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# Agro-Socioeconomic Newsletter

Indonesian Center for Agricultural Socio Economic and Policy Studies (ICASEPS)

## Editorial

Dear Readers,

This issue contains two selected research results about growth sources of corn and soybean, and cattle breeding. Demand for these three commodities is increasing following the fast development of agricultural-based industries as well as health improvement through balanced protein intake.

Some information from international seminar is also supplied, namely rural poverty reduction and mobile data showcase. The ICASEPS' regular seminar is quite interesting. Summary of the topics on institutional innovation and agricultural insurance should enhance your information.

We hope that this newsletter brings additional valuable information for you to share. We will meet you again in the next issue.

Thank you.

The Editor

## CONTENT



Research Findings

## GROWTH SOURCES OF CORN AND SOYBEAN PRODUCTION

**Bambang Irawan, Dewa K.S. Swastika, Sri H. Suhartini, Valeriana Darwis, Rangga D. Yofa**

Demand for corn in Indonesia keeps rising, especially those for food and animal feed. Similarly, soybean demand continues to expand mainly due to increased raw material needs of its processing industry, such as tofu, tempeh, and soy sauce. Demand for both commodities, however, grow faster than their domestic production and imports are unavoidable. Therefore, for food security and self-sufficiency, the Indonesian government has a commitment to increase domestic production of corn and soybean. To support Indonesian government policy on corn and soybean production enhancement, an analysis of the sources of production growth of both commodities is essential. Sources of production growth of corn and soybean can be derived from increases in harvested areas and increased yields both at macro and micro levels. This study aims: (a) to analyze the sources of growth of corn and soybean production, (b) to analyze possible production enhancement of corn and soybean, and (c) to identify the problems faced by farmers to take advantage of production growth possibilities.

Corn farm business primary data were collected from regencies representing production centers of corn and soybean, i.e. Wonogiri Regency (Central Java Province) and South Lampung Regency (Lampung Province) for corn. Soybean farm business primary data were collected in Garut Regency (West Java Province) and Bima Regency (West Nusa Tenggara Province). Most of national corn production is allocated to meet demand for foodstuffs (44.82%) and livestock feed, especially that of chicken (23.95%). During the period of 2003-2013 total national corn consumption on average rose by 5.44%/year. However, since national corn production is not sufficient to meet domestic demand, the country imports of about 8% of national corn demand. In the same period, 64% of soybean demand was satisfied through imported soybean. Imported soybean grew by 3.19%/year on average. Increased demand for soybean import was mainly driven by raw material requirement for soybean processing industry, absorbing about 88% of domestic soybean demand.

In the last ten years (2005-2015), production growth rates of corn and soybean tended to decrease. Corn production growth rate fell from 7.62%/year in 2005-2010 to 1.58%/year in the period of 2010-2015, while the growth rate of soybean production depleted from 2.30%/year to 1.61%/year. Soybean production growth rate decline was mainly due to lower growth in its harvested area, while reduced corn production growth rate was due to less growth rates in its harvested area and yield. Harvested areas of corn and soybean decline was due to lower competitiveness of those commodities compared to that of rice especially in wetland areas.

Corn production growth is mainly driven by its increased yield, while that of soybean was due to the increase in harvested area. In the last 20 years the role of yield increase as the main source of corn production growth is still significant but it is getting smaller as it is replaced by harvested area expansion. On the other hand, harvested area enhancement as the main source of soybean production growth decreases and increased soybean yield becomes more significant. Most of increase in corn harvested area was due to farmland expansion such as deforestation and conversion from estate crop land to that of food crop. Most of soybean area harvested enhancement was due to improved Cropping Index (IP). Improving soybean IP is not beneficial to total food production enhancement effort as it reduces other food crops' planted-areas. Rice and green bean compete with soybean in terms of farmland use.

There are five possible sources of production growth of corn and soybean, namely: (a) farmland expansion, (b) cropping index or IP enhancement, (c) minimizing harvested area reduction due to flood, drought, and pest, (d) alley cropping of corn and soybean in the early stage of plantation crops, and (e) improving corn and soybean yields. If all of those sources of growth are applied, national corn production is possible to increase by 6.71%/year. Potential for increasing national soybean production by applying those five sources of production growth is 16.44% per year. Limited farmland resource may limit planted areas of both commodities. There are five prioritized provinces for corn national production through yield improvement, i.e. North Sumatra, West Java, Central Java, West Nusa Tenggara, and South Sulawesi. In terms of soybean production enhancement through yield boost, five prioritized provinces are East Java, West Nusa Tenggara, South Sulawesi, West Java, and Central Java. To increase corn production through harvested area expansion can be carried out in 10 provinces, i.e. North Sumatra, West Sumatra, Riau, South Sumatra, Lampung, West Nusa Tenggara, West Kalimantan, East Kalimantan, North Sulawesi, and South Sulawesi. Soybean production improvement through harvested area enhancement is potential to conduct in 10 provinces, i.e. North Sumatra, Riau, Jambi, South Sumatra, West Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, and Central Sulawesi.

