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INDONESIAN AGRICULTURAL SECTOR REGIONAL VALUE CHAIN IN REGIONAL COMPREHENSIVE ECONOMIC PARTNERSHIP (RCEP)

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Abstract: Global value chains (GVC) were a phenomenon of production of goods or services that involved various countries acting as providers of raw materials, intermediate products, and finished goods. There was a GVC concept with a more specific scope, namely the Regional Value Chain (RVC). This concept was carried out by countries that had regional cooperation. ASEAN countries and several partner countries had a new regional cooperation agreement, namely the Regional Comprehensive Economic Partnership (RCEP). The presence of the RCEP agreement opened opportunities for Indonesia to contribute. Various production chains could be created. Longer production chains allowed the distribution of benefits from GVC to be uneven in each country. This needed to be watched out for, so it was necessary to conduct research on whether Indonesia's participation in the agricultural RVC of the RCEP region provided benefits for Indonesia or not. The type of data used in this research was secondary data in the form of cross-section data, consisting of the Inter-Country Input Output (ICIO) table sourced from the OECD, which was released in 2021. This research used input-output table methods and backward linkage and forward linkage methods of a country's sector (Indonesia and RCEP partners) so that its position in the RCEP production chain and the world could be known. The result was that Indonesia acted as a provider of raw materials in 21 types of RCEP industries. RCEP provided value added to Indonesian agriculture.

Keywords: global value chain (GVC), inter-county input output table (ICIO), regional value chain (RVC), regional comprehensive economic partnership (RCEP)

Abstrak: *Rantai nilai global (Global Value Chain/GVC) merupakan fenomena produksi yang melibatkan berbagai negara sebagai penyedia bahan baku, produk setengah jadi, dan barang jadi. Terdapat konsep GVC dengan cakupan yang lebih spesifik, yaitu Regional Value Chain (RVC). Konsep ini dilakukan oleh negara-negara yang memiliki kerja sama regional. Negara-negara ASEAN dan beberapa negara mitra memiliki perjanjian kerjasama regional yang baru yaitu Regional Comprehensive Economic Partnership (RCEP). Hadirnya perjanjian RCEP membuka peluang bagi Indonesia untuk berkontribusi. Berbagai rantai produksi dapat tercipta. Rantai produksi yang lebih panjang memungkinkan distribusi manfaat dari GVC tidak merata di setiap negara. Hal ini perlu diwaspadai, sehingga perlu dilakukan penelitian apakah keikutsertaan Indonesia dalam RVC pertanian kawasan RCEP memberikan manfaat bagi Indonesia atau tidak. Jenis data yang digunakan dalam penelitian ini adalah data sekunder berupa data cross section. Terdiri dari tabel Inter-Country Input Output (ICIO) yang bersumber dari OECD yang dirilis pada tahun 2021. Penelitian ini menggunakan metode tabel input output dan; keterkaitan ke belakang (backward linkage) dan keterkaitan ke depan (forward linkage) sektor suatu negara (Indonesia dan mitra RCEP) sehingga dapat diketahui posisinya dalam rantai produksi RCEP dan dunia. Hasilnya adalah Indonesia berperan sebagai penyedia bahan baku pada 21 jenis industry RCEP. RCEP memberikan nilai tambah bagi pertanian Indonesia.*

Kata kunci: *global value chain (GVC), tabel inter-county input output (ICIO), regional value chain (RVC), regional comprehensive economic partnership (RCEP)*

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INTRODUCTION

The value chain is a series of activities needed to produce a product or service. It consists of conceptual stages, production, delivery, to destruction (Kaplinsky 1999; Cattaneo et al. 2013). A value chain is a series of activities required to produce a product or service. These activities can consist of raw material production, intermediate product production, processing, assembly, shipping, storage, and distribution so that it can be consumed by consumers. These activities can be carried out by one company or by several companies. This is done to get the highest level of efficiency and greater profits in each part of the production system. As the industry develops, these activities are carried out by several countries so that the value chain becomes global or can be referred to as a global value chain.

