The Impact of ASEAN+6 Sustainable Policies on Indonesia's Cocoa Butter Trade

Daffa Ibra Danendra[1*], *Nia Kurniawati* Hidayat[1], and *Dea* Amanda[2]

[1]Department of Resources and Environmental Economics, Faculty of Economic and Management, IPB University, Jl. Agatis Dramaga Campus IPB, Bogor, West Java, 16680, Indonesia
[2]Agribusiness Management Study Program, School of Vocational Studies, IPB University, Jl. Raya Pajajaran, Bogor, West Java, 16128, Indonesia

Abstract. The expansion of Free Trade Agreements (FTAs) within the ASEAN+6 region has reshaped economic dynamics, particularly in the trade of strategic commodities such as cocoa. As a vital tropical agricultural product, cocoa especially cocoa butter holds the largest market share potential in ASEAN+6 trade. These FTAs not only drive trade creation and diversion but also emphasize sustainability in resource management and environmental responsibility. This research explores the scope of ASEAN+6 agreements, trade policies, and their effects within the region using a descriptive qualitative approach and panel data regression with the Poisson Pseudo Maximum Likelihood (PPML) estimator. Findings reveal six active FTAs—AFTA, ACFTA, AIFTA, AKFTA, AANZFTA, and AJCEP regulating both tariff and non-tariff measures with sustainability considerations in political, economic, and environmental spheres. Empirical analysis highlights trade creation effects on Indonesia's cocoa butter exports and imports, yet policy harmonization remains crucial to maximizing trade benefits and addressing sustainability challenges. Strengthening economic integration through a comprehensive regional review is imperative to align policies and enhance trade contributions to sustainable economic growth. By addressing gaps in literature and policy, this study underscores the necessity of integrated trade strategies to fortify ASEAN+6 economic resilience.

1 Introduction

The role of international trade in the form of export and import activities is crucial and provides positive impacts on various national economies [1]. Furthermore, [2] in general, the presence of free trade agreements (FTAs) has become widespread since the mid-1990s. Various products traded under both FTA and non-FTA schemes have experienced fluctuations in value within Indonesia's two main commodity sectors those are non-oil and gas, also agriculture. The value of non-oil and gas exports has declined, while the agricultural sector alone recorded an increase of 5.32 percent during the first quarter of 2024. The World Trade Organization (WTO), a trade organization founded in 1995, highlighted that Asia,

* Corresponding author: daffaibradanendra@apps.ipb.ac.id

which consists of West Asia, the Middle East, and East Asia, holds the record for the most Regional Trade Agreements (RTAs) globally, with a total of 169 RTAs. [3] See Figure 1.

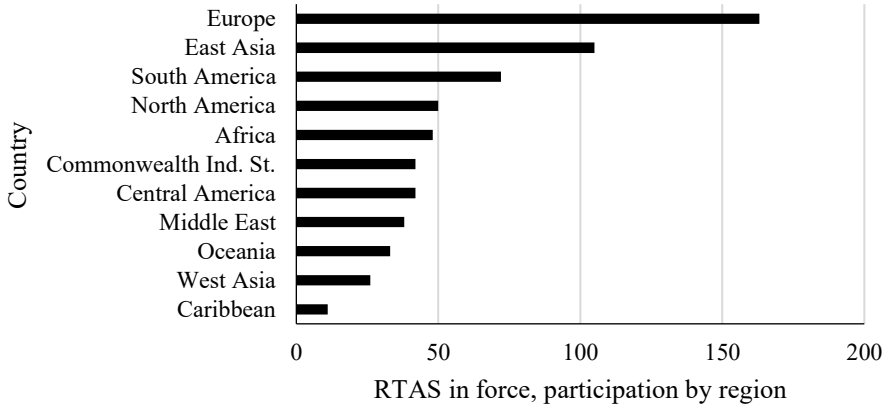


Fig 1. Number of RTAs by region in the world in 2024 [4]

The growth of free trade in Asia and its surrounding regions has been observed since the early 2000 [4]. The rise in the number of Regional Trade Agreements (RTAs) in Asia is closely linked to the region's role as a developing market hub, which serves as a reference point for economic growth in numerous countries. The potential of RTAs in each country strongly influences Free Trade Agreements (FTAs). This potential is collectively governed among member countries to sign agreements and implement minimal or no barriers, both tariff and non-tariff, between one another [5].

According to the fundamental theories of international trade, which include comparative and absolute advantage analyses, FTAs provide opportunities for partner countries to focus on developing products with comparative advantages over less competitive ones during the production process [5]. The United Nations Conference on Trade and Development [6] in its publication, states that the volume of international trade is generally dominated by goods rather than services. One key factor driving international trade is globalization, which fosters openness and interdependence among nations as a result of economic integration.

Indonesia's role within the Association of Southeast Asian Nations (ASEAN) requires prioritizing efforts to maintain regional strength in the global marketplace, especially amid the rapid pace of trade liberalization [7]. Externally, Indonesia, as part of ASEAN, is engaged in six ongoing FTAs with ASEAN and its partner countries those are ASEAN Free Trade Area (AFTA), ASEAN-China FTA (ACFTA), ASEAN-India FTA (AIFTA), ASEAN-Korea FTA (AKFTA), ASEAN-Australia-New Zealand FTA (AANZFTA), and ASEAN-Japan Comprehensive Economic Partnership (AJCEP). These FTAs have been renegotiated into a single comprehensive regional as known as the Regional Comprehensive Economic Partnership (RCEP), involving ASEAN's 10 member states and six strategic partner countries Australia, India, Japan, South Korea, New Zealand, and China [8].

The ASEAN+6 framework, which embodies economic collaboration and integration, enables the seamless movement of goods and other external elements among its member nations. Tariff barriers are maintained between zero and five percent, while non-tariff restrictions are absent for products categorized under the Sensitive List (SL) and General Exceptions List (GE). Meanwhile, goods and services from non-ASEAN+6 regions adhere to applicable tariffs.

