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Indonesia's Youth Strategy Towards Sustainable Agricultural Change

AuthNur Rizky Oktaviani[1], Zuhud Rozaki[2], Retno Wulandari[3], Ridho Ikbar Distrianada[4]
[1,2,3,4] Agribisnis, Pertanain, Universitas Muhammadiyah Yogyakarta, Yogyakarta, Indonesia, 55183
Email: nurrizkyoktaviani025@gmail.com[1]; zaki@umy.ac.id [2], retno.wulandari@umy.ac.id [3] , ridhoikbar1749@gmail.com[4]

ABSTRACT
Education and training focused on sustainable agriculture have a crucial role to play in preparing young Indonesians to play a role in sustainable agricultural change. This article discusses several internal and external factors influencing youth interest in the agricultural sector, including limited land constraints, inadequate financial support, negative views of agriculture, and the attractiveness of the non-agricultural sector in urban areas. Research shows that effective, practical, and up-to-date education and training programs can inspire youth to engage in sustainable agricultural practices. The importance of reviving youth interest in agriculture is also emphasized through the development of young entrepreneurs in the agricultural sector. Concrete measures such as increased access to technology, agricultural infrastructure development, and cooperation between governments, research institutions, and communities were identified as strategies to achieve sustainable agriculture. The importance of reviving youth interest in agriculture is also emphasized through the development of young entrepreneurs in the agricultural sector. Concrete measures such as increased access to technology, agricultural infrastructure development, and cooperation between governments, research institutions, and communities were identified as strategies to achieve sustainable agriculture. The importance of active youth participation in the policy process and cooperation with various parties was also discussed. Various training initiatives, such as the Kostratani Program at the Jambi Agricultural Training Center and thematic training activities for farmers, show the government's real commitment in increasing the capacity of agricultural human resources. However, challenges such as the labor crisis in the agricultural sector, especially among young farmers, have an impact on the aging of farmers. Strategies for the protection and empowerment of farmers according to Law Number 19 of 2013, which involve increasing resilience to climate change, business risk management, and strengthening market systems, were identified as steps that can be taken to address various problems in the agricultural sector.

Keywords: sustainable agricul, agricultural sector, Change, protection and empowerment

INTRODUCTION

Agriculture has a very important role in meeting food needs and supporting environmental sustainability. In Indonesia, young people are faced with great challenges when trying to contribute to realizing sustainable agriculture. The focus on education and training on sustainable agricultural practices is key to preparing young people for the dynamics of modern agriculture, including complex issues such as the environment, climate change, and the application of agricultural technology.

Several studies have shown that youth participation in the agricultural sector is declining, and this can be explained by a variety of internal and external factors. Constraints such as limited time and energy, as well as the perception that working in the agricultural sector is less prestigious, present significant barriers. Therefore, to achieve sustainable agricultural growth, it is important to revive the interest of the younger generation in this sector.

The importance of reviving the interest of the younger generation in agriculture is the main focus in efforts to achieve sustainable agriculture. Internal factors, such as limited land area and financial support, as well as external factors, such as perceptions of lack of prestige and rapid urban development, need serious attention from the government, educational institutions, and the public.

In this context, joint efforts are needed to create an environment that supports and stimulates the interest of the younger generation in developing the agricultural sector. Concrete measures, such as increasing access to modern agricultural technology, developing adequate agricultural infrastructure, and cooperation between governments, research institutions, and communities are key to success in achieving agricultural sustainability.This article will provide a more detailed overview of the challenges faced by young people in actively engaging in sustainable agriculture in Indonesia, as well as present innovative solutions to overcome these obstacles.

LITERATURE REVIEW

Sustainable agriculture plays a crucial role in responding to global challenges related to food and environmental sustainability. To ensure Indonesia's youth can play a role in the transformation of sustainable agriculture, education and training focused on sustainable agricultural practices is a key element. This includes a deep understanding of sustainable agricultural practices, the environment, and mastery of modern agricultural technology.