Producers and consumers from different countries are connected by GVCs. GVCs help provide more choices and opportunities for consumers and producers around the world. According to research by Gareffi and Stark (2011), the ability of a country to join the global value chain is important for the development of a country, especially for developing and low-income countries. This is important for Indonesia, as it is a developing country.

The GVC phenomenon also occurs in the agricultural sector. For example, wheat produced in America, Australia, and Ukraine is processed into flour in Indonesia and Turkey, then exported to make noodles in China and bread in Africa and the Middle East (OECD, 2021). The involvement of various countries proves that the agricultural sector is experiencing the GVC phenomenon.

There is a GVC concept with a more specific scope, namely Regional Value Chain (RVC). This concept is carried out by countries that have regional cooperation, such as the Asia Free Trade Area (AFTA), Asia Pacific Economic Cooperation (APEC), North American Free Trade Area (NAFTA), South Asia Association for Regional Cooperation (SAARC), and Central American Free Trade Area (CAFTA).

ASEAN countries and several partner countries have a new regional cooperation agreement, the Regional Comprehensive Economic Partnership (RCEP). RCEP is a form of regional trade cooperation between 10 ASEAN countries and 5 ASEAN partner countries. RCEP was created in order to strengthen the global economy and market by simplifying the free trade area (FTA) rules among RCEP member countries. According to the Coordinating Minister for Economic Affairs, RCEP is the largest trading bloc in the world, covering 30% of world GDP, 27% of world trade, 29% of foreign direct investment (FDI), and 29% of world population. RCEP will bring various benefits to Indonesia, including certainty and uniformity of trade rules, a more conducive investment climate, increased business opportunities for goods, services, and investment, and strengthened integration into the Regional Value Chain.

GVC agricultural participation helps to boost overall economic growth. Growth for farmers and producers along global value chains across industries. The utilization of raw materials and market access to various countries can help to increase the growth of the agricultural and industrial sectors and increase the proportion of profits for farmers and producers. Research by Gareffi and Stark (2011) shows that the ability of a country to join the global value chain is important for the development of a country, especially for developing and low-income countries. This is important for Indonesia because Indonesia is a developing country.

There are 15 countries that have signed the RCEP agreement, including 10 ASEAN countries and 5 FTA partner countries. The ten ASEAN countries consist of Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam, and the five FTA partners are Australia, China, Japan, New Zealand and South Korea.

The presence of the RCEP agreement opens up opportunities for Indonesia to contribute to RVCs between RCEP regions. Various production chains between RCEP countries can be created with the presence of this cooperation. However, research by Xing and Detert (2010) shows that longer production chains allow the distribution of benefits from GVCs to be uneven in each country. This needs to be watched out, whether RCEP will provide opportunities or threats to Indonesia's agricultural sector, so it is necessary to conduct research on the role of Indonesia's agricultural sector in RCEP.

Research related to the RCEP agreement has become popular in recent years. There are various studies that discuss from various understandings, such as international law by Maulana (2021), Moenardi et al. (2021), and in the field of economics by Abdullah and Rosjadi (2021), Nugraha et al. (2020), Maidah and Widyastutik (2020), Ingot and Laksani (2019), Rakhman (2016), Nugroho (2020), Itakura and Lee (2019), Aprilianti (2019), Yunarwanto (2020) and others. In the economic scope, RCEP research is generally discussed in terms of international trade with several methods used such as Revealed Comparative Advantage (RCA), Export Product Dynamic (EPD), Gravity Model, and Computable General Equilibrium (CGE). Research using the RCA and EPD methods provides information on the export performance of Indonesian commodities to RCEP countries. Research using Gravity Model and CGE provides information about the factors that influence the export of Indonesian commodities to RCEP countries. This study uses another approach to examine RCEP cooperation from an economic perspective, namely by using the Inter Country Input Output Table (ICIO). The ICIO table can capture the Regional Value Chain phenomenon among RCEP countries. This table can provide information about the role of an economic sector in Indonesia to the sector in RCEP countries. Through this analysis, information is obtained about the role of Indonesia's agricultural sector to the sectors in RCEP countries. The presence of this research can provide a new perspective and complement the knowledge of Indonesia-RCEP cooperation in terms of Regional Value Chain.

