

Regional Cooperation on Rice Commodity to Achieve Food Security: Asean Case Study

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Abstract

Food security remains a major concern among ASEAN countries, with rice an important commodity. Rice production is vulnerable to climate change, which causes production declines and price spikes. ASEAN is committed to strategic cooperation to protect rice supplies and prevent food crises, as well as increasing production and stabilizing supply through collaborative initiatives. This study uses qualitative methods and descriptive analysis in literature studies to explore the implementation of ASEAN regional cooperation on rice commodities. Secondary data is used to understand the impact of rice commodities on food security in the ASEAN region. Through a descriptive analytical approach, this research aims to provide an accurate picture of the relationship between regional cooperation and rice commodity management in ASEAN. The results of this research indicate that ASEAN rice market integration is important to reduce price risks for farmers and improve food security. The establishment of a rice futures market can help manage risks and ensure stable prices. Regional cooperation and harmonization of rice standards are needed, as well as improved infrastructure and financial support for farmers.

Keywords: Food Security, Rice, ASEAN

Abstrak

Ketahanan pangan tetap menjadi perhatian utama di antara negara-negara ASEAN, dengan beras sebagai komoditas penting. Produksi beras rentan terhadap perubahan iklim, yang menyebabkan penurunan produksi dan lonjakan harga. ASEAN berkomitmen pada kerjasama strategis untuk melindungi pasokan beras dan mencegah krisis pangan, serta meningkatkan produksi dan menstabilkan pasokan melalui inisiatif kolaboratif. Studi ini menggunakan metode kualitatif dan analisis deskriptif dalam studi literatur untuk mengeksplorasi implementasi kerja sama regional ASEAN pada komoditas beras. Data sekunder digunakan untuk memahami dampak komoditas beras terhadap ketahanan pangan di kawasan ASEAN. Melalui pendekatan deskriptif analitis, penelitian ini bertujuan memberikan gambaran yang akurat tentang hubungan kerja sama regional dan manajemen komoditas beras di ASEAN. Hasil penelitian ini menunjukkan bahwa integrasi pasar beras ASEAN penting untuk mengurangi risiko harga bagi petani dan meningkatkan keamanan pangan. Pembentukan pasar berjangka beras dapat membantu mengelola risiko dan memastikan harga yang stabil. Kerjasama regional dan harmonisasi

standar beras diperlukan, serta peningkatan infrastruktur dan dukungan finansial bagi petani.

Kata kunci: Ketahanan Pangan, beras, ASEAN

1. INTRODUCTION

Food security is an issue that continues to be discussed by ASEAN countries. Food is the most important basic need that must be fulfilled by every individual (Prasetio, 2021). Food has a very valuable meaning and role in the life of a nation. A country's food availability must be stabilized and maintained. Food security is a condition in which the country provides sufficient food needs (Qoriah, 2021). For Southeast Asian countries, food is synonymous with rice as the main staple food consumed. The rice commodity also has a major influence on the economic sector in terms of increasing people's income (Jiuhardi, 2023). In addition, the availability and stability of rice prices is one of the keys to achieving the economic stability of a country.

However, the production level of rice commodities is always affected by climate/weather. Especially for agrarian countries that experience climate/weather crises that always experience extreme changes. The climate crisis that occurs in a country will actually greatly impact the agricultural sector, especially rice commodities (Suarjana, 2023). In recent months, the climate crisis experienced by several ASEAN countries has led to reduced production of all major rice producers. In addition, the United States Department of Agriculture (USDA) predicts that global rice supplies will decline to a low of 170.2 million tons by the end of 2023 to 2024 due to increased demand in recent years and the continuous crop failures experienced by farmers. This has been a major factor in the soaring rice prices that have plagued most of the world's foodstuffs and had a significant impact on inflation and hunger (Putri, 2023).



Figure 1. FAO Food Price Index

The picture explains that the FAO (Food and Agriculture Organization) food price index fell to the level of 124.3 points in May 2023. Compared to April recorded at 127.7 points, this figure decreased significantly, marking an increase in prices for rice commodities in almost all the world. To meet food needs, Southeast Asia is present as a region producing food commodities, especially rice. Rice itself is the staple food of most of the Southeast Asian population, making rice a commodity whose sustainability must be maintained (Mudji & Ramadhani, 2020). At the 23rd ASEAN Economic Community Council (AECC) all ASEAN countries agreed to establish strategic cooperation in the field of food security, especially in the commodity of rice. This collaboration was carried

out to secure the availability of rice supplies and prevent a food crisis in the ASEAN region. In addition, ASEAN countries are working together to become the largest rice producers in the world (Utami, 2023).

