

FOOD SECURITY ISSUES: POTENTIAL AND CHALLENGES OF AGRICULTURE IN LAHAD DATU, SABAH

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Abstract. The agricultural sector, particularly food crops, is a vital component in guaranteeing food security since it plays a significant role in supplying food sources to the community. However, low wages and fluctuating agricultural commodity prices on the international market for agriculture made it frequently linked to poverty and due to the widespread poverty, particularly in rural regions. The Malaysian government has mobilised the industrial and service sectors as the primary drivers of the nation's GDP thus Malaysia's agriculture industry has been in decline. Food crops in the study area are facing a decrease in food planting area. Thus, there is a need to expand the food crops planting area and approaches to enhance the productivity of the food crops. Therefore, this research was carried out to determine the food security issues, the potential and challenges of agriculture in Lahad Datu, Sabah. The intended study is using a qualitative method such as observations and sources such as printed materials including journals, papers, previous studies, and others. According to the study, in order to survive, people have shifted from growing food crops to industrial crops on agricultural land. This has led to a decrease in the production of food crops due to limited food crop cultivation area.

Keywords: *agriculture, Lahad Datu, potential, challenges, food security*

Introduction

The agricultural sector is one of the important sectors in Malaysia. The agricultural sector in Malaysia is divided into two categories, namely food crops and industrial crops. Food crops are the main contributors to staple foods, which include vegetables, cereal crops, and fruits, while industrial crops consist of tea, oil palm, cocoa, and rubber cultivated by companies. The agricultural sector has become an important sector to ensure the continuity of the country's economy (Hadi and Zainol, 2019). However, agricultural activities carried out in rural areas are subsistence-based, and this situation traps the community in poverty. Competition to ensure survival has caused many farmers to shift their involvement to the industrial crop sector, such as oil palm, which offers more market stability. Indirectly, this situation has changed the agricultural land use landscape. The land use change from food crops to industrial crops like palm oil poses a challenge more to the food crop agricultural sector. For instance, the land use change in the agriculture sector may lead to the lack of food crop cultivation areas, limit food crop production and result in an increased food import dependency index. Dependence on food imports will expose the country to experiencing a food shortage crisis if the country does not have any preparations to face global crises such as conflicts between food-importing countries, the COVID-19 pandemic, and others. The impact of this global crisis will not only threaten the country's sustainability but also affect low-income communities and small-scale farmers (Wahab et al., 2024).

This situation can be seen from 2020 to 2021, which highlights the importance of ensuring the continuity of the country's food security. During this period, sectors such as agriculture, livestock, fisheries, and other sectors that contribute to the country's food

sources were affected due to COVID-19. The implementation of roadblocks, the closure of markets, and business premises to control the increase of COVID-19 has made it difficult to distribute and sell food crops, thereby causing losses to traders and farmers as they are unable to market their crop production. Farmers and industry players in agriculture certainly face challenges in ensuring their profits while simultaneously ensuring the continuity of food security. Awareness of the importance of ensuring food security became prominent during the COVID-19 pandemic that affected countries around the world. Many sectors of the country were affected, especially the agricultural sector, to the extent that it disrupted the food supply chain across the country. In the 1970s, the Malaysian economy was heavily dependent on the agricultural sector, as evidenced by the percentage contribution of the agricultural sector to the Gross Domestic Product (GDP), which was 30.8% (Chamhuri et al., 2022). The agricultural sector is seen as capable of providing job opportunities and sources of income for farmers, and in 2020, the agricultural sector emerged as the second most important sector to the country's economy. Although the Covid-19 pandemic has had a negative impact on various economic sectors, it has also opened Malaysia's eyes to reassess the importance of the agricultural sector to the country. In this regard, this study aims to examine the challenges and potential of the agricultural sector in ensuring the sustainability of food security in Lahad Datu.