This research contributes to knowing how Indonesia's agricultural sector contributes to various industrial sectors among RCEP member countries. Through the input output method using ICIO data, this study is conducted to analyze 1. Indonesia's agriculture contribution in the Regional Value Chain (RVC) in RCEP region; 2. Benefits obtained (value added) from Indonesia's participation in agriculture RVC in RCEP region; 3. Linkages of Indonesia's agriculture sector in RVC in RCEP region.

METHODS

The type of data used in this study is secondary data in the form of cross section data. Consists of the Inter-Country Input Output (ICIO) table sourced from the OECD which was released in 2021. The year of analysis is 2018 because it uses the latest IO table, namely ICIO 2018 which was released in 2021.

This study uses another approach to examine RCEP cooperation from an economic perspective, namely by using the inter country input output table (ICIO). ICIO tables can capture the phenomenon of Regional Value Chain between RCEP countries. This table can provide information about the role of an economic sector in Indonesia on sectors in RCEP countries. Through this analysis, information was obtained about the role of Indonesia's agricultural sector in sectors in RCEP countries. The presence of this research can provide new perspectives and complement knowledge about Indonesia-RCEP cooperation from the Regional Value Chain side.

The object of analysis includes 15 RCEP agreement member countries consisting of 10 ASEAN countries and 5 FTA partner countries. The ten ASEAN countries consist of Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam, and the five FTA bloc partners are Australia, China, Japan, New Zealand and South Korea. The focus of the industrial sector is agriculture, hunting, and forestry against 45 other industrial sectors in 10 ASEAN countries and 5 partner countries (675 industrial sector variables).

Contribution and Value Added of GVC

ICIO data is an input output table integrated with various countries (Figure 1). The RVC contribution of agriculture sector is obtained by row summation of Indonesia's agriculture sector to various sectors in various RCEP countries.

The general equation of the ICIO table is as follows:

$$x11 + x12 + \ldots + x1j + F1 = X1$$
$$x21 + x22 + \ldots + x2j + F2 = X2$$
$$xi1 + xi2 + \ldots + xij + F1 = X1$$

Which: xij (The amount of output of sector i that is used as input by sector j); fi (Final demand for sector i); xi (Total output of sector i); n (Total sector); i (Sectors that produce inputs); j (Sectors that consume input); Wn (Value added country n)

Hypothesis for contribution:
H0: $Xij\ldots \leq 0$; H1: $Xij\ldots > 0$

Hypothesis for value Added:
H0: wn ≤ 0; H1: Wn > 0

There are 2 research objectives that can be achieved with this method 1) Indonesia's agricultural sector contributes to various sectors in RCEP countries, but it is not yet known what industry sector and country it contributes to and how much. 2) Indonesia's agricultural sector benefits in the form of added value from RCEP RVC participation, but the value is unknown.

Backward and Forward Linkage

Input-output analysis is used in this study to analyze the backward linkage and forward linkage of a country's sector (Indonesia and RCEP partners) so as to know its position in the RCEP production chain and the world. The backward linkage and forward linkage formulas are as follows:

Forward linkage

$$TFL_i = \frac{\Sigma_{j=1}^{n} b_{ij}}{\frac{1}{n}\Sigma_{i=1}^{n}\Sigma_{j=1}^{n} b_{ij}}$$

Which: TFLi (Total forward linkage for sector i); bij (i-th row, j-th column Leontief inverse matrix element); n (Total sector)

Hypotesis:
H0: TFLi ≤ 0; H1: TFLi > 0

Backward linkage

$$TBL_j = \frac{\Sigma_{i=1}^{n} b_{ij}}{\frac{1}{n}\Sigma_{j=1}^{n}\Sigma_{j=1}^{n} b_{ij}}$$

Which: TBLj (Total forward linkage for sector I); bij (i-th row, j-th column Leontief inverse matrix element); n (Total sector).

Hypotesis:
H0: TBLj ≤ 0; H1: TBLj > 0

The hypothesis of this method is that Indonesia's agricultural sector has forward and backward linkages to various industrial sectors in RCEP countries, but it is not yet known in which sectors and which countries.