Technically, improved yields of corn and soybean can be conducted through improvement of crop cultivation technology consisting of land preparation, seeds, planting, fertilizer application, and irrigation. Corn and soybean usually compete with other food crops, especially rice. It implies that harvested area expansion of corn and soybean is not easily implemented. Yield improvement is another way of boosting corn and soybean production. Alley cropping of corn and soybean inside estate crop plantation is possible only for the first two-year stage after main crop planting. Other supporting factors to enhance corn and soybean production are farmers' access to capital and agricultural insurance.

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## CATTLE BREEDING PATTERNS ASSESSMENT TO SUPPORT THE BEEF CATTLE BREEDING STOCK REGIONAL DEVELOPMENT

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### Introduction

So far, calves import is one way for overcoming domestic-calves shortage. However, Law No. 41/2014 on animal husbandry and animal health advises that provision and development of animal breeding is carried out by prioritizing domestic production. Accordingly, regional development policy of beef cattle calf is strategic. Beef cattle breeding deals with: (1) insufficient quantity and quality of breeding stock; (2) breeding development concept is still conducted partially and not closely linked in terms of types and distribution; (3) breeding institutions are unable to meet the demand for calves; (4) sources of breeding are dispersed, difficult for fostering production, collection, and distribution of calves; (5) private breeding is not well developed due to quite low calves demand.

This study aims to create the development patterns of beef cattle breeding intended to meet demand for beef cattle cows at local, regional, and national levels. Specifically, this study aims: (1) to review concept, response, and implementation on improved local beef breeding regions in order to support breeding stock development; (2) to identify various development patterns by taking into account the diversity of local improved genetic resources and its successful rate; (3) to assess development pattern performance to meet demand for cattle breeding at local, regional, and national levels; and (4) to assess strengths, weaknesses, opportunities, and threats of cattle breeding patterns development. This study was conducted in the cattle breeding regions and the conservation areas for local and native cattle. The development patterns consisted of those of farmers' groups (KTT), UPT (Technical Service Unit), UPTD (Regional Technical Services Units), and private. Accordingly, study sites were Aceh, Central Java, Bali, and West Nusa Tenggara (NTB) Provinces. Additional data were collected in West Java and East Java Provinces.

### Concept, Response, and Implementation of Regional Calves Sources Legislation

Large female productive ruminant are genetic resources to preserve in order to maintain calves availability. It is necessary to develop breeding centers (*wilsumbit*) through female productive slaughtering control. Law No. 41/2014 on Source of Breeding has been implemented in Aceh through a Decree of Aceh Jaya Regency No. 25/2011 on Stipulation of Pulo Raya as Local Cattle Purification Region. It is financed using Aceh Budget (APBA) and Regency Budget (APBK).

To support the breeding development, Bali and NTB Provincial Governments enacted the Governor Decrees on Calf Price accompanied with Indonesian National Standard (SNI) Certificate and recording activities. To maintain genetic resources and to appreciate breeding activities, Bali Provincial Government issued the Governor Decree No. 46/2011 on Cattle Breeding Release Procedures and A Governor Decree No. 564/03-N /HK /2016 on Expenses Allocation and Calf-Base Price of Bali Cattle in Bali. In order to reduce population of exotic "red cows", Central Java Governor instructed the Head of the Provincial Animal Husbandry and Health to breed PO calves as many as 10% of PO Kebumen. Female productive cow slaughtering control is enabled using Provincial and Governor Rules. This conduct aims to improve continuous quality calf supply and it is expected to get self-sufficient.

Minister of Agriculture arranges national cow breeding system through enacting some regulations. Following this system, there are newly established cattle breeding farmer groups, cattle breeder associations, breeding-based People's Cattle Center (SPR) Program, cattle functional groups, cattle card users to be legislated through Local Government Rules (*Perda*), recording system, SNI for calves, SKLB, Certification, EBV, LSPro, Performance Test Station (SUP). The other issues include established cattle prices based on Bali and NTB Governors, and lifting calves selling ban from Bali. Cows breeding legislation deals with some problems, e.g. (i) lack developed conservation area of Aceh's cattle in Pulo Raya, (ii) cattle certification at farmer groups has no good recording, (iii) performance test does not well run, (iv) Artificial Insemination Agencies' tasks on semen production and marketing does not work well, (v) inconsistent development of regional calves resource in Central Lombok.

