



## Editorial

Dear Readers,

This is the last Newsletter issued in 2019. As usual, we have several important information for you. First, soybean self-sufficiency has been long time discussed among the policymakers. Our research team, led by Dr. Bambang Sayaka, concluded that self-sufficiency in soybean could be met through restructuring production and marketing aspects. Second, policy to face regional markets through AEC and RCEP economic cooperation. Dr. Saktyanu K. Dermoredjo led research on this topic and come up with strong suggestions, among the others, to improve farmer's institutions and to strengthen cooperation with local marketing partners to enhance the quality of products and hence to achieve higher products competitiveness.

In addition, information about policy development, our publications, and research activities are included in this issue. We welcome two of our colleagues who have been defended their dissertations at their respective universities. The excerpts of their work are provided for your reference.

Thank you

The Editor

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## Research Findings



### POLICY DESIGN AND ALTERNATIVE TO ACHIEVE SOYBEAN SELF-SUFFICIENCY

**Bambang Sayaka, Dewa K.S. Swastika, Henny Mayrowani, Yonas H. Saputra**

#### Introduction

Soybean-based food industry development, along with population growth, boosts this commodity demand. Soybean balance deficit is fulfilled by import. The gap keeps increasing, and the government deals with this matter through the implementation of the Special Effort (*Upsus*) program. It is necessary to design the policy concept and strategy to encourage farmers such that they will increase soybean production toward self-sufficiency.

The study was conducted in 2018 in the soybean-producing provinces, namely West Java (Bandung and Tasikmalaya Regencies), Central Java (Grobogan and Blora Regencies), Lampung (South Lampung and Central Lampung Regencies), West Nusa Tenggara or NTB (Central Lombok and eastern Lombok Regencies), and South Sulawesi (Bulukumba and Bone Regencies). Primary data collected from farmers and farmer groups through interviews using structured questionnaires and focus group discussion (FGD) at ICASEPS and some Agricultural Service Offices. Data were processed descriptively.

#### Research Results

##### Soybean Self-Sufficiency Concept

Principally, soybean self-sufficiency is realized when domestic production meets national demand. Soybean production kept decreasing during the last 23 years, from 1.82 million tons in 1992 to 0.98 million tons in 2015 (1.74% per year). Harvested area shrank from 1.66 million hectares in 1992 to 0.62 million hectares in 2015 (3.91% per year). Soybean sharply decreased since 1997 when Bulog's role in soybean marketing channels was removed. From 2008 to 2009, soybean harvested area and production improved as both local and import soybean prices increased by more than 50% compared to the previous year. The highest production was achieved in 2015 (963.239 tons), and the lowest took place in 2017 (543.517 tons). Soybean demand increased from 2,104,543 to 2,383,907 tons for the 2015-2017 period. Indonesia experienced the most significant soybean import volume in 2015, i.e., 2,256,932 tons.

Domestic soybean balance was a deficit of 1,183,907 tons in 2017. Some constraints of domestic soybean production enhancement were:

(a) low yield of 1.57 tons/ha and not competitive; (b) short durability of soybean seed; (c) unstructured local soybean marketing channel and low price; (d) imported soybean price was lower than that of local soybean; and (e) too large imported soybean in the domestic market as there is no-tariff and no-trade protection.

### Soybean Self-Sufficiency Policy

Ministry of Agriculture launches the soybean self-sufficiency program from upstream to downstream parts at once. The upstream aspect consists of seed development, including production improvement, distribution, price stabilization, as well as newly planted area enhancement (PATB). On-farm program comprises seed, fertilizer, and agricultural machinery assistance, and guidance and control for the PATB implementation. The downstream aspect includes post-harvest mechanization through agricultural machinery, labeling, floor price, processed product diversification, import control, job creation, and export opportunity.

Soybean production enhancement program for the 2016–2025 period was implemented through the following phases. A baseline survey was conducted in 2015, indicating that the planted area was 646,425 hectares and a yield of 1.57 tons/hectare. In 2017, many packages were done, i.e., PATB, import control, and tariff application, floor price, Bulog involvement, GMO/non-GMO product labeling, soybean product diversification, healthy product branding for café, restaurant and hospital. Soybean self-sufficiency will be achieved in 2020 while sustaining self-sufficiency and exporting soybean in 2025, and Indonesia will be the leading soybean exporting country in ASEAN.

To sustain self-sufficiency and export, soybean will be grown outside food crop areas. It includes mixed cropping and rain-fed land with a target of 2–3 million hectares per year. Operational strategy toward soybean self-sufficiency consists of (a) land provision for PATB; (b) accelerating IAARD technology transfer; (c) developing medium and large-scale soybean farms collaborating with farmer groups; (d) small-scale soybean farm consolidation; (e) government aid infrastructure to farmer groups; (f) import control through tariff and non-tariff barriers; (g) applying at least 10% import tariff; (h) establishing floor price; (i) market assurance to farmers; and (j) improvement of soybean seed system regulation.