Materials and Methods

The study was carried out in Lahad Datu, Sabah and qualitative methods have been implemented in this study. This method consists of: (i) primary sources: observations; (ii) secondary sources: written and printed materials such as articles, journals, and reports from the Lahad Datu Department of Agriculture. In this study, the observation focused on the village that engages in food crop farming activities such as hill rice, specifically in Kampung Ulu Tebori, Tungku. Based on the input received from the Lahad Datu Agricultural Department and the Tungku Native Court, Kampung Ulu Tebori is one of the areas in Tungku that still practices hill paddy cultivation. Therefore, Kampung Ulu Tebori is a strategic area for researchers to conduct field observations. Meanwhile, secondary sources are types of data that already exist, collected for research such as journals, articles, past studies, and so on (Ussif et al., 2020). In this method, sources and printed materials such as journals, articles, and past studies are important for researchers to conduct a literature review to identify research problems, and reports from the Lahad Datu Department of Agriculture are also crucial for understanding the agricultural sector landscape in Lahad Datu.

The concept

This study will use the concept of food security. Food security exists when all people at all times have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, IFAD, UNICEF, WFP and WHO, 2023). Therefore, the four dimensions of food security consist of food availability, economic and physical access to food, food utilization, and stability over time as shown in the *Figure 1*. *Figure 1* shows the terminology of food security, which consists of four dimensions: availability, access, utilization, and stability of food. *Figure 6* also explains a bit about food insecurity, hunger, and malnutrition. The dimensions of food security refer to the four dimensions

of traditional food safety, which consist of: (1) Availability: Addressing whether food is actually or potentially present physically or not, including aspects of production, food reserves, markets and transportation, and wild food. (2) Access: If food is actually or potentially physically available, the next question is whether households and individuals have sufficient physical and economic access to that food or not. (3) Usage: If food is available and households have sufficient access, the next question is whether households maximize the use of adequate nutrition and energy or not. Adequate energy and nutrient intake by individuals is the result of good care and nutrition practices, food preparation, dietary diversity and food distribution within the household, and access to clean water, sanitation, and healthcare. Combined with good biological utilization of the food consumed, this determines the individual's nutritional status. (4) Stability: If the dimensions of availability, access, and utilization are sufficiently met, stability is a condition where the entire system is stable, thereby ensuring that households are food secure at all times. Stability issues can refer to short-term instability (which can lead to acute food insecurity) or medium to long-term instability (which can lead to chronic food insecurity). Climate, economic, social, and political factors can all be causes of instability. These dimensions are important to determine whether the food security in Lahad Datu is sufficient or not for the community.