**Breeding Patterns and Their Success Levels**

There are three breeding patterns, namely farmer groups', Company's and Government's Patterns. Farmer groups' patterns are intensive and semi-intensive toward extensive. Government's pattern consists of central and local technical implementing units (UPT). Intensive pattern rears cattle in the common or individual farmers' cowsheds. Semi-intensive pattern rear cattle in the cowsheds at the settlement border areas with pasture and palm oil plantations. Intensive pattern enables the calves to get SNI and certification.

Company's pattern deals with high cost of feed, service per conception (S/C) ratio is 2 on average, and lambing distance does not show good performance. Government's pattern is not profit oriented, but it is intended to produce good quality cows and to preserve local cattle purity. The cows produced meet SNI and certified.

**Performance of Cattle Breeding Patterns**

There are three network components of beef cattle breeding, namely: (a) institutions as the breeders of beef cattle, (b) institutions acting as policy makers, and (c) institution playing supporting role. Institutions producing calves are: (a) farmers groups, (b) breeding companies, (c) Improved Livestock Breeding and Forage Animal Feed UPT, and (d) Regional Cow Breeding UPT.

Institutions serving as policy makers for beef cattle breeding business are: (a) Directorate General of Livestock and Animal Health, (b) Department of Animal Husbandry and Animal Health, and (c) Agency in charge of animal husbandry at regency level. Supporting institutions are: (a) Centers for National and Regional Artificial Insemination (BBIB, BIB, and BIBD), (b) Agricultural Technology Assessment Agency (BBP2TP/BPTP), (c) universities, and (d) Seed Livestock Commission. As the regional breeding sources, NTB, Bali, and Central Java Provinces are still surplus and able to sell cows to other provinces. Aceh Province is a deficit area of cows.

**Policy Strategy for Local Improved Cattle Breeding Pattern Development**

Intensive farmer groups in Lombok Island are potential but they deal with uneasy access to formal credit and partnership. Legislation related with cows inter-regional trade is a threat, because they have to retain qualified parental inside the province. Intensive farmer groups in Kebumen Regency face some weaknesses, such as small-scale business, inaccessible formal credit, and imported cows. Semi-intensive farmer groups in Aceh cope with calves supply shortage, limited, and partnership. Company's pattern has insufficient breeding techniques and should deal with cows import policy.

Government breeding centers produce over supply of qualified cows. Due to financial administration, the centers could not sell out the cows. Official requirement of free from 12 types of Strategic Transmitted Animal Diseases (PHMS) constrain Artificial Insemination Agency (BBIB Singosari) to acquire potential bull for some years.

**Policy Implications**

Relevant government institutions through government funding should purchase calves produced by farmer groups sold for purposes other than breeding. Over supply of frozen semen produced by BBIB/BIB at their working areas should be exported. The government needs to implement fair-calf price according to respective group, i.e. Proper Seed Letter (SKLB), certificates, and estimate breeding value (EBV). Government needs to get quality calves through bidding based on quality not only cheapest price. It is necessary to improve consistency in developing calf producing centers including those in Pulo Raya, Nusa Penida, and Sapudi Island.

Network synergy among existing breeding patterns needs improvement. It should take into account technical, institutional, policy, and economic aspects. Insemination service improvement is urgent to intensify cow birth rates at farm level. Natural insemination is advisable for semi intensive pattern.

Cattle breeding pattern of farmer groups is not main business. Thus, the government needs to expand farmers' cows holding. Access to formal credit for cows breeding business is necessary as it requires significant capital. Cattle breeding companies also need technical assistance, eased control on inter-regional calves' trade, and fair price of quality-based calves.

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## Policy Development

### PROGRAM TO ACCELERATE THE POPULATION OF CATTLE AND WATER BUFFALO

Special program to accelerate the population of cattle and water buffalo has been launched in 2016 (*Upsus SIWAB*). The program covers two main intensification activities, namely (a) Artificial Insemination (IB) and (b) Natural Breeding (KA). After almost two years of implementation, the concept of this program needs evaluation by collecting feedback from stakeholders for program improvement. This program, called *Upsus SIWAB*, is the continuation of a long program on self-sufficiency in beef (2000-2014). *Upsus SIWAB* is directed to accelerate the population of pregnant cows and water buffalo.

The evaluation revealed that the challenges are basically laid on some important issues, including (a) the guide book to execute is too general that the officials at field level face some difficulties in explanation and application, and (b) different locations have various associated problems, specifically in respect to the condition of the pregnant cow target (cow's age, health, cowshed, etc.). The availability of skilled personnel and the support of artificial insemination facilities are prerequisite of this program. Fail to provide these two components should leave the program unconvinced and meaningless.