Regarding the dominance of goods exports over services, Indonesia plays a significant role in exporting various commodities, particularly tropical agricultural products such as coffee, cocoa, and palm oil. This aligns with a publication by Indonesia Central Bureau of

Statistics which highlights Indonesia's leading plantation commodities for export, including palm oil, rubber, coconut, coffee, and cocoa, with varying export trends. Furthermore, cocoa's potential as a strategic national commodity aligns with Indonesia Government Regulation No. 26 of 2021, which promotes added value in agricultural exports.

Cocoa and its derivatives represent one of the strategic export commodities, particularly in countries with tropical climates. The broad classification of Indonesia's agricultural trade especially cocoa derivatives, is divided into two categories: export promotion products and import substitution products. The potential of the cocoa and derivatives industry can be utilized to capitalize on opportunities for exporting high-quality domestic products with added value. Furthermore, Indonesia's cocoa derivative products generally contribute to foreign exchange earnings and exhibit high competitiveness within the ASEAN region, despite the dominance of smallholder farmers in Indonesia's cocoa plantations.

Based on the goods classification system for trade, cocoa and other cocoa preparations are categorized under Harmonized System (HS) code 18, further detailed into several distinct four-digit HS codes. Each product within the commodity group holds a different market value, which depends on the added value generated during cocoa processing. Hence, cocoa is a product worthy of study regarding its impact on international trade, given its varied market share percentages (see Figure 2).

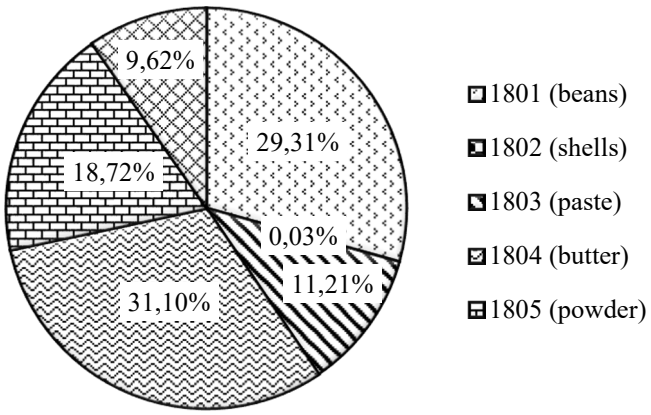


Fig 2. Market share of Indonesian cocoa products [9]

According to Figure 2, Indonesia's market share in cocoa commodities shows that cocoa butter dominates with the largest share of 31.10 percent. This is because cocoa butter, produced from further processing of cocoa beans, serves as a key component in beverages and a range of culinary products. As part of the downstream efforts for cocoa derivative products, cocoa butter is traded for its high-fat content, which is essential for several industries, including food, pharmaceuticals, and cosmetics. As one of the world's cocoa suppliers, Indonesia's cocoa exports maintain a substantial market share globally. The market potential for cocoa exports is bolstered by the relatively low domestic consumption of chocolate in Indonesia, resulting in a surplus. Within the ASEAN+6 region, the market share of cocoa butter products varies significantly, as detailed in Figure 3.

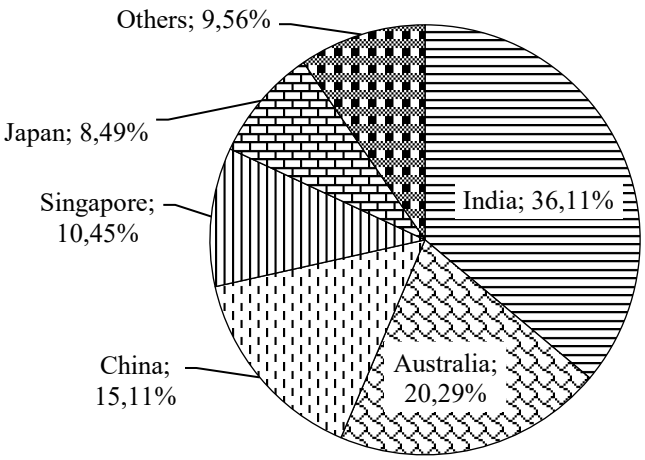


Fig 3. Market share of Indonesian cocoa butter products (HS 1804) in the ASEAN+6 region in 2022 [9]

The fluctuating export value of Indonesia's cocoa butter products is attributed to the uneven market share within the ASEAN+6 region. Generally, only countries with industries or industrial partners possessing advanced cocoa-processing technology contribute to this market. The largest market share for cocoa butter exports is India, accounting for 36.11 percent (see Figure 3). India's dominance in the market for cocoa butter and powder is driven by aggregate consumer demand for these products, which are used in traditional and religious foods and align with preferences for healthy ingredients. Figure 3 also illustrates that within the ASEAN+6 region, Indonesia has played a role in enhancing value-added processing beyond primary exports, supported by trade agreements.

The expansion of trade agreements, particularly for strategic and competitive commodities with significant market positions, has prompted numerous theoretical and empirical studies on trade agreements. This interest arises from the influence of free trade agreements on trade creation and trade diversion effects [10]. Furthermore, these concepts can result in the formation of trade among member nations, referred to as trade creation, or the redirection of trade away from non-member countries, which is known as trade diversion.

Existing studies on free trade agreements (FTAs) primarily focus on broad economic impacts, yet there remains a lack of specific analysis regarding the ASEAN+6 framework and its influence on Indonesia's cocoa butter trade. While research on trade creation and diversion is well-documented, limited attention has been given to how these effects shape the export competitiveness of cocoa butter, a high-value agricultural product with significant market potential. Furthermore, the interplay between tariff and non-tariff measures within ASEAN+6 and their role in determining trade flows for processed cocoa products remains underexplored. The existing body of literature also tends to overlook the sustainability dimensions embedded within regional trade agreements, particularly in relation to resource management and environmental responsibility. Addressing these gaps is crucial to understanding the structural challenges and opportunities Indonesia faces in optimizing its cocoa butter exports under the ASEAN+6 framework.

