

Evaluating the Issues of the Ecosystem in Supporting the Development of Agropreneur Muda in Malaysia

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ABSTRACT

The primary aim of the establishment of the Agropreneur Muda program was to maximize Malaysian youth participation in the agricultural sector through adequate training, financial assistance, and entrepreneurial support. However, the ineffectiveness of its implementation thus far is largely due to an ecosystem that is not comprehensive enough to nurture successful young agropreneurs in the country. The purpose of this paper is to examine the effectiveness of the supporting ecosystem for the program, with particular attention to the role of government in policy planning, institutional support, financial allocation, training modules, and market opportunities. Grounded in the concept of human capital development, the study highlights that the effectiveness of the ecosystem is influenced by the technical, managerial, and entrepreneurial skills of participants. This study employed a qualitative method using semi-structured questions, conducted through in-depth interviews with key participants in the Agropreneur Muda program to obtain comprehensive findings. The findings indicate that while efforts towards improving the ecosystem of this agricultural start-up program have been initiated, its effectiveness has not been fully realized due to challenges such as the misuse of resources, low adoption of digital applications, and limited inter-agency coordination. Therefore, to prevent such issues from recurring, it is suggested that an integrated and innovation-driven ecosystem be effectively and comprehensively applied to ensure the long-term sustainability of young farmers and the fulfilment of the core objectives of Agropreneur Muda.

Contribution/Originality: The contribution of this study is to provide clear and comprehensive information on the systemic issues within the human capital development ecosystem that have negatively affected the overall implementation of the Agropreneur Muda Program.

1. Introduction

Agriculture is regarded as one of the most important sectors for a country, particularly in ensuring food security, economic growth, and rural development for all nations around the world, including Malaysia. Generally, the global trend has shown that youth participation in agriculture remains low due to negative perceptions that farming activities are unprofitable, labor-intensive, and less prestigious compared to career opportunities offered by employers in urban areas (Proctor & Lucchesi, 2012; FAO, 2014). As a result of the declining participation of the younger workforce in the agricultural sector, it faces difficulties in achieving long-term sustainability, as it is confronted with issues such as an aging population and limited innovation.

Given this situation, it is crucial for both the government and international bodies to play significant roles through strategic planning and collaboration in order to achieve national food sector goals in both the short and long term. In 2010, an initiative was introduced by the Malaysian government to encourage young people to venture into agropreneurship careers, known as the Agropreneur Muda Program. This program provides facilities in the form of financial assistance, training modules, and institutional support directly to the youth participants, with the objective of equipping them with adequate entrepreneurial and technical competencies. With sufficient preparation provided to the participants of the Agropreneur Muda program, they will be capable of leading a new generation ready to innovate, enhance productivity, and contribute to national food security through the concept of modern agropreneurship.

Throughout the implementation of this program, the results have shown positive impacts, particularly in terms of increased youth involvement. However, it continues to face several challenges such as misuse of resources, inconsistent monitoring, limited adoption of digital technologies, and fragmented coordination among agencies, which ultimately hinder the program's long-term effectiveness among the target groups (Ministry of Agriculture and Agro-Based Industry, 2019).

The concept of an entrepreneurial ecosystem is therefore essential in evaluating the effectiveness of the Agropreneur Muda program's implementation. Based on Isenberg (2010) and Stam (2015), the key components of a successful agropreneurial ecosystem include interconnections among finance, markets, institutions, human capital, culture, and entrepreneurship support, all functioning collectively. The primary reason for the need of such an ecosystem in agricultural programs for young farmers is that they are highly dependent on the resources provided by stakeholders to ensure the sustainability of their agricultural projects. Therefore, by applying this framework, a comprehensive assessment can be conducted to identify in detail whether the agropreneurial ecosystem influences the development of young farmers, or whether it is also affected by other factors such as policy weaknesses, institutional limitations, and insufficient capacity-building. The purpose of this study is to critically evaluate the effectiveness of the ecosystem in sustaining the development of the Agropreneur Muda Program in Malaysia. In addition, this study aims to identify the strengths and weaknesses of the program's implementation at various levels, including institutions, training programs, financial aid, and innovation approaches, particularly in developing the potential of young farmers.

Overall, the findings of this study are expected to provide the government with clear insights, especially in the context of policy formulation, by highlighting the effectiveness

of the ecosystem in empowering agropreneurs to remain sustainable over the long term and to strengthen national food security.

2. Literature Review

2.1. Youth in Agriculture and Agropreneurship

Issues related to the agricultural workforce have become a global concern due to the declining interest among the younger generation, largely influenced by negative stigmas portraying the sector as unattractive, low-paying, and labor-intensive (Proctor & Lucchesi, 2012; FAO, 2014). With such perceptions widely spread among society, it has indirectly led to a significant decline in youth participation in the agricultural sector, particularly in developing countries.

In the Malaysian context, the younger generation tends to prefer working in urban areas, which are perceived to offer better job security and higher profitability compared to careers in agriculture (Król, 2019). In response to this issue, the Malaysian federal government introduced a specific initiative known as the Agropreneur Muda Program, aimed at encouraging new generations to continue the nation's agricultural legacy by providing financial assistance, capacity building through relevant agencies, and entrepreneurial opportunities.

However, this study indicates that without proper planning at the federal level to establish a supportive ecosystem for implementing the program, the essential components of human capital development such as financial resources, skills enhancement, institutional frameworks, and market access may not function effectively. As a result, the program's sustainability and effectiveness may fall short of achieving its intended national objectives.

2.2. Entrepreneurship Ecosystem Theory

The use of the entrepreneurial ecosystem concept has become increasingly popular and widely applied in studies that specifically focus on entrepreneurship research. Based on Isenberg (2010), the functionality of entrepreneurship can be achieved through the interconnection of key elements such as finance, markets, human capital, policies, culture, and support services. To ensure the effective application of the entrepreneurial ecosystem approach, it must be dynamic and context-specific, aligning with the socio-economic differences of each environment (Stam, 2015).

Mason and Brown (2014) elaborated that the success of any entrepreneurial program requires the existence of a collaborative ecosystem involving all relevant stakeholders, rather than operating in isolation, which is more likely to lead to failure. In the real-world implementation of agricultural entrepreneurship programs, young farmers are highly dependent on the ecosystem approach, particularly in areas such as technology adoption, training, and institutional coordination, to ensure the effectiveness and sustainability of their agricultural projects.