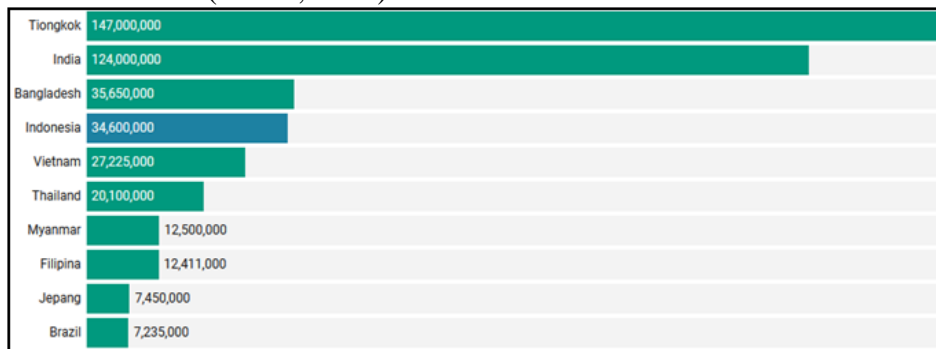


Figure 2. World's Largest Rice Producing Country

According to data from the United States Department of Agriculture (USDA), in 2023 Indonesia managed to become the number one rice producer in ASEAN countries by producing 34.6 million tons of rice. Indonesia's rice production is estimated to come mostly from the cities of West Java (17%), East Java (17%), Central Java (14%), South Sulawesi (6%), and North Sumatra (5%). Below Indonesia are other ASEAN countries such as Vietnam with an estimated rice production of 27.22 million tons. This is followed by Thailand with 20.1 million tons, Myanmar with 12.5 million tons and the Philippines with 12.41 million tons. This condition causes ASEAN countries to assume the importance of maintaining the stability of food supply in rice commodities (Kusnandar, 2023).

Research conducted by Quaralia (2022) shows that the agricultural sector is a key basis for food security and sustainable development in the ASEAN region. ASEAN agriculture is responsible for a wide range of food commodities in the global supply chain, and is one of the world's two to three largest producers of rice, vegetable oil, shrimp, cassava and coconut. The research also states that ASEAN cooperation is a type of regime in which countries collaborate so that food security and food welfare in the ASEAN region can be achieved through international forums and organizations. Therefore, ASEAN cooperation is needed to achieve food security and welfare in the ASEAN region. Rahmawati & Mahadri's research (2024) shows that ASEAN is a forum for Southeast Asian countries to discuss food security issues. Food security is an important component of ASEAN cooperation in the field of food and agriculture. The majority of ASEAN countries consume rice as a staple food.

With the importance of maintaining food security in rice commodities, ASEAN countries always strive to maintain stability and even increase the supply of rice commodities. Various collaborations have been carried out with ASEAN member countries in an effort to maintain food security. Cooperation is carried out solely to overcome problems that can destabilize rice commodities in each country. In addition, each country must be able to accommodate in a balanced manner related to the supply and demand aspects in order to realize strong food security to face all threats, so regional cooperation between ASEAN member countries is the right step to take.

Therefore, this research will review regional cooperation on rice commodities to realize food security in ASEAN countries. Through various sources of literature and data analysis, the author will observe and analyze various forms of regional cooperation carried out by ASEAN countries in creating food security, especially in rice commodities.

This research aims to provide an overview and present various relationships when ASEAN countries seek to implement regional cooperation in realizing various strategic steps to maintain food security in rice commodities. This research can contribute theoretically and practically in realizing food security in rice commodities carried out through regional cooperation of ASEAN countries.

2. METHOD

This article uses the Library Study research type. (Pitoria, 2022) states that in library research, data collection is carried out by examining and studying various literature or reading materials such as books, journals, and so on. And used as a reference based on the subject matter under study. In the data analysis technique in the literature study approach, the author uses several strategies to process the data found from the literature. One of them is to conduct qualitative analysis of the information collected. Qualitative analysis allows the author to gain a deep understanding of the issue under study by exploring the meaning, patterns, and context of the data found. For example, in the context of this research, the author can use qualitative analysis to evaluate the suitability of the implementation of ASEAN regional cooperation on rice commodities with the needs and challenges faced by member countries.

In addition, the descriptive analysis approach is also an important technique in processing literature study data. Descriptive analysis allows the author to organize and describe the data collected in the form of a comprehensive narrative or description. By using descriptive analysis, the author is able to systematically present information on important aspects of the implementation of ASEAN regional cooperation on rice commodities, such as the policies implemented, their impact on food security, and the factors that influence their implementation. By combining qualitative methods and descriptive analysis, the author was able to gain a comprehensive understanding of the topic under study and answer the research objectives in depth. This made it possible to produce valuable findings and make a significant contribution to the development of knowledge in the field.