THE RESULTS

RCEP Potential for Indonesia

Based on ICIO data in 2018, Indonesia's economy produces a total of USD 1,537 billion worth of goods and services. Of all the goods and services produced by Indonesia, 88% of the products are used for domestic needs and 12% are exported to other countries. The total value of Indonesia's exports in 2018 amounted to 188.7 billion USD. The allocation of the use of Indonesian products in international trade consists of 63% (119.7 billion USD) for intermediate needs (used as production inputs) and 37% (69.0 billion USD) used for final demand needs.

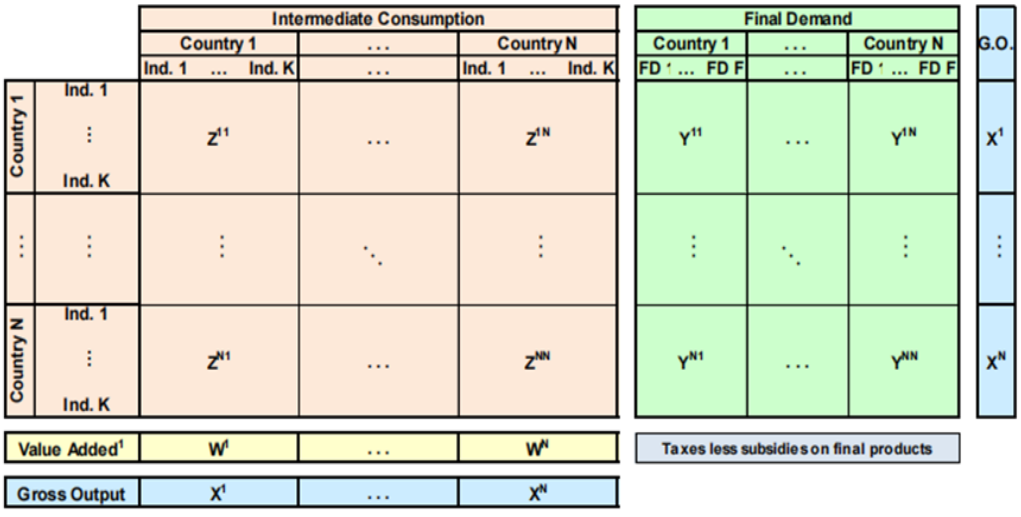

Figure 1. Concept of inter country input output table by OECD

Indonesia has 15 largest trading partners in terms of the value of Indonesian exports to destination countries. The first is China, the second to fifth are India, the US, Japan, and Korea, and the sixth to fifteenth are Singapore, Malaysia, Thailand, the Philippines, Australia, Taiwan, Vietnam, Germany, the Netherlands, and Spain. Of the 15 largest export trading partners, 9 of them are RCEP members.

Nine of Indonesia's 15 largest export trading partners are RCEP members. The nine countries are China, Japan, Korea, Singapore, Malaysia, Thailand, Philippines, Australia, and Vietnam. Based on the proportion, Indonesia's export to ASEAN has a proportion of 19 percent, 37% with 5 FTA partners (China, Japan, Korea, Australia, New Zealand), and 44% with countries outside 9 ASEAN and 5 partners. In total, RCEP can cover 56% of Indonesia's total exports to the world. It can be seen that the proportion of Indonesia's trade to RCEP is large, so RCEP is an important partner for Indonesia's trade.