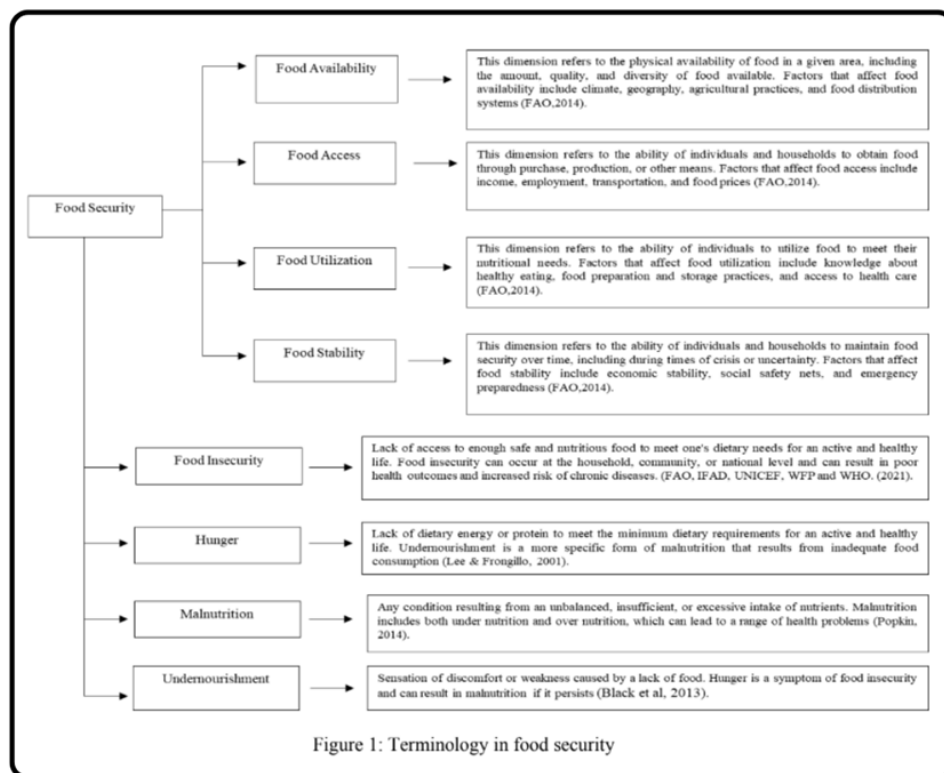


Figure 1. Terminology in food security.
Source: Ibrahim et al. (2018).

Results and Discussion

Food security issues

One of the food security issues is availability of limited food supplies, especially during COVID-19. This situation has violated one of the domains of food security, namely the availability of food supplies, which poses a threat to the food security of the community. Availability can be classified as the physical availability of food in certain areas, including the quantity, quality, and variety of food available (Ibrahim et al., 2018). The implementation of the Movement Control Order (MCO) caused several public markets to cease operations and be ordered to close in order to control the increase of COVID-19. Indirectly, the food crop market during COVID-19 could not operate as usual and consumer purchasing power was limited. The limited availability of food supplies makes it difficult for the community to fully access food resources. Next is the limited yield of rice planting. This situation occurs for rice hill planting in the Tungku area, Lahad Datu, which is planted on a small scale and harvested twice a year, with the limited rice planting and its yield leading to a limited production. The unavailability of rice food supply will impact the domain of food security. *Figure 2* shows the hill paddy cultivation area in Kampung Ulu Tebori, Tungku in Lahad Datu with a cultivation area of less than 2 acres. The farmers who cultivate this hill paddy have converted part of their land to oil palm cultivation due to its more stable market and to survive in a harsh high cost of living. Furthermore, palm oil production continues to grow in line with the increasing demand (Voora et al., 2023). The constantly increasing demand creates a stable market because palm oil can be processed into cooking oil, animal feed, cosmetics in contrast to food crops that are less competitive than the palm oil industry. With this, it can be seen that industrial crops such as palm oil have indeed changed the economic activities of the community. The planting of hill rice is also carried out on a small scale and is done for self-sufficiency, and if there is any surplus from the harvest, it is only then sold to the villagers. This situation is certainly seen as a concern because the rice harvest cannot meet the needs of the other residents due to the very limited production.



Figure 2. Hill rice and oil palm plantations in Kampung Ulu Tebori, Tungku, Lahad Datu, Sabah.

Furthermore, considering that consumers have the capacity to spend more, they demand safety, quality, and freshness in food such as Basmati rice, vegetables, and imported fruits, causing domestic food demand to change due to shifts in food