According to Malecki (2018), in the context of the Agropreneur Muda Program, applying the ecosystem perspective facilitates the evaluation of all program components both in terms of functional synergy that contributes to a long-term impact, and the measurement of program effectiveness

2.3. Human Capital and Capacity Building in Agriculture

Based on [Schultz \(1961\)](#) and [Becker \(1964\)](#), the concept of human capital theory explains that productivity and economic outcomes can be improved through investments made in education, training, and skills development. In the agricultural sector, human capital is seen as one of the key focuses that must be emphasized to encourage farmers' ability to innovate, implement new technologies, and ensure the sustainability of entrepreneurial ventures ([Feder et al., 1985](#)).

In relation to the implementation of the Agropreneur Muda program, the development of human capital is emphasized through the provision of technical training, mentorship, and business advisory services directly to the agropreneur participants. The criticism of human capital development implemented in the program is that it focuses mainly on production skills, rather than on management competencies, digital literacy, and sustainability within the sector. This directly impacts the long-term effectiveness of the program if it lacks proper guidance concerning agricultural value chains. With maximum empowerment of human capital, the intended results of Agropreneur Muda can be achieved.

2.4. Policy, Institutions, and Program Effectiveness

A strong role needs to be emphasized at the institutional level in developing a conducive environment for the entrepreneurial ecosystem within the agricultural sector. As explained by [North \(1990\)](#), the role of institutions is to manage affairs through both formal and informal norms, while simultaneously influencing economic performance through incentives and the reduction of ambiguity.

In the context of the implementation of the Agropreneur Muda program in Malaysia, it has been stated that the program heavily relies on ministries, agencies, and financial institutions to ensure that funding is channeled properly and training programs are effectively conducted for the target groups. This is in accordance with the financial allocations provided by the federal government to ensure the effective implementation of this program from 2010 to 2020. Therefore, the continuation of financial-related issues such as misuse of subsidies, weak monitoring mechanisms, and poor inter-agency coordination have often been reported at the higher levels ([Ministry of Agriculture and Agro-Based Industry, 2019](#)).

From the perspective of Islamic economics, the resources allocated at the federal level can be utilized productively and equitably if good governance, accountability, and moral values are strengthened. By empowering these perspectives at the institutional and governance levels, the effectiveness of the Agropreneur Muda program can be maximized to ensure the successful implementation of the initiative.

2.5. Sustainability, Digitalization, and the Future of Agropreneurship

Recent literature has emphasized that agricultural entrepreneurship must prioritize aspects of sustainability and digital innovation. Based on [Linn, Thuzar, and Broos Maenhout \(2019\)](#) stated that the relevance of the agricultural ecosystem approach must include the integration of technological innovation with environmental and social sustainability. This is supported by the [FAO \(2019\)](#), which highlighted that to enhance productivity and the contribution of human capital among youth in the agricultural

sector, a digital transformation is necessary such as through precision farming, mobile applications, and e-commerce platforms.

In the context of Malaysia's transformation in this sector, the government has adopted digital technology among young farmers; however, studies have shown that challenges faced by young agropreneurs, such as inadequate infrastructure and skill gaps, hinder the comprehensive adoption of digital technologies (Trendov et al., 2019).

In such situations, the steps that need to be taken by stakeholders involved in implementing the Agropreneur Muda program include making the practice of digital competencies and sustainability principles key elements in reducing the risk of program implementation failure and fostering a more dynamic agricultural culture.

The conclusion drawn from the reviewed literature shows that an assessment based solely on program inputs and outputs will not be sufficient to achieve the targeted effectiveness of the Agropreneur Muda implementation. Through the use of the entrepreneurial ecosystem framework, evaluations can be conducted more comprehensively, taking into account aspects such as youth involvement, human capital development, institutional frameworks, and sustainability necessities.

3. Methodology

In general, the method used in this study is the qualitative method, specifically through semi-structured interviews. This method was chosen as the primary approach in order to identify in detail the issues that have occurred within the ecosystem throughout the implementation of the Agropreneur Muda program over the years. Meanwhile, for the sampling process, this study adopted the purposive sampling technique, particularly in selecting the research participants who were represented by individuals with experience and direct involvement in the implementation of the Agropreneur Muda program.

To obtain accurate data through this qualitative approach, the researcher applied a specific selection process targeting those who had been directly involved in the program's implementation for more than three years. A total of ten (10) research participants were selected, most of whom were between 30 and 40 years old. All of the research participants were from the state of Perak. This was due to the researcher's residence in the same state, which facilitated the interview process conducted either physically or online via WhatsApp call or video call, depending on the participants' convenience.

Through this method, a wide range of responses, criticisms, and suggestions for improving the program in the future were able to be explored, especially from the perspectives of the main stakeholders, namely the program participants, agricultural agencies, and private entities. The data collection period for all respondents involved in the Agropreneur Muda program took approximately two months, from July to August 2024.

Before conducting the data collection sessions with the selected research participants, ethical considerations were observed. The researcher contacted them via email or personal message, attaching an official permission letter issued by the Department of Political Science, IIUM, along with a list of interview questions. This was to allow the

participants to prepare and decide whether to accept or decline participation in the interview sessions for this study. After all data were collected through the semi-structured interviews with the selected individuals, the researcher transcribed the data using the ATLAS.ti software.

Finally, for data analysis, the thematic analysis method was employed. The transcribed data were analyzed thematically to align with the research objectives. Through the thematic analysis process, the researcher examined the perspectives of various informants, highlighting similarities and differences, and uncovering unexpected insights related to the implementation of the Agropreneur Muda program.

4. Results

4.1. Institutional And Policy Support Ecosystem

The evaluation of the effectiveness level of the Agropreneur Muda program implementation is also influenced by the ecosystem at the institutional and policy levels. The responsibility of the Ministry of Agriculture and Food Industries (MAFI) serves as the main backbone and policymaker, connecting the agricultural agencies under its supervision such as FAMA, DOA, and MARDI particularly in driving aspects related to marketing, technical advice, and the diffusion of agricultural technology innovations throughout the program's implementation among the target groups.

One of the issues that often becomes the focus of discussion among participants of the Agropreneur Muda program is related to the approach that should be taken by the relevant ministry in establishing a mechanism to regulate the entry of imported agricultural products into the domestic market. This is evident in one of the inputs by the private entity;

Agropreneur Muda is seen as a program that only encourages participants to increase the productivity of agricultural products in the country, at the same time the government's role in controlling prices and the entry of imported agricultural goods is not well controlled after the IP was abolished, causing production produced by farmers in this program to experience a sharp drop in prices due to the existence of lower price competition offered by importing countries in the national market (Participant 1).

This is because the excessive influx of imported agricultural products will affect the market for agricultural goods produced by local farmers themselves. After the program has been implemented for quite some time, it is crucial for the ministry to establish an ecosystem policy to address this issue among farmers in Malaysia particularly young farmers who are new to the agricultural sector, as they are more likely to be economically impacted.