### Soybean Production Enhancement Programs

Since the 1970s until now, many programs have been launched to realize soybean self-sufficiency. Production intensification began in 1973 through Mass Guidance (*Bimas*) and Mass Intensification (*Inmas*) programs for secondary crops. Special Movement (*Gersus*) was carried out in the 1980s and also *Insus* with Special Operation (*Opsus*) for new soybean production areas. Bulog was assigned to control soybean import in 1980 with specific buyers, i.e., Kopti, where the distribution areas were limited to non-soybean producing centers.

In 1998 and 1999 two consecutive programs were implemented, i.e. Rice, Corn, Soybean Self-sufficiency Movement (*Gema Palagung*) and Soybean Awakes Movement (*Gerakan Kedelai Bangkit*). In 2009 the government re-launched soybean self-sufficiency program to be achieved in 2014 and Ministry of Agriculture assigned Bulog to control imports of secondary-crop product. The program was not successful, but the current government (2014–2019) in 2017 again implemented Special Effort (*Upsus*) Program to realize rice, corn, and soybean (*Pajale*) self-sufficiency.

### Historical Performance of Soybean Self-Sufficiency Achievement Based on Supply and Demand Perspective

- 1974–1974: Local soybean production surpassed national demand. The surplus was between 2,800-4,000 tons/year or less than 1% of national production.
- 1970–1980 and 1980-1990: Consumption growth rates were higher than those of production.
- 1990–2000: Production growth was negative, but consumption growth was still positive.
- 2000–2015: Negative production growth with soaring consumption growth. Local soybean gets less competitive.



Indonesia's soybean trade was a deficit, so far. Soybean imported was used for raw materials of the food processing industry, i.e., tempeh, tofu, ketchup, taucu, and feed industry. Soybean import value kept increasing from US\$33 million in 1980 to US\$7.7 billion in 2014. On the other hand, Indonesia's soybean export value was US\$10,000 in 1987 increased to US\$205 million in 2014. Exported soybean products were those processed with high added value.

### Domestic Soybean Competitiveness Compared to Imported Soybean

Domestic soybean has advantages in terms of taste, freshness, and non-genetically modified organism (non-GMO). However, those advantages could not compete with imported soybean such as continuous supply, type and size uniformity, cleanness, and lower price. For the 2007-2015 period, the price ratio of domestic soybean to imported soybean, i.e., farm gate price to CIF, was 1.36. It indicated that the domestic farm-gate price was 36% higher than that of imports.

### Policy Design and Alternative to Achieve Soybean Self-Sufficiency in the Long Term

To achieve soybean self-sufficiency in the long term, the government needs to restructure production, consumption, and import aspects. Soybean should be produced on the suitable farmland and appropriate scale such that it will meet the national demand. Soybean production program is aimed at the interested farmers where they grow this commodity more competitive than other secondary crops. Production inputs are well provided in terms of quality, quantity, and at the right time. HPP established by the government should be effectively implemented and supported with sufficient state budget. Trying to grow GMO soybean in certain areas is the potential to enhance production.

Controlled soybean demand is necessary as long as it satisfies people's consumption and raw material for both the food processing industry and feed mill. The government has to manage the soybean retail price such that it is profitable to the farmers and affordable to the consumers. Soybean import control is arranged through an import tariff application. The import period is implemented outside the soybean harvest season.

### Concluding Remarks

Soybean self-sufficiency could be realized in the long term through restructuring production and marketing aspects. Production aspect includes: (a) soybean production program is focused in competitive areas thus PATB program using state budget need to be reviewed as it dealt with many constraints; (b) allocating specific land area for soybean production, whether it is

an island or newly leveled farm area, operated by cooperative, farmer group, regional/state own corporation with an interesting incentive; (c) growing soybean on swamp area (BJA) and/or dry land using mixed cropping; (d) supply of quality, affordable, sufficient seed volume at the right time; (e) growing GMO soybean. Marketing aspect consists of (a) implementing an effective floor price (HPP) through Bulog purchase with sufficient state budget allocation based on President Regulation (*Perpres*), not Regulation of Minister of Trade (*Permendag*); and (b) regulating soybean import period, import quota, and import tariff according to WTO rules.

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## STRATEGIC AGRICULTURAL DEVELOPMENT POLICY FACING AEC AND RCEP ECONOMIC COOPERATION

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### Introduction

The ASEAN cooperation has experienced a long evolution period since 1967 to achieve the current people-oriented and people-centered regional cooperation with cohesiveness and fairness among the member countries. Through the AEC 2015 agreement, the changes of ASEAN cooperation vision in 2015 cover: (a) full integration of economic; (b) competitive, innovative, and dynamic; (c) connectivity and sectoral cooperation; (d) strong, inclusive, and people-oriented and people-centered; and (e) become the global ASEAN.