The availability of appropriate human resource with IB facilities, well managed distribution of frozen semen along with its safety container, and local-level slaughter control for female cow are among the direct disadvantage condition that need to be resolved. Distribution role of each institution involve in this program should also be well organized to reach higher program achievement. For this purpose, a comprehensive study is required with objective to improve the implementation of the program. In addition, a good communication and coordination between central and local officials and similarly at field level should increase the success rate of this program.

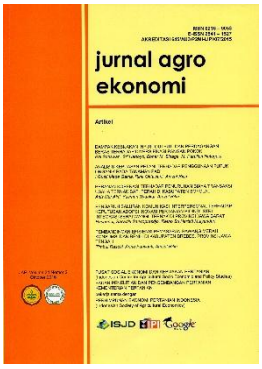
## Research Activities

Researchers at ICASEPS are very busy these days to improve the quality of their respective studies. Some are going to the field for, particularly primary data collection, and some are analyzing their data. All of these works are supported by good computer facilities along with a more reliable internet connection at the office. Research teams also organize special group discussions for specific issues at local levels in their attempt to obtain important inputs and deeper analysis.

On its collaborative studies, ICASEPS, IPB, and ACIAR on Indo-Dairy Project have organized several meetings at local levels (provinces of West Java and North Sumatera) during their field survey to obtain data, information and knowledge about specific topic they discuss. Similarly, the regular research also conducted focused meetings, such as Improvement of Farmer Access on Agricultural Market recently in South Sulawesi Province to promote and to enter local market and the possibility of regional market expansion for specific agricultural products. This method seems to be effective to collect more inputs directly from the actors and to capture the development trend for policy recommendations. Perhaps, holding a meeting at local level for specific issue within the entire research activities could be effective and well organized during the field survey.

## ICASEPS Publications

### Jurnal Agro Ekonomi Vol. 34 No. 2 October 2016




1. *Dampak Kebijakan Input, Output, dan Perdagangan Beras terhadap Diversifikasi Pangan Pokok* (Impacts of Rice Input, Output, and Trade Policies on Staple Food Diversification) (Edi Setiawan, Sri Hartoyo, Bonar M. Sinaga, M. Parulian Hutagaol)
2. *Analisis Kepuasan Petani terhadap Penggunaan Pupuk Organik pada Tanaman Padi* (Analysis of Farmers' Satisfaction on Organic Fertilizer Application for Rice Farming) (I Gusti Made Gama, Rina Oktaviani, Amzul Rifin)
3. *Peranan Koperasi terhadap Penurunan Biaya Transaksi Usaha Ternak Sapi Perah di Kabupaten Boyolali* (Roles of Cooperative on Dairy Farming Transaction Costs Reduction in Boyolali Regency) (Anis Nur Aini, Yusman Syaukat, Amzul Rifin)
4. *Pengaruh Saluran Komunikasi Interpersonal terhadap Keputusan Adopsi Inovasi Pertanian Bioindustri Integrasi Serai Wangi–Ternak di Provinsi Jawa Barat* (Influence of Interpersonal Communication Media on Adoption Decision of the Integrated Citronella–Livestock Bio-industry Farming Innovation in West Java Province) (Rushendi, Sarwititi Sarwoprasdjo, Retno Sri Hartati Mulyandari)
5. *Pembandingan Efisiensi Pemasaran Bawang Merah Konsumsi dan Benih di Kabupaten Brebes, Provinsi Jawa Tengah* (Market Efficiency Comparison between Shallot for Consumption and Seed in Brebes Regency, Central Java Province) (Timbul Rasoki, Anna Fariyanti, Amzul Rifin)

### Analisis Kebijakan Pertanian Vol. 14 no. 2 December 2016

1. *Modernisasi Penyuluhan Pertanian di Indonesia: Dukungan Undang-Undang Nomor 23 Tahun 2014 terhadap Eksistensi Kelembagaan Penyuluhan Pertanian di Daerah* (Agricultural Extension Modernization in Indonesia: Support of Act Number 23/2014 to Regional Agricultural Extension Institution Existence) (Syahyuti)