Meanwhile, the institution that plays a role in financial matters refers to Agrobank, which has been officially appointed by the ministry to manage issues related to loans and grants for young farmers participating in this program. However, in some situations, this financial institution is seen as unable to coordinate and align its roles in promoting the development of young agropreneurs within this program, which consequently causes the ecosystem to be less effective in shaping successful young farmers in the

country's agricultural sector. In this regard, one of the issues that received criticism and responses from program participants concerns the strict restrictions imposed by financial institutions in providing loans for the development of agricultural ventures. The financial institutions officially appointed by the Ministry of Agriculture and Food Industries (MAFI), namely Agrobank and TEKUN, are responsible for managing matters related to the financial channels that enable young farmers to apply for agricultural loans to expand the scale of their farming projects.

Based on one response regarding the challenges faced by young farmers in applying for loans from financial institutions:

One of the main challenges encountered during the process relates to the basic requirements set by the financial institutions, which include having a stable financial capacity in the applicant's account before the loan application is submitted. This requirement aims to ensure that borrowers are capable of repaying the loan along with the interest charged. Secondly, applicants must have at least one year of experience in managing agricultural activities. Lastly, they must provide a detailed and well-documented financial statement of their sales and purchases throughout the implementation of their agricultural project. (Participant 2)

Due to the various challenges in applying for financial loans from the relevant institutions, the conditions imposed are often difficult for young farmers to meet. Therefore, the common solution among young farmers facing financial difficulties particularly in covering the operational costs of their agricultural projects that require immediate financial support is to borrow directly from close family members or nearby agricultural agencies.

Hence, the issue faced by Agropreneur Muda participants with financial institutions is closely related to the unfriendly nature of the imposed requirements toward young farmers. As a result, this issue has become a point of criticism among program participants, as it contradicts the government's effort to promote agricultural development through youth participation. The many obstacles in obtaining financial assistance from financial institutions indirectly conflict with the intended objectives of the program.

In this regard, the entrepreneurial ecosystem requires policies, incentives, and resources (such as grants, training, and market linkages) that are supportive in ensuring that the development of this program can achieve its actual objectives. All these mechanisms need to be adapted and aligned with the needs and requirements of agropreneurs to increase the number of agropreneurs in the country.

In real situations that have occurred during the implementation of this program in the field, issues were related to the inability to access sufficient funding from institutions, limited inclusivity in running agricultural projects, and a lack of attention to building agropreneurial capacity and potential. Therefore, this can be related to [Isenberg's \(2010\)](#) view on the entrepreneurial ecosystem model, which emphasizes that building a dynamic entrepreneurship ecosystem requires strong interconnections between financial, human, and social capital.

Secondly, another significant issue frequently discussed among Agropreneur Muda participants is the lack of a holistic approach in the policy and program design. In this context, the program tends to be short-term in nature, focusing primarily on targeting young individuals who face employment challenges through the agricultural sector, particularly university graduates. One of the main criticisms regarding the implementation of this program is the absence of a holistic adoption and early awareness among the younger generation from the school level up to the university level about the economic opportunities that can be developed through a career as a modern farmer.

The important point of this issue relates to the creation ecosystem of the Agropreneur Muda program for youth in Malaysia, which has not been systematically planned for the targeted group. The absence of a holistic ecosystem developed by the federal government to produce successful agropreneurs in our agricultural sector has resulted in a lack of structured pathways from early schooling to university level, which could possibly position agriculture as a career comparable to other established professions. Furthermore, the program generally becomes known to the public only after young people have finished secondary school or university.

One of the private officers commented that;

For me, the government needs to re-examine the overall ecosystem in the implementation of the National Agro-Food Policy through the Agropreneur Muda program, especially in encouraging young people who have graduated from universities or agricultural institutes in this country to choose not to make agriculture their career after finishing their studies. I feel that the existing ecosystem in the agricultural skills space cannot provide confidence and there are problems with careers in the agricultural sector. A detailed study needs to be done by the government in overcoming this problem (Participant 3).

As a result of the absence of a holistic implementation of this program from the early stages of schooling up to the university level, most participants involved in the Agropreneur Muda program do not have a clear goal of viewing the agricultural sector as a profitable economic source. Consequently, many of them participate merely to fulfill government quotas or to occupy their free time, which implies that they are not genuinely committed to pursuing agriculture as a serious and sustainable career path to become the next generation of modern farmers in the country. Therefore, with the lack of ecosystem that is not comprehensive in the Agropreneur Muda program itself, its implementation would not have a positive impact on career development as a modern farmer and also ensure the continuity of new farmers in the agricultural sector consistently and continuously.

Finally, the ecosystem within the agricultural offices themselves still lacks openness in fostering and encouraging the diversification of agricultural activities (such as vegetable cultivation, fisheries, and livestock) that can be undertaken by Agropreneur Muda participants in a given area. This means that the implementation of agricultural projects under the Agropreneur Muda program in a particular location is often restricted to specific types of agricultural activities predetermined by the respective agricultural agencies. Indirectly, this limits the growth of young farmers by restricting their freedom

to choose the types of agricultural activities they wish to pursue based on their own interests and preferences.

One of the applicants who applied this grant, criticized in terms of the openness of the agricultural agencies who have set the type of crop for a specific area;

In general, participants of Young Agropreneur program in the state of Selangor will receive training on agriculture that has high value products for example planting rock melons and big red chilies. But it becomes a major obstacle for applicants who want to do agricultural activities other than those set by the agricultural agency at the state level because they see that the project is in conflict with the targets set by the state in the past. When an individual applies for a grant under the Young Agropreneur program to plant other than that set by the state agriculture agency, it is difficult for the application to be approved. And if the individual who gets the grant does not follow the project recommendations from the agricultural agency, then action will be imposed on the participant. Therefore, it should be better if the agencies are not too strict in giving the opportunity for the applicants to apply this grant in any agricultural activities according to the interest of those people. And at the same time, it shows the inclusiveness and varieties of agriculture projects rather than focusing on only specified project at that area (Participant 4).

In conclusion, to enhance the effectiveness of the Agropreneur Muda program in attracting more young people to venture into the agricultural sector, local agricultural agencies should encourage a greater diversity of agricultural activities that align with the interests and preferences of potential young farmers.