The creation of free trade areas (FTAs) significantly influences trade activities by implementing tariff and non-tariff measures as a result of trade intervention. Furthermore, with the existence of FTAs, the primary challenge for a region lies in the harmonization of trade integration and economic integration [28]. These two forms of integration are crucial to review as a means of anticipating potential adverse effects on member states involved in

trade agreements. Therefore, aims of this research is to examine the nature of trade agreements and trade policies within the ASEAN+6 region, as well as the trade effects, to understand the role of ASEAN+6 trade agreements in Indonesia's cocoa butter products as a form of economic integration. This analysis is essential because the role of sustainable trade policies is critical in ensuring long-term benefits. By integrating sustainability into trade agreements, the region can promote economic growth while preserving ecological systems and ensuring social equity, thus aligning with global efforts toward sustainable development.

2 Methods

This research utilizes time series data on trade flows for each country, which are then cross-referenced with time series data on the trade flows of other countries. The analysis covers a ten-year period from 2013 to 2022, with the countries categorized into two groups: ASEAN+6 trading partners and non-ASEAN+6 trading partners, as referenced before [8].

The countries included in ASEAN+6 are Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam, Australia, China, India, Japan, Korea, and New Zealand. Non-ASEAN+6 trading partners include the United States, Bangladesh, the Netherlands, Belgium, Brazil, the United Kingdom, Hong Kong, Iceland, Italy, Germany, Canada, Egypt, Mexico, Nigeria, Norway, Pakistan, France, Russia, Spain, Switzerland, Turkey, and the UAE. The data used in this research comprise each nation's gross domestic product (GDP), the measured distance between their respective capitals, exchange rates, landlocked status, the sustainability trade index, the starting year of each FTA agreement, and the total export and import values of cocoa butter (HS 1804) see Table 1.

Table 1. Types and sources of research data

Data	Symbol	Unit	Source	Exp.Sign
Trade value	T	US$	UN Comtrade	
GDP real	GDP	US$	World Development Indicators	+
Distance	DIST	Km	CEPII	-
Exchange Rate	ER	US$/LCU	World Development Indicators	+
Dummy landlocked	LANDL	*Dummy*	CEPII	-
Sustainability Trade Index	STI	*Dummy*	Hinrich Foundation	+
Dummy FTA	FTA_1, FTA_2, FTA_3	*Dummy*	Asian Regional Integration Center dan Indonesia Ministry of Trade	+

Exp. Sign: Expected sign.
Source: own elaboration

This study uses qualitative analysis to identify the form of agreement and quantitative for the impact of creation and trade diversion of ASEAN+6. Furthermore, the analysis method will be explained as follows.

2.1 Qualitative Data Analysis

The analysis of qualitative data in this study employs a descriptive approach. This method serves as a means of explanation, providing a detailed and comprehensive description of each variable individually. The descriptive method serves several purposes, including:
a. Collecting detailed and accurate information that reflects phenomena.
b. Identifying existing problems or conditions.

c. Making comparisons or evaluations.
d. Determining relevant stakeholders and guiding planning or decision-making for the future.

The qualitative descriptive analysis in this research reveals the various types of trade agreements within ASEAN+6, encompassing their historical establishment, preferential tariff rates, most-favoured nation (MFN) provisions, non-tariff policies, and other relevant aspects. Additionally, this analysis confirms the impact of ASEAN+6 trade agreements on Indonesia's cocoa butter products. Through this examination, a clearer understanding emerges of the outcomes and implications of the trade policies that have been agreed upon.

2.2 Panel Data Regression with PPML Approach and Trade Effects

To analyze the impact of ASEAN+6 implementation on Indonesia's cocoa butter products, the augmented gravity model is employed. The estimation model used in this research is the Poisson Pseudo Maximum Likelihood (PPML) method. This method is adopted based on the argument by Anderson and van Wincoop which states that traditional gravity models are not fully correctly specified as they fail to account for multilateral resistance terms. Also, PPML can solve the problem of zero trade flows. The following is the model developed in this study:

$$T_{ijt} = \exp\{\beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln DIST_{ij} + \beta_4 \ln ER_{ijt} + \beta_5 LANDL_j + \beta_6 STI_j + \beta_7 FTA\_1_{ijt} + \beta_8 FTA\_2_{ijt} + \beta_9 FTA\_3_{ijt} + \varepsilon_{ijt}\} \quad (1)$$

Where T_{ijt} represents trade value from country i (exporter) to country j (importer) at time (year) t; GDP_{it} is the real annual GDP of Indonesia at time (year) t, and GDP_{jt} was the real annual GDP of trading partners country at time (year) t; $DIST_{ij}$ represents the distance between country capitals of Indonesia (i) and trading country (j); ER_{ijt} represents the exchange rates from country i (exporter) to country j (importer) at time (year) t; Dummy $LANDL_j$ shown that the country (j) was landlocked status or not; Dummy STI_j represents the trading country is in the ranking of STI category; Dummy FTA_1_{ijt} has a value of 1 when both exporting countries (i) and importing countries (j) are in the ASEAN+6 trade agreement, 0 otherwise; Dummy FTA_2_{ijt} has value 1 when only the exporting country (i) (not the importing country) has a trade agreement with a country other than ASEAN+6, 0 otherwise; Dummy FTA_3_{ijt} has value 1 when only the importing country (j) (and not the exporting country) is a member of the FTA, 0 otherwise.

To analyze the impact of trade creation and trade diversion resulting from free trade agreements within the ASEAN+6 framework, dummy FTA variables are employed. These variables aim to assess the influence of agreements between Indonesia and ASEAN+6, as well as other trading partners. The method used to estimate the effects of trade creation and trade diversion follows the approach developed by Martínez-Zarzoso. The results of these dummy variables will provide various insights into each analyzed variable in this study.

