



ASEAN Cooperation in Creating Sustainable Development in the Food Sector: Opportunities and Challenges

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Abstract

This study aims to analyze the opportunities and challenges faced by ASEAN cooperation in creating sustainable development in the food sector. The method used in this study is a qualitative descriptive analysis which involves searching the literature from sources that are relevant to the research topic. ASEAN already has various cooperation mechanisms in the food sector. In addition, the trend also shows an increase in food trade in the ASEAN region. ASEAN as a region has a huge opportunity to increase cooperation in the food sector, considering there are still large opportunities to add value to products. ASEAN is a region that produces various food commodities and also has various research and development centres for agricultural commodities. However, even though it has great opportunities, there are several challenges in realizing this dream, including infrastructure challenges and pandemic challenges.

Keywords: AMAF, ASEAN, food security

Introduction

Uncertain global situations such as climate change, political conflicts, and pandemics can pose serious threats to world food security. Climate change can affect the availability of water and land needed for food production, while political conflicts, such as the Russia-Ukraine conflict, can disrupt food production and distribution. Additionally, pandemics such as COVID-19 can affect food supply chains and disrupt the safe and sufficient transportation, storage, and distribution of food. Some of these things have contributed to disrupting global food production and increasing food prices, thereby causing an increase in food prices that are difficult for poor people around the world to reach.

The COVID-19 pandemic illustrates how vulnerable the global food system is due to shocks. This is caused by a lack of preventative action, especially when having to make very quick decisions amid a crisis (Workie et al., 2020). The global food system is very complex and unstable, especially when experiencing unexpected shocks such as a pandemic (Béné,

2020). Therefore, a country needs to have a mechanism that can anticipate disruption in the food sector amidst an unpredictable global situation.

Southeast Asia is a strategic region in the food sector because it has great potential in the production and distribution of food. This region has fertile soil, a good climate, and abundant natural resources, making it possible to produce various types of food (Shittu et al., 2021). Apart from that, this region also has great opportunities for global trade because it is located between the Pacific and Indian Oceans, making it an important transit point for ships carrying food (Hall, 2019). However, Southeast Asia also faces challenges in meeting food needs, namely an increasing population, rapid technological development (Mok et al., 2020), and climate change (Islam & Kieu, 2020). To overcome these challenges, the Association of Southeast Asian Nations (ASEAN) collaborates in the field of food security, one of which is the ASEAN Ministers Meeting on Agriculture and Forestry (AMAF) which started in 1968 and is held regularly every year, the scope of which is cooperation includes

agriculture and forestry (Sekretariat Nasional ASEAN - Indonesia, n.d.). Despite the cooperation within ASEAN, food security remains a significant challenge in the face of the economic development of ASEAN member countries, particularly in the wake of the COVID-19 pandemic. As such, this article aims to address the opportunities and challenges that ASEAN encounters in its quest for food security.

Materials and Method

This research on ASEAN cooperation in creating sustainability in the food sector is qualitative research which emphasises a comprehensive analysis of one case study in addressing food safety issues. This method involves collecting results or conjectures resulting from previous research, then the results are interpreted (Harahap et al., 2022). The study of documents issued by ASEAN is our foundation in analysing ASEAN cooperation in the food sector. Apart from using official ASEAN documents, journal articles and internet articles are also references for us in providing analysis on this topic. Data analysis is carried out simultaneously with the process of collecting data originating from various documents. Furthermore, the results of the analysis are presented in the form of a narrative that describes the opportunities and challenges of ASEAN cooperation in creating sustainable development in the food sector.

Results and Discussion

Literature Review

Food security according to FAO (1996 in Alonso et al., 2018) is a situation where humans have physical, social and economic access to sufficient, safe, and nutritious food that meets food needs to support a healthy life. In food security, there are four pillars, namely food availability which includes food supply, food access which includes a person's ability to obtain food, food utilisation which includes food processing, and food stability including a person's preparedness when food sources are not available (Alonso et al., 2018).

These four pillars are experiencing challenges. In 2016, around 815 million people worldwide experienced hunger and this number is predicted to continue to increase. On the other hand, the Food and Agriculture Organization (FAO) has a mission to eradicate hunger by 2050 amidst global problems, such as natural

disasters, poverty, armed conflict, and increasing population. By comparing cases of hunger that occur in various countries, research by Prosekov and Ivanova (2018) shows that food scarcity that causes hunger is not only caused by food shortages but also political factors and poverty.