2. *Strategi Komunikasi Pemanfaatan Varietas Unggul Baru Padi Toleran Rendaman* (Communication Strategy on Submergence Tolerant New Improvement Rice Varieties Adoption) (Herlina Tarigan, Rita Nur Suhaeti, Rudy Sunarja Rivai)
3. *Ketahanan Pangan dan Kemiskinan di Provinsi Aceh* (Food Security and Poverty in Aceh Province) (Zakiah)
4. *Peningkatan Produksi Ubi Kayu Berbasis Kawasan di Provinsi Jawa Barat dan Sulawesi Selatan* (Cluster-Based Cassava Production Improvement in West Java and South Sulawesi Provinces) (Ening Ariningsih)
5. *Perilaku Harga Produk Peternakan pada Hari Besar Keagamaan Nasional* (Price Behavior of Livestock Products during National Religious Holidays) (Atien Priyanti, Ismeth Inounu)
6. *Urgensi dan Opsi Perubahan Kebijakan Subsidi Pupuk* (Urgent Policy Changes in Fertilizer Subsidy) (Sri Hery Susilowati)

**Temuan-Temuan Pokok dan Rekomendasi Kebijakan Pembangunan Pertanian dari Hasil-Hasil Penelitian PSEKP Tahun 2015 (Key Findings and Recommendations of Agricultural Development Policy from ICASEPS Research Results of 2015)**

This book consists of 4 chapters as follows:

**Bab I. Pendahuluan** (Chapter I. Introduction)

1. Latar Belakang (Background)
2. Urgensi Penulisan Buku (Urgency of Writing the Book)
3. Sistematika Buku (Book Systematics)

**Bab II. Rekapitulasi Temuan Pokok Penelitian dan Garis Kebijakan yang Direkomendasikan Penelitian Reguler** (Chapter II. Recapitulation of Key Research Findings and Policy Lines Recommended by Regular Research)

1. Penelitian Perdagangan Internasional (Research on International Trade)
2. Penelitian Pembangunan Wilayah dan Sumber Daya Pertanian (Research on Regional and Agricultural Resource Development)
3. Penelitian Pengembangan Komoditas Pertanian Strategis (Research on Strategic Agricultural Commodity Development)
4. Penelitian Sumber Daya Manusia dan Kelembagaan Pertanian (Research on Agricultural Human Resource and Institution)

**Bab III. Rekapitulasi Temuan Pokok Penelitian dan Garis Kebijakan yang Direkomendasikan Penelitian Analisis Kebijakan** (Chapter III. Recapitulation of Key Research Findings and Policy Lines Recommended by Policy Analysis Research)

**Bab IV. Penutup** (Chapter IV. Conclusion)

## ICASEPS News

### SUSTAINABLE AGRICULTURE AND RURAL POVERTY REDUCTION


Seminar on Sustainable Agriculture and Rural Poverty Reduction was held from May 7 to 20, 2017 in Beijing. It was organized by Agriculture Management Institute (AMI), i.e. a department-level institution directly affiliated to the Ministry of Agriculture (MoA) of the People's Republic of China. The seminar was attended by participants from ASEAN countries namely Indonesia, Malaysia, Thailand, Laos, Cambodia, Myanmar, and Vietnam. Dr. Saktyanu Kristyantoadi of ICASEPS was one of the participants benefited from exchange of data and information among the countries. Each participant enjoyed the event with appreciation for sharing valuable information based on each and every one experiences in agricultural development practices.

During the seminar, each participant was requested to deliver their respective country report. Indonesia presented a topic on sustainable agricultural development, titled "Current Status and Future Perspectives of Agricultural Development: The Case of Indonesia" which covered some important subjects such as performance of macro-economic and poor condition in Indonesia; the dynamics of the strategic environmental changes in achieving food security; the importance of the national food production in achieving food sovereignty; food security system; agriculture development; production targets to be self-sufficient of 5 main commodities; current status of agricultural development; future perspectives of agricultural development; and perspectives for agricultural cooperation.

### THE CRAWFORD PARLIAMENTARY CONFERENCE AND THE MOBILE ACQUIRED DATA SHOWCASE

Dr. Ening Ariningsih, a senior researcher of ICASEPS, has an opportunity to attend the Crawford Parliamentary Conference and the Mobile Acquired Data (MAD) Showcase which were held in Canberra, August 7 to 9, 2017. The Crawford Parliamentary Conference, titled "Transforming Lives and Livelihoods: The Digital Revolution in Agriculture" focused on the current and future likely impact of the data revolution for smallholders. This conference was a great opportunity for IAARD to find new and innovative approaches to conducting agricultural research and development projects.

The conference presenting some presenters from various international institutions, namely Global Open Data for Agriculture and Nutrition (GODAN), Gro-Intelligence, CSIRO's Agriculture Flagship, International Center for Agricultural Research in the Dry Areas (ICARDA), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Agricultural Impact International (AgImpact), Food Agility Cooperative Research Centre, University of Sydney, International Center for Tropical Agriculture (CIAT), and Australian Centre for International Agricultural Research (ACIAR).

