leavy & Sally, 2010).

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Furthermore, at the 2020 Asian Agriculture and Food Forum (ASAFF) event, Rina SA'adah Adisurya, Chairperson of the Indonesian Farmers Association (HKTI), spoke about the importance of regeneration in agriculture. She stated that the majority of young farmers or millennials now hold key roles in developing land, production processes, and agribusiness. They are known for their productive and efficient performance, as well as their ability to utilize technology and innovation. Regeneration of farmers is key in encouraging technology-based agriculture. To attract the younger generation to the agricultural sector, it is important to make farming a promising and profitable profession. This can be achieved through better market access, innovation, and technology utilization. Regeneration of farmers is considered a major factor in bringing about progress and modernization in agriculture. Nowadays, agricultural modernization involves the use of superior seeds, appropriate fertilizers, agricultural mechanization equipment, and digital technology in all aspects of farmers' lives, including in their farming model (News.republikas.co.id, 2022).

Furthermore, at the Asian Agriculture and Food Forum (ASAFF) 2020, Rina SA'adah Adisurya, Chairperson of the Indonesian Farmers Association (HKTI), spoke about the importance of regeneration in Modernizing agriculture is a government strategy aimed at increasing agricultural production, particularly in the context of rice production. High production levels in rice crops are essential to ensure food availability for the community, and this is a step towards food self-sufficiency (Pratiwi, 2016). In a book launch event entitled "Modernizing Indonesian Agriculture" by the Center for Indonesian Policy Studies (CIPS) outlined that the modernization of the agricultural sector is a necessity that must be pursued in a sustainable manner. This modernization process is driven by three main factors, namely

agricultural sector growth, sustainability, and agricultural sector resilience to global shocks. In addition, also shows the view that most of the poverty in Indonesia is related to the agricultural sector, so steps need to be taken to advance the agricultural sector. This sector helps poor families escape poverty. In addition, modernization also has the potential to lure the interest of the younger generation to engage in the agricultural sector, which in turn can create regeneration (Kompas.id, 2023).

With limited agricultural resources, agricultural modernization includes economic expansion and population increase. In addition, modernization also brings new technologies that can help farmers conserve land and increase yields, especially through the use of improved seeds and commercial fertilizers. Changes in the institutional framework of society, as well as contracts between farmers, farm laborers, and other stakeholders in villages and cities, were also part of this process (Hayami, 1981). One of the main benefits of agricultural modernization is the increased ability of people to get a better education, especially for young people. As livestock owners have embraced agricultural technology, they are now better able to perform farm-related tasks. Crop yields have also benefited from this (Yudha et al., 2023).

Based on this explanation, the author can conclude that the regeneration of farmers in southeast Aceh has the potential to influence the modernization of the agricultural sector. This is due to the fact that young farmers who are familiar with technology have the ability to innovate in agriculture, which in turn allows for modernization. Modernization also has a positive impact on agricultural production, which contributes to the provision of food for the community. In addition, modernization has also had a positive influence on farmers' welfare, increasing their ability to fund better education, especially for farmers' children. This happens because farmers in southeast Aceh district have adopted agricultural technology, which in turn improves their ability to carry out tasks related to agriculture, and this has a positive impact on the yields produced.

5. CONCLUSION

Policies targeting parents and the younger generation should be developed to stimulate farmer regeneration. The most important thing is to improve the lives of farming families. Increased land access and ownership for farming families, as well as improved facilities and infrastructure, are necessary to maintain stable incomes.... Therefore, agrarian reform must be implemented immediately. On the other hand, special policies aimed at the younger generation are also needed, with an emphasis on developing their awareness of different areas of agriculture. To encourage educated young people to enter the agricultural sector, agricultural

education should be improved, including vocational education up to the level of higher education.

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