4.2. Financial and market ecosystem

The weaknesses identified in the implementation of the Agropreneur Muda program relate to the financial and market ecosystem chain, which focuses mainly on the production stage. This causes the effectiveness and sustainability of young farmers to develop poorly. For agropreneurs, one of their main expectations is to have efficient market linkages that allow them to market their agricultural products competitively. Based on [Isenberg \(2010\)](#) and [Stam \(2015\)](#), the importance of entrepreneurial ecosystems lies in enabling agropreneurs to establish market connectivity, especially to gain feedback, resources, and opportunities, and to ensure enterprise growth.

In the context of Malaysian agropreneurs, although the government has provided training in financial and technical skills to program participants, they still face challenges in sustaining themselves in the market over the long term. This is mainly due to unconnected value chains and low integration between production and distribution networks. In this regard, the Federal Agricultural Marketing Authority (FAMA) and the Department of Agriculture (DOA) play important roles in linking the products produced by local farmers to both local and regional markets.

However, the roles of these agricultural agencies involved in marketing agricultural products through the Agropreneur Muda program are often limited in scale and short-term in nature. This issue frequently occurs due to the absence of effective protective

mechanisms that could help maintain profitable prices for the agropreneurs themselves. Indirectly, this creates negative economic effects for young farmers, who may have large quantities of agricultural output but are unable to sell them, resulting in market oversupply.

One of the main reasons the agricultural market ecosystem has not been well developed thus disadvantaging farmers is the competition from imported food products, which enter the country at the same time local farmers produce their crops. The lack of effective government intervention to create a local-producer-friendly ecosystem indirectly causes importers to offer cheaper agricultural prices compared to local farmers.

Although agencies such as FAMA have been tasked with addressing this issue, they are unable to purchase domestic agricultural products in bulk when the domestic surplus becomes uncontrollable. In this regard, one of the inputs from a private sector entity highlighted that the agricultural market ecosystem has long been neglected and not given serious attention by the Ministry of Agriculture Malaysia.

The marketing ecosystem for agricultural products produced by young farmers tends to face challenges when confronted with the influx of imported goods entering the domestic market. Meanwhile, the agricultural agencies responsible for marketing are often unable to purchase all the produce from farmers on a large scale due to quota restrictions that must be adhered to, as well as the agencies' limited capacity to offer competitive prices. (Participant 5)

Most agropreneurs who face such problems tend to rely heavily on third-party buyers or intervention from the Ministry of Agriculture, rather than developing continuous and sustainable relationships with other actors such as private sector partners for joint marketing efforts. This indicates a limitation in marketing connections, which are largely restricted to selected government agencies.

In addition, it can be identified that the participants also lack digital marketing skills and data-driven capabilities, which further restricts their ability to understand dynamic markets and current consumer demands. To address this situation, collaboration involving multiple stakeholders is needed to enhance effectiveness across processing, distribution, financial institutions, and innovation, particularly from agencies capable of direct involvement in the program.

Among the efforts that can be implemented to overcome this issue is by promoting the adoption of cluster-based production models and public-private partnerships (PPPs) to improve market opportunities, product standardization, and the collective bargaining power among young agropreneurs. One of the officers at "Lembaga Pertubuhan Peladang" stated that there is a big demand from the food industries in getting raw and fresh agricultural products produced by our local farmers;

"Pertubuhan Peladang Kawasan" (PPK) needs to give recommendations to Agropreneur Muda participants to plant a crop that is needed by the private food industry and can be sold directly with the results obtained to that party. For example, the area in Muar, Johor focuses for these farmers to plant as many lemongrasses as possible to meet the needs in Singapore

which requires a supply of three tons of lemongrass per week for Singaporeans. While there are a few that will focus on ginger and curry leaves for the needs of the Mamee factory in Melaka (Participant 6).

Therefore, the effectiveness of market access and value chain connectivity will significantly influence the ecosystem within the implementation of this program, particularly in reducing overdependence on marketing support from agricultural agencies, ensuring continuous engagement with wholesalers from various sectors, and encouraging positive growth and participation among youth in the agri-food economy.

4.3. Human Capital and Mindset

The effectiveness of the Agropreneur Muda ecosystem is also influenced by key factors related to human capital and mindset. Based on [Schultz \(1961\)](#) and [Becker \(1964\)](#), the emphasis placed on human capital resources such as education, skills, and training can enhance an individual's productivity and outcomes. In the agricultural sector, the application of the human capital concept helps shape young farmers to become more resilient and innovative in their involvement within the national agri-food industry. This is supported by the [Kamalrulzaman \(2021\)](#), which states that by empowering human capital, new farmers will be more motivated to adopt the latest technologies, increase productivity, and have greater capacity to sustain themselves in the entrepreneurial world.

However, this study has identified that the emphasis given by the authorities implementing the Agropreneur Muda program to the target group still focuses primarily on technical and financial training, rather than striving to transform tangible aspects of human capital specifically by addressing mindset-related challenges that contribute to the inconsistency of agropreneurial success.

To ensure that a farmer can sustain in the field of agropreneurship, the necessary development involves cultivating a positive entrepreneurial mindset, which will have beneficial effects on fostering proactive behavior, determination, and the ability to adapt to current innovations within the agricultural sector. A common issue identified among agropreneurs is their high dependency on continuous external assistance provided by the ministry and agricultural agencies, rather than taking the initiative to bear risks and develop a self-reliant attitude.

The gap identified here lies in the efforts that need to be undertaken by the government to ensure that a genuine understanding of the world of agropreneurship among the younger generation is strengthened. This empowerment is crucial to develop a clear and stable mindset among the Agropreneur Muda participants and to sustain human labour continuity within the national agricultural sector.

One of the research participants stated that if an individual does not possess the right mindset toward agropreneurship, it becomes difficult to achieve the expected level of success;

The real test faced by Agropreneur Muda participants emerges when they experience failure during the early stages of implementing their agricultural projects. Such failures often occur due to several factors, including lack of experience, financial constraints, pest infestations, and

the unstable prices of agricultural products in the market. At this point, a significant question arises for these young farmers whether they will have the willpower to continue their agricultural ventures after experiencing failure in the initial phase. (Participant 7)

In this regard, a strong and clear mindset is essential to ensure the long-term persistence of an individual in the agricultural field, as this sector is inherently unpredictable and involves various risks throughout the project implementation process unlike other types of employment. In such circumstances, participants often lack the determination to sustain their projects over a long period. Their enthusiasm tends to appear only at the initial stage, particularly upon receiving the government grant approval, but this motivation diminishes once the first phase of their project fails, leading them to discontinue future agricultural efforts.