Regarding cooperation in the food sector, some works have discussed this. Cooperation in the food sector, especially related to food safety, is one of the main issues in ASEAN. The focus of this collaboration emphasises efforts to overcome the problems of hunger and poverty. In the ASEAN context, the issue of food safety includes several dimensions, such as the business dimension, the social network dimension, and the bureaucratic dimension. The business dimension in this case emphasises the fisheries and agricultural sectors. Farmers and fishermen are still faced with the problem of traditional patterns which must adapt to various government policies, such as competitiveness, standardisation, and even certification. On the other hand, in the social network dimension, when faced with aspects of cooperation in creating food security, we sometimes have to deal with policies that do not pay attention to the formation of food-secure communities. Import policy is a form of policy that is considered contrary to efforts to create food-secure communities. Meanwhile, related to the bureaucratic dimension, there is more emphasis on monitoring and evaluation mechanisms that need to be carried out on government policies in creating food safety (Wisnu, 2013).

The work of Rahman and Ahamat (2018) explains that food trade and food markets are one of the strategic plans discussed in the ASEAN Economic Community (AEC) to create sustainable development in the food sector. This integrated and competitive community in creating sustainable development pays attention to global challenges that can impact the food sector. Food prices at the global level are one of the challenges that ASEAN countries consider when formulating policies in the food sector. Price control policies, price subsidies, and even import facilitation policies are various policies taken to address the impact of food prices. Attention to food commodities is important considering that this commodity is one of the priorities in the 2015 AEC Blueprint.

Thow, et al. (2019) argued that many countries in the ASEAN region encounter obstacles in developing their food policies. One of the reasons for this obstacle is that there is increasingly nar-

row space for policies for lower-middle-income countries under the World Trade Organization (WTO) regime. For example, Indonesia will encounter difficulties in developing a food policy with a policy of setting market prices for rice commodities. This happens because the market price determination policy is considered a policy that can distort the market based on the provisions in the WTO.

As a response to food price inflation, several countries in the ASEAN region have also formulated policies aimed at controlling food prices. One country that is making breakthroughs in efforts to control food prices is the Philippines. In 2018, the Philippine Government is committed to replacing the quantitative restrictions policy on rice products and replacing it with the imposition of tariffs. Balié and Valera (2020) formulated the impact obtained from the Philippine policy. Based on the study they conducted, it appears that the price of rice in the Philippines will decrease in a short time, but this impact will not last long. The imposition of tariffs on rice products must be accompanied by concrete and comprehensive efforts from the Philippine Government to improve the quality and productivity of farmers.

Previous studies have examined food policies in ASEAN member countries, as well as the causes of food insecurity, such as poverty and food shortages. Additionally, these studies have explored the correlation between food security and the economic aspect. However, there has been no explicit research conducted on the collaboration among ASEAN countries to establish sustainable food security.

Condition of the Food Supply Chain in ASEAN

The increasingly widespread globalisation and cross-border economic activities are influencing the formation of food supply chains in various regions, including ASEAN. The existence of a food supply chain ensures the continuity of food supplies from food producers to products that can be consumed. In general, the food supply chain is a continuity of food production, distribution, and consumption activities. This process takes place across national boundaries so that the problem of food supply becomes an International Relations problem. Food supplies move from one country to another by taking advantage of the conditions set by the free trade regime. Furthermore, the food production process has now become very com-

plicated where the production process can involve various entities spread across many countries.

Today, food production in the modern world does not only depend on the agricultural sector. Times have moved so far that food production focuses more on mass production on a global scale. The food industry takes advantage of the prices of food raw materials, such as rice, corn and wheat, which are very cheap in the production process. On the other hand, the cheap food production process in industry and agricultural businesses also provides benefits for the working class where they can consume these products to survive.

Historically, countries in the ASEAN region have played the role of providing the main food ingredients for the food industry. The area around the mouth of the Mekong River in Southeast Asia is called the rice bowl of Southeast Asia because it is a very fertile area and suitable for rice farming (Yeophantong, 2013). The development of the food supply chain in the ASEAN region also grows local industries in the region. This has led to the increasing number of actors involved, such as transnational companies and local companies, in the food supply chain in the ASEAN region.