3. RESULTS AND DISCUSSION

The high demand for rice commodities in the international market has led to the increasing dependence of the international rice market on the rice industry of ASEAN member countries. Simply put, rice-importing countries may have to import rice to deal with domestic problems, as long as international rice prices always experience uncertain changes in response to the policies of other member countries that make imports less effective. Similarly, rice-exporting countries may have to import rice to deal with domestic problems due to the impact of perceived producers preferring to export rice to other countries, resulting in several problems such as price increases and scarcity of rice commodities. Moreover, the climate change crisis has caused a real impact on every farmer in ASEAN countries. Asean member nations have engaged in cooperative trading of commodities, including rice, cocoa, wheat, and sugar, in the commodity market. ASEAN member nations accept a prearranged price through a futures or legal agreement to initiate market integration in rice commodities before trading with the importing country.

The unification of rice markets in ASEAN might potentially help farmers reduce the danger of selling their produce at a loss. Farmers may need to spend capital to create a certain commodity, but they also face the possibility of receiving a poor price for the

production costs in the next harvest. At times, farmers must capitalize on the price at the time of harvest, particularly if there is a risk of their crops deteriorating over time. Farmers may mitigate risk by selling items at a predetermined price on the same day using a futures agreement that guarantees the current or previously agreed-upon price. ASEAN nations have decided to enhance the well-being of their farmers, ensuring the preservation of food security in rice commodities, regardless of the circumstances.

Agricultural commodity markets The Chicago Mercantile Exchange (CME) in the United States has the title of being the biggest in the world. In the Asian area, notable commodity exchanges include the Thailand Agricultural Futures Exchange (AFET), the Japan Tokyo Commodity Exchange (TOCOM), the China Zhengzhou Commodity Exchange (ZCE), and the Singapore Commodity Exchange (SICOM). TOCOM and SICOM marketplaces do not trade rice. CME operates the rice commodities market via the Chicago Board of Trade, which is a component of the CMO Group. Experts consider the market effective in promoting the future of rice. Ewing outlines the crucial elements for achieving success, such as unrestricted futures markets, minimal government price restrictions, a conducive regulatory framework, and clearinghouses.

Thailand's region has AFET, the only agricultural futures market in the area. AFET, established in 2001, specializes in trading futures contracts for tapioca, rubber, and rice commodities with funding from the Thai government. AFET categorizes market participants into brokers and sellers. AFET allows up to 20 brokers to participate, while also encouraging new sellers to join. ZCE offers many varieties of rice in China, including early rice, Japonica rice, and late Indica rice. China established ZCE as its first rice futures market, which has been operational since 1993.

Past evaluations of rice market policies in Indonesia, together with comparable assessments in ASEAN nations, indicate advancements in the integration of the controversial rice market. Rice is considered a commodity of high significance by all ASEAN countries. Countries in the area have been compelled to adopt policies favoring local rice production due to certain measures, which may be seen as protectionist, resulting in increased pricing, particularly in Indonesia and the Philippines. The need for all member nations to include the ASEAN Economic Community (AEC), the ASEAN Integrated Food Security Framework (AIFS), and strategic planning for ASEAN cooperation in food, agriculture, and forestry is leading to the development of new policies. Internal rules must comply with regional regulations, which include provisions that impact and safeguard the viability of the local rice sector. The AIFS strategic planning framework is created by policymakers. The OECD has found empirical evidence indicating rice market integration, since rice price levels often align, indicating the presence of rice market integration. OECD observations confirm that pricing fluctuations across the ASEAN area exhibit similarities, but with delays in adjustments. Market integration may be justified; however, internal regulations in each country might lead to price disparities across nations, diminishing the efficacy of rice market integration. It is said that completely integrating into the ASEAN rice market might eliminate price discrepancies and decrease malnutrition among ASEAN households by up to 5%, as revealed by certain research (OECD, 2018).

Establishing a rice futures market might enhance farmers' understanding of price and risk management since ASEAN member nations, including Indonesia, are not now prepared to advocate for rice trade liberalization. This scenario might enhance the sustainability of commerce between ASEAN countries, leading to cheaper rice prices for citizens in all rice-importing nations in Southeast Asia, thereby alleviating concerns about

price fluctuations. State-owned firms responsible for managing imported rice have also engaged in the futures market to improve the management of rice supplies. They use accurate domestic supply data to assess the capability of ASEAN member nations to do the same.