Apart from that, the young people in this country misunderstand the career of agropreneur. The level of understanding about the new concept of agropreneur is still low among the community in Malaysia. Most of the people think that when the young people join this program, it is just for the sake of producing raw material at an optimum level for the country. On the other hand, the main concern for this program is not just to maximize the volume of production from the agricultural industry, but to also portray a new outlook of a businessman bearing the entrepreneurial spirit that includes various aspects such as personality, competitiveness and others. The government is trying to change the old perspective of the agricultural sector. One of the main problems on the part of the participants themselves is a lack of understanding of the concept of true entrepreneurship.

One of the participants said that this program had tried to bring a new perception as an entrepreneur rather than to be as a normal farmer like before;

In other words, the participants' mindset must be changed and corrected regarding the Agropreneur concept itself. At the initial stage, certain parties need to explain and instill an accurate ideology to the participants of the Agropreneur Muda program in more detail about the true meaning of the concept of entrepreneurship in the agricultural sector. This will ensure that participants under the implementation of this policy really understand the direction of entrepreneurs in the agricultural sector (Participant 8).

By looking at the situation happening on the ground, the participants who are under the Agropreneur Muda program still carry with them a character that does not represent an individual who has the values of a successful entrepreneur. And most of them are more inclined to bring their identity as traditional farmers both in terms of thinking patterns and professionalism in the career. With such a combination of characters, the outside community assesses the work culture of an entrepreneur in farming as not the same as other so-called entrepreneurs who have carry the certain look and style.

For example, the attitude of the farmers in this program is not visible in portraying leadership as successful entrepreneurs. In other words, most of the entrepreneurs themselves prefer to be low-profile rather than market themselves to the public, even though the entrepreneurs can already be categorized as successful in the agricultural industry. Ideally these successful entrepreneurs need to promote themselves to the

general public so that this sector can attract more participation from the young people in this country. And at the same time will bring a new narrative to the Malaysian society in the job that is as competitive as other careers.

In this case, the party responsible for ensuring the understanding of the concept and the true direction of entrepreneurship is the participants themselves who applied for the grant. While the ministry and agricultural agencies must ensure that the concept can be applied practically through related programs that can further improve the qualities and values of professionalism among the Agropreneur Muda participants.

All in all, the findings indicate that when participants of the Agropreneur Muda program lack a clear understanding and mindset regarding the concept of agropreneurship being implemented, it negatively impacts the attitudes and commitment of individuals involved in the program. This is because such a phenomenon will hinder the intended outcomes of the program's implementation when financial support is consistently provided by the authorities to participants, resulting in the absence of an entrepreneurial culture and attitude within the agricultural sector. According to Aerni (2019), she highlights that the importance of changing behavioral orientation should be emphasized in order to develop agropreneurs who are more consistent, motivated, and capable of sustaining themselves in agropreneurship over the long term, rather than focusing solely on financial and technical aspects in the implementation of the Agropreneur Muda program.

Thus, the focus that needs to be emphasized at present is on building an ecosystem that integrates mindset training among participants of the Agropreneur Muda program. Furthermore, the ecosystem established by MAFI to conduct training modules has generally focused only on technical and operational skills, with very limited emphasis on developing entrepreneurial attitudes, leadership, and digital abilities. If MAFI and agricultural agencies were to empower elements oriented toward experiential learning, mentorship, and continuous capacity building, it would help reduce the existing gap in human capital effectiveness. By incorporating an approach based on values-based education that aligns with Malaysia's socio-religious culture, it would directly help develop agropreneurs with strong ethical conduct, a sense of responsibility, and persistence among young Malaysian agropreneurs.

In conclusion, the success of the entrepreneurial ecosystem in agropreneurship depends on the emphasis placed on the human capital and mindset dimensions among young farmers in Malaysia. Through a holistic approach that focuses on developing the mindset, ethical values, and innovation of these young farmers, the Agropreneur Muda participants will not only benefit as individuals but will also contribute positively to the modernization of national agriculture and the sustainable economic transformation of rural areas.

4.4. Sustainability and Environmental Dimension

In assessing the effectiveness of the Agropreneur Muda ecosystem, it is also important to consider the sustainability and environmental dimensions. Each agropreneur should possess values that go beyond agricultural production they must also take responsibility for the local ecology and climate change issues that directly affect their agricultural projects.

This is crucial because the agricultural sector in Malaysia is often associated with environmental challenges such as land degradation, loss of biodiversity, declining water quality, and unpredictable climate change, which have not yet been seriously addressed. Therefore, the Agropreneur Muda platform serves as an important step in raising awareness among the new generation in agriculture to adopt eco-friendly farming systems and efficient resource use that can yield long-term positive impacts.

One of the respondents gave his opinions regarding with this issue;

In general, this policy is actually good for supplying enough food to consumers for long term planning. In my opinion, I have a criticism that I want to throw in relation to the policy objectives in achieving food security. For me, the objective for the National Agro-Food Policy in Malaysia is not in line with the concept of food security itself. The main purpose of the current policy is only focused on producing the maximum amount of agricultural produce that can be brought about in a particular crop season. But in terms of the safety of food that will be used by consumers, it is a big question whether it is safe or not safe to eat (Participant 9).

Instead of the Ministry of Agriculture and Food Industries (MAFI) has made efforts to introduce sustainable agricultural practices in the implementation of the Agropreneur Muda program, including organic farming, precision agriculture, and the use of organic agricultural inputs. However, findings indicate that the adoption and acceptance of eco-friendly agricultural approaches among Agropreneur Muda participants remain low. Many of them prefer short-term productivity and profit-oriented methods rather than choosing environmentally friendly approaches.

In one of the respondents, he criticized about the direction of the program;

My comment regarding the implementation of the Agropreneur Muda program is that, despite being carried out for quite some time, it still has not succeeded in reforming national agricultural practices toward more environmentally friendly and consumer-oriented approaches. This should, in fact, align with the objectives of our National Agrofood Policy and national food security goals. Based on my observations, I found that the agricultural practices under this program still rely heavily on the total use of chemical-based pesticides. As an initial step toward reform, the program should move forward by adopting a semi-organic farming system as a transitional approach. (Participant 10).

The reform to establish a more sustainable ecosystem within the implementation of the Agropreneur Muda program cannot be achieved because it was identified that the preference for non-eco-friendly methods among young farmers is largely due to a lack of environmental training, unsupportive policies, and a limited market for green agricultural products. Therefore, authorities need to align a systematic sustainability framework that can be applied to improve the quality and productivity of agricultural outputs produced under this program, while ensuring they are environmentally sustainable.

Besides that, the effectiveness of the ecosystem also requires integration between environmental and social sustainability, where agriculture should not be measured solely by production-based metrics, but should also emphasize social aspects such as waste reduction and well-being enhancement. For example, encouraging agropreneurs involved in the program to adopt Climate-Smart Agriculture (CSA) practices such as crop diversification, renewable energy utilization, and efficient water management can reduce negative environmental impacts and create a more resilient and sustainable economy.