Following the new agreement of AEC 2015, it has been approved that there will be cooperation between ASEAN and the other six partner countries, namely China, India, Japan, Australia, New Zealand, and Korea bound in the new economic partnerships, Regional Comprehensive Economic Partnership (RCEP). The main objective of RCEP is to expand and to get closer the economic cooperation basis to empower economic integrity and enhance the economic development of respective countries. The 15 member countries of RCEP are the export destination for Indonesia (56.2% of the total world export) and sources of import (70% of total world import), and also as the source of foreign direct investment (48.21% of the total FDI).

This study learned the impact of AEC and RCEP on national agricultural policies. The study sites were selected purposively with the consideration that the sites should be the production centers of commodities under this study. The commodities are corn, soybean, chili, shallot, coffee, cocoa, and cattle. Those are commodities with high potentials to provide added value, have strong competitiveness, and could compete with similar commodities at international markets. The selected provinces were North Sumatera, West Java, East Java, South Sulawesi, and West Nusa Tenggara. The analyses conducted were descriptive and quantitative analyses (RCA and RO) and the GTAP program.

## RESULTS AND DISCUSSIONS

### Policy Development and Implementation of MEA in Agriculture Sector in Indonesia, ASEAN, dan RCEP

Concerning the tariff in ASEAN up to 2018, each ASEAN member countries indicate that the tariff line among the ASEAN member countries as a whole lied in the range of

9558-12337 with the entire tariffs that have been approaching 0 (zero) percent. Other member countries than Singapore still have some tariff lines that could protect the main commodities at the local level. However, with the spirit of ASEAN cooperation, these countries have shown their true efforts to reduce more significant tariffs since 2003.

Following the development of tariff reduction, the non-tariff barriers, usually called Non-Tariff Measurements (NTMs), are frequently appearing to take their part in trade activities and leading to price distortion that could reduce the benefit obtained from such international trade. NTMs were applied in ASEAN to hold on import products because tariff policy was presumably not entirely effective in hampering the import products. Out of the total of 5975 measures in ASEAN, 33.2% are SPS, 43.1% are TBT, and 12.8% are export measures.

Indonesia confronts the tight rules of NTMs of the six-country partners of ASEAN with the range of tariffs between 736 to 2596, while within the ASEAN member countries in the range of 2 to 1037, and Indonesia NTMs Indonesia only as many as 293. This means that the six-country partners apply NTMs that could create trade distortion within the RCEP. With this protection, the product distortion from ASEAN member countries would relatively face various difficulties in entering those six countries.

Indonesia has 199 rules and regulations concerning NTMs issued by 14 offices with 636 NTMs coded. These 636 NTMs could affect 6466 tariffs or 65% of the total of Indonesia's tariffs. The Ministry of Agriculture only concentrates on SPS managed by the Quarantine Agency with 18 regulations. These 18 regulations need special efforts to consolidate with other non-agriculture institutions considering the role of NTMs as instruments to protect the interests of national agriculture.

### Development of Trade and Investment of Indonesia's Agricultural Commodities with ASEAN and RCEP



**Corn** has a strategic role in agricultural development, namely as raw materials for feed, in addition to the role of food consumption. In 2016, corn import was very high up to US\$250 million, with mainly imported (as much as US\$242 million) from non-RCEP member countries (ASEAN+6). With the national policy in 2017, however, Indonesia had no longer import this strategic crop. This means that demand for raw materials for feed was sufficiently supplied domestically and even with the export target in 2018 up to 500 thousand tons. Among the RCEP member countries with high potential of import are Japan, Korea, and Vietnam, as shown by their respective total import amounted to US\$2.6, US\$1.6, and US\$1.4 billion, and mainly imported from non-RCEP member countries.

**Soybean** trade has its import value higher than corn, namely US\$52.6 billion and imported from RCEP member countries. China revealed the most, up to US\$32.4 billion, while Indonesia only around US\$1 million, the amount less than Japan (US\$1.4 million) and Thailand (US\$1.1 million). These figures indicate that the word import potentials are existing in RCEP regions. The export pressure of world soybean producers such as the USA and Argentina would be very much influence the production development of soybean in each of RCEP member countries. Within the RCEP member countries, the soybean

export countries are China and India, with the export value US\$109 million and US\$151 million, respectively.

In the world **chili** trade that achieved the amount of US\$6.4 billion, the import of RCEP member countries reached a total of US\$900 million. This means that the demand for chili is relatively low. Indonesia only imported as much as US\$61 million, while the other countries comparatively had higher import values, such as Japan, Malaysia, Thailand, and Vietnam, with respectively US\$192 million, US\$142.5 million, US\$160 million, and US\$155.6 million. These figures indicate the opportunity for Indonesia's chili to enter international markets in the region. The other RCEP member countries with opportunities to enter export markets are India as the main supplier for Malaysia, Thailand, and Vietnam. Meanwhile, the chili export from Indonesia was relatively low at around US\$11.8 million, of which India was surprisingly the main export destination, with about US\$4 million in value.