The impact of massive industrialisation in the food sector can be seen from the position of ASEAN countries in the world food supply chain. For example, Thailand has advantages in rice, shrimp, and rubber products, being one of the main exporters of these commodities. Meanwhile, Malaysia is one of the main exporters of palm oil, rubber, and cocoa products. Furthermore, other countries in ASEAN, such as Vietnam are also involved in the global food supply chain by becoming one of the main exporters of rice and coffee commodities. Even though ASEAN member countries are important players in the global food supply chain, several issues deserve attention, including the loss of 20-30% of harvest during the transportation process, demands from developed countries to ensure product quality and standards, low levels of control, government on logistics systems, and infrastructure in the region (Noomhorm & Ahmad, 2008).

Meanwhile, food trade within the ASEAN region itself has begun to increase in the past decade after ASEAN countries sought more trading partners outside the region. Based on FAO calculations, it appears that in general ASEAN countries set trade tariff barriers in the food sector within the ASEAN region much lower than trade

tariff barriers for other countries outside the ASEAN region (Bouët et al., 2022). Even though food trade in the ASEAN region has not yet been fully liberalised, this fact shows that countries in the ASEAN region are committed to opening their food product markets to fellow ASEAN members. Countries such as Myanmar, Brunei Darussalam, Singapore, and Thailand have relatively low levels of tariff barriers for food products from other ASEAN countries.

Looking at the general condition of the food supply chain in the ASEAN region, we will focus on three main things, namely cooperation, technology, and standards (Modisa & Jaikaew, 2022). These three things are important factors that influence the general condition of the food supply chain in the ASEAN region. The cooperation factor will look at how the actors who play a role in the ASEAN region collaborate with other actors to create a food supply chain in the region. Meanwhile, the technological factor looks at how trends in the use of technology affect the food supply chain system in the region. Lastly, the standard factor looks at how international standards are something that ASEAN member countries need to achieve to participate in the food supply chain.

Collaboration in the food supply chain is created and continues to transform, either in a supply chain for a product or in a supply chain with other products. When compared to a single supply chain, developing partnerships between business people will make it easier for business people to develop their products. On the other hand, consumers will also be helped by lower product prices and product diversification on the market. An example of cooperation in the context of the food supply chain occurs in Indonesian-produced cocoa commodities where initially Indonesian-produced cocoa was marketed overseas to meet the needs of multinational companies (Syahrudin & Kalchschmidt, 2012). The situation is starting to change with downstream practices occurring in Indonesia, which have given rise to various local industries that aim to provide added value from cocoa products (Neilson et al., 2020).

Technology and infrastructure play an important role in influencing the food supply chain in various countries. Tools such as Electronic Resources Planning (ERP) have been widely used in various countries to control and update the condition of supplies owned by entrepreneurs in the food sector. Apart from ERP, Radio Frequency Identification (RFID) technology is

also widely used in the food supply chain process. The implementation of RFID technology makes the food supply chain process faster and more accurate from upstream to downstream. Apart from helping the shipping process, the existence of RFID also helps users find out data related to the commodity, such as the expiration date of the product. One of the countries in the ASEAN region that is a pioneer in implementing RFID in the food supply chain is Thailand (Noomhorm & Ahmad, 2008). Furthermore, new tools such as artificial intelligence, robotic systems and blockchains have also begun to be seen as solutions for developing food supply chains. The use of new technology has an impact on increasing access to information and markets, simplifying supply chains, and reducing operational costs (Dutta et al., 2020).

Factors related to standards are one of the things that must be met by entrepreneurs to enter the global food supply chain. The main problem related to food standards lies in the food safety factor, based on data from the World Health Organization (WHO), disease originating from food has become a major problem in the Southeast Asia region, much higher than in other regions (World Health Organization, 2015). To overcome these problems, several ASEAN member countries have adopted various models and strategies that can eliminate problems related to diseases originating from food, such as Good Agriculture Practices, Good Manufacturing Practices, and Good Hygiene Practices. Unfortunately, not all ASEAN member countries have sufficient resources to implement this model and strategy. This condition is complicated by the fact that the structure of the food industry in Southeast Asia is very fragmented, with many large-scale business actors, such as multinational companies and street vendors. Recognising these problems, ASEAN member countries are working together to create related policies and frameworks. ASEAN member countries agreed to create food safety governance by implementing the ASEAN Food Safety Policy and the ASEAN Food Safety Regulatory Framework. The existence of these governance instruments shows the commitment of ASEAN member countries to regulate food safety issues and further strengthen the food supply chain in the region (Lin, 2019).