Fikriman et al (2022) provide a definition that reflects that

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successful management of agricultural resources must still maintain environmental quality and preserve natural resources. The decline in youth participation in the early stages of agriculture is a concern, and Fitri Ningsih and Sofyan Syaf (2015) highlight time and energy constraints as major factors.

The sustainability of agriculture is also influenced by internal and external factors. Agus et al (2018) showed that constraints such as limited land area and financial support affect the interest of the younger generation. External factors, such as perceived lack of prestige and rapid urban development, also influence their career choices. Re-energizing the interest of young people in the agricultural sector requires the role of educational institutions and the serious involvement of the government in creating jobs.

Some factors that make the younger generation reluctant to have a career in agriculture include higher income in the non-agricultural sector, a bad image of agriculture, and limited land ownership (Agus et al, 2018). Therefore, including young people in policies and motivating them to collaborate with various agricultural interests is important. Innovative programs and strategies, as outlined by Fitrah et al (2018), can include increasing access to technology, developingagricultural infrastructure, and collaboration among stakeholders.

Training programs, such as the Kostratani Program depicted in Figure 1, are concrete steps by the government to increase human resource capacity in the agricultural sector (Agus et al, 2021). Seeing an increase in labor in the non- agricultural sector, especially in recent years, shows a labor crisis in the agricultural sector, especially in young farmers (Syarifah et al, 2021).

The strategy of protecting and empowering farmers, as identified in Law Number 19 of 2013, is key in overcoming various challenges. The seven strategies include efforts to address climate change, vulnerability to natural disasters, business risk, globalization, and global economic turmoil.

METHOD

This research aims to thoroughly understand the factors influencing young people's interest in the agricultural sector, as well as identify sustainable innovation programs and strategies that can increase their participation in sustainable agriculture in Indonesia. The method used in this study is descriptive analytical with a qualitative approach.

1. Research Design:
   This research adopts a qualitative approach with an analytical descriptive research design. This approach allows researchers to detail the context and complexity of phenomena related to the interest of young people in the agricultural sector, while analyzing the internal and external factors that influence such interests.
2. Data Source:
   Using related literature and research to understand the concept of sustainable agriculture, factors influencing young people's interest in agriculture, as well as innovation programs and strategies already in place. Analyze statistical data related to agricultural and non- agricultural labor in Indonesia from 2013 to 2017. In addition, examining strategies for protecting and empowering farmers according to Law Number 19 of 2013.
3. Data Collection Procedure:
   Conduct a detailed analysis of the text to identify the main themes, factors, and innovation programs described in the text. Assess relevant literature and research to gain an in-depth understanding of the concept of sustainable agriculture, challenges within the agricultural sector, and strategies that have been implemented.
4. Data Analysis:
   Apply content analysis to identify emerging patterns and themes in the text, focusing on factors influencing the interest of young people and sustainable innovation programs. Interpret the results of the analysis to gain a thorough understanding of the factors influencing the interests of young people and strategies that can increase their participation in agriculture.

RESULT AND DISCUSSION

Education and training that focuses on sustainable agriculture is essential in preparing Indonesia's young generation to play a role in food-sustainable agricultural change. It involves sustainable agricultural practices, environmental understanding, population growth, climate change, declining natural resources and modern agricultural technology. In addition, practical, adequate and up-to-date training programs are also important to enable youth to understand and apply sustainable practices effectively in an agricultural environment. Knowledge provided related to good soil management, use of organic fertilizers, integrated pest control practices, and efficient irrigation techniques.

The learning and training process include several key elements that are very important, including:

1. The direct involvement of young people in sustainable agricultural practices, including soil management, planting techniques, and crop care, will provide an immersive experience. This not only increases agricultural productivity but also strengthens awareness of the need to preserve the environment.
2. Education should provide a comprehensive understanding of the environmental challenges facing agriculture. This includes issues such as

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climate change, natural resource decline, and the impact of population growth. Through this understanding, the younger generation is expected to develop innovative solutions that support sustainability.