consumption patterns that prioritize imported fruits and vegetables, especially from temperate regions, resulting in a significant decrease in demand for tropical fruits such as papaya, watermelon, and durian (Suffian and Suffian, 2021). Indirectly, this situation will increase the index of dependence on imported food sources. In addition, dependence on imported food is one of the food security issues. The self-sufficiency level of basic food items shows minimal improvement and remains low, such as rice, vegetables, fruits, beef, mutton, and liquid milk (Suffian and Suffian, 2021). This situation has resulted in the replacement of food imports as a solution to fill the gap. The gap between food exports and imports is widening now. The total food import amounted to RM 482.8 billion compared to RM 296 billion in exports over the past ten years (Suffian and Suffian, 2021). Therefore, it is not surprising that the food import bill continues to rise as the demand for food keeps increasing. The agricultural and agro-food policy acknowledges issues and challenges such as the high food import bill, labor shortages, availability of suitable land, higher input production costs, lack of infrastructure and rural machinery, limited financial assistance, coordination and implementation among agencies still developing at a slower growth rate, making it difficult to ensure food security sustainability. Malaysia itself is a rice-importing country because the rice harvest can only meet 70% of the country's needs, and the remaining needs are imported from other countries such as Thailand, Vietnam, and Pakistan (Mat et al., 2020). If complete dependence on imported rice occurs, this situation will result in market instability within the country and become a national concern. For instance, most agricultural items have a high Self-Sufficiency Ratio (SSR) that have a high dependence on imports. Malaysia is highly dependent on the import of beef (RM2.2 billion), goat meat (RM879.4 million), mangoes (RM87.9 million), and coconuts (RM266.1 million) to meet domestic consumption (Chamhuri et al., 2022). Therefore, ensuring food supply stability is necessary.

Agriculture potential in Lahad Datu, Sabah

The industries of agriculture, livestock and fisheries are frequently linked to food security. Nevertheless, this study's area of expertise will be more delved into the agriculture sector. The agricultural sector has the potential to ensure food security by producing food crops that can meet the needs of the community, especially staple foods. Lahad Datu itself is an ideal region for agriculture practice due to its fertile soil and flat terrain. However, only a few locations with slopes under 25 degrees can still support tree planting with soil management techniques in place, and the Lahad Datu area is appropriate for cultivating crops, especially fruits (Ridzuan et al., 2024). In Lahad Datu, the main crop is palm oil, which is the primary economic source for the Lahad Datu community. Most of the communities that are involved in the palm oil industry have boosted their economy and used to buy their necessities such as food etc. In addition, food crops are also cultivated in Lahad Datu durian, pineapple, dragon fruit, paddy hill etc but on a smaller scale than palm oil. The rice and paddy sector is of strategic importance to the country because it ensures the nation's food security (Zaman et al., 2019). As early as the 1950s, the country's rice sector has always received attention from the government through various interventions such as input subsidies, rice price controls, and policy support. Even with continuous government intervention until now, the growth of rice yields has not been rapid. Therefore, one of the alternatives to address the issue of national food security and achieve self-sufficiency in rice production in line with population growth is to implement the use of innovation in rice production under

the National Agro-Food Policy 2.0, in line with the wave of the 4.0 industrial revolution (Zaman et al., 2019).

Furthermore, through the agricultural sector that practices sustainable agricultural practices, it is capable of meeting the food security needs of the community without compromising the welfare and ability of future generations to meet their needs (Dauda Goni et al., 2024). Sustainable agricultural systems and sustainable food systems encompass many practices to promote soil fertility (Dauda Goni et al., 2024). Sustainable agricultural practices can ensure consumer confidence in the safety of food crops because the practices employed avoid crops that contain excessive chemicals or pesticides. *Figure 3* shows an alternative land for food crops in Segama, Lahad Datu. This alternative land is one of the government approaches to tackle a limited cultivation area for the food crops. The accessibility of alternative land will encourage farmers to work in the food crop sector. Next is to provide a market for food crops in Lahad Datu. Incentives alone are not sufficient to ensure the sustainability of food security through the agricultural sector if the market for food itself is limited or non-existent. Therefore, to ensure that the agricultural sector, such as food crops, is competitive and has high marketability, initiatives to establish the manufacturing industry need to be planned and implemented, focusing on producing food and beverage products from food crops. For example, establishing fruit processing factories that turn fruits into juices, dried foods, snacks, and more. This initiative will attract residents to venture into the food crop industry and directly create job opportunities for the community. The full utilization of food crop yields will reduce surplus production and minimize food crop waste that cannot be marketed.



Figure 3. Alternative land for food crops in Segama, Lahad Datu, Sabah.