ASEAN Cooperation in the Food Sector

The issue of food safety is an issue that always accompanies development dynamics in various countries. This is important because there

are several problems such as unstable food prices, decreasing agricultural production land, and climate change which is considered to cause more complex problems, such as the global food crisis. Responding to this problem, ASEAN initiated cooperation at the regional level to face challenges in the agricultural and food sectors. The different characteristics of ASEAN member countries in the agricultural and food sectors are the foundation for ASEAN in formulating forms of cooperation in the food sector. Coordination and minimising differences in food safety policies between member countries is important in creating food security at the regional level.

Different characteristics can be seen from the diverse production capacities of ASEAN member countries as well as different food insecurity issues between countries. Therefore, policy harmonisation is the goal of implementing cooperation in the food sector. The cooperation carried out can ultimately form a social safety net to address the negative impacts of free trade (Hermanto, 2015). In ASEAN itself, the main ASEAN bodies that are active in regulating the harmonisation and convergence of food safety and quality standards are under the leadership of the ASEAN Economic Minister. These bodies are the ASEAN Consultative Committee on Standards and Quality (ACCSQ) and the ACCSQ Prepared Foodstuff Products Working Group (ACCSQFPWG) (Foodbiz Asia, 2018).

Cooperation and harmonisation of policies within ASEAN reflect a form of shared commitment among ASEAN members in creating the availability and sustainability of the food sector in the region. Judging from the journey of ASEAN cooperation, in 1997 ASEAN member countries agreed to achieve a vision called ASEAN 2020. Regarding food security, one of the provisions in ASEAN Vision 2020 states that ASEAN will strengthen their cooperation to increase food security and international competitiveness in the food, agriculture and forestry sectors. In addition, this vision also aims to make ASEAN a major producer of these products and promote the forestry sector as a model in forest management, conservation and sustainable development. Furthermore, at the 21st ASEAN Summit held in Phnom Penh, Cambodia, in 2012, ASEAN leaders stated that food security remained a major challenge for ASEAN and the world as a whole amidst a situation of high commodity prices and economic uncertainty (Purwanti, 2022).

One of the agreements that ASEAN has

reached in the food sector can be seen in the ASEAN Strategic Plan in the Food, Agriculture, and Forestry (FAF) sector. Through this strategic plan, ASEAN identified priority areas for cooperation in responding to social, economic, and demographic changes, as well as climate change issues that put pressure on resources, as well as regional and global integration. Some of the cooperation priorities carried out include: 1) increasing the quantity and quality of production by implementing sustainable green technology; 2) increasing market access, trade facilitation and economic integration; 3) equitable distribution of food to create food security; 4) food security that can be maintained amid climate change and natural disasters; 5) assisting small producers and Small and Medium Enterprises (SMEs) to increase productivity, product quality and technology in meeting market standards at the global level; 6) strengthening ASEAN cooperation in responding to international issues that can impact the food, agriculture and forestry sectors; and 7) more sustainable forest management (ASEAN, 2015). Support for small producers in the food, agriculture and forestry sectors as well as cooperatives and Micro, Small and Medium Enterprises (MSMEs) was agreed upon within the ASEAN framework in 2021. Strengthening the food, agriculture and forestry sectors is aimed at strengthening the AEC (Purwanti, 2022). From this agreement, it can be seen that the sustainability of the food sector and assistance to all parties involved in the food supply chain, such as small producers and MSMEs, are important keys to creating sustainable development in the food sector.

On the other hand, ASEAN is also collaborating with the ASEAN+3 scheme. Some forms of cooperation are: 1) crafting Food Security Blueprint: ASEAN Integrated Food Security (AIFS) Framework and the Strategic Plan of Action on Food Security (The SPA-FS); 2) ASEAN Plus Three Emergency Rice Reserve (APTERR), which is a collaboration aimed at creating an emergency food reserve mechanism; and 3) cooperation related to the creation of capacity building and a food safety information system or what is known as the ASEAN Food Security Information System (AFSIS). The basic objectives of several collaborations carried out are eradicating malnutrition, alleviating poverty, and establishing rice reserves at the regional level. Apart from that, it is hoped that this collaboration will ultimately create food security in the East Asia and South-east Asia regions (Yudhatama et al., 2021).