Table 2. Classification of trade creation and trade diversion effect coefficients

Efects	Flows	Coefficients
Net Trade Creation	-	β_7FTA_1 > 0 dan β_9FTA_3 = 0
Trade Diversion	Export	β_7FTA_1 > 0 dan β_8FTA_2 < 0
Trade Diversion	Import	β_7FTA_1 > 0 dan β_9FTA_3 < 0
Trade Creation	Export	β_7FTA_1 > 0 dan β_8FTA_2 > 0
Trade Creation	Import	β_7FTA_1 > 0 dan β_9FTA_3 > 0

Source : modified Viner (2014) [10]

3 Results and discussion

3.1 Forms of Trade Agreements and Trade Policies in the ASEAN+6 Region

Trade agreements and trade policies in the ASEAN+6 Region play a crucial role in strengthening regional economic integration and as an effort to expand economic connectivity in the Asia-Pacific Region. ASEAN+6, which consists of FTA schemes that are running, including the ASEAN FTA (AFTA), ASEAN-China FTA (ACFTA), ASEAN-India FTA (AIFTA), ASEAN-Korea FTA (AKFTA), ASEAN Australia-New Zealand FTA (AANZFTA), and ASEAN-Japan Comprehensive Economic Partnership (AJCEP), has formulated various forms of trade agreements with various agreed criteria. This aims to encourage trade liberalization, reduce barriers, and strengthen cross-country economic performance. The fundamental goal of trade liberalization policies is to foster substantial economic expansion, particularly in various emerging economies. On a broader scale, the six existing FTAs involving ASEAN and its strategic partner nations emphasize strengthening economic cooperation and lowering trade barriers. These agreements contribute significantly to enhancing trade activities and promoting investment flows between ASEAN and its partner countries.

ASEAN+6 is a joint FTA group consisting of 10 ASEAN member countries with six strategic partner countries in the Asia-Pacific region. The six strategic partners are Australia, China, India, Japan, South Korea, and New Zealand. The ASEAN+6 FTA scheme is based on the formation of ongoing trade agreements. The ASEAN+6 region was formed as a strategic region that complements each other in an effort to mitigate political, economic, and energy conditions by International Energy Agency. The objectives of the ASEAN+6 region include increasing the GDP of member countries, expanding domestic demand in the region, increasing economic efficiency, and developing infrastructure to connect member countries. One of the things behind the existence of the ASEAN+6 region was when ASEAN leaders attended the East Asian Summit (EAS) in November 2004. The summit produced a proposal, one of which was the formation of a new forum proposed by the East Asia Vision Group but without a clear view of which countries were suitable to become members. The initial reference that pioneered the study of the East Asia Vision Group was the form of integration of the ASEAN+3 trade agreement with ASEAN-Japan-China-South Korea member countries. ASEAN+3 in its journey still uses many short-term implementation targets. This idea certainly requires a lot of negotiation and study because one of the reasons ASEAN+3 was formed was the response to the Asian financial crisis of 1997-1998. The financial crisis made several countries in Asia have the same sense of challenge.

Based on the formation of economic integration in the ASEAN+3 region, the EAS Summit was held twice again in December 2005 in Kuala Lumpur and in Cebu in January 2007 to follow up on the formation of a new forum for strategic trade partner regions. The EAS Summit was attended by 10 ASEAN member countries with six countries, namely China, Japan, Korea, India, Australia, and New Zealand (see Figure 4). Through the forum, Japan considers that the synergy in the forum is an appropriate trade and investment cooperation group so that its sustainability is known as ASEAN+6. The focus of the formation of the strategic area aims at general issues in the fields of economy, energy, and environment. The following are the areas of six ASEAN strategic partners.

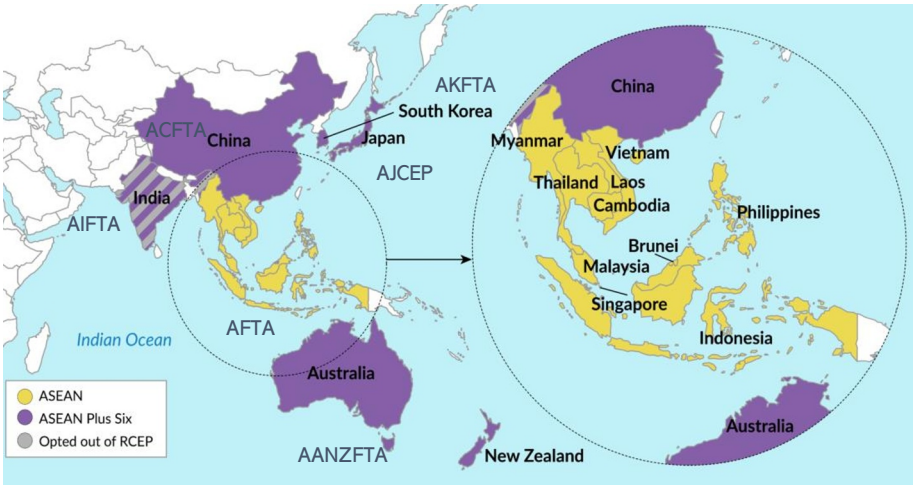


Fig 4. ASEAN+6 strategic trade partner area (GIS report 2024)

ASEAN+6 has demonstrated significant advantages, as an increase in the participating countries within the FTA, along with an expansion in the range of liberalization policies and regulatory discussions, leads to greater overall benefits for the agreement. Therefore, economic integration in the ASEAN+6 region is believed to have a positive effect, with the note that it needs to be deepened on related issues. Issues that can be deepened and highlighted as a form of policy internalization are related to the implementation of good agricultural practices (GAP), investment, labor migration, intellectual property rights, competitiveness policies, and dispute resolution through negotiation. Furthermore, the following is a table explaining the mapping of tariff and non-tariff policies for Indonesian cocoa butter trade in the ASEAN+6 region partially.