The MAD Showcase was an opportunity to see evaluation results of digital data collection applications and their impact

on agricultural research projects which was led by AgImpact and funded by ACIAR and gain an understanding of how mobile application can be used to improve the quality and efficiency of data collected in research projects. The MAD series of research activities have supported and assessed the use of digital data collection apps within the context of agricultural research projects in low resource settings.

The research commenced with a desktop review of 17 commercially available apps and piloted two in the field. From there the MAD team has worked with nine ACIAR research projects across Asia and the Pacific to understand how apps impact project management and operations.

Based on five criteria, i.e., usability, scalability, affordability, security, and user support as well as its performance in the pilot project it is concluded that CommCare is the best app to use. Further evaluation showed that the use of apps realize the benefits and enrich relationships between farmers, researchers, and project leaders, i.e., improved data quality/access, improved survey management, improved engagement, improved access to knowledge, and reduced survey time.

The agenda for MAD Showcase provided the opportunity to hear first-hand from the MAD project team and collaborating project partners the opportunities, challenges, successes, and pathways for adopting digital data collection apps uncovered in the MAD research series projects. Therefore, aside from providing presenters from ACIAR and AgImpact, the MAD Showcase also provided presenters from various levels: from Programs and Partners (National Agricultural Research Institute, Papua New Guinea; International Rice Research Institute, Philippines; Transformative Agriculture and Enterprise Development Program (TADEP)), Project Leaders (University of Adelaide, University of Queensland, University of Melbourne, University of Canberra), to App Manager (International Rice Research Institute, Philippines; University of Adelaide) in panel groups.

## ICASEPS' REGULAR SEMINAR

### Institutional Innovation

On June 8, 2017 the ICASEPS' regular agricultural development seminar was held at the headquarter office of the Ministry of Agriculture in Jakarta. The seminar discussed about agriculture institutional innovation. Prof. Agus Pakpahan, Senior Researcher and former Director General of Estate Crops delivered his presentation titled "Learning in Institutional Innovation: The Case of Estate Crop". He deeply explained about the concept, regulation, field condition, success story of farmer's institutional development, and analysis with frame on the ideology and development for the interest of the people. He emphasizes the importance of our policies to help our small-scale famers for which he reiterates the statement of Mr. Joko Widodo, the President of RI, on January 5, 2017 about agricultural development vision as follows: Farmers must be clustered to engage them in cooperative order. This means that there should be an economic of scale, not a small scale one as it is not economic scalable. Farmers must be organized in a large scale for efficient economic of scale. We shall not leave the farmers walking alone. We have to accompany and guard them with modern management leading to activities that are more efficient. Who are they? Either state-owned enterprises or corporation from federated-BUMDes (village-level economic enterprises) for modern production and marketing activities. We shall not leave the farmers in their own daily ordinary activities, they should not. If that is so, they will never compete with large agricultural corporations as those in Thailand, Philippines, and US.

On the farmer's card policy, the Ministry of Agriculture has applied an online system for such card through the so-called SIMLUH, but need to have more detail data on the protected farmers to whom the card is dedicated. In the Law No. 19/2013 on Farmer's Protection and Empowerment, it is said that protection is given only for small-scale farmers who employ their field up to 2 ha. No peasants or landless farmers are included even though their number is large and BPS also defines farmers as hired farm labor. One should aware that the Ministry of Agriculture serves all farmers and protects the farmers and they are eligible for agricultural education, training, and extension by group and not individual. Unfortunately, the SIMLUH data only consist of farmer's groups in the category of own and employ and farmers that only employ, not for farm labor. Farmer's card in fact is only oriented to help the farmers (own and or employ) to access subsidized fertilizers.

Lesson learned from sugarcane estate, specifically on new policy to overcome sugar production problems and the decreasing trend of sugarcane farmer's income. Previous situation showed the significant role of Bulog (the national logistic agency) to absorb farmer's sugar. Before the effective application of IMF ban for Bulog to limit their role only to buy and stabilize price of rice and the revocation of the President's Instruction (*Inpres*) No. 9/1975 on Sugarcane Smallholder's Intensification (support smallholding farmer's estate), the farmers could just sit down, their production would be easily sold (bought by Bulog). However, soon after those years, sugarcane production sharply decreased and hit the lowest ever level for more than 30 years. Since no more Bulog like the other day, the new institution is now highly required.