Indonesia's Contribution in Regional Value Chain (RVC) in RCEP Region

Inter-Country Input Output (ICIO) table in 2018 sourced from the OECD which was released in 2021 stated that Indonesia's export value to RCEP countries in 2018 has a proportion of 6.41 Billion USD to China for final demand and 30.13 Billion USD for intermediate products, 4.27 Billion USD to Japan for final demand and 13.24 Billion USD for intermediate products, 1.78 Billion USD to Korea for final demand and 9, 53 Billion USD for intermediate products, to Singapore with 1.97 Billion USD for final demand and 7.84 Billion USD for intermediate products, to Malaysia with 1.98 Billion USD for final demand and 5.21 Billion USD for intermediate products, to Thailand with 2.31 Billion USD for final demand and 4, 55 Billion USD for intermediate products, to Philippines by 3.13 Billion USD for final demand and 3.02 Billion USD for intermediate products, to Australia by 2.80 Billion USD for final demand and 1.73 Billion USD for intermediate products, to Myanmar by 0.28 Billion USD for final demand and 0.35 Billion USD for intermediate products, to New Zealand 0.31 Billion USD for final demand and 0.15 Billion USD for intermediate products, to Cambodia 0.18 Billion USD for final demand and o.07 Billion USD for intermediate products, to Brunei Darussalam 0.02 Billion USD and to Laos 0.02 Billion USD for final demand. It can be seen that not all RCEP countries are important partners for Indonesia's trade. China, Japan, Korea, Singapore, Malaysia, Thailand, Philippines, Australia, and Vietnam can provide a large market share for Indonesia. Meanwhile, five other countries namely Myanmar, New Zealand, Cambodia, Brunei Darussalam, and Laos provide a small market share for Indonesia.

The industrial sectors in Indonesia that export to the RCEP region can be seen in Figure 2. In the type of intermediate goods, the largest ranking is obtained from the mining sector with a very large gap when compared to the other 14 sectors, while the ranking of final demand goods is occupied by the food, beverage and tobacco industry sector. The agricultural sector itself ranked 14th in intermediate and 9th in final demand with a value of 1.49 billion USD for intermediate goods and 0.85 billion USD for final demand goods.

Contribution of Indonesian Agriculture in Regional Value Chain (RVC) in RCEP Region

Indonesia has 15 largest agricultural export destinations. Seven of them are RCEP members. In terms of proportion, Indonesia's export value to RCEP accounts for 40% while export value to ROW accounts for 60%. The proportion of Indonesia's agricultural exports to RCEP can be said to be large considering RCEP consists of 14 partners while ROW consists of 226 countries. Although RCEP as a whole has a large value of Indonesia's agricultural exports, not all countries are important agricultural trading partners. Ten RCEP countries are Indonesia's agricultural market share, namely Japan, China, Malaysia, Korea, Singapore, Thailand, Vietnam, Philippines, Australia, and New Zealand. While the other 4 are Myanmar, Brunei Darussalam, Cambodia, and Laos have values close to zero.

The comparison of the use of Indonesian agricultural products in RCEP consists of 64% used as production input/ intermediate and 36% used for final consumption/ final demand. This shows that Indonesia's agricultural sector plays more of a role as a provider of raw materials than final products in the RCEP RVC.

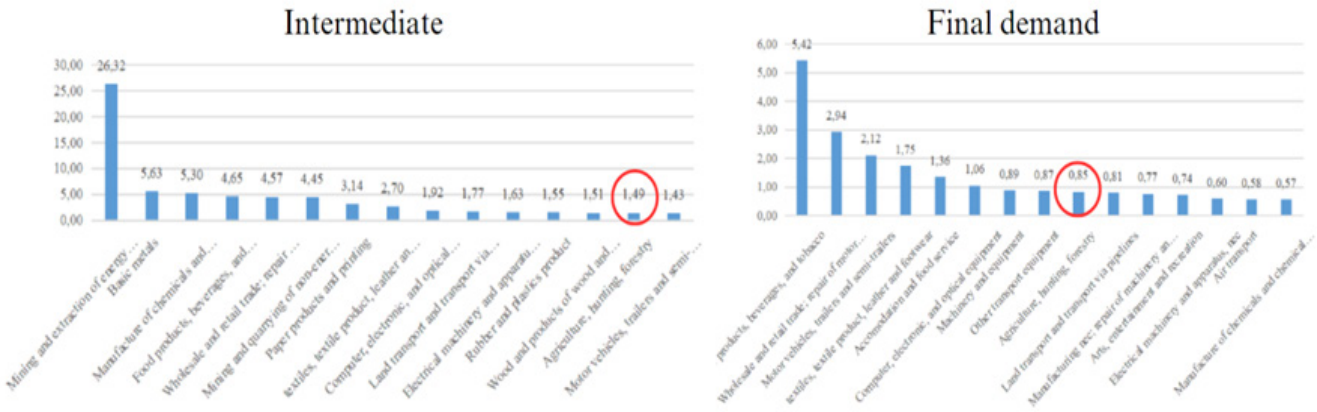

Figure 2. Industry sectors with largest export value of intermediate and final demand products in RCEP region in billion USD