3. Education should introduce young people to the latest agricultural technologies, including the use of sensors, artificial intelligence, and geographic information systems. The integration of these technologies is expected to improve production efficiency while reducing negative impacts on the environment.
4. Training programs should be designed to be relevant to the practical needs of young people in the field. Direct participation in activities such as soil management demonstrations, application of organic fertilizers, and integrated pest control strategies will improve their skills.
5. Education needs to place special emphasis on good soil management to maintain fertility and prevent degradation. This includes an understanding of soil and water conservation practices that can be implemented on an agricultural scale.
6. Knowledge of efficient irrigation techniques should be an integral part of learning and training. It aims to provide an understanding of the wise use of water in the context of agriculture, a crucial aspect in dealing with climate change.
7. Education and training programs should encourage young people to develop entrepreneurship in the sustainable agriculture sector. This could include incentives and support to help them achieve economic independence, a key factor in achieving sustainability and food security.

With these aspects in the learning process, it is hoped that the younger generation will become leaders in shaping the future of sustainable agriculture in Indonesia.

Fikriman et al (2022) revealed that the success of resource management by agricultural companies to meet changing human needs while maintaining or improving environmental quality and preserving natural resources is the definition of agriculture. Fitri Ningsih and Sofyan Syaf (2015) revealed that youth participation in agricultural activities has decreased, especially in the process of land preparation, seed planting, and plant care. Low involvement in the tillage and seed stages is due to considerable time and energy demands.

The need for good and quality human resorurces has recently decreased, especially in the contribution of the younger generation to the participation of agricultural success in Indonesia. The interest of youth as the next generation of farmers must be grown to return to the agricultural sector to increase agricultural productivity in the national food supply. Here are the internal and external factors that cause the agricultural sector to be increasingly undesirable to the youth. Internal factors include narrow land area and limited agricultural financing support. External factors include, the perception of youth if working in the non- agricultural sector in urban areas is more prestigious and rapid urban development. Efforts to lure the younger generation to be interested in working in the agricultural sector is the role of educational institutions to change the mindset of youth. The government must also be serious in opening jobs, especially in agriculture.

Educational institutions have a major role in changing the perception of youth towards the agricultural sector. Education that focuses on the positive aspects and opportunities contained in the agricultural sector, including technological innovation and its economic potential, can open minds and stimulate the interest of the younger generation. The government also needs to take serious responsibility in creating job opportunities in the agricultural sector. These measures include developing policies that support sustainable agriculture, incentivizing young agricultural entrepreneurs, and creating a conducive business environment. Overall, cooperation between educational institutions, government, and the private sector needs to be strengthened to create conditions that support and stimulate the interest of young people in contributing to the agricultural sector. Only through these measures can we ensure sustainable agricultural growth and meet national food needs.

Agus *et al* (2018) revealed that there are several factors that the younger generation is not interested in working in agriculture, including income from the non-agricultural sector is higher than that from the agricultural sector, a bad image of agriculture, and limited area of agricultural land ownership. Umi *et al* (2021) suggest that the step to attract the younger generation to be interested in working in the agricultural sector is to involve the growth of young entrepreneurs in agriculture. This relates to the importance of having quality human resources in the agricultural sector that can be required to achieve sustainable agricultural growth.

Young people should be actively involved in policy processes and cooperate with agricultural interests. There are several continuous innovation programs and strategies that can be carried out. First, increase access to technology. Through collaborations with research institutes and international organizations, farmers have access to sustainable agricultural technologies such as quality seeds and fertilizers. These include:

1. Provide training to farmers on the importance of selecting and using high- quality seeds.
2. Integrate information about high- yielding seed varieties and the latest breeding methods through educational programs.
3. Introducing the concept and benefits of organic fertilizer to farmers as an environmentally

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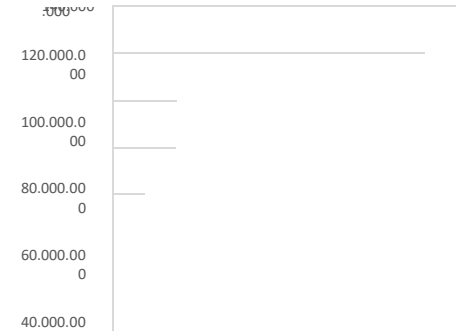
friendly alternative.