It can be summed up that the implementation of Agropreneur Muda is against with the objectivity of National Agrofood Policy itself in terms of ensuring the safety of the food produced through our agriculture sector is not secure to the people and also give bad consequences to the environment as a whole. If the government could not make the reform to the agriculture practice to be free from chemicals, it results to the increasing cases of health issues and pollution.

Needless to say, it will cost a lot government spending to handle these issues for the future. In this regard, this aspect should be a serious emphasis on environmental protection and sustainability through the implementation of Young Agropreneur. One of the most notable factors is the use of chemical pesticides on the agricultural site specifically on vegetable crops. The approach suggested by the agricultural agency is to focus on the use of biological control or environmentally friendly pesticides that work just as effectively in reducing the rate of pesticide attacks.

5. Recommendations.

5.1. Public Private Partnership (PPP)

Most of the time, the private entities will be labialized as an entity that makes profit towards the others as long as can give the financial profits. However, in order to make this young agropreneur program more effective, it is necessary to have a partnership with the government. Although it is a bit strange for the government to make a serious partnership with the private sector, it can be achieved if good can be obtained fairly for both parties. Therefore, at the government level there are certain constraints that will cause the effectiveness of the program to not run well. With the involvement of the private sector, either directly or indirectly, it will help to solve the weaknesses that the government has constraints to overcome.

Among those that can be proposed for partnership for both parties in terms of investment. For this angle, the partnership between the government and the private sector in the program to make this Young Agropreneur program a success still does not exist anymore. It means that in moving the country's food industry more effectively is to encourage investment that can be made by the private sector whether in the form of capital, loans, research, technology and skills that can be trained to become skilled workers in the agricultural sector. Indirectly, it will reduce the burden on the MAFI ministry to provide an injection of budget to sustain the liability of the program.

Secondly is, private entities must exist inside the discussion room that is organized by the ministry of MAFI. The involvement of the private sector in the discussion table to take into account whether in terms of ideas, criticisms and improvements thrown by those parties to ensure that policies and programs can be well planned for the short and

long term. This is because, it is important to get a discussion of ideas from various parties that are usually involved in the agricultural sector so that it will see a comprehensive view from various parties before a final decision will be determined by the ministry involved.

5.2. Strengthen the cooperation from various agricultural agencies.

The lacking from the agricultural agencies that implemented the Agropreneur Muda is in term of mutual discussion among agencies. What we can see, at the implementation level of program, there is not strong cooperation between agricultural agencies on the area. Each of the agencies only focus on to fulfil the responsibilities according to their own scope of job.

At the micro level to ensure the program can achieve the objectives maximize, it needs to have a strong cooperation as a team instead of different agencies. Firstly, among the benefits can be gained by strong cooperation is to see the development of ideas through the discussion session by different agricultural agencies. It is to be conducted the discussion at the agencies level on that area whether annually to make sure the changing, sharing and criticising of ideas occurred. Besides that, every agency has the weaknesses and strengths that need to be compliment to each other. If that agencies have the difficulty on a certain area, the other will help. This good culture must be nurtured among the agricultural agencies rather than being silo in implementing the program given by ministry.

Secondly is, to provide solutions at the different angles. Sometimes, it is not enough to have a discussion at single agency only especially in solving the issues happened from the Agropreneur Muda. Usually, the suggestions given by the single agency to settle the problems will be come out with the same solutions that are not really effective to be used. Most of the time, they might think that these solutions among the best to tackle down the issues in agricultural project in this program, actually it is not among the best ideas. As a result, the issues cannot be settled down by the agency and keep on repeating the same problems years by years of implementation of that program. If, the discussion always happened among the agricultural agencies at the micro level, it will be come out a lot of ideas to solve the problems which are much better from our agency.

5.3. Reskilling and upskilling courses.

For this context, the allocation of budget from the government needs to be increased to ensure that reskilling and upskilling courses can be implemented by agricultural agencies regularly at district level. It is important to expose the participant of Agropreneur Muda with development of new technology in the agricultural system in Malaysia. Although, at the state level already organised this kind of upskilling and reskilling program through '*Institut Latihan Pertanian*', but some of the modules itself are not well equip and up to date with current the context of development for agricultural system. In addition, the participants just get the knowledge related with agriculture just for single time only, which is not sufficient. Most of the participants that joined in this program only attended the short courses for single time just that conducted by the agricultural agency or from private specially to fulfil the requirements of the program as a part of compulsory condition. It is insufficient for the participant to get enough of knowledge and skill with related to agriculture and to expert within a short period of time.

The concern on this matter is to run the courses with the private entities to make sure the exposure on agriculture will be exposed more to the participants of this program. The reason why the government needs to increase the budget related to upskilling and reskilling courses to the agricultural agencies because of the Young Agropreneur participants had faced the constraint of financial. It needs to supported program that can reduce the burden of participants in ensuring themselves with the sufficient skills and knowledge related with agricultural system.

Secondly is, it is a part of solution that identified by the agencies specifically on the weakness faced by the participants of Agropreneur Muda. It means that, the official that in charge in this program can organize a specific course to solve the problem that happened throughout the agricultural projects that conducted by the participants. The benefit also can be gained from this effort for the officials' side in terms of to increase their knowledge related with the current agriculture system. Indirectly, it will help the official for this program to guide the participant with accurate consultation in all areas in agriculture management and expertise.

5.4. Formulate strong agriculture policy

On the part of the MAFI ministry itself, it is to empower the existing policies and programs to be improved in the future. Strong's policy for this aspect is to look at the role and initiative of the government to protect participants under this Agropreneur Muda program from various angles. This is because, young talents who are still new in the agriculture industry are very fragile to face failure in their agriculture projects at the beginning of program participation. So, the tendency for failure is higher than the success that can be obtained through this sector so it needs a policy that can protect this group for a certain period.

Among the efforts that can be made by the ministry is to create a proposal that can protect by creating the policy offered the low-interest rate on agriculture loan and agriculture insurance. It is possible that in this regard, the government and the ministries involved are not overly bound in providing loans and insurance only based on the provisions of the central government. The ministry can diversify sources for this finance through the search for banking institutions and the food industry that are interested in investing in the agriculture sector. From this point of view, the participants have various options to save their savings for insurance and also make loan applications according to their level of financial ability.

Therefore, these two aspects are important both for insurance and this loan to ensure the welfare of young farmers will be protected if any emergency occurs in the course of their agricultural project. It is also a backup for the next round of capital if the previous project is not successful.