The new institution is expected to be able to properly function in controlling, determining, and achieving the target with big success. Through this institution, the farmers are expected to change their mindset, behavior, and capability to achieve the certain level target of economic scale. One of these institutions is the Indonesian Association of Small-scale Sugarcane Farmers (Asosiasi Petani Tebu Rakyat Indonesia/APTRI). APTRI is the sugarcane farmers' facilitator. The local government estate-crop offices would become the organizers of APTRI's meetings with private sectors as guarantor and bailout institution in their attempt to have the right price of sugar. Such institutions are important for the farmers to strengthen the farmer's bargaining position against industries.

The decreasing trend of sugar industry performance is much caused by various factors coming from different directions. For Indonesia, this sugar weak condition is more affected by abundant sugar import and inconsistencies in long-term policies. For a stable long-term agricultural prices, an increase

in efficiency, productivity, and sustainability of agricultural products is required. The establishment of farmer's institution is highly recommended to equip them facing such problems. Like APTRI and other farmer's associations, such as palm oil, tobacco, coconut, clove, pepper, and cotton, future solution should stick to the establishment of institutions that could prevent farmers from the slump and unfortunate condition. This could be a way to meet the commercial function of estate crops that would also be considered from its ecology, economy, and socio-cultural functions and which in turn would play its role to harmonize the nation.

Agro-industry should become the agricultural development flag in its orientation to achieve certain added values out of the good agricultural practices. The development of institution could support the farmer's social capital. The concept of Estate Crops Industrial Society Area (KIMBUN) is the further development of the above mentioned institutions in its attempt to introduce the appropriate models of estate crops by reducing inputs from outside since the biological transformation process has been completely implemented and meet the required combination of estate/agriculture and animal husbandry.

## Agricultural Insurance

Insurance is the contribution of many who pay premiums to a few who suffer from certain perils. It is also considered as an instrument to convert variable and potentially large losses into fixed and much smaller costs of premium. Insurance reduces risks. Rules and regulations are defined between the insured party and the insurer in insurance policy. Agricultural insurance is new to Indonesian agriculture, and is increasing in importance amid the negative impact of global climate change to protect the farmers from agricultural risks that cause abundant losses. The MoA has initiated the pilot implementation of agricultural insurance to overcome the problems associated with direct compensation, while achieving protection and empowerment of farmers. To have feedback from stakeholders, on July 20, 2017, the MoA held a meeting with topic titled "Challenges and Direction of Agricultural Insurance Development". As one of ICASEPS's regular seminars, this event was conducted at the MoA headquarter in Jakarta. The speaker is Dr. Sahat M. Pasaribu, an agricultural economist at ICASEPS, who is greatly involved in developing agricultural insurance program in Indonesia.

The government provide premium subsidy for the farmers since 2015 as a part of the pilot project program that will last until 2019. Under the pilot crop insurance, premium is paid partly by farmers themselves (20%) and partly subsidized (80%). The premium rate is Rp 180,000/ha/planting season at which the farmers only pay Rp 36,000/ha/planting season. The pilot insurance is based on indemnity that is determined based on the national average cost of paddy production: Rp 6,000,000/ha of rice farm (approx. US$ 1 = Rp 13,000). This means that the farmers will also obtain Rp 6,000,000/ha of damage area (reach 75% of damage area/no harvest). The calculation of indemnity in the event of loss or damage to rice farm is based on the formula set by the Directorate General of Food Crops of the MoA as follows: (1) light damage, intensity no more than 25%; (2) medium damage, intensity between 25 and 49%; (3) severe damage, intensity between 50 and 74%; and (4) total damage, intensity equal to or more than 75%. Risks covered by this insurance are damage caused by flood, drought, and pest and disease infestations. Under the pilot implementation, only when the damage intensity reaches 75%, the insured will be entitled to receive the insurance payment. The 75% threshold is justified, among others, on the notion that, with more than 25% of rice fields that are still able to be harvested, farmers can recover their production costs to a certain extent. This program has been accepted by the farmers with the increasing number of farmers who participated in the program. In 2015, the area covered was only about 233 thousand hectares, and a year later has been increased to about 500 thousand and in 2017 is expected for more than 600 thousand hectares or about 60 to 70 % of the target area of 1 million hectares.

Farmers showed their enthusiasm in this program and it is obvious because the program is intended to protect the farmer's interests. The government has also introduced the insurance for livestock. In 2017, the target number of cow to be insured is no less than 120,000 heads. Insurance for cow is also interesting as the farmers will obtain benefit covered by the risks of cow's death due to diseases and accident events. Theft insurance is also introduced that will increase the farmer's confidence. The farmers will obtain up to Rp 10,000,000 on each of the abovementioned risks (terms and conditions apply as in the implementation guidebook).