Research on creating a rice futures market inside ASEAN has varying viewpoints on its influence on intra-ASEAN rice trade. Convening of a group of experts to deliberate on the Asian rice futures market. Creating a market for various rice varieties is challenging due to the different market treatments required, the politicized nature of rice, and the potential for price increases in the futures market. (Patunru & Ilman, 2019) argue that a spot market with extensive, competitive and clear market information and with minimal government intervention will influence the success of futures contracts. Not only that, the success of the rice futures market depends not only on spot market conditions but also on the following factors:

- a. High private sector participation in international rice marketing
- b. Enhanced regional cooperation in rice trade policy, as well as harmonization of rice quality and price standards
- c. Improved rice industry infrastructure, particularly storage accommodation and funding for market players
- d. The establishment of an independent agency can be responsible for rice market prices and production data
- e. Full legal framework for monitoring futures monitoring
- f. Educational support for aspiring market participants and government trading staff
- g. Establishment of a regional forum where futures market stakeholders can discuss policies conducive to developing futures contracts
- h. Increased price transparency in the spot market
- i. Cash price index for ASEAN region

Establishing a rice futures market requires systematic adjustments across different characteristics of the rice commodity, as shown by the points on these criteria. ASEAN member nations are now facing challenges, including the involvement of the private sector in the international rice sales system. Rice growers in Southeast Asia and Indonesia have little involvement in international markets. Indonesian rice farmers often own small plots of land, less than 0.5 hectares per person, which is why they do not engage in the rice futures market. Rice futures exchanges like the CME have little involvement from small agricultural enterprises, despite the USDA's extensive attempts to educate them about this financial tool. Large agricultural firms, those with over 800 hectares of land, are the ones using the futures market. Small agricultural businesses are more inclined to use futures contracts instead of forward contracts, as recommended by the commercial sector, namely rice millers. Rice growers often use futures markets as a form of risk management.

Businessmen, millers, sellers, and merchants are more likely to engage in overseas rice markets compared to rice growers, mostly because of the involvement of nations with monopoly rights or other favored governmental positions. Consequently, the lack of involvement from the business sector may hinder the effective development of the rice futures market. It is challenging to coordinate the involvement of entrepreneurs, rice millers, and retailers in the international market due to the lack of reliable data from each country. However, they may still engage and enhance the liquidity of the futures market.

Regional collaboration in the ASEAN region has been defined in various ways. The formation of the APTERR (ASEAN Plus Three Emergency Rice Reserve) was driven

by the hope of establishing a physical rice stockpile that could stop rice for ASEAN member states when local production and foreign markets were unable to meet demand (Arianto A. Patunru, 2021). Under the reserve agreement, ASEAN member states had previously accepted a multilateral trade agreement (AFTA) that lowered trade constraints for commodities (although those constraints still exist in various forms in most countries). Despite the fact that these platforms always face challenges to implement, APTERR has adopted a similar system for futures markets (Tier 1 Scheme), but it is rarely used. APTERR is currently only being used to help secure rice warehouses in areas affected by natural disasters.

Southeast Asian nations are now standardizing rice quality by adopting unique standards set by the Food and Agriculture Organisation (FAO), the International Organisation for Standardisation (ISO), and other international organizations. Regional norms are crucial in easing transactions and promoting the development of rice futures markets. The East African Community (EAC) has enforced regional standardization to align rice quality as well as product and service specifications. Indonesia clearly needs enhanced infrastructure in the rice industry, namely in storage and financing initiatives. There is a lack of study on the quality of BULOG preservation in Indonesia and other Asian nations, despite infrastructure being a crucial component influencing rice quality and sustainability. In addition, the current major on-farm storage conditions in Asia are open, such as rice sacks or barns, making them vulnerable to pests. Commercial storage conditions are comparable since items are vulnerable to air exposure and pests. Box 1 examines a proven solution to this issue in Ethiopia by establishing ECX (Swastika, 2012).

Some financial programs and subsidy programs have already been implemented in Indonesia, including Kartu Tani (Farmer Card) and KUR (Kredit Dagang Rakyat). Similar programs can also be found in other Southeast Asian countries in seasonal credit and subsidies to farmers. But the low level of financial literacy in Indonesia (29.7%, according to OJK, 2018) as well as in Southeast Asia (34%, S&P Global Finlit Survey, 2014) makes it attractive to many. It is almost impossible for related parties to enter the financial market.