Indonesian Agriculture to Australia

There are 2 Australian industry sectors that use inputs from the Indonesian agricultural sector. Indonesian agriculture is an input in Australia in the Food products, beverages, tobacco sector, the agriculture, hunting, and forestry sector. Of the 2 Australian industry sectors that use inputs from Indonesia's agricultural sector, Australia's Food products, beverages, and tobacco sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to Japan

Indonesia's agricultural sector provides a large amount of raw materials for 14 Japanese industrial sectors. Japan is the second largest trading partner of Indonesia's agricultural exports after the US and the largest trading partner of Indonesia's agricultural exports in the RCEP region. Of the 14 Japanese industrial sectors that use inputs from the Indonesian agricultural sector, the Japanese Food products, beverages, and tobacco sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to Korea

Indonesia's agricultural sector provides a large amount of raw materials for 9 Korean industrial sectors. Korea is the seventh largest trading partner of Indonesia's agricultural exports and the fourth largest trading partner of Indonesia's agricultural exports in the RCEP region. Of the 9 Korean industrial sectors that use inputs from Indonesia's agricultural sector, Korea's Food products, beverages, and tobacco sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to New Zealand

There are 2 New Zealand industry sectors that use inputs from the Indonesian agriculture sector. Indonesian agriculture is an input in New Zealand in the Food products, beverages, and tobacco sector and the agriculture, hunting, and forestry sector. Of the 9 New Zealand industry sectors that use inputs from Indonesia's agricultural sector, New Zealand's Food products, beverages, and tobacco sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to China

China is the third largest trading partner of Indonesia's agricultural exports after the US and Japan and the second largest trading partner of Indonesia's agricultural exports in the RCEP region. Indonesia's agricultural sector is a large provider of raw materials for 14 Chinese industrial sectors. Of the 14 Chinese industrial sectors that use inputs from the Indonesian agricultural sector, China's Agriculture, hunting, and forestry sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to Malaysia

Indonesia's agricultural sector provides a large amount of raw materials for six Malaysian industrial sectors. Malaysia is the sixth largest trading partner of Indonesia's agricultural exports and the third largest trading partner of Indonesia's agricultural exports in the RCEP region. Of the 6 Malaysian industry sectors that use inputs from the Indonesian agricultural sector, Malaysia's Food products, beverages, and tobacco sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to Philippines

Indonesia's agricultural sector is an input to the Philippine economy. Indonesia's agricultural sector provides raw materials for 4 Philippine industrial sectors with a considerable amount. The Philippines is not among the 15 largest trading partners of Indonesia's agricultural exports, but it is the sixth largest trading partner of Indonesia's agricultural exports in the RCEP region. Of the 4 Philippine industry sectors that use inputs from Indonesia's agricultural sector, the Philippine Food products, beverages, and tobacco sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to Singapore

Indonesia's agricultural sector provides a significant amount of raw materials for seven Singaporean industries. Singapore is the eighth largest trading partner of Indonesia's agricultural exports and the fifth largest trading partner of Indonesia's agricultural exports in the RCEP region. Of the 7 Singaporean industrial sectors that use inputs from the Indonesian agricultural sector, Singapore's Food products, beverages, and tobacco sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to Thailand

Indonesia's agricultural sector provides a significant amount of raw materials for 4 Thai industrial sectors. Thailand is the tenth largest trading partner of Indonesia's agricultural exports and the sixth largest trading partner of Indonesia's agricultural exports in the RCEP region.

Indonesian Agriculture to Vietnam

Indonesia's agricultural sector provides a significant amount of raw materials for 8 Vietnamese industrial sectors. Vietnam is the eleventh largest trading partner of Indonesia's agricultural exports and the seventh largest trading partner of Indonesia's agricultural exports in the RCEP region. Of the 8 Vietnamese industrial sectors that use inputs from the Indonesian agricultural sector, Vietnam's Food products, beverages, and tobacco sector is the largest user of Indonesian agricultural products.