Next is, creating a body that can control competitors between young entrepreneurs and big suppliers whether from insider and outsider. The reason is because of the small agropreneur needs to compete with the biggest competitors whether from the insiders and outsiders that produced a large scale of agriculture production. It is very hard for young agropreneur to compete with these competitors in terms of scale of production and the price offer that much cheapest which at last the small agropreneur will lost in this competition from the big competitors at the market level. For the example, this body

will impose related with the input price that at the market and also targeted subsidy to small agropreneurs. So, it is better to focus on the competition among the small agropreneurs to ensure that those people are well equip the experiences inside the agriculture industry before involving with the competitors from the biggest producers. Therefore, it is a part of to preserve the career as young farmer.

In addition, collaboration should be made with the agricultural institution and universities especially in improving the research and development in agriculture technology. The role of these two parties needs to be enhanced for the development of the Young Agropreneur program. This is important to ensure that the results of their studies and expertise can be contributed towards the improvement of certain aspects that need to be improved in the future.

Last but not least is, to bring a good natural agriculture practice to be more emphasized towards the young farmer in this program. It means, this program is a good starter for the government to concern on the production of agriculture products that practiced the practices which are eco-friendly to environment and human beings. From the neighboring countries the direction of their agriculture sector more towards the free pesticides and more on organic based. It is important to ensure the food that supplied to the customers can give more positive impacts to the Malaysian health in term health productivity.

5.5. Cooperation with the local authority.

For this aspect, the cooperation between ministry and local authority needs to be involved actively in supporting the program of Agropreneur Muda. At the district level, the role of local authority to give the support for this program is still lesser. The role that can be played by the local authority is important especially in supporting the development of agriculture on that specific area.

Somehow, the constraint that faced by the agricultural agencies in implementing this agriculture program on that area is insufficient of land to be used. The land possessions that acquired by the agricultural agencies are quite limited to be given to the participants who do not have any land to run their agricultural projects. At this situation, the role from local authority can be played especially in finding the suitable lands for the participants that really have the passion in conducting the Agropreneur Muda project on those areas. This is because, the local authority itself has its own expertise in determining the suitable land that can be used for agriculture whether through leasing or renting towards the applicants of Agropreneur Muda.

5.6. Decentralization of single ministry.

The allocation given by the central government to run this program is given to several ministries other than the Ministry of Food Industry (MAFI) such as the Ministry of Rural Development, Ministry of International Trade and Industry, Ministry of Entrepreneur Development and Cooperatives. Although the budget distribution to run this program was given to other ministries, but it has contributed to the redundancy problem between all the ministries involved and it is difficult to assess how effective this program has been. As long as this Agropreneur Muda has been carried out, it is very synonymous with the MAFI ministry alone compared to other ministries.

Ideally, the implementation of this program needs to be managed under only one ministry that refers to MAFI, then it will bring about more effective management and results at the implementation stage later. In addition, data sharing issues involving between ministries are not open. Each of them keeps information related to the development of Young Agropreneurs confidential and works in silos between ministries. This will show that the inequality in achieving the objectives of success for the program. With the allocation given to a single ministry, various initiatives can be planned specially to stimulate the development of young agropreneurs for the future.

5.7. Promotion of program.

Regarding with promotion of Agropreneur Muda, the role of government level is not strong enough in reaching the information about this program to all level of societies. The weakness identified from the ministry side is due to lack of engagement with the possible people that really closed to society such as schools, universities, NGOs, excos and local authority of that areas in promoting this program very widely. The suitable strategy in promoting in any ministry programs are becoming the people itself as a promoter or mediator whether directly and indirectly. The stories from other will be transmitted to other people through mouth by mouth regarding with the success of Agropreneur Muda program that conducted by the Malaysian youth. Therefore, the people will acknowledge about the presence of Agropreneur Muda in Malaysia.

Besides that, the use of social media coverage is expanded on the journey of the Agropreneur Muda program through media channels that are the main focus of young people such as TikTok and Twitter. Meanwhile, for the creation of content whether in the form of videos downloaded on social media that are relaxed, meet the needs of young people, and are not too heavy to be accepted by that group.

At the same time, to make this program seen to be promoted either at the international or national level is to hold a forum related to Agropreneurs that involves the involvement of well-known speakers. It indirectly provides exposure related to agropreneur which can be seen as a career that has a bright future for young people in Malaysia.

5.8. Updated database system

For this aspect, the ministry needs to be standardized in terms of using an effective database system that across the ministries and agricultural agencies. It was found that the system used today still uses methods that are not updated with the current requirements that refer to the traditional system, especially involving applications related to applications for the grants, incentive assistance for agricultural inputs and financial aid. It is better for nowadays to use the big data technology in organizing the issue related to handling the issue of bureaucracy.

The benefit that can be gained through new system in reducing the number of misused of application to apply the grant or financial aid from Agropreneur Muda. With this system, it can trace the people who already get the dana from the ministry or agricultural agency for several times. Normally, this grant will be given to the eligible applicant only for once time, whereas the regarding with other aids like agricultural inputs and machine will be accommodated based on the situation and progress of project from participants of Agropreneur Muda. So, it will make sure the transparency of

application can be increased to reduce the issues of the people who applied too many times when the offer given by agencies specially to get the financial aid and others, as a result the people that in need of money and aid will be ignored.

Other than that, it will assure the system of application for this grant looks more systematic into one single system. Previously, the application to get this grant will be applied according to the agricultural agencies and ministries. Somehow, it makes the process of application take a long time to get the result either approved or rejected due to wait the approval of each level starts from agencies at the district level, state level and lastly from the ministry level. Through this implementation of one-singled system, it can reduce the time period of processing the application submitted by the applicants.

5.9. Involvement from other races

The encouragement should be made from the government especially in encouraging the other races to participate in Agropreneur Muda. According to the observation at the implementation level to run this program, most of the participants are dominated by one race that refers to Malays. It is hard to find the other races like Chinese and Indian that really like to join in this agriculture program. The suggestion can be suggested towards the ministry by allocating a specific quota for non-Malays in the Agropreneur Muda. So that, it will have a big force from the ministry to fulfil the quota that has been set up inside the policy.

The reason is to assure the program is not be looking as a single-centred reflects for only can be participated only one single race. Actually, the program is opened to all races that really passionate in agriculture sector to apply this grant. Indirectly, the program is not only to produce the future successors for food industry, but at the same time it is a medium to nurture the spirit of multiculturalism among Malaysian youths.