Table 3. Classification of tariff and non-tariff policies for Indonesian cocoa butter trade in the ASEAN+6 Region

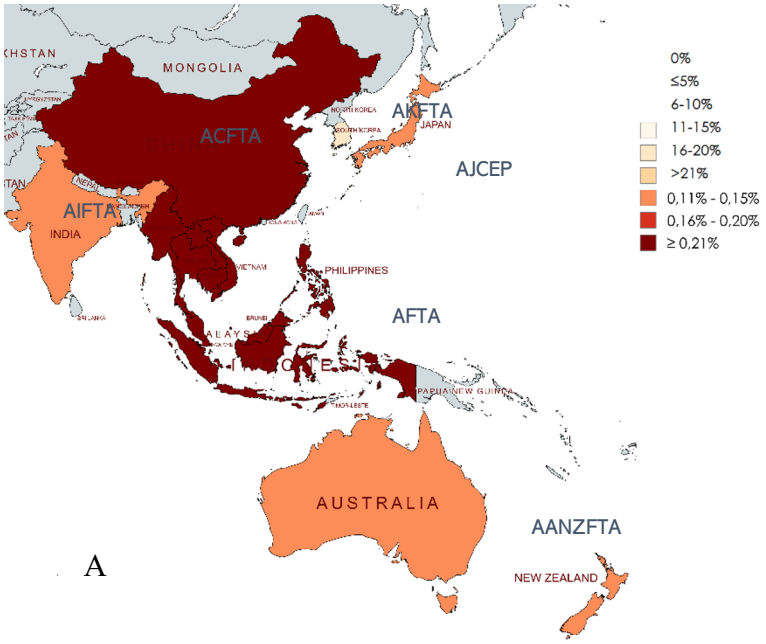
FTAs scheme	**Country**	***Sign and effect***	**Tariffs before FTA comes into effect (%)**		**Tariffs before FTA comes into effect (%)**		**Total NTMs *before force***	**Total NTMs *after force***
			Import duty	**Export duty**	**Import duty**	**Export duty**		
AFTA	Brunei Darussalam	1992	5 < X < 25	5 < X < 25	5	0	0	6
	Cambodia	1992			5	20	0	5
	Lao	1992			5	1	0	5
	Malaysia	1992			5	0	2	6
	Myanmar	1992			5	10	3	9
	Phillipines	1992			5	0	3	10
	Singapore	1992			5	0	0	5
	Thailand	1992			5	0	4	6
	Viet Nam	1992			5	0	0	1
AANZFTA	Australia	2010	15	0	10	0	1	7
ACFTA	China	2005	22	0	8	0	1	4

Table 3. Classification of tariff and non-tariff policies for Indonesian cocoa butter trade in the ASEAN+6 Region (*continue*)

FTAs scheme	Country	*Sign and effect*	Tariffs before FTA comes into effect (%)		Tariffs before FTA comes into effect (%)		Total NTMs *before force*	Total NTMs *after force*
			Import duty	Export duty	Import duty	Export duty		
AIFTA	India	2010	15	30	10	0	1	4
AJCEP	Japan	2008	15	0	10	0	0	4
AKFTA	South Korea	2007	5	5	0	0	0	7
AANZFTA	New Zealand	2010	15	0	10	0	7	7

Description:
X = Applied tariff rate

Based on Table 3, it shows that there is a diversity of tariff applications before and after each trade agreement in the ASEAN+6 region was implemented. Furthermore, the following is a figure showing export duties on cocoa butter products before and after the signing of the FTA in the ASEAN+6 region in Figure 5.



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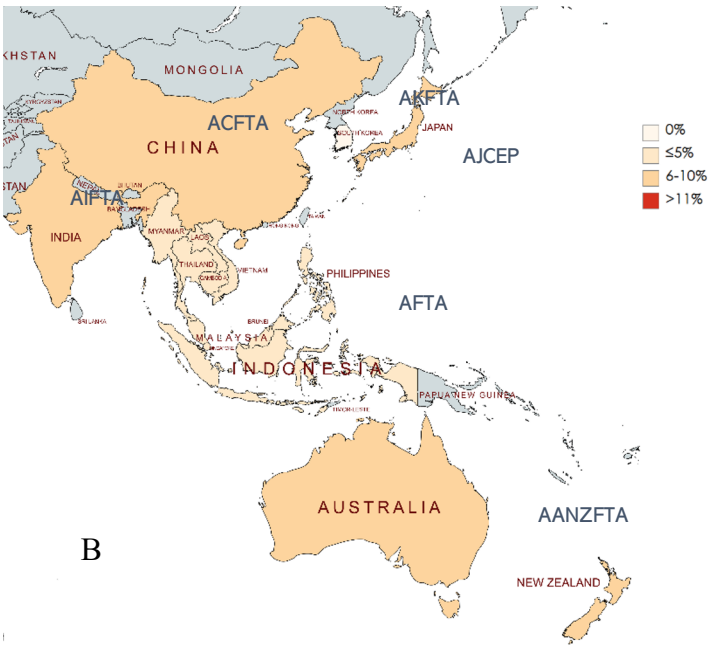


Fig 5. Cocoa butter export duty rates in the ASEAN+6 region (A) export duty rates before implementation of each FTA (B) export duty rates after implementation of each FTA

Before the implementation of the FTA, there were differences in export duty policies among ASEAN+6 countries. In Figure 5, ASEAN countries, including Brunei Darussalam, Cambodia, Laos, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam, applied export duties at fairly high rates, namely more than 5 percent (see Figure 5a). Export duty policies indirectly limit the competitiveness of ASEAN export products in the international market, because high export costs tend to be a disincentive for local producers to market their products abroad.

The tariff conditions also encourage ASEAN countries to maintain more domestic products for domestic consumption rather than for export. Unlike ASEAN, countries in the Plus Six group, namely Australia, China, India, Japan, South Korea, and New Zealand, apply much lower export duties. Export tariffs in Plus Six countries vary, with Australia, India, Japan, and New Zealand setting export duties of 15 percent, while China applies a slightly higher tariff of 22 percent. South Korea has the lowest export tariff among the Plus Six, at only 5 percent. The low export duty policy reflects the Plus Six countries' efforts to improve the competitiveness of their export products, allowing cocoa butter products to enter the ASEAN+6 market at a more competitive price.