Indonesian Agriculture to Myanmar, Cambodia, Laos, and Brunei Darussalam

There are no industrial sectors in Myanmar, Cambodia, Laos, and Brunei Darussalam that use inputs from Indonesia's agricultural sector. All sectors in these countries' economies show values close to zero, so it is assumed that Indonesian agriculture is not an input in these countries' economies.

Indonesian Agriculture to RCEP

In general, Indonesia's agricultural sector provides raw materials for 21 types of industries in the RCEP region. These sectors are Food products, beverages, and tobacco (822.44 million USD); Agriculture, hunting, dan forestry (329.59 million USD); Accommodation and food services (70.26 million USD); Textile, textile product, leather, and footwear (69.31 million USD); Rubber and plastics products (34.33 million USD); Wholesale and retail trade; repair of motor vehicles and motorcycles (33.76 million USD); Manufacture of pharmaceuticals, medicinal chemical and botanical products (20.93 million USD); Wood and products of wood and cork (20.09 million USD); Health and social work (15.86 million USD); Paper products and printing (11.26 million USD); Construction (10.92 million USD); Manufacture of chemicals and chemical products (9.88 million USD); Administrative and support service activities (9.12 million USD); Manufacturing nec; repair of machinery and equipment (8.42 million USD); Fishing and aquaculture (5.92 million USD); Education (4.39 million USD); Other service activities (2.79 million USD); Professional, scientific and technical activities (1.79 million USD); Arts, entertainment and recreation (1.76 million USD); Public administration and defense; compulsory social security (1.37 million USD); dan Water transport (1.35 million USD).

In the RCEP region, Indonesia's agricultural sector is the largest provider of raw materials in the Food products, beverages, and tobacco industry with a value of 822.44 million USD. There are 10 countries, namely Japan (325.60 million USD), Korea (156.99 million USD), Malaysia (109.80 million USD), Thailand (67.53 million USD), Vietnam (53.13 million USD), Singapore (45.25 million USD), Philippines (26.21 million USD), China (24.10 million USD), Australia (8.46 million USD), and New Zealand (5.38 million USD).

Value Added of Indonesia's Agriculture Sector in RCEP RVC

Indonesia's participation in RCEP provides greater value added to Indonesia's agricultural sector compared to only marketing agricultural products in the domestic market. However, in this case the domestic market still needs to be the main market priority compared to the RCEP market. This is because the domestic market provides much greater revenue value compared to the RCEP market. The RCEP market is only a complementary market for Indonesian agricultural products if the demand in the domestic market has been met.

Since there have not been many studies specifically examining the value added of Indonesia's participation in regional cooperation in agriculture, there are limitations in the references to previous studies. One of the studies that came close is by Ira (2019), with her research using the Stochastic Gravity Model method has the result that the FTA spill-over effect for RCEP members and non-members has the potential to increase Indonesia's exports by 7.2% through expanding Indonesia's role in the Global Value Chain. After five years of implementation, the increase in exports can reach 8-11% and investment can grow 18-22%. Ira's research supports this research that RCEP can provide more benefits for Indonesia compared to not participating in RCEP.

Backward and Forward Linkages of Indonesia's Agriculture Sector to RCEP Region Economic Sectors

The total value of the backward linkage coefficient is 0.23791 meaning that every 1 dollar of output produced by the Indonesian agricultural sector requires 0.23791 dollars to purchase inputs from other sectors. If the agricultural sector is developed or increases its production, the other sectors will also develop due to the use of inputs from the Indonesian agricultural sector, ceteris paribus. The 8 largest backward linkages are dominated by the domestic sector with a large value when compared to other sectors. The sum of the values of the eight industries has a value of 0.19980 or contributes 84% of the input needs of the agricultural sector. In general, in the Indonesian region, in the production process, the Indonesian agricultural sector requires inputs in various sectors such as: Agriculture, hunting, forestry; Wholesale and retail trade; repair of motor vehicles; Food products, beverages, and tobacco; Chemical and chemical products; Financial and insurance activities; Construction; Coke and refined petroleum products;bLand transport and transport via pipelines. Meanwhile, in the RCEP region, in the production process, Indonesia's agricultural sector requires inputs from the Chemical and chemical products sector. Chemical and chemical products sector products used come from China, Singapore, Korea, Thailand, Japan and Malaysia.