4. Develop a training program on techniques for using organic fertilizers and their application in sustainable agriculture.

Second, the development of adequate agricultural infrastructure. This program helps reduce post-harvest losses and expand market opportunities for farmers. Here aresome steps and components that can be done in this program:

1. Modernization and improvement of road infrastructure and transportation systems to facilitate the distribution of agricultural products from production sites to markets.
2. Build modern storage warehouses with temperature and humidity control to minimize post-harvest losses.
3. Provide storage facilities in accordance with the type of agricultural products, such as vegetables, fruits, and other food products.
4. Construction of markets and regional distribution centers strategically placed to provide convenience for farmers in marketing their products.

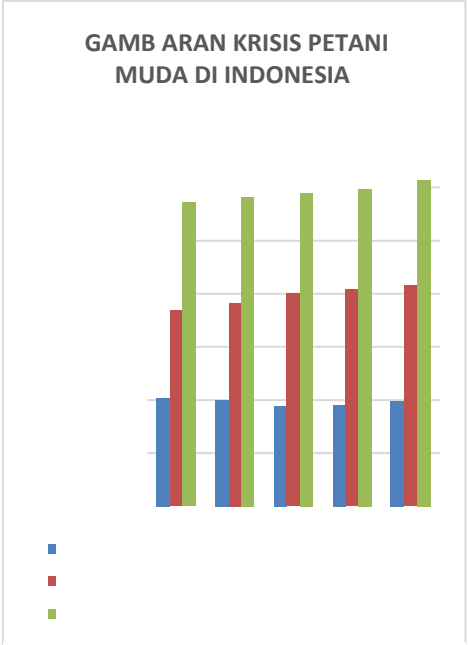
Third, collaboration and cooperation between the government, research institutions and the community. This cooperation involves the exchange of knowledge, technology and resources to increase production. Through this program, it can be used as a driver in the change towards sustainable agriculture that will have a positive impact on the future of agriculture in Indonesia.



	2013	2014	2015	2016	2017
Pertanian	40.764.7	39.903.0	37.748.2	38.030.6	39.678.4
Non Pertanian	73.580.6	76.495.9	80.084.7	81.499.1	83.102.1
Total	114.345.	116.398.	117.833.	119.529.	122.780.

Source: https://ecoentrepreneur.trunojoyo.ac.id/agriekonomika/art icle/view/5429

Breed et al (2018) suggests that young farmers contribute by implementing agricultural programs oriented towards environmental sustainability. The participation rate of young farmers in environmentally friendly agriculture programs is influenced by environmental factors as one of the main variables Nazaruddin and Oeng (2019) mentioned that the influence on youth participation in agriculture is determined by their perceptions, access to information and Communication Technology (ITC), and strengthening farmer groups.



Picture 2. Development of Agricultural and Non- Agricultural Work

Based on Figure 1, showing the Kostratani Program, Jambi Agricultural Training Center which continues to maneuver to improve Agricultural Human Resources in the form of training. Especially through Thematic Training for Rice Plant Farmers Batch I. This activity was carried out in Sungai Full City in collaboration with the Horticulture and Plantation Food Crops Office (TPHP).

Through this training, farmers are expected to gain increased competence and knowledge in rice cultivation, increase agricultural productivity in areas covered by this program, and strengthen strategic collaboration.

Agus et al (2021) revealed that the government implements a program to strengthen farmers' knowledge through training activities. Trainingis an initiative to improve the capacity of human resources. It is also a form of education that aims to update the specific skills of individuals as well as groups. (Putu &; Good, 2017)

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Figure 1. Rice Farmer Training (Puguh)
Source: https://oerban.com/pelatihan-tematik-petani-padi-angkatan-i-bpp-buktikan-dukung-program-kostratani/

Based on Figure 2, it can be seen the development of agricultural and non- agricultural workers in Indonesia from 2013 to 2017. The development of labor in the agricultural sector fluctuated, but had a downward trend from 2013 to 2017. Meanwhile, in the non-agricultural sector, the number of workers tends to increase every year.