5.10. Diversity of agricultural projects.

The encouragement from the ministry in implementing Agropreneur Muda program is to encourage the diversity of the agricultural sector in all areas such as crops, livestock and also fisheries. Normally, at the agricultural agency level, they will suggest to young agropreneur participants to carry out their agricultural projects based on the recommendations given by the agency due to the marketability of the agricultural products can be sold with high value of price.

It is better to encourage the diversity of agricultural projects for a particular place in order to meet local needs and reduce dependence on raw materials brought in from outside the area. It means, the production at the regional level is not too dependent on the production produced by producer from outside of the district. In addition, at the same time it can diversify agricultural skills that can be benefited by agencies and program participants.

5.11. The value of grant needs to be increased.

It is about the value of grant in Agropreneur Muda cannot be sustained with the current cost for doing the agriculture project. Nowadays, the cost to invest in agricultural inputs is increasing year by year. The same value of grant is not sufficient specifically in conducting a single economic agricultural project. The participants need to inject their

own money to invest the additional costing of the project. So, from the side of ministry can make research on the actual quotation cost for economic agricultural project based on the current situation. So, that the participants do not felt burden to spend more additional money to ensure their projects work smoothly.

6. Conclusion

In conclusion, the findings of this study indicate that the program implemented by the Ministry of Agriculture and Food Industries (MAFI) has provided wide-ranging opportunities for Malaysian youth to actively engage in the national food sector through more structured agricultural activities that align with the objectives of current national agricultural policies. In this regard, the evaluation of the program's effectiveness requires a comprehensive and holistic ecosystem approach, particularly among the various stakeholders involved, including financial institutions, government agencies, ministries, and private entities. One of the findings reveals that entrepreneurial growth among young farmers participating in the program cannot be sustained through financial assistance alone, especially when it comes to maintaining their long-term involvement in the industry.

For issues within the program's ecosystem that remain unresolved, the study identifies several key gaps that need to be addressed namely the development of an agropreneurial mindset, enhancement of technical and managerial skills, and stronger integration along the agricultural value chain. In this situation, complete reliance on financial aid is insufficient to ensure entrepreneurial sustainability due to the absence of a systematic and coordinated approach across different stakeholders. Therefore, to produce competitive and resilient agropreneurs capable of thriving in a rapidly evolving agri-food sector, a holistic ecosystem is essential one that emphasizes market accessibility, consistent capacity building, technological innovation, and sustainability orientation.

Future research should focus more specifically on policy and institutional empowerment, particularly in establishing strong foundational structures to develop a more comprehensive agropreneurial ecosystem. For example, policymakers involved in designing new policies should consider drafting a National Youth Agropreneurship Ecosystem Framework, which would bring together ministries, agencies, and private actors under a collaborative platform. Such an initiative would foster innovation, sustainability, and youth empowerment in implementing the Agropreneur Muda program across all states in Malaysia.

Finally, further studies should also explore the psychological and socio-cultural dimensions influencing the mindset of agropreneurs, given that Malaysian society is shaped by a deeply socio-religious context. This line of research could generate diverse and meaningful perspectives for different target groups. Ultimately, the key driver of agricultural modernization and national food security lies in the inclusivity of the Agropreneur Muda ecosystem anchored in the integration of digital transformation, green technology, and strong networking among local agropreneurs

Ethics Approval and Consent to Participate

The researchers used the research ethics provided by the Department of Political Science at IIUM. All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional research committee. Informed consent was obtained from all participants according to their own agreement whether by online or email.

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Conflict of Interest

All authors have no conflicts of interest.

References

- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press. <https://press.uchicago.edu/ucp/books/book/chicago/H/bo3684031.html>
- FAO. (2014). *Youth and agriculture: Key challenges and concrete solutions*. Food and Agriculture Organization of the United Nations. <https://www.fao.org/3/i3947e.pdf>
- FAO. (2019). *Digital technologies in agriculture and rural areas*. Food and Agriculture Organization of the United Nations. <https://www.fao.org/3/ca4887en/ca4887en.pdf>
- Feder, G., Just, R. E., & Zilberman, D. (1985). Adoption of agricultural innovations in developing countries: A survey. *Economic Development and Cultural Change*, 33(2), 255–298. <https://doi.org/10.1086/451461>
- Isenberg, D. (2010). The big idea: How to start an entrepreneurial revolution. *Harvard Business Review*, 88(6), 40–50. <https://hbr.org/2010/06/the-big-idea-how-to-start-an-entrepreneurial-revolution>
- Kamalrulzaman, N. I., Ahmad, A., Ariff, A., Mohd, S., & Muda, M. (2021). Innovation capabilities and performance of Malaysian agricultural SMEs: The moderating role of strategic alliance. *International Journal of Business and Society*, 22, 675–695. <https://doi.org/10.33736/ijbs.3751.2021>
- Król, K. (2019). The application of web analytics by owners of rural tourism facilities in Poland – Diagnosis and an attempt at measurement. *Journal of Agribusiness and Rural Development*, 4(54), 319–326. <https://doi.org/10.17306/J.JARD.2019.01154>
- Linn, T., & Maenhout, B. (2019). Measuring the efficiency of rice production in Myanmar using data envelopment analysis. *Asian Journal of Agriculture and Development*, 16(2), 1–24. <https://doi.org/10.37801/ajad2019.16.2.1>
- Malecki, E. J. (2018). Entrepreneurship and entrepreneurial ecosystems. *Geography Compass*, 12(3), e12359. <https://doi.org/10.1111/gec3.12359>

- Mason, C., & Brown, R. (2014). *Entrepreneurial ecosystems and growth-oriented entrepreneurship*. OECD LEED Programme Papers. <https://www.oecd.org/cfe/leed/Entrepreneurial-ecosystems.pdf>
- Ministry of Agriculture and Agro-Based Industry Malaysia. (2019). *Annual report on youth agropreneurship development*. Government of Malaysia. <https://www.kpk.gov.my/>
- North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511808678>
- Proctor, F., & Lucchesi, V. (2012). *Small-scale farming and youth in an era of rapid rural change*. International Institute for Environment and Development. <https://pubs.iied.org/14617IIED>
- Schultz, T. W. (1961). Investment in human capital. *The American Economic Review*, 51(1), 1–17. <https://www.jstor.org/stable/1818907>
- Stam, E. (2015). Entrepreneurial ecosystems and regional policy: A sympathetic critique. *European Planning Studies*, 23(9), 1759–1769. <https://doi.org/10.1080/09654313.2015.1061484>
- Trendov, N. M., Varas, S., & Zeng, M. (2019). *Digital technologies in agriculture and rural areas: Status report*. Food and Agriculture Organization of the United Nations. <https://www.fao.org/3/ca4985en/ca4985en.pdf>