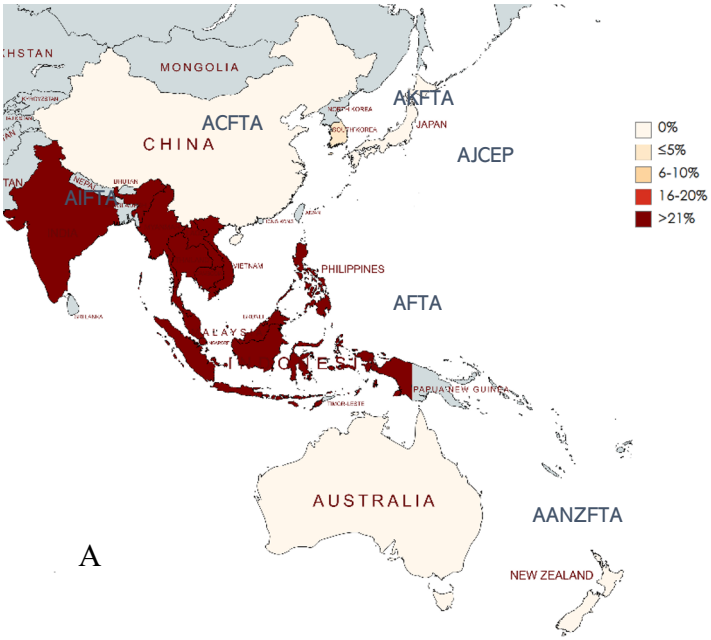
After the implementation of the FTA, there were significant changes in the application of export duties in the ASEAN+6 region, with different analysis periods (see Figure 5b). In ASEAN countries, data was used four years after the implementation of (AFTA) in 2007, while Plus Six countries used data one year after their bilateral FTAs came into effect. In terms of export duties, ASEAN countries included in AFTA generally lowered their export tariffs to 5 percent. This can be seen in Brunei Darussalam, Cambodia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Low export tariffs show the commitment of ASEAN countries to strengthen the competitiveness products, especially cocoa butter product, in international market and reduce barriers to intra-ASEAN trade.

When applicable export duties are lower, manufacturers in ASEAN countries have a greater opportunity to expand their markets to the ASEAN+6 region at a lower cost, thereby

increasing regional trade volume. Furthermore, Plus Six countries also lowered their export duties as part of the FTAs. Australia, India, Japan, and New Zealand applied export duties of 10 percent, while China lowered its export tariff to 8 percent. South Korea even eliminated its export duties completely (0 percent). The tariff reduction reflects the efforts of PLUS SIX countries to strengthen trade relations with ASEAN, encourage freer cross-border goods flows, and improve the competitiveness of their export products in the ASEAN market. Low or zero export tariffs are expected to strengthen the economic integration of the ASEAN+6 region.

In addition to export duties, there are also significant differences in the application of import duties in ASEAN+6. ASEAN countries apply quite high import duties, namely above 5 percent, which function as a form of protection for local industries from imported products (see Figure 6a). This policy aims to protect domestic producers and maintain domestic market stability by reducing competition from foreign goods. High import duties create barriers for imported products to enter the ASEAN market, which can help ASEAN member countries maintain the resilience of their industries.

On the other hand, Plus Six countries tend to be more open to imported products by implementing lower import duties. Australia, China, Japan, and New Zealand even eliminated import duties for imported products with a tariff of 0 percent, which shows their support for free trade and easy access for goods from abroad. However, there are exceptions in India and South Korea, which each set import duties of 30 percent and 5 percent, which are still considered high. The low import duty policy in the Plus Six countries reflects their commitment to strengthening international trade networks. The following is a picture of the mapping of import duties in the ASEAN+6 Region before and after the implementation of the FTA, presented in Figure 6.



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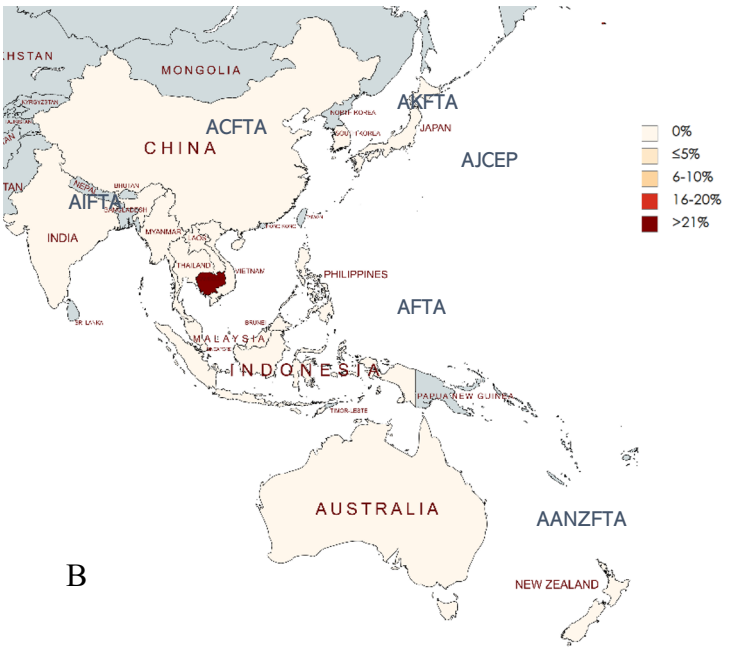

Fig. 6. Cocoa butter import duty rates in the ASEAN+6 region (A) import duty rates before implementation of each FTA (B) import duty rates after implementation of each FTA (processed from ITC Macmap 2024)

In terms of import duties, after the implementation of each FTA, ASEAN countries have shown a tendency to eliminate or significantly reduce their tariffs (see Figure 6b). Brunei Darussalam, Malaysia, the Philippines, Singapore, Thailand, and Vietnam apply 0 percent import duties for imported products from the ASEAN+6 region. However, several ASEAN countries such as Cambodia, Laos, and Myanmar still set tariffs at 20 percent, 10 percent, and 10 percent respectively. This policy reflects the different levels of readiness of each ASEAN country in opening its market to foreign products, especially for countries that are still in the economic development stage.

On the other hand, the Plus Six have set import duties at 0 percent, which shows full openness. This policy indicates a commitment from the Plus Six countries to support the flow of products from ASEAN without tariff barriers, and to strengthen the free trade network in the Region. In addition to tariff policies, there are non-tariff policies consisting of several special instruments for cocoa butter products. Based on non-tariff policy data on butter trade, there are variations in every country's approach cocoa trade regulations. The following are non-tariff barriers to cocoa butter trade in the ASEAN+6 region in Table 4.

Table 4. Non-tariff barriers to cocoa butter in the ASEAN+6 region

Country	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Total
Brunei Darussalam	1	1			1	1									1	1	6
Cambodia	1	1				1									1	1	5
Indonesia	1	1			1	1									1		5
Lao	1	1				1									1	1	5
Malaysia	1	1			1	1									1	1	6

Table 4. Non-tariff barriers to cocoa butter in the ASEAN+6 region (*continue*)

Country	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Total
Myanmar	1	1	1		1	1	1		1						1	1	9
Phillipines	1	1	1	1	1	1	1	1							1	1	10
Singapore	1	1				1									1	1	5
Thailand	1	1			1	1									1	1	6
Viet Nam															1		1
Australia	1	1	1		1	1									1	1	7
China	1	1			1										1	1	5
India	1	1													1	1	4
Japan	1	1													1	1	4
South Korea	1	1	1		1	1									1	1	7
New Zealand	1	1			1	1								1	1	1	7

Description :
1 = indicates the existence of trade barriers
1 = indicates that the policy was in place before the FTA was implemented

A	:	Sanitary and Phytosanitary	I	:	Trade investment
B	:	Technical barriers to trade	J	:	Distribution restriction
C	:	Pre-shipment inspection	K	:	Restriction post-sale
D	:	Cartel trade protection	L	:	Subsidies
E	:	Non-automatic import licensing	M	:	Government restriction
F	:	Price control (tax and charge)	N	:	Intelectual property
G	:	Finance measures	O	:	Rules of origin (ROO)
H	:	Measures competition	P	:	Exported related measures

Source : United Nations Conference on Trade and Development Statistics [6]

Non-tariff measures (NTMs) encompass various aspects, including Sanitary and Phytosanitary (SPS) measures, technical barriers, price controls, non-automatic import licenses, subsidies, and rules of origin. These policies regulate quality, safety, and trade flow, particularly in the domestic cocoa butter market. ASEAN countries exhibit varying degrees of NTMs stringency, with the Philippines scoring the highest (10 points), reflecting stringent policies such as market competition constraints and distribution restrictions. Myanmar (9 points) and Malaysia and Thailand (6 points each) also implement significant regulations, whereas Laos and Cambodia demonstrate lower NTM scores (5 points), indicating fewer trade barriers. In the ASEAN+6 framework, Australia, South Korea, and New Zealand show relatively high NTMs (7 points each), while India and Japan display lower scores (4 points each), signifying more open trade policies.

ASEAN+6 free trade agreements (FTAs) offer strategic opportunities for Indonesia's cocoa butter exports by reducing import tariffs in major markets like Japan, Australia, and New Zealand, enabling more competitive pricing. Intra-ASEAN tariff reductions further diminish export barriers, enhancing Indonesia's regional trade competitiveness. However, NTMs, such as sanitation standards, technical barriers, and rules of origin, require Indonesian producers to meet increasingly complex international requirements for market access [46]. Thus, Indonesia's export sustainability depends on adapting to global standards, supported by domestic policy reforms, infrastructure development, and human capital improvements.

Integration through ASEAN+6 FTAs also enables Indonesia to expand its market share and attract foreign investments to modernize its domestic cocoa industry. Nevertheless,

challenges persist, including addressing economic disparities among ASEAN+6 countries, particularly in CLMV nations, and enhancing industrial efficiency and competitiveness. Collaborative efforts between governments, businesses, and stakeholders are crucial for fostering inclusive economic growth. Effective integration, supported by technical and financial assistance from non-governmental organizations, can strengthen the value-added cocoa sector, optimizing regional trade synergies and addressing structural challenges for sustainable economic cooperation.

3.2 The role of trade agreements in the ASEAN+6 Region on the effects of creation and diversification of trade in Indonesian Cocoa Butter Products

Referring to Table 5, the estimation results indicate that the R-Squared value obtained is 68.8 percent. This implies that 77.7 percent of the variation in Indonesian cocoa butter trade is attributable to its independent variables, whereas the remaining 22.3 percent is influenced by external factors beyond the model. Furthermore, of the eight independent variables analyzed, only two variables are not significant, namely Indonesia's real GDP and geographical distance. Other variables have a significant effect on Indonesian cocoa butter trade as indicated by a probability value below the 1 percent real level (<0.01). Further testing, namely the regression equation specification error test (RESET), was carried out to test the model's resilience to heteroscedasticity [12]. The RESET results show that the RESET test P-Value is 0.190 with a chi2 value of 1.72. At this value (Prob> chi2) of 0.190, it indicates that there is no miss-specification in the estimation model. Furthermore, the results of the regression determinants with PPML of Indonesian cocoa butter in the ASEAN+6 region are presented in Table 5.

Table 5. Non-tariff barriers to cocoa butter in the ASEAN+6 region

Variable	Koefisien	*Std. Error*	*P-value*
ln GDP real Indonesia	0,171	0,579	0,767
ln PDB real destination	0,608	0,119	0,000*
ln Distance geo	-0,208	0,347	0,549
ln exchange rate	0,808	0,114	0,000*
landlocked	-5,740	0,645	0,000*
STI	1,069	0,436	0,014*
FTA 1	6,897	0,512	0,000*
FTA 2	6,350	0,645	0,000*
FTA 3	7,631	0,525	0,000*
Constanta	-20,154	20,676	0,320
R-Squared	0,777		
Observasi	368		
Pseudo Log-Likelihood	-2.506E+09		
RESET Test P-Value	0,190		

Description: * significant at 1% confidence level
Source: processed data (2024)

The real GDP of Indonesia (lnGDPit) has a positive coefficient of 0.171, indicating alignment with the initial hypothesis. However, it is statistically insignificant (p-value = 0.767), suggesting that changes in Indonesia's real GDP do not significantly impact cocoa butter trade. Such findings reflect structural constraints in product quality and global competitiveness outweighing domestic economic growth. The real GDP of partner countries (lnGDPjt) positively influences cocoa butter trade with a significant coefficient of 0.608 (p-value = 0.000). value of 1% increase in partner GDP raises trade by 0.608%, reflecting increased purchasing power and demand. These results underscore the importance of monitoring partner countries' GDP trends in the ASEAN+6 framework.

Geographical distance (lnDISTij) has a negative coefficient of -0.208, indicating that a 1% increase in distance reduces trade by 0.208%. However, it is statistically insignificant (p-value = 0.549). Such outcomes suggest that market demand, economic structure, and access to strategic markets outweigh the impact of geographical proximity, aligning with Andrian (2014) and Newton's law of gravitation [13]. Exchange rate (lnERijt) has a significant positive effect with a coefficient of 0.808 (p-value = 0.000). A 1% depreciation increases cocoa butter trade by 0.808%, as it enhances price competitiveness in international markets, driving demand. This observation aligns with global trends on exchange rate impacts on primary commodities.

The regression analysis of the Sustainable Trade Index (STI) demonstrates a statistically significant and positive correlation with Indonesia's cocoa butter trade within the ASEAN+6 region. The estimated coefficient of 1.069 suggests that a one-unit rise in the Sustainable Trade Index leads to a corresponding 1.069% increase in cocoa butter trade value, provided that all other variables remain unchanged. The significance level, with a p-value of 0.014, is below the 5% threshold, confirming the robustness of this variable's impact.

This result highlights that countries with higher sustainability in trade practices, including environmental, social, and governance (ESG) standards, are more likely to engage in higher trade volumes with Indonesia. This positive relationship aligns with prior findings emphasizing the growing importance of sustainable practices in global trade dynamics. It suggests that the alignment of Indonesian cocoa butter production with sustainability standards can enhance its market acceptance and trade potential in the ASEAN+6 region. These findings underscore the need for Indonesian producers to further integrate sustainable practices to remain competitive in the increasingly ESG-conscious global marketplace.

The landlocked dummy variable (LANDLj) has a negative coefficient of -5.740, significantly reducing trade (p-value = 0.000). Landlocked countries face higher sportation costs and logistical inefficiencies, reducing trade competitiveness [14]. Addressing such barriers within ASEAN+6 could improve trade efficiency. FTA dummy variables (FTA_1, FTA_2, and FTA_3) significantly influence trade (p-value = 0.000) with coefficients of 6.897, 6.350, and 7.631, respectively. These findings confirm trade creation effects under ASEAN+6 agreements, emphasizing the need for government and private sector collaboration to sustain trade benefits.

Trade creation in Indonesia's cocoa butter exports within the ASEAN+6 region significantly enhances trade performance, production efficiency, and national economic development. The elimination of tariffs and non-tariff barriers enables Indonesian cocoa butter to compete more effectively in regional markets, increasing export volumes and trade value [2]. The rising export demand also generates economies of scale, reducing production costs and improving operational efficiency. Consequently, trade creation contributes not only to higher national income but also reinforces Indonesia's position as a leading cocoa butter exporter.

On the import side, trade creation facilitates access to cheaper and higher-quality raw materials, technology, and intermediate products, improving cost efficiency for domestic cocoa butter processing industries. Since the implementation of FTAs in ASEAN+6, average

import values have grown by 57%, reflecting increased trade efficiency through sourcing from more competitive partners [15]. Although nominal import values remain low, they play a strategic role in supporting domestic industries by reducing production costs and enhancing competitiveness [8]. However, excessive reliance on imported inputs could undermine national industrial resilience, necessitating strategies to empower local cocoa farmers and ensure long-term industry sustainability.

To maximize the benefits of trade creation, the Indonesian government should implement policies to enhance national competitiveness and export capacity. Fiscal incentives, such as import tariff reductions for raw materials, could lower production costs and increase trade volumes [8]. Investments in logistics and transportation infrastructure are essential to streamline exports, reduce shipping costs, and ensure timely delivery, particularly for perishable goods. Additionally, improving product quality standards and certifications is critical to meet international market requirements and expand market access. Strengthening bilateral and multilateral collaborations within FTA frameworks can facilitate market expansion and technology transfer, further bolstering Indonesia's competitiveness in regional markets.

4 Conclusion

The trade framework within the ASEAN+6 region is structured through multiple free trade agreements (FTAs), including AFTA, ACFTA, AIFTA, AKFTA, AANZFTA, and AJCEP. These FTAs necessitate compliance with both tariff and non-tariff measures for Indonesian cocoa butter products. Tariff measures encompass import and export duties as regulated by the respective legislations of ASEAN+6 member states. Meanwhile, non-tariff measures require adherence to regulations such as the composition of ingredients, cocoa type, certifications, product quarantine, rules of origin, and the processing pathway from raw cocoa beans to cocoa butter. These policies aim to ensure the quality and traceability of products, aligning with international trade standards.

The estimation of trade determinants for Indonesian cocoa butter in the ASEAN+6 region identifies several significant variables, including the real GDP of partner countries, exchange rates, landlocked status, the Sustainable Trade Index, and three FTA dummy variables. Conversely, the real GDP of Indonesia and geographical distance were found to have no significant impact. Dummy variables indicate that the trade effects observed within the ASEAN+6 framework are characterized by trade creation in both export and import flows. To optimize these outcomes, the Indonesian government must enhance economic integration within the region by addressing tariff and non-tariff barriers and strengthening compliance with partner countries' trade regulations. These efforts are essential to ensuring Indonesia's sustained competitiveness and market access within the ASEAN+6 region.

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