Table 1. Government Intervention in Rice Trade in the Asian Region in Relation to Food Security

Country	Commodities	Government Policy Intervention
Singapore	Rice	Rice imports are done under 2 categories, namely stockpile and ordinary licenses.
Brunei Darussalam	Rice	There is no constraint on importing rice.
Thailand	Rice, cassava, durian, longan	Exports require registration from the Ministry of Agriculture.
Malaysia	Rice	Providing input subsidies, tariff reductions, and supporting minimum prices.
Indonesia	Rice	Market prices are intervened through Bulog by setting a floor value to protect farmers and a domestic price for rice to protect consumers.
Philippines	Rice	Realize and distribute through buffer stock systems and price support.

Kamboja	Rice	Organize rice seed banks and provide rice seeds, distribute diesel fuel, and purchase farmers' rice.
Vietnam	Rice	Rice and fertilizer export rations are controlled.
Myanmar	Rice	Achieving surplus rice production.
Laos	Rice	No food security strategy described.

The acceptance of individual standards by the Food and Agriculture Organisation (FAO), the International Organisation for Standardisation (ISO), and other international organizations. Regional norms are crucial for enabling transactions and promoting the development of rice futures markets. The East African Community (EAC) has enforced regional standardization to align rice quality with product and service specifications. Indonesia clearly needs enhanced infrastructure in the rice industry, namely in storage and financing initiatives. There is a lack of study on the quality of BULOG preservation in Indonesia and other Asian nations, despite infrastructure being a crucial aspect that impacts rice quality and sustainability. Moreover, the current major on-farm storage conditions in Asia are open, such as rice sacks or barns, making them vulnerable to pests. Items in commercial storage conditions are exposed to air and vermin. Box 1 examines a proven solution to this issue in Ethiopia by establishing ECX.

Domestic rice prices tend to discourage FDI in agriculture, fisheries, and food processing, where local ownership reaches 30%. In Thailand, export products must be registered with the Ministry of Agriculture. In contrast to Malaysia, the government protects the people by subsidizing raw materials, reducing import duties, and supporting the least price. The government guarantees the least value of rice and subsidizes the price of rice for farmers. With the least price guarantee system, Bernas buys rice from farmers at a value not exceeding the minimum price. In addition, through the Rice Value Subsidy Program, the government provides farmers with a fixed fulfillment of the amount of rice sold to the government. Similarly, the Indonesian government intervenes in the market value through Bulog by setting a floor price to protect farmers and a domestic rice value equal to protect users. Bulog has the exclusive right to import rice.

According to (Saragih, 2017), known as a country with a large agricultural industry, Indonesia does not yet have clear policy goals regarding food self-sufficiency so that the diet in Indonesia is mostly imported products. One of the joint ways that ASEAN countries do is by forming a rice reserve (ASEAN Plus Three Emergency Rice Reserve or APTERR) so that rice reserves remain safe and do not cause unrest in the community. APTERR as a regional framework to tackle the problem of food insecurity after disasters to ensure food security in emergency situations due to natural disasters, through the provision of food assistance programs and improved nutrition for the poor.

Therefore, after analyzing that regional cooperation in the form of the establishment of a rice futures market carried out by ASEAN member countries is able to provide a real reaction to the formation of food security in this rice commodity. aims to increase farmers' knowledge about price and risk management so that the cooperation built by each ASEAN member can be implemented through an agreement to strengthen the availability of rice as a major commodity in Southeast Asia.

4. CONCLUSION

Food security, particularly in the context of rice production and supply, is a major concern for ASEAN countries due to its importance in meeting people's food needs. In recent years, the climate crisis and other factors have caused instability in rice production,

impacting the availability and price of rice globally. ASEAN countries have responded to this challenge by cooperating in maintaining and improving rice supply through various initiatives, including establishing regional cooperation and integrating rice markets. Literature shows that regional cooperation, as embodied in the ASEAN Economic Community (AEC) and the ASEAN Integrated Food Security Framework (AIFS), plays a key role in addressing food security challenges. In addition, the establishment of a common rice futures market in the ASEAN region has also been proposed as one of the solutions to improve risk management and stabilize rice prices.

This research recommends that ASEAN countries need to increase regional cooperation to establish a rice futures market, which will help manage price risks and ensure food security. The adoption of uniform rice quality standards throughout ASEAN will facilitate futures market transactions and development. In addition, improvements are needed in the rice industry infrastructure, such as storage and financing, as well as a regulatory framework that supports the futures market. Education for farmers and market players about risk and price management, to encourage active private sector participation in international rice trade. The establishment of an independent body responsible for managing production data and market prices as well as increasing price transparency in the spot market are also very important. With these steps, it is hoped that price stabilization, increased farmer welfare and food security in the ASEAN region can be achieved.

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