The current scenario shows that Malaysia needs to increase its food supply to accommodate the growing population of 35 million by 2020 (Tapsir et al., 2019). R&D must generate technology that can support the development of sufficient local food production in line with economic growth, prosperity, and the luxurious lifestyle caused

by increased income, with changes in food consumption patterns from grains to animal proteins and vegetables (Tapsir et al., 2019). The efforts undertaken, particularly in R&D, can advance the agricultural sector and agro-based industries so that these sectors become modern and competitive (Mat et al., 2020).

Challenges in the agriculture sector in Lahad Datu, Sabah

One of the food security issues occurs when agri-food crops are sidelined. It is said that investments in Malaysia are allocated to commodity crops such as palm oil, rubber, and cocoa, which provide higher export value and serve as inputs to the manufacturing sector (Suffian and Suffian, 2021). In the mid-1980s to 1990s, due to the government's direction towards an industrial economy, greater emphasis was placed on the manufacturing sector. They found that agri-food activities required large capital, high labor costs, and had low productivity. This situation causes the agri-food sector to be neglected, resulting in reduced production. Indirectly, agricultural land is dominated by commodity crops such as palm oil instead of food crops. *Figure 4* shows the land use for farmers in Kampung Ulu Teburi, Lahad Datu where the areas for cultivating paddy hills do not exceed 2 acres and most of their land used to plant palm oil. Thus, limited area for food cultivation made it hard to produce large-scale food crop production. In Lahad Datu specifically, rice cultivation (hill rice) is carried out on a small scale and for subsistence, and if there is any surplus from the harvest, it is sold to the villagers. However, based on the observations conducted, the area of paddy hill cultivation in Kampung Ulu Teburi, Tungku, is estimated to not exceed 2 acres per farmer, thus the yield from the rice harvest is only sufficient to meet the household's needs.



Figure 4. Land use for farmer in Kampung Ulu Teburi, Lahad Datu, Sabah.

Next, the challenges in the agricultural sector to ensure the continuity of food security are linked to climate change. Unpredictable climate change affects hill rice. Throughout the observation that has been carried out in the hill rice planting in Kampung Ulu Teburi, it is shown that drainage system problems could cause the hill rice fields to be constantly flooded and disturb the growth of the hill rice. This hill rice is experiencing damage and will disrupt the growth and productivity of the hill rice crop. That is to say, the absence of a market for food crops also became a challenge for the food crops sector in Lahad Datu. The absence of a market for food crops poses a challenge for the agricultural sector in ensuring the sustainability of food security because the availability of food resources is limited. The establishment of factories or industries involving the production of food crop products can open up the market for food crops, and this situation can attract many entrepreneurs and farmers to engage in the food crop agricultural sector. The marketability of these food crop products can certainly stabilize food crop prices while also increasing farmers' incomes, as their crops are no longer just sold in markets and grocery stores but can be processed into other food products and marketed both domestically and internationally. By establishing factories and manufacturing industries focused on food crops, these products will become 'special products from Lahad Datu,' thereby encouraging the increase of food crop cultivation in Lahad Datu. Not to mention, a marked decline in the agricultural sector is evident during COVID-19. All activities in the agricultural sector, such as agricultural product businesses, plantations, and the cultivation of agricultural resources, to decline while containing the spread of the epidemic from escalating to a more serious

level (Shah, 2021). The decline in the agricultural industry has affected the food supply because the production of most food supply products such as raw foods consisting of vegetables, livestock meat, and plantation products like palm oil and rubber are non-functional and not allowed to operate, and ordered to close (Shah, 2021).