The decline in the number of agricultural workers can be attributed to the adoption of modernization in the agricultural sector that replaces manual labor with the use of technology. Conversely, an increase in the number of workers in non-agricultural sectors may reflect economic growth in those sectors, attracting more individuals to join industries or services. Changes in a country's economic structure can also play a significant role, resulting in the movement of more workers from the agricultural sector to the non-agricultural sector.

Syarifah et al (2021) stated that the labor crisis in the agricultural sector, especially in the young farmer group, has an impact on the aging of farmers. This reflects the increase in the number of elderly farmers, while the involvement of the younger generation in working in the agricultural sector is decreasing.

Table 1. Farmer Protection and Empowerment Strategy (Source: Law Number 19 of 2013)

NO	Farmer protection strategies	Farmer empowerment strategy
1.	Facilities and infrastructure of agricultural production.	Education and training.
2.	Business certainty.	Counseling and mentoring.
3.	Prices of agricultural commodities.	Development of systems and means of marketing agricultural products.
4.	Elimination of high cost economic practices.	Consolidation and guarantee of agricultural land and area.
5.	Compensation for crop failure due to extraordinary events.	Provision of financing and capital facilities.
.	Early warning systems and addressing the impacts of climate change.	Ease of access to science, technology, and information.
7.	Farm insurance.	Strengthening farmer institutions.

Source : https://anggaran.kemenkeu.go.id/in/post/analisis-strategi-pencapaian-efektivitas-pelaksanaan- anggaran-asuransi-pertanian-dalam-apbn- melalui-analisis-swot

Based on Table 1, there is a strategy to protect and empower farmers according to Law Number 19 of 2013. There are 7 strategies that can be done for sustainable farmers in dealing with various problems. The increasing trend of climate change, vulnerability to natural disasters, business risks, globalization, global economic turmoil, and a market system that is not in favor of farmers can be well resolved. Kedi (2016) emphasized that all efforts and strategies to empower farmer institutions have a close relationship with socio-technical conditions in the farming community.

CONCLUSION AND RECOMMENDATION

Based on thediscussion above, it can be concluded that the contribution of the younger generation in the agricultural sector has a central role in ensuring the sustainability of food security in Indonesia. Nevertheless, a number of factors, both internal and external, influence the interest of youth to be actively involved in the agricultural sector. These constraints include internal factors such as limited land and financial support, as well as external barriers such as perceived lack of prestige working in the agricultural sector and rapid urban growth.

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Successful sustainable agriculture requires collaboration from various parties, including educational institutions, government, and society as a whole. The importance of providing effective and practical training to young people to understand and implement sustainable agricultural practices, including soil management, the use of organic fertilizers, integrated pest control, and the use of modern irrigation technology, is key in preparing them.

Innovation programs and strategies that accommodate increased access to technology, agricultural infrastructure development, and cooperation between the government, research institutions, and communities, can be drivers of change towards sustainable agriculture in Indonesia. These efforts are expected to be able to overcome the challenges of the labor crisis in the agricultural sector, especially among young farmers.

Here are some suggestions that can be implemented:

1. Strengthening education and training programs that specifically focus on aspects of sustainable agriculture, including the introduction of modern technology, for the younger generation.
2. The involvement of educational institutions in changing the negative views of young people towards the agricultural sector by presenting clear information about opportunities and sustainability that can be found in agriculture.
3. The government is expected to provide concrete support, including policies that support sustainable agricultural practices and create job opportunities in the agricultural sector.
4. Encourage close collaboration between governments, research institutions, and communities to create innovative programs and effective strategies to increase agricultural productivity.
5. Actively engage young people in decision-making processes and implementation of policies related to agriculture to motivate their participation in sustainable agricultural development.
6. Growing young entrepreneurs in the agricultural sector by providing support and incentives that can attract young people to pursue careers in agriculture.

By implementing these steps, it is expected to create an environment that supports and fosters the interest of the younger generation to be actively involved in the agricultural sector, maintain the sustainability of this sector, and meet national food needs.

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