As illustrated above, cooperation in the

food sector is aimed at addressing issues of food access and food insecurity in every condition. For example, the emergence of the COVID-19 pandemic has had an impact on the food sector at the regional level. The spike in food prices occurred as a result of high demand but was not accompanied by adequate food availability. Social restriction policies have an impact on economic turmoil in society. In fact, in Southeast Asia, there was a decline in agricultural production of 3.11%. Responding to this condition, ASEAN+3 cooperation through APTERR took several steps, such as rice assistance to several APTERR member countries. In this case, Japan provided 300 metric tons (MT) of rice assistance to Cambodia which was experiencing a food security crisis (Napitupulu, 2021).

In addition to cooperation at the ASEAN+3 level, ASEAN is also collaborating with China to strengthen food security. The main basis of this cooperation is that food safety is a human right. The multidimensional crisis due to COVID-19, climate change issues and conflict have triggered the emergence of food insecurity, so cooperation in the food sector is important. Both China and ASEAN member countries see that this cooperation will help ensure food security in the region, stabilize regional food markets, and is expected to become a model for global food security governance (Sajid, 2022).

ASEAN+3 cooperation and cooperation with ASEAN partner countries reflect that food problems in the region are not only resolved by ASEAN member countries but also require cooperation with ASEAN partner countries. This is important to do considering that food issues are not only a problem at the regional level but have become a global problem. The dynamics of ASEAN cooperation in the food sector will continue until the 2023 ASEAN Summit in Jakarta, Indonesia.

Cooperation and collaboration in overcoming the impact of the multidimensional crisis, especially related to the food sector, is the focus of The ASEAN Foreign Ministers' Retreat (AMM Retreat) which will be held in 2023 in Jakarta. The issue of food and its sustainability is the shared responsibility of all ASEAN members. The issue of food safety is a priority issue in Indonesia's chairmanship of ASEAN in 2023. The joint commitment of ASEAN member countries in addressing issues in the food sector was emphasised again in the 2023 AMM Retreat. Cooperation and collaboration are expected to increase food reserves and other commodities that can boost agricultural productivity, such as fertiliser. In addition,

ASEAN member countries also agreed to allocate emergency reserves, especially for plants that are not ASEAN's main commodities (The Jakarta Post, 2023).

Thus, it can be seen that problems in the food sector are very multidimensional problems that include economic, social, and political aspects. This research sees that the political aspect of this issue is related to ASEAN's institutional commitment to creating sustainable development in the food sector. Through commitment and implementation of the agreed commitments, it is hoped that food reserves can be increased and access to food can be increased. Several agreed forms of cooperation and commitment of course require concrete steps in their implementation.

To implement and realise the cooperation goals agreed upon at the ASEAN level, as well as the targets and programs that have been set, large-scale resource mobilisation is required. Therefore, to support the implementation of the ASEAN Strategic Plan in the food sector, funding costs are shared among ASEAN member countries. In addition, additional resources are obtained through mobilising support from development partners and other funding sources. Expanding support for the strategic plans that have been established is considered very important for achieving ASEAN's goals. This mobilisation of support is carried out by involving Civil Society Organizations (CSOs) such as academic institutions, Non-Governmental Organizations (NGOs), and the private sector (Biro Kerja Sama Luar Negeri Kementerian Pertanian, n.d.).

Analysis of Opportunities and Challenges for ASEAN Cooperation in the Food Sector

Southeast Asia's strategic position supported by a warm tropical climate can make Southeast Asia a region to be reckoned with internationally. Countries in Southeast Asia have very abundant natural resources, ranging from agricultural products, such as oil and natural gas to natural wealth, such as copper, tin, gold, wood, coffee, and rubber (Triwahyuni, 2011). The majority of Southeast Asians consume rice. Although other staple foods are still consumed, rice is a mainstay commodity for export to other countries. Due to the dependence of Southeast Asian people on rice, food security, especially rice, is a very important

issue that needs to be discussed within the framework of multilateral cooperation (Purwanti, 2022).