The total value of the forward linkage coefficient is 0.60285, meaning that for every 1 dollar of output produced by the agricultural sector, 0.60285 dollars are used as inputs by other sectors. The top 11 values are dominated by the domestic sector with a very large value when compared to other sectors. The sum of the values of the eleven industries has a value of 0.58461 or contributes 97% of the use of intermediate type output of the Indonesian agricultural sector. This shows that Indonesia's agricultural sector output allocation is mostly allocated to the domestic sector. In the RCEP region in general, Indonesia's agricultural sector is a provider of raw materials in the food products, beverages, and tobacco sector in 8 countries namely Japan, Korea, Malaysia, Thailand, Vietnam, Singapore, the Philippines, and China; agriculture, hunting and forestry in 3 countries namely China, Japan, Vietnam; Textile, textile products, leather, and footwear in China; Accommodation and food service activities in Japan; Wholesale and retail trade; repair of motor vehicles in Japan; Pharmaceuticals, medicinal, chemical and botanical products in China; and Wood and products of wood and cork in Vietnam. This is in line with research by Ingot and Laksani (2019) which states that Indonesia's participation in the RCEP global value chain is dominated by low-tech industries that produce raw materials.

Managerial Implications

In the RCEP region, Indonesia's agricultural sector still plays a role as a provider of raw materials/ intermediate products. The government must focus on processing raw products into final goods of Indonesia's agricultural products so that exports to RCEP will be dominated by final demand goods. This can provide greater added value to the domestic economy, as the chain of production carried out in the domestic becomes longer. In addition, if Indonesia is still going to export raw materials, this can be focused on agricultural

products related to the 21 industrial sectors described. The Indonesian government needs to support the export process and continue to participate in RCEP, as its participation can provide greater added value to Indonesia's agricultural sector.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

RCEP is a large share of Indonesia's agricultural trade, but not all RCEP members are important trading partners. Ten out of fourteen RCEP countries are Indonesia's agricultural market share. There is Japan, China, Malaysia, Korea, Singapore, Thailand, Vietnam, Philippines, Australia, and New Zealand. The role of Indonesia's agricultural sector in RCEP is dominant as a provider of raw/intermediate materials.

From 45 types of industrial sectors, Indonesia's agricultural sector provides raw materials to 21 types of industrial sectors in the RCEP region with the largest destination sector being to the Food products, beverages, and tobacco sector. The other 20 industry sectors are Agriculture, hunting, dan forestry; Accommodation and food services; Textile, textile product, leather, and footwear; Rubber and plastics products; Wholesale and retail trade; repair of motor vehicles and motorcycles; Manufacture of pharmaceuticals, medicinal chemical and botanical products; Wood and products of wood and cork; Health and social work; Paper products and printing; Construction; Manufacture of chemicals and chemical products; Administrative and support service activities; Manufacturing nec repair of machinery and equipment; Fishing and aquaculture; Education; Other service activities; Professional, scientific and technical activities; Arts, entertainment and recreation; Public administration and defense compulsory social security; dan Water transport.

Indonesia's participation in RCEP provides greater additional value to Indonesia's agricultural sector than only selling agricultural products to the domestic market, but it is complementary. Selling to the domestic market still needs to be prioritized because it provides much greater revenue.

Recommendations

This research can provide specific information on the role of Indonesia's agricultural value chain in RCEP. There is no research that specifically discusses the value chain of Indonesia's agricultural sector in all RCEP countries. Through this research, information is obtained about the role of Indonesia's agricultural sector in RCEP, value added, as well as the forward and backward linkages of Indonesia's agricultural sector in RCEP. However, there is a limitation in this study that the agricultural sector studied cannot be made more specific by commodity, because the data used is aggregate data.

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