The world trade of **onion** and **shallot** have reached a value of US\$3.5 billion, of which the RCEP member countries import was only US\$700 million. The RCEP member countries with import potentials are Japan, Malaysia, and Vietnam, as shown by the import for the three countries, at the amount of US\$171 million, US\$136 million, and US\$240 million, respectively, in 2016. The main exporter countries are China and India, which also supply onion and shallot to Indonesia (US\$74 million in 2016). Indonesia should thoroughly consider the imported shallots from India, Malaysia, and New Zealand that have contributed at the amount of US\$13.3 million, US\$12.6 million, and US\$16.8 million, respectively, so that it could not affect the domestic price of shallot. The main problem faced by Indonesia is the entrance of illegal onion pickles from India that probably have intensively penetrated the traditional markets all over the country.

The total trade of **coffee**, including the processed one, has amounted to US\$23.7 billion (2016). The main importers are not in RCEP member countries (US\$21.7 billion). From



this import value, the main RCEP member country exporters are Vietnam, Indonesia, India, and China, with a total value of US\$2,433 billion, US\$755 million, US\$526 million, and US\$453 million, respectively. The main export destinations of Indonesia's shallot were Japan and Malaysia, with a total amount of US\$87 million and US\$71 million, respectively. Vietnam, the competitor for Indonesia, has the main export destinations to RCEP member countries, namely China, India, Japan, Korea, Australia, Philippines, and Thailand, with the values ranging from US\$56 million (China) to US\$184 million (Japan). The domination of Vietnam in the world trade of coffee should be learned as a warning to particularly consider the quality of coffee since its cultivation always to meet the consumer's taste and quality, especially the foreign consumers.

The total world trade value of **cocoa** and its processed products have reached US\$40.6 billion. This value was mainly found in non-RCEP member countries (US\$36 billion), and the rest was distributed among the 16 RCEP member countries (US\$2 billion), which mainly enjoyed by Indonesia (up to US\$698 million) and Malaysia (US\$506 million). The two latter countries have their main contribution to RCEP member countries. The Indonesia cocoa export destinations in RCEP

member countries were Australia, China, India, Japan, and Malaysia, with total values at US\$44 million, US\$68 million, US\$46 million, US\$42 million, and US\$246 million, respectively. It is interesting to consider that at the same time, Indonesia is also an export destination of cocoa from Malaysia, mainly in the form of processed products. This indicates that Malaysia that has a shortage of raw materials would prioritize and focus on intermediate and end products while the raw materials come from Indonesia.

The world trade value for **beef cattle**, including water buffalo, was amounted to US\$41 billion (2016), with US\$11 billion imported by the RCEP member countries. The main importer countries were China, Japan, Korea, and Vietnam amounted to US\$2.5 million, US\$2.7 million, US\$2.2 million, and US\$2.1 million, respectively. Meanwhile, Indonesia's import was US\$602 million. The main exporters were Australia, India, and New Zealand, along with the non-RCEP member countries such as Brazil. For Indonesia, the challenge of this beef cattle issue is how to increase domestic production. Regional development for livestock is strongly encouraged to meet the steady increase in domestic demand.

The VGC analysis revealed that at farmer level, there is a need to improve various aspects in each chain of production, processing, and marketing. This is important in the attempt to improve production performance for a sustainable and sufficient volume of supply for consumption as well as for industry. Common problems faced by the stakeholders could be seen and indicated by (a) structure of agricultural input-output, (b) coverage of agricultural geographic, (c) role of government and related institutions; (d) improvement of supply chain added value; (e) support of agricultural institutions; and (f) role of the other relevant stakeholders.

### Impact of AEC and RCEP Cooperation on the Performance of Agricultural Crops in Indonesia

AEC and RCEP should significantly influence the performance of the agricultural sector in Indonesia, especially in the food sub-sector and livestock, as revealed through GTAP analysis. On the contrary, horticulture and estate crops sub-sectors showed a positive prospect in AEC and RCEP trade. However, improvement specifically on technology and investment should be prioritized to keep the positive trend of trade consistency, income/GDP, and welfare. This means that when trade activity with zero percent tariff occurs, Indonesia has been well prepared to deal with the others in terms of technology application and investment facilities. Technology and investment in this respect (domestic and foreign) should strongly encourage the quality and productivity of farmer's various products.

### Synthesis: Indonesia's Agricultural Sector within the AEC and RCEP Economic Cooperation

There is an opportunity for Indonesia to increase its participation in the AEC and RCEP economic cooperation but only with significant, integrative, and comprehensive improvement in many aspects, specifically through simplification of many interests of sub-sectors to generate strong economic connectivity with transparently activity management. Agricultural products, in this regard, are expected to gradually improved and strong enough to compete with similar products from different countries in global trade activity. The ASEAN countries and the ASEAN partner countries should see Indonesia as a competitor rather than their

export destination country. Efficiency improvement made in the process of production, processing, and marketing should significantly help the acceleration of market domination domestically and, at the same time, encourage to enter the regional market with high-quality products and to compete with similar products at the global level.