ASEAN as a regional organisation in Southeast Asia is making efforts to strengthen food security in the region through AMAF which was attended by ministers in the food sector in ten ASEAN member countries. The last AMAF was the 44th AMAF which was held online by Laos in 2022. Several important points underlined at the meeting were (1) the impact of the COVID-19 pandemic on the food, agriculture and forestry sectors and their recovery efforts; (2) the cooperation framework related to ASEAN cooperation in the food, agriculture and forestry sectors 2021-2022; (3) food security and nutritional fulfilment; (4) safety, handling and quality of food products; (5) sustainable development in the food, agriculture, and forestry sectors; and (6) involvement of other parties, such as dialogue partners and international organisations (ASEAN, 2022).

These six points are both opportunities and challenges for ASEAN member countries. ASEAN as a regional organisation in Southeast Asia is considered to have a sufficient bargaining position at the global level because of the commitment shown by its member countries in carrying out integration. Therefore, the cooperation carried out by ASEAN in the food sector has the opportunity to be successful, especially as ASEAN also partners with other countries, for example through the ASEAN+3 scheme with China, Japan, and the Republic of Korea and ASEAN+6 with China, Australia, India, Japan, South Korea, and New Zealand (Shimizu, 2021).

As a region with a population of 650 million people and partners with several other surrounding countries, ASEAN has great opportunities for cooperation in the food security sector through food trade. In recent years, exports and imports of ASEAN member countries in the food sector have shown a positive trend. In total, the export value of agricultural and food products from ASEAN member countries experienced a significant increase, from USD 1.25 billion in 1995 to USD 99.6 billion in 2018. During the same period, the value of imports also increased from USD 14.9 billion to USD 79 billion. Both exports and imports are growing at a higher pace than the global average. In 1995, the share of global exports from ASEAN member countries was only 6%, but increased to 8.2% in 2018. Meanwhile, the share of imports increased from 4% to 6.5%. This increase was caused by increasing productivity in the agricultural sector and consumption levels in each ASEAN member country (Oizumi, 2020).

Apart from that, ASEAN can also increase cooperation in terms of research and development in the agricultural sector. Thailand, for example, is one of the countries in Southeast Asia with the best development of food, agriculture and biotechnology. Meanwhile, Singapore is superior in terms of research in these three fields. Other countries, such as Indonesia, Malaysia and Vietnam also have quite good research and technology development capacity in the fields of food, agriculture and biotechnology (Haddawy et al., 2016). By looking at the potential for research and development in the food, agricultural and biotechnology sectors in several ASEAN member countries, ASEAN can increase research and development cooperation to share knowledge and technology and increase agricultural efficiency and productivity in the region.

USAID (2013 in Purwanti, 2022) in its report shows that in general, the main challenges to food security in Southeast Asia are related to food access, distribution, and affordability. Food availability is no longer an obstacle because food protectionist policies in several countries in Southeast Asia to meet domestic needs encourage domestic production, even if it is not efficient enough, it is at least able to inhibit food imports, as is the case in Indonesia which limits rice imports and Thailand. which reduces sugar imports.

Food access is closely related to poverty. There are still many small farmers in rural areas who are net food buyers rather than suppliers, meaning they cannot produce enough food to feed their families. Therefore, fluctuations in food prices have a major impact on their livelihoods (Lin et al., 2022). For example, people in Eastern Indonesia do not have access to food because they have relatively low purchasing power (Hadi et al., 2020).

Meanwhile, food distribution is also vulnerable to disruption due to uncertain conditions, such as the COVID-19 pandemic. The large number of actors involved in the food production process also causes obstacles in the supply chain (Quaralia, 2022). Then, food affordability is also an issue in Southeast Asia due to the low purchasing power of countries in Southeast Asia. High food prices can reduce buyers' interest in buying them, especially in countries in Southeast Asia where the population is still dominated by poor people.

More specifically, there are several chal-

allenges in the dynamics of ASEAN cooperation in the food sector, such as the COVID-19 pandemic. According to Teng, et al. (2021), the food sector is one of the sectors most vulnerable to uncertain dynamics such as pandemics, even in normal situations because, during the COVID-19 pandemic, there were various obstacles, such as a lack of labour to produce food, lockdowns, and limited access and distribution of food. Moreover, the situation in each country can be different. For example, Singapore and Brunei Darussalam are very dependent on grain supplies imported from other countries, so during the COVID-19 pandemic, these two countries had difficulty getting access to grain from abroad. On the other hand, Indonesia and the Philippines can still supply their food supplies, so there is no need to rely on imports from other countries whose mechanisms become more difficult when a lockdown occurs. Geographical differences and policies related to the COVID-19 pandemic in each ASEAN member country determine whether a country can survive a crisis and become an obstacle in ASEAN cooperation in the context of post-pandemic recovery.