Agricultural insurance program will be developed to cover other strategic crops/commodities. Chili and shallot are among the strategic agricultural commodities to be shortly covered in the insurance program. Agricultural financial support will also be designed to accompany agricultural development, particularly in the preparation of financial empowerment program that will also include financial support for insurance program. Meanwhile, on the development and promotion, given a gap in understanding on insurance among government officials and farmers, more efforts for dissemination of information about the Law No. 19/2013, technical guidance, and other related issues, such as outbreak control and claim mechanism, are highly recommended. Various products of agricultural insurance would also be developed. It has been envisioned the option product design for rice crop insurance program, such as weather-based index or yield-based index insurance. The development of the program should always be supported by private sector, so that the three-way coordination system will be smartly performed under the modern public-private partnerships (PPP) pattern of development.

## WELCOME

Sri Nuryanti, ICASEPS researcher, has defended her dissertation to fulfil one of requirements to be awarded a doctoral degree from Institut Pertanian Bogor. We would like to welcome Dr. Sri Nuryanti, returns to office and commences various research activities. We hope that her contribution to provide valuable inputs for development policies could enhance sustainable agricultural development in Indonesia. For your information, the summary of her dissertation could be shared as follows:

Self-sufficiency policy is theoretically inefficient. Nevertheless, it has been an important agenda and goal of the agricultural development since the establishment of the Government of Indonesia according to the strategic role of rice in the economy. The government aimed to achieve four main targets of the sustainable self-sufficiency, i.e. the increasing rice production, the stable price and reserve stocks, and zero import, hence the welfare of rice producers and consumers could be improved.

Beside the production policy, the three policy instruments (price, distribution, import) were implemented by a state-owned enterprise of Indonesia, namely Badan Urusan Logistik (Bulog). Many studies revealed that the involvement of state enterprises could cause market failure in accordance with the rent-seeking activities thus generated high social cost accordingly.

The research questions in this work were: (1) how was the political preference of the government to Bulog, and hence it has been involved to intervene rice market in order to achieve self-sufficiency? (2) what occured in the rice market, hence a lot of the allocated fund could have not brought Indonesia to the sustainable self-sufficiency yet? (3) was there any relationship between political preference of the government to the vested-interest groups, the domestic rice market performance, and the level of self-sufficiency? Therefore, this research titled "Political Economic Analysis of Rice Self-Sufficiency in Indonesia" was conducted aiming to (1) estimate the political preference of the government to Bulog and the other vested-interest groups in the rice market of Indonesia, (2) analyze the effectiveness of the rice market intervention that carried out by Bulog, and (3) analyze the relationship among political preference of the government to the vested-interest groups, the generated economic rent, and the achievement of self-sufficiency. A political preferential function model was employed to answer the research questions.

The annual national level data started from 2004 to 2014 consisting of prices, potential economy of rice, trades, the performance of Bulog, and macroeconomic indicator variables were collected from the authorized sources to analyze the demand and supply relation function using a dynamic oligopolistic model. The elasticity values of demand and supply and the computation results of the quantitative parameter of the price, distribution, and import policies were then used to estimate the political preference of the government to the producers, consumers, and the government as indicated by the magnitude of the political weight. The economic rent generated along with the implementation of the price, distribution, and import policies were computed in order to estimate the social cost of the achievement of the rice self-sufficiency. The political weight and the generated economic rent were estimated using a political econometric model to analyze the influence of both to the level of rice self-sufficiency.

Based on the analysis results, the political preference of the government related to the price, distribution, and import policies was biased toward the vested-interest group of the government. It was shown by the magnitude of the political weight of Bulog that reached the highest, followed by the producer group and the consumer group who received the lowest political preference. The market intervention conducted by Bulog has caused market distortion indicated by the generation of the economic rent and dead-weight loss, thus the achievement of rice self-sufficiency required high social cost. These findings proved that self-sufficiency policy is inefficient because of the high social cost accordingly. The bigger political weight of the producer and the government groups, the higher level of the self-sufficiency. The bigger political weight of the consumer, the more social cost and the lower level of the self-sufficiency. The sustainable self-sufficiency could be achieved with the active participation of the producer and the government groups, hence the social cost that related to the participation of the consumer could be minimized.

The policy implication of the research are the future rice policy should take more into account the interest of the producer group according to the high sensitivity of this group to the change in prices indicated by the price elasticity of supply. Price is being the only factor that is considered by the producer to decide paddy cultivation. On the other hand, the consumer group is not sensitive to the change in price since rice is staple food and even normal goods. The role of the government through Bulog is still important and subject to reposition in order to minimize market distortion caused by rent-seeking activity of non-Bulog rent-seekers.

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