### Policy Implications

Strong strategies are required to improve the performance of corn and soybean to compete with similar products from different countries to enter AEC and RCEP global markets. Corn production needs to increase locally to meet the steadily increasing demand. For this purpose, the government and other stakeholders need to formulate strong policy followed by programs and activities to be implemented in many areas. Those programs and activities are to increase production and productivity with better cultivation techniques and improved farm management such as the use of HYV, application of technology/improved cultivation technique, and better post-harvest handling. Improvement of farmers' institutions is strongly suggested to achieve a higher level of cultivation. Cooperation with other parties in a partnership concept is also strongly encouraged to improve the quality of products and to ease product marketing. Control improvement to reduce the impact of pests and disease, specifically in soybean, should be prioritized, particularly by the local government. Promotion to increase the area size of soybean cultivation is strongly recommended. The local government needs to find suitable land to expand the cultivation of both soybean and corn. Price incentives for farmers would be another strong factor to be considered. Other available facilities would increase the interests of the farmers to grow more. It is down to the (local) government to have strong attention and commitments to work in favor of the farmers.

Efforts to increase production and productivity of chili and shallot are strongly encouraged. Other than the technology approach, the government role is crucial to guard the marketing activity up to the consumer level. This is suggested because the fresh chili dominates the demand while the demand pattern remains the same with the occurrence of fluctuation correlation between the production and the price. With the perishability of chili, modern post-harvest technology is required to ensure the freshness of the crop up to the farmer's level. This is important for price stability, especially during the off-season. Similar problems also occur in shallot. However, it is essential to note that the availability of HYV seed suits with a specific location would be critical, including the affordability of its price. Innovation to reduce the use of pesticides is also of importance to be considered in shallot demand policy.

Coffee and cocoa are two important estate crops at which lots of households involve. Now, the government only provides two



activities to increase production and productivity, namely extension and working together with the farmers. As regulator and facilitator, the government plays a strategic role in improving the farmer's welfare through the creation of added value: (a) enhance role and function of local government institutions and stakeholders, and (b) strategy to empower and to manage local institutions to increase the bargaining position of the farmers.

Strategies with applied programs are required to improve the performance of livestock. Improvement in farmer's institutions should have resulted in the continuous availability of livestock to meet the demand for household consumption as well as for industrial purposes. Added value for farmers could be obtained from better raising management, fattening the cattle for ADG (average daily growth), and marketing improvement through partnership cooperation (especially for fattening), all for the higher price and better farmer's income.

Production efficiency through adoption and technology adaptation is required to maintain production for consumption and industry. Connectivity and cooperation among the stakeholders, especially cooperation and coordination across the government institutions (agriculture and non-agriculture) for mutual benefit, should significantly improve the production, processing, and marketing chains. The role of government in empowering the supply chain is very important through regulations that would be oriented on 5 AEC 2025 pillars. The five pillars are (1) full integration of economic; (2) competitiveness, innovation, and dynamics; (3) connectivity and cooperation between sectors; (4) strong, inclusive, people-oriented, and people-centered; and (5) the global role of ASEAN.

Indonesia is expected to be self-empowered with a higher quality of products to control and dominate not only domestic markets but also penetrate regional/global markets, specifically within the AEC and RCEP economic cooperation. Improvements in many aspects of achieving a higher quality of strategic products could be implemented through integrative, innovative, superior, and inclusive market-oriented efforts (for higher competitiveness). Connectivity and cooperation among the stakeholders are encouraged for stronger products entering the global markets.

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## Policy Development

### AGRICULTURAL INVESTMENT AND EXPORT REGULATIONS REVIEW

#### Background

Consumption and government spending are the primary sources of national economic growth. Conversely, investment and trade contribute less to economic growth. From now on, the government will boost investment and trade as the main economic growth.

An integrated, one-stop business permit service from the central to regency levels was established. To boost investment and business, the government applies for Investment and Business Permit electronically. On 21 June 2018, the President of the Republic of Indonesia signed a Government Regulation (PP) No. 24/2018 on Online Single Submission (OSS).

Accordingly, the Minister of Agriculture (MoA) launches the export enhancement plan of some agricultural commodities. However, there is information on steps, policies, and regulations

to achieving export and investment enhancement targets. It is necessary to review existing policies and regulations in the agriculture sector.

GoI decides to improve Foreign Direct Investment (FDI) both inside ASEAN countries and outside ASEAN. FDI to Indonesia is relatively slow and below those to Singapore and Thailand, even that to Vietnam. Relatively low Global Competitiveness Index and Ease for Doing Business Index are indicators of low both foreign and domestic investments in Indonesia.