This situation caused the supply of vegetables, which are usually sent to public markets for sale to consumers, to not be supplied to vegetable vendors as usual, resulting in agricultural produce being released in excessive amounts without being used or traded to consumers. Food prices reached an all-time high in 2022 as a result of the COVID-19 pandemic's disruption of regional and global food supply systems due to the rice-exporting nations like Vietnam and Myanmar temporarily banned exports owing to the pandemic, which fuelled an increase in rice prices both domestically and internationally (Omar et al., 2022). Other than that, COVID-19 has reduced the ability to buy food sources as most of the community are fired from their job. Given the complex challenges posed by poverty, which have been exacerbated by the COVID-19 pandemic (Ridzuan et al., 2025). Thus, this led the community to facing a crisis in poverty during COVID-19 undermined that during the COVID-19, the food security was at risk. In addition, the involvement of youth in the agricultural sector is also one of the challenges in ensuring food security sustainability. Chamhuri et al. (2022) emphasize that the involvement of young people is seen as suitable for modernizing or 'revitalizing' the agricultural sector and needs to be enhanced. Youth involvement aligns with the national mission to reduce unemployment, tackle poverty, and enhance the domestic food supply. This situation occurs because the youth are more inclined to explore modern agricultural technologies such as the Internet of Things (IoT), precision farming, and smart farming (Chamhuri et al., 2022). However, as is known, agriculture falls into the category of jobs classified as 3D (Dirty, Dangerous, Difficult). This further adds to the lack of interest among the youth to engage in the agricultural sector. MAFI also reported that out of 14.6 million youths in Malaysia, only 15 percent are involved in the agricultural sector and only four percent of university students consider a career in this sector (Chamhuri et al., 2022).

It is undeniable that the expansion of commodity crops contributes significantly to the country's economy and GDP, and creates more stable job opportunities compared to other sectors. However, this expansion has caused many workers to shift to industrial crops such as palm oil, thereby reducing the labor force for food crops. Thus, resulting in a shortage of labor in the agricultural sector (Abdullah and Mustapha, 2009). This situation occurs because job opportunities in other industries offer higher income and a better job image in the industrial sector. The shift of labor to other sectors is to improve their standard of living due to more stable income and markets compared to the agricultural sector for food crops, which have market instability and uncertain income. Therefore, it is not surprising if the food crop sector experiences a shortage of labor. The issue of food security requires immediate attention. Due to a shortage of agricultural area for food crops and poverty that restricts community's ability to buy their basic food, Lahad Datu's degree of food sufficiency cannot ensure food sustainability and sufficient in near future if effective approaches aren't taken. Furthermore, it is evident that during the COVID-19 epidemic, Lahad Datu's food security was in a severe situation, with prices being high and insufficient food supply. Future research on food security should be focusing on the policy and the implementation of the policy within the region. There is a need to understand the intricate connections between food security and other agriculture sectors. By tackling these study topics, academics and decision-

makers may create plans that guarantee sustained food security, advance agricultural sustainability, and strengthen food systems' ability to withstand shocks from around the world. Thus, securing the food security.

Conclusion

In conclusion, the potential of the agricultural sector can be developed to become more competitive with continuous R&D and sustainable agricultural practices. Meanwhile, regarding the issues and challenges in the agricultural sector to ensure food security highlight the involvement of the palm oil industry. The expansion of the palm oil industry has undoubtedly helped improve the economy and the standard of living for the local population. However, at the same time, the community views the expansion of the palm oil industry as an opportunity to generate greater profits, unlike food crops that take a long time to harvest and have unstable demand and markets. Considering these factors, there is an urgent need to examine the impact of the palm oil industry on food security and sustainable development in Lahad Datu, researching about how the waste from palm oil could be produced to enhance food security and thus to establish policies or preventive measures to control the impact of the palm oil industry on food security in Lahad Datu.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