In addition, several countries in Southeast Asia still face serious challenges in achieving sufficient food security for their populations. According to Purwanti (2022), of the ten ASEAN member countries, only Singapore and Brunei Darussalam have the title of 'food secure'. In contrast, Cambodia, Laos, and Myanmar are ASEAN member countries that experience 'food insecurity'. Meanwhile, five other countries are in the middle. In terms of fulfilling nutrition, ASEAN member countries still see cases of malnutrition, especially in children. Based on the data obtained from ASEAN (2017), around 80% or around 5.4 million children experience malnutrition and 17.9 million children experience stunting.

Then, improving food safety, handling and quality is also a challenge for ASEAN member countries to improve their economies through import-export activities. Fajarwaty and Jukes (2022) found that cooperation between food safety institutions is still less than optimal, despite understanding the impact of dangerous food on health. Apart from that, sustainable development in the food, agriculture and forestry sectors is still very much needed in Southeast Asia. ASEAN member countries not only rely on their economies in the agricultural sector but also the industrial sector. The industrial sector produces dangerous carbon dioxide gas emissions, so to balance this, it is necessary to empower the agricultural sector which is expected to be able to preserve the environment

(Vo & Ngo, 2021). On the other hand, agricultural practices in Southeast Asia are still not completely sustainable because there is still a lot of waste and excessive use of pesticides. Therefore, the practice of sustainable agriculture still needs to be echoed in ASEAN member countries so that it can be implemented at the regional level.

It can be concluded that ASEAN has a big opportunity to increase cooperation in the food sector because of the various potentials it has. Moreover, regional forums such as AMAF are also regularly held and produce various agreements that can support food security at the regional level. However, ASEAN must also consider the conditions and needs of each member country because each member country has different challenges and needs, so the right approach is needed to overcome problems in each country. Apart from that, the characteristics of the food sector which is very vulnerable to disruption also need to be considered by ASEAN, in addition to the problem of food sustainability which has not been resolved because it is still hampered by access, distribution and affordability.

Conclusion

This article discusses cooperation between ASEAN members on food issues. Based on intra-ASEAN food trade trends, it appears that food trade between ASEAN members tends to increase. Realising the importance of this problem, ASEAN has begun to foster various collaborations and governance at the regional level to improve the food supply chain, both horizontally and vertically. Furthermore, cooperation in the field of food supply chains also involves countries outside ASEAN, for example through the ASEAN+3 mechanism.

Looking at existing trends and conditions, it appears that ASEAN has a great opportunity to develop a comprehensive food supply chain mechanism in the region. The majority of ASEAN countries are producers of raw materials and important commodities in the food industry value chain, so cooperation to increase the added value of these products is important. Apart from that, several ASEAN countries, such as Singapore, the Philippines and Indonesia, have various research and development centres in the food sector which are useful for adding value to agricultural products.

Several challenges could hinder the es-

establishment of a food supply chain in the region. These factors include infrastructure, the COVID-19 pandemic, and politics. Even though cooperation between ASEAN member countries is hampered by political factors, countries in the region are committed to advancing the creation of a food supply chain through AMAF.

Food security remains a significant concern for several Southeast Asian countries. Cambodia, Laos, and Myanmar, being ASEAN member countries, are still experiencing food insecurity. Even though ASEAN member countries have made progress in providing adequate nutrition, cases of malnutrition, especially in children, are still prevalent. At the domestic level, cooperation between food safety institutions is suboptimal despite the understanding of the detrimental impact of dangerous food on health. Additionally, agricultural practices in Southeast Asia are not wholly sustainable as there is still a considerable amount of food waste and excessive use of pesticides.

Suggestion

Given the promising prospects for ASEAN's food supply chain development, it's crucial to address challenges collectively. To overcome infrastructure gaps, member states could prioritize joint infrastructure projects. Additionally, fostering resilience against future pandemics through coordinated responses and stockpiling can enhance food security. Finally, continuous diplomatic efforts should be made to mitigate political barriers and strengthen cooperation within the ASEAN+3 framework for a robust regional food supply chain.

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