### Investment and Trade Regulations

One-stop business permit service is among the government's measures to improve business service. The President of RI signed PP No. 24/2018 on Online Single Submission (OSS). At the central level, its positive impacts are indicated by much faster processing and getting the business permit. Coordination between central and regional levels is still going on. All of the restricting regulations should be abolished and replaced with those boosting investments and export at each ministry. At the same time, the Governors/Regents/Mayors have to eliminate constraining regional regulations for investment and export enhancement.

MoA has established some commodities export enhancement plan. Investment in the agriculture sector, however, is still constrained by an unfriendly and unfavorable business climate. On the other hand, the deregulation of investment and its incentive is inhibited by political issues. Foreign investment (PMA) is still deemed as a threat to national sovereignty and self-reliance. It is quite different from the neighboring countries, e.g., Thailand, Vietnam, and Malaysia, where PMA is an integral part of economic growth and export improvement.

### Agricultural Investment Performance

Except for the plantation crops subsector, the overall agriculture sector is under-investment, and it is the primary constraint. To achieve higher growth and export targets, the government should accelerate both domestic investment (PMDN) and PMA in the agriculture sector. Even though it is not easy politically, but it is urgent to implement.

PMDN for this sector, especially the horticulture subsector, is limited. Selected PMA should have been an alternative to accelerate investment in this sector. Besides improving production and yield, PMA is expected to conduct research and development and to encourage technology transfer for more efficient, quality, and competitive products.

Capital and technology-intensive businesses such as the horticulture seed industry should be more open to PMA, including that of large-scale horticulture business. This business needs large capital and has to produce quality products

efficiently and competitively in the world market. GoI has to encourage and facilitate partnerships between PMA and PMDN and between large and small businesses.

### Agricultural Sector Trade Performance



Estate crop subsector is the only subsector with a trade balance surplus. Food crops, horticulture, and livestock subsectors are deficits in the 2010-2017 period. A surplus trade balance of the agriculture sector comes

from the estate crop subsector, surpassing those of the other three subsectors. The trade balance deficit of the horticulture subsector tends to increase over time.

Increased trade balance deficits of food crops, horticulture, and livestock subsectors and decreased trade balance surplus of estate crop subsector are critical. This condition is due to relatively low and small values of direct investments, both PMA and PMDN, in the agriculture sector. It is time for MoA to boost both PMDN and PMA, including that in the horticulture sector.

Horticulture business still deals with constraints in the upstream (production) and downstream (postharvest, marketing). Horticulture farming (especially fruit crops) is mixed crops and not in the specific zone, less intensive, not uniform in terms of variety, crop age, and practice. It leads to varying sizes, physical performance, and fruit maturity. Fruits supply is not continuous and unable to meet export quota. The consequence is less competitive Indonesian fruits export in the world market.

### Policy Implications

Indonesia needs a national platform related to investment and trade policies as the guidelines for government officials, politicians, business actors, and all components of the nation. The national platform states that PMA is an integral part of the national economy, not contrasting PMA and PMDN, but synergizing them. This guideline should be depicted in the Long-Term and Mid-Term National Development Plans (RPJP and RPJM) previously well known as the National Development Guidelines (GBHN) for investment and export enhancement.

It is time for Indonesian agriculture to regain its competitiveness in the world market as it was in the last decades. Planning to reclaim as the main pepper and spices exporter is possible with a mindset change toward export-oriented agriculture and leaving the defensive or import substitution strategy.

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## RESEARCH REPORTS

After some discussions for in-depth analysis through meetings and seminars, all 12 titles of research conducted during 2019 have been finalized. Each research team has submitted their find reports and valuable results in the form of policy brief to ICASEPS management for follow up actions. Among the 12 titles include (a) Export Development Strategy to Encourage Horticulture Subsector Growth and Farmer Income (*Strategi*

*Pengembangan Ekspor Mendorong Pertumbuhan Subsektor Hortikultura dan Pendapatan Petani*); (b) Management Analysis of Imported Fruit Substitution Supply Chain (*Analisis Manajemen Rantai Pasok Komoditas Buah Substitusi Impor*); (c) National Horticultural Seeding Development Policy (*Kebijakan Pengembangan Perbenihan Hortikultura Nasional*); and (d) Design and Implementation of Farm Business Consolidation (*Rancang Bangun dan Implementasi Konsolidasi Usaha Tani*).

## Research Activities

## ICASEPS Publications

### ANALISIS KEBIJAKAN PERTANIAN

Vol. 17 No. 2 December 2019

1. *Riset Pasar Biodiesel B20 di Indonesia: Evaluasi terhadap Produk dan Kesadaran Konsumen* (Market Research of Indonesian B20 Biodiesel: Product Evaluation and Consumer Awareness) (Sachnaz Desta Oktorina, Ratnawati Nurkhoiry, M. Ansori Nasution, Suroso Rahutomo)
2. Dynamics of Indonesian Consumption Patterns of Rice and Rice-Based Food Away from Home (Handewi Purwati Saliem, Hermanto, Erma Suryani, Rita Nur Suhaeti, Mewa Ariani)
3. *Konsumsi Buah dan Sayur Siswa SD Penerima Program Gizi Anak Sekolah di Cianjur* (Fruit and Vegetable Consumption of Elementary School Students Participating in the Nutrition Program for School Children in Cianjur) (Tiurma Sinaga, Anna Vipta Resti Mauludyani, Haiva Nopiany, Marestry Nuzul Annur)
4. *Dampak dan Keberlanjutan Program Cetak Sawah di Kabupaten Katingan, Provinsi Kalimantan Tengah* (Impact and Sustainability of New Rice Field Development Program in Katingan Regency, Central Kalimantan Province) (Lalu Ardhian Mustapa, Yeti Lis Purnamadewi, Arya Hadi Dharmawan)



5. *Efisiensi Teknis Usaha Tani Padi di Provinsi Kepulauan Bangka Belitung* (Technical Efficiency of Rice Farming in Bangka Belitung Province) (Fitri Kartiasih, Adi Setiawan)

### JURNAL AGRO EKONOMI

Vol. 37 No. 2 October 2019

1. Dampak Penggunaan Combine Harvester terhadap Kehilangan Hasil Panen Padi di Provinsi Banten (Impact of Combine Harvester Utilization on Loss of Rice Yields in Banten Province) (Eka Rastiyanto Amrullah and Ani Pullaila)
2. Technical Efficiency and Income Level of Sugar Cane Farming in Pati Regency (Dwi R. Mulyanti, Jamhari)
3. *Efisiensi Teknis Pada Pengelolaan Tanaman Terpadu (PTT) Padi Sawah di Kabupaten Karanganyar, Provinsi Jawa Tengah* (Technical Efficiency of the Integrated Crop Management of Rice in Karanganyar Regency, Central Java Province) (Restie Novitaningrum, Suprapti Supardi, Sri Marwanti)
4. *Dampak Kebijakan Domestik terhadap Ketersediaan Bahan Baku Industri Pengolahan Jagung di Indonesia* (Impact of Domestic Policy on Availability of Raw Materials for Maize Processing Industries in Indonesia) (Veraliaanta Br Sebayang, Bonar M. Sinaga, Harianto, I Ketut Kariyasa)
5. *Dampak Pengembangan Biofuels terhadap Volatilitas Harga Beberapa Komoditas Pangan Dunia* (Impact of Biofuels Development on Price Volatility of Some Foods Commodities in the World) (Fathimah Sholihah, Nunung Kusnadi)

## ICASEPS News

### WELCOME

We would like to welcome two of ICASEPS junior researchers who have defended their dissertations and finalized their higher education at reputable institutions. Welcome aboard! Their return to ICASEPS should strengthen our research capacity while regeneration in research capability at the Center continues. The abstract of their dissertation is provided for your reference.



**Dr. Helena Juliani Purba** was previously studied at the Universitas Sumatera Utara (2000) and pursued to higher education at IPB University, Bogor at which she graduated, both Master and Doctoral degrees (2005 and 2010, respectively) in agricultural economics. Born in Medan, North Sumatera, her interests are in the field of international trade and macroeconomics. Dissertation:

#### **The Impact of External and Internal Factors on the World Market Vegetable Oil and Indonesian Biodiesel**

Indonesia is the main producer and the exporter of palm oil in the global trade of vegetable oil. Along with the increase in the world population growth and the development of the downstream program (especially fuel), the need for world vegetable oil also increases every year. In 2050, the projected consumption of world vegetable oil reaches 25 kg per capita,

requiring the availability of 230 million tons of vegetable oil or needs an additional 60 million tons of production in 2015. The consumption increase in world vegetable oil as the raw material of biodiesel (blending fossil oil) is in line with the mandatory biodiesel policy conducted by all world exporters and importers of vegetable oils. Palm oil is the largest commodity in terms of production, consumption, and trade on the world markets. For Indonesia, palm oil and its derivative products are the most significant contributors to foreign exchange, amounting to Rp239 trillion in 2017. Currently, Indonesia attempts to develop biodiesel sourced from palm oil in the mandatory biodiesel policy. Biodiesel is considered a renewable and low emission energy source. Therefore, the trade policy is required to accelerate the achievement of biodiesel industry development.

This study aims to: (1) build econometrics model of the world vegetable oil trade and Indonesia's biodiesel industry; (2) analyze the performance of the world vegetable oil trade and Indonesia's biodiesel industry; (3) analyze factors affecting the world vegetable oil market and Indonesia's biodiesel industry; and (4) analyze the impact of external factors, trade policies, DMO, and Replanting toward the world vegetable oil market and Indonesia's biodiesel industry. The analysis utilized the secondary national data from 1991-2015. The study employed a simultaneous equation model consisting of 88 structural equations and 18 identity equations and estimated using the Two-Stage Least Square (2SLS) method.

The results showed that the Indonesian export tax policy on palm oil and the European Union's ban on palm oil imports had a positive impact on Indonesia's biodiesel industry development, which is indicated by the increase of foreign exchange of biodiesel export. However, it also causes a negative impact, i.e., the decreased total export foreign exchange due to the decline of foreign exchange earned from palm oil. The export tax policy will be more effective in increasing the total foreign exchange revenues (exports of palm oil and biodiesel) if it is synergized with oil palm replanting policy. The increase in palm oil import tariff imposed by the major importers (India, Europe, China, and the United States) had a positive impact on the Indonesia's biodiesel industry development. Still, it would reduce the total foreign exchange revenues. The decrease of foreign exchange exports of palm oil was unable to be compensated by the increase in foreign exchange from biodiesel exports. This policy had a positive impact on the world trade performance (market) of soybean oil, but it reduced the market performance of rapeseed oil and sunflower oil.

The simulation result showed the increase of world crude oil price have an impact on the increase in the world exports and imports of palm oil; however, the increase in world imports exceeds the world exports so driving up the world price of palm oil. The increase in the palm oil importer's GDP has a positive impact on Indonesia's total foreign exchange earnings, but it has a negative impact on the domestic biodiesel industry development.

The development of the biodiesel industry can be executed through the replanting policy and a combination of palm oil export tax policy and DMO. The escalation of world vegetable oil prices because of the increase of palm oil export tax could be reduced by conducting a replanting program, so the palm oil export to the world market raises, and the price declines. While the European Union implemented an import ban policy, the Indonesian government is suggested to implement a replanting and DMO policy to compensate for the foreign exchange loss of palm oil export so that the total of foreign export exchange could still increase. When the world price of crude oil increases, it is recommended the government to implement the DMO policy. In the future, the downstream palm oil policy in Indonesia should be focused on accelerating the downstream of the biodiesel industry. This policy should be accompanied by the increase of oil palm plantation productivity through replanting to the palm oil production increases, and the price of cooking oil can be stable due to the use of palm oil for cooking oil is not disrupted.

**Dr. Endro Gunawan:** Born in Banjarnegara, Central Java, he was previously awarded master's degree in public policy from the Universitas Indonesia, Jakarta (2000). His doctoral degree in agribusiness management was awarded by the Asian Institute of Technology, Bangkok (2019). He is



specifically interested in the field of agricultural socio-economic, agribusiness, marketing management, and public policy. Dissertation: **Assessment of the Warehouse Receipt System for Agricultural Commodities in Indonesia**

The common problem with agricultural commodities is price volatility. The warehouse receipt system is one of the means by which the farmers can manage the price volatility and finance their production activities. The warehouse receipt system has been implemented in Indonesia since 2006, based on Law No. 9 of 2006. As a new financial system, the warehouse receipt system is not well known and not fully understood by stakeholders. Consequently, the warehouse receipt system has been under-utilized by farmers as they are reluctant to use it.

This study examined the role of the warehouse receipt system for agricultural commodities in Indonesia. Specifically, the objectives of the study were: (a) to assess the farmers' perceptions of the warehouse receipt system, (b) to determine the factors influencing farmers' use of the warehouse receipt system, and (c) to evaluate the factors influencing farmers' use of the private and public warehouses. The locations of this research were the Subang and Cianjur districts in West Java Province in Indonesia.

The weighted average index was used to assess the farmers' perceptions regarding the warehouse receipt system. Binary logit regression was employed to examine the factors influencing farmers' use of the warehouse receipt system. The result of the weighted average index revealed that there was a strong perception that the warehouse receipt system is not well known and provides easy access to credit, but smallholder farmers have limited access. The main problems of the warehouse receipt system were lack of awareness, lack of human resources for management, and limited access for smallholder farmers. The result from the binary logit regression revealed that age, land ownership, selling price, availability of credit, and availability of transportation facilities positively influenced the decision to use the warehouse receipt system. In contrast, education, income per annum, profit, and participation in farmer groups negatively influenced the decision of farmers to use the warehouse receipt system.

The bivariate probit regression was used to check if there is an endogeneity problem in farmers' use of the public and private warehouses. The results revealed that the farmers use one type of warehouse (i.e., public or private). Therefore, there is no endogeneity problem in this case, and this implies that individual binary probit regressions of the farmers' use of private and public warehouses are appropriate. The results of binary probit regression revealed that profit, availability of insurance, and availability of processing facilities positively influenced the farmers' decision to use a private warehouse receipt system. In contrast, education, production, selling price, and distance from the farm to the warehouse negatively influenced farmers' decision to use the private warehouse receipt system.

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