REFERENCES

- [1] Abdullah, N.C., Mustapha, R. (2009): Kajian kes usahawan tani Industri Kecil Sederhana (IKS) Bumiputera di negeri Terengganu (A case study of SMI Bumiputera agropreneurs in Terengganu). – Jurnal Pendidikan Malaysia 34(2): 143-165.
- [2] Chamhuri, N., Wahab, M.S., Mohd Sofi, N.A., Mahrus, H.T.S, Junaidi, S.N., Salim, N.N.I., Syafri, S., Mohd,N.I. (2022): Keterlibatan Belia Dalam “Meremajakan” Sektor Pertanian di Malaysia. – Jurnal Personalia Pelajar 25(1): 39-49.
- [3] Dauda Goni, M., Aroyehun, A.B., Abdul Razak, S., Drammeh, W., Abbas, M.A. (2024): Food insecurity in Malaysia: assessing the impact of movement control order during the COVID-19 pandemic. – Nutrition & Food Science 54(7): 1202-1218.
- [4] FAO, IFAD, UNICEF, WFP, WHO (2023): The State of Food Security and Nutrition in the World 2023. Urbanization, agrifood systems transformation and healthy diets across the rural-urban continuum. – FAO, IFAD, UNICEF, WFP, WHO 316p.
- [5] Hadi, N.M.H., Zainol, F.A. (2019): Agribusiness in Malaysia: Some facts and emerging issues. – Journal of Management and Operation Research 1(2): 1-8.
- [6] Ibrahim, A.Z., Hassan, K., Kamaruddin, R., Anuar, A.R. (2018): Livelihood assets and food security achievement: An empirical study of the coastal fishermen in northern

- peninsular Malaysia. – *Indian Journal of Public Health Research & Development* 9(11): 1383-1390.
- [7] Mat, S.H.C., Sathiman, S., Hamid, F. (2020): Pendapatan Bukan Padi Bantu Pesawah Keluar Daripada Kemiskinan Lebih Cepat. – *Journal of Economics and Sustainability* 2(2): 14-26.
 - [8] Omar, S.C., Anis, N.S., Sze, I.K.Y. (2022): Paddy and Rice Statistics in East Malaysia. – *The Paddy and Rice Industry of Sabah and Sarawak*, Khazanah Research Institute 200p.
 - [9] Ridzuan, M.I.M., Morshidi, A.B., Zakaria, N.S., Idris, R.Z., Jambol, D.J.A. (2025): Unraveling the nexus: Exploring Malaysia's research trends in advancing UN SDG 1. – *Multidisciplinary Reviews* 8(2): 2025050-2025050.
 - [10] Ridzuan, M.I.B.M., Eboy, O.V., Hua, A.K., Khairullah, M.A.A.A. (2024): Pemetaan Guna Tanah Dan Litupan Tanah Di Lahad Datu, Sabah. – *Jurnal Kinabalu* 30: 224-238.
 - [11] Shah, M.K.M. (2021): The Impact of Covid-19 Pandemic on Income and Employment in the Agriculture and Food Supply Industry. – *Environment* 6(25): 171-188.
 - [12] Suffian, F., Suffian, F. (2021): Policy Analysis: Food Security in Malaysia. – *Journal of Administrative Sciences* 20: 91-111
 - [13] Tapsir, S., ELINI, E.E., Roslina, A., Noorlidawati, A.H., HAFIZUDIN, Z.M., Hairazi, R., Rosnani, H. (2019): Food security and sustainability: Malaysia agenda. – *Malaysian Applied Biology* 48(3): 1-9.
 - [14] Ussif, D.R., Ertuğrul, A.P., Coskun, P.D., Baycan, A.P. (2020): Research methodologies: Qualitative quantitative and mixed research method in social sciences. – *International Journal of Academic Multidisciplinary Research* 4(6): 83-91.
 - [15] Voora, V., Bermúdez, S., Farrell, J.J., Larrea, C., Luna, E. (2023): Palm oil prices and sustainability. – *IISD Market Report* 46p.
 - [16] Wahab, M.A.A., Aziz, N.A.A., Abdullah, A.A. (2024): Malaysia, Indonesia and Thailand Trends on Food Security Research: A Bibliometric Analysis from 2003 to 2022. – *Journal of Contemporary Social Science and Education Studies (JOCSSSES)* 4(1): 1-16.
 - [17] Zaman, N.B.K., Ali, J., Othman, Z. (2019): Faktor Penerimaan Teknik Penanaman Padi Secara Sistem Intensifikasi Padi. – *Jurnal Dunia Perniagaan* 